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# THE MEMPHIS DEPOT
# TENNESSEE

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# SEMI-ANNUAL GROUNDWATER QUALITY REPORT (YEAR FIVE, SECOND HALF) GROUNDWATER INTERIM REMEDIAL ACTION

## DUNN FIELD

## MEMPHIS DEFENSE DEPOT, TENNESSEE

**PREPARED FOR**



**MOBILE DISTRICT CORPS OF ENGINEERS**

**CONTRACT NO. DACA01-99-D-0040**

**BY**

**JACOBS FEDERAL PROGRAMS**

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# 1.0 INTRODUCTION

This report summarizes the results of Year Five, Second Half (Y5S2) monitoring of the Groundwater Interim Remedial Action (IRA) system at the Dunn Field area of the Memphis Defense Depot, Memphis, Tennessee (DDMT).

## 1.1 Scope of Work

This report summarizes a sampling event of October 2003 and presents the groundwater surface data through October 2003. System monitoring was performed in accordance with "Groundwater Interim Remedial Action, Defense Depot Memphis, Tennessee, Operations and Maintenance Plan," Amendment 3 (August 28, 2001) prepared by CH2M Hill. The plan contains an overview of the recovery system and its functions. Start-up, operation, and shutdown procedures are detailed in this O&M plan. Requirements for sampling, monitoring and reporting are also specified.

## 1.2 Site Description and Background

DDMT covers 642 acres in Shelby County, Tennessee (Figure 1). The facility is approximately four miles southeast of the central business district and one mile northwest of Memphis International Airport. Operations began in 1942 with the mission to inventory and supply materials for the United States Army. In 1964, its mission was expanded to serve as one of the principal distribution centers for a complete range of military commodities. Past activities at DDMT included a wide range of storage, distribution, and maintenance practices. DDMT has been closed since 1997 and is maintained by the Memphis Depot Caretaker Division, under the control of the Defense Depot, Susquehanna, Pennsylvania/Defense Logistics Agency (DLA). DDMT is currently undergoing Base Realignment and Closure (BRAC) activities.

Dunn Field, also called OU-1, consists of 68 acres of land located north of the main installation, across Dunn Road (Figure 1). The northwestern quadrant of Dunn Field was used as a landfill area. The southwestern and southeastern quadrants were used as a storage area for mineral stockpiles. The northeastern portion was used as a pistol range and later as a pesticide storage area. Until 1970, Army supplies, including hazardous and non-hazardous materials were burned or buried primarily in the northwest portion of Dunn Field. These materials potentially included oil and grease, paint, paint thinner, methyl bromide, pesticides, herbicides, and food supplies. Disposal operations at Dunn Field have created a plume of contaminated groundwater, in the shallow fluvial aquifer, along the western and northern portion of Dunn Field. Groundwater monitoring performed during the 1989 and 1990 remedial investigation/feasibility study (RI/FS) identified concentrations of dissolved volatile organic compounds (VOCs) and heavy metals above regulatory limits. Identified VOCs included, but were not limited to tetrachloroethene, trichloroethene, dichloroethene, carbon tetrachloride, chloroform and 1,1,2,2 – trichloroethane.

The DDMT facility is classified as a Superfund Site under the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA) Section 120 (Federal Facilities).

### 1.3 Hydrogeology

DDMT is underlain by a layer of wind blown deposits (loess) about 20 to 30 feet thick. Underlying the loess, to a depth of generally 70 to 95 feet below land surface (bls), is a series of terrace deposits consisting primarily of silty to gravelly sands with some thin clay interbeds. The lower saturated portion of the terrace deposits is referred to as a fluvial aquifer, which is the uppermost aquifer beneath DDMT. The Jackson Formation, Upper Claiborne Group, which generally consists of high plasticity clay of variable thickness (5 to 75 feet), composes the base of the fluvial aquifer. The saturated thickness of the fluvial aquifer varies from 2 to 20 feet and is controlled, in part, by the topography of the Jackson Formation, Upper Claiborne Group.

Beneath the Jackson Formation, Upper Claiborne Group lies the Memphis Sand Aquifer, which is the primary source of drinking water for the City of Memphis. The Jackson Formation, Upper Claiborne Group clays serve as both the confining unit for the Memphis Sand Aquifer and the base of the fluvial aquifer.

### 1.4 Remedial Objectives

The DDMT facility, including Dunn Field, was placed on the National Priority List (NPL) in 1992 primarily because of the EPA's final Hazard Ranking System (HRS) Scoring Package of 58.06. In August 1995, CH2M-Hill submitted a Record of Decision (ROD) for a Groundwater IRA at Dunn Field to the regulatory agencies for approval. The ROD provided the basis of design for the components associated with the Interim Remedial Action for Dunn Field. The following remedial objectives were identified in the ROD and O&M Plan:

- Install recovery wells along the leading edge of the groundwater plume
- Operate the system of recovery wells until contaminant concentrations are reduced to acceptable levels or until the final remedy is in place.
- Perform chemical analysis to monitor the quality of the discharge in accordance with city discharge permit requirements.
- Create a hydraulic barrier to prevent any further migration of contaminated groundwater offsite.

### 1.5 System Description

Seven groundwater extraction wells, one pre-cast concrete building, an underground conveyance system, a flow measurement and control system, and associated components were installed at Dunn Field in 1997. Equipment, process controls, operational requirements, recovery well sizes and depths, pumping rates, and construction drawings

are defined in the Technical Specifications prepared by CH2M Hill. The system location and layout is shown in Figure 1.

Four additional wells (RW-1, RW-1A, RW-1B, and RW-2) were completed in the first half of 2001 Startup of these wells occurred the first week in March 2001.
These additional recovery wells are located in a line to the south (along the perimeter of Dunn Field) of RW-3.

# 2.0 SYSTEM MONITORING METHODOLOGY

## 2.1 Groundwater Level Measurements

Water level measurements were recorded quarterly during this operational period from a select number of monitoring wells located both on and off Dunn Field and the system recovery wells. Continuously monitoring transducers are located in six wells (MW-04, 13, 45, 55, 84, 95). These transducers are downloaded quarterly. Representative water levels from these transducers are included in Appendix A. Complete transducer data files are maintained with the project records.

The monitoring scheme is shown below.

| | | | |
|---|---|---|---|
| MW-3 | MW-30 | MW-56 | MW-87* |
| MW-4T | MW-31 | MW-57 | MW-89* |
| MW-5 | MW-32 | MW-58 | MW-90* |
| MW-6 | MW-33 | MW-59 | MW-91* |
| MW-7 | MW-34 | MW-60 | MW-95*T |
| MW-8 | MW-35 | MW-61 | MW-126** |
| MW-9 | MW-36 | MW-65 | MW-127** |
| MW-10 | MW-37 | MW-68 | MW-128*** |
| MW-11 | MW-38 | MW-69 | MW-129*** |
| MW-12 | MW-41 | MW-70 | MW-130*** |
| MW-13T | MW-42 | MW-71 | PZ-02 |
| MW-14 | MW-43 | MW-73* | RW-01 |
| MW-15 | MW-45T | MW-74* | RW-01A |
| MW-18 | MW-46 | MW-75* | RW-01B |
| MW-19 | MW-49 | MW-76* | RW-02 |
| MW-27 | MW-51 | MW-77* | RW-03 |
| MW-28 | MW-53 | MW-78* | RW-04 |
| MW-29 | MW-54 | MW-79* | RW-05 |
| | MW-55T | MW-80* | RW-06 |
| | | MW-84*T | RW-07 |
| | | | RW-08 |
| | | | RW-09 |

*Wells installed in October through December 2000
T Wells with transducers installed
**Wells installed in July 2002
***Wells installed in June 2003

All wells requiring water level measurements were monitored in accordance with the requirements of Exhibit 5-1 of the Amendment #1 to the Groundwater Interim Remedial Action, Defense Depot Memphis, Tennessee Updated Operation and Maintenance Plan dated September 1999 (Updated O&M). Figure 2 shows the locations of all monitored wells. Previous measurement data for past sampling events were submitted to the USACE, DLA, TDEC and USEPA separately with their respective groundwater quality reports. A complete set of the Y5S2 measurement data is given in Appendix A. Flow rates and water levels in the recovery wells have been collected during site visits, with this information summarized in the monthly Operation and Maintenance Reports.

## 2.2 Groundwater Sample Collection and Analyses

Groundwater samples were collected in October, 2003. The sampling method was diffusion bags suspended in the screened interval. Using diffusion bags, discrete depth intervals can be sampled in each well. Bags were filled with distilled water and placed in the well so that there was a two-foot diffusion bag sampler for each five feet of screened interval in the wells. If past sampling indicated no vertical stratification in contamination, fewer diffusion samplers were used per well. Diffusion samplers were placed in the wells on 17 September and retrieved on 28 October 2003. Since the previous sampling event, new wells MW-128, 129 and 130 were added to the sampling list. Also added were existing wells MW-07, 08, 09 and 29, while piezometer PZ-02 was removed. Samples were collected from 36 monitoring wells, and 10 recovery wells as shown below:

| Well Type | Well No. | Analyses/Method at Each Well | Date Performed |
|---|---|---|---|
| Down-Gradient Groundwater Monitoring Wells | MW-07<br>MW-08<br>MW-09<br>MW-29<br>MW-30<br>MW-31<br>MW-32<br>MW-33<br>MW-34<br>MW-36<br>MW-37<br>MW-40<br>MW-42<br>MW-43<br>MW-44<br>MW-51<br>MW-54<br>MW-56<br>MW-57<br>MW-58<br>MW-67<br>MW-68<br>MW-69<br>MW-70<br>MW-71<br>MW-76<br>MW-77<br>MW-78<br>MW-79<br>MW-80<br>MW-95<br>MW-126<br>MW-127<br>MW-128<br>MW-129<br>MW-130 | **Semi-Annual:**<br>Volatile Organics/SW8260B | 28 October 03 |

| | | | |
|---|---|---|---|
| Recovery Wells | RW-01<br>RW-1A<br>RW-1B<br>RW-02<br>RW-03<br>*RW-04<br>RW-05<br>RW-06<br>RW-07<br>RW-08<br>RW-09 | **Semi-Annual**:<br>Volatile Organics/SW8260B<br><br>*RW-04 was non-operational at the time of sampling | 29 October 03 |

Cumulative analytical results for sampled monitoring wells presented in Table 1 include the current sampling episode plus the previous three sets of data. Cumulative analytical results for the sampled recovery wells presented in Table 2 also include the current set of data and the three previous data sets. Laboratory analytical reports are provided in Appendix B. A discussion of the results is presented in Section 3.0 of this report.

### 2.3 System Discharge Sample Collection and Analyses

Per agreement with the City of Memphis, effluent samples, which had been collected monthly, are now collected quarterly, with results reported to the City semi-annually. All effluent samples are collected from the groundwater extraction system at a location approximately 200 feet upstream from the final discharge point. The discharge point is a manhole located on Person Avenue at the north property line of the Depot.

The samples were analyzed in accordance with Section F.1 of the Industrial Wastewater Discharge Agreement for Volatile Organic Compounds (VOCs) in each quarter. Semi-Volatile Organic Compounds (SVOCs) and Metals are also analyzed on a semi-annual basis.

Analysis of the samples was performed to evaluate compliance with the City of Memphis Industrial Wastewater Discharge Agreement and subsequent revisions. A copy of this agreement was provided in the Year One Operations and Maintenance Report. Analytical results for each effluent sample, to date, are presented in Table 3. Laboratory analytical reports are provided in Appendix C. A discussion of the results is presented in Section 3.0 of this report.

### 2.4 Field and Laboratory Quality Assurance/Quality Control Samples

As part of the Quality Assurance/Quality Control (QA/QC) Program, a variety of field and laboratory QA/QC samples were collected and analyzed during each sampling event. Groundwater was the only matrix analyzed; however, samples were collected from three different sources: groundwater monitoring wells, groundwater extraction recovery wells, and groundwater extraction effluent. A discussion of data validation and quality control issues is included in Appendix D.

QA/QC samples collected in the field during this semi-annual sampling event included 5 equipment blanks, 8 double blind duplicates, temperature blanks, and trip blanks. A trip blank and temperature blank was typically included in every cooler delivered to the laboratory. One double blind duplicate was collected for approximately every ten samples while one equipment blank was collected for approximately every 20 samples. Laboratory QA/QC included surrogate spikes to show control of organic analyses, a method blank and laboratory control sample, and matrix spike and matrix spike duplicate (MS/MSD) samples.

**2.5 Sample Packaging and Handling**

Upon collection, samples and associated field QA/QC samples were immediately placed on ice in a cooler. Stored samples were checked periodically and ice was replaced as needed to maintain a 4 degree Celsius temperature. Samples were segregated by sealed plastic bubble-wrap bags and placed in a cooler with the chain-of-custody forms. Samples were typically hand delivered the same day of collection to the laboratory, Environmental Testing and Consulting, Inc. (ETC) in Memphis, TN.

# 3.0 MONITORING RESULTS

This section discusses results of the Y5S2 interim remedial action groundwater monitoring at DDMT performed in October 2003. Figure 2 shows the locations of monitoring and recovery wells at the site.

## 3.1 Groundwater Elevation and Hydraulic Gradient

Groundwater level measurements at the site were collected approximately twice a month at monitoring wells locations discussed in Section 2.0 since system start-up in November 1998 through the end of 2002. Beginning in 2003, water levels will be collected quarterly. The most recently updated monitoring scheme is shown in Section 2.0. Groundwater elevation data for Y5S2, collected for the Dunn Field area on October 29, 2003, was used as the basis for this report. The Jacobs Engineering hydrogeology staff prepared the groundwater interpolation data. A detailed description of the interpolation technique and tables of groundwater elevations are included in Appendix E. The groundwater contour map generated from the data is shown in Figure 3.

The groundwater flow direction during the Y5S2 groundwater measurement event was generally to the west. In general, the baseline calculated hydraulic gradient varied from 0.015 ft/ft in the northern part of Dunn Field to 0.0075 ft/ft across the southernmost section of Dunn Field. Groundwater level measurements of monitoring wells that are sampled are provided in Table 4. Groundwater measurement data from all monitored wells is provided in Appendix A.

## 3.2 Groundwater Analytical Results

This section discusses analytical results of effluent samples of water discharged to the Publicly Owned Treatment Works (POTW) as well as groundwater samples collected from recovery wells and select monitoring wells. A copy of the laboratory analytical reports for Y5S2 monitoring/recovery wells, including chain-of-custody documentation, is provided in Appendix B. A copy of the laboratory analytical reports and chain-of-custody documentation for the effluent samples is provided in Appendix C. Figure 4 shows analytical data for seven chemicals of concern on the site map. Chemicals chosen for display include Tetrachloroethene (PCE), Trichloroethene (TCE), and breakdown products including 1,1,2,2-PCA (1,1,2,2-PCA), Cis 1,2-Dichloroethene (Cis 1,2-DCE), 1,1-Dichloroethene (1,1-DCE) and Chloroform. Carbon Tetrachloride is also shown.

### 3.2.1 Effluent Analytical Results Summary

During the Y5S2 monitoring period, an effluent discharge sample was collected in July and November 2003 from the groundwater recovery system. The samples were analyzed for TCL Volatile Organics (Method 8260B) in July, and added TCL Semi-Volatile Organics (Method 8270C) and Metals (EPA 200 series) in November. Effluent analytical reports are provided in Appendix C. Table 3 presents the analytical results of all effluent samples from the start of operation through November 2003. This table indicates that

there were no exceedances of the City of Memphis discharge permit limitations during the July or November 2003 sampling events.

### 3.2.2 Recovery Well Analytical Results Summary

Y5S2 groundwater samples were collected from ten of eleven recovery wells in October, 2003. RW-4 was not operational at this time and no sample was collected. The groundwater samples were analyzed for TCL Volatile Organics (Method 8260B). Results are provided in Tables 2. Y5S2 recovery well laboratory analytical results are provided in Appendix B.

Only compounds that have been detected are reported. Trichloroethene (TCE) has consistently exceeded MCLs in all of the recovery wells, and exceeded the MCL this monitoring period in all of the recovery wells. Carbon Tetrachloride has been consistently detected at concentrations exceeding MCLs in the newest recovery wells (RW-1, 1A, 1B, and 2) and in RW-3. All of these wells are located from the western mid-section of Dunn Field southward.

Cis 1,2-Dichloroethene (Cis 1,2-DCE) has been consistently detected above MCLs in Recovery Well RW-8, and has exceeded MCLs three out of the last four sampling events. This compound has now also exceeded MCLs in two of the last three sampling events at Well RW-02. Tetrachloroethene (PCE) was detected above MCLs during this sampling event in RW-1, RW-1A, RW-5, RW-6, RW-7, RW-8, and RW-9. It has consistently exceeded MCLs in RW-1A, RW-4, RW-5, RW-6, RW-8 and RW-9. The compound 1,1 Dichloroethene (1,1-DCE) was detected above MCLs in RW-8 and RW-9 (both located at the north end of the recovery well system) and was ND in the remainder of the recovery wells. Observations for individual wells are given below:

RW-01 This well had been inoperable during each of the previous two sampling events. Results from this event indicated that Carbon Tetrachloride exceeded the MCL and was approximately double the concentration as the previous sample (collected April 2002). TCE was also found at a considerably higher level than the previous sample (154 ug/L compared to 58.2 ug/L in April, 2002). PCE slightly exceeded the MCL this sample period (9.36 ug/L). No other constituent exceeded MCLs, although it should be noted that Chloroform also exhibited a marked increase since the previous sample (286 ug/L as compared to 68.2 ug/L in April, 2002).

RW-01A Three compounds (Carbon Tetrachloride, PCE and TCE) exceeded the MCLs during the Y5S2 sample event. Carbon Tetrachloride and TCE increased from the previous sample (14.6 to 33.6 ug/L and 112 to 285 ug/L respectively). PCE which had been below MCL the previous sample period increased to 11.3 ug/L.

Two other compounds which do not have established MCL limits (chloroform and 1,1,2,2-PCA) were detected at high concentrations (754 and 169 ug/L respectively).

RW-01B As in the past three sample events, two compounds (Carbon Tetrachloride and TCE) exceeded the MCLs during the Y5S2 sample event. Carbon Tetrachloride exhibited a decrease from the last sample (30.9 to 19.5 ug/L). TCE decreased slightly from 46.4 to 42.4 ug/L.

RW-2 Three compounds (Carbon Tetrachloride, Cis 1,2-DCE and TCE) exceeded the MCLs during the Y5S2 sample event. Carbon Tetrachloride decreased from the last sample (15.5 to 14.0 ug/L). TCE increased slightly from 73.4 ug/L to 83.4 ug/L. Both Carbon Tetrachloride and TCE had exceeded the MCLs in each of the previous 3 events. Cis 1,2-DCE has now exceeded MCLs two of the last three monitoring periods and is above MCLs this event at 78.6 ug/L.

RW-03 As in previous events, two compounds (Carbon Tetrachloride and TCE) exceeded the MCLs during the Y5S2 sample event. Carbon Tetrachloride decreased from the last sample (19.1 to 10.9 ug/L). TCE decreased from 70.4 to 66.4 ug/L.

RW-04 RW-04 was not operational during the sample event. No sample was collected.

RW-05 As in two of the previous three sample events, PCE exceeded MCLs but did decrease slightly from 10.2 to 7.47 ug/L. TCE showed an increase from 95 to 193 ug/L and had exceeded the MCLs in each of the previous three sampling events.

RW-06 PCE and TCE exceeded the MCL during this sample event. PCE was detected at 37.1 ug/L (little change from previous period) and TCE was found at 40.7 ug/L decreasing from 59.4 ug/L in the previous sampling event. Both constituents have consistently exceeded the MCL in previous events.

RW-07 PCE and TCE exceeded MCLs during this sample event. PCE was found at a concentration of 5.35 ug/L, a slight decrease from the previous period (5.94 ug/L) with TCE decreasing slightly from 108 to 102 ug/L. TCE has consistently exceeded the MCLs.

RW-08 Four compounds (1,1-DCE, CIS 1,2-DCE, PCE and TCE) exceeded the MCL concentration during the Y5S2 sampling event. TCE has consistently exceeded MCLs in each of the previous events, but did decrease from 413 to 232 ug/L. PCE decreased slightly from 14.3 to 11.0 ug/L and has also exceeded the MCLs consistently. Cis 1,2-DCE has exceeded MCLs in three of the last four sample events and was found at a concentration of 116 ug/L. 1,1-DCE exceeded the MCL at this location for the fifth consecutive time with a concentration of 14.2 ug/L. 1,1,2,2-PCA was also detected at a concentration of 223 ug/L but no MCL has been established for this contaminant.

RW-09 Three compounds (1,1-DCE, PCE, and TCE) exceeded the MCL this period. 1,1-DCE decreased 33.2 to 7.46 ug/L. PCE decreased from 64.6 to 26.5 ug/L. TCE showed an increase from 61.3 to 120 ug/L. All three compounds have consistently exceeded the MCLs in this recovery well.

### 3.2.3 Monitoring Well Analytical Results Summary

Y5S2 groundwater samples were collected from select monitoring wells at the site. The samples were analyzed for TCL Volatile Organics (Method (8260B). Y5S2 monitoring well laboratory analytical reports are contained in Appendix B.

Table 1 presents TCL Volatile Organics analytical results from all monitoring wells sampled during the Y5S2 event. Only compounds detected during any sampling event have been reported in the tables. Diffusion bag samplers were used to collect all samples. Diffusion bag samplers allow determination of stratification of contaminants in the well. Generally, one diffusion bag sampler was used for each five foot section of well screen, so multiple samples were collected from many of the wells depending on the screen length and water table elevation. Some of the wells which had previously shown little vertical stratification are now being sampled with fewer diffusion bags.

A plot of concentration vs time has been prepared for each of the monitoring wells which have exhibited contaminant concentrations exceeding MCLs for two or more sampling events (see Figures 5 – 17 of this report). These plots graphically show potential increasing or decreasing trends and are discussed in the monitoring well summary section below:

MW-07 This well, along with Wells MW-08, 09, 29, 128, 129 and 130 has been added to the monitoring program as of this Y5S2 report to show potential up-gradient off-site contaminants as they migrate onto Dunn Field from the northeast. Three compounds were detected exceeding the MCLs at this location (1,1-DCE, PCE, and TCE). 1,1-DCE was detected at a concentration of 40.9 ug/L PCE was detected at 42.6 ug/L, while TCE registered 27.6 ug/L. Chloroform was also detected at a concentration of 139 ug/L.

There does appear to be some vertical stratification in this well, with the upper sampled interval having lower concentrations of 1,1-DCE, PCE, and TCE. The chloroform concentration was higher in the upper sampled interval and the lower interval was non-detect for that compound.

MW-08 This was the first semi-annual sampling event for this well. Sampling indicated no exceedance of MCL's, with only 1,1-DCE being detected (1.43 ug/L).

MW-09 This was the first semi-annual sampling event for this well. Only Carbon Tetrachloride exceeded MCLs with a result of 8.34 ug/L. Chloroform was also detected at a concentration of 27.2 ug/L, while PCE and TCE were detected but at concentrations below MCLs.

MW-29 This was the first semi-annual sampling event for this well. Three compounds exceeded MCLs at this location (1,1-DCE, PCE, and TCE). There were detected at maximum concentrations of 34.8, 27.1, and 29 6 ug/L respectively.

There was no apparent vertical stratification at this location, with all three sampled screen intervals indicating similar levels of contaminants.

MW-30 No VOCs have been detected at concentrations exceeding MCLs for this and all previous sampling events.

MW-31 Only one compound (1,1-DCE) was detected above MCLs during this sampling event. TCE has exceeded MCLs in all previous sampling events, but fell below MCL for the first time. 1,1-DCE decreased slightly from 13.7 to 8.38 ug/L.

Vertical stratification at this location is minimal for this sample event, although some stratification, especially in TCE had been noted previously.

Figure 5 shows the concentration of 1,1-DCE, TCE and PCE over time. Each of these constituents have exceeded the MCLs at some time. 1,1-DCE and TCE had shown an increasing trend through the October 2002 sample event, but have both shown decreasing trends since.

MW-32 One compound (TCE) was detected at a concentration exceeding the MCLs. CarbonTetrachloride had been detected at concentrations exceeding MCLs in prior sampling events, but decreased to ND this period. TCE remained practically the same as the last sampling event at 13.4 ug/L.

Two additional chemicals of concern (chloroform and 1,1,2,2-PCA) have been detected at this location. Chloroform showed little change this event at 50.9 ug/L and has shown a decreasing trend over the last four events. 1,1,2,2-PCA has decreased for the fifth consecutive time (11 to 7.82 ug/L).

Figure 6 shows concentrations of Carbon Tetrachloride, TCE and chloroform over the range of the historical sampling data. The three constituents showed a steady increase in concentration from 1999 through 2001, with a sharp spike in October of 2001. Since that time, concentrations have decreased significantly and appear to be on a decreasing trend.

MW-33 No VOC compounds have been detected at concentrations exceeding MCLs during this and all prior sampling events.

MW-34 No VOCs were detected at concentrations exceeding the MCLs during this sampling event. The only compound detected was chloroform at 3 ug/L. There does not appear to be any stratification in this well.

MW-36 No VOC compounds were detected which exceeded the MCLs. No stratification is evident in this well.

MW-37 No VOC constituents were detected which exceeded the MCLs. There is no evidence of stratification in this well.

MW-40 No VOC compounds have been detected at concentrations exceeding MCLs during this and all previous sampling events.

MW-42 No VOC constituents were detected which exceeded the MCLs.

MW-43 No VOC constituents were detected which exceeded the MCLs. No stratification is evident in this well.

MW-44 No VOC constituents were detected which exceeded the MCLs during this sample event. No stratification has been evident in this well.

Figure 7 shows concentrations of Carbon Tetrachloride, chloroform, and TCE since the beginning of the sampling program (February 1999). All three constituents have appeared at the well since November 2000 and generally increased slightly through October 2001. Since that time there has been a decreasing trend in all three constituents. Only Carbon Tetrachloride has yet exceeded MCLs (October 2001).

MW-51 Two compounds (1,1-DCE and TCE) were detected at concentrations exceeding the MCLs during Y5S2. TCE decreased slightly from 10 to 5.54 ug/L. 1,1-DCE concentrations have exceeded MCLs in each event except for Y2Q1 but has shown a decrease from 33.3 (Y5S1) to 17.6 ug/L (Y5S2).

A plot of historical data for 1,1-DCE and TCE is given in Figure 8. TCE concentrations have remained relatively constant over the sampling periods. 1,1-DCE had shown a generally increasing trend through October, 2002, but has shown a decreasing trend over the last two sampling events.

MW-54 Four VOC compounds (Cis 1,2-DCE, PCE, 1,1,2-TCA and TCE) were detected at concentrations exceeding MCLs during the Y5S2 sampling event. Carbon Tetrachloride had been consistently detected at concentrations exceeding MCLs over the last four sample periods, but dipped below the MCL this event. Cis 1,2-DCE has now exceeded MCLs in two of the last three sample events and was detected at 85.3 ug/L. PCE exceeded MCLs for the first time at this location, with a concentration of 10.1 ug/L. 1,1,2-TCA also exceeded MCLs for the first time here with a concentration of 10.4 ug/L. TCE increased from 632 to 1900 ug/L. Aside from a slight decrease during the previous sample event, TCE has shown a definite increasing trend since the February 2001 event.

Some stratification is occurring in this well with most of the VOCs showing an increase with screen depth. As in previous events, TCE especially showed a significant increase with depth.

Chloroform has been detected in this well at near stable concentrations of 3 to 20 ug/L over the past sampling events.

Figure 9 shows the concentration of Carbon Tetrachloride, Chloroform, Cis 1,2-DCE, and TCE over time. Carbon Tetrachloride and Chloroform have shown little change during the range of the sampling events. TCE and Cis 1,2-DCE, on the other hand, have shown a definite increasing trend beginning with the Y3S2 event (October 2001). TCE, especially has shown an overall increasing trend and has gone from less than 100 ug/L to 1900 ug/L, an almost 20-fold increase, since February 2001.

MW-56 No compounds have been detected at concentrations exceeding MCLs during this and all previous sampling events. Chloroform has been detected in this well during several previous events and has been on a generally increasing trend since Y3S1 (February 2001), although the concentration decreased this sample period from 41.2 to 26 ug/L.

MW-57 Three compounds (Carbon Tetrachoride, PCE, and TCE) were detected at concentrations exceeding MCLs. Carbon Tetrachloride decreased from 42.4 to 33 3 ug/L. TCE remained practically unchanged at 71.6 ug/L. PCE decreased slightly from 7.86 to 5.32 ug/L. Additionally, chloroform was detected at a concentration of 18.2 ug/L.

Figure 10 shows concentrations of Carbon Tetrachloride, Chloroform, PCE, and TCE over time. TCE has shown a definite increasing trend over time, although the concentration has somewhat stabilized over the last two events. Chloroform had shown a slightly increasing trend, but appears to be leveling out overall. The concentrations of the other two constituents appear to be changing very little.

MW-58 No VOCs have been detected at concentrations exceeding MCLs during this and all previous sampling events.

MW-67 No VOC contaminants were found which exceeded the MCLs. All previous sampling events have resulted in practically no detection of contaminants.

MW-68 No constituents were detected which exceeded the MCLs.

A plot of TCE, PCE, and 1,1-DCE vs time for MW-68 (Figure 11) shows a definite decreasing trend since the November 2002 sample event. Only during the Y4S2 (October 2002) sampling event has any contaminant (1,1-DCE) been shown to exceed the MCLs.

MW-69 There was no exceedance of MCLs during this sample period. Overall, this well has shown a decreasing trend in TCE concentration over time, down to a non-detect for this sample event (Figure 12).

MW-70 Three constituents were detected which exceeded MCLs this sampling period (PCE, 1,1,2-TCA, and TCE). PCE was detected a concentration of 17.3 ug/L and had been non-detect the previous two sample periods. 1,1,2-TCA also exceeded MCLs at 6.92 ug/L, and had also been non-detect for the previous two sample periods. TCE exceeded MCLs increasing from 1220 to 2530 ug/L in Y5S2. This well shows evidence of stratification with concentrations decreasing with depth.

As before, 1,1,2,2-PCA has also appeared in high concentrations in this well. The concentration increased this period from 3060 to 8270 ug/L.

A plot of historical data is given in Figures 13A and 13B for MW-70. 1,1,2,2-PCA and TCE are shown on Figure 13A. 1,1,2,2-PCA had been increasing for four of the previous five sample events and has shown an overall increasing trend since the February 2001 sample event. TCE continues to show a slight overall downward trend. Figure 13B presents the historical data for Cis 1,2-DCE, PCE and 1,1,2-TCA in this well. Cis 1,2-DCE has shown a generally decreasing trend, but had a slight up-tick this period. PCE and 1,1,2-TCA have shown little trend over the range of sampling events.

MW-71 Two VOC compounds (Carbon Tetrachloride and TCE) were detected at concentrations exceeding MCLs during Y5S2. Carbon Tetrachloride and TCE have exceeded the MCLs in each of the prior sampling events in which this well was sampled. Carbon Tetrachloride decreased slightly from 17.6 to 15.3 ug/L. TCE also decreased from 44.5 to 17.4 ug/L. Some evidence of stratification exists in this well.

Two additional compounds for which there is no established MCL were also detected. Chloroform was found at a concentration of 88.8 ug/L and 1,1,2,2-PCA was detected at a concentration of 27 ug/L.

Plots of historical constituent concentrations for MW-71 are given in Figures 14A and 14B. Carbon Tetrachloride and PCE are shown on Figure 14A and both indicate a generally decreasing trend. Chloroform, 1,1,2,2-PCA, and TCE are shown on Figure 14B and also indicate an overall decreasing trend.

MW-76 One compound (TCE) was detected at a concentration exceeding the MCL. TCE decreased in concentration from 78.9 to 33.8 ug/L. The higher concentration of TCE was detected in the lower screened interval. PCE had exceeded the MCLs during the previous sample event, but has decreased below those levels for this period.

Additionally, 1,1,2,2- PCA (for which there is no MCL) was detected at a concentration of 8.08 ug/L.

Figure 15 shows the plot of concentrations of 1,1,2,2-PCA and TCE over time. Both show a definite decreasing trend. However, it should be noted that this well is directly downgradient of MW-77 summarized below, and this well shows much higher concentrations of these contaminants. It could be expected that concentrations of these two constituents will begin to increase in the future.

MW-77 Four compounds were detected exceeding the MCLs (Cis 1,2-DCE, PCE, 1,1,2-TCA and TCE). Cis 1,2-DCE decreased in concentration from 230 to 189 ug/L PCE has now exceeded MCLs in two of the last four events and was detected at 14.8 ug/L. 1,1,2-TCA has also exceeded MCLs in two of the last four events and was detected at a

concentration of 8.53 ug/L TCE concentrations decreased going from 5320 to 4550 ug/L.

After being on a steeply increasing trend over the last three events, 1,1,2,2-PCA showed a decrease from 30,000 to 12,800 ug/L.

Figures 16A and 16B show the concentration of constituents vs time for MW-77. Figure 16A shows 1,1,2,2-PCA and TCE concentrations. Although there is no MCL established for 1,1,2,2-PCA, the high concentration it has shown at this location makes it a significant indicator of groundwater quality. 1,1,2,2-PCA had been on a steeply increasing trend, but showed a significant decrease this period. TCE has shown little change over the last three sample events. Figure 16B shows the concentration of Cis 1,2-DCE and 1,1,2-TCA. Cis 1,2-DCE shows an overall increasing trend, but did experience a slight decrease over the last three sample periods. 1,1,2-TCA has now exceeded MCLs at this location two of the last four sample events.

MW-78 As in the previous sampling event, no constituents were detected which exceeded the MCLs.

MW-79 Two compounds (1,1-DCE and TCE) were detected at concentrations exceeding the MCLs. 1,1-DCE showed a decrease from 35.8 to 23.9 ug/L and TCE decreased slightly from 15.2 to 12.4 ug/L. PCE had exceeded the MCLs during the previous period, but dipped back below the level in Y5S2.

Figure 17 shows the concentration of 1,1-DCE, PCE, and TCE over time for well MW-79. PCE has shown an overall very slight decreasing trend over the range of sample events. TCE has shown a generally increasing trend, with one large spike in the November 2002 sample. 1,1-DCE has shown no definable trend, fluctuating generally between 20 and 40 ug/L.

MW-80 No VOC constituents were detected which exceeded the MCLs, and this is consistent with previous sampling events.

MW-95 No VOC constituents were detected which exceeded the MCLs. There has been no past exceedances of MCLs in this well.

MW-126 This was the third time this well had been sampled. No constituents were detected which exceeded the MCLs.

MW-127 This was the third time this well had been sampled. No constituents were detected which exceeded the MCLs.

MW-128 This well was installed in June 2003, and is added to the monitoring program as of this report. No constituents were detected which exceeded the MCLs.

MW-129 This well was installed in June 2003, and is added to the monitoring program as of this report. Three constituents were detected exceeding the MCLs (1,1-DCE, PCE, and TCE). 1,1-DCE was detected at 42 ug/L, PCE was detected at 26 1 ug/L and TCE was found at 13.4 ug/L.

There does not appear to be any significant vertical stratification of contaminants in this well, although PCE did increase from the upper screened interval to the lower two intervals.

MW-130 This well was installed in June 2003, and is added to the monitoring program as of this report. Three constituents were detected which exceeded the MCLs (1,1-DCE, PCE and TCE). The compounds were detected at 42.2, 80.3, and 64 ug/L respectively.

There is no vertical stratification of contaminants at this location.

PZ-02 This piezometer was removed from the sampling program as of this report, being replaced in the sampling program by well MW-128.

### 3.3 QA/QC Results

The data validation process indicated that the data is useable and is of good quality. A complete discussion of the QA/QC validation process is given in Appendix D of this report.

# 4.0 CONCLUSIONS

Conclusions to this quarterly groundwater quality report have been developed from the review of groundwater monitoring and recovery results. The two major system monitoring methods included chemical analysis of samples and groundwater level measurements.

## 4.1 Summary of Monitoring Results

- Three new wells (MW-128, 129, 130) were installed in June 2003 to evaluate the potential migration of contaminants onto Dunn Field from the north and east. In addition to the new wells, existing site wells MW-07, 08, 09, and 29 were added to the monitoring program. These wells are located on Dunn Field along the north property line on the east side of the area. Results of sampling at these locations indicate there is a contaminant plume originating from off-site migrating in a southwest direction approximately parallel to the Canadian National Railway track north of Person Avenue, then migrating beneath Person and onto Dunn Field. The contaminants consist of 1,1-DCE, PCE and TCE. 1,1-DCE in particular seems to be indicative of the plume and has appeared in recovery wells RW-08 and RW-09 along the north and northwest borders of the property.

- There has been an overall decrease in contaminant concentration noted at several well locations immediately down-gradient of the recovery well system, particularly at wells MW-32, MW-68, and MW-69. This could be indicative of capture of contaminants by the groundwater recovery system up-gradient of these locations.

- Among wells showing significant increases in contaminant concentration are MW-54 and MW-77. The overall trend at these wells, just to the west of the central part of the recovery system has been increasing over the span of sample events (see Figures 9, 16A and 16B). This could be indicative of groundwater contamination that moved beyond the Dunn Field property line prior to the installation of the groundwater recovery system. If so, the contaminants should eventually peak and then decrease over time. MW-76 which is directly down-gradient of MW-77 should begin to see an increase in contaminants over time as the groundwater moves into this area.

- The groundwater flow during this quarter is generally to the west. Since system startup, the flow direction has remained generally to the west and southwest, with a west-northwest component from the southern end of Dunn Field. The hydraulic gradient was seen to vary across the site from 0.015 ft/ft in the north to 0.0075 ft/ft in the south.

- Several monitoring wells have shown no evidence of stratification (MW-34, MW-36, MW-37, MW-43, MW-44, MW-68, and MW-69). The number of diffusion bags installed in these wells should be reduced to one.

- Since the recovery well system has become fully operational, it is exerting significant influence on the groundwater flow on the west edge of Dunn Field.

# TABLES

## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW-07-Y5S2 | | Maximum | |
|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0310738-08 | 0204273-02 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 28-Oct-03 | 28-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Sample Depth Interval | | | 68 7-70 7 | 73 7-75 7 | Drinking Water Standard | (October 7 1999) |
| Laboratory Analyses | DL | Units | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | |
| Acetone | 1 | ug/L | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 1.23 | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 139 | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | 1 68 | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 18 7 | 40 9 | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | NS | 4 1 |
| 1 1 2 2 Tetrachloroethane | 1 | ug/L | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 15 | 42 6 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | 1 69 | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 21.2 | 27 6 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-08-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0310738-11 | | |
| Date Sample Collected | | | 28-Oct-03 | | |
| Sample Depth Interval | | | 65-65 | | |
| Laboratory Analyses | DL | Units | | | |
| TCL Volatile Organics (Method 8260B) | | | | | |
| Acetone | 1 | ug/L | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | NS | 3 6 |
| 1,1-Dichloroethane | 1 | ug/L | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 1 43 | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | NS | 4 1 |
| 1 1,2,2-Tetrachloroethane | 1 | ug/L | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | ND | 200 | 540 |
| 1 1 2 Trichloroethane | 1 | ug/L | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-09-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0310738-10 | | |
| Date Sample Collected | | | 28-Oct-03 | | |
| Sample Depth Interval | | | 76 6-78 6 | | |
| Laboratory Analyses | DL | Units | | | |
| TCL Volatile Organics (Method 8260B) | | | | | |
| Acetone | 1 | ug/L | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | NS | 0 17 |
| Carbon Desulfide | 1 | ug/L | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 8.34 | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 27.2 | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | NS | 4 1 |
| 1 1 2,2-Tetrachloroethane | 1 | ug/L | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 1 89 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | 1000 | 750 |
| 1,2,4 - Trichlorobenzene | 1 | ug/L | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | 200 | 540 |
| 1 1,2-Trichloroethane | 1 | ug/L | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 3 32 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW-29-Y5S2 | | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0310738-12 | 0310738-13 | 0310738-14 | | |
| Date Sample Collected | | | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 40 7-42 7 | 45 7-47 7 | 50 7-52 7 | | |
| Laboratory Analyses | DL | Units | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | 1 45 | 1 56 | 1 52 | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 33 2 | 34 8 | 32.8 | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | NS | 4 1 |
| 1 1,2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 25 | 27.1 | 26 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | 1000 | 750 |
| 1,2 4 Trichlorobenzene | 1 | ug/L | ND | ND | ND | 70 | 190 |
| 1 1,1-Trichloroethane | 1 | ug/L | 3 36 | 3.58 | 3 61 | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 27.9 | 29 6 | 28.5 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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E 1

**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-30-Y4S1 | | MW-30-Y4S2 | | MW-30-Y5S1 | MW-30-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-01 | 0204273-02 | 0210053-1 | 0210053-2 | 0304218-01 | 0310738-48 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 02-Oct-02 | 02-Oct-02 | 08-Apr-03 | 29-Oct-03 | | |
| Sample Depth Interval | | | 50 8-52 8 | 55.8-57 8 | 50.8-52.8 | 55 8-57 8 | 55 8-57 8 | 55 8-57.8 | | |
| Laboratory Analyses | DL | Units | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 4 1 |
| 1 1,2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1,2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW-31-Y4S1 | | MW-31-Y4S2 | | MW-31-Y5S1 | | MW 31 Y5S2 | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-03 | 0204273-04 | 0210053-03 | 0210053-04 | 0304218-02 | 0304218-03 | 0310738-49 | 0310738-50 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 02-Oct-02 | 02-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 72.2-74.2 | 77.2 79.2 | 72.2-74.2 | 77.5-79.5 | 72.2-74.2 | 77.5-79.5 | 72.2-74.2 | 77.5-79.5 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | 1 36 | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | 0 88 J | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | 1 08 | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | 0 65 J | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 20 6 | 39 5 | 39 3 | 55 4 | 13 7 | 5 37 | 8 38 | 7 61 | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 5 34 | 2 51 | 11 3 | 0 73 J | 1 53 | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | 6 78 | 2 66 | 17 | 1.24 | 2 06 | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 1 | 1 24 | 1 32 | 1 1 | 0 92 J | 0 83 J | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2,4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | 0 50 J | 0 62 J | 0 63 J | ND | ND | ND | ND | 200 | 540 |
| 1 1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 33 1 | 21 5 | 87 5 | 15 8 | 13.5 | 1,24 | 1 46 | 2 32 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW-32-Y4S1 | MW-32-Y4S2 | MW-32-Y5S1 | MW-32 Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-05 | 0210053-05 | 0304218-04 | 0310738-39 | | |
| Date Sample Collected | | | 10-Apr-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 64 3-65 3 | 64.5-66.5 | 64 5-66.5 | 64.5-66.5 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 12 1 | 12 3 | 1 18 | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 102 | 91.5 | 50.2 | 50 9 | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 1 26 | 0 72 J | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | 4 21 | 3 49 | 9 16 | 7 97 | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2,2-Tetrachloroethane | 1 | ug/L | 24 | 14 | 11 | 7 82 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 0 82 J | 1 41 | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1 2,4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | 0.59 J | ND | 0 52 J | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 37 9 | 34 8 | 13 5 | 13 4 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-33-Y4S1 | MW-33-Y4S2 | MW-33-Y5S1 | MW-33-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-06 | 0210053-06 | 0304218-05 | 0310738-47 | | |
| Date Sample Collected | | | 10-Apr-02 | 02-Oct-02 | 08-Apr-03 | 29-Oct-03 | | |
| Sample Depth Interval | | | 58 1-60 1 | 58-60 | 58-60 | 58-60 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1,1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1 2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-34-Y4S1 | | | MW-34-Y4S2 | | | MW-34-Y5S1 | | | MW-34-Y5S2 | | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-07 | 0204273-08 | 0204273-09 | 0210053-07 | 0210053-08 | 0210053-09 | 0304218-06 | 0304218-07 | 0304218-08 | 0310738-05 | 0310738-06 | 0310738-07 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 145-147 | 150-152 | 155-157 | 146-148 | 149 5-151.5 | 155.5-157 5 | 145-147 | 150-152 | 155-157 | 145-147 | 150-152 | 155-157 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | 1 06 | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 10 5 | 7 78 | ND | 2 56 | 1.26 | ND | 13 9 | 7 66 | 4 45 | 3 | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 4 1 |
| 1 1,2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1,1,1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 1 16 | 0 97 J | 0 90 J | ND | ND | ND | 1 75 | 120 | 0 74 J | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-36-Y5S1 | | | MW-36-Y4S2 | | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0304614-02 | 0304614-03 | 0304614-04 | 0310738-15 | 0310738-16 | 0310738-17 | | |
| Date Sample Collected | | | 23-Apr-03 | 23-Apr-03 | 23-Apr-03 | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 195-197 | 200-202 | 205-207 | 195-197 | 200-202 | 205-207 | | |
| Laboratory Analyses | DL | Units | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | 0 97 J | 0 92 J | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1,1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | 6 55 B | 6 63 B | ND | ND | ND | NS | 4 1 |
| 1 1 2,2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

**Semi-Annual Analytical Results for TCL Volatile Organics**
**on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-37-Y4S1 | | | MW-37-Y4S2 | | | MW-37-Y5S1 | | | MW-37-Y5S2 | | | Maximum | USEPA Region III |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-10 | 0204273-12 | 0204273-13 | 0210053-11 | 0210053-12 | 0210053-13 | 0304218-09 | 0304218-10 | 0304218-12 | 0310738-40 | 0310738-41 | 0310738-43 | Contaminant Level | RBCs-Tap Water |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | (MCL)-Primary | (October 7 1999) |
| Sample Depth Interval | | | 172 3-174 3 | 177 3-179 3 | 182 3-184 3 | 172.5-174.5 | 177.5-179 5 | 182.5-184.5 | 172.5-174 5 | 177 5-179.5 | 182 5-184.5 | 172 5-174 5 | 177.5-179 5 | 182 5-184.5 | Drinking Water Standard | |
| Laboratory Analyses | DL | Units | | | | | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | 5 22 B | 15 0 B | ND | ND | ND | NS | 4 1 |
| 1,1,2,2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 0 83 J | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-40-Y4S1 | MW-40-Y4S2 | MW-40-Y5S1 | MW-40-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-14 | 0210053-14 | 0304218-13 | 0310739-62 | | |
| Date Sample Collected | | | 10-Apr-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 91 6-93 6 | 91.5-93.5 | 91 5-93 5 | 91.5-93.5 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | 1 11 | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2 Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | 13 4 B | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1,1 2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW-42-Y4S1 | MW-42-Y4S2 | MW-42-Y5S1 | MW-42-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-15 | 0210053-15 | 0304218-14 | 0310739-61 | | |
| Date Sample Collected | | | 10-Apr-02 | 01-Oct-02 | 06-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 57-58 | 57-58 | 57-58 | 57-58 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 82608) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | 14.2 B | ND | NS | 4 1 |
| 1 1 2 2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-43-Y4S1 | | MW-43-Y4S2 | | MW-43-Y5S1 | | MW-43-Y5S2 | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-16 | 0204273-17 | 0210053-16 | 0210053-17 | 0304218-15 | 0304218-16 | 0310739-63 | 0310739-64 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 163 5-165 5 | 168 6-170 5 | 163 5-165.5 | 168.5-170 5 | 163.5-165.5 | 168 5-170.5 | 163 5-165.5 | 168.5-170.5 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | 0.56 J | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1,1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | 14 1 B | 13 8 B | ND | ND | NS | 4 1 |
| 1 1,2,2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-44-Y4S1 | | | MW-44-Y4S2 | | | MW-44-Y5S1 | MW-44-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-18 | 0204273-19 | 0204273-20 | 0210053-18 | 0210053-19 | 0210053-20 | 0304218-17 | 0310739-60 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 59 4-61 4 | 64 4-66 4 | 69 4-71 4 | 60-62 | 65-67 | 70-72 | 65-67 | 65-67 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | 1 06 | ND | ND | ND | ND | 1 55 | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | 4 35 | 2 1 | ND | 4 39 | ND | 3 65 | 1 96 | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | 2 81 | 1.29 | ND | 2 8 | 1 03 | 2 19 | 1 15 | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1 Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | 1 1 | ND | ND | 1 01 | ND | 0 84 J | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | 13 8 B | ND | NS | 4 1 |
| 1,1 2 2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1,2,4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | 2 05 | 0 85 J | ND | 1 67 | ND | 1 64 | 0 821 J | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

**TABLE 1**
**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-51-Y4S1 | | MW-51-Y4S2 | | MW-51-Y5S1 | MW-51-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204273-21 | 0204273-24 | 0210053-21 | 0210053-24 | 0304218-18 | 0310738-30 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 58-60 | 63-65 | 58.5-60.5 | 63.5-65.5 | 63.5-65.5 | 63.5-65.5 | | |
| Laboratory Analyses | DL | Units | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 26 4 | 18.2 | 57 | 53 7 | 33.3 | 17 6 | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | 0 74 J | ND | 0 74 J | 0 922 J | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2,4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | 1 09 | 1 | 0 70 J | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 1 9 | 1 72 | 7.11 | 7.04 | 10 | 5 54 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | NO | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW 54 Y4S1 | | | MW-54 Y4S2 | | | MW-54-Y5S1 | | | MW 54 Y5S2 | | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-01 | 0204274-02 | 0204274-03 | 0210053-25 | 0210053-26 | 0210053-27 | 0304218-19 | 0304218-20 | 0304218-21 | 0311458-01 | 0311458-02 | 0311458-03 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 08-Apr-03 | 08-Apr-03 | 18-Nov-03 | 18-Nov-03 | 18-Nov-03 | | |
| Sample Depth Interval | | | 82 1-84 1 | 85 6-87 6 | 90 6-92 6 | 82 1-84 1 | 85 6-87 6 | 90 6-92 6 | 82 1-84 1 | 85 6-87 6 | 90 6-92 6 | 82 1-84 1 | 85 6-87 6 | 90 6-92 6 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 17 9 | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 2 96 | 14 2 | 14 4 | 5 58 J | 14.4 | 14 | 0 68 J | 7.32 J | 7 48 J | ND | 3 35 | 2 58 | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 5 54 | 8 84 | 8 15 | 11 5 | 11 6 | 10 9 | 1 82 | ND | ND | ND | 3 18 | 3 68 | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 5 11 | 9 95 | 9 17 | 12 1 | 15.2 | 16 2 | 1.51 | 6 76 J | 7 71 J | 4 16 | 15 13 | 16 | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 24.2 | 43 7 | 41 7 | 66 | 85 9 | 80.2 | 10 7 | 44 1 | 44 3 | 26 3 | 75 5 | 85.3 | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | 51 7 | ND | 8 92 B | 104 B | 102 B | ND | ND | ND | NS | 4 1 |
| 1,1,2 2-Tetrachloroethane | 1 | ug/L | 9 06 | 18 1 | 17 5 | 40 | 60 1 | 50 7 | 10 3 | 40 6 | 44 1 J | 301 | 1680 | 1760 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | 1 62 | 2 06 | ND | ND | ND | ND | 3 43 J | 4 02 J | ND | 7.37 | 10 1 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1,1,2-Trichloroethane | 1 | ug/L | ND | 1 19 | 1 1 | ND | ND | ND | ND | ND | ND | 2 05 | 7 86 | 10 4 | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 127 | 618 | 723 | 333 | 632 | 920 | 72 4 | 632 | 629 | 216 | 1530 | 1900 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-56-Y4S1 | MW-56-Y4S2 | MW-56-Y5S1 | MW-56-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-04 | 0210053-28 | 0304218-24 | 0310738-04 | | |
| Date Sample Collected | | | 10-Apr-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 69 6-70 6 | 69 6-70 6 | 69 6-70 6 | 69 6-70 6 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 82608) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 31 6 | 49 3 | 41 2 | 26 | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1 2 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1,1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | 9 42 B | ND | NS | 4 1 |
| 1 1,2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1,1 1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1,2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 1 27 | 1 95 | 1 32 | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-57-Y4S1 | | MW-57-Y4S2 | | MW-57-Y5S1 | | MW-57-Y5S2 | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-05 | 0204274-06 | 0210053-29 | 0210053-30 | 0304218-25 | 0304218-26 | 0310738-01 | 0310738-02 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 64 5-65.5 | 67-69 | 64.5-65 5 | 67-69 | 64.5-65 5 | 67-69 | 64.5-65.5 | 67-69 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 82608) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 38.5 | 42 8 | 19 6 | 43 | 41.5 | 42.4 | 24.3 | 33.3 | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 13 4 | 15 1 | 12 6 | 29 7 | 11 8 | 15 6 | 12.2 | 18.2 | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 1 63 | 1 88 | 1 1 | 2.27 | 0 99 J | 1 37 | 0 973 J | 1 45 | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | 0 51 J | 0 55 J | 0 54 J | 1 13 | 0 53 J | 0 68 J | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | 8 85 B | ND | ND | ND | NS | 4 1 |
| 1 1,2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 6 08 | 5 02 | 3 64 | 8 14 | 6 43 | 7.86 | 5.32 | 5 28 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 58 8 | 66 4 | 54 1 | 111 | 60 9 | 73 3 | 57 3 | 71 6 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-58-Y4S1 | MW-58-Y4S2 | MW-58-Y5S1 | MW-58-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-07 | 0210053-31 | 0304218-27 | 0310738-03 | | |
| Date Sample Collected | | | 10-Apr-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 64 9-66 9 | 64 9-66 9 | 64 9-66.9 | 64 9-66 9 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 2 75 | 3 36 | 1 47 | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | 0.57 J | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1,2,4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 2 46 | 1 82 | 1 06 | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-67 Y4S1 | | | MW-67-Y4S2 | | | MW-67-Y5S1 | | | MW-67-Y5S2 | | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-11 | 0204274-12 | 0204274 13 | 0210053-35 | 0210053-36 | 0210053-37 | 0304218-28 | 0304218-29 | 0304218-30 | 0310739-65 | 0310739-66 | 0310739-67 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 1-Oct-02 | 1-Oct-02 | 1-Oct-02 | 8-Apr-03 | 8-Apr-03 | 8-Apr-03 | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 261 263 | 266-268 | 271-273 | 261-263 | 266-268 | 271-273 | 261-263 | 266-268 | 271-273 | 261-263 | 266-268 | 271-273 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | 3 33 | ND | 3 95 | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2,2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1,1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW-68-Y4S1 | | MW-68-Y4S2 | | MW-68-Y5S1 | | MW-68-Y5S2 | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-14 | 0204274-15 | 0210053-38 | 0110130-18 | 0304218-31 | 0304218-32 | 0310738-32 | 0310738-33 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 03-Oct-01 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 74 1-76 1 | 79 1-81 1 | 74 1-76 1 | 79 1-81 1 | 74 1-76.1 | 79 1-81 1 | 74 1-76 1 | 79 1-81 1 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | 7 88 | 1 43 | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | 9 01 | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | 5 08 B | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | 1 01 | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | 4 3 | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | 0 94 J | 3 85 | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

[redacted] E 1

**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-69-Y4S1 | | MW-69-Y4S2 | | MW-69-Y5S1 | | MW-69-Y5S2 | | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274 16 | 0204274-17 | 0210053-40 | 0210053-41 | 0304218-33 | 0304218-35 | 0310739-68 | 0310739-70 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 02-Oct-02 | 02-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Sample Depth Interval | | | 86 4-88 4 | 91 4-93 4 | 86 4-88 4 | 91 4 93 4 | 86 4-88 4 | 91 4-93 4 | 86 4-88 4 | 91 4-93 4 | Drinking Water Standard | (October 7 1999) |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 1 52 | ND | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 4 14 | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | 7 92 | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | 5 01 B | 5 15 B | ND | ND | NS | 4 1 |
| 1 1 2,2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 1 84 | ND | 0 98 J | ND | 1 94 | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1,2 4 Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1,1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 128 | ND | 8.12 | ND | 2 18 | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW 70-Y4S1 | | MW-70-Y4S2 | | MW-70-Y5S1 | | MW-70-Y5S2 | | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-18 | 0204274-19 | 0210053-42 | 0210053-43 | 0304218-36 | 0304218-37 | 0310738-37 | 0310738-38 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 02-Oct-02 | 02-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Sample Depth Interval | | | 84 3-86 3 | 89 3-91 3 | 84 3-86.3 | 89 3-91.3 | 84 3-86.3 | 89 3-91.3 | 84 3-86 3 | 89 3-91 3 | Drinking Water Standard | (October 7, 1999) |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | 89.2 | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 3 99 | ND | ND | ND | ND | ND | 0 644 J | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | 2 65 | ND | ND | ND | ND | 2.5 | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | 0 98 J | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 27 3 | 10 8 | ND | ND | ND | ND | 18 8 | 3 91 | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 114 | 69 2 | 72 4 | 42.5 J | ND | 31 6 J | 112 | 50 | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | 1610 | 394 | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | 2540 | 1580 | 12400 | 7980 | 3060 | 2120 | 8270 | 4170 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 13 5 | 3 27 | ND | ND | ND | ND | 17.3 | 3 85 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | 1 17 | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1,2-Trichloroethane | 1 | ug/L | 7 35 | 5 2 | ND | ND | ND | ND | 6 92 | 4 39 | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 2940 | 1490 | 1980 | 1340 | 1220 | 824 | 2530 | 1280 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | 17 | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J = estimated value quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

E 1

**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-71-Y4S1 | | MW-71-Y4S2 | | MW-71-Y5S1 | | MW-71-Y5S2 | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-20 | 0204274-23 | 0210053-44 | 0210053-45 | 0304218-38 | 0304218-39 | 0310738-45 | 0310738-46 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 02-Oct-02 | 02-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 71.3-72.3 | 73.8-75.8 | 71.3-72.3 | 73.8-75.8 | 71.3-72.3 | 73.8-75.8 | 71.3-72.3 | 73.8-75.8 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0.32 |
| Bromodichloromethane | 1 | ug/L | 1.02 | ND | ND | ND | ND | ND | ND | ND | NS | 0.17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | 1.78 | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 20.3 | 17 | ND | 11.2 | 17.6 | 15.3 | 6.87 | 15.3 | 5 | 0.16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 7.88 | 2.33 | 8.89 | 73.1 | 1.17 | 35.4 | 68.8 | 31.1 | NS | 0.15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3.6 |
| 1,1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0.12 |
| 1,1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0.044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 3.36 | 1.76 | ND | ND | 0.52 J | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | 9.64 | 3.3 | ND | 1.12 | 1.59 | 0.54 J | 1.59 | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | 8.33 B | 8.20 B | ND | ND | NS | 4.1 |
| 1,1,2,2-Tetrachloroethane | 1 | ug/L | 3.32 | 68.1 | 9.49 | 26.7 | 30.8 | 7.62 | 27 | ND | NS | 0.053 |
| Tetrachloroethene | 1 | ug/L | 1.96 | 1.32 | ND | ND | 1.31 | ND | ND | ND | 5 | 1.1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1,2,4-Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1,1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1,1,2-Trichloroethane | 1 | ug/L | 6 | 1.36 | ND | ND | 0.66 J | ND | ND | ND | 5 | 0.19 |
| Trichloroethene | 1 | ug/L | 184 | 70.9 | 1.6 | 27 | 44.5 | 16.8 | 17.4 | 10.4 | 5 | 1.6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0.019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

**Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells**

| Sample Identification Number | | | MW-76-Y4S1 | | MW-76-Y4S2 | | MW-76-Y5S1 | | MW-76-Y5S2 | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204274-24 | 0204275-01 | 0210053-47 | 0210053-48 | 0304218-40 | 304218-41 | 0310738-35 | 0310738-36 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 86-88 | 91-93 | 86-88 | 91-93 | 86-88 | 91-93 | 86-88 | 91-93 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | 1 22 | ND | ND | ND | 1 44 | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 5 29 | 7 71 | 1 17 | ND | 2 58 | 4 74 | 0 831 J | 1 93 | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | 10 6 | 13.5 | 2 94 | 1 9 | 5 98 | 10 3 | 1 74 | 4 16 | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | 7 69 B | 8 18 B | ND | ND | NS | 4 1 |
| 1,1,2 2-Tetrachloroethane | 1 | ug/L | 117 | 15.5 | 54 7 | 14 | 8 92 | 11 6 | 6 75 | 8 08 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | 1 81 | ND | 1 8 | 12 | 7 43 | 2.29 | 1 87 | 5 | 1 1 |
| Toluene | 1 | ug/L | 1.23 | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 90 7 | 142 | 37.2 | 20 3 | 55 4 | 78 9 | 17.6 | 33 8 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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## Semi-Annual Analytical Results for TCL Volatile Organics on Sampled Monitoring Wells

| Sample Identification Number | | | MW-77-Y4S1 | MW-77-Y4S2 | MW-77-Y5S1 | MW-77-Y5S1 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204275-02 | 0210053-53 | 0304218-42 | 0311458-05 | | |
| Date Sample Collected | | | 10-Apr-02 | 01-Oct-02 | 08-Apr-03 | 18-Nov-03 | | |
| Sample Depth Interval | | | 84 9-86 9 | 84 9-86 9 | 84 9-86 9 | 84 9-86 9 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Desulfide | 1 | ug/L | ND | ND | ND | 0 864 J | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | 5 39 | ND | ND | 4 96 | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 42 2 | 42 9 J | 42 2 J | 37 8 | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 176 | 237 | 230 | 189 | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | 387 | ND | NS | 4 1 |
| 1 1,2,2-Tetrachloroethane | 1 | ug/L | 4330 | 16200 | 30000 | 12800 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 7.18 | ND | ND | 14 8 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1,2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | 9.46 | ND | ND | 8.53 | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 3170 | 5040 | 5320 | 4550 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J' = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-78-Y4S1 | | | MW-78-Y4S2 | | | MW-78-Y5S1 | MW-78-Y5S2 | Maximum | USEPA Region III |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204275-03 | 0204275-04 | 0204275-05 | 0210053-54 | 0210053-55 | 0210053-56 | 0304216-43 | 0310736-31 | Contaminant Level | RBCs-Tap Water |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | (MCL)-Primary | (October 7, 1999) |
| Sample Depth Interval | | | 52 4-54 4 | 57 4-59 4 | 62 4-64 4 | 52 4-54 4 | 57 4-59 4 | 62 4-64 4 | 57 4-59 4 | 57 4-59 4 | Drinking Water Standard | |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | 2 07 | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2 Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | 6 0 B | ND | NS | 4 1 |
| 1 1 2 2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1,1,2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinkir Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-79-Y4S1 | | | | MW-79-Y4S2 | | | | MW-79-Y5S1 | | MW-79-Y5S2 | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204275-06 | 0204275-07 | 0204275-09 | 0204275-10 | 0210053-57 | 0210054-58 | 0210054-59 | 0210054-60 | 0304218-44 | 0304218-45 | 0310738-52 | 0310738-54 | | |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 08-Apr-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 84 5-86.5 | 89.5-91.5 | 94 5-96 5 | 99 5-101.5 | 84 5-86.5 | 89.5-91.5 | 94.5-96.5 | 99 5-101.5 | 89.5-91.5 | 99 5-101 5 | 89.5-91.5 | 99.5-101.5 | | |
| Laboratory Analyses | DL | Units | | | | | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | 112 | 25 7 | 34.4 | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 47 J | 0 66 J | ND | ND | NS | 800 |
| 1,2 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 17.4 | 16 4 | 18.8 | 18.5 | 19 8 | 22 6 | 23 5 | 23 8 | 29 3 | 35 8 | 21.6 | 23.9 | 7 | 0 044 |
| Trans 1,2 Dichloroethene | 1 | ug/L | 1 09 | ND | ND | ND | 6 82 J | 11.2 | 10 7 | 9 | 1 31 | 0 73 J | 1 34 | 1 61 | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 0 68 J | ND | ND | ND | 5 34 J | 8 67 J | 8 07 J | 7 02 J | 0 66 J | 0 48 J | 1 41 | 2 07 | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 12 B | ND | ND | ND | NS | 4 1 |
| 1 1 2,2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 3 39 | 3.56 | 6 96 | 6 64 | ND | 2 89 J | 3.26 J | 3 18 J | 1 83 | 5.64 | 2 1 | 1 95 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0 44 J | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 9 | 6 05 | 6 87 | 5.79 | 37 8 | 67 6 | 68 4 | 56 6 | 15 2 | 12 3 | 11 2 | 12 4 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-80-Y4S1 | | | MW-80-Y4S2 | | | MW-80-Y5S1 | MW-80-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204275-11 | 0204275-12 | 0204275-13 | 0210054-62 | 0210054-63 | 0210054-64 | 0304218-48 | 0310739-58 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Sample Depth Interval | | | 61 3-63 3 | 64 8-66 8 | 69 8-71 8 | 61.3-63 3 | 64 8-66 8 | 69 8-71 8 | 64 8-66 8 | 64.8-66.8 | Drinking Water Standard | (October 7, 1999) |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | 1 13 | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | 1 07 | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1 Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2 Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-95-Y4S1 | | | | MW-95-Y4S2 | | | | MW-95-Y5S1 | MW-95-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204275-14 | 0204275-15 | 0204275-16 | 0204275-17 | 0210054-65 | 0210054-66 | 0210054-67 | 0210054-68 | 0304218-49 | 0310738-56 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 10-Apr-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Sample Depth Interval | | | 41 3-43 3 | 46 3-48 3 | 51 3-53 3 | 56 3-58 3 | 41 3-43 3 | 46 3-48 3 | 51 3-53 3 | 56 3-58 3 | 46 3-48 3 | 46 3-48 3 | Drinking Water Standard | (October 7 1999) |
| Laboratory Analyses | DL | Units | | | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | 0 60 J | 190 | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 3 6 |
| 1 1 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2 Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 33 B | ND | NS | 4 1 |
| 1 1 2 2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1,1,2 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-126-Y4S2 | MW 126-Y5S1 | MW-126-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0210054-69 | 0304218-50 | 0310738-57 | | |
| Date Sample Collected | | | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 22-24 | 22-24 | 22-24 | | |
| Laboratory Analyses | DL | Units | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | 0 84 J | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | NS | 3 6 |
| 1,1-Dichloroethane | 1 | ug/L | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | 7 10 B | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range

Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-127-Y4S2 | | MW-127-Y5S1 | MW-127-Y5S2 | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0210054-70 | 0210054-71 | 0304218-51 | 0310739-59 | | |
| Date Sample Collected | | | 01-Oct-02 | 01-Oct-02 | 08-Apr-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 61-63 | 66-68 | 66-68 | 66-68 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | 1 36 | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | 6 6 B | ND | ND | NS | 4 1 |
| 1,1 2 2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-128-Y5S2 | | | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0310738-26 | 0310738-27 | 0310738-28 | 0310738-29 | | |
| Date Sample Collected | | | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 56-58 | 61-63 | 66-68 | 71-73 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 2 98 | 3 41 | 2 64 | 2 88 | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | ND | ND | ND | ND | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 1 14 | 1 04 | ND | ND | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-129-Y5S2 | | | Maximum | |
|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0310738-22 | 0310738-23 | 0310738-25 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Sample Depth Interval | | | 66 3-68 3 | 71 3-73 3 | 76 3-78 3 | Drinking Water | (October 7 1999) |
| | | | | | | Standard | |
| Laboratory Analyses | DL | Units | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | NS | 0 17 |
| Carbon Disulfide | 1 | ug/L | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | NS | 3 6 |
| 1 1-Dichloroethane | 1 | ug/L | 4 87 | 4 71 | 4.58 | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | 5 | 0 12 |
| 1 1 Dichloroethene | 1 | ug/L | 42 | 41 | 40 2 | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | 100 | 120 |
| Cis 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | NS | 4 1 |
| 1 1 2 2 Tetrachloroethane | 1 | ug/L | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 12 8 | 24 9 | 26 1 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | 1000 | 750 |
| 1 2 4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | 70 | 190 |
| 1 1 1 Trichloroethane | 1 | ug/L | 3 02 | 3 43 | 3 5 | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 12 | 12 4 | 13 4 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

| Sample Identification Number | | | MW-130-Y5S2 | | | | Maximum Contaminant Level (MCL)-Primary Drinking Water Standard | USEPA Region III RBCs-Tap Water (October 7, 1999) |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0310738-18 | 0310738-19 | 0310738-20 | 0310738-21 | | |
| Date Sample Collected | | | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | 28-Oct-03 | | |
| Sample Depth Interval | | | 60 5-62.5 | 65.5-67 5 | 70 5-72.5 | 75 5-77.5 | | |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 1 | ug/L | ND | ND | ND | ND | NS | 6100 |
| Benzene | 1 | ug/L | ND | ND | ND | ND | 5 | 0 32 |
| Bromodichloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 17 |
| Carbon Desulfide | 1 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | ND | ND | ND | ND | 5 | 0 16 |
| Chlorobenzene | 1 | ug/L | ND | ND | ND | ND | 100 | 110 |
| Chloroform | 1 | ug/L | ND | ND | ND | ND | NS | 0 15 |
| Chloromethane | 1 | ug/L | ND | ND | ND | ND | NS | 3 6 |
| 1,1-Dichloroethane | 1 | ug/L | 2 76 | 2 72 | 2 67 | 2 45 | NS | 800 |
| 1,2 Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 42 2 | 40 5 | 38 4 | 38 | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 100 | 120 |
| Cis 1 2 Dichloroethene | 1 | ug/L | 0.599 J | 0 675 J | ND | 0.596 J | 70 | 61 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | NS | 4 1 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | ND | ND | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 74 3 | 79 8 | 80.3 | 76 6 | 5 | 1 1 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1000 | 750 |
| 1 2,4 - Trichlorobenzene | 1 | ug/L | ND | ND | ND | ND | 70 | 190 |
| 1 1,1-Trchloroethane | 1 | ug/L | 4 62 | 4 81 | 4 39 | 4 61 | 200 | 540 |
| 1 1,2-Trchloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 19 |
| Trchloroethene | 1 | ug/L | 61.1 | 64 | 60.4 | 62 3 | 5 | 1 6 |
| Vinyl Chloride | 1 | ug/L | ND | ND | ND | ND | 2 | 0 019 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NA = not available

B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is w/in instrument working range



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## Semi-Annual Analytical Results for TCL Volatile Organics on System Recovery Wells

| Sample Identification Number | | | RW-1A-Y4S1 | RW-1A-Y4S2 | RW-1A-Y5S1 | RW-1A-Y5S2 | RW-1B-Y4S1 | RW-1B-Y4S2 | RW-1B-Y5S1 | RW-1B-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204276-06 | 0210054-75 | 0304614-01 | 0310781-12 | 0204276-07 | 0210054-76 | 0304476-10 | 0310781-11 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 1-Oct-02 | 23-Apr-03 | 29-Oct-03 | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 20 | ug/L | ND | ND | 56 30 | ND | ND | ND | ND | ND | NS | 6100 |
| 2-Butanone (MEK) | 20 | ug/L | ND | ND | 82 30 | 38 80 | ND | ND | ND | ND | NS | 1900 |
| Carbon Disulfide | 10 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 44.50 | 65.30 | 14.60 | 33 60 | 22.50 | 27.90 | 30 90 | 19 50 | 5 | 0 16 |
| Chloroform | 1 | ug/L | 700 00 | 1120 00 | 449 00 | 754 00 | 26 40 | 20 80 | 34 10 | 40 80 | NS | 0 15 |
| 1,1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | 1 23 | ND | ND | 1 14 | ND | ND | ND | ND | 5 | 0 12 |
| 1,1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 5 41 | 6 35 J | 1 34 | 3 64 | 2 48 | 2 45 | 1 54 | 1 69 | 100 | 120 |
| Methylene Chloride | 1 | ug/L | ND | 71 2 B | 6 80 B | ND | ND | 6 94 B | ND | ND | NS | 4 1 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 12 10 | 17 60 | 6 44 | 11 10 | 10 70 | 12 50 | 8 28 | 14 50 | 70 | 61 |
| 1,1 2,2-Tetrachloroethane | 1 | ug/L | 156 00 | 187 00 | 167 00 | 169 00 | ND | 1 43 | ND | 3 75 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 13 30 | 12.30 | 4 54 | 11.30 | 2 99 | 2 05 | 4 60 | 2 93 | 5 | 1 1 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | 3 41 | 3 32 J | 2 70 | 4 22 | ND | 0 66 J | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 289.00 | 294.00 | 112.00 | 285.00 | 34.80 | 24 10 | 46 40 | 42.40 | 5 | 1 6 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NP = not performed
B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is within the working range of the instrument



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## Semi-Annual Analytical Results for TCL Volatile Organics on System Recovery Wells

| Sample Identification Number | | | RW-01-Y4S1 | RW-01-Y4S2 | RW-01-Y5S1 | RW-01-Y5S2 | RW-02-Y4S1 | RW-02-Y4S2 | RW-02-Y5S1 | RW-02-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204275-21 | NP | NP | 0310781-13 | 0204275-22 | 0210054-77 | 0304476-09 | 0310781-09 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | NP | NP | 29-Oct-03 | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 20 | ug/L | ND | NP | NP | ND | ND | ND | ND | ND | NS | 6100 |
| 2-Butanone (MEK) | 20 | ug/L | ND | NP | NP | ND | ND | ND | ND | ND | NS | 1900 |
| Carbon Disulfide | 10 | ug/L | ND | NP | NP | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachlonde | 1 | ug/L | 24.10 | NP | NP | 49 10 | 13.00 | 21.60 | 15.50 | 14.00 | 5 | 0 16 |
| Chloroform | 1 | ug/L | 68 20 | NP | NP | 286 00 | 34 40 | 23 10 | 12 40 | 11 40 | NS | 0 15 |
| 1,1-Dichloroethane | 1 | ug/L | ND | NP | NP | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | NP | NP | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | NP | NP | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 1 55 | NP | NP | 2 86 | 5 22 | 6 49 | 3 89 | 4 57 | 100 | 120 |
| Methylene Chloride | 1 | ug/L | ND | NP | NP | ND | ND | 6 92 B | ND | ND | NS | 4 1 |
| Cis 1,2-Dichloroethene | 1 | ug/L | 1 16 | NP | NP | 4 30 | 65 90 | 88.10 | 68 70 | 78.60 | 70 | 61 |
| 1 1 2,2-Tetrachloroethane | 1 | ug/L | ND | NP | NP | ND | 77 10 | 94 70 | 80 60 | 95 90 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 4 36 | NP | NP | 9.36 | 1 48 | 1 48 | 1 88 | 1 56 | 5 | 1 1 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | NP | NP | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | NP | NP | ND | 2 74 | 3 34 | 2 91 | 3 02 | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 58.20 | NP | NP | 154.00 | 63.90 | 64 60 | 73.40 | 83.40 | 5 | 1 6 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NP = not performed
B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is within the working range of the instrument



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**Semi-Annual Analytical Results for TCL Volatile Organics on System Recovery Wells**

| Sample Identification Number | | | RW-03-Y4S1 | RW-03-Y4S2 | RW-03-Y5S1 | RW-03-Y5S2 | RW-04-YS1 | RW-04-Y4S2 | RW-04-Y5S1 | RW-04-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204275-23 | 0210054-78 | 0304476-07 | 0310781-03 | 0204275-24 | 0210054-79 | 0304476-06 | NP | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | NP | (MCL)-Primary | RBCs-Tap Water |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 20 | ug/L | ND | ND | ND | ND | ND | ND | ND | NP | NS | 6100 |
| 2-Butanone (MEK) | 20 | ug/L | ND | ND | ND | ND | ND | ND | ND | NP | NS | 1900 |
| Carbon Disulfide | 10 | ug/L | ND | ND | ND | ND | ND | ND | ND | NP | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 9.75 | 15.20 | 19.10 | 10.90 | 1 70 | 1 77 | 1 61 | NP | 5 | 0 16 |
| Chloroform | 1 | ug/L | 2 43 | 3 97 | 17 50 | 2 08 | 2 23 | 3 33 | 2 41 | NP | NS | 0 15 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | NP | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | NP | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | NP | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 2 47 | 2 56 | 2 78 | 1 73 | 7 01 | 8 11 | 4 24 | NP | 100 | 120 |
| Methylene Chloride | 1 | ug/L | ND | 6 66 B | ND | ND | ND | 6 24 B | ND | NP | NS | 4 1 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 15 40 | 16 90 | 36 00 | 9 04 | 26 80 | 38 80 | 22 80 | NP | 70 | 61 |
| 1 1,2,2-Tetrachloroethane | 1 | ug/L | 4 35 | 3 61 | 31 70 | ND | 37 50 | 669 00 | 55 40 | NP | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 1 30 | 0 92 J | 2 82 | 1 10 | 6.21 | 5.73 | 5 97 | NP | 5 | 1 1 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | NP | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | 1 31 | ND | 3 33 | 5.25 | 2 87 | NP | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 87.20 | 70.40 | 70.40 | 66.40 | 665.00 | 1050.00 | 562 00 | NP | 5 | 1 6 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NP = not performed
B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range but is within the working range of the instrument



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## Semi-Annual Analytical Results for TCL Volatile Organics on System Recovery Wells

| Sample Identification Number | | | RW-05-Y4S1 | RW-05-Y4S2 | RW-05-Y5S1 | RW-05-Y5S2 | RW-06-Y4S1 | RW-06-Y4S2 | RW-06-Y5S1 | RW-06-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204276-01 | 0210054-80 | 0304476-05 | 0310781-07 | 0204323-01 | 0210054-81 | 0304476-04 | 0310781-06 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | 11-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 20 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| 2-Butanone (MEK) | 20 | ug/L | ND | ND | ND | ND | 45 60 | ND | ND | ND | NS | 1900 |
| Carbon Disulfide | 10 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachlonde | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 16 |
| Chloroform | 1 | ug/L | 1 24 | ND | 1 04 | 1 04 | 1 37 | 3 15 | 3 11 | 2 15 | NS | 0 15 |
| 1,1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1 2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 7 | 0 044 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 5 08 | 2 30 | 1 05 | 2 23 | 0 76 J | 3 98 | 5 13 | 4 01 | 100 | 120 |
| Methylene Chloride | 1 | ug/L | ND | ND | ND | ND | ND | 6 76 B | ND | ND | NS | 4 1 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 15 80 | 12 80 | 3 95 | 7 08 | 1 39 | 10 00 | 15 70 | 11 20 | 70 | 61 |
| 1,1 2,2-Tetrachloroethane | 1 | ug/L | 196 00 | 47 80 | 5 60 | 14 90 | ND | 2 00 | ND | ND | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 5.89 | 4 36 | 10.20 | 7.47 | 28.70 | 32.60 | 37.60 | 37.10 | 5 | 1 1 |
| 1,1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 400.00 | 142.00 | 95.00 | 193.00 | 5.42 | 27.20 | 59.40 | 40 70 | 5 | 1 6 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NP = not performed
B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recovenes outside acceptance ranges
E = Concentration exceeds the established method calibration range, but is within the working range of the instrument



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TABLE 2

**Semi-Annual Analytical Results for TCL Volatile Organics on System Recovery Wells**

| Sample Identification Number | | | RW-07-Y4S1 | RW-07-Y4S2 | RW-07-Y5S1 | RW-07-Y5S2 | RW-08-Y4S1 | RW-08-Y4S2 | RW-08-Y5S1 | RW-08-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204276-2 | 0210054-82 | 0304476-03 | 0310781-05 | 0204276-03 | 0210054-83 | 0304476-02 | 0310781-04 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Laboratory Analyses | DL | Units | | | | | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | | |
| Acetone | 20 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 6100 |
| 2-Butanone (MEK) | 20 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1900 |
| Carbon Disulfide | 10 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachlonde | 1 | ug/L | ND | 0 98 J | ND | ND | 1 49 | 2 76 | 1 96 | 1 79 | 5 | 0 16 |
| Chloroform | 1 | ug/L | 2 64 | 6 66 | 3 48 | 3 87 | 15 30 | 36 20 | 20 00 | 18 70 | NS | 0 15 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 5 | 0 12 |
| 1,1-Dichloroethene | 1 | ug/L | ND | ND | ND | ND | 14.20 | 36.80 | 14.10 | 14.20 | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 12 70 | 10 80 | 13 70 | 12 00 | 38 00 | 38 60 | 36 30 | 26 10 | 100 | 120 |
| Methylene Chloride | 1 | ug/L | ND | 6 29 B | ND | ND | ND | 5 7 B | ND | ND | NS | 4 1 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 51 20 | 50 40 | 63 80 | 56 80 | 130.00 | 166.00 | ND | 116.00 | 70 | 61 |
| 1 1 2,2-Tetrachloroethane | 1 | ug/L | 115 00 | 156 00 | 144 00 | 208 00 | 171 00 | 312 00 | 350 00 | 223 00 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 4 96 | 4 22 | 5.94 | 5.35 | 10.40 | 8.35 | 14.30 | 11.00 | 5 | 1 1 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | 0 60 J | ND | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | 1 87 | 1 43 | 2 20 | 2 21 | 2 98 | 3 90 | 4 85 | 3 12 | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 74 10 | 55.30 | 108 00 | 102.00 | 288.00 | 189.00 | 413.00 | 232.00 | 5 | 1 6 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NP = not performed
B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recoveries outside acceptance ranges
E = Concentration exceeds the established method calibration range, but is within the working range of the instrument



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## Semi-Annual Analytical Results for TCL Volatile Organics on System Recovery Wells

| Sample Identification Number | | | RW-09-Y4S1 | RW-09-Y4S2 | RW-09-Y5S1 | RW-09-Y5S2 | Maximum | |
|---|---|---|---|---|---|---|---|---|
| Laboratory & Lab Sample ID No | | | 0204276-04 | 0210054-84 | 0304476-01 | 0310781-01 | Contaminant Level | USEPA Region III |
| Date Sample Collected | | | 10-Apr-02 | 1-Oct-02 | 17-Apr-03 | 29-Oct-03 | (MCL)-Primary | RBCs-Tap Water |
| Laboratory Analyses | DL | Units | | | | | | |
| TCL Volatile Organics (Method 8260B) | | | | | | | | |
| Acetone | 20 | ug/L | ND | ND | ND | ND | NS | 6100 |
| 2-Butanone (MEK) | 20 | ug/L | ND | ND | ND | ND | NS | 1900 |
| Carbon Disulfide | 10 | ug/L | ND | ND | ND | ND | NS | 1000 |
| Carbon Tetrachloride | 1 | ug/L | 1 23 | 1 28 | 1 50 | 6.55 | 5 | 0 16 |
| Chloroform | 1 | ug/L | 12 10 | 23 40 | 16 50 | 69 70 | NS | 0 15 |
| 1,1-Dichloroethane | 1 | ug/L | 1 21 | 1 68 | 1 32 | ND | NS | 800 |
| 1,2-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | 5 | 0 12 |
| 1 1-Dichloroethene | 1 | ug/L | 32.40 | 42.00 | 33.20 | 7.46 | 7 | 0 044 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 2 41 | 2 03 | 2 71 | 9 51 | 100 | 120 |
| Methylene Chloride | 1 | ug/L | ND | 6 35 B | ND | ND | NS | 4 1 |
| Cis 1 2-Dichloroethene | 1 | ug/L | 7 23 | 7 55 | 9 11 | 47 00 | 70 | 61 |
| 1 1 2 2-Tetrachloroethane | 1 | ug/L | 5 07 | 10 20 | 5 35 | 90 30 | NS | 0 053 |
| Tetrachloroethene | 1 | ug/L | 42.90 | 30.40 | 64.60 | 26.50 | 5 | 1 1 |
| 1,1,1-Trichloroethane | 1 | ug/L | 1 28 | 1 49 | 1 23 | ND | 200 | 540 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | ND | ND | 1 70 | 5 | 0 19 |
| Trichloroethene | 1 | ug/L | 42.20 | 35.00 | 61.30 | 120 00 | 5 | 1 6 |

Only compounds detected are listed
ug/L = micrograms per liter
DL = Detection Limit
TCL = Target Compound List
BDL = Below Detection Limit
MCL = Maximum Contaminant Level - Primary Drinking Water Standards
RBCs = Risk Based Contaminants
NS = no standard NP = not performed
NP = not performed
B = Analyte detected in associated method and/or equipment blank
J = Estimated value - presence of the compound was confirmed but less than the reported DL
J* = estimated value - quality control recovenes outside acceptance ranges
E = Concentration exceeds the established method calibration range, but is within the working range of the instrument



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# TABLE 3

## Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System
## Dunn Field, Memphis Depot, Tennessee

| Sample Identification Number | | | ST-EFF-01 | ST-EFF-02* | ST-EFF-03 | ST-EFF-04 | ST-EFF-04A (Duplicate) | ST-EFF-05 | ST-EFF-06 | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No | | | 9810617-01 | 9810819-01 | 9811263-01 | 9811479-01 | 9811479-04 | 9811705-01 | 9812045-01 | Industrial Wastewater |
| Total System Effluent Sample Description | | | Week 1 of System Startup Testing | Week 2 of System Startup Testing | Week 1 of System Operation (O&M) | Week 2 of System Operation (O&M) | | Week 3 of System Operation (O&M) | Week 4 of System Operation (O&M) | Discharge Max Levels |
| Date Effluent Sample Collected | | | 19-Oct-98 | 26-Oct-98 | 9-Nov-98 | 16-Nov-98 | | 23-Nov-98 | 30-Nov-98 | -- |
| Instantaneous Flow Rate | | | 230 GPM/331 200 GPD | 155* GPM/223 200 GPD | 199 GPM/286 560 GPD | 169 8 GPM/244 512 GPD | | 158 8 GPM/228 672 GPD | 145 0 GPM / 208 800 GPD | 561 600 GPD |
| Totalized Flow | | | 1,382 400 GAL | 3,408,480 GAL | 5 976 549 GAL | 7,748,690 GAL | | 9 343,370 GAL | 10,969,840 GAL | -- |
| LABORATORY ANALYSES | DL | Units | | | | | | | | *Monthly Ave / One Day Max* |
| pH (Method 150 1) | -- | SU | 5 6 | 5 9 | 5 8 | 5 6 | 5 9 | 5 6 | 5 8 | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | 0 104 | 0 107 | 0 109 | 0 118 | 0 117 | 0 112 | 0 124 | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 23 | 21 6 | 24 7 | 25 3 | 25 | 24 8 | 26 5 | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 07 | 0 046 | 0 022 | 0 019 | 0 019 | 0 036 | 0 01 | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 11 7 | 11 3 | 12 6 | 13 | 12 8 | 12 5 | 13 | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | ND | ND | ND | 0 015 | 0 015 | 0 014 | 0 048 | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 916 | 0 781 | 0 883 | 0 975 | 1 15 | 0 9 | 0 703 | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 27 8 | 28 3 | 27 7 | 27 9 | 28 7 | 26 6 | 26 1 | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 047 | 0 129 | 0 095 | 0 098 | 0 095 | 0 063 | 0 062 | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | *ug/L* |
| Carbon Tetrachloride | 1 | ug/L | 2 9 | 4 3 | 3 06 | 3 27 | 3 38 | 4 07 | 3 22 | 20 / 40 |
| Chloroform | 1 | ug/L | 13 6 | 12 9 | 14 9 | 18 1 | 20 9 | 20 6 | 16 4 | 20 / 40 |
| 1,1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | NS |
| 1,1-Dichloroethene | 1 | ug/L | 11 6 | 5 42 | 9 99 | 13 9 | 15 6 | 20 3 | 14 6 | 50 / 100 |
| Cis 1 2-Dichlorothene | 1 | ug/L | 29 2 | 43 8 | 30 | 33 3 | 36 8 | 37 3 | 32 8 | 50 / 100 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 5 96 | 9 27 | 6 68 | 7 47 | 7 92 | 8 42 | 7 47 | 50 / 100 |
| Methylene Chloride | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1,1,2,2-Tetrachloroethane | 1/50/100 | ug/L | 87 1 | 159 | 234 | 234 | 257 | 272 | 176 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 25 7 | 22 6 | 28 9 | 30 | 29 7 | 34 4 | 25 6 | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | 20 / 40 |
| 1,1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | 1 | ND | 10 / 20 |
| 1 1 2-Trichloroethane | 1 | ug/L | 1 81 | 2 82 | 1 59 | 1 46 | 1 5 | 1 3 | 1 1 | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 108 | 226 | 195 | 225 | 220 | 217 | 160 | 400 / 800 |
| TCL Semi Volatile Organics (Method 8270C) | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | ND | 23 6B | ND | ND | ND | 26B | ND | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | 91 2 | 2 5J | ND | ND | ND | ND | ND | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |

NOTE Compounds included in this table are those listed in Section D 3 and detected as part of the analytical methods conducted per Section F 1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting Inc Memphis, TN

= Recovery well RW-09 was not in operation at the time of sample collection

= Recovery well RW-08 was not in operation at the time of sample collection

A = Recovery well RW-03 was not in operation at the time of sample collection.

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value - presence of the compound was confirmed but less than the reported DL

J = estimated value quality control recoveries outside acceptance ranges

ND = not detected

B = analyte detected in associated method and/or equipment blank

mg/L = milligrams per liter

ug/L = micrograms per liter

DL = detection limit

GPM = gallons per minute

GPD = gallons per day

91.2 = bold number indicates that value exceeds Discharge Max. Levels

A=Effluent meter zeroed out 03-Nov-99

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TABLE 3

## Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System
## Dunn Field, Memphis Depot, Tennessee

| Sample Identification Number | | | ST-EFF-07* | ST-EFF-07A* (Duplicate) | ST-EFF-08 | ST-EFF-09 | ST-EFF-HG-09A | ST-EFF-HG-05 (Duplicate) | ST-EFF-HG-09B | ST-EFF-HG-09C | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No | | | 9812764-01 | 9812764-02 | 9901688-01 | 9902664-01 | 9902702-01 | 9902702-02 | 9902756-01 | 9902775-01 | Industrial Wastewater |
| Total System Effluent Sample Description | | | Week 7 of System Operation (O&M) | | Week 13 of System Operation (O&M) | Week 17 of System Operation (O&M) | | | | | Discharge Max Levels |
| Date Effluent Sample Collected | | | 18-Dec-98 | | 26-Jan-99 | 22-Feb-99 | 23-Feb-99 | | 24-Feb-99 | 25-Feb-99 | -- |
| Instantaneous Flow Rate | | | 98 4* GPM/141 696 GPD | | 116 7 GPM/168 048 GPD | 108 1 GPM/155 664 GPD | 80 7 GPM**/116 208 GPD | | 79 2 GPM** / 114 048 GPD | 104.2 GPM/150 048 GPD | 561 600 GPD |
| Totalized Flow | | | 14,448,100 GAL | | 20,527,972 GAL | 24 668,250 GAL | 24,817,070 GAL | | 24,924,750 GAL | 25,017,630 GAL | -- |
| LABORATORY ANALYSES | DL | Units | | | | | | | | | *Monthly Avg / One Day Max* |
| pH (Method 150 1) | -- | SU | 5 8 | 5 8 | 6 5 | 6 1 | -- | -- | -- | -- | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | -- | -- | -- | -- | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | ND | ND | ND | -- | -- | -- | -- | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | 0 114 | 0 118 | 0 119 | 0 109 | -- | -- | -- | -- | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | ND | ND | ND | -- | -- | -- | -- | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 25 2 | 26 3 | 27 1 | 23 1 | -- | -- | -- | -- | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | ND | ND | ND | ND | -- | -- | -- | -- | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | ND | ND | ND | ND | -- | -- | -- | -- | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 020 | 0 014 | 0 044 | 0 151 | -- | -- | -- | -- | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | -- | -- | -- | -- | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 11 9 | 12 4 | 12 5 | 11 3 | -- | -- | -- | -- | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | 0 097 | 0 101 | 0 175 | 0 049 | -- | -- | -- | -- | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | ND | ND | ND | ND | -- | -- | -- | -- | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 808 | 0 818 | 0 927 | 0 951 | -- | -- | -- | -- | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 25 3 | 26 8 | 26 5 | 24 1 | -- | -- | -- | -- | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 115 | 0 081 | 0 048 | 0 065 | -- | -- | -- | -- | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | *ug/L* |
| Carbon Tetrachloride | 1 | ug/L | 4 50 | 4 72 | 2 32 | 2 53 | -- | -- | -- | -- | 20 / 40 |
| Chloroform | 1 | ug/L | 10 1 | 10 3 | 9 95 | 6 64 | -- | -- | -- | -- | 20 / 40 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | -- | -- | -- | -- | NS |
| 1,1 Dichloroethene | 1 | ug/L | 4 8 | 5 36 | 13 3 | 19 5 | -- | -- | -- | -- | 50 / 100 |
| Cis 1 2 Dichlorothene | 1 | ug/L | 43 4 | 46 7 | 34 | 36 2 | -- | -- | -- | -- | 50 / 100 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 9 78 | 10 4 | 7 85 | 11 | -- | -- | -- | -- | 50 / 100 |
| Methylene Chloride | 5 | ug/L | ND | ND | ND | ND | -- | -- | -- | -- | 10 / 20 |
| 1,1 2 2-Tetrachloroethane | 1/50/100 | ug/L | 175 | 189 | 60 1 | 46 8 | -- | -- | -- | -- | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 11 8 | 13 4 | 17 9 | 16 5 | -- | -- | -- | -- | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | -- | -- | -- | -- | 20 / 40 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | -- | -- | -- | -- | 10 / 20 |
| 1 1 2-Trichloroethane | 1 | ug/L | ND | 1 06 | ND | ND | -- | -- | -- | -- | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 183 | 196 | 116 | 144 | -- | -- | -- | -- | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | 11 9 | 11.6 | ND | ND | -- | -- | -- | -- | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | ND | ND | ND | ND | -- | -- | -- | -- | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | ND | -- | -- | -- | -- | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | ND | -- | -- | -- | -- | 10 / 20 |

NOTE Compounds included in this table are those listed in Section D 3 and detected as part of the analytical methods conducted per Section F 1 of Industrial Wastewater Discharge Agreement.
All analyses performed by Environmental Testing & Consulting Inc Memphis TN
* = Recovery well RW-09 was not in operation at the time of sample collection
** = Recovery well RW-08 was not in operation at the time of sample collection
^ = Recovery well RW-03 was not in operation at the time of sample collection
NS = no standard listed in the Industrial Wastewater Discharge Agreement
J = estimated value presence of the compound was confirmed but less than the reported DL
J = estimated value quality control recoveries outside acceptance ranges
ND = not detected
B = analyte detected in associated method and/or equipment blank
mg/L = milligrams per liter
ug/L = micrograms per liter
DL = detection limit
GPM = gallons per minute
GPD = gallons per day
91.2 = bold number indicates that value exceeds Discharge Max Levels
A=Effluent meter zeroed out 03-Nov-99

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## TABLE 3

## Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System
## Dunn Field, Memphis Depot, Tennessee

| Sample Identification Number | | | ST-EFF-10 | ST-EFF-11 | ST-INF-11 (Duplicate) | ST-EFF-12 | ST-EFF-13 | ST-EFF-14 | ST-INF-14 (Duplicate) | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No. | | | | 9904750-01 | 9904750-02 | 9905639-01 | 9907002-01 | 9907539-01 | 9907539-02 | Industrial Wastewater |
| Total System Effluent Sample Description | | | Week 21 of System Operation (O&M) | Week 26 of System Operation (O&M) | | Week 30 of System Operation (O&M) | Week 35 of System Operation (O&M) | Week 38 of System Operation (O&M) | | Discharge Max Levels |
| Date Effluent Sample Collected | | | 26-Mar-99 | 27-Apr-99 | | 24-May-99 | 30-Jun-99 | 21-Jul-99 | | -- |
| Instantaneous Flow Rate | | | 94 3 GPM/135 792 GPD | 105 3 GPM/151 632 GPD | | 87 9 GPM/126,576 GPD | 81.3 GPM/117 072 GPD | 80 9 GPM / 116 496 GPD | | 561 600 GPD |
| Totalized Flow | | | 28 964 822 GAL | 32 187 260 GAL | | 36 220 118 GAL | 40,550,662 GAL | 42,647,212 GAL | | -- |
| LABORATORY ANALYSES | DL | Units | | | | | | | | *Monthly Ave / One Day Max* |
| pH (Method 150 1) | -- | SU | 5 7 | 6 6 | 6 2 | 6 0 | 5 9 | 5 8 | 5 9 | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | 0 106 | 0 108 | 0 114 | 0 11 | 0 107 | 0 101 | 0 099 | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 22 7 | 23 | 22 8 | 23 1 | 21 4 | 21 | 21 2 | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 034 | 0 025 | 0 034 | 0 012 | 0 016 | 0 016 | 0 011 | 10 / 20 |
| Lead (Method 200 7) | 0 05 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 11 3 | 11 6 | 11 7 | 11 4 | 10 5 | 10 6 | 10 6 | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | 0 04 | 0 029 | 0 03 | 0 031 | 0 027 | 0 014 | 0 059 | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | ND | ND | ND | ND | ND | ND | ND | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 861 | 0 728 | 0 859 | 0 844 | 0 767 | 0 835 | 0 806 | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 23 8 | 22 9 | 24 1 | 24 2 | 23 8 | 22 8 | 22 4 | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 069 | 0 04 | 0 045 | 0 047 | 0 026 | 0 028 | 0 03 | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | *ug/L* |
| Carbon Tetrachloride | 1 | ug/L | 2 17 | 1 47 | 1 61 | 2 25 | 2 29 | 1 46 | 1 29 | 20 / 40 |
| Chloroform | 1 | ug/L | 5 59 | 6 63 | 7 15 | 4 54 | 9 3 | 8 46 | 7 93 | 20 / 40 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | NS |
| 1 1-Dichloroethene | 1 | ug/L | 13 9 | 11 8 | 11 8 | 16 2 | 17 8 | 14 2 | 13 4 | 50 / 100 |
| Cis 1 2-Dichlorothene | 1 | ug/L | 37 | 37 | 37 2 | 42 8 | 48 3 | 34 1 | 32 5 | 50 / 100 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 10 8 | 9 77 | 9 7 | 12 0 | 13 7 | 10 1 | 9 66 | 50 / 100 |
| Methylene Chloride | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1,1 2,2-Tetrachloroethane | 1/50/100 | ug/L | 29 3 | 38 9 | 39 2 | 56 1 | 76 4 | 65 1 | 59 8 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 18 7 | 12 9 | 13 6 | 16 1 | 17 | 14 6 | 13 3 | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1 5B | 1 | ND | 20 / 40 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1 1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 116 | 116 | 117 | 150 | 163 | 117 | 110 | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | 24 4B | ND | 14 1B | 13.6B | ND | ND | ND | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |

NOTE Compounds included in this table are those listed in Section D 3 and detected as part of the analytical methods conducted per Section F 1 of Industrial Wastewater Discharge Agreement

All analyses performed by Environmental Testing & Consulting Inc Memphis, TN

* = Recovery well RW-09 was not in operation at the time of sample collection

** = Recovery well RW-08 was not in operation at the time of sample collection

^ = Recovery well RW-03 was not in operation at the time of sample collection

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value presence of the compound was confirmed but less than the reported DL

J* = estimated value quality control recoveries outside acceptance ranges

ND = not detected

B = analyte detected in associated method and/or equipment blank

mg/L = milligrams per liter

ug/L = micrograms per liter

DL = detection limit

GPM = gallons per minute

GPD = gallons per day

91.2 = bold number indicates that value exceeds Discharge Max. Levels

A=Effluent meter zeroed out 03-Nov-99

TABLE 3

## Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System
## Dunn Field, Memphis Depot, Tennessee

| Sample Identification Number | | | ST-EFF-15 | ST-INF-15 (Duplicate) | ST-EFF-16 | ST-EFF-17 | ST-EFF-018 | ST-EFF-116 (Duplicate) | ST-EFF-019 | ST-EFF-117 (Duplicate) | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No | | | 9908593-02 | 9908593-01 | 9909614-01 | 9910519-01 | 9911451-01 | 9911451-02 | 9912495-01 | 9912495-02 | Industrial Wastewater |
| Total System Effluent Sample Description | | | Week 43 of System Operation (O&M) | | Week 47 of System Operation (O&M) | Week 51 of System Operation (O&M) | Week 55 of System Operation (O&M) | | Week 59 of System Operation (O&M) | | |
| Date Effluent Sample Collected | | | 23-Aug-99 | | 22-Sep-99 | 21-Oct-99 | 16-Nov-99 | | 15-Dec-99 | | – |
| Instantaneous Flow Rate | | | 74 7 GPM / 107,576 GPD | | 72.2 GPM/104 112 GPD | 72.3 GPM/104,112 GPD | 76.2 GPM/109 728 GPD | | 71 5 GPM/102,960 GPD | | 561,600 GPD |
| Totalized Flow | | | 46,332,590 GAL | | 49,474,353 GAL | 52 388,107 GAL | 55,040,162 GAL | | 57,672,540 GAL | | – |
| LABORATORY ANALYSES | DL | Units | | | | | | | | | *Monthly Ave / One Day Max* |
| pH (Method 150 1) | -- | SU | 5 7 | 5 7 | 6 0 | 5 7 | 6 1 | | 5 9 | 5 7 | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | 0 07 | ND | ND | ND | ND | ND | ND | ND | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | 0 099 | 0 1 | 0 098 | 0 099 | 0 1 | 0 101 | 0 099 | 0 097 | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 21 1 | 20 7 | 20 6 | 20 6 | 21 1 | 21 3 | 20 1 | 19 8 | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | ND | ND | ND | ND | 0 011 | ND | ND | ND | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 1 | 0 093 | 0 088 | 0 018 | 0 025 | 0 034 | 0 019 | 0 015 | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 10 6 | 10 6 | 10 3 | 10 7 | 10 5 | 10 6 | 10 3 | 10 2 | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | 0 028 | 0 026 | 0 018 | 0 020 | 0 022 | 0 022 | 0 007 | 0 007 | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | ND | ND | ND | ND | 0 066 | ND | ND | ND | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 798 | 0 79 | 0 852 | 0 926 | 1 16 | 0 82 | 0 84 | 0 764 | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 24 6 | 25 3 | 22 2 | 23 0 | 22 8 | 22 4 | 23 1 | 21 8 | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 033 | ND | 0 043 | 0 028 | 0 07 | 0 055 | 0 047 | 0 045 | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | *ug/L* |
| Carbon Tetrachloride | 1 | ug/L | 1 21 | 1 18 | 2 05 | 2 22 | 1 77 | 1 69 | 1 18 | 0 18J | 20 / 40 |
| Chloroform | 1 | ug/L | 9 38 | 9 78 | 9 88 | 8 30 | 7 41 | 7 49 | 8 81 | 6 4 | 20 / 40 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS |
| 1 1 Dichloroethene | 1 | ug/L | 17 | 18 | 19 3 | 16 6 | 16 6 | 16 7 | 15 7 | 10 2 | 50 / 100 |
| Cis 1,2-Dichlorothene | 1 | ug/L | 47 1 | 50 2 | 49 8 | 44 1 | 48 9 | 49 4 | 47 | 32 5 | 50 / 100 |
| Trans 1 2 Dichloroethene | 1 | ug/L | 14 6 | 14 9 | 14 5 | 13 0 | 12 7 | 13 0 | 12 6 | 8 4 | 50 / 100 |
| Methylene Chloride | 5 | ug/L | 11 9 | 12 8 | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1,1 2,2-Tetrachloroethane | 1/50/100 | ug/L | 137 | 131 | 148 | 183 | 120 | 118 | 137 | 144 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 19 8 | 19 8 | 21 8 | 19 2 | 17 9 | 17 8 | 19 1 | 14 2 | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 20 / 40 |
| 1 1,1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 0 61J | 0 43J | 10 / 20 |
| 1,1,2-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | 0 89J | ND | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 207 | 216 | 214 | 208 | 177 | 181 | 174 | 134 | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | ND | ND | 10 6B | ND | ND | ND | ND | 13 7B | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |

NOTE Compounds included in this table are those listed in Section D 3 and detected as part of the analytical methods conducted per Section F 1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting Inc , Memphis, TN

* = Recovery well RW-09 was not in operation at the time of sample collection

^ = Recovery well RW-08 was not in operation at the time of sample collection

^A = Recovery well RW-03 was not in operation at the time of sample collection

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value quality control recoveries outside acceptance ranges

ND = not detected

B = analyte detected in associated method and/or equipment blank

mg/L = milligrams per liter

ug/L = micrograms per liter

DL = detection limit

GPM = gallons per minute

GPD = gallons per day

91.2 = bold number indicates that value exceeds Discharge Max. Levels

A=Effluent meter zeroed out 03-Nov-99

TABLE 3

## Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System
## Dunn Field, Memphis Depot, Tennessee

| Sample Identification Number | | | ST-EFF-020 | ST-EFF-021 | ST-EFF-121 (Duplicate) | ST-EFF-022 | ST-INF-022 (Duplicate) | ST-EFF-023 | ST-EFF-024 | EQB-024 | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No | | | 0001169-01 | 0002422-01 | 0002422-02 | 0003418-01 | 0003418-02 | 0004399-01 | 0005400-01 | 0005400-02 | Industrial Wastewater |
| Total System Effluent Sample Description | | | Week 63 of System Operation (O&M) | Week 68 of System Operation (O&M) | | Week 72 of System Operation (O&M) | | Week 76 of System Operation (O&M) | Week 80 of System Operation (O&M) | Week 80 of System Operation (O&M) | |
| Date Effluent Sample Collected | | | 10-Jan-00 | 15-Feb-00 | | 15-Mar-00 | | 14-Apr-00 | 16-May-00 | 16-May-00 | – |
| Instantaneous Flow Rate | | | ^64 9 GPM/93 456 GPD | 70 6 GPM/101 664 GPD | | 57 1 GPM/82,224 | | 57 1 GPM/82,224 GPD | 52 1 GPM/75,024 GPD | 52 1 GPM/75 024 GPD | 561 600 GPD |
| Totalized Flow | | | 59 949 612 GAL | 62,926 034 GAL | | 65 383 409 GAL | | 67,775,983 GAL | 70,137 871 GAL | 70,137,871 GAL | – |
| LABORATORY ANALYSES | DL | Units | | | | | | | | | Monthly Ave / One Day Max, |
| pH (Method 150 1) | -- | SU | 7 0 | 6 1 | 5 4 | 6 1 | 5 8 | 6 1 | 5 9 | 6 0 | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | | mg/L |
| Aluminum (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | 0 099 | 0 106 | 0 108 | 0 105 | 0 104 | 0 111 | ND | ND | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 19 9 | 21 0 | 21 6 | 21 98 | 21 88 | 21 18 | 21 4 | 20 8 | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 021 | 0 114 | 0 036 | 0 155J* | 0 029J* | 0 048 | ND | 0 032 | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 10 6 | 10 8 | 11 3 | 11 2 | 11 | 10 9 | 11 4 | 11 | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | ND | 0 025 | 0 025 | 0 015 | 0 015 | 0 019 | ND | ND | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 752 | 0 816 | 0 874 | 0 852 | 0 809 | 0 826 | 0 681 | 0 892 | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 22 8 | 22 7 | 23 5 | 24 6 | 23 5 | 22 9 | 23 3 | 22 3 | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 038 | 0 305 | 0 053 | 0 04 | 0 043 | 0 052 | 0 045 | 0 038 | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | ug/L |
| Carbon Tetrachloride | 1 | ug/L | 1 14 | 1 71 | 1 67 | 1 56 | 1 5 | 1 63 | 0 87 | ND | 20 / 40 |
| Chloroform | 1 | ug/L | 8 34 | 6 51 | 6 58 | 7 76 | 8 36 | 7 60 | 7 59 | 7 76 | 20 / 40 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | 0 47J | ND | ND | NS |
| 1 1-Dichloroethene | 1 | ug/L | ND | 13 8 | 14 1 | 12 8 | 13 5 | ND | 14 8 | 15 6 | 50 / 100 |
| Cis 1 2-Dichlorothene | 1 | ug/L | 48 | 43 8 | 43 7 | 42 6 | 43 1 | 51 5 | 50 9 | 52 4 | 50 / 100 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 13 4 | 12 3 | 12 0 | 13 2 | 13 4 | 14 9 | 15 8 | 16 3 | 50 / 100 |
| Methylene Chloride | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1,1,2 2-Tetrachloroethane | 1/50/100 | ug/L | 218 | 177 | 189 | 47 5 | 51 7 | 54 7 | 51 | 51 3 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 17 7 | 14 9 | 15 3 | 17 2 | 18 | 18 | 15 2 | 15 9 | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | 1 53J | ND | ND | ND | 20 / 40 |
| 1,1,1-Trichloroethane | 1 | ug/L | ND | 0 48J | 0 48J | 0 52J | ND | ND | ND | ND | 10 / 20 |
| 1,1,2-Trichloroethane | 1 | ug/L | ND | 0 80J | 0 75J | 0 66J* | 0 97J | 0 96J | ND | 0 78 | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 189 | 177 | 179 | 115 | 121 | 189 | 124 | 129 | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | | | | | | | | |
| Bis(2 ethylhexyl)phthalate | 10 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |

NOTE Compounds included in this table are those listed in Section D 3 and detected as part of the analytical methods conducted per Section F 1 of Industrial Wastewater Discharge Agreement

All analyses performed by Environmental Testing & Consulting Inc Memphis, TN

* = Recovery well RW-09 was not in operation at the time of sample collection

** = Recovery well RW-08 was not in operation at the time of sample collection

^ = Recovery well RW-03 was not in operation at the time of sample collection.

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value presence of the compound was confirmed but less than the reported DL

J* = estimated value quality control recoveries outside acceptance ranges

ND = not detected

B = analyte detected in associated method and/or equipment blank

mg/L = milligrams per liter

ug/L = micrograms per liter

DL = detection limit

GPM = gallons per minute

GPD = gallons per day

91,2 = bold number indicates that value exceeds Discharge Max. Levels

A=Effluent meter zeroed out 03-Nov-99

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TABLE 3

## Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System
## Dunn Field, Memphis Depot, Tennessee

| Sample Identification Number | | | ST-EFF-025 | ST-EFF-026 | EQB-026 | ST-EFF-027 | ST-EFF-028 | EQB-028(DUPLICATE) | ST-EFF-029 | EQB-029(DUPLICATE) | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No | | | 0006716-01 | 0007278-01 | 0007278-02 | 0008325-01 | 0009443-01 | 0009443-02 | 0010480-01 | 0010480-02 | Industrial Wastewater |
| Total System Effluent Sample Description | | | Week 85 of System Operation (O&M) | Week 88 of System Operation (O&M) | Week 88 of System Operation (O&M) | Week 92 of System Operation (O&M) | Week 97 of System Operation (O&M) | Week 97 of System Operation (O&M) | Week 101 of System Operation (O&M) | Week 101 of System Operation (O&M) | |
| Date Effluent Sample Collected | | | 23-Jun-00 | 13-Jul-00 | 13-Jul-00 | 11-Aug-00 | 19-Sep-00 | 19-Sep-00 | 18-Oct-00 | 18-Oct-00 | – |
| Instantaneous Flow Rate | | | 55 09 GPM/79,330 GPD | 52 78 GPM/76 003 GPD | 52 78 GPM/76 003 GPD | 57.22 GPM/82,396 GPD | 55 95 GPM/80,568 GPD | 55 95 GPM/80,568 GPD | 45 14 GPM/65,002 GPD | 45 14 GPM/65,002 GPD | 561 600 GPD |
| Totalized Flow | | | 73,321,836 GAL | 75 673,706 GALLONS | 75 673,706 GALLONS | 78,223 187 | 80 640 059 GALLONS | 80,640,059 GALLONS | 82 655 006 GALLONS | 82 655,006 GALLONS | – |
| LABORATORY ANALYSES | DL | Units | | | | | | | | | *Monthly Ave / One Day Max,* |
| pH (Method 150 1) | – | SU | 5 7 | 7 7 | 8 4 | 6 1 | 5 8 | 6 1 | 6 0 | 6 0 | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 04 / 0 1 |
| Banum (Method 200 7) | 0 003 | mg/L | 0 109 | 0 104 | ND | 0 111 | 0 115 | 0 117 | 0 108 | 0 109 | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 21 8 | 21 3 | 0 067 | 21 7 | 22 8 | 23 1 | 21 1 | 21 4 | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 094 | 0 029 | ND | 0 137 | 0 187 | 0 739 | 0 061 | 0 036 | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 11 4 | 11 | ND | 10 8 | 10 9 | 11 | 10 3 | 10 5 | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | 0 014 | 0 009 | ND | 0 011 | 0 010 | 0 010 | ND | ND | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | ND | ND | ND | ND | ND | ND | ND | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | ND | ND | ND | ND | 0 03 | **0 335** | ND | ND | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 829 | 0 836 | ND | 0 87 | 0 886 | 0 954 | 0 886 | 0 872 | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 22 0 | 23 7 | 3 2 | 23 8 | 23 2 | 23 4 | 23 7 | 25 4 | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 04 | 0 061 | ND | 0 045 | 0 118 | 0 084 | 0 094 | 0 074 | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | *ug/L* |
| Carbon Tetrachlonde | 1 | ug/L | 1 3 | 1 2 | ND | 1 82 | 2 31 | 2 12 | 1 57 | 1 65 | 20 / 40 |
| Chloroform | 1 | ug/L | 9 41 | 8 92 | ND | 7 96 | 9 24 | 8 30 | 9 69 | 8 54 | 20 / 40 |
| 1 1-Dichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | NS |
| 1 1-Dichloroethene | 1 | ug/L | 16 6 | 15 | ND | 13 2 | 17 6 | 17 1 | 18 8 | 18 | 50 / 100 |
| Cis 1 2 Dichlorothene | 1 | ug/L | 62 7 | 54 4 | ND | 44 5 | 50 | 46 5 | 55 7 | 51 | 50 / 100 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 18 5 | 15 9 | ND | 11 6 | 13 4 | 11 5 | 16 0 | 14 8 | 50 / 100 |
| Methylene Chlonde | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1,1 2 2-Tetrachloroethane | 1/50/100 | ug/L | 59 2 | 52 | ND | 42 7 | 61 4 | 60 3 | 61 3 | 58 7 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 14 5 | 13 8 | ND | 13 8 | 22 1 | 22 8 | 15 9 | 15 9 | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 20 / 40 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1 1 2-Trichloroethane | 1 | ug/L | 0 93 | 0 669J | ND | 0 86J | 1 14 | ND | ND | 1 01 | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 139 | 123 | ND | 148 | 152 | 159 | 101 | 102 | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| Di-n butyl Phthalate | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |

NOTE Compounds included in this table are those listed in Section D 3 and detected as part of the analytical methods conducted per Section F 1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting Inc Memphis, TN

= Recovery well RW-09 was not in operation at the time of sample collection

= Recovery well RW-08 was not in operation at the time of sample collection

A = Recovery well RW-03 was not in operation at the time of sample collection.

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value - presence of the compound was confirmed but less than the reported DL

J = estimated value quality control recoveries outside acceptance ranges

ND = not detected

B = analyte detected in associated method and/or equipment blank

mg/L = milligrams per liter

ug/L = micrograms per liter

DL = detection limit

GPM = gallons per minute

GPD = gallons per day

91.2 = bold number indicates that value exceeds Discharge Max. Levels

A=Effluent meter zeroed out 03-Nov 99

TABLE 3

**Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System**
**Dunn Field, Memphis Depot, Tennessee**

| Sample Identification Number | | | ST-EFF-030 | ST-EFF-031 | EQB-031 | EQB-032 | ST-EFF-033 | ST-EFF-131 (Dup) | EFF-9-14-01 | EFF-12-21-01 | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No | | | 0011634-01 | 0012504-01 | 0012504-02 | 0101349-01 | 0105036-01 | 0105036-02 | 0109232-01 | 0112602-02 | Industrial Wastewater |
| Total System Effluent Sample Description | | | Week 105 of System Operation (O&M) | Week 109 of System Operation (O&M) | Week 109 of System Operation (O&M) | Week 112 of System Operation (O&M) | Week 126 of System Operation (O&M) | Week 126 of System Operation (O&M) | O&M | O&M | |
| Date Effluent Sample Collected | | | 21-Nov-00 | 20-Dec-00 | 20-Dec-00 | 16-Jan-01 | 1-May-01 | 1-May-01 | 14-Sep-01 | 21-Dec-01 | – |
| Instantaneous Flow Rate | | | 11 11 GPM/15 998 GPD | 16.27 GPM/23 435 GPD | 16 27 GPM/23,435 GPD | 25 45 GPM/36 648 GPD | 42 39 GPM/61 042 GPD | 42 39 GPM/61 042 GPD | 48 6 GPM 69 984 GPD | 49 8 GPM 71 772 GPD | – |
| Totalized Flow | | | 83 150 768 GALLONS | 83,877,244 GALLONS | 83 877 244 GALLONS | 85,023,474 GALLONS | 85 023,474 GALLONS | 85 023 474 GALLONS | 101,568 586 GALLONS | 105 815 578 GALLONS | – |
| LABORATORY ANALYSES | DL | Units | | | | | | | | | *Monthly Ave / One Day Max* |
| pH (Method 150 1) | -- | SU | 5 8 | 6 5 | 7 3 | 5 8 | Not Tested | Not Tested | Not Tested | Not Tested | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | ND | 0 117 | ND | 0 119 | Not Tested | Not Tested | Not Tested | Not Tested | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 20 1 | 23 4 | ND | 22 5 | Not Tested | Not Tested | Not Tested | Not Tested | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 053 | 0 211 | 0 012 | 0 322 | Not Tested | Not Tested | Not Tested | Not Tested | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 9 87 | 11 5 | ND | 11 8 | Not Tested | Not Tested | Not Tested | Not Tested | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | ND | 0 009 | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | Not Tested | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | 0 026 | ND | ND | 0 038 | Not Tested | Not Tested | Not Tested | Not Tested | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 839 | 0 978 | ND | 0 937 | Not Tested | Not Tested | Not Tested | Not Tested | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 23 1 | 21 8 | 0 072 | 23 1 | Not Tested | Not Tested | Not Tested | Not Tested | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 059 | 0 063 | ND | 0 121 | Not Tested | Not Tested | Not Tested | Not Tested | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | *ug/L* |
| Carbon Tetrachloride | 1 | ug/L | 1 62 | ND | ND | 1 42 | 4 73 | 4 82 | 3 39 | 6 11 | 20 / 40 |
| Chloroform | 1 | ug/L | 7 88 | 7 15 | ND | 14 20 | 23 60 | 26 30 | 34 20 | 52 10 | 20 / 40 |
| 1,1-Dichloroethane | 1 | ug/L | ND | 0 51J | ND | ND | ND | ND | ND | 0 53 J | NS |
| 1 1-Dichloroethene | 1 | ug/L | 16 7 | 14 6 | ND | 18 7 | 10 7 | 10 7 | 11 00 | 16 40 | 50 / 100 |
| Cis 1,2-Dichlorothene | 1 | ug/L | 54 8 | 18 2 | ND | 59 2 | 44 7 | 41 1 | 38 80 | 53 60 | 50 / 100 |
| Trans 1,2-Dichloroethene | 1 | ug/L | ND | ND | ND | 15 3 | 10 3 | 11 4 | 9 09 | 13 20 | 50 / 100 |
| Methylene Chloride | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1 1 2 2-Tetrachloroethane | 1/50/100 | ug/L | 29 7 | ND | ND | 178 | 59 3 | 57 7 | 102 00 | 174 00 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 18 3 | 20 7 | ND | 26 | 13 1 | 12 8 | 13 50 | 21 60 | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 20 / 40 |
| 1 1 1-Trichloroethane | 1 | ug/L | ND | 0 52 J | ND | ND | ND | ND | 0 32 | 0 65 J | 10 / 20 |
| 1 1,2-Trichloroethane | 1 | ug/L | 1 05 | ND | ND | 2 19 | 1 14 | 0 97 J | 0 98 | 1 32 | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 99 3 | 57 6 | ND | 89 | 130 | 136 | 107 00 | 173 00 | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | ND | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | ND | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | ND | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | ND | Not Tested | Not Tested | Not Tested | ND | 10 / 20 |

NOTE Compounds included in this table are those listed in Section D 3 and detected as part of the analytical methods conducted per Section F 1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting Inc Memphis, TN

* = Recovery well RW-09 was not in operation at the time of sample collection

* = Recovery well RW-08 was not in operation at the time of sample collection

^ = Recovery well RW-03 was not in operation at the time of sample collection

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J = estimated value presence of the compound was confirmed but less than the reported DL

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ND = not detected

B = analyte detected in associated method and/or equipment blank

mg/L = milligrams per liter

ug/L = micrograms per liter

DL = detection limit

GPM = gallons per minute

GPD = gallons per day

91.2 = bold number indicates that value exceeds Discharge Max. Levels

A=Effluent meter zeroed out 03-Nov-99



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TABLE 3

## Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System
## Dunn Field, Memphis Depot, Tennessee

| Sample Identification Number | | | EFF-2-11-02 | EFF-4-10-02 | EFF-4-10B-02 | E-001 | Eff-11-20-02/Eff-12-10-0 | Eff-1-30-03 | Eff-5-13-03 | Eff-7-28-03 | City of Memphis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory ID No | | | 0202225-02 | 0204276-09 | 0204276-10 | 0205147-01 | 0211497-1/0212292-01 | 30170201 | 0305328-01 | 0307550-01 | Industrial Wastewater |
| Total System Effluent Sample Description | | | O&M | O&M | O&M | O&M | O&M | O&M | O&M | O&M | |
| Date Effluent Sample Collected | | | 11-Feb-02 | 10-Apr-02 | 10-Apr-02 | 7-May-02 | 11/20/02 & 12/10/02 | 30-Jan-03 | 13-May-03 | 28-Jul-03 | -- |
| Instantaneous Flow Rate | | | 49 8 GPM 71,772 GPD | 54.2 GPM 78 014 GPD | 54 2 GPM 78 014 GPD | 59 GPM 84 960 GPD | 57.8 GPM 83,227 GPD | 58 6 GPM 84,384 GPD | 61.5 GPM 88 560 GPD | 62 6 GPM 90 176 GPD | -- |
| Totalized Flow | | | 105,815,578 GALLONS | 116 900 632 GALLONS | 116 900,632 GALLONS | 117,495,351 GALLONS | 133 775 559 GALLONS | 138,824,199 GALLONS | 148 773,724 Gallons | 156,994,396 GALLONS | -- |
| LABORATORY ANALYSES | DL | Units | | | | | | | | | *Monthly Ave / One-Day Max* |
| pH (Method 150 1) | -- | SU | Not Tested | Not Tested | Not Tested | Not Tested | Not Tested | Not Tested | | | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | | | | | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | Not Tested | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | Not Tested | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | Not Tested | 0 104 | 0 104 | Not Tested | ND | Not Tested | 0 096 | Not Tested | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | Not Tested | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | Not Tested | 23 5 | 23 5 | Not Tested | 24 8 | Not Tested | 22 4 | Not Tested | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | Not Tested | ND | ND | Not Tested | 0 003 | Not Tested | 0 003 | Not Tested | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | Not Tested | 0 022 | 0 01 | Not Tested | 0 006 | Not Tested | ND | Not Tested | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | Not Tested | 0 206 | 0 076 | Not Tested | 0 221 | Not Tested | 0 059 | Not Tested | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | Not Tested | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | Not Tested | 11 5 | 11 5 | Not Tested | 12 | Not Tested | 11 3 | Not Tested | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | Not Tested | 0 025 | 0 025 | Not Tested | 0 045 | Not Tested | 0 036 | Not Tested | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | Not Tested | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | Not Tested | 0 003 | ND | Not Tested | ND | Not Tested | ND | Not Tested | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | Not Tested | 0 829 | 0 823 | Not Tested | 0 814 | Not Tested | 0 813 | Not Tested | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | Not Tested | 21 5 | 21 9 | Not Tested | 23 7 | Not Tested | 22 3 | Not Tested | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | Not Tested | 0 292 | 0 038 | Not Tested | 0 038 | Not Tested | 0 041 | Not Tested | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | | | | | | | | *ug/L* |
| Carbon Tetrachloride | 1 | ug/L | 5 53 | 5 52 | 5 52 | 5 59 | 5 41 | 4 87 | 7 24 | 6 08 | 20 / 40 |
| Chloroform | 1 | ug/L | 51 10 | 52 00 | 52 40 | 51 00 | 51 60 | 48 20 | 61 30 | 67 50 | 100 / 200 |
| 1,1 Dichloroethane | 1 | ug/L | 0 42 | ND | ND | ND | ND | ND | ND | ND | NS |
| 1,1-Dichloroethene | 1 | ug/L | 14 30 | 15 20 | 15 10 | 12 50 | 10 00 | 13 10 | 9 25 | 8 56 | 50 / 100 |
| Cis 1 2 Dichlorothene | 1 | ug/L | 60 00 | 55 80 | 56 80 | 50 80 | 34 90 | 39 40 | 45 00 | 41 10 | 80 / 100 |
| Trans 1 2-Dichloroethene | 1 | ug/L | 14 60 | 14 70 | 14 60 | 10 20 | 7 28 | 7 46 | 8 53 | 8 00 | 50 / 100 |
| Methylene Chloride | 5 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1,1,2,2-Tetrachloroethane | 1/50/100 | ug/L | 124 00 | 104 00 | 95 60 | 73 20 | 69 60 | 62 90 | 85 60 | 148 00 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 17 00 | 15 80 | 15 60 | 15 40 | 17 00 | 23 20 | 22 80 | 17 40 | 60 / 120 |
| Toluene | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 20 / 40 |
| 1,1,1 Trichloroethane | 1 | ug/L | ND | ND | ND | ND | ND | ND | ND | ND | 10 / 20 |
| 1,1 2 Trichloroethane | 1 | ug/L | 1 48 | 1 73 | 1 56 | 1 29 | 1 32 | 1 26 | 1 73 | 1 40 | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 179 00 | 156 00 | 155 00 | 133 00 | 109 00 | 142 00 | 159 00 | 164 00 | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | ND | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | ND | ND | ND | Not Tested | ND | Not Tested | 5 38 B | Not Tested | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 10 / 20 |
| Phenol | 5 | ug/L | ND | ND | ND | Not Tested | ND | Not Tested | ND | Not Tested | 10 / 20 |

TABLE 3

**Summary of Analytical Results for Total Effluent (through November 2003) of the Groundwater Recovery System**
**Dunn Field, Memphis Depot, Tennessee**

| Sample Identification Number | | | Eff-11-18-03 | City of Memphis |
|---|---|---|---|---|
| Laboratory ID No. | | | 0311459-01 | Industrial Wastewater |
| Total System Effluent Sample Description | | | O&M | |
| Date Effluent Sample Collected | | | 18-Nov-03 | -- |
| Instantaneous Flow Rate | | | 54 09 GPM 77,889 GPD | -- |
| Totalized Flow | | | 164,663,968 GALLONS | -- |
| LABORATORY ANALYSES | DL | Units | | *Monthly Avg / One Day Max* |
| pH (Method 150 1) | -- | SU | | 5 5 to 10 0 |
| TAL Metals (EPA 200 Series) | | | | *mg/L* |
| Aluminum (Method 200 7) | 0 06 | mg/L | ND | 1 / 2 |
| Arsenic (Method 206 2) | 0 003 | mg/L | ND | 0 04 / 0 1 |
| Barium (Method 200 7) | 0 003 | mg/L | 0 098 | NS |
| Cadmium (Method 200 7) | 0 005 | mg/L | ND | 0 01 / 0 02 |
| Calcium (Method 200 7) | 0 015 | mg/L | 23 7 | NS |
| Chromium (Method 200 7) | 0 009 | mg/L | 0 0052 | 0 2 / 0 4 |
| Copper (Method 200 7) | 0 008 | mg/L | 0 007 | 0 2 / 0 4 |
| Iron (Method 200 7) | 0 009 | mg/L | 0 086 | 10 / 20 |
| Lead (Method 200 7) | 0 06 | mg/L | ND | 0 15 / 0 3 |
| Magnesium (Method 200 7) | 0 04 | mg/L | 11 5 | NS |
| Manganese (Method 200 7) | 0 003 | mg/L | 0 06 | NS |
| Mercury (Method 245 1) | 0 0002 | mg/L | ND | 0 001 / 0 002 |
| Nickel (Method 200 7) | 0 02 | mg/L | ND | 0 1 / 0 3 |
| Potassium (Method 200 7) | 0 25 | mg/L | 0 789 | NS |
| Sodium (Method 200 7) | 0 05 | mg/L | 23 3 | NS |
| Zinc (Method 200 7) | 0 01 | mg/L | 0 062 | 0 3 / 1 0 |
| TCL Volatile Organics (Method 8260B) | | | | *ug/L* |
| Carbon Tetrachloride | 1 | ug/L | 6 57 | 20 / 40 |
| Chloroform | 1 | ug/L | 71 00 | 100 / 200 |
| 1,1-Dichloroethane | 1 | ug/L | ND | NS |
| 1,1-Dichloroethene | 1 | ug/L | 4 07 | 50 / 100 |
| Cis 1,2-Dichlorothene | 1 | ug/L | 60 70 | 80 / 100 |
| Trans 1,2-Dichloroethene | 1 | ug/L | 12 00 | 50 / 100 |
| Methylene Chloride | 5 | ug/L | ND | 10 / 20 |
| 1 1 2 2-Tetrachloroethane | 1/50/100 | ug/L | 122 00 | 500 / 1000 |
| Tetrachloroethene | 1 | ug/L | 10 50 | 60 / 120 |
| Toluene | 1 | ug/L | ND | 20 / 40 |
| 1,1,1-Trichloroethane | 1 | ug/L | ND | 10 / 20 |
| 1,1,2-Trichloroethane | 1 | ug/L | 2 09 | 50 / 100 |
| Trichloroethene | 1/50/100 | ug/L | 139 00 | 400 / 800 |
| TCL Semi-Volatile Organics (Method 8270C) | | | | |
| Bis(2-ethylhexyl)phthalate | 10 | ug/L | ND | 10 / 20 |
| Di-n-butyl Phthalate | 5 | ug/L | ND | 30 / 60 |
| Naphthalene | 2 | ug/L | ND | 10 / 20 |
| Phenol | 5 | ug/L | ND | 10 / 20 |

**TABLE 4**
**Groundwater Levels Corresponding**
**to Semi-Annually Sampled Wells**

| Sampled Date | MW-07 GWELEV | MW-08 GWELEV | MW-09 GWELEV | MW-29 GWELEV | MW-30 GWELEV | MW-31 GWELEV | MW-32 GWELEV | MW-33 GWELEV | MW-34 GWELEV | MW-37 GWELEV | MW-40 GWELEV | MW-42 GWELEV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Feb-99 | | | | | 228.85 | 221.80 | 223.90 | 227 48 | 163 51 | NA | 184.32 | NA |
| 25-May-99 | NA | NA | NA | NA | 228.36 | 220.48 | 222.25 | 226.52 | 163 14 | NA | 183.52 | NA |
| 27-Aug-99 | NA | NA | NA | NA | 227.66 | 217.17 | 222.54 | 226 17 | 154 33 | NA | 178.75 | NA |
| 3-Nov-99 | NA | NA | NA | NA | 227.07 | 219.37 | 222 44 | 218 16 | 154.47 | NA | 175.93 | NA |
| 7-Feb-00 | NA | NA | NA | NA | 226.42 | 218.92 | 222.04 | 225.60 | 160 39 | NA | 177.98 | NA |
| 16-May-00 | NA | NA | NA | NA | 226.06 | 218.54 | 221.67 | 225.48 | 160.50 | NA | 178.53 | NA |
| 22-Aug-00 | NA | NA | NA | NA | 225.89 | 218.22 | 221.38 | 225 20 | 152.61 | NA | 172.80 | NA |
| 7-Nov-00 | NA | NA | NA | NA | 225.54 | 218.02 | 221.97 | 224 81 | 160.98 | NA | 170 35 | NA |
| 13-Feb-01 | NA | NA | NA | NA | 225.69 | 218.66 | 221.88 | 225.00 | 158.87 | 154.21 | 172.50 | 216 42 |
| 11-Sep-01 | NA | NA | NA | NA | 226.03 | 218.11 | 220 88 | 224.08 | 154.82 | 148.81 | 171.25 | 217.61 |
| 19-Mar-02 | NA | NA | NA | NA | 228.32 | 218.89 | 220 00 | 215.68 | 160.83 | 157.10 | 174.66 | 219.31 |
| 2-Oct-02 | NA | NA | NA | NA | 227.87 | 219.60 | 221 22 | 224.25 | 157.12 | 151.87 | 174.85 | 218.37 |
| 9-Apr-03 | NA | NA | NA | NA | 228 52 | 219.89 | 221.22 | 224.27 | 162.26 | 157.89 | 179.12 | 219 42 |
| 29-Oct-03 | 228 94 | 231 01 | 228 92 | 235.29 | 228.55 | 220.44 | 221.58 | 224.62 | 161.58 | 156.66 | 180.33 | 221.08 |

Notes:
Groundwater elevations are in feet above mean sea level (msl)
Table contains data corresponding to quarterly sampled groundwater wells only.
NA = not available.



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**TABLE 4**
**Groundwater Levels Corresponding**
**to Semi-Annually Sampled Wells**

| Sampled Date | MW-43 GWELEV | MW-44 GWELEV | MW-51 GWELEV | MW-54 GWELEV | MW-56 GWELEV | MW-57 GWELEV | MW-58 GWELEV | MW-67 GWELEV | MW-68 GWELEV | MW-69 GWELEV | MW-70 GWELEV | MW-71 GWELEV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Feb-99 | NA | 217.62 | 235.32 | 219 23 | NA | NA | NA | NA | NA | NA | NA | NA |
| 25-May-99 | NA | 216.89 | 235.47 | 217 55 | NA | NA | NA | NA | NA | NA | NA | NA |
| 27-Aug-99 | NA | 216.16 | 234.17 | 216 91 | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nov-99 | NA | 215 45 | 233.18 | 216.20 | NA | NA | NA | NA | NA | NA | NA | NA |
| 7-Feb-00 | NA | 214 77 | 232.38 | 215.46 | 226 45 | 224.25 | 227 08 | NA | NA | 222 83 | 223 94 | 225.49 |
| 16-May-00 | NA | 214.17 | 230.48 | 214.81 | 226.24 | 227.19 | 226.87 | 151.22 | NA | 222 82 | 223 71 | 225.24 |
| 22-Aug-00 | NA | 213.62 | 232.02 | 214.36 | 225.98 | 227.02 | 226.72 | NA | 221.46 | 222 51 | 223 11 | 225 01 |
| 7-Nov-00 | NA | 213.10 | 231 44 | 213.70 | 225.75 | 226 60 | 226.52 | NA | 222.45 | 223 03 | 223.58 | 225 74 |
| 13-Feb-01 | 155.48 | 213.02 | 231 72 | 213 71 | 225.72 | 226.64 | 226.52 | 153 11 | 222.68 | 223.73 | 224 25 | 225.14 |
| 11-Sep-01 | 151.02 | 212 96 | 232.30 | 213 57 | 225 53 | 226.04 | 226.23 | 153 11 | 221 78 | 222 45 | 223 10 | 223 51 |
| 19-Mar-02 | 157.99 | 213 46 | 236.61 | 213.96 | 225 92 | 226.58 | 226.59 | 157.99 | 222.58 | 223 36 | 223 55 | 223.49 |
| 2-Oct-02 | 153.47 | 214 12 | 234.39 | 214.78 | 225 97 | 226.56 | 226.72 | 150.88 | 222.81 | 223 23 | 223 74 | 223 79 |
| 9-Apr-03 | 159 04 | 214 66 | 236.04 | 215.16 | 226 30 | 227.12 | 227 04 | NA | 224.03 | 223.98 | 224 17 | 224.04 |
| 29-Oct-03 | 158 06 | 215.07 | 235.34 | 215 79 | 226 42 | 226.98 | 227.22 | NA | 223.65 | 223.96 | 224.60 | 224 26 |

Notes:
Groundwater elevations are in feet above mean sea level (msl)
Table contains data corresponding to quarterly sampled groundwater wells only
NA = not available.



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**TABLE 4**
**Groundwater Levels Corresponding**
**to Semi-Annually Sampled Wells**

| Sampled Date | MW-76 GWELEV | MW-77 GWELEV | MW-78 GWELEV | MW-79 GWELEV | MW-80 GWELEV | MW-95 GWELEV | MW-126 GWELEV | MW-127 GWELEV | MW-128 GWELEV | MW-129 GWELEV | MW-130 GWELEV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Feb-99 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 25-May-99 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 27-Aug-99 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nov-99 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 7-Feb-00 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 16-May-00 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 22-Aug-00 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 7-Nov-00 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 13-Feb-01 | 217.66 | 222.50 | 224.75 | 212 70 | 212 59 | 227.52 | NA | NA | NA | NA | NA |
| 11-Sep-01 | 217.10 | 221.42 | 224.86 | 212 57 | 212 63 | 228.68 | NA | NA | NA | NA | NA |
| 19-Mar-02 | 222.49 | 221.84 | 226.63 | 213 03 | 213.15 | 232.36 | NA | NA | NA | NA | NA |
| 2-Oct-02 | 218.25 | 222.13 | 226.67 | 213 73 | 213.91 | 230.92 | 232 87 | 209.18 | NA | NA | NA |
| 9-Apr-03 | 218 36 | 222 33 | 227.13 | 214 12 | 214.51 | 233.30 | 236 96 | 209.66 | NA | NA | NA |
| 29-Oct-03 | 219 07 | 222.57 | 227.25 | 214 62 | 214.96 | 231.28 | 233.10 | 210.87 | 244 29 | 238 23 | 239.43 |

Notes:
Groundwater elevations are in feet above mean sea level (msl)
Table contains data corresponding to quarterly sampled groundwater wells only
NA = not available.

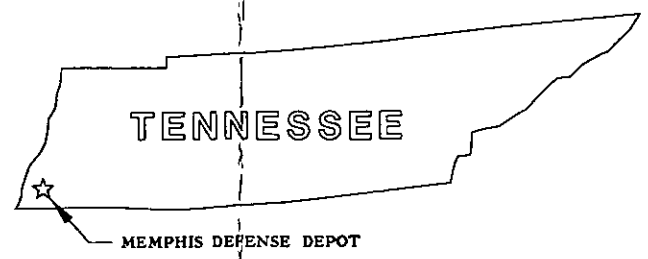


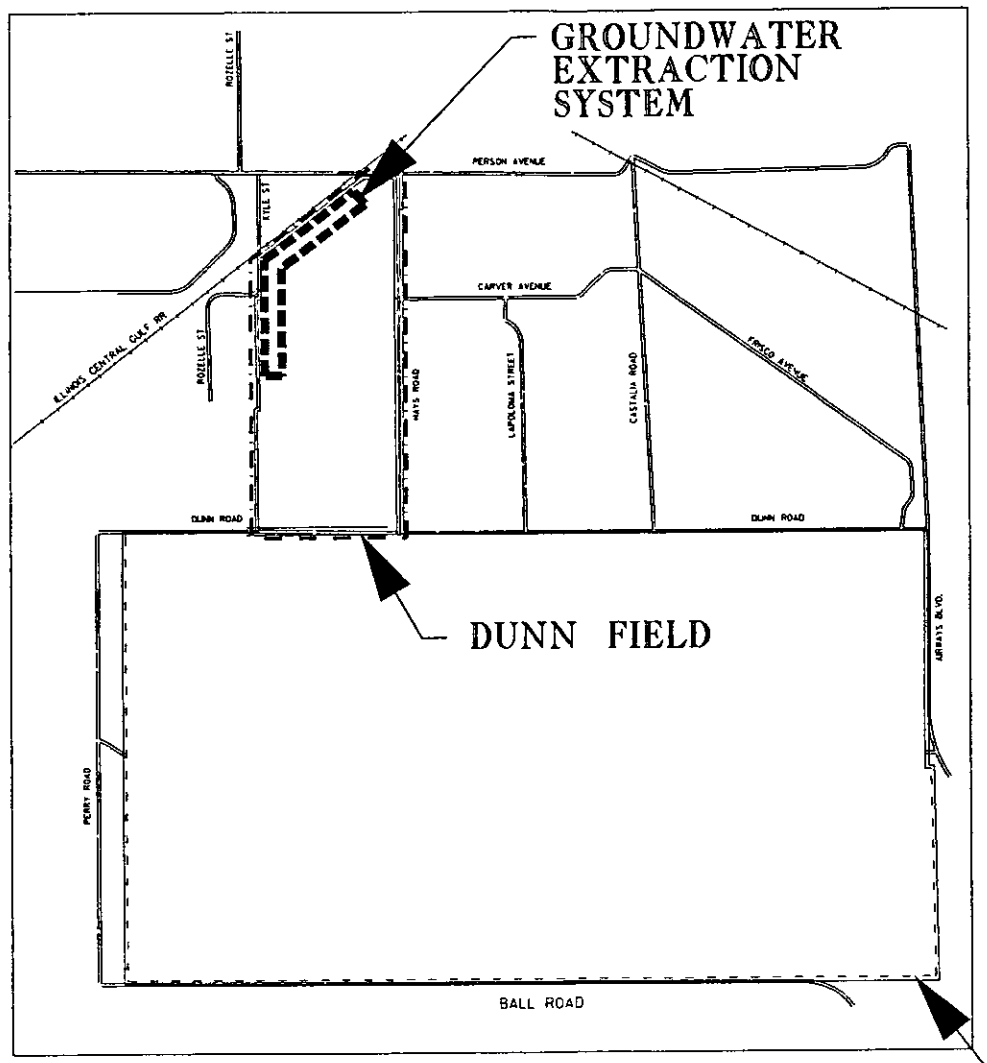
768 78

# FIGURES

N

SCALE 400 0 400 800 FEET




APPROXIMATE SCALE- 1" = 400

LEGEND

- GROUNDWATER EXTRACTION SYSTEM
- DUNN FIELD
- MEMPHIS DEFENSE DEPOT

| NO | DATE | DESCRIPTION | APPRD |
|---|---|---|---|
| | | DIVISION 5 | |

SCALE: 1" = 200'
DESIGNED: A. SWIM
DRAWN: S.M.J.SEE
CHECKED: D. SUTAN
APPROVED: F. JAMES
DATE: OCT. 2000

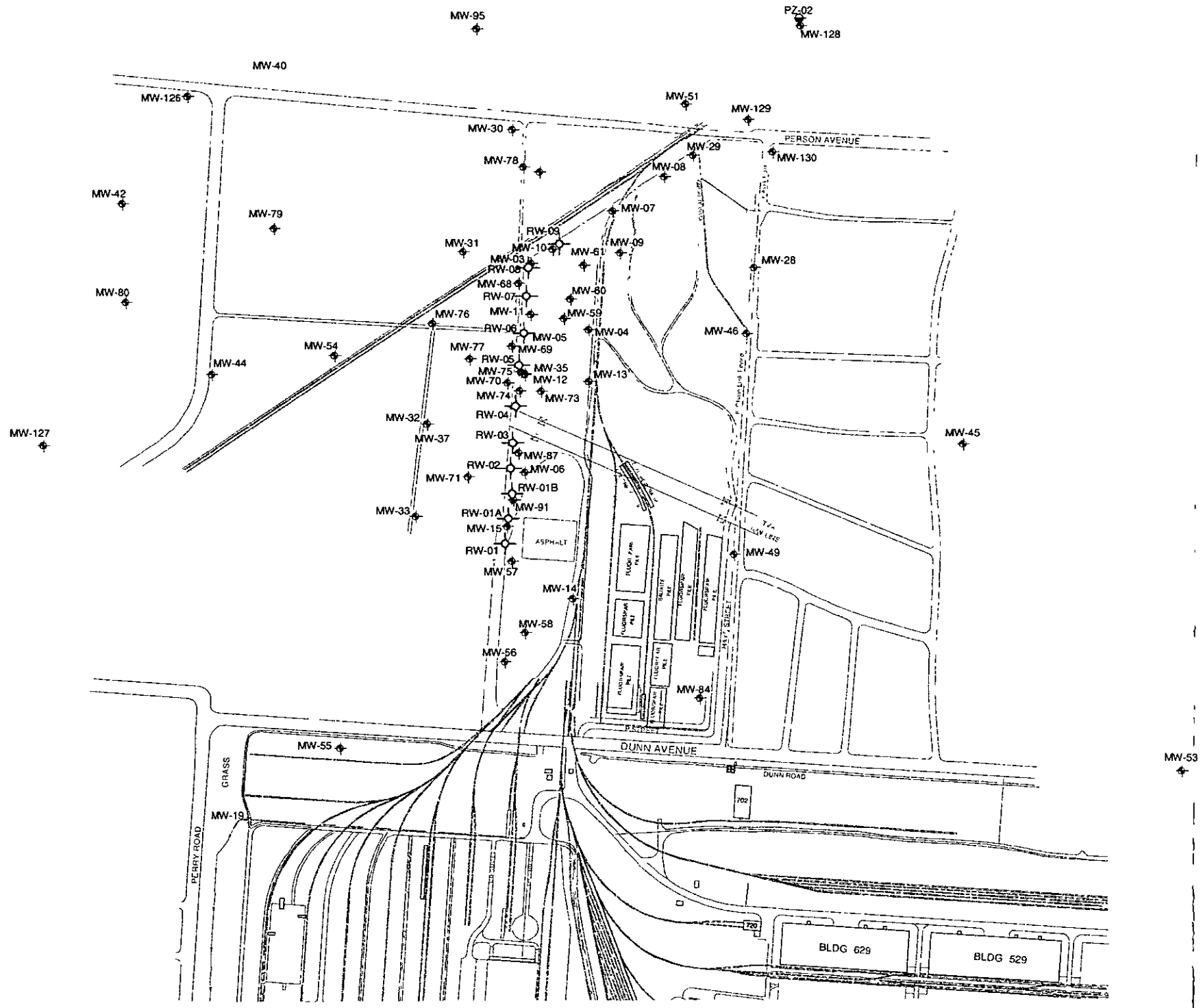
DUNN FIELD
GROUNDWATER EXTRACTION SYSTEM
MEMPHIS DEFENSE DEPOT, TENNESSEE

JE Sverdrup
A Jacobs Company
NASHVILLE, TENNESSEE
SVERDRUP PROJECT No. CS5340

MEMPHIS DEFENSE DEPOT,
DUNN FIELD, AND THE
GROUNDWATER EXTRACTION SYSTEM

DRAWING No.
FIG.1
SHEET No. 1 OF 3

J:\CS5340\CS5340\DWG\MXD\FIG1.MXD




| | |
|---|---|
| SCALE | 1 7200 |
| DESIGNED | N. ZEHMS |
| DRAWN | N ZEHMS |
| CHECKED | K SMITH |
| APPROVED | N ZEHMS |
| DATE | DECEMBER 17, 2003 |

## Legend

- MW-71 — Monitoring Well
- PZ-02 — Piezometer
- RW-05 — Recovery Well

N

0 300 600

Scale in Feet

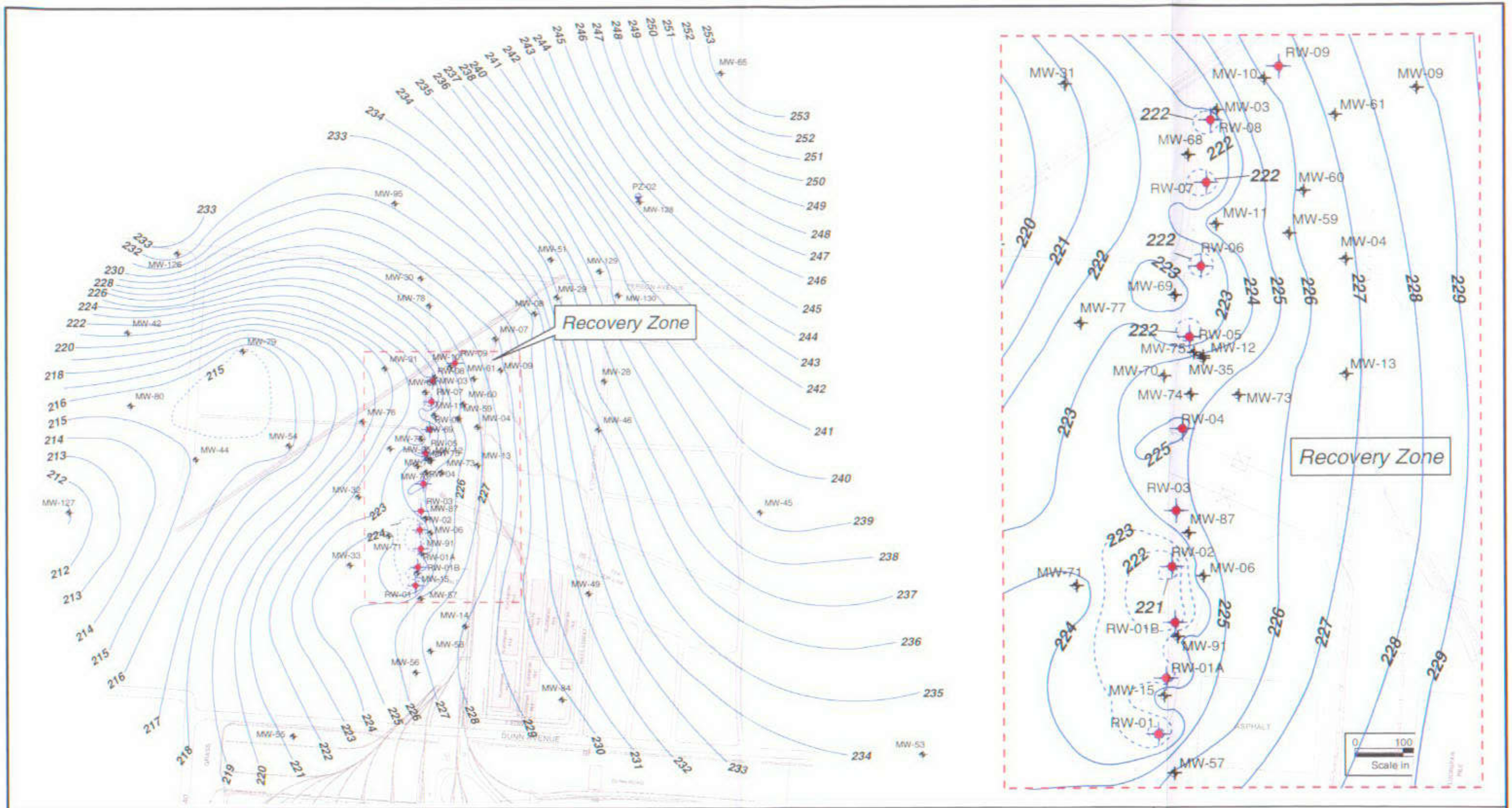
JE JACOBS

# Groundwater Monitoring and Recovery Well Locations

Memphis DDMT
Memphis, Tennessee

12/17/03 NZ /GIS/Memphis/Projects/Report_Oct_2003/Figure2 mxd

Figure 2




| | |
|---|---|
| SCALE: | 1:7200 |
| DESIGNED: | N. ZEHMS |
| DRAWN: | N. ZEHMS |
| CHECKED: | K. SMITH |
| APPROVED: | N. ZEHMS |
| DATE: | DECEMBER 18, 2003 |

Legend

- MW-71 — Monitoring Well
- PZ-02 — Piezometer
- RW-05 — Recovery Well
- 218 — Groundwater Elevation, 1-ft contour (ft msl)
- 218 — Groundwater Depression 1-ft contour (ft msl)

N

0 300 600
Scale in Feet

JACOBS

Potentiometric Surface Map
Y5S2 (October 29, 2003)
of Shallow Aquifer
Memphis DDMT
Memphis, Tennessee

12/19/03 NZ:/Memphis/Projects/Report_Oct_2003/Figure3_Y5S2.mxd

Figure 3

| MW-76 | |
|---|---|
| Tetrachloroethene | 2.29 |
| Trichloroethene | 33.80 |
| 1,1,2,2-Tetrachloroethane | 8.08 |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | 4.16 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-75 | |
|---|---|
| Tetrachloroethene | 2.10 |
| Trichloroethene | 12.40 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | 2.07 |
| 1,1-Dichloroethene | 23.90 |
| Carbon Tetrachloride | ND |

| MW-126 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-40 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-85 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-30 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-78 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-128 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | 1.14 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | 3.41 |
| Carbon Tetrachloride | ND |

| MW-51 | |
|---|---|
| Tetrachloroethene | 0.922 J |
| Trichloroethene | 6.84 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | 17.80 |
| Carbon Tetrachloride | ND |

| MW-130 | |
|---|---|
| Tetrachloroethene | 80.50 |
| Trichloroethene | 64.00 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | 679 J |
| 1,1-Dichloroethene | 42.20 |
| Carbon Tetrachloride | ND |

| MW-29 | |
|---|---|
| Tetrachloroethene | 27.10 |
| Trichloroethene | 29.60 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | 34.80 |
| Carbon Tetrachloride | ND |

| MW-42 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-77 | |
|---|---|
| Tetrachloroethene | 14.80 |
| Trichloroethene | 4550.00 |
| 1,1,2,2-Tetrachloroethane | 12800.00 |
| Chloroform | 4.90 |
| Cis 1,2-Dichloroethene | 189.00 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 0.864 J |

| MW-48 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-129 | |
|---|---|
| Tetrachloroethene | 26.10 |
| Trichloroethene | 13.40 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | 43.00 |
| Carbon Tetrachloride | ND |

| MW-08 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | 1.43 |
| Carbon Tetrachloride | ND |

| MW-31 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | 2.32 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | 8.36 |
| Carbon Tetrachloride | ND |

| MW-80 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-54 | |
|---|---|
| Tetrachloroethene | 10.10 |
| Trichloroethene | 1900.00 |
| 1,1,2,2-Tetrachloroethane | 1760.00 |
| Chloroform | 3.66 |
| Cis 1,2-Dichloroethene | 88.30 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 3.35 |

| MW-07 | |
|---|---|
| Tetrachloroethene | 42.80 |
| Trichloroethene | 27.60 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | 139.00 |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | 40.90 |
| Carbon Tetrachloride | 1.23 |

| MW-52 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | 13.40 |
| 1,1,2,2-Tetrachloroethene | 7.82 |
| Chloroform | 50.90 |
| Cis 1,2-Dichloroethene | 7.97 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| RW-09 | |
|---|---|
| Tetrachloroethene | 28.80 |
| Trichloroethene | 120.00 |
| 1,1,2,2-Tetrachloroethane | 90.30 |
| Chloroform | 68.70 |
| Cis 1,2-Dichloroethene | 47.00 |
| 1,1-Dichloroethane | 7.46 |
| Carbon Tetrachloride | 6.56 |

| RW-07 | |
|---|---|
| Tetrachloroethene | 6.36 |
| Trichloroethene | 102.00 |
| 1,1,2,2-Tetrachloroethene | 208.00 |
| Chloroform | 3.87 |
| Cis 1,2-Dichloroethene | 56.80 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-09 | |
|---|---|
| Tetrachloroethene | 1.89 |
| Trichloroethene | 3.32 |
| 1,1,2,2-Tetrachloroethene | ND |
| Chloroform | 27.20 |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 8.34 |

| MW-44 | Y5S2 |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | 0.821 J |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | 1.15 |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 1.96 |

| MW-67 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| RW-06 | |
|---|---|
| Tetrachloroethene | 37.10 |
| Trichloroethene | 40.70 |
| 1,1,2,2-Tetrachloroethene | ND |
| Chloroform | 2.15 |
| Cis 1,2-Dichloroethene | 11.20 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| RW-08 | |
|---|---|
| Tetrachloroethene | 11.00 |
| Trichloroethene | 232.00 |
| 1,1,2,2-Tetrachloroethene | 223.00 |
| Chloroform | 18.70 |
| Cis 1,2-Dichloroethene | 116.00 |
| 1,1-Dichloroethene | 14.20 |
| Carbon Tetrachloride | 1.79 |

| MW-43 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-127 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-37 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-71 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | 17.40 |
| 1,1,2,2-Tetrachloroethane | 27.00 |
| Chloroform | 88.80 |
| Cis 1,2-Dichloroethene | 1.59 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 18.30 |

| MW-70 | |
|---|---|
| Tetrachloroethene | 17.30 |
| Trichloroethene | 2830.00 |
| 1,1,2,2-Tetrachloroethane | 8270.00 |
| Chloroform | 2.50 |
| Cis 1,2-Dichloroethene | 112.00 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 0.644 J |

| RW-05 | |
|---|---|
| Tetrachloroethene | 7.47 |
| Trichloroethene | 193.00 |
| 1,1,2,2-Tetrachloroethene | 14.90 |
| Chloroform | 1.04 |
| Cis 1,2-Dichloroethene | 7.08 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| RW-04 | |
|---|---|
| Tetrachloroethene | NP |
| Trichloroethene | NP |
| 1,1,2,2-Tetrachloroethene | NP |
| Chloroform | NP |
| Cis 1,2-Dichloroethene | NP |
| 1,1-Dichloroethene | NP |
| Carbon Tetrachloride | NP |

| MW-33 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| RW-1B | |
|---|---|
| Tetrachloroethene | 2.90 |
| Trichloroethene | 42.40 |
| 1,1,2,2-Tetrachloroethane | 3.75 |
| Chloroform | 40.80 |
| Cis 1,2-Dichloroethene | 14.50 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 19.50 |

| RW-02 | |
|---|---|
| Tetrachloroethene | 1.56 |
| Trichloroethene | 83.40 |
| 1,1,2,2-Tetrachloroethene | 95.90 |
| Chloroform | 11.40 |
| Cis 1,2-Dichloroethene | 78.60 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 14.00 |

| RW-03 | |
|---|---|
| Tetrachloroethene | 1.10 |
| Trichloroethene | 86.40 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | 2.06 |
| Cis 1,2-Dichloroethene | 9.04 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 10.90 |

| RW-1A | |
|---|---|
| Tetrachloroethene | 11.30 |
| Trichloroethene | 286.00 |
| 1,1,2,2-Tetrachloroethane | 169.00 |
| Chloroform | 754.00 |
| Cis 1,2-Dichloroethene | 11.10 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 33.60 |

| RW-01 | |
|---|---|
| Tetrachloroethene | 9.36 |
| Trichloroethene | 164.00 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | 286.00 |
| Cis 1,2-Dichloroethene | 4.30 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 49.10 |

| MW-57 | |
|---|---|
| Tetrachloroethene | 6.32 |
| Trichloroethene | 71.60 |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | 18.20 |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 33.30 |

| MW-34 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | 3.00 |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-56 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | 26.50 |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-58 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

| MW-36 | |
|---|---|
| Tetrachloroethene | ND |
| Trichloroethene | ND |
| 1,1,2,2-Tetrachloroethane | ND |
| Chloroform | ND |
| Cis 1,2-Dichloroethene | ND |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | ND |

MW-76 MW-75 MW-126 MW-40 MW-85 MW-30 MW-78 MW-128 MW-51 MW-130 MW-29 MW-42 MW-77 MW-48 MW-95 MW-129 MW-08 MW-31 MW-80 MW-54 MW-79 MW-07 MW-52 RW-09 RW-07 MW-44 MW-67 MW-06 MW-69 MW-77 MW-05 MW-70 MW-32 MW-04 MW-37 MW-03 MW-127 MW-02 MW-43 MW-71 RW-01B MW-33 RW-01A RW-01 MW-57 MW-58 MW-56 MW-34 MW-36 RW-1B RW-02 RW-03 RW-1A RW-01 MW-57 MW-34 MW-56 MW-58 MW-36

PERSON AVENUE

LENOX AVENUE

| | |
|---|---|
| SCALE | 1:7200 |
| DESIGNED | N. ZEHMS |
| DRAWN | N. ZEHMS |
| CHECKED | K. SMITH |
| APPROVED | N. ZEHMS |
| DATE | JANUARY 6, 2003 |

## Legend

MW-71 Monitoring Well

PZ-02 Piezometer

RW-05 Recovery Well

| RW-02 | |
|---|---|
| Tetrachloroethene | 1.48 |
| Trichloroethene | 64.6 |
| 1,1,2,2-Tetrachloroethane | 94.7 |
| Chloroform | 23.1 |
| Cis 1,2-Dichloroethene | 88.1 |
| 1,1-Dichloroethene | ND |
| Carbon Tetrachloride | 21.6 |

Organic Compound

Lab Result

Lab Result Exceeding MCL

NP = Not Performed

N

0 300 600

Scale in Feet

JE JACOBS

Selected Volatile Organic Compound Concentrations in Groundwater, Y5S2 Sampling Event, October 2003

Memphis DDMT

Memphis, Tennessee

31/08/04 NZ /GIS/Memphis/Projects/Report_Oct_2003/Figure4.mxd

Figure 4

**Figure 5**
**Contaminant Concentration vs Time**
**for Well MW-31**

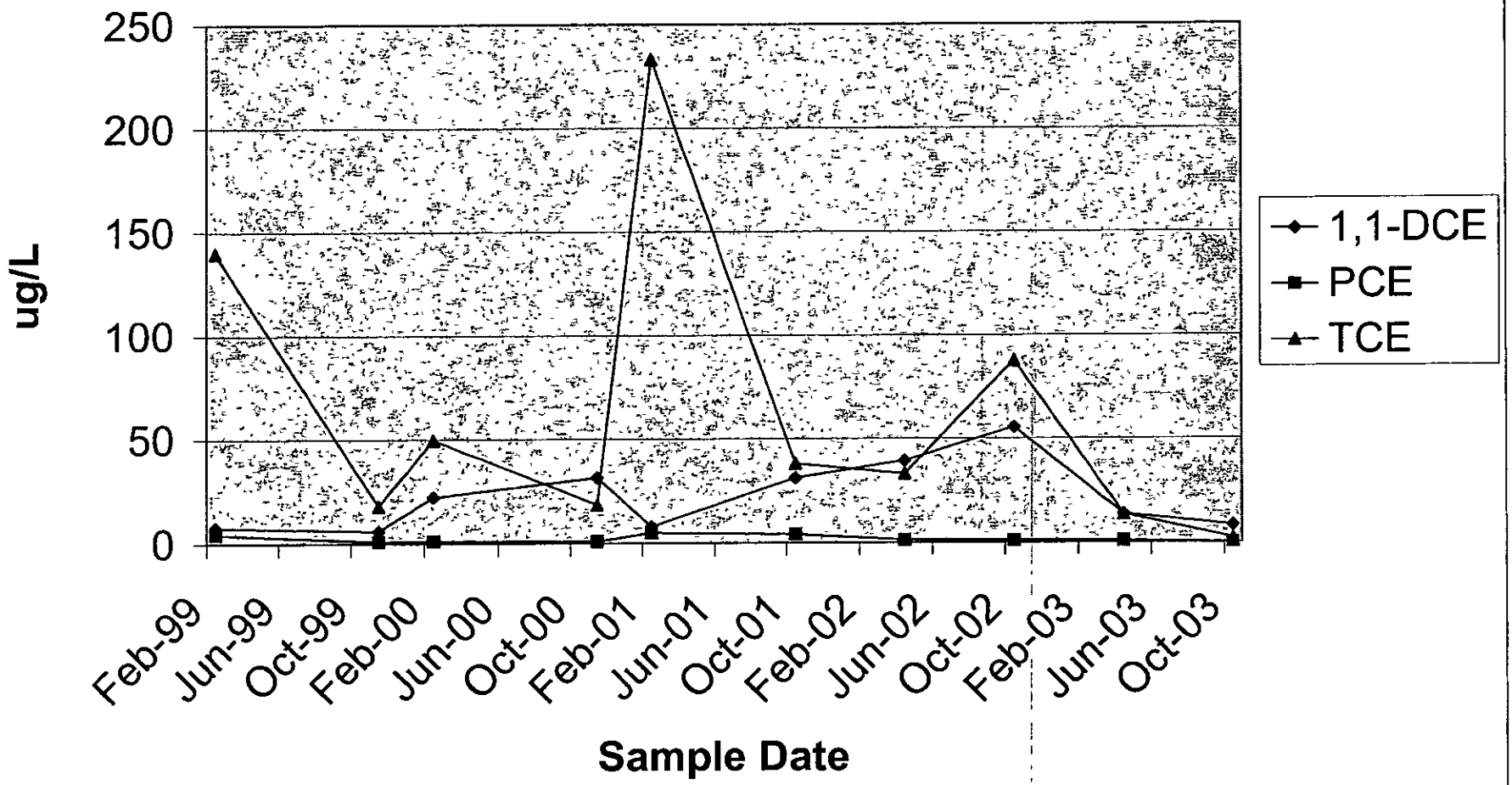
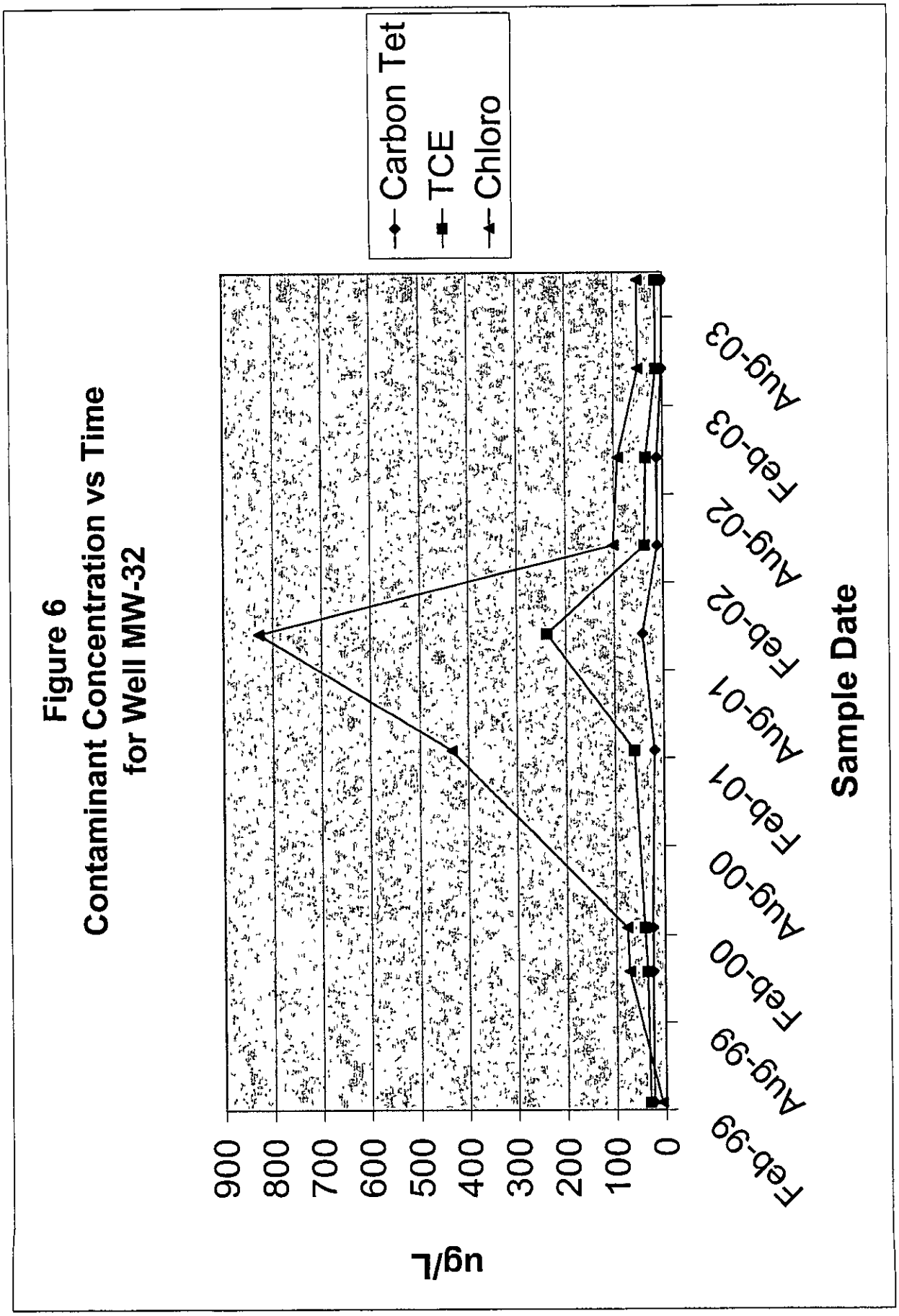


**Figure 6**
**Contaminant Concentration vs Time**
**for Well MW-32**



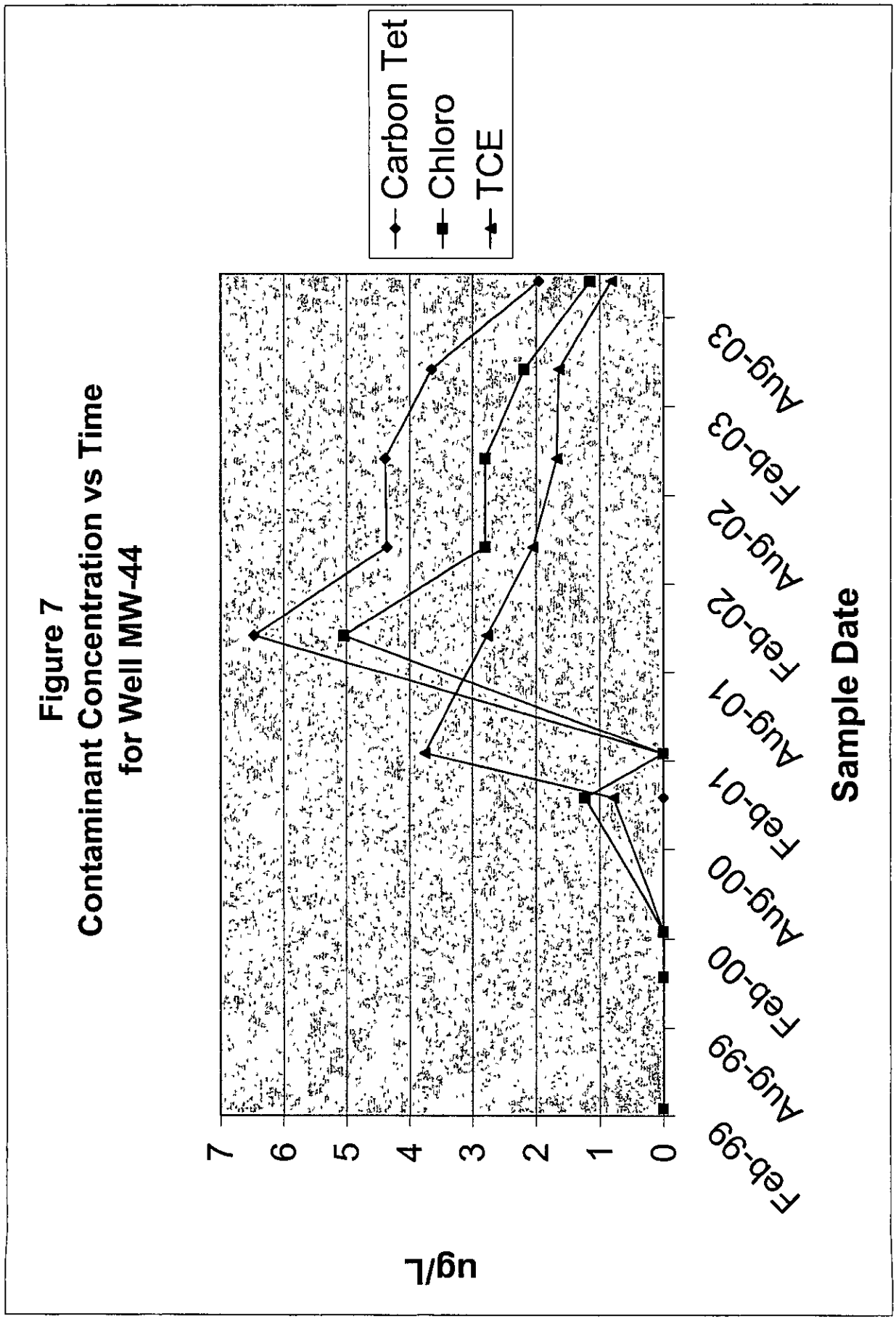



**Figure 7**
**Contaminant Concentration vs Time**
**for Well MW-44**

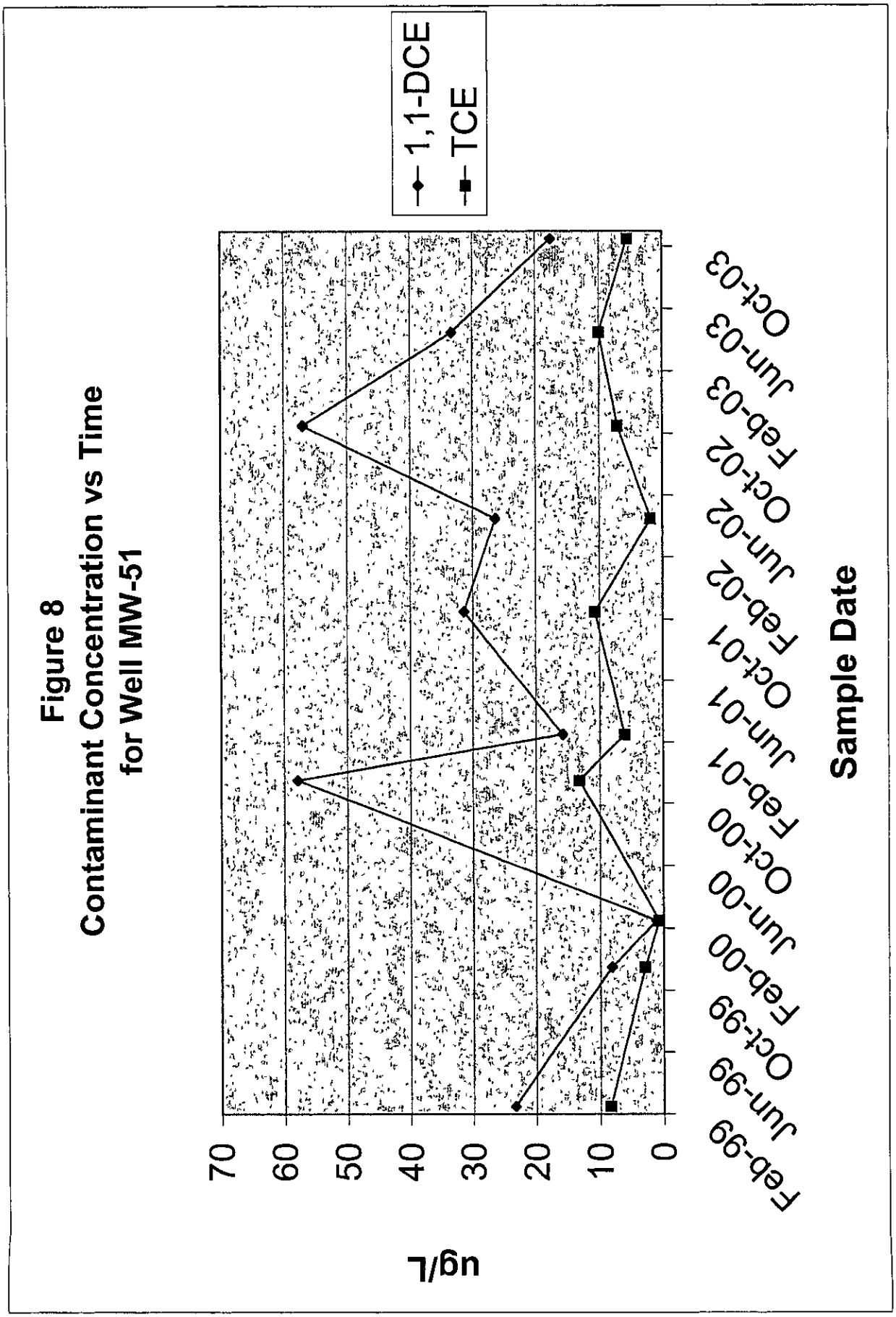



**Figure 8**
**Contaminant Concentration vs Time**
**for Well MW-51**

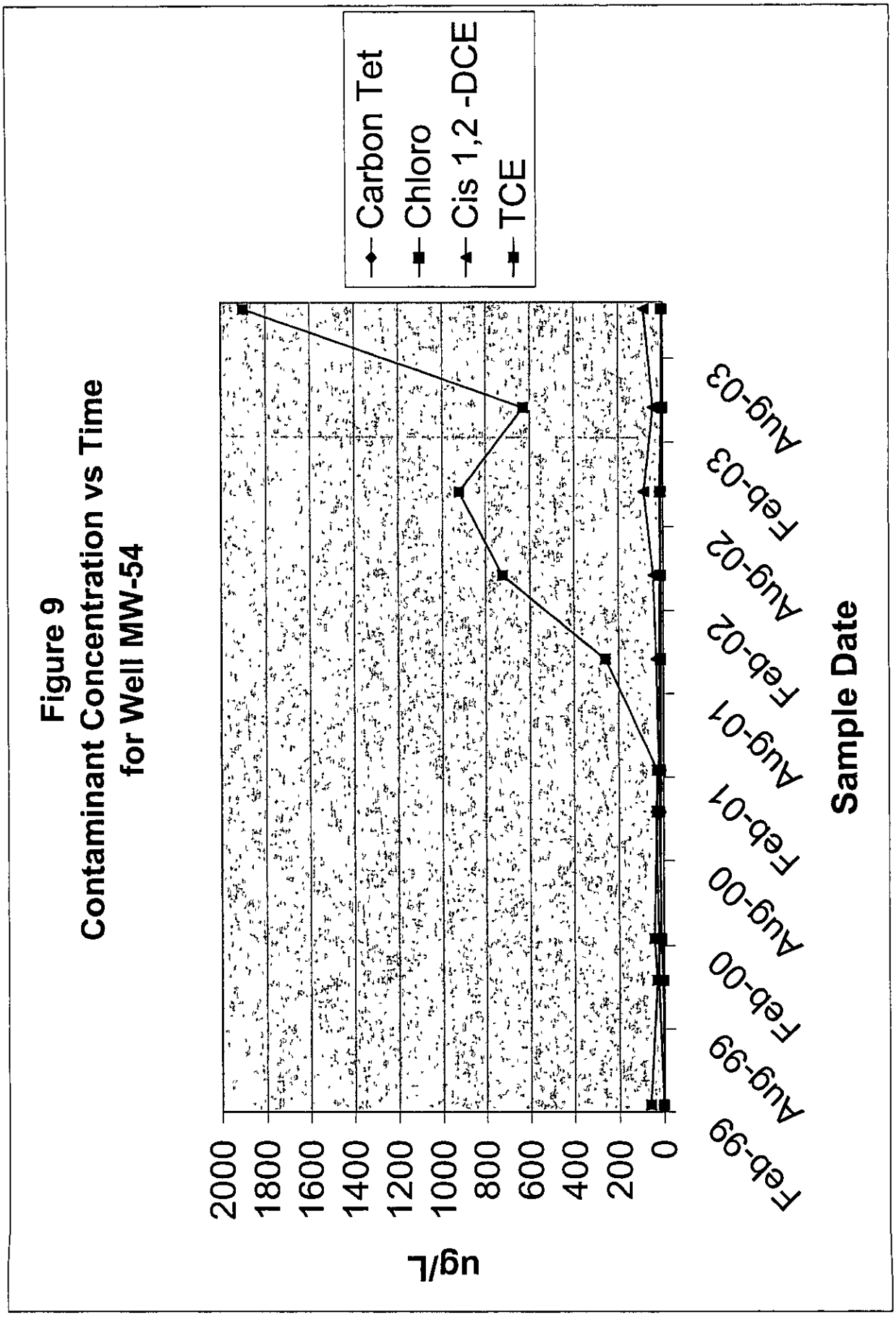



**Figure 9**
**Contaminant Concentration vs Time**
**for Well MW-54**

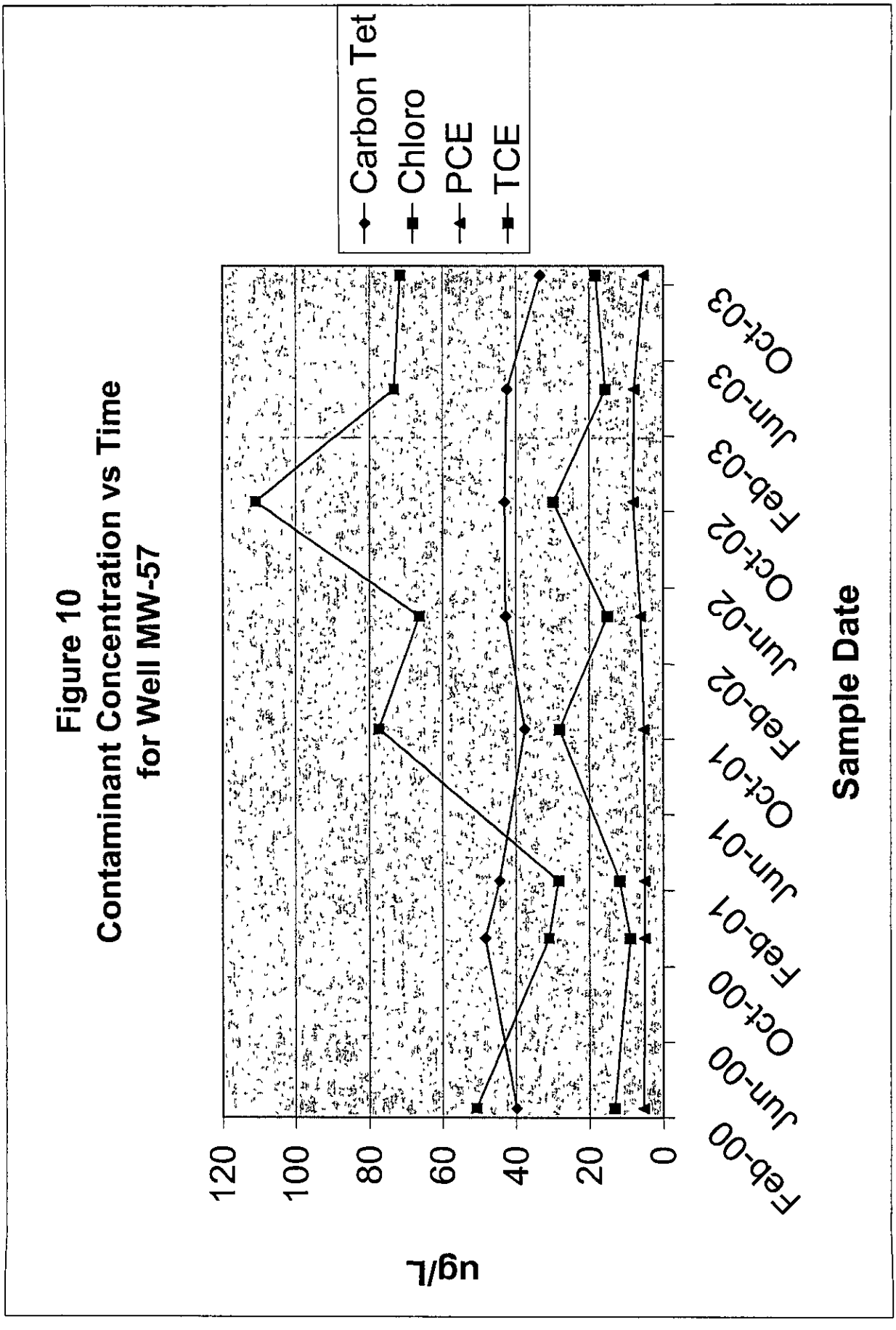



**Figure 10**
**Contaminant Concentration vs Time**
**for Well MW-57**

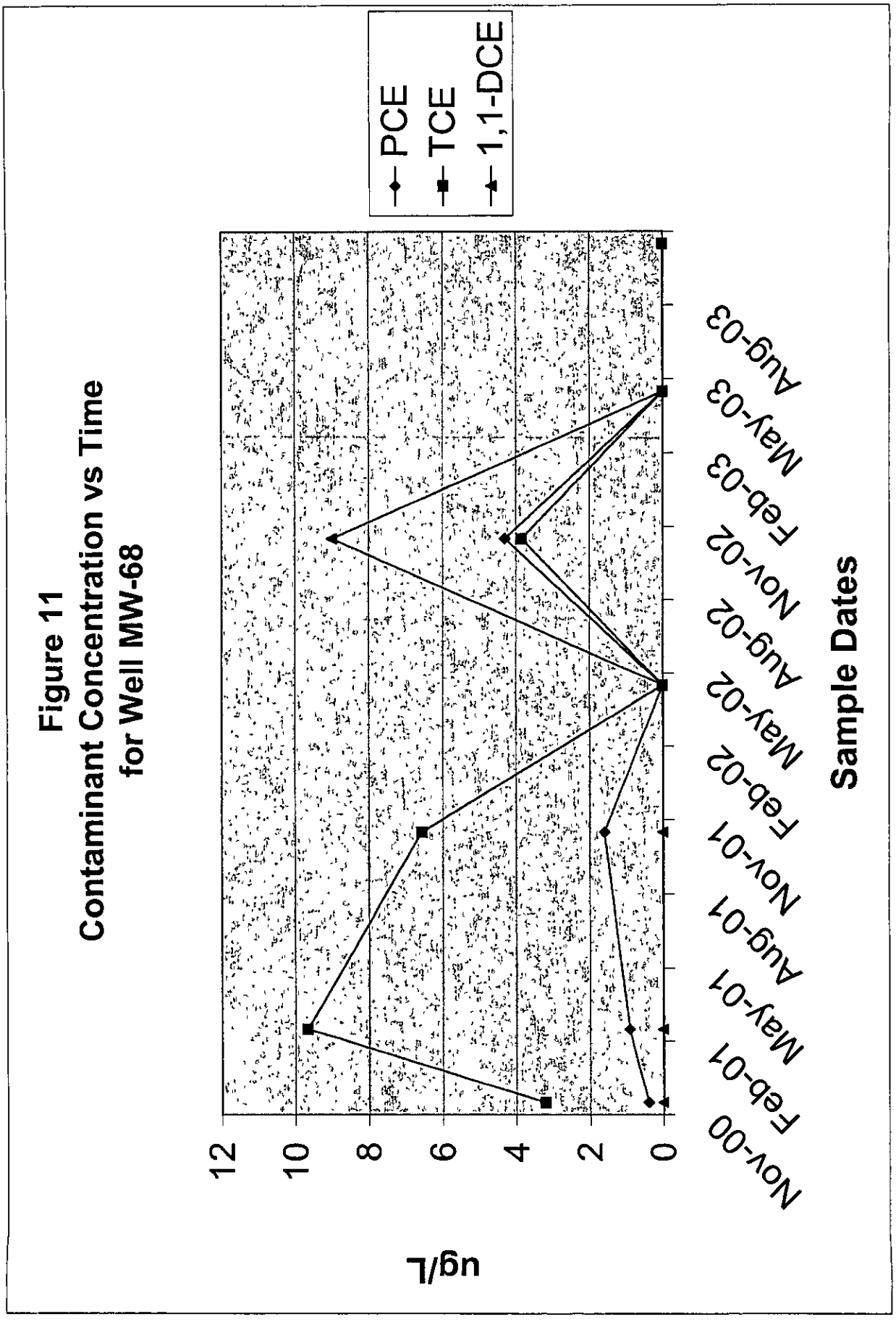
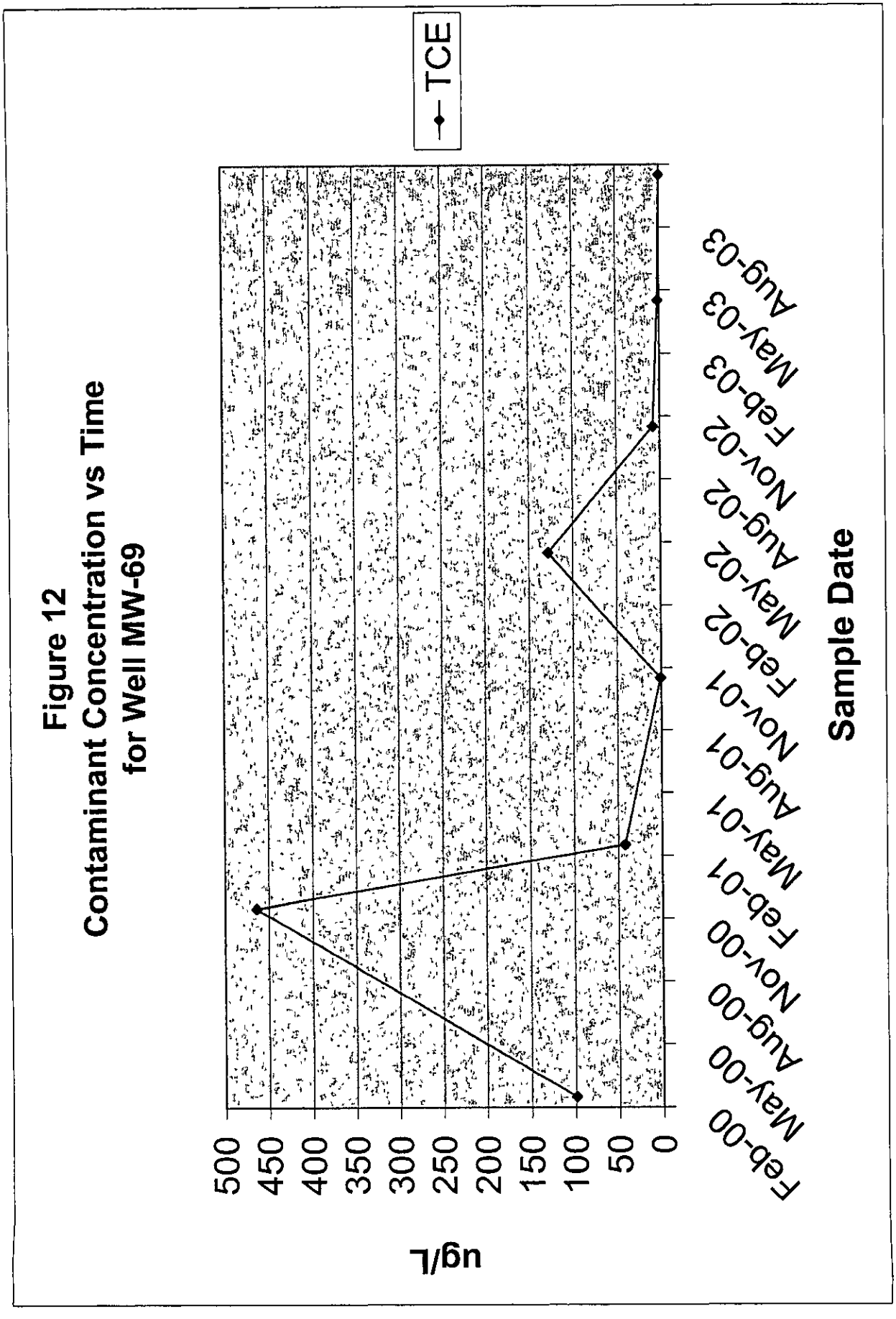



**Figure 11**
**Contaminant Concentration vs Time**
**for Well MW-68**


Figure 12
Contaminant Concentration vs Time
for Well MW-69
TCE
ug/L
500
450
400
350
300
250
200
150
100
50
0
Feb-00
May-00
Aug-00
Nov-00
Feb-01
May-01
Aug-01
Nov-01
Feb-02
May-02
Aug-02
Nov-02
Feb-03
May-03
Aug-03
Sample Date

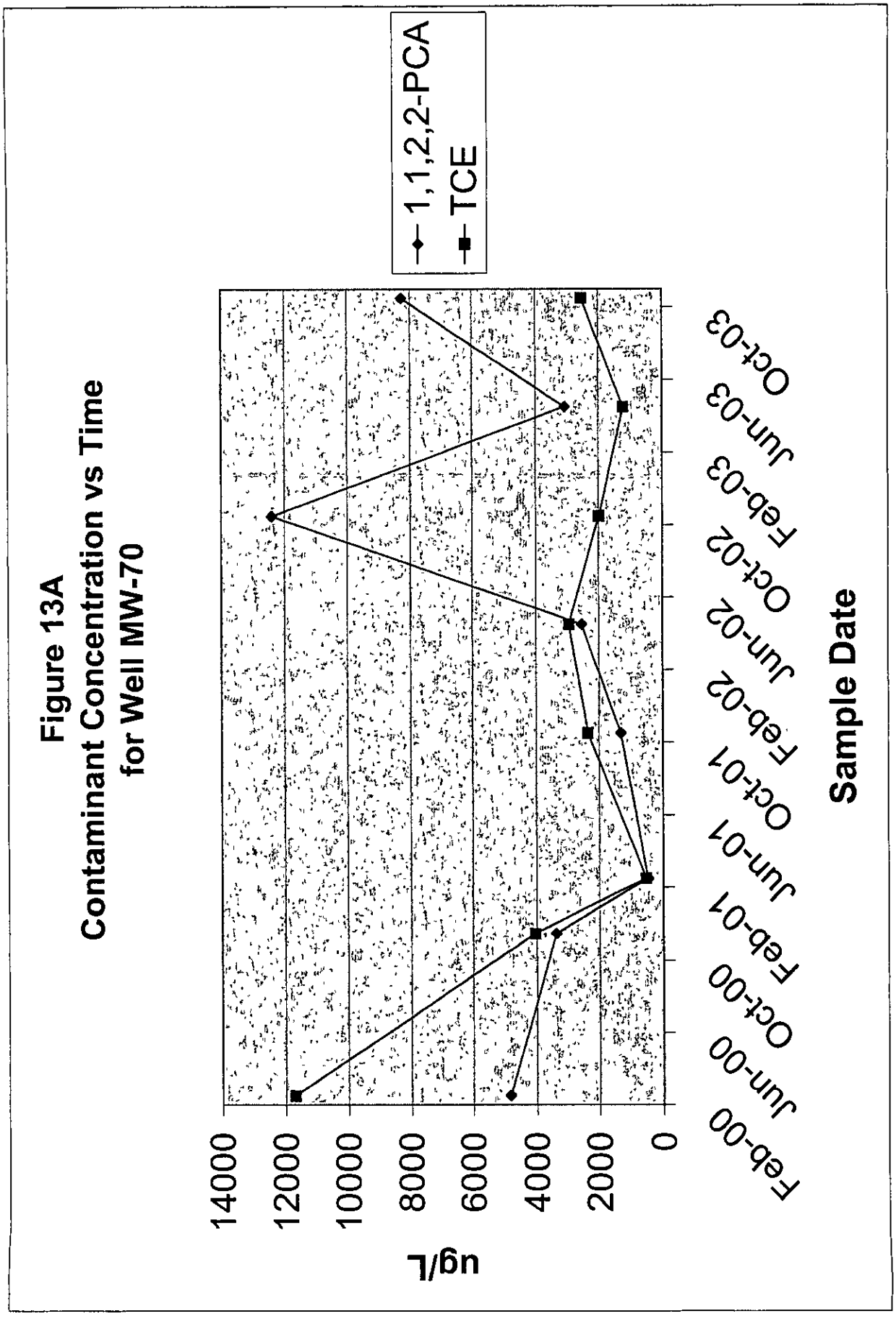
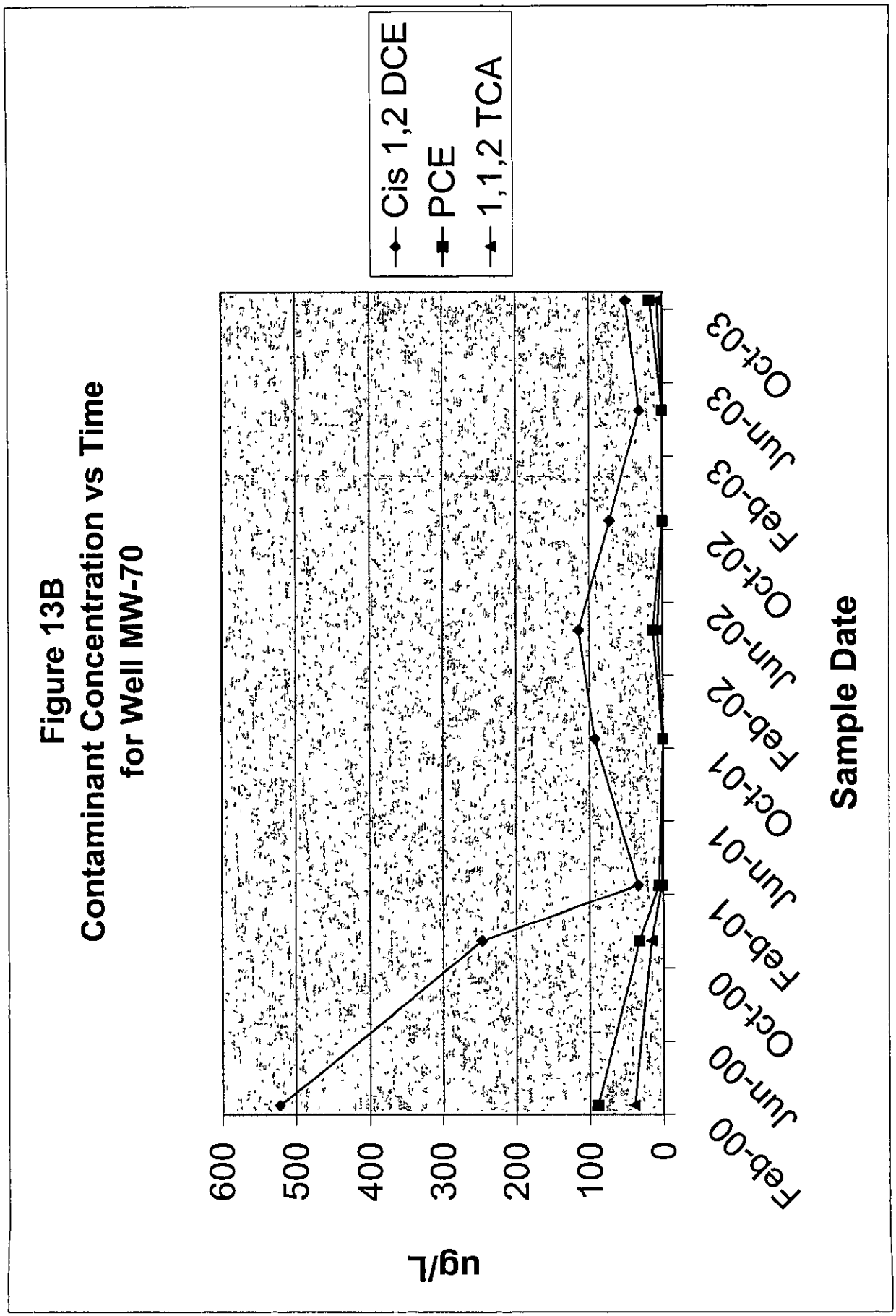
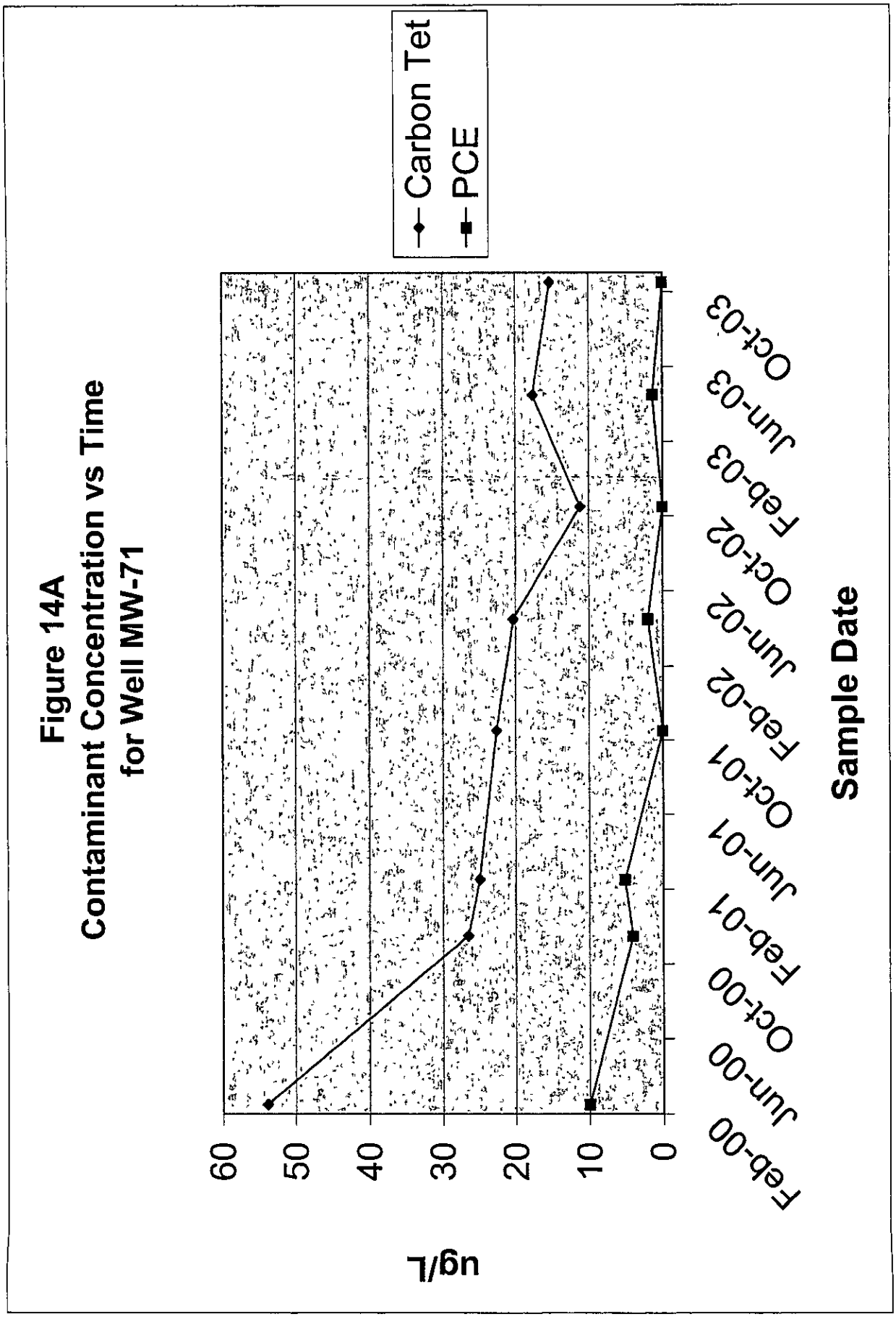



**Figure 13A**
**Contaminant Concentration vs Time**
**for Well MW-70**

**Figure 13B**
**Contaminant Concentration vs Time**
**for Well MW-70**




Figure 14A
Contaminant Concentration vs Time
for Well MW-71
Carbon Tet
PCE
ug/L
60
50
40
30
20
10
0
Feb-00
Jun-00
Oct-00
Feb-01
Jun-01
Oct-01
Feb-02
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Sample Date

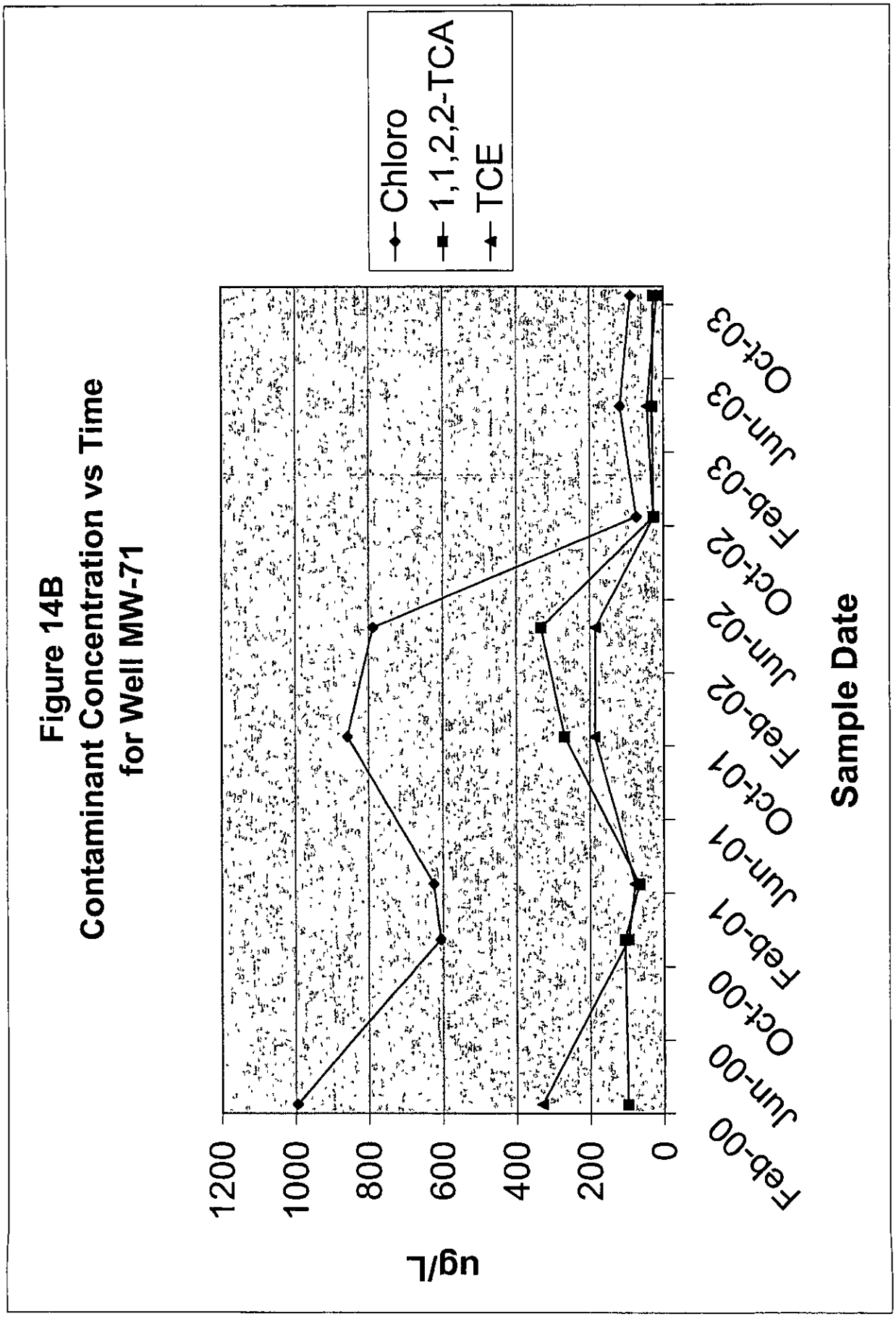
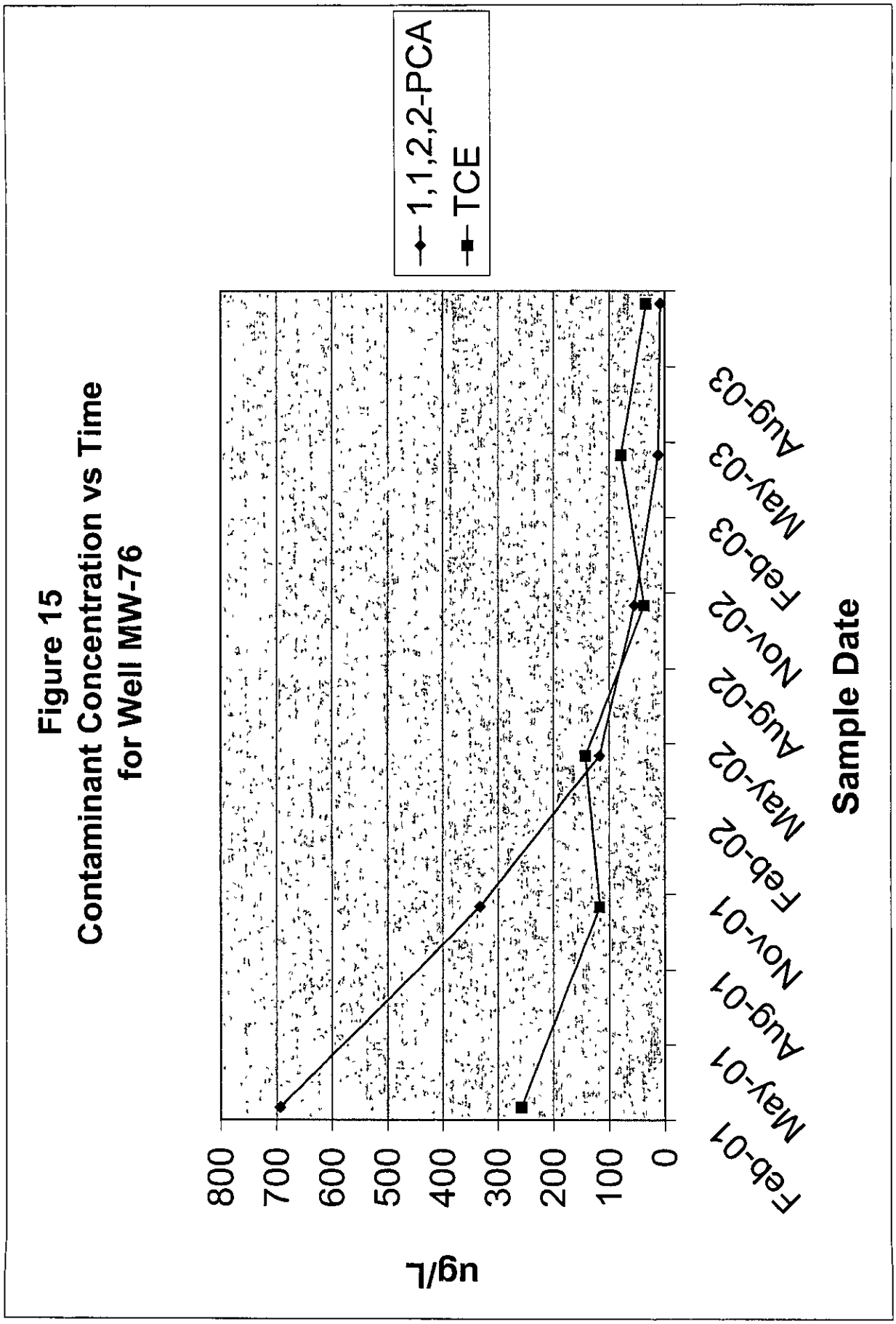



**Figure 14B**
**Contaminant Concentration vs Time**
**for Well MW-71**

**Figure 15**
**Contaminant Concentration vs Time**
**for Well MW-76**



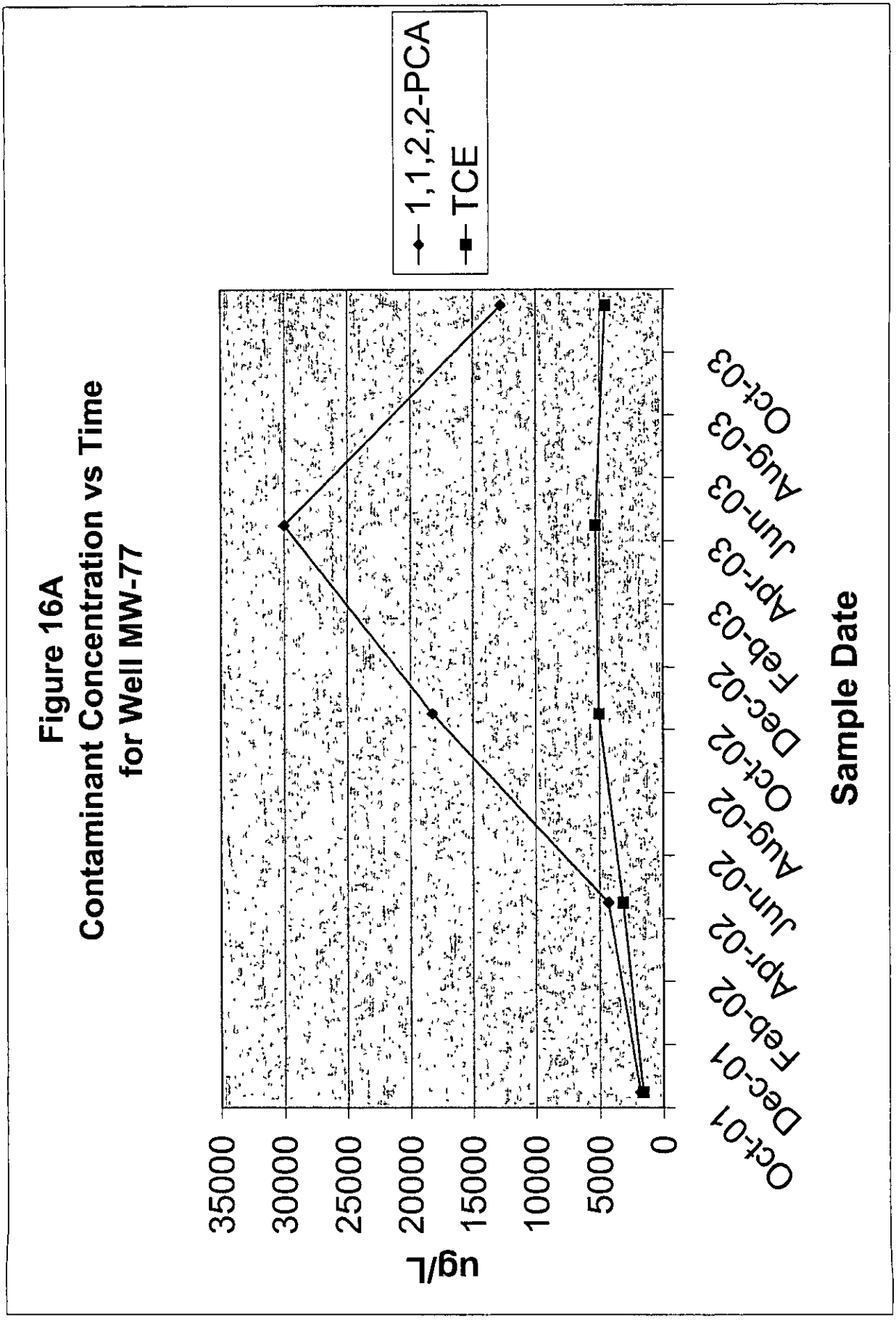



**Figure 16A**
**Contaminant Concentration vs Time**
**for Well MW-77**

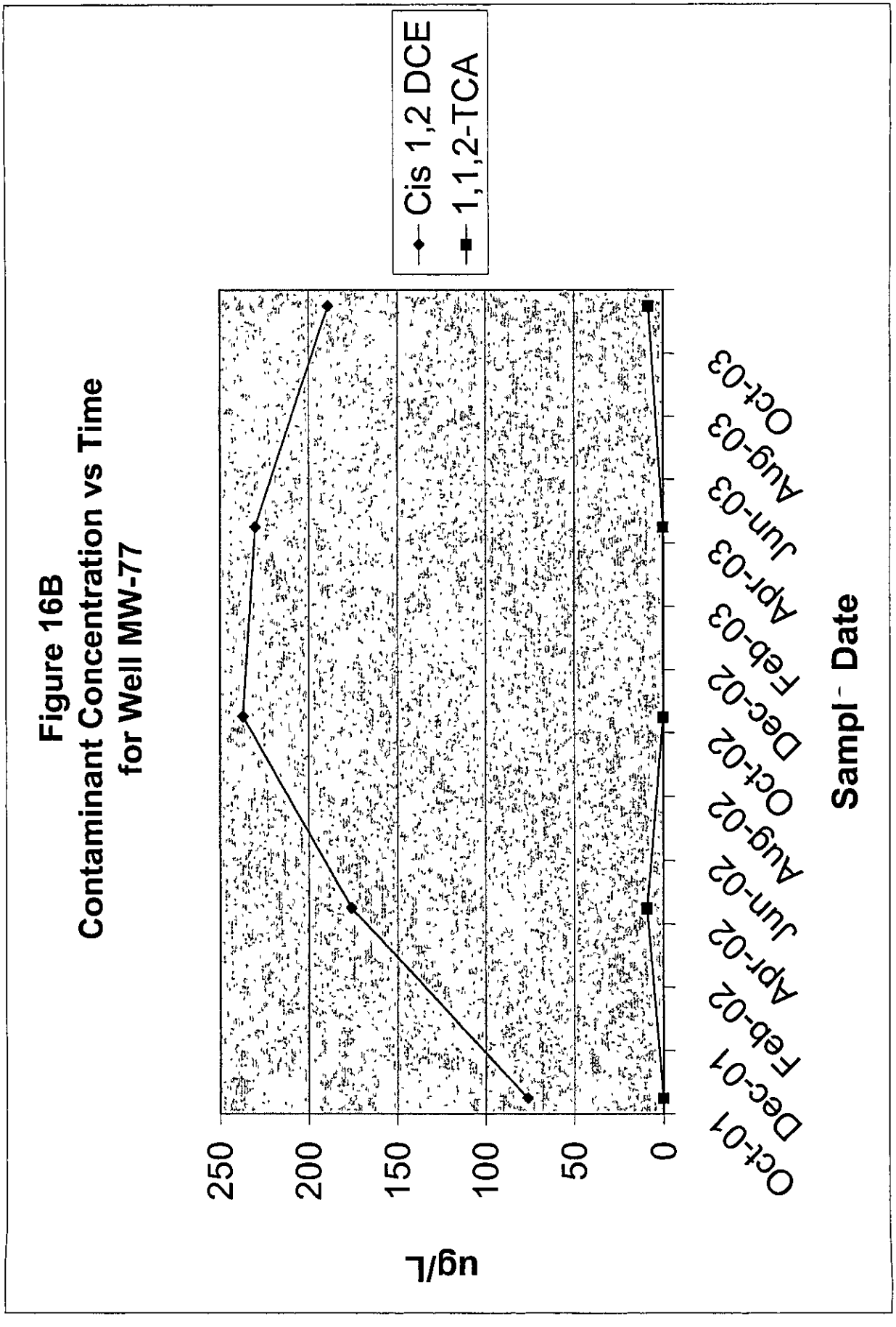
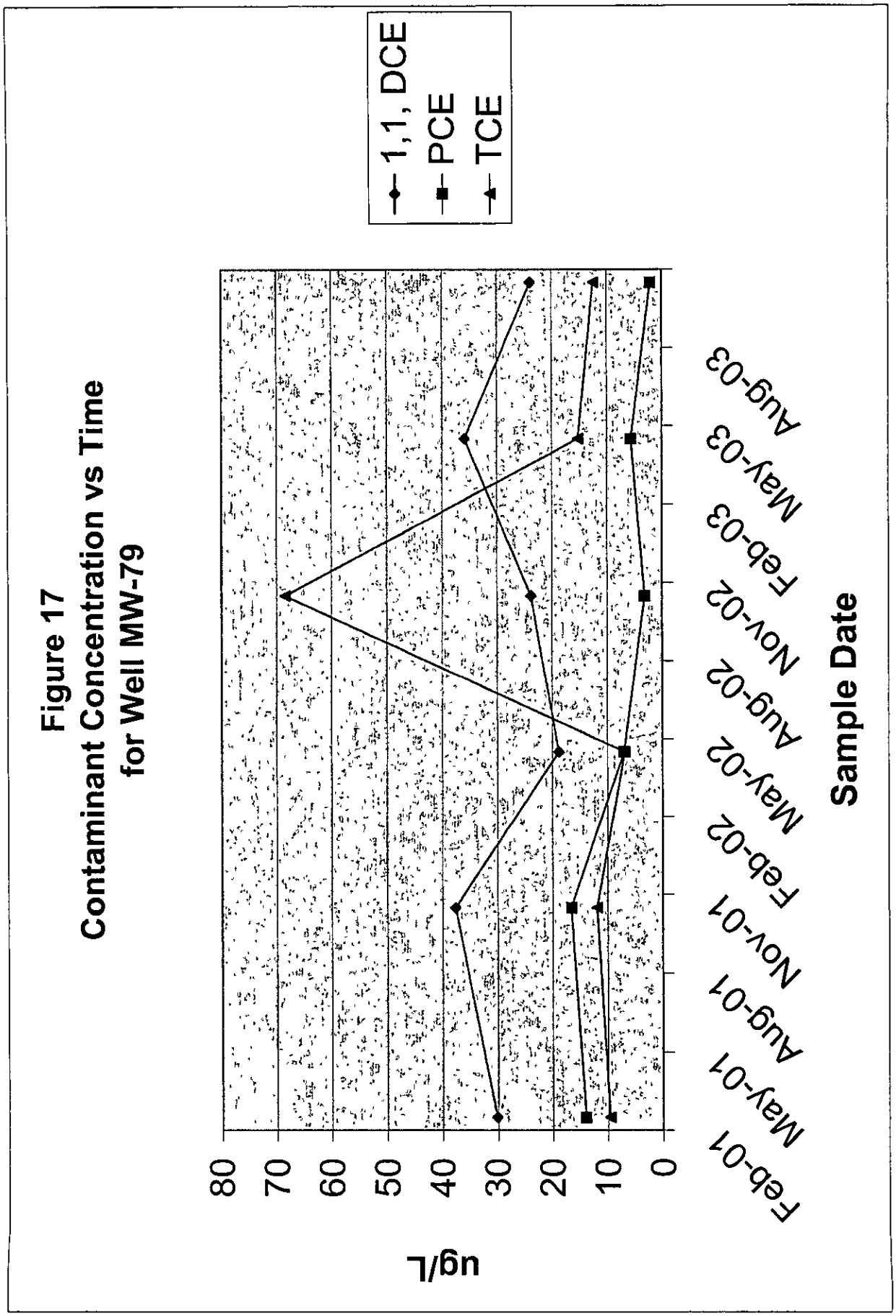



**Figure 16B**
**Contaminant Concentration vs Time**
**for Well MW-77**


Figure 17
Contaminant Concentration vs Time
for Well MW-79
1,1, DCE
PCE
TCE
ug/L
0
10
20
30
40
50
60
70
80
Feb-01
May-01
Aug-01
Nov-01
Feb-02
May-02
Aug-02
Nov-02
Feb-03
May-03
Aug-03
Sample Date

# APPENDIX A

# GROUNDWATER MEASUREMENT DATA

| Well ID | MW-2 | | MW-3 | | MW-4 | | MW-5 | | MW-6 | | MW-7 | | MW-8 | | MW-9 | | MW-10 | | MW-11 | | MW-12 | | MW-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOC Elevation | 292 04 | | 292 35 | | 301 61 | | 304 64 | | 289 11 | | 295 1 | | 292.59 | | 304 32 | | 288 79 | | 299 47 | | 301.3 | | 300 01 | |
| Total Depth (ft) | 35 00 | | 77 00 | | 81 80 | | 79.25 | | 70.24 | | 77 20 | | 69 00 | | 82.50 | | 71 00 | | 85 00 | | 87 00 | | 83 00 | |
| Location | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | |
| DATE | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev |
| 16-Jan-01 | DRY | --- | 68 31 | 224 04 | 75 94 | 225 67 | Dry | --- | 63 31 | 225 80 | 68.24 | 226.86 | 64 19 | 228 40 | 77 46 | 226.86 | 63 86 | 224 93 | 75.25 | 224.22 | 76.56 | 224 74 | NM | NM |
| 31-Jan-01 | DRY | --- | 70 11 | 222.24 | 76 04 | 225 57 | Dry | --- | 63.29 | 225 82 | 68 66 | 226 44 | 64 37 | 228.22 | 77 70 | 226 62 | 65 14 | 223 65 | 75 69 | 223 78 | 76 81 | 224 69 | NM | NM |
| 20-Feb-01 | NM | NM | 69 94 | 222 41 | 76 04 | 225.57 | Dry | — | 63 13 | 225 98 | 68.56 | 226.54 | 64 34 | 228.25 | 77 64 | 226 68 | 65 01 | 223 78 | 75 61 | 223 88 | 76 67 | 224 63 | 73 80 | 226.21 |
| 2-Mar-01 | DRY | Dry | 70 00 | 222 35 | 76 00 | 225 61 | | | 63 04 | 226 07 | 69 00 | 226 10 | 64.25 | 228 34 | 77 06 | 227.26 | 65 00 | 223 79 | | | 76 08 | 225 22 | 73 819 | 226 19 |
| 3-Mar-01 | DRY | Dry | 70 00 | 222.35 | 75 99 | 225 62 | | | 63 60 | 225.51 | 68 05 | 227 05 | 64 30 | 228 29 | 77 00 | 227.32 | 65 10 | 223 69 | | | 76 15 | 225 15 | 73 768 | 226 24 |
| 4-Mar-01 | — | — | 70 25 | 222 10 | 74 15 | 227 46 | | | 63 81 | 225 30 | 69 68 | 225 42 | 64.28 | 228 31 | 77 06 | 227.26 | — | — | | | 75 21 | 226 09 | 73 973 | 226 04 |
| 5-Mar-01 | DRY | Dry | --- | — | 76 19 | 225 42 | | | 63 92 | 225 19 | 68 68 | 226 42 | 64 35 | 228.24 | 77 65 | 226 67 | --- | --- | | | 76 74 | 224.56 | 73 992 | 226 02 |
| 6-Mar-01 | DRY | Dry | 70.20 | 222 15 | 76 17 | 225 44 | | | 63 91 | 225.20 | 68 63 | 226 47 | 64 38 | 228 21 | 77 80 | 226.52 | 65.34 | 223 45 | | | 76 81 | 224 49 | 73 909 | 226 10 |
| 7-Mar-01 | DRY | Dry | 70 16 | 222 19 | 76 12 | 225 49 | | | 63 85 | 225 26 | 68 62 | 226 48 | 64.24 | 228 35 | 77 76 | 226.56 | 65 31 | 223 48 | | | 76 81 | 224 49 | 73 877 | 226 13 |
| 8-Mar-01 | DRY | Dry | 70 09 | 222.26 | 76 11 | 225.50 | | | 63 83 | 225.28 | 68.54 | 226.56 | 64.26 | 228 33 | 77 69 | 226 63 | 65 03 | 223 76 | | | 76 80 | 224.50 | 73 856 | 226 15 |
| 9-Mar-01 | — | — | --- | — | — | --- | | | --- | — | --- | --- | — | --- | — | — | --- | — | | | --- | — | 73 913 | 226 10 |
| 10-Mar-01 | 31 52 | 260.52 | 70 19 | 222 16 | 76.24 | 225 37 | | | 63 94 | 225 17 | 68 72 | 226.38 | 64 35 | 228 24 | 77.57 | 226 75 | 65.33 | 223 46 | | | 76 94 | 224 36 | 73 877 | 226 13 |
| 11-Mar-01 | 31 00 | 261 04 | 70 18 | 222 17 | 76.22 | 225 39 | | | 63 92 | 225 19 | 68 71 | 226.39 | 64 33 | 228.26 | 77.56 | 226 76 | 65 30 | 223 49 | | | 76 90 | 224 40 | 73 923 | 226 09 |
| 12-Mar-01 | — | — | 70 05 | 222 30 | 76 15 | 225 46 | | | 63 90 | 225.21 | 68 57 | 226.53 | 64.20 | 228 39 | 77.57 | 226 75 | --- | — | | | 76 13 | 225 17 | 73 837 | 226 17 |
| 13-Mar-01 | 31.52 | 260.52 | 70 22 | 222 13 | 76 80 | 224 81 | | | 63 93 | 225 18 | 68 72 | 226.38 | 64 35 | 228.24 | 77.57 | 226 75 | 65 31 | 223 48 | | | 76 94 | 224 36 | 74 01 | 226 00 |
| 14-Mar-01 | — | — | — | — | --- | — | | | — | --- | — | — | --- | — | --- | --- | — | — | | | | | — | — | 73 95 | 226 06 |
| 15-Mar-01 | 32.50 | 259.54 | 69 99 | 222 35 | 76 11 | 225.50 | | | 63 95 | 225 16 | 68 45 | 226 65 | 64 03 | 228.56 | 77 69 | 226 63 | --- | — | | | 76 06 | 225 24 | 73.874 | 226 14 |
| 16-Mar-01 | 30 58 | 261 46 | 70 48 | 221 87 | 76 35 | 225.26 | | | 63 30 | 225 81 | 68 73 | 226.37 | 66.40 | 226 19 | 77 74 | 226.58 | --- | --- | | | 77 03 | 224.27 | 74 112 | 225 90 |
| 29-Mar-01 | — | --- | 70 34 | 222 01 | 76 40 | 225.21 | Dry | Dry | 63 33 | 225 78 | 68 64 | 226 46 | 64.25 | 228 34 | 77 71 | 226 61 | — | — | 76.27 | 223 20 | 77 25 | 224 05 | 74 029 | 225 98 |
| 19-Apr-01 | | | 70 38 | 221 97 | 76 50 | 225 11 | Dry | Dry | 64 41 | 224 70 | 68 61 | 226 49 | 64.20 | 228 39 | 77 85 | 226 47 | 65 45 | 223.34 | 76.37 | 223 10 | 77 40 | 223 90 | 74 17 | 225 84 |
| 30-Apr-01 | | | 70 45 | 221 90 | 76.50 | 225 11 | Dry | Dry | 64 49 | 224 62 | 68 60 | 226 50 | 64 17 | 228 42 | 77 84 | 226 48 | 65 42 | 223 37 | 76 41 | 223 06 | 77 41 | 223 89 | 74 25 | 225 76 |
| 15-May-01 | | | 70 39 | 221 96 | 76 50 | 225 11 | Dry | | 64 40 | 224 71 | 68.57 | 226.53 | 64 10 | 228 49 | 77 81 | 226.51 | 65 45 | 223 34 | 76 36 | 223 11 | 77 47 | 223 83 | | |
| 31-May-01 | | | 69.20 | 223 15 | 75 42 | 225 19 | Dr y | | 64 00 | 225 11 | 68 39 | 226 71 | 64 08 | 228.51 | 77 71 | 226 61 | 65 10 | 223 69 | 76 31 | 223 16 | 76 66 | 224 64 | | |
| 15-Jun-01 | | | 70 43 | 221 92 | 76 51 | 225 10 | Dry | | 64 72 | 224 39 | 68 44 | 226 66 | 64.03 | 228.56 | 77 72 | 226 60 | 65 38 | 223 41 | 76.57 | 222 90 | 77 75 | 223 55 | | |
| 29-Jun-01 | | | 70 54 | 221.81 | | | Dry | | 64 78 | 224.33 | 68.50 | 226 60 | 64 01 | 228.58 | 57 59 | 246 73 | 65 48 | 223 31 | 76 67 | 222 80 | 77 86 | 223 44 | | |
| 18-Jul-01 | | | 70 60 | 221 75 | | | Dry | | 65 00 | 224 11 | 68.51 | 226 59 | 64 02 | 228.57 | 77 75 | 226.57 | 65 50 | 223.29 | 76 71 | 222 76 | 77 95 | 223 35 | | |
| 31-Jul-01 | | | 70 61 | 221 74 | 76 69 | 224 93 | Dry | | 65 02 | 224 09 | 68.56 | 226.54 | 64 04 | 228.55 | 77 79 | 226.53 | 65.59 | 223.29 | 76 80 | 222 67 | 78 00 | 223 30 | 74.804 | 225.21 |
| 15-Aug-01 | | | 70 64 | 221 71 | 76 713 | 224 90 | Dry | | 65 00 | 224 11 | 68.56 | 226.54 | 64.03 | 228 56 | 77 85 | 226 47 | 65 61 | 223 18 | 76 80 | 222 67 | 78 00 | 223 30 | 74 839 | 225 17 |
| 31-Aug-01 | | | 70 71 | 221 64 | | | Dry | | 65 06 | 224 05 | 68 60 | 226.50 | 64 11 | 228 48 | 77 89 | 226 43 | 65.59 | 223.20 | 76 84 | 222 63 | 78 06 | 223 24 | | |
| 18-Oct-01 | | | 70 77 | 221 58 | 76 772 | 224 84 | Dry | — | 65.20 | 223 91 | 68 08 | 227 02 | 64 00 | 228 59 | 78 02 | 226 30 | 65 71 | 223 08 | 76 89 | 222 58 | 78 13 | 223 17 | 74 897 | 225 11 |
| 1-Nov-01 | | | 70 69 | 221 66 | 76 772 | 224 84 | Dry | | 65 11 | 224 00 | 68.39 | 226 71 | 63 73 | 228 86 | 77 89 | 226.43 | 65 61 | 223 18 | 76 81 | 222 66 | 77 19 | 224 11 | 74 92 | 225 09 |
| 16-Nov-01 | | | 70 77 | 221 58 | 76 808 | 224 80 | Dry | | 65.26 | 223 85 | 68 42 | 226 68 | 63 70 | 228 89 | 77 81 | 226 51 | 65 58 | 223.21 | 76 89 | 222.58 | 78 14 | 223 16 | 74 973 | 225 04 |
| 3-Dec-01 | | | 70 65 | 221 70 | 76 76 | 224 85 | Dry | | 65.20 | 223 91 | 68 31 | 226 79 | 63 67 | 228 92 | 77 78 | 226 54 | 65.52 | 223.27 | 76 78 | 222 69 | 79 00 | 222 30 | 74 952 | 225 06 |
| 14-Dec-01 | | | 70 62 | 221 73 | 76 796 | 224 81 | Dry | | 65 21 | 223 90 | 68 19 | 226 91 | 63 22 | 229 37 | 77.81 | 226 51 | 65 31 | 223 48 | 76 72 | 222 75 | 78 88 | 222 42 | 75 042 | 224 97 |
| 2-Jan-02 | | | 70 40 | 221 95 | 76 581 | 225 03 | Dry | | 65.22 | 223 89 | 67 74 | 227.36 | 62 85 | 229 74 | 77 46 | 226 86 | 65 22 | 223.57 | 76 70 | 222 77 | 78 05 | 223 25 | 74 728 | 225.28 |
| 22-Jan-02 | | | 70 12 | 222.23 | 76 39 | 225 22 | Dry | | 65 13 | 223 98 | 67.47 | 227 63 | 62 53 | 230 06 | 77 11 | 227.21 | 64 92 | 223 87 | 76.53 | 222 94 | 76 89 | 224 41 | 74 589 | 225 42 |
| 5-Feb-02 | | | 70 05 | 222 30 | 76.286 | 225.32 | Dry | | 65 12 | 223 99 | 67 38 | 227 72 | 62 47 | 230 12 | 77 08 | 227.24 | 64 85 | 223 94 | 76.25 | 223 22 | 77 78 | 223 52 | 74 479 | 225.53 |
| 11-Feb-02 | | | 70 08 | 222.27 | 76 247 | 225 36 | Dry | | 65 13 | 223 98 | 67 40 | 227 70 | 62 49 | 230 10 | 77 10 | 227 22 | 64.87 | 223 92 | 76 32 | 223 15 | 76 81 | 224 49 | 74 483 | 225 53 |
| 5-Mar-02 | | | 69 81 | 222 54 | 76 044 | 225 57 | Dry | | 64 97 | 224 14 | 67 16 | 227 94 | 62.22 | 230 37 | 76 81 | 227.51 | 64.56 | 224.23 | 76 00 | 223 47 | 77.58 | 223 74 | 74.252 | 225 76 |
| 18-Mar-02 | | | 69 68 | 222 67 | 75 968 | 225 64 | dry | | 64 93 | 224 18 | 66 99 | 228 11 | 62 08 | 230.51 | | | | | 75 81 | 223 66 | 76 87 | 224 43 | 74 213 | 225 80 |
| 4 Apr-02 | | | 69 62 | 222 73 | 75 827 | 225 78 | dry | | 65 00 | 224 11 | 66 81 | 228.29 | 61 79 | 230 80 | 76.50 | 227 62 | 64 30 | 224 49 | 75 79 | 223 68 | 77 38 | 223 92 | 74 067 | 225 94 |
| 17-Apr-02 | | | 69 42 | 222 93 | 75 76 | 225 85 | dry | | 64 87 | 224.24 | 66 57 | 228.53 | 61.59 | 231 00 | 76 32 | 228 00 | 64 15 | 224 84 | 75 91 | 223.58 | 77 40 | 223 90 | 74 014 | 226 00 |
| 1-May-02 | | | 69 29 | 223 06 | 75.573 | 226 04 | Dry | | 64 71 | 224.40 | 66 41 | 228 69 | 61 42 | 231 17 | 76 12 | 228.20 | | | 75 85 | 223 62 | 77.38 | 223 92 | 73 841 | 226 17 |
| 16-May-02 | | | 69.28 | 223 07 | 75.576 | 226 03 | Dry | | 64 70 | 224 41 | 66 41 | 228 69 | 61.48 | 231 11 | 76 06 | 228.26 | 64 00 | 224 79 | 75 88 | 223.59 | 77 36 | 223 94 | 73 83 | 226 18 |
| 4-Jun-02 | | | 68 10 | 224.25 | 75 458 | 226 15 | Dry | | 64.58 | 224.53 | 66 39 | 228 71 | 61.51 | 231 08 | 75 96 | 228 36 | 63 60 | 225 19 | 75 58 | 223.89 | 77.22 | 224 08 | 73 765 | 226.25 |
| 19-Jun-02 | | | 67 86 | 224 49 | 75 359 | 226.25 | Dry | | 64 55 | 224.56 | 66 38 | 228 72 | 61.58 | 231 01 | 75 89 | 228 43 | 64 45 | 224 34 | 75 49 | 223 98 | 77.20 | 224 10 | 73 684 | 226.33 |
| 2-Jul-02 | | | 67 81 | 224.54 | 75.239 | 226 37 | Dry | | 64 46 | 224 65 | 66.31 | 228 79 | 61.57 | 231 02 | 75 80 | 228.52 | 63 40 | 225.39 | 75 40 | 224 07 | 77 11 | 224 19 | 73.552 | 226 46 |
| 17-Jul-02 | | | 67 80 | 224 55 | 75.22 | 226 39 | Dry | | 64 40 | 224 71 | 66.37 | 228 73 | 61 68 | 230 91 | 75 82 | 228.50 | 63 37 | 225 42 | 75 37 | 224 10 | 77 04 | 224.26 | 73 52 | 226 49 |
| 5 Aug-02 | | | 67 80 | 224.55 | 75 17 | 226 44 | Dry | | 64 36 | 224 75 | 66 45 | 228 65 | 61 77 | 230.82 | 75 84 | 228 48 | 63 40 | 225 39 | 75 37 | 224 10 | 77 01 | 224.29 | 73 44 | 226.57 |
| 15-Aug-02 | | | 67 82 | 224 53 | 75 23 | 226.38 | Dry | | 64 40 | 224 71 | 66.55 | 228 55 | 61 82 | 230 77 | 15 95 | 288.37 | 63 42 | 225 37 | 75 41 | 224 06 | 77 02 | 224 28 | 73 48 | 226 53 |
| 3 Sep-02 | | | 67 94 | 224 41 | 75 25 | 226 36 | dry | | 64 37 | 224 74 | 66 64 | 228 46 | 62 03 | 230.56 | 75 98 | 228.34 | 63.51 | 225.28 | 75 43 | 224 04 | 77 02 | 224 28 | 73 47 | 226.54 |
| 20-Sep-02 | | | 69.20 | 223 15 | 75 423 | 226 19 | dry | | 64 35 | 224 76 | 66 80 | 228 30 | 62 14 | 230 45 | 76 15 | 228 17 | 64 06 | 224 73 | 75 74 | 223 73 | 77 10 | 224.20 | 73.575 | 226 44 |
| 2-Oct-02 | | | 69 38 | 222 97 | 75 548 | 226 06 | dry | | 64 64 | 224 47 | 66 95 | 228 15 | 62 31 | 230.28 | 76 30 | 228 02 | 64 21 | 224.58 | 75 88 | 223 59 | 77 25 | 224 05 | 73 679 | 226 33 |
| 15-Oct-02 | | | 69 39 | 222 96 | 75 578 | 226 03 | dry | | 64 61 | 224.50 | 66 97 | 228 13 | 62 30 | 230 29 | 76 42 | 227 90 | 64 30 | 224 49 | 75 98 | 223 48 | 77 32 | 223 98 | 73 698 | 226 31 |
| 4-Nov-02 | | | 69.56 | 222 79 | 75 703 | 225 91 | dry | | 64 72 | 224 39 | 67 13 | 227 97 | 62 39 | 230 20 | 76 42 | 227 90 | 64 39 | 224 40 | 76 02 | 223 45 | 77 40 | 223 90 | 73 815 | 226.20 |
| 20-Nov-02 | | | 69.52 | 222 83 | 75 688 | 225 92 | Dry | | 64 71 | 224 40 | 67 09 | 228 01 | 62 37 | 230 22 | 76 51 | 227 81 | 64 37 | 224 42 | 76 00 | 223 47 | 77 39 | 223 91 | 73 785 | 226.23 |
| 3-Dec-02 | | | 69 54 | 222 81 | 75 815 | 225 80 | dry | | 64 70 | 224 41 | 67 11 | 227 99 | 62.38 | 230 21 | 76.50 | 227 82 | 64 38 | 224 41 | 76 01 | 223 46 | 77 40 | 223 90 | 73 919 | 226 09 |
| 17-Dec-02 | | | 69 58 | 222 77 | 75 662 | 225 95 | Dry | | 64 71 | 224 40 | 67 11 | 227 99 | 62.36 | 230.23 | 76 48 | 227 84 | 64 41 | 224 38 | 75 98 | 223 49 | 77 36 | 223 94 | 73 76 | 226 25 |
| 6-Jan-03 | | | 69 76 | 222.59 | 75 842 | 225 77 | Dry | | 64 84 | 224.27 | 67.22 | 227 88 | 62.38 | 230.21 | 76 45 | 227 87 | 64 36 | 224 43 | 75 98 | 223 49 | 75 39 | 225 91 | 73 956 | 226 05 |
| 9-Apr-03 | | | 67 61 | 224 74 | 75 09 | 226.52 | Dry | | 63 83 | 225.28 | 66.26 | 228 84 | 61.52 | 231 07 | 75 72 | 228 60 | 62 73 | 226 06 | 74 91 | 224.56 | 76 71 | 224 59 | 73 37 | 226 64 |
| 29-Oct-03 | | | 68 35 | 224 00 | 74 72 | 226 89 | Dry | | 64 02 | 225 09 | 66 16 | 228 94 | 61 58 | 231 01 | 75 40 | 228 92 | 62 73 | 226 06 | 75 06 | 224 41 | 76 60 | 224 70 | 73 02 | 226 99 |

NOTES

Year One O&M is a separate data set.

Baseline water levels were recorded 03-Nov-98 thru 04-Nov-98

All elevations are in feet. All depths are in feet, Below Top of Casing (BTC).

Rainfall for the 24-hr period is recorded by the National Weather Service at Memphis International Airport.

MW-6S gauging required as of year two O&M location unknown until 05-Jan-00

PZ-02 gauging required as of year two O&M, location unknown until 15-Nov-99

TOC = top of casing

DTW = depth to water

NM = not measured

NA = not available

| Well ID | MW-14 | | MW-15 | | MW-18 | | MW-19 | | MW-27 | | MW-28 | | MW-29 | | MW-30 | | MW-31 | | MW-32 | | MW-33 | | MW-34 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOC Elevation | 302 22 | | 295 12 | | 308 04 | | 290.57 | | 303 86 | | 294 79 | | 273 22 | | 275 14 | | 290.37 | | 285 38 | | 280 71 | | 299 97 | |
| Total Depth (ft) | 80 00 | | 81 00 | | 140 00 | | 96 40 | | 93 60 | | 69 00 | | 54 00 | | 59 00 | | 79 00 | | 67.80 | | 60 00 | | 156 90 | |
| Location | Dunn Field | | Dunn Field | | Depot | | Depot | | Depot | | Dunn Field | | Dunn Field | | MLGW Facility | | MLGW Facility | | Kyle | | Off-Site | | Dunn Field | |
| DATE | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev |
| 16-Jan-01 | 74 60 | 227 62 | 68 69 | 226 43 | Dry | — | 88.88 | 201 69 | Dry | --- | 61 32 | 233 47 | 41.39 | 231 83 | 48 98 | 226 16 | 71 30 | 219 07 | 62 88 | 222 50 | 55 59 | 225 12 | 139 62 | 160 35 |
| 31-Jan-01 | 74 60 | 227 62 | 68 86 | 226.26 | 135 03 | 173 01 | 89 08 | 201 49 | Dry | — | 61 61 | 233 18 | 41.50 | 231 72 | 49 19 | 225 95 | 71 64 | 218 73 | 62 83 | 222.55 | 55 75 | 224 96 | 138.53 | 161 44 |
| 20-Feb-01 | 74 76 | 227 46 | 69 72 | 225 40 | NM | NM | NM | NM | NM | NM | 61.51 | 233.28 | 41.39 | 231 83 | 49 16 | 225 98 | 71 59 | 218 78 | 63 00 | 222 38 | 55 60 | 225 11 | 140 85 | 159 12 |
| 2-Mar-01 | 74 754 | 227.47 | 69 02 | 226 10 | --- | --- | 89 00 | 201.57 | | | 61 04 | 233 75 | — | --- | 49 02 | 226 12 | 71 09 | 219.28 | | | 55 81 | 224 90 | | |
| 3-Mar-01 | 74 749 | 227 47 | 70 05 | 225 07 | — | — | — | --- | | | 61 01 | 233 78 | — | — | 49 02 | 226 12 | 71 09 | 219 28 | | | 56 61 | 224 10 | | |
| 4-Mar-01 | 74 772 | 227 45 | — | — | — | — | — | — | | | 61 47 | 233 32 | — | — | 49 05 | 226.09 | 71 00 | 219 37 | | | 55 90 | 224.81 | | |
| 5-Mar-01 | 74 791 | 227 43 | --- | --- | --- | --- | 89.25 | 201 32 | | | 61 63 | 233 16 | 41 37 | 231 85 | --- | — | — | — | | | — | — | | |
| 6-Mar-01 | 74 791 | 227 43 | — | — | — | — | 89 42 | 201 15 | | | 61 63 | 233 16 | 40 33 | 232 89 | 49 04 | 226 10 | 71 69 | 218 68 | | | 55 86 | 225 05 | | |
| 7-Mar-01 | 74 791 | 227.43 | — | — | --- | --- | 89 35 | 201.22 | | | 61.57 | 233.22 | 41 33 | 231 89 | — | — | — | — | | | — | — | | |
| 8-Mar-01 | 74 938 | 227.28 | --- | --- | — | --- | 89 00 | 201 57 | | | — | — | 41.27 | 231 95 | 49 10 | 226 04 | 71 58 | 218 79 | | | 55 65 | 225 06 | | |
| 9-Mar-01 | 74 941 | 227.28 | — | — | — | — | — | — | | | --- | --- | — | — | — | — | --- | --- | | | — | --- | | |
| 10-Mar-01 | 74 941 | 227.28 | --- | --- | 126 61 | 181 43 | 89 12 | 201 45 | | | 61.53 | 233.26 | 41.21 | 232 01 | 49 13 | 226 01 | 71 65 | 218 72 | | | 55 72 | 224 99 | | |
| 11-Mar-01 | 74 938 | 227.28 | --- | --- | 126 60 | 181 44 | | | | | 61 52 | 233.27 | 41.20 | 232 02 | 49 10 | 226 04 | 71 64 | 218 73 | | | 55 70 | 225 01 | | |
| 12-Mar-01 | 74 929 | 227.29 | --- | --- | 129 95 | 178 09 | 88 95 | 201 62 | | | 61 44 | 233 35 | 41.23 | 231 99 | 49 00 | 228 14 | 71 60 | 218 77 | | | 55 60 | 225 11 | | |
| 13-Mar-01 | 74 938 | 227 28 | — | — | 126 61 | 181.43 | 89 12 | 201 45 | | | 61.53 | 233.26 | 41 21 | 232 01 | 49 13 | 226 01 | 71 65 | 218 72 | | | 55 72 | 224 99 | | |
| 14-Mar-01 | 74 941 | 227.28 | --- | --- | --- | --- | — | — | | | — | --- | — | — | — | — | — | — | | | — | --- | | |
| 15-Mar-01 | 74 934 | 227 29 | — | — | 129.50 | 178 54 | 88 94 | 201 63 | | | 61 49 | 233 30 | 40 82 | 232 40 | 49 00 | 226 14 | 71 60 | 218 77 | | | 55 69 | 225 02 | | |
| 16-Mar-01 | 74 948 | 227.27 | --- | --- | --- | --- | 89 33 | 201.24 | | | 61.58 | 233 21 | 41.27 | 231 95 | — | — | — | — | | | | | | |
| 29-Mar-01 | 74 973 | 227.25 | 69 95 | 225 17 | 132 60 | 175 44 | 89 17 | 201 40 | Dry | Dry | 61 37 | 233 42 | 41 00 | 232.22 | 49 02 | 226 12 | 71 77 | 218 60 | 63 60 | 221 78 | 55 81 | 224 90 | 139 32 | 160 65 |
| 19-Apr-01 | 75 04 | 227 18 | 70 02 | 225 10 | | | | | | | 61 31 | 233 48 | 40 96 | 232 26 | 48 92 | 226.22 | 71.82 | 218 55 | 63 40 | 221 98 | 56 05 | 224 66 | | |
| 30-Apr-01 | 75 058 | 227 16 | 70 07 | 225 05 | 131 70 | 176 34 | 89.27 | 201 30 | Dry | Dry | 61 30 | 233 49 | 40 88 | 232.34 | 48 90 | 226.24 | 71 86 | 218 51 | 63 43 | 221 95 | 56 00 | 224 71 | 139 53 | 160 44 |
| 15-May-01 | | | 69 98 | 225 14 | | | | | | | 61 11 | 233 68 | 40 74 | 232 48 | 48 81 | 226 33 | 71 82 | 218 55 | 63 43 | 221 95 | 56 02 | 224 69 | | |
| 31-May-01 | | | 69 88 | 225.24 | 134 17 | 173 87 | 89 37 | 201.20 | Dry | | 61 11 | 233 68 | 40 68 | 232.54 | 48 78 | 226.36 | 71 70 | 218 67 | 63 44 | 221 94 | 56 02 | 224 69 | 140.23 | 159 74 |
| 15-Jun-01 | | | 70 12 | 225 00 | | | | | | | 61 09 | 233 70 | 40 71 | 232.51 | 48 78 | 226.36 | 71 91 | 218 46 | 63 59 | 221 79 | 56 25 | 230 46 | 140 71 | 159 26 |
| 29-Jun-01 | | | 69 74 | 225 38 | 131 90 | 176 14 | 89 42 | 201 15 | Dry | | 61 00 | 233 79 | 40 01 | 233.21 | 48 73 | 226 41 | 71 93 | 218.44 | 64.58 | 220 80 | 56 21 | 224 50 | 139 72 | 160 25 |
| 18-Jul-01 | 75 00 | 227.22 | 70 41 | 224 71 | | | | | | | 60 89 | 233 90 | 40 64 | 232.58 | 48 73 | 226 41 | 71 99 | 218.38 | 63 65 | 221 73 | 56 31 | 224 40 | | |
| 31-Jul-01 | 75 07 | 227 15 | 70 30 | 224 82 | 134.51 | 173.53 | 89.52 | 201 05 | Dry | | 59 96 | 234 83 | 40 68 | 232.54 | 48 73 | 226 41 | 72 00 | 218 37 | 63 70 | 221.68 | 56 40 | 224 31 | 143 36 | 156 61 |
| 15-Aug-01 | 74 98 | 227 24 | 70 22 | 224 90 | | | | | | | 60 88 | 233 91 | 40 65 | 232 57 | 48 74 | 226 40 | 71 96 | 218.41 | 63 68 | 221 70 | 56 33 | 224 38 | | |
| 31 Aug-01 | 75 02 | 227.20 | 70.56 | 224.56 | 135 97 | 172 07 | 89 63 | 200 94 | Dr y | | 60 92 | 233 87 | 40 71 | 232.51 | 48.80 | 226 34 | 72 03 | 218 34 | 63 71 | 221 67 | 56 50 | 224.21 | 144 45 | 155 52 |
| 18-Oct-01 | 74 45 | 227 77 | 70 69 | 224 43 | | | | | | | 61 06 | 233 73 | 39 62 | 233 60 | 48 69 | 226 45 | 72 05 | 218 32 | 64 00 | 221.38 | 56 91 | 223 80 | | |
| 1-Nov-01 | 75 00 | 227.22 | 70 63 | 224 49 | 132.84 | 175 20 | 89 65 | 200 92 | Dry | | 60 93 | 233.86 | 39 70 | 233 52 | 48.55 | 226.59 | 72 03 | 218.34 | 63 97 | 221 41 | 56 53 | 224 18 | 143 01 | 156 96 |
| 16-Nov-01 | 75.50 | 226 72 | 70 78 | 224.34 | | | | | | | 60 97 | 233.82 | 39 81 | 233 41 | 48.57 | 226.57 | 72.20 | 218 17 | 64 10 | 221.28 | 86 75 | 193 96 | | |
| 3-Dec-01 | 75 49 | 226 73 | 70 78 | 224 34 | 130 16 | 177 88 | 89 78 | 200 79 | Dry | | 60 88 | 233 91 | 39 75 | 233 47 | 48 40 | 226 74 | 72 11 | 218.26 | 63 79 | 221.59 | 86 71 | 194 00 | 141 90 | 158 07 |
| 14-Dec-01 | 75 45 | 226 77 | 70 78 | 224 34 | | | | | | | 60 73 | 234 06 | 39 06 | 234 16 | 47 99 | 227 15 | 72 02 | 218 35 | 64 11 | 221 27 | 86 77 | 193 94 | | |
| 2-Jan-02 | 75 42 | 226 80 | 70 75 | 224 37 | 131 71 | 176 33 | 89 90 | 200 67 | Dry | | 60 65 | 234 14 | 38.54 | 234 68 | 47 42 | 227 72 | 71 95 | 218 42 | 64 11 | 221 27 | 86 88 | 193 83 | 140 23 | 159 74 |
| 22-Jan-02 | 75 24 | 226 98 | 70 60 | 224 52 | | | | | | | 60.20 | 234.59 | 38 11 | 235 11 | 47 11 | 228 03 | 71 69 | 218 68 | 64 01 | 221 37 | 58 78 | 221 93 | | |
| 5-Feb-02 | 75 35 | 226 87 | 70 62 | 224.50 | 131.86 | 176 18 | 89 77 | 200.80 | Dry | | 60 18 | 234 63 | 38 11 | 235 11 | 47 06 | 228 08 | 71 70 | 218 67 | 64 08 | 221 30 | 56 84 | 223 87 | 140 17 | 159.80 |
| 11-Feb-02 | 75 38 | 226 84 | 70 60 | 224.52 | | | | | | | 60 18 | 234 61 | 38 12 | 235 10 | 47 10 | 228 04 | 71 68 | 218 69 | 64 05 | 221 33 | 58 81 | 221 90 | | |
| 5-Mar-02 | 75.26 | 226 96 | 70 44 | 224 68 | 132 00 | 176 04 | Diff Bag | | Dry | | 59 75 | 235 04 | 37 80 | 235 42 | 46 80 | 228 34 | 71 43 | 218 94 | 63 93 | 221 45 | 56 68 | 224 03 | Diff Bag | |
| 18-Mar-02 | 75 17 | 227 05 | 70 46 | 224 66 | | | | | | | 59 55 | 235.24 | 37 55 | 235 67 | | | | | | | | | | |
| 4-Apr-02 | 75 30 | 226 92 | 70.52 | 224 60 | 131 88 | 176 16 | 89 55 | 201 02 | dry | | 59 41 | 235.38 | 37 30 | 235 92 | Diff bag | | Diff bag | | Diff bag | | Diff bag | | Diff bag | |
| 17-Apr-02 | 75 08 | 227 14 | 70 35 | 224 77 | | | | | | | 59 08 | 235 71 | 36 99 | 236 23 | 46 21 | 228 93 | 71 14 | 219.23 | 63 88 | 221 50 | 56 60 | 224 11 | | |
| 1-May-02 | 74 84 | 227 38 | 70.20 | 224 92 | 132.24 | 175 80 | 89.36 | 201.21 | Dry | | 58 70 | 236 09 | 36 88 | 236 34 | 46 07 | 229 07 | 70 88 | 219 49 | 63 75 | 221 63 | 56 42 | 224.29 | 138.50 | 161 47 |
| 16-May-02 | 74 91 | 227 31 | 70.24 | 224 88 | | | | | | | 58 60 | 236 19 | 37 15 | 236 07 | 46 15 | 228 99 | 70 83 | 219.54 | 68 76 | 216 62 | 56.45 | 224.26 | | |
| 4-Jun-02 | 74 88 | 227 34 | 70 10 | 225 02 | 134.28 | 173 76 | 89.27 | 201 30 | Dry | | 58 48 | 236 31 | 37.27 | 235 95 | 48.22 | 226 92 | 70 66 | 219 71 | 63 73 | 221 65 | 56 40 | 224 31 | 138 68 | 161.29 |
| 19-Jun-02 | 74 93 | 227.29 | 70 11 | 225 01 | | | | | | | 58.50 | 236.29 | 36 48 | 236 74 | 48 33 | 228 81 | 70 49 | 219.88 | 63 74 | 221 64 | 56 42 | 224.29 | | |
| 2-Jul-02 | 74 81 | 227 41 | 70 01 | 225 11 | 135 78 | 172.26 | 89 15 | 201 42 | Dry | | 58 42 | 236 37 | 37.59 | 235 63 | 46 35 | 228 79 | 70 30 | 220 07 | 63 66 | 221 72 | 56 31 | 224 40 | 140.23 | 159 74 |
| 17-Jul-02 | 74 84 | 227 38 | 70 03 | 225 09 | | | | | | | 58.51 | 236.28 | 37 82 | 235 40 | 46 45 | 228 69 | 70.20 | 220 17 | 63 62 | 221 76 | 56 31 | 224 40 | | |
| 5-Aug-02 | 74 75 | 227 47 | 70 00 | 225 12 | 135.20 | 172 84 | 89 02 | 201.55 | Dry | | 58.57 | 236.22 | 38 00 | 235.22 | 46 56 | 228.58 | 70 10 | 220.27 | 63.56 | 221 82 | 56 30 | 224 41 | 141 64 | 158 33 |
| 15-Aug-02 | 74 75 | 227 47 | 70 02 | 225 10 | | | | | | | 58 65 | 236 14 | 37 82 | 235 40 | 46 60 | 228.54 | 70 18 | 220 19 | 63.57 | 221 81 | 56 30 | 224 41 | | |
| 3-Sep-02 | 74 77 | 227 45 | 70 00 | 225 12 | 135 48 | 172 56 | 88 93 | 201 64 | Dry | | 58 80 | 235 99 | 37.39 | 235 83 | 46 77 | 228.37 | 70 19 | 220 18 | 63 60 | 221 78 | 56.28 | 224 43 | 141 97 | 158 00 |
| 20-Sep-02 | 74 68 | 227.54 | 69 95 | 225 17 | | | | | | | 58 84 | 235 95 | 38 30 | 234 92 | diff bag | | diff bag | | diff bag | | diff bag | | diff bag | |
| 2-Oct-02 | 74 79 | 227 43 | 70.22 | 224 90 | 136 72 | 171 32 | 88 92 | 201 65 | dry | | 59.00 | 235 79 | 38 68 | 234 54 | 47 00 | 228 14 | 70 57 | 219 80 | 63 66 | 221 72 | 56 31 | 224 40 | 142 60 | 157 37 |
| 15-Oct-02 | 74 68 | 227.54 | 70.20 | 224 92 | | | | | | | 58 95 | 235 84 | 38.52 | 234 70 | 47 02 | 228 12 | 70 60 | 219 77 | 63 61 | 221 77 | 56 31 | 224 40 | | |
| 4-Nov-02 | 74 82 | 227 40 | 70 30 | 224 82 | 136 03 | 172 01 | 88 90 | 201 67 | | | 59 02 | 235 77 | 38 35 | 234 87 | 47 09 | 228 05 | 70 76 | 219 61 | 63 76 | 201 62 | 56 51 | 224.20 | 141 71 | 158.26 |
| 20-Nov-02 | 74 80 | 227 42 | 70.23 | 224 89 | | | | | | | 58 94 | 235 85 | 38.26 | 234 96 | 47 09 | 228 05 | 70 73 | 219 64 | 63 79 | 221 59 | 56.50 | 224 21 | | |
| 3-Dec-02 | 74 79 | 227 43 | 70.28 | 224 84 | 136 11 | 171 93 | 88 92 | 201 65 | Dry | | 58 98 | 235 81 | 38 30 | 234 92 | 47 10 | 228 04 | 70 75 | 219 62 | 63 77 | 221 61 | 56 51 | 224 20 | 140 05 | 159 92 |
| 17-Dec-02 | 74 71 | 232 03 | 70 19 | 224 93 | | | | | | | 58.82 | 235 97 | 38.25 | 234 97 | 47 01 | 228 13 | 70 72 | 219 65 | 63 75 | 221 63 | 56 43 | 224.28 | | |
| 6-Jan-03 | 75 02 | 227.20 | 70 34 | 224 78 | 135 75 | 172 29 | 88 86 | 201 71 | | | 58 96 | 235 83 | 38 18 | 235 04 | 47 15 | 227 99 | 71 05 | 219 32 | 64 00 | 221 38 | 56 68 | 224 03 | 138 89 | 161 08 |
| 9-Apr-03 | 74 58 | 227 64 | 69.22 | 225 90 | 134.36 | 173 68 | 88 41 | 202 16 | Dry | | 57 87 | 236 92 | 37.24 | 235 98 | 46 35 | 228 79 | 70 28 | 220 09 | 63 66 | 221 72 | 56 29 | 224 42 | 137 46 | 162.51 |
| 29-Oct-03 | 74.21 | 228 01 | 69 93 | 225 19 | 133 65 | 174 39 | 87.20 | 203 37 | Dry | | 58 04 | 236 75 | 37 93 | 235.29 | 46 32 | 228 82 | 69 73 | 220 64 | 63 30 | 222 08 | 55 94 | 224 77 | 138 14 | 161 83 |

| Well ID | MW-35 | | MW-36 | | MW-37 | | MW-38 | | MW-40 | | MW-41 | | MW-42 | | MW-43 | | MW- 44 | | MW-45 | | MW-46 | | MW-49 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOC Elevation | 300 46 | | 310.24 | | 284 91 | | 307 45 | | 262.23 | | 283 81 | | 274 83 | | 284.99 | | 269 07 | | 293 22 | | 287.56 | | 310 49 | |
| Total Depth (ft) | 90 00 | | 209 00 | | 182 80 | | 155 00 | | 95 00 | | 67 00 | | 59 00 | | 173 00 | | 74 00 | | 68 00 | | 72 00 | | 90 00 | |
| Location | Dunn Field | | Dunn Field | | Kyle | | Depot | | Off-Site | | Off-Site | | Off-Site | | Elementary School | | Off-Site | | Off-Site | | Dunn Field | | Dunn Field | |
| DATE | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev |
| 16-Jan-01 | 74 86 | 225 60 | 155 16 | 155 08 | 126 74 | 158 17 | NM | NM | 90 58 | 171 65 | 65 97 | 217 84 | 56 96 | 217 87 | NM | NM | 55 91 | 213 16 | 56 63 | 238.59 | 56 91 | 230 65 | 78 83 | 231 66 |
| 31-Jan-01 | 75 80 | 224 66 | 153 68 | 156.56 | 124 74 | 160 17 | 136 43 | 171 02 | 90 40 | 171 83 | 66 19 | 217 62 | Diff Sampler | | 130 61 | 154 38 | 56 35 | 212 72 | 57 10 | 236 12 | 55 87 | 231 69 | 80 15 | 230 34 |
| 20-Feb-01 | 75 85 | 224 61 | NM | NM | 130 68 | 154.23 | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | 56 90 | 236 32 | 55 77 | 231 79 | 79 99 | 230.50 |
| 2-Mar-01 | 75 96 | 224.50 | 154 00 | 156.24 | — | — | 136 03 | 171 42 | 89 41 | 172 82 | 66 19 | 217 62 | 57 06 | 217 77 | 129 15 | 155 84 | 56 12 | 212 95 | — | — | 55 62 | 231 94 | 79 06 | 231 43 |
| 3-Mar-01 | 76 00 | 224 46 | 154 02 | 156 22 | — | — | 134 12 | 173 33 | 90 01 | 172.22 | 66 19 | 217 62 | — | — | 129.00 | 155 99 | 56 12 | 212 95 | 56 69 | 236.53 | 55 70 | 231 86 | 79 80 | 230 69 |
| 4-Mar-01 | — | — | 154 00 | 156.24 | — | — | 138 81 | 168 64 | — | — | 67 00 | 216 81 | 57 09 | 217 74 | 129 18 | 155 81 | 56 12 | 212 95 | 57 06 | 236 16 | — | — | 79 86 | 230 63 |
| 5-Mar-01 | 75 69 | 224 77 | 153 66 | 156.58 | — | — | 136 04 | 171 41 | 89.59 | 172 64 | — | — | 57 55 | 217.28 | 129 00 | 155 99 | 56.51 | 212.56 | 57.24 | 235 98 | 56 01 | 231.55 | 80.37 | 230 12 |
| 6-Mar-01 | 75 99 | 224 47 | — | — | — | — | — | — | 89.25 | 172 98 | 64 61 | 219.20 | 57.58 | 217.25 | 129.31 | 155 68 | 56 32 | 212 75 | 57 17 | 236 05 | 55 94 | 231 62 | 79 71 | 230 78 |
| 7-Mar-01 | 75 95 | 224.51 | 154 00 | 156.24 | — | — | 136 00 | 171.45 | — | — | — | — | — | — | — | — | — | — | 56 99 | 236.23 | 55 88 | 231 68 | 80 17 | 230.32 |
| 8-Mar-01 | 75 84 | 224 62 | 153 80 | 156 44 | 129 00 | 155 91 | 133 41 | 174 04 | — | — | 66 18 | 217 83 | 57.58 | 217.25 | — | — | 56 00 | 213 07 | 56 81 | 236 41 | 55 78 | 231 78 | 79 98 | 230.51 |
| 9-Mar-01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 10-Mar-01 | 75 98 | 224 48 | 154 00 | 156.24 | — | — | 131 55 | 175 90 | — | — | 66.27 | 217.54 | 57 65 | 217 18 | 128 75 | 156.24 | 56.25 | 212 82 | 56 94 | 236.28 | 55 85 | 231 71 | 80 01 | 230 48 |
| 11-Mar-01 | 75 96 | 224.50 | 154 00 | 156.24 | — | — | 131.54 | 175 91 | — | — | 66.25 | 217.56 | — | — | 128 73 | 156.28 | 56 23 | 212 84 | 56 93 | 236 29 | 55.83 | 231 73 | 80 00 | 230 49 |
| 12-Mar-01 | 76 35 | 224 11 | 154 00 | 156.24 | — | — | 135 41 | 172 04 | 89 00 | 173.23 | 66.30 | 217.51 | 57 31 | 217 52 | 128 40 | 156 59 | 55 90 | 213 17 | 56 44 | 236 78 | 55 73 | 231 83 | | |
| 13-Mar-01 | 75 98 | 224 48 | 154 01 | 156 23 | — | — | 131.55 | 175 90 | — | — | 66.27 | 217.54 | 57 65 | 217 18 | 128 75 | 156 24 | 56.25 | 212 82 | 56 94 | 236.28 | 55 85 | 231 71 | 80 01 | 230 48 |
| 14-Mar-01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 15-Mar-01 | 76.25 | 224.21 | 154.00 | 156 24 | — | — | 133 81 | 173 64 | 88 30 | 173 93 | — | — | 57 45 | 217.38 | 128 70 | 156.29 | 55 95 | 213 12 | 56 57 | 236 65 | 55 91 | 231 85 | — | — |
| 16-Mar-01 | 76 34 | 224 12 | 154 00 | 156.24 | — | — | 135 39 | 172 06 | 89 10 | 173 13 | 66.24 | 217.57 | 57.52 | 217.31 | 128 71 | 156.28 | 56.50 | 212 57 | — | — | 55 96 | 231 60 | 80 02 | 230 47 |
| 29-Mar-01 | 76 40 | 224 06 | 152 64 | 157 60 | 128 04 | 156 87 | 135 05 | 172 40 | 88.54 | 173 69 | 66.25 | 217.56 | 57 63 | 217.20 | 127.81 | 157 18 | 56 16 | 212 91 | 56.58 | 236 64 | 55 78 | 231 78 | 79 97 | 230.52 |
| 19-Apr-01 | 76.53 | 223 93 | | | 129 92 | 154 99 | | | | | | | | | | | | | | | 55 77 | 231 79 | 80 13 | 230 36 |
| 30-Apr-01 | 76 61 | 223 85 | 154 73 | 155 51 | 130 16 | 154 75 | 135 66 | 171 79 | | | 66 17 | 217 64 | 57 65 | 217 18 | 128 82 | 156 17 | 56 18 | 212.89 | 56.54 | 236 68 | 55 78 | 231 78 | 80 18 | 230 31 |
| 15-May-01 | 76.58 | 223 88 | | | 132 59 | 152.32 | | | | | | | | | | | | | 56.25 | 236 97 | 55 61 | 231 95 | 79 99 | 230 50 |
| 31-May-01 | 76 49 | 223 97 | 156 30 | 153 94 | 131.20 | 153 71 | 135 00 | 172 45 | | | 66 17 | 217 64 | 57.58 | 217 25 | 129 93 | 155 06 | | | 56 27 | 236 95 | 55 68 | 231 88 | 80 14 | 230 35 |
| 15-Jun-01 | 76 91 | 223.55 | | | 131 66 | 153.25 | | | | | | | | | | | | | 56 40 | 236 82 | 55 66 | 231 90 | 80.20 | 230.29 |
| 29-Jun-01 | 76 76 | 223 70 | 152 04 | 158.20 | 134 88 | 150 03 | 136.33 | 171 12 | | | 66.20 | 217 61 | 57 47 | 217 36 | 132 18 | 152 61 | | | 56 61 | 236 61 | 55 55 | 232 01 | 80 07 | 230 42 |
| 18-Jul-01 | 77 04 | 223.42 | | | 135 79 | 149 12 | | | | | | | | | | | | | 56 13 | 237 09 | 55.55 | 232 01 | 80 11 | 230 38 |
| 31-Jul-01 | 77 06 | 223 40 | 161 71 | 148 53 | 136 78 | 148 13 | 137 07 | 170.38 | | | 66.22 | 217.59 | 57.34 | 217 49 | 133 72 | 151.27 | | | 56 00 | 237 22 | 55 55 | 232 01 | 80 12 | 230 37 |
| 15-Aug-01 | 77 14 | 223 32 | | | 136 85 | 148 06 | | | | | | | | | | | | | 55 883 | 237 34 | 55.47 | 232.09 | 80 00 | 230 49 |
| 31-Aug-01 | 77 14 | 223 32 | 162 40 | 147 84 | 137 30 | 147 61 | 137 81 | 169 64 | | | 66.20 | 217 61 | 57.27 | 217 56 | 134.58 | 150 41 | | | | | 55.50 | 232 06 | 80 02 | 230 47 |
| 18-Oct-01 | 77 40 | 223 06 | | | 134 73 | 150 18 | | | | | | | | | | | | | 56 062 | 237 16 | 54 61 | 232 95 | 80 10 | 230.39 |
| 1-Nov-01 | 78 12 | 222 34 | 158 71 | 151 53 | 133 79 | 151 12 | 137 48 | 169 97 | 91 18 | 171 05 | 65 95 | 217 86 | 57 13 | 217 70 | 132.24 | 152 75 | 56 10 | 212 97 | 55 953 | 237.27 | 55 51 | 232 05 | 79 93 | 230.56 |
| 16-Nov-01 | 77.27 | 223 19 | | | 132 52 | 152 39 | | | | | | | | | | | | | 56 131 | 237 09 | 55 36 | 232 20 | 80 17 | 230 32 |
| 3-Dec-01 | 77 17 | 223.29 | 155 60 | 154 64 | 130 73 | 154 18 | 137.21 | 170.24 | | | 66 08 | 217 73 | 57 18 | 217 65 | 130.55 | 154 44 | | | 56 143 | 237 08 | 55.50 | 232 06 | 80 12 | 230 37 |
| 14-Dec-01 | 77 14 | 223 32 | | | 128 80 | 156 11 | | | | | | | | | | | | | 56 055 | 237 17 | 55 42 | 232 14 | 80 10 | 230 39 |
| 2-Jan-02 | 77 16 | 223 30 | 152.55 | 157 69 | 127 78 | 157 13 | 136 95 | 170.50 | | | 66 09 | 217 72 | 57.28 | 217 55 | 128 46 | 156.53 | | | 55 85 | 237 37 | 55 36 | 232 20 | 80 08 | 230 41 |
| 22-Jan-02 | 77 00 | 223 46 | | | 129 07 | 155 84 | | | | | | | | | | | | | 55 522 | 237 70 | 53 84 | 233 72 | 79 90 | 230.59 |
| 5-Feb-02 | 76 89 | 223 57 | 154 04 | 156 20 | 129 83 | 155 08 | 135 95 | 171.50 | | | 66 16 | 217.65 | 57.20 | 217 63 | 128 94 | 156 05 | | | 55 467 | 237 73 | 55 10 | 232 46 | 80 03 | 230 46 |
| 11-Feb-02 | 76 92 | 223 54 | | | 129 52 | 155.39 | | | | | | | | | | | | | 55 469 | 237 75 | 54 01 | 233 55 | 79 94 | 230 55 |
| 5-Mar-02 | 76 66 | 223 80 | Diff Bag | | 129 00 | 155 91 | Diff Bag | | | | 66 08 | 217 73 | 57 05 | 217 78 | 127 90 | 157 09 | | | 55 222 | 238 00 | 54 76 | 232 80 | 79 85 | 230 64 |
| 18-Mar-02 | | | | | | | | | | | | | | | | | | | | | 54 60 | 232 96 | 79 75 | 230 74 |
| 4-Apr-02 | 76 55 | 223 91 | 151.53 | 158 71 | Diff bag | | 135 38 | 172 07 | | | | | Diff bag | | Diff bag | | Diff bag | | 55 081 | 238 14 | 54.55 | 233 01 | 79.88 | 230 61 |
| 17-Apr-02 | 76 53 | 223 93 | | | 128 18 | 156 73 | | | | | | | | | | | | | 54 677 | 238 54 | 54.26 | 233 30 | 79 60 | 230 89 |
| 1-May-02 | 76 50 | 223 96 | 154 06 | 156 18 | 129.21 | 155 70 | 134 79 | 172 66 | 86 48 | 175 75 | 65.85 | 217 96 | 55 91 | 218 92 | 127 34 | 157 65 | 55 15 | 213 92 | 54 103 | 239 12 | 53 96 | 233 60 | 79.20 | 231.29 |
| 16-May-02 | 76 49 | 223 97 | | | 129 60 | 155 31 | | | | | | | | | | | | | 54.22 | 239 00 | 53 78 | 233 78 | 79.26 | 231.23 |
| 4-Jun-02 | 76 40 | 224 06 | 153 82 | 156 42 | 129 10 | 155 81 | 134 70 | 172 75 | | | 65 86 | 218 15 | 56.55 | 218 28 | | | | | 54 144 | 239.08 | 53 60 | 233 96 | 79 18 | 231 31 |
| 19-Jun-02 | 76 30 | 224 16 | | | 130 65 | 154.26 | | | | | | | | | | | | | 54.218 | 239 00 | 53 58 | 233 98 | 79 19 | 231 30 |
| 2-Jul-02 | 76.21 | 224.25 | 157 43 | 152 81 | 132.55 | 152 36 | 135 10 | 172 35 | | | 65.46 | 218 35 | 56 41 | 218.42 | 129 84 | 155 15 | | | 54 043 | 239 18 | 53 45 | 234 11 | 79 00 | 231 49 |
| 17-Jul-02 | 76 16 | 224 30 | | | 133.58 | 151 33 | | | | | | | | | | | | | 54.24 | 238 98 | 53 43 | 234 13 | 78 98 | 231 51 |
| 5-Aug-02 | 76 13 | 224 33 | 158 70 | 151.54 | 134 00 | 150 91 | 135.54 | 171 91 | | | 65 35 | 218 46 | 56 31 | 218 52 | 131 90 | 153 09 | | | 54 23 | 238 99 | 53 41 | 234 15 | 78 80 | 231 69 |
| 15-Aug-02 | 76 14 | 224.32 | | | 133.58 | 151 33 | | | | | | | | | | | | | 54 4 | 238 82 | 53 45 | 234 11 | 78 81 | 231 68 |
| 3-Sep-02 | 76 17 | 224.29 | 158.23 | 152 01 | 133 38 | 151 53 | 135 80 | 171 65 | | | 65 45 | 218 36 | 56 35 | 218 48 | 131.25 | 153 74 | | | 54 43 | 238 79 | 53.57 | 233 99 | 78 80 | 231 69 |
| 20-Sep-02 | 76.22 | 224.24 | 160 42 | 149 82 | diff bag | | | | diff bag | | diff bag | | diff bag | | diff bag | | diff bag | | 54 421 | 238 80 | 53.51 | 234 05 | 78 65 | 231 84 |
| 2-Oct-02 | 76 37 | 224 09 | 156 73 | 153.51 | 133 02 | 151 89 | 136 00 | 171 45 | 87 60 | 174 63 | 65 34 | 218 47 | 56.50 | 218.33 | 131.52 | 153 47 | 54 95 | 214 12 | 54.564 | 238 66 | 53 37 | 234 19 | 78 79 | 231 70 |
| 15-Oct-02 | 76 45 | 224 01 | | | 133 02 | 151.89 | | | | | | | | | | | | | 54 292 | 238 93 | 53 61 | 233 95 | 78 61 | 231 88 |
| 4-Nov-02 | | | 157.46 | 152 78 | 132 71 | 152.20 | 135 71 | 171 74 | | | 65 46 | 218 35 | 56 33 | 218 50 | 131 56 | 153 43 | | | 54.271 | 238 95 | 53 80 | 233 78 | 78 90 | 231 59 |
| 20-Nov-02 | 76.51 | 223 95 | | | 129 48 | 155 43 | | | | | | | | | | | | | 54 139 | 239 08 | 53 76 | 233 80 | 78 88 | 231 61 |
| 3-Dec-02 | 76.52 | 223 94 | 157 92 | 152 32 | 130 01 | 154 90 | 135 05 | 172 40 | | | 65 46 | 218 35 | 56 30 | 218 53 | 130.20 | 154 79 | | | 54 345 | 238 88 | 53 78 | 233 78 | 78 89 | 231 60 |
| 17-Dec-02 | 76 49 | 223 97 | | | 129 65 | 155 26 | | | | | | | | | | | | | 53 957 | 239.26 | 53 63 | 233 93 | 78 82 | 231 67 |
| 6-Jan-03 | 76 52 | 223 94 | 150 77 | 159 47 | 126.26 | 158 65 | 134 70 | 172 75 | 85.50 | 176 73 | 66 85 | 216 96 | 58.26 | 216.57 | 126 68 | 158.31 | 55 22 | 213 85 | 54 388 | 238 85 | 53 88 | 233 68 | 79 24 | 231 25 |
| 9-Apr-03 | 75 84 | 224 62 | | | 127 00 | 157 91 | 133 42 | 174 03 | 83 33 | 178 90 | | | 55 45 | 219 38 | 125 95 | 159 04 | 54 41 | 214 66 | 53 33 | 239 89 | 52 94 | 234 62 | 78 56 | 231 93 |
| 29-Oct-03 | 75.84 | 224 62 | 152 95 | 157.29 | 128.23 | 156 68 | 132 89 | 174.56 | 82 12 | 180 11 | | | 53 79 | 221.04 | 126 93 | 156 06 | 54 00 | 215 07 | 53 88 | 239 34 | 52 68 | 234 88 | 77 85 | 232 64 |

| Well ID | MW-51 | | MW-53 | | MW-54 | | MW-55 | | MW-56 | | MW-57 | | MW-58 | | MW-59 | | MW-60 | | MW-61 | | MW-62 | | MW-63 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOC Elevation | 275.23 | | 306.38 | | 295.35 | | 292.08 | | 293.60 | | 290.77 | | 290.51 | | 300.13 | | 296.86 | | 294.04 | | 293.65 | | 306.06 | |
| Total Depth (ft) | 65.00 | | 82.50 | | 94.50 | | 74.00 | | 69.50 | | 70.50 | | 67.50 | | 85.00 | | 84.00 | | | | 112.50 | | 135.00 | |
| Location | Off-Site | | Off-Site | | MLGW Facility | | Depot | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Dunn Field | | Depot | | Depot | |
| DATE | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev |
| 16-Jan-01 | 43.57 | 231.66 | 74.18 | 232.20 | 81.56 | 213.79 | 71.27 | 220.81 | 67.12 | 226.48 | 63.88 | 226.89 | 63.91 | 226.60 | 75.04 | 225.09 | 71.59 | 225.27 | | | 93.95 | 199.70 | 106.75 | 199.31 |
| 31-Jan-01 | 43.65 | 231.58 | 74.28 | 232.10 | 81.87 | 213.48 | 71.48 | 220.62 | 68.00 | 225.60 | 64.03 | 226.74 | 64.15 | 226.36 | 75.35 | 224.78 | 72.05 | 224.81 | | | 93.99 | 199.66 | 106.93 | 199.13 |
| 20-Feb-01 | 43.52 | 231.71 | NM | NM | 81.68 | 213.67 | NM | NM | NM | NM | 64.13 | 226.64 | 64.00 | 226.51 | 75.27 | 224.86 | 71.98 | 224.88 | 69.84 | | NM | NM | NM | NM |
| 2-Mar-01 | 43.42 | 231.81 | 74.50 | 231.88 | 81.20 | 214.15 | 69.00 | 223.08 | 67.02 | 226.58 | 64.01 | 226.76 | 63.99 | 226.52 | 75.15 | 224.98 | 71.83 | 225.03 | | | | | | |
| 3-Mar-01 | 43.00 | 232.23 | 73.09 | 233.29 | 81.60 | 213.75 | --- | --- | 67.70 | 225.90 | 64.00 | 226.77 | 62.89 | 227.62 | 75.29 | 224.84 | 71.98 | 224.88 | | | 93.99 | 199.66 | 106.05 | 200.01 |
| 4-Mar-01 | 43.46 | 231.77 | 74.21 | 232.17 | 81.40 | 213.95 | --- | --- | --- | --- | 64.29 | 226.48 | 63.01 | 227.50 | 75.44 | 224.69 | 72.18 | 224.68 | | | --- | --- | --- | --- |
| 5-Mar-01 | 43.47 | 231.76 | 74.55 | 231.83 | 82.00 | 213.35 | 71.47 | 220.61 | 68.15 | 225.45 | 64.44 | 226.33 | 64.28 | 226.23 | 75.51 | 224.62 | 72.02 | 224.84 | | | 93.23 | 200.42 | 106.05 | 200.01 |
| 6-Mar-01 | 43.39 | 231.84 | 74.62 | 231.76 | 81.81 | 213.54 | 71.53 | 220.55 | 68.18 | 225.42 | 64.42 | 226.35 | 64.28 | 226.23 | 75.44 | 224.69 | 72.17 | 224.69 | | | 93.98 | 199.67 | 107.25 | 198.81 |
| 7-Mar-01 | 43.42 | 231.81 | 74.46 | 231.92 | --- | --- | 71.15 | 220.93 | --- | --- | 64.31 | 226.46 | --- | --- | 75.40 | 224.73 | 72.03 | 224.83 | | | 93.88 | 199.77 | 107.31 | 198.75 |
| 8-Mar-01 | 43.38 | 231.85 | 74.18 | 232.20 | 81.23 | 214.12 | 71.01 | 221.07 | 67.97 | 225.63 | 64.17 | 226.60 | 64.02 | 226.49 | 75.34 | 224.79 | 72.00 | 224.86 | | | 93.92 | 199.73 | 107.01 | 199.05 |
| 9-Mar-01 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | | --- | --- | --- | --- |
| 10-Mar-01 | --- | --- | 74.24 | 232.14 | 81.84 | 213.51 | 71.43 | 220.65 | 68.00 | 225.60 | 64.21 | 226.56 | 64.10 | 226.41 | 75.59 | 224.54 | 72.18 | 224.68 | | | 94.00 | 199.65 | 106.70 | 199.36 |
| 11-Mar-01 | 43.32 | 231.91 | 74.23 | 232.15 | 81.82 | 213.53 | 71.41 | 220.67 | 68.00 | 225.60 | 64.20 | 226.57 | 64.00 | 226.51 | 75.57 | 224.56 | 72.16 | 224.70 | | | 94.00 | 199.65 | 106.00 | 197.06 |
| 12-Mar-01 | 43.30 | 231.93 | 73.80 | 232.58 | 81.51 | 213.84 | 70.70 | 221.38 | 66.76 | 226.82 | 64.15 | 226.62 | 64.13 | 226.38 | 75.39 | 224.74 | 71.98 | 224.88 | | | 94.00 | 199.65 | 106.09 | 199.97 |
| 13-Mar-01 | 43.15 | 232.08 | 74.24 | 232.14 | 81.84 | 213.51 | 71.43 | 220.65 | 68.01 | 225.59 | 64.21 | 226.56 | 64.12 | 226.39 | 75.59 | 224.54 | 72.19 | 224.67 | | | 94.00 | 199.65 | 106.00 | 197.06 |
| 14-Mar-01 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | | --- | --- | 109.00 | 197.06 |
| 15-Mar-01 | 43.32 | 231.91 | 73.97 | 232.41 | 81.82 | 213.53 | 70.70 | 221.38 | 66.76 | 226.84 | 63.64 | --- | 64.10 | 226.41 | 75.65 | 224.48 | 72.02 | 224.84 | | | 92.00 | 201.65 | --- | --- |
| 16-Mar-01 | 12-Feb-00 | 232.08 | 74.23 | 232.15 | 81.89 | 213.46 | 71.55 | 220.53 | 68.73 | 226.87 | 64.51 | --- | 64.10 | 226.41 | 75.63 | 224.50 | 71.68 | 225.18 | | | 93.55 | 200.10 | --- | --- |
| 29-Mar-01 | 43.19 | 232.04 | 74.05 | 232.33 | 81.75 | 213.60 | 71.10 | 220.98 | 67.88 | 225.72 | 64.31 | 226.46 | 64.00 | 226.51 | 75.76 | 224.37 | 72.38 | 224.48 | 69.17 | | 94.01 | 199.64 | | |
| 19-Apr-01 | 43.02 | 232.21 | | | 81.80 | 213.55 | | | | | 64.39 | 226.38 | 64.17 | 226.34 | 75.82 | 224.31 | 72.42 | 224.44 | 69.19 | | | | | |
| 30-Apr-01 | 42.96 | 232.27 | 74.25 | 232.13 | 81.78 | 213.57 | 70.74 | 221.34 | 68.05 | 225.55 | 64.40 | 226.37 | 64.21 | 226.30 | 75.89 | 224.24 | 72.50 | 224.36 | 69.25 | | | | | |
| 15-May-01 | 42.88 | 232.35 | | | 81.68 | 213.67 | 70.38 | 221.70 | | | 64.28 | 226.49 | 64.04 | 226.47 | 75.81 | 224.32 | 72.41 | 224.45 | 69.10 | | | | | |
| 31-May-01 | 42.82 | 232.41 | 74.07 | 232.31 | 81.69 | 213.66 | 70.44 | 221.64 | 67.85 | 225.75 | 64.29 | 226.48 | 64.06 | 226.45 | 75.72 | 224.41 | 72.22 | 224.64 | 68.95 | | | | | |
| 15-Jun-01 | 42.77 | 232.46 | | | 81.90 | 213.45 | | | | | 64.48 | 226.31 | 64.17 | 226.34 | 75.91 | 224.22 | 72.45 | 224.41 | 69.14 | | | | | |
| 29-Jun-01 | 42.74 | 232.49 | 74.06 | 232.32 | 81.77 | 213.58 | 70.70 | 221.38 | 67.91 | 225.69 | 64.38 | 226.39 | 64.10 | 226.41 | 78.04 | 224.09 | 72.58 | 224.28 | 69.24 | | | | | |
| 18-Jul-01 | 42.79 | 232.44 | | | 81.79 | 213.56 | | | | | 64.53 | 226.24 | 64.16 | 226.35 | 76.10 | 224.03 | 72.62 | 224.24 | 69.72 | | | | | |
| 31-Jul-01 | 42.79 | 232.44 | 74.15 | 232.23 | 81.80 | 213.55 | 70.81 | 221.27 | 68.00 | 225.60 | 64.56 | 226.21 | 64.20 | 226.31 | 76.15 | 223.98 | 72.69 | 224.17 | 69.31 | | | | | |
| 15-Aug-01 | 42.82 | 232.41 | | | 81.67 | 213.68 | 70.783 | 221.30 | | | 64.56 | 226.21 | 64.17 | 226.34 | 78.14 | 223.99 | 72.67 | 224.19 | 69.30 | | | | | |
| 31 Aug-01 | 42.92 | 232.31 | 73.99 | 232.39 | 81.78 | 213.57 | | | 68.00 | 225.60 | 65.65 | 225.12 | 64.21 | 226.30 | 76.18 | 223.95 | 72.70 | 224.16 | 69.33 | | | | | |
| 18-Oct-01 | 41.33 | 233.90 | | | 82.80 | 212.55 | 70.944 | 221.14 | | | 65.05 | 225.72 | 64.33 | 226.18 | 76.20 | 223.93 | 72.22 | 224.64 | 68.37 | | | | | |
| 1-Nov-01 | 40.61 | 234.62 | 73.71 | 232.67 | 81.75 | 213.60 | 71.004 | 221.08 | 67.99 | 225.61 | 65.80 | 224.97 | 64.22 | 226.29 | 76.21 | 223.92 | 72.71 | 224.15 | 69.31 | 224.73 | 93.94 | 199.71 | 108.60 | 197.46 |
| 16-Nov-01 | 41.11 | 234.12 | | | 82.00 | 213.35 | 71.066 | 221.01 | | | 64.88 | 225.89 | 64.37 | 226.14 | 76.26 | 223.87 | 72.75 | 224.11 | 69.35 | 224.69 | | | | |
| 3-Dec-01 | 40.90 | 234.33 | 74.10 | 232.28 | 81.95 | 213.40 | 71.047 | 221.03 | 68.18 | 225.42 | 64.90 | 225.87 | 64.39 | 226.12 | 76.16 | 223.97 | 72.65 | 224.21 | 69.25 | 224.79 | | | | |
| 14-Dec-01 | 39.97 | 235.26 | | | 81.93 | 213.42 | 70.962 | 221.12 | | | 64.63 | 225.94 | 64.37 | 226.14 | 76.08 | 224.05 | 72.55 | 224.31 | 69.07 | 224.97 | | | | |
| 2-Jan-02 | 39.31 | 235.92 | 74.05 | 232.33 | 81.89 | 213.46 | 70.939 | 221.14 | 68.12 | 225.48 | 64.81 | 225.96 | 64.35 | 226.16 | 76.00 | 224.13 | 72.41 | 224.45 | 68.95 | 225.09 | | | | |
| 22-Jan-02 | | | | | 81.65 | 213.70 | 70.477 | 221.60 | | | 64.04 | 226.73 | 68.12 | 222.39 | 73.57 | 226.56 | 72.20 | 224.66 | 68.81 | 225.23 | | | | |
| 5-Feb-02 | | | 74.12 | 232.26 | 81.91 | 213.44 | 70.362 | 221.72 | 67.96 | 225.64 | 64.60 | 226.17 | 64.18 | 226.33 | 75.71 | 224.42 | 72.14 | 224.72 | 68.56 | 225.48 | | | | |
| 11-Feb-02 | | | | | 81.72 | 213.63 | 70.315 | 221.77 | | | 64.38 | 226.39 | 68.14 | 222.37 | 73.57 | 224.53 | 72.16 | 224.68 | 68.77 | 225.27 | | | | |
| 5-Mar-02 | 38.81 | 236.42 | Diff Bag | | 81.54 | 213.81 | Diff Bag | | 67.85 | 225.75 | 64.42 | 226.35 | 64.08 | 226.43 | 75.40 | 224.73 | 71.88 | 224.98 | 68.33 | 225.71 | | | | |
| 18-Mar-02 | | | | | | | | | | | 64.39 | 226.38 | | | 75.29 | 224.84 | 71.74 | 225.12 | 68.20 | 225.84 | | | | |
| 4-Apr-02 | Diff bag | | 74.07 | 232.31 | Diff bag | | 69.948 | 222.13 | Diff bag | | Diff bag | | Diff bag | | 75.25 | 224.88 | 71.70 | 225.16 | 68.13 | 225.91 | | | | |
| 17-Apr-02 | 38.24 | 236.99 | | | 81.38 | 213.97 | | | | | 64.21 | 226.56 | 63.88 | 226.63 | 75.20 | 224.93 | 71.56 | 225.30 | 67.91 | 226.13 | | | | |
| 1-May-02 | 38.40 | 236.83 | 73.22 | 233.16 | 81.03 | 214.32 | 69.741 | 222.34 | 67.42 | 226.18 | 64.05 | 226.72 | 63.88 | 226.63 | 75.06 | 225.07 | 71.41 | 225.45 | 67.70 | 226.34 | 94.00 | 199.65 | 107.40 | |
| 16-May-02 | 38.75 | 236.48 | | | 81.08 | 214.27 | 70.049 | 222.03 | | | 64.11 | 226.66 | 63.73 | 226.78 | 75.02 | 225.11 | 71.40 | 225.46 | 67.66 | 226.38 | | | | |
| 4-Jun-02 | 39.00 | 236.23 | 73.36 | 233.02 | 80.93 | 214.42 | 70.1 | 221.98 | 67.45 | 226.15 | 64.05 | 226.72 | 63.89 | 226.82 | 74.86 | 225.27 | 71.14 | 225.72 | 67.50 | 226.54 | | | | |
| 19-Jun-02 | 39.31 | 235.92 | | | 80.69 | 214.46 | 70.22 | 221.86 | | | 64.06 | 226.71 | 63.70 | 226.81 | 74.78 | 225.35 | 71.06 | 225.80 | 67.40 | 226.64 | | | | |
| 2-Jul-02 | 39.70 | 235.53 | 73.26 | 233.12 | 80.70 | 214.65 | 70.266 | 221.81 | 67.41 | 226.19 | 64.02 | 226.75 | 63.65 | 226.86 | 74.63 | 225.50 | 70.93 | 225.93 | 67.30 | 226.74 | | | | |
| 17-Jul-02 | 39.77 | 235.46 | | | 80.66 | 214.69 | 70.45 | 221.63 | | | 64.06 | 226.71 | 63.70 | 226.81 | 74.58 | 225.55 | 70.87 | 225.99 | 67.29 | 226.75 | | | | |
| 5-Aug-02 | 40.00 | 235.23 | 73.20 | 233.18 | 80.53 | 214.82 | 70.56 | 221.52 | 67.48 | 226.12 | 64.05 | 226.72 | 63.65 | 226.86 | 74.57 | 225.56 | 70.90 | 225.96 | 67.30 | 226.74 | | | | |
| 15-Aug-02 | 40.42 | 234.81 | | | 80.54 | 214.81 | 70.64 | 221.44 | | | 64.07 | 226.70 | 63.71 | 226.80 | 74.63 | 225.50 | 70.92 | 225.94 | 67.29 | 226.75 | | | | |
| 3-Sep-02 | 40.48 | 234.75 | 73.20 | 233.18 | 80.56 | 214.79 | 70.71 | 221.37 | 67.59 | 226.01 | 64.13 | 226.64 | 63.74 | 226.77 | 74.69 | 225.44 | 71.00 | 225.88 | 67.47 | 226.57 | | | | |
| 20-Sep-02 | diff bag | | | | diff bag | | 70.274 | 221.81 | | | diff bag | | diff bag | | 74.90 | 225.23 | 70.27 | 226.59 | 67.72 | 226.32 | | | | |
| 2-Oct-02 | 40.65 | 234.38 | 73.31 | 233.07 | 80.58 | 214.77 | 70.332 | 221.75 | 67.65 | 225.95 | 64.23 | 226.54 | 63.80 | 226.71 | 75.02 | 225.11 | 71.41 | 225.45 | 67.90 | 226.14 | | | | |
| 15-Oct-02 | 40.48 | 234.75 | | | 80.48 | 214.87 | 70.284 | 221.80 | | | 64.20 | 226.57 | 63.71 | 226.80 | 75.06 | 225.07 | 71.46 | 225.40 | 67.93 | 226.11 | | | | |
| 4-Nov-02 | 40.50 | 234.73 | | | 80.62 | 214.73 | 70.048 | 222.03 | 67.69 | 225.91 | 64.24 | 226.53 | 63.85 | 226.66 | 75.22 | 224.91 | 71.62 | 225.24 | 68.12 | 225.92 | | | | |
| 20-Nov-02 | 40.58 | 234.65 | | | 80.55 | 214.80 | 70.011 | 222.07 | | | 64.15 | 226.62 | 63.82 | 226.69 | 75.20 | 224.93 | 71.80 | 225.06 | 68.04 | 226.00 | | | | |
| 3-Dec-02 | 40.54 | 234.69 | 73.35 | 233.03 | 80.57 | 214.78 | 70.021 | 222.06 | 67.65 | 225.95 | 64.21 | 226.56 | 63.83 | 226.68 | 75.20 | 224.93 | 71.77 | 225.09 | 68.08 | 225.96 | | | | |
| 17-Dec-02 | 40.41 | 234.82 | | | 80.48 | 214.87 | 69.945 | 222.14 | | | 64.05 | 226.72 | 63.72 | 226.79 | 75.16 | 224.97 | 71.59 | 225.27 | 68.07 | 225.97 | | | | |
| 6-Jan-03 | 40.32 | 234.91 | 73.59 | 232.79 | 80.90 | 214.45 | 70.039 | 222.04 | 67.80 | 225.80 | 64.12 | 236.65 | 63.96 | 226.55 | 75.32 | 224.81 | 71.78 | 225.08 | 68.25 | 225.79 | | | | |
| 9-Apr-03 | 39.20 | 236.03 | 72.98 | 233.40 | 80.20 | 215.15 | 69.41 | 222.67 | 67.32 | 226.28 | 63.87 | 227.10 | 63.48 | 227.03 | 74.42 | 225.71 | 70.75 | 226.11 | 67.05 | 226.99 | | | | |
| 29-Oct-03 | 39.90 | 235.33 | 72.58 | 233.80 | 79.57 | 215.78 | 70.45 | 221.63 | 67.20 | 226.40 | 63.61 | 226.96 | 63.30 | 227.21 | 74.20 | 225.93 | 70.52 | 226.34 | 66.86 | 227.18 | | | | |

APPENDIX [redacted]TER LEVELS

| Well ID | MW-65 | | MW-67 | | MW-68 | | MW-69 | | MW-70 | | MW-71 | | MW-73 | | MW-74 | | MW-75 | | MW-76 | | MW-77 | | MW-78 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOC Elevation | 263 22 | | 278 21 | | 291 69 | | 307 02 | | 304 99 | | 294 4 | | 300 65 | | 303 68 | | 303 61 | | 302 71 | | 304 42 | | 275 00 | |
| Total Depth (ft) | 52 00 | | 275 00 | | TBD | | 92.20 | | 91 00 | | 75 40 | | | | | | | | | | | | | |
| Location | Cloverdale | | Off-Site | | Kyle St. | | Off-Site | | Off-Site | | Off-Site | | Dunn Field | | Dunn Field | | Kyle St. | | Kyle St. | | Kyle St. | | Kyle Street | |
| DATE | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev |
| 16-Jan-01 | 13 95 | 249.27 | NM | NM | 68 06 | 223 63 | 83 00 | 224 02 | NM | NM | 69 35 | 225 05 | | | | | | | | | | | 50 14 | 224 86 |
| 31-Jan-01 | 11 46 | 251 76 | NM | NM | 69 06 | 222 63 | 83.20 | 223 82 | NM | NM | 69 32 | 225 08 | 75.57 | 225 08 | 79 00 | 224 68 | | | | | | | 50 20 | 224 80 |
| 20-Feb-01 | NM | NM | NM | NM | 69 00 | 222 69 | 83 15 | 223 87 | 80.37 | 224 62 | 69.26 | 225 14 | 75.55 | 225 10 | 79 00 | 224 68 | 79 14 | 224 47 | 85 13 | 217.58 | 81 95 | 222 47 | 52 50 | 222.50 |
| 2-Mar-01 | | | | | 69 02 | 222 67 | 83 32 | 223 70 | | | 69.34 | 225 06 | | | | | | | | | | | | |
| 3-Mar-01 | 7 83 | 255 59 | | | 69 02 | 222 67 | — | --- | | | 69 36 | 225.04 | | | | | | | | | | | | |
| 4-Mar-01 | 7 07 | 256 15 | | | 69.38 | 222 31 | 83 32 | 223 70 | | | 69 34 | 225 06 | | | | | | | | | | | | |
| 5-Mar-01 | 9 79 | 253 43 | | | 69.29 | 222 40 | — | --- | | | --- | — | | | | | | | | | | | | |
| 6-Mar-01 | 7 75 | 255 47 | | | 69.22 | 222 47 | 83 35 | 223 67 | | | — | — | | | | | | | | | | | | |
| 7-Mar-01 | 6 74 | 256 48 | | | 69 19 | 222.50 | 83.29 | 223 73 | | | 69.56 | 224 84 | | | | | | | | | | | | |
| 8-Mar-01 | 6 75 | 256 47 | | | 69 10 | 222.59 | 83 44 | 223 58 | | | 69 06 | 225 34 | | | | | | | | | | | | |
| 9-Mar-01 | --- | — | | | — | --- | — | --- | | | — | — | | | | | | | | | | | | |
| 10-Mar-01 | 7 00 | 256.22 | | | 69 17 | 222.52 | 83.57 | 223 45 | | | 69 69 | 224 71 | | | | | | | | | | | | |
| 11-Mar-01 | 7 00 | 256.22 | | | 69 16 | 222.53 | 83 54 | 223 48 | | | 69 68 | 224 72 | | | | | | | | | | | | |
| 12-Mar-01 | 6 90 | 256 32 | | | 69 00 | 222 69 | 83.50 | 223.52 | | | 69 63 | 224 77 | | | | | | | | | | | | |
| 13-Mar-01 | 7 00 | 256.22 | | | 69 17 | 222.52 | 83 57 | 223 45 | | | 69 69 | 224 71 | | | | | | | | | | | | |
| 14-Mar-01 | --- | — | | | — | --- | — | --- | | | — | --- | | | | | | | | | | | | |
| 15-Mar-01 | 6 90 | 256 32 | | | 69 15 | 222 54 | 83.54 | 223 48 | | | 69 68 | 224 72 | | | | | | | | | | | | |
| 16-Mar-01 | 6 60 | 256 62 | | | | | | | | | | | | | | | | | | | | | | |
| 29-Mar-01 | 6 90 | 256.32 | | | 69 47 | 222 22 | 83 92 | 223 10 | 81 30 | 223 69 | 70 07 | 224 33 | 76 10 | 224.55 | 79 60 | 224 08 | 79 74 | 223.87 | 85 31 | 217 40 | 82 40 | 222 02 | 50.29 | 224 71 |
| 19-Apr-01 | | | | | 69 52 | 222 17 | 84 02 | 223 00 | 81.22 | 223 77 | 70.23 | 224 17 | 76.21 | 224 44 | 79 73 | 223 95 | 79 86 | 223 75 | 85 39 | 217 32 | 82 51 | 221 91 | 50.22 | 224 78 |
| 30-Apr-01 | 6.27 | 256 95 | | | 69.52 | 222 17 | 84 07 | 222 95 | 81.29 | 223 70 | 70 26 | 224 14 | 76.29 | 224 36 | 79 81 | 223 87 | 79 91 | 223 70 | 85 42 | 217 29 | 82.55 | 221 87 | 50.20 | 224 80 |
| 15-May-01 | | | | | 69 46 | 222.23 | 84 02 | 223 00 | | | 70.25 | 224 15 | 76.27 | 224 38 | 79 80 | 223 88 | 79 92 | 223 69 | 85 40 | 217 31 | 82.56 | 221 86 | 50 17 | 224 83 |
| 31-May-01 | 7 48 | 255 74 | | | 69 06 | 222 63 | 84 15 | 222 87 | | | 70 11 | 224.29 | 76.30 | 224 35 | | | 80 15 | 223 46 | 85 44 | 217.27 | 82 62 | 221 80 | 72 37 | 202 63 |
| 15-Jun-01 | | | | | 69 41 | | 84 35 | 222 67 | | | 70 48 | 223 92 | 76 49 | 224 16 | 80.05 | 223 63 | 80 33 | 223.28 | 85 58 | 217 13 | 82 74 | 221 68 | 50 03 | 224 97 |
| 29-Jun-01 | 8 87 | 254 35 | | | 69 80 | 221 89 | 84.55 | 222 47 | 81 79 | 223.20 | 70 55 | 223 85 | 76.55 | 224 10 | 80 11 | 223.57 | 80 40 | 223 21 | 85.54 | 217 17 | 82 82 | 221 60 | 50 06 | 224 94 |
| 18-Jul-01 | | | | | 69.87 | 221 82 | 84.52 | 222.50 | 81 90 | 223 09 | 70 74 | 223 66 | 76 63 | 224 02 | 80 19 | 223 49 | 80 47 | 223 14 | 85 58 | 217 13 | 82 90 | 221 52 | 50 06 | 224 94 |
| 31-Jul-01 | 10 64 | 252.58 | | | 69 91 | 221 78 | 84.50 | 222 52 | 81 95 | 223 04 | 70 81 | 223.59 | 76 70 | 223 95 | 80.23 | 223 45 | 80 55 | 223 06 | 85 60 | 217 11 | 82 96 | 221 46 | 50 08 | 224 92 |
| 15-Aug-01 | | | | | 69 90 | 221 79 | 84 59 | 222 43 | 81 96 | 223 03 | 70.80 | 223 60 | 76 70 | 223 95 | 80.25 | 223 43 | 80.56 | 223 05 | 85 60 | 217 11 | 82 98 | 221 44 | 50 10 | 224 90 |
| 31-Aug-01 | 12 70 | 250.52 | | | 69 93 | 221 76 | 84 62 | 222 40 | 82 01 | 222 98 | 70 92 | 223 48 | 76 75 | 223 90 | 80.28 | 223 40 | 80 59 | 223 02 | 85 65 | 217 06 | 83 00 | 221 42 | 50 11 | 224 89 |
| 18-Oct-01 | | | | | 69 88 | 221 81 | 80 98 | 226 04 | 81 99 | 223 00 | 71 03 | 223.37 | 76 81 | 223 84 | 80 36 | 223.32 | | | 85 66 | 217 05 | 83 04 | 221 38 | 50 00 | 225 00 |
| 1-Nov-01 | 10 57 | 252 65 | 126 62 | 151.59 | 69 90 | 221 79 | 84.58 | 222 44 | 81 97 | 223 02 | 70 93 | 223 47 | 76 78 | 223 87 | 80.32 | 223 36 | 80 62 | 222 99 | 85 67 | 217 04 | 83 00 | 221 42 | 49 89 | 225 11 |
| 16-Nov-01 | | | | | 70 00 | 221 69 | 84 67 | 222 35 | 82 08 | 222 91 | 70 10 | 224.30 | 76 87 | 223 78 | 80 37 | 223.31 | 80 70 | 222 91 | 85 80 | 216 91 | 83 08 | 221 34 | 49 87 | 225 13 |
| 3-Dec-01 | 9 34 | 253 88 | | | 69 90 | 221 79 | 84.59 | 222 43 | 82 00 | 222 99 | 71 08 | 223 32 | 76 80 | 223 85 | 80.32 | 223.36 | 80 61 | 223 00 | 85 78 | 216 93 | 83 05 | 221 37 | 49 79 | 225 21 |
| 14-Dec-01 | | | | | 69 78 | 221 91 | 84.54 | 222 48 | 82.00 | 222 99 | 70 10 | 224.30 | 76 77 | 223 88 | 80.30 | 223 38 | 80 59 | 223 02 | 85 75 | 216 96 | 83 06 | 221 36 | 49 67 | 225 33 |
| 2-Jan-02 | 6 16 | 257 06 | | | 69 70 | 221 99 | 84.53 | 222 49 | 81 98 | 223 01 | 71 12 | 223.28 | 76 75 | 223 90 | 80.31 | 223 37 | 80 58 | 223 03 | 85 71 | 217 00 | 83 01 | 221 41 | 49 18 | 225 82 |
| 22-Jan-02 | | | | | 69.50 | 222 19 | 78 04 | 228 98 | 78 17 | 226 82 | 71.07 | 223 33 | 76 60 | 224 05 | 80 49 | 223 19 | 80 46 | 223 15 | 85 55 | 217 16 | 78 36 | 226 06 | 46.21 | 228 79 |
| 5-Feb-02 | 3 53 | 259 69 | | | 69 46 | 222.23 | 84 10 | 222 92 | 81 78 | 223 21 | 71 13 | 223.27 | 76.54 | 224 11 | 80 11 | 223.57 | 80 31 | 223 30 | 85.55 | 217 16 | 82 80 | 221 62 | 48 80 | 226 20 |
| 11-Feb-02 | | | | | 69 48 | 222 21 | 84 12 | 222 90 | 79.20 | 225 79 | 71 10 | 223 30 | 76 60 | 224 05 | 80 38 | 223 30 | 80 43 | 223 18 | 85 54 | 217 17 | 82 75 | 221 67 | 46 87 | 226 13 |
| 5-Mar-02 | 3 79 | 259 43 | | | 69.22 | 222 47 | 83 79 | 223 23 | 81.56 | 243 43 | 70 95 | 223 45 | 76.31 | 224 34 | 79 91 | 223 77 | 80 07 | 223 54 | 85 35 | 217 36 | 82.56 | 221 86 | 48.52 | 226 48 |
| 18-Mar-02 | | | | | | | | | | | | | 76.21 | 224 44 | 79 82 | 223 86 | 79 96 | 223 65 | | | | | | |
| 4-Apr-02 | Diff bag | | Diff bag | | Diff bag | | Diff bag | | Diff bag | | Diff bag | | 78.23 | 224 42 | 79 83 | 223 85 | 79 98 | 223 63 | Diff bag | | Diff bag | | Diff bag | |
| 17-Apr-02 | | | | | 69 00 | 222 69 | 83 90 | 223 12 | 81.50 | 223 49 | 70 92 | 223.48 | 76 15 | 224.50 | 79 79 | 223 89 | 79 97 | 223 64 | 85 11 | 217 60 | 82 45 | 221 97 | 47 98 | 227 02 |
| 1-May-02 | 3 52 | 259 70 | | | 68 84 | 222 85 | 83 75 | 223.27 | 81.39 | 223 60 | 70 74 | 223 66 | 76 16 | 224 49 | 79 74 | 223 94 | 79 88 | 223 73 | 84 95 | 217 76 | 82 40 | 222 02 | 47 83 | 227 17 |
| 16-May-02 | | | | | 68 87 | 222 82 | 83 85 | 223 17 | 81 41 | 223.58 | 70 75 | 223 65 | 76 06 | 224.59 | 79 72 | 223 96 | 79 90 | 223 71 | 84 90 | 217 81 | 82 40 | 222 02 | 47 82 | 227 18 |
| 4-Jun-02 | | | | | 68.27 | 223 42 | 83 56 | 223 46 | 81 32 | 223 67 | 70 61 | 223 79 | 75 98 | 224 67 | 79 85 | 224 03 | 79 80 | 223.81 | 84 80 | 217 91 | 82 34 | 222 08 | 47 80 | 227 20 |
| 19-Jun-02 | | | | | 68 15 | 223.54 | 83 66 | 223 36 | 81 31 | 223 68 | 70 61 | 223 79 | 75 92 | 224 73 | 79 61 | 224 07 | 79 75 | 223 86 | 85.71 | 217 00 | 82.28 | 222 14 | 47 80 | 227.20 |
| 2-Jul-02 | 8 76 | 254 46 | | | 68 00 | 223 69 | 83 55 | 223 47 | 81.20 | 223 79 | 70 50 | 223 90 | 75 84 | 224 81 | 79 55 | 224 13 | 79 68 | 223 93 | 84 56 | 218 15 | 82.22 | 222 20 | 47 78 | 227 22 |
| 17-Jul-02 | | | | | 67 93 | 223 76 | 83.50 | 223 52 | 81 15 | 223.84 | 70 47 | 223 93 | 75 77 | 224.88 | 79 48 | 224 20 | 79 61 | 224 00 | 84 47 | 218.24 | 82 15 | 222.27 | 47.83 | 227 17 |
| 5-Aug-02 | 10 60 | 252 62 | | | 67 90 | 223 79 | 83 48 | 223 54 | 81 09 | 223 90 | 70 38 | 224 02 | 75 72 | 224 93 | 79 46 | 224 22 | 79.59 | 224 02 | 84 35 | 218 36 | 82 11 | 222 31 | 47 90 | 227 10 |
| 15-Aug-02 | | | | | 67 95 | 223 74 | 83 53 | 223 49 | 81 14 | 223 85 | 70 47 | 223 93 | 75 77 | 224.88 | 79.52 | 224 16 | 79 60 | 224 01 | 84 35 | 218 36 | 82 13 | 222.29 | 48 00 | 227 00 |
| 3-Sep-02 | 11 02 | 252.20 | | | 68 02 | 223 67 | 83 57 | 223 45 | 81 15 | 223 84 | 70 43 | 223 97 | 75 78 | 224 87 | 79 74 | 223 94 | 79.59 | 224 02 | 84 31 | 218 40 | 82 12 | 222 30 | 48 08 | 226 92 |
| 20-Sep-02 | diff bag | | diff bag | | diff bag | | diff bag | | diff bag | | diff bag | | 75 98 | 224 67 | 79.50 | 224 18 | 79 65 | 223 96 | diff bag | | diff bag | | diff bag | |
| 2-Oct-02 | 6 97 | 256.25 | | | 68 87 | 222 82 | 83 81 | 223.21 | 81 31 | 223 68 | 70 60 | 223 80 | 75 91 | 224 74 | 79 61 | 224 07 | 79 80 | 223 81 | 84 46 | 218.25 | 82 29 | 222 13 | 48.33 | 226 67 |
| 15-Oct-02 | | | | | 68 88 | 222 81 | 83 85 | 223 17 | 81.36 | 223 63 | 70 61 | 223 79 | 75 92 | 224 73 | 79 64 | 224 04 | 79 85 | 223 76 | 84.50 | 218.21 | 82 35 | 222 07 | 48 38 | 226 62 |
| 4-Nov-02 | 5 85 | 257 37 | | | 69 05 | 222 64 | 83 95 | 223 07 | 81 44 | 223.55 | 70 74 | 223 66 | 76 07 | 224 58 | 79 74 | 223 94 | 79 96 | 223 65 | 84 63 | 218 08 | 82 45 | 221 97 | 48.52 | 226 48 |
| 20-Nov-02 | | | | | 69 02 | 222 67 | 83 90 | 223 12 | 81 41 | 223.58 | 70 73 | 223 67 | 76 06 | 224 59 | 79 72 | 223 96 | 79 95 | 223 66 | 84 63 | 218 08 | 82 42 | 222 00 | 48.50 | 226.50 |
| 3-Dec-02 | 6 02 | 257 20 | | | 69 03 | 222 66 | 83 92 | 223 10 | 81 43 | 223 56 | 70 74 | 223 68 | 76 08 | 224.57 | 79 75 | 223 93 | 79 94 | 223 67 | 84 64 | 218 07 | 82 43 | 221 99 | 48.51 | 226 49 |
| 17-Dec-02 | | | | | 69 01 | 222 68 | 83 82 | 223.20 | 81 36 | 223 63 | 70 68 | 223 72 | 76 05 | 224 60 | 79 72 | 223 96 | 79 93 | 223 68 | 84 60 | 218 11 | 82 38 | 222 04 | 48 44 | 226 56 |
| 6-Jan-03 | 4 66 | 258 56 | | | 69 20 | 222 49 | 84 04 | 222 98 | 81 51 | 223 48 | 70 93 | 223 47 | 76 18 | 224 49 | 79 83 | 223 85 | 80 04 | 223.57 | 84 77 | 217 94 | 82 48 | 221 94 | 48 44 | 226 56 |
| 9-Apr-03 | 2 75 | 260 47 | | | 67 65 | 224 04 | 83 06 | 223 98 | 80 88 | 224 11 | 70 35 | 224.05 | 75 51 | 225 14 | 79 16 | 224 52 | 79.20 | 224 41 | 84 35 | 218 36 | 82 09 | 222 33 | 47 87 | 227 13 |
| 29-Oct-03 | 10 00 | 253.22 | | | 68 03 | 223 66 | 83 08 | 223 94 | 80 45 | 224.54 | 70 13 | 224.27 | 75 09 | 225.56 | 79 00 | 224 68 | 78.75 | 224 86 | 83 64 | 219 07 | 81 85 | 222 57 | 47 75 | 227.25 |

| Well ID | MW-79 | | MW-80 | | MW-84 | | MW-87 | | MW-89 | | MW-90 | | MW-91 | | MW-95 | | MW-126 | | MW-127 | | MW-128 | | MW-129 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOC Elevation | 285 03 | | 273 81 | | 311 15 | | 294 93 | | 303 98 | | 304 19 | | 291 99 | | 259 43 | | 252 22 | | 268 71 | | 284 14 | | 293 01 | |
| Total Depth (ft) | | | | | | | | | | | | | | | | | | | | | | | | |
| Location | Regan Street | | Meadowhill & Rozelle | | Dunn Field | | Dunn Field | | Depot | | Depot | | Dunn Field | | Rozelle St. | | Person/Rayner | | Westmore | | Cintas | | Person | |
| DATE | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev | DTW (BTC) | GW Elev |
| 16-Jan-01 | 72 30 | 212 73 | 61.26 | 212.55 | | | | | | | | | 66 14 | 225 85 | 32 00 | 227 43 | | | | | | | | |
| 31-Jan-01 | Diff Sampler | | Diff Sampler | | | | 68 45 | 226 48 | | | | | 66 03 | 225 96 | 32 06 | 227 37 | | | | | | | | |
| 20-Feb-01 | NM | NM | NM | NM | | | 69.35 | 225.58 | | | | | 65 89 | 226 10 | 31 83 | 227 60 | | | | | | | | |
| 2-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 10-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 11-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 12-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 13-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 14-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 15-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 16-Mar-01 | | | | | | | | | | | | | | | | | | | | | | | | |
| 29-Mar-01 | 72 46 | 212.57 | 61 43 | 212 38 | | | 73 70 | 221.23 | 119 00 | | 119 17 | | 67 47 | 224 52 | 31 06 | 228 37 | | | | | | | | |
| 19-Apr-01 | 72 45 | 212.58 | | | | | 70.53 | 224 40 | | | | | 67 11 | 224 88 | | | | | | | | | | |
| 30-Apr-01 | 72 49 | 212.54 | 61 41 | 212 40 | | | 70.59 | 224 34 | 119 40 | | 119 43 | | 67 18 | 224 81 | 36 66 | 222 77 | | | | | | | | |
| 15-May-01 | | | | | 82.55 | | 70.55 | 224 38 | | | | | 67 11 | 224 88 | 30.55 | 228 88 | | | | | | | | |
| 31-May-01 | | | 61.26 | 212.55 | 82.56 | | 70 17 | 224 76 | 119 48 | | 119 48 | | 66 89 | 225 10 | 30 57 | 228 86 | | | | | | | | |
| 15-Jun-01 | | | | | 82.57 | | 70 91 | | | | | | 67 76 | 224 23 | 30 66 | 228 77 | | | | | | | | |
| 29-Jun-01 | 72 45 | | 61.26 | 212 55 | | | 71 00 | 223 93 | 119 87 | | 119 73 | | 67 69 | 224 30 | | | | | | | | | | |
| 18-Jul-01 | | | | | | | 71 10 | 223 83 | | | | | | | | | | | | | | | | |
| 31-Jul-01 | 72 46 | 212.57 | 61 28 | 212.53 | | | 71 16 | 223 77 | 120 37 | | 120 09 | | 68 01 | 223 98 | 30 70 | 228 73 | | | | | | | | |
| 15-Aug-01 | | | | | 82 692 | | 71 15 | 223 78 | | | | | 67 99 | 224 00 | 30 716 | 228 71 | | | | | | | | |
| 31-Aug-01 | 72 40 | 212 63 | 61 19 | 212 62 | | | 71.20 | 223 73 | 120 59 | | 120 38 | | 68 15 | 223 84 | | | | | | | | | | |
| 18-Oct-01 | | | | | 82 69 | 228 46 | 71 30 | 223 63 | | | | | 68.29 | 223 70 | | | | | | | | | | |
| 1-Nov-01 | 72 40 | 212 63 | 61 17 | 212 64 | 82 687 | 228 46 | 71.23 | 223 70 | 120 41 | 183 57 | 120.25 | 183 94 | 68.23 | 223 76 | 30 61 | 228 82 | | | | | | | | |
| 16-Nov-01 | | | | | 82 914 | 228.24 | 77 35 | 217.58 | | | | | 68.32 | 223 67 | 30 455 | 228 98 | | | | | | | | |
| 3-Dec-01 | 72.59 | 212 44 | 61 36 | 212 45 | 82 923 | 228 23 | 71 31 | 223 62 | 120 44 | 183.54 | 120 42 | 183 77 | 68.32 | 223 67 | 30 322 | 229 11 | | | | | | | | |
| 14-Dec-01 | | | | | 82 847 | 228 30 | 71 32 | 223 61 | | | | | 68 32 | 223 67 | 29 872 | 229.56 | | | | | | | | |
| 2-Jan-02 | 72 52 | 212.51 | 61.29 | 212.52 | 82 81 | 228 34 | 71 32 | 223 61 | 120 01 | 183 97 | 120 14 | 184 05 | 68.30 | 223 69 | 27 678 | 231 75 | | | | | | | | |
| 22-Jan-02 | | | | | 82.581 | 228.57 | 71.24 | 223 69 | | | | | 68.20 | 223 79 | 27 535 | 231 90 | | | | | | | | |
| 5-Feb-02 | 72 35 | 212 68 | 63 11 | 210 70 | 82.544 | 228 61 | 71.23 | 223 70 | 120 00 | 183 98 | 119 99 | 184.20 | 69 21 | 222 78 | 27 471 | 231 96 | | | | | | | | |
| 11-Feb-02 | | | | | 82.514 | 228 64 | 71 25 | 223 68 | | | | | 68 25 | 223 74 | 27 431 | 232 00 | | | | | | | | |
| 5-Mar-02 | 72 16 | 212 87 | 60 88 | 212 93 | Diff Bag | | 71 06 | 223 87 | Diff Bag | | Dif Bag | | 68 08 | 223 91 | 27 418 | 232 01 | | | | | | | | |
| 18-Mar-02 | | | | | | | 71 06 | 223 87 | | | | | 68 08 | 223 91 | | | | | | | | | | |
| 4-Apr-02 | Diff bag | | Diff bag | | 82 432 | 228 72 | 71 09 | 223 84 | 119.52 | 184 46 | 119 64 | 184 55 | 68 12 | 223 87 | diff bag | | | | | | | | | |
| 17-Apr-02 | | | | | 82 185 | 228 97 | 71 01 | 223 92 | | | | | 67 98 | 224 01 | 25 825 | 233 61 | | | | | | | | |
| 1-May-02 | 71 65 | 213 38 | 60.22 | 213 59 | 82 128 | 229 02 | 70 90 | 224 03 | 118 70 | 185.28 | 118 92 | 185.27 | 67 88 | 224 11 | 25 781 | 233 65 | | | | | | | | |
| 16-May-02 | | | | | 82 356 | 228 79 | 70 90 | 224 03 | | | | | 67 61 | 224 38 | 26 318 | 233 11 | | | | | | | | |
| 4-Jun-02 | 71.55 | 213 48 | 60 07 | 213 74 | 82.331 | 228 82 | 70 84 | 224 09 | 118 80 | 185 18 | 118 90 | 185.29 | 67.28 | 224 71 | 26 752 | 232 68 | | | | | | | | |
| 19-Jun-02 | | | | | 82 324 | 228 83 | 70 84 | 224 09 | | | | | 67.26 | 224 73 | 26 33 | 233 10 | | | | | | | | |
| 2-Jul-02 | 71 38 | 213 65 | 59 88 | 213 93 | 82 303 | 228 85 | 70 76 | 224 17 | 119 00 | 184 98 | 118 99 | 185.20 | 67 18 | 224 81 | 26.536 | 232 89 | | | | | | | | |
| 17-Jul-02 | | | | | 82.2 | 228 95 | 70 72 | 224.21 | | | | | 67 18 | 204 81 | | | | | | | | | | |
| 5-Aug-02 | 71 23 | 213 80 | 59 77 | 214 04 | 82 16 | 228 99 | 70 69 | 224.24 | 119 11 | 184 87 | 118 98 | 185.21 | 67 15 | 224 84 | | | 19 72 | 232.50 | 59 70 | 209 01 | | | | |
| 15-Aug-02 | | | | | 82 15 | 229 00 | 70 70 | 224.23 | | | | | 67 16 | 224 83 | | | 19 69 | 232.53 | 59 62 | 209 09 | | | | |
| 3-Sep-02 | 71 29 | 213 74 | 59 65 | 213 96 | 82 12 | 229 03 | 70 70 | 224.23 | 119 17 | 184 81 | 119 02 | 185 17 | 67 18 | 224 81 | 26.5 | 230 93 | 19 45 | 232 77 | 59.51 | 209.20 | | | | |
| 20-Sep-02 | diff bag | | diff bag | | 82 057 | 229 09 | 70 67 | 224.26 | | | | | 67.21 | 224 78 | | | | | | | | | | |
| 2-Oct-02 | 71 30 | 213 73 | 59 90 | 213 91 | 82 11 | 229 04 | 70 83 | 224 10 | 119 27 | 184 71 | 119 17 | 185 02 | 67 88 | 224 11 | 28.51 | 230 92 | 19 35 | 232 87 | 59.53 | 209 18 | | | | |
| 15-Oct-02 | | | | | 82 098 | 229 05 | 70 79 | 224 14 | | | | | 67 83 | 224 16 | 27.557 | 231 87 | | | | | | | | |
| 4-Nov-02 | 71 35 | 213 68 | 59 93 | 213.68 | 82 112 | 229 04 | 70.84 | 224 09 | 119 02 | 184 96 | 118 92 | 185.27 | 67 95 | 224 04 | 27 402 | 232 03 | 15 57 | 236 65 | | | | | | |
| 20-Nov-02 | | | | | 82 198 | 228 95 | 70 82 | 224 11 | | | | | 67 89 | 224 10 | 27.361 | 232 07 | | | | | | | | |
| 3-Dec-02 | 71.35 | 213 68 | 59.83 | 213 98 | 82 198 | 228 95 | 70 85 | 224 08 | 119 00 | 184 98 | 118 94 | 185.25 | 67 90 | 224 09 | 27 755 | 231.68 | 15 62 | 236 60 | 59 50 | 209 21 | | | | |
| 17-Dec-02 | | | | | 82 184 | 228 97 | 70 89 | 224 04 | | | | | 67.87 | 224 12 | 27 419 | 232 01 | | | | | | | | |
| 6-Jan-03 | 71.53 | 213.50 | 60 09 | 213 72 | 82 172 | 228 98 | 71 00 | 223 93 | 118 61 | 185.37 | 118 75 | 185 44 | 68 00 | 223 99 | 26 676 | 232 75 | 14 00 | 238 22 | 59 60 | 209 11 | | | | |
| 9-Apr-03 | 70 91 | 214 12 | 59 30 | 214 51 | 81 61 | 229 54 | 70 09 | 224 84 | 117.52 | 186.46 | 117 68 | 186.51 | 66 62 | 225 37 | 26 13 | 233 30 | 15.26 | 236 96 | 59 05 | 209 66 | | | | |
| 29-Oct-03 | 70 41 | 214 62 | 58.85 | 214 96 | 81 44 | 229 71 | 70 02 | 224 91 | 116 04 | 187 94 | 116 13 | 188 06 | 67.53 | 224 46 | 28 15 | 231 28 | 19 12 | 233 10 | 57 84 | 210 87 | 39 85 | 244.29 | 54 78 | 238.23 |

APPENDIX [redacted]ER LEVELS

| Well ID | MW-130 | | PZ-02 | |
|---|---|---|---|---|
| TOC Elevation | 293.2 | | 284.39 | |
| Total Depth (ft) | | | 54.50 | |
| Location | Person/Hayes | | Off-Site | |
| DATE | DTW (BTC) | GW Elev. | DTW (BTC) | GW Elev |
| 16-Jan-01 | | | 45.20 | 239.19 |
| 31-Jan-01 | | | 44.96 | 239.43 |
| 20-Feb-01 | | | 44.21 | 240.18 |
| 2-Mar-01 | | | | |
| 3-Mar-01 | | | 43.07 | 241.32 |
| 4-Mar-01 | | | 43.82 | 240.57 |
| 5-Mar-01 | | | 44.03 | 240.36 |
| 6-Mar-01 | | | 43.85 | 240.54 |
| 7-Mar-01 | | | 43.75 | 240.64 |
| 8-Mar-01 | | | 43.52 | 240.87 |
| 9-Mar-01 | | | --- | --- |
| 10-Mar-01 | | | 43.63 | 240.76 |
| 11-Mar-01 | | | 43.61 | 240.78 |
| 12-Mar-01 | | | 43.00 | 241.39 |
| 13-Mar-01 | | | 43.63 | 240.76 |
| 14-Mar-01 | | | --- | --- |
| 15-Mar-01 | | | 43.18 | 241.21 |
| 16-Mar-01 | | | | |
| 29-Mar-01 | | | 43.19 | 241.20 |
| 19-Apr-01 | | | 42.89 | 241.50 |
| 30-Apr-01 | | | 42.81 | 241.58 |
| 15-May-01 | | | 42.78 | 241.61 |
| 31-May-01 | | | 42.75 | 241.64 |
| 15-Jun-01 | | | 42.55 | 241.84 |
| 29-Jun-01 | | | 42.69 | 241.70 |
| 18-Jul-01 | | | 42.91 | 241.48 |
| 31-Jul-01 | | | 42.99 | 241.40 |
| 15-Aug-01 | | | 42.93 | 241.46 |
| 31-Aug-01 | | | 43.37 | 241.02 |
| 18-Oct-01 | | | | |
| 1-Nov-01 | | | 42.48 | 241.91 |
| 16-Nov-01 | | | 42.83 | 241.56 |
| 3-Dec-01 | | | 42.31 | 242.08 |
| 14-Dec-01 | | | 41.92 | 242.47 |
| 2-Jan-02 | | | 40.15 | 244.24 |
| 22-Jan-02 | | | 39.30 | 245.09 |
| 5-Feb-02 | | | 39.20 | 245.19 |
| 11-Feb-02 | | | 39.31 | 245.08 |
| 5-Mar-02 | | | 39.62 | 244.77 |
| 18-Mar-02 | | | | |
| 4-Apr-02 | | | | |
| 17-Apr-02 | | | 36.80 | 247.59 |
| 1-May-02 | | | 36.62 | 247.77 |
| 16-May-02 | | | 36.94 | 247.45 |
| 4-Jun-02 | | | | |
| 19-Jun-02 | | | 38.56 | 245.83 |
| 2-Jul-02 | | | 39.00 | 245.39 |
| 17-Jul-02 | | | 39.66 | 244.73 |
| 5-Aug-02 | | | 39.96 | 244.43 |
| 15-Aug-02 | | | 39.98 | 244.41 |
| 3-Sep-02 | | | 40.50 | 243.89 |
| 20-Sep-02 | | | | |
| 2-Oct-02 | | | 40.10 | 244.29 |
| 15-Oct-02 | | | 39.20 | 245.19 |
| 4-Nov-02 | | | 39.52 | 244.87 |
| 20-Nov-02 | | | 39.25 | 245.14 |
| 3-Dec-02 | | | 39.52 | 244.87 |
| 17-Dec-02 | | | 39.00 | 245.39 |
| 6-Jan-03 | | | 38.10 | 246.29 |
| 9-Apr-03 | | | 36.30 | 248.09 |
| 29-Oct-03 | 53.77 | 239.43 | 39.81 | 244.58 |

# APPENDIX B

## SEMI-ANNUAL MONITORING AND RECOVERY WELL SAMPLES ANALYTICAL LABORATORY DATA

**ENVIRONMENTAL TESTING & CONSULTING, INC.**
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

*Founded 1972*

November 13, 2003

Mr. Kraig Smith
Jacobs
600 William Northern Blvd.
Tullahoma, TN 37388

Ref. Analytical Testing

| | |
|---|---|
| ETC Order No. | 0310738, 0310739 |
| Project Descripton | Memphis Defense Depot |
| Project Number | C5X51115 |

The above referenced project has been analyzed per your instructions The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

The analytical data has been validated using standard quality control measures performed as required by the analytical method Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the USEPA, NELAP, and USACE.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions

Sincerely,

Connie Bradberry
Laboratory Project Manager

Attachment

JACOBS_DDMT

*Certifications*

| | | | | | |
|---|---|---|---|---|---|
| Tennessee | #02027 | Mississippi | | USDA | #S-46279 |
| Arkansas | | Oklahoma | #9311 | EPA | #TN00012 |
| Kentucky | #90047 | Virginia | #00106 | NELAP | #04015 |
| Alabama | #40750 | Louisiana DEQ | #04015 | | |
| Illinois | #000537 | U S Army Corps of Engineers | | | |

# Environmental Testing & Consulting, Inc.

## Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

| | |
|---|---|
| **Q** | Surrogate Recovery Outside QC Limits |
| **J** | Estimated Value. Presence of the compound was confirmed but less than the |
| | reported detection limit.[1] |
| **E** | Concentration exceeds the established method calibration range but is within |
| | the working range of the instrument. |
| **B** | Analyte detected in the associated Method Blank. |
| **U** | Reported result was unconfirmed Refer to Case Narrative. |
| **C** | Result reported from GC/MS confirmation analysis. |
| **M** | Result reported represents a minimum value. Refer to Case Narrative. |
| **NC** | Result reported from Primary Column. Result did not confirm. |
| * | QC Data (percent recovery/RPD for a particular analyte was outside QC Limits) |

**1** Estimated values are not reported for the following common laboratory contaminants:

Acetone
Methylene Chloride
Toluene
Phthalates
Sodium
Zinc

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

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## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Jacobs ETC Order #0310738
Site ID Memphis Defense Depot C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073801 | MW-57-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073802 | MW-57-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073803 | MW-58-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073804 | MW-56-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073805 | MW-34-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073806 | MW-34-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073807 | MW-34-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073808 | MW-07-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073809 | MW-07-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073810 | MW-09-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073811 | MW-08-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073812 | MW-29-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073813 | MW-29-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073814 | MW-29-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073815 | MW-36-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073816 | MW-36-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073817 | MW-36-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073818 | MW-130-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073819 | MW-130-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073820 | MW-130-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073821 | MW-130-4 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073822 | MW-129-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073823 | MW-129-100 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073824 | MW-129-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073825 | MW-129-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073826 | MW-128-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073827 | MW-128-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Jacobs
Site ID Memphis Defense Depot

ETC Order #0310738
C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073828 | MW-128-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073829 | MW-128-4 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073830 | MW-51-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073831 | MW-78-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073832 | MW-68-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073833 | MW-68-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073834 | ERB-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073835 | MW-76-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073836 | MW-76-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073837 | MW-70-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073838 | MW-70-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073839 | MW-32-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073840 | MW-37-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073841 | MW-37-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073842 | MW-37-200 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073843 | MW-37-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073844 | ERB-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073845 | MW-71-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073846 | MW-71-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073847 | MW-33-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073848 | MW-30-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073849 | MW-31-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073850 | MW-31-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073851 | MW-31-200 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073852 | MW-79-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073853 | MW-79-100 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073854 | MW-79-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Jacobs ETC Order #0310738
Site ID Memphis Defense Depot C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073855 | ERB-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073856 | MW-95-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073857 | MW-126-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Jacobs
Site ID Memphis Defense Depot

ETC Order #0310739
C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073958 | MW-80-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073959 | MW-127-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073960 | MW-44-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073961 | MW-42-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073962 | MW-40-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073963 | MW-43-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073964 | MW-43-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073965 | MW-67-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073966 | MW-67-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073967 | MW-67-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073968 | MW-69-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073969 | MW-69-100 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073970 | MW-69-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073971 | Trip Blank | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

Environmental Testing & Consulting, Inc.

# Login
# Chain-of-Custody

Environmental Testing & Consulting, Inc. 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0310738
ETC Quote No.

768 116

| | | | |
|---|---|---|---|
| Company Name: Jacobs | Phone # 931 393 6148 | RUSH[2] | |
| | PO # | Ice | |
| Project/Site (Include State): MEMPHIS DEPOT, TN | FID # | | |
| | E-Mail | | |
| Type of Event[1] : Single Daily Weekly Monthly | Quarterly (Semi-Annual) Annual | | |
| Project #: CSX51115 | Matrix: 1 Wastewater 2 Aqueous 3 Soil/Sediment 4 Sludge 5 Oil/Solvent 6 Other | | |
| Project Manager/Contact: KRAIG SMITH | | | |

Analysis Requested (Note special detection limits / methods): VOCs

Which Regs Apply? NPDES; Wastewater; RCRA; UST; Risk Based Limits; TRRP 13; LA RECAP; USACE

| # of Cont. | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOCs | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | MW-57-1 | | 10/28 | 0825 | water | GRAB | X | |
| 3 | MW-57-2 | | | 0830 | | | X | |
| 3 | MW-58-1 | | | 0840 | | | X | |
| 3 | MW-56-1 | | | 0850 | | | X | |
| 3 | MW-34-1 | | | 0855 | | | X | |
| 3 | MW-34-2 | | | 0900 | | | X | |
| 3 | MW-34-3 | | | 0905 | | | X | |
| 3 | MW-07-1 | | | 0910 | | | X | |
| 3 | MW-07-2 | | | 0915 | | | X | |
| 3 | MW-09-1 | | | 0925 | | | X | |
| 3 | MW-08-1 | | | 0930 | | | X | |

| | | | | |
|---|---|---|---|---|
| Sampled By: K. Smith | Method of Shipment: Hand Deliver | Blank/Cooler Temp: 4°C | Remarks | |
| RELINQUISHED BY (sign): Kraig Smith | DATE: 10/29/03 | TIME: 0755 | RECEIVED BY (sign) | DATE / TIME |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE / TIME |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign): RBaugh | DATE / TIME: 10/29/03 0755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return Sample Kit Request Form with chain of custody

Distribution Original accompanies samples to the laboratory Pink copy for Field Crew

Environmental Testing & Consulting, Inc. 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0310738
ETC Quote No.

| Company Name | Phone # 931-393-6448 | RUSH[2] |
|---|---|---|
| Jacobs | PO # | Ice |
| Project/Site (Include State) | FID # | |
| Memphis Depot | E-Mail | |

Type of Event[1] : Single Daily Weekly Monthly Quarterly Semi-Annual Annual

| Project # | Matrix | |
|---|---|---|
| C5X5115 | 1 Wastewater | 4 Sludge |
| Project Manager/Contact | 2 Aqueous | 5 Oil/Solvent |
| KRAIG SMITH | 3 Soil/Sediment | 6 Other |

Analysis Requested (Note special detection limits / methods)

VOC

Which Regs Apply?
- NPDES
- Wastewater
- RCRA
- UST
- Risk Based Limits
- TRRP 13
- LA RECAP
- USACE

| # of Cont. | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | MW-29-1 | | 10/28 | 0940 | Water | GRAB | X | |
| 3 | MW-29-2 | | | 0950 | | | X | |
| 3 | MW-29-3 | | | 0955 | | | X | |
| 3 | MW-36-1 | | | 1000 | | | X | |
| 3 | MW-36-2 | | | 1005 | | | X | |
| 3 | MW-36-3 | | | 1010 | | | X | |
| 3 | MW-130-1 | | | 1020 | | | X | |
| 3 | MW-130-2 | | | 1022 | | | X | |
| 3 | MW-130-3 | | | 1025 | | | X | |
| 3 | MW-130-4 | | | 1030 | | | X | |
| 3 | MW-129-1 | | | 1035 | | | X | |

| Sampled By | Method of Shipment | Blank/Cooler Temp | Remarks |
|---|---|---|---|
| K. Smith | Hand Deliver | 4°C | |

| | DATE | TIME | | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY (sign) | 10/29/03 | 0755 | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) | DATE | TIME |
| | | | RBOYD | 10/29/03 | 0755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return ETC Sample Kit Request Form with chain of custody
Distribution Original accompanies samples to the laboratory Pink copy for Field Crew.



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Environmental Testing & Consulting, Inc. 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0310738
ETC Quote No

| | | | |
|---|---|---|---|
| Company Name: Jacobs | Phone # | RUSH[2] | |
| | PO # | Ice | |
| Project/Site (Include State): Memphis Depot | FID # | | |
| | E-Mail | | |
| Type of Event[1]: Single Daily Weekly Monthly Quarterly Semi-Annual Annual | | | |
| Project #: CSX51115 | Matrix: 1 Wastewater, 2 Aqueous, 3 Soil/Sediment, 4 Sludge, 5 Oil/Solvent, 6 Other | | |
| Project Manager/Contact | | | |

Analysis Requested (Note special detection limits / methods): VOCs

Which Regs Apply? NPDES, Wastewater, RCRA, UST, Risk Based Limits, TRRP 13, LA RECAP, USACE

| # of Cont. | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOCs | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | MW-129-100 | | 10/28 | 1035 | water | GRAB | X | |
| | MW-129-2 | | | 1040 | | | X | |
| | MW-129-3 | | | 1045 | | | X | |
| | MW-128-1 | | | 1055 | | | X | |
| | MW-128-2 | | | 1058 | | | X | |
| | MW-128-3 | | | 1100 | | | X | |
| | MW-128-4 | | | 1105 | | | X | |
| | MW-51-1 | | | 1115 | | | X | |
| | MW-78-1 | | | 1230 | | | X | |
| | MW-68-1 | | | 1240 | | | X | |
| | MW-68-2 | | | 1242 | | | X | |

Sampled By: K. Smith
Method of Shipment: Hand Deliver
Blank/Cooler Temp: 2.4°C
Remarks:

| | DATE | TIME | | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY (sign) | 10/29/03 | 0755 | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | | | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | | | RECEIVED BY LAB (print/sign) | 10/29/03 | 0755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return Sample Kit Request Form with chain of custody
Distribution: Original accompanies samples to the laboratory Pink copy for Field Crew

Environmental Testing & Consulting, Inc 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0310738
ETC Quote No

| Company Name | Phone # 931-393-6448 | RUSH[2] |
|---|---|---|
| Jacobs | PO # | Ice |
| Project/Site (Include State) | FID # | |
| Memphis Depot | E-Mail | |

Type of Event[1] Single Daily Weekly Monthly Quarterly Semi-Annual Annual

Project # CSX51115

Project Manager/Contact KRAIG SMITH

Matrix
1 Wastewater 4 Sludge
2 Aqueous 5 Oil/Solvent
3 Soil/Sediment 6 Other

Analysis Requested (Note special detection limits / methods)

Which Regs Apply?
NPDES
Wastewater
RCRA
UST
Risk Based Limits
TRRP 13
LA RECAP
USACE

| # of Cont | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | ERB-2 | | 10/28 | 1245 | water | GRAB | X | |
| | MW-76-1 | | | 1255 | | | X | |
| | MW-76-2 | | | 1300 | | | X | |
| | MW-70-1 | | | 1305 | | | X | |
| | MW-70-2 | | | 1310 | | | X | |
| | MW-32-1 | | | 1320 | | | X | |
| | MW-37-1 | | | 1325 | | | X | |
| | MW-37-2 | | | 1328 | | | X | |
| | MW-37-200 | | | 1328 | | | X | |
| | MW-37-3 | | | 1330 | | | X | |
| | ERB-1 | | | 1335 | | | X | |

Sampled By K. Smith
Method of Shipment Hand Deliver
Blank/Cooler Temp 4°C
Remarks

| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
|---|---|---|---|---|---|
| Kraig Smith | 10/29/03 | 0755 | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
| | | | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) | DATE | TIME |
| | | | RBaird | 10/29/03 | 0755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return ETC Sample Kit Request Form with chain of custody

Distribution: Original accompanies samples to the laboratory Pink copy for Field Crew



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Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0310738
ETC Quote No

768 120

| | | | |
|---|---|---|---|
| Company Name: Jacobs | Phone # 931-393-6448 | RUSH[2] | |
| | PO # | Ice | |
| Project/Site (Include State): Memphis Depot | FID # | | |
| | E-Mail | | |

Type of Event[1] : Single Daily Weekly Monthly Quarterly Semi-Annual Annual

Project # CSX51115

Project Manager/Contact: Kraig Smith

Matrix: 1 Wastewater, 2 Aqueous, 3 Soil/Sediment, 4 Sludge, 5 Oil/Solvent, 6 Other

Analysis Requested (Note special detection limits / methods): VOC

Which Regs Apply? NPDES, Wastewater, RCRA, UST, Risk Based Limits, TRRP 13, LA RECAP, USACE

| # of Cont. | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | MW-71-1 | | 10/28 | 1350 | water | GRAB | X | |
| | MW-71-2 | | | 1355 | | | X | |
| | MW-33-1 | | | 1400 | | | X | |
| | MW-30-1 | | | 1410 | | | X | |
| | MW-31-1 | | | 1415 | | | X | |
| | MW-31-2 | | | 1420 | | | X | |
| | MW-31-200 | | | 1420 | | | X | |
| | MW-79-1 | | | 1430 | | | X | |
| | MW-79-100 | | | 1430 | | | X | |
| | MW-79-2 | | | 1435 | | | X | |
| | ERB-3 | | | 1440 | | | X | |

Sampled By: K. Smith
Method of Shipment: Hand Deliver
Blank/Cooler Temp: 4°C
Remarks:

| | DATE | TIME | | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY (sign) | 10/29/03 | 0755 | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | | | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | | | RECEIVED BY LAB (print/sign) | 10/29/03 | 0755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return Sample Kit Request Form with chain of custody

Distribution Original accompanies samples to the laboratory Pink copy for Field Crew

Environmental Testing & Consulting, Inc. 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order: 0310738, 739
ETC Quote No.:

| | | | |
|---|---|---|---|
| Company Name: Jacobs | Phone # 931-393-6448 | RUSH[2] | |
| | PO # | Ice | |
| Project/Site (Include State): Memphis Depot | FID # | | |
| | E-Mail | | |

Type of Event[1] : Single Daily Weekly Monthly Quarterly Semi-Annual Annual

Project #: C5X51115

Project Manager/Contact: KRAIG SMITH

Matrix: 1 Wastewater, 2 Aqueous, 3 Soil/Sediment, 4 Sludge, 5 Oil/Solvent, 6 Other

Analysis Requested (Note special detection limits / methods): VOC

Which Regs Apply? NPDES, Wastewater, RCRA, UST, Risk Based Limits, TRRP 13, LA RECAP, USACE

| # of Cont | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | MW-95-1 | | 10/28 | 1450 | Water | GRAB | X | etc# 0310738 |
| | MW-126-1 | | | 1455 | | | X | ↓ |
| | MW-80-1 | | | 1500 | | | X | etc# 0310739 |
| | MW-127-1 | | | 1510 | | | X | |
| | MW-44-1 | | | 1515 | | | X | |
| | MW-42-1 | | | 1525 | | | X | |
| | MW-40-1 | | | 1530 | | | X | |
| | MW-43-1 | | | 1545 | | | X | |
| | MW-43-2 | | | 1550 | | | X | |
| | MW-67-1 | | | 1600 | | | X | |
| | MW-67-2 | | | 1605 | | | X | |

Sampled By: K. Smith
Method of Shipment: Hand Deliver
Blank/Cooler Temp: 4°C
Remarks:

| | DATE | TIME | | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY (sign) | 10/29/03 | 0755 | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | | | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | | | RECEIVED BY LAB (print/sign) | 10/29/03 | 0755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return ETC Sample Kit Request Form with chain of custody

Distribution: Original accompanies samples to the laboratory Pink copy for Field Crew



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Environmental Testing & Consulting, Inc 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
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# CHAIN OF CUSTODY RECORD

ETC Work Order #03|0739
ETC Quote No

| | | | |
|---|---|---|---|
| Company Name: Jacobs Eng. | Phone # 931 393 6448 | RUSH[2] | |
| | PO # | Ice | |
| Project/Site (Include State): Memphis Depot | FID # | | |
| | E-Mail | | |
| Type of Event[1]: Single Daily Weekly Monthly | Quarterly Semi-Annual Annual | | |
| Project #: C5X5 1115 | Matrix: 1 Wastewater, 2 Aqueous, 3 Soil/Sediment, 4 Sludge, 5 Oil/Solvent, 6 Other | | |
| Project Manager/Contact: KRAIG SMITH | | | |

Analysis Requested (Note special detection limits / methods): VOC

Which Regs Apply? NPDES; Wastewater; RCRA; UST; Risk Based Limits; TRRP 13; LA RECAP; USACE

| # of Cont | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | MW-67-3 | | 10/28 | 1610 | water | GRAB | X | |
| 3 | MW-69-1 | | | 1620 | | | X | |
| 3 | MW-69-100 | | | 1620 | | | X | |
| 3 | MW-69-2 | | | 1625 | | | X | |
| 3 | TRIP BLANK | | | | | | | |

| Sampled By | Method of Shipment | Blank/Cooler Temp | Remarks |
|---|---|---|---|
| K. Smith | Hand Deliver | 4°C | EDDs |

| | DATE | TIME | | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY (sign) Kraig Smith | 10/29/03 | 0755 | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) P Bangs | DATE 10/29/03 | TIME 0755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

[1] Please return Sample Kit Request Form with chain of custody
Distribution Original accompanies samples to the laboratory Pink copy for Field Crew



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# Environmental Testing & Consulting, Inc.
## Cooler Receipt Form

Date/Time Received 10/29/03-07:55
Date/Time Checked In 10/29/03-07:55
Carrier/Bill# Client hand-delivered

LIMS# 0310-738-739
Project McGhee Tyson ANG

By Rebekah Barger

| | | |
|---|---|---|
| 1. | Custody Seals?/Location- | No |
| 2. | Samples are non-radioactive? | Yes |
| 3 | Chain of Custody in plastic? | Yes |
| 4. | Temperature at receipt (ok = 4 ± 2 °C)<4oC | OK |
| 5. | Ice & Packing- bags, ice, bubble wrap, boxes | Yes |
| 6. | Chain of Custody filled out properly? | Yes |
| 7. | All containers in separate bags? | No |
| 8. | Sample containers intact? | Yes |
| 9. | Label(s) complete and in good condition? | Yes |
| 10. | Label(s) agree with Chain of Custody? | Yes |
| 11. | Correct containers used? | Yes |
| 12. | Sufficient sample? | Yes |
| 13. | VOA vials bubble-free ($H_2O$) or no head space (soil)? | Yes |
| 14. | Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____ | Yes |

**Comments** _____

*Validated Date and Time of Sample Receipt (VDTSR)

Environmental Testing & Consulting, Inc.

# Sample Reports

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750


768 125

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-01
Field ID : MW-57-1

Matrix : AQUEOUS
Sample Date : 10/28/03 08:25:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | 24 3 | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 12 2 | ug/L | 1 00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 0.973J | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 5.32 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 57 3 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 111 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 83 | 58 | 131 |

JB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073801

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073801

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0401005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310738**

ETC Lab ID : **0310738-02**
Field ID : **MW-57-2**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 08:30:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 33.3 | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 18 2 | ug/L | 1.00 | | | | |
| [illegible]loromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | 1.45 | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | | |
| Tetrachloroethene | 5.28 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 71.6 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 113 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073802

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073802

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0501006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 129

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID . 0310738-03
Field ID : MW-58-1

Matrix : AQUEOUS
Sample Date : 10/28/03 08:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 116 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 130

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073803

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073803

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0601007

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 7.70 | NJ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 131

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID . 0310738-04
Field ID : MW-56-1

Matrix : AQUEOUS
Sample Date : 10/28/03 08:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | 26.0 | ug/L | 1 00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

[redacted]

CB

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 132

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073804

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073804

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0701008

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 133

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310738**

ETC Lab ID : **0310738-05**
Field ID **MW-34-1**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 08:55:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | 3 00 | ug/L | 1 00 | | | | |
| [redacted]loromethane | ND | ug/L | 1 00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 134

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073805

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073805

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0801009

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 6.96 | NJ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 135

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310738**

ETC Lab ID : **0310738-06**
Field ID : **MW-34-2**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 09:00:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | **V311031** | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted],1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 108 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 136

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
031073806

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073806

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0901010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 590-18-1 | 2-BUTENE, (Z)- | 6.04 | 7.37 | NJ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID: **0310738-07**
Field ID : **MW-34-3**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 09:05:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [illegible]loromethane | ND | ug/L | 1 00 | | | | |
| [illegible],1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 138

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073807

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073807

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1001011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 7.13 | NJ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 139

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-08
Field ID . MW-07-1

Matrix: AQUEOUS
Sample Date . 10/28/03 09:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 1.23 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 139 | ug/L | 1 00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted],1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 18.7 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | | |
| Tetrachloroethene | 15.0 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | 21 2 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 103 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 140

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073808

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073808

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1101012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 141

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID . 0310738-09
Field ID : MW-07-2

Matrix : AQUEOUS
Sample Date . 10/28/03 09:15:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | | |
| [illegible]-Dichloroethane | 1.68 | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | 40.9 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 42 6 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | 1 69 | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 27 6 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

000032

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
031073809

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073809

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1201013

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 6.95 | NJ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID . **0310738-10**
Field ID : **MW-09-1**

Matrix : **AQUEOUS**
Sample Date . **10/28/03 09:25:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 8 34 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 27.2 | ug/L | 1.00 | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | |
| Tetrachloroethene | 1.89 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 3.32 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073810

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073810

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1301014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
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| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-11
Field ID . MW-08-1

Matrix : AQUEOUS
Sample Date : 10/28/03 09:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 1.43 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 108 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 101 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073811

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073811

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1401015

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 6.79 | NJ |
| 2. | | | | | |
| 3. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 147

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-12
Field ID : MW-29-1

Matrix : AQUEOUS
Sample Date : 10/28/03 09:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | 1 45 | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 33 2 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 25.0 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | 3.36 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 27.9 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 109 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 123 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

[redacted]

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 148

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073812

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073812

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1501016

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 149

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-13
Field ID : MW-29-2

Matrix : AQUEOUS
Sample Date : 10/28/03 09:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]loromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | 1.56 | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 34 8 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 27 1 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | 3 58 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 29.6 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

[redacted]

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 150

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073813

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073813

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1601017

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 106-98-9 | 1-BUTENE | 6.05 | 6.85 | NJ |
| 2. | | | | | |
| 3. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 151

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310738**

ETC Lab ID : **0310738-14**
Field ID : **MW-29-3**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 09:55:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | **V311031** | | | | | | |
| **Dilution Factor** | **1** | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [illegible]loromethane | ND | ug/L | 1.00 | | | | |
| [illegible]1-Dichloroethane | 1.52 | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 32 8 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 26.0 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | 3.61 | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | 28.5 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 152

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073814

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073814

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1701018

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 6.43 | NJ |
| 2. | | | | | |
| 3. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 153

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-15
Field ID : MW-36-1

Matrix : AQUEOUS
Sample Date : 10/28/03 10:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 105 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

000044

768 154

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073815

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073815

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1801019

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 6.50 | NJ |
| 2. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 155

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-16
Field ID : MW-36-2

Matrix: AQUEOUS
Sample Date : 10/28/03 10:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/05/03 | LS | 8260B 5030B |
| **QC Batch** | **V211051** | | | | | |
| **Dilution Factor** | **1** | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 95 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000046

** - Method Detection Limit

768 156

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073816

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073816

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1009

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750


768 157

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-17
Field ID : MW-36-3

Matrix : AQUEOUS
Sample Date : 10/28/03 10:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/05/03 | | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 158

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073817

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073817

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 159

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310738**

ETC Lab ID : **0310738-18**
Field ID **MW-130-1**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 10:20:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/05/03 | LS | 8260B 5030B |
| **QC Batch** | **V211051** | | | | | |
| **Dilution Factor** | **1** | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | 2 76 | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 42.2 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 74 3 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | 4.62 | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 61.1 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 0 599J | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 94 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 96 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 160

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073818

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073818

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750


768 161

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-19
Field ID : MW-130-2

Matrix : AQUEOUS
Sample Date : 10/28/03 10:22:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/05/03 | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | |
| [redacted],1-Dichloroethane | 2 72 | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 40.5 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | |
| Tetrachloroethene | 79.8 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | 4.81 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 64 0 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 0.675J | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 162

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073819

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073819

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID . **0310738-20**
Field ID : **MW-130-3**

Matrix . **AQUEOUS**
Sample Date : **10/28/03 10:25:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/05/03 | | LS | 8260B 5030B |
| **QC Batch** | V211051 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | | |
| [illegible]-Dichloroethane | 2.67 | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 38 4 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 80 3 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | 4.39 | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 60 4 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 90 | 84 | 115 |
| S2 - Toluene-d8 | 95 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 90 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 164

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073820

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073820

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1013J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.



2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID : **0310738-21**
Field ID : **MW-130-4**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 10:30:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/05/03 | LS | 8260B 5030B |
| **QC Batch** | V211051 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | |
| [illegible]-Dichloroethane | 2 45 | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 38.0 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 76 6 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | 4.61 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 62 3 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 0.596J | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 93 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 102 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 89 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073821

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073821

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 167

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-22
Field ID : MW-129-1

Matrix : AQUEOUS
Sample Date : 10/28/03 10:35:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/05/03 | LS | 8260B 5030B |
| **QC Batch** | V211051 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | 4 87 | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | 42.0 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 12 8 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | 3 02 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 12 0 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

000058

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 168

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073822

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073822

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1015

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 169

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-23
Field ID : MW-129-100

Matrix : AQUEOUS
Sample Date : 10/28/03 10:35:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/05/03 | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | 4 26 | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 35.4 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 12.8 | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | 3.05 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 11.8 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 89 | 58 | 131 |

[redacted]

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 170

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073823

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073823

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1016

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 171

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID . 0310738-24
Field ID : MW-129-2

Matrix : AQUEOUS
Sample Date : 10/28/03 10:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/06/03 | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | 4.71 | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 41 0 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 24 9 | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | 3.43 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 12 4 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 99 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

000062

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 172

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073824

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073824

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1017

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 173

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-25
Field ID : MW-129-3

Matrix : AQUEOUS
Sample Date : 10/28/03 10:45:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted],1-Dichloroethane | 4.58 | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | 40 2 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 26.1 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | 3 50 | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 13 4 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 96 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 104 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 174

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073825

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073825

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 175

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-26
Field ID : MW-128-1

Matrix : AQUEOUS
Sample Date : 10/28/03 10:55:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 2 98 | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | 1 14 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 103 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073826

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073826

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 177

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-27
Field ID: MW-128-2

Matrix: AQUEOUS
Sample Date: 10/28/03 10:58:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/06/03 | | LS | 8260B 5030B |
| **QC Batch** | V211061 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| [illegible]oromethane | ND | ug/L | 1 00 | | | | |
| [illegible]-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 3.41 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 1 04 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 99 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000068

** - Method Detection Limit

768 178

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073827

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073827

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1007

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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| 27. | | | | | |
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| 29. | | | | | |
| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID : **0310738-28**
Field ID . **MW-128-3**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 11:00:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/06/03 | | LS | 8260B 5030B |
| **QC Batch** | V211061 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | 2 64 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 91 | 84 | 115 |
| S2 - Toluene-d8 | 96 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 180

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073828

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073828

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1008

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 181

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-29
Field ID: MW-128-4

Matrix: AQUEOUS
Sample Date: 10/28/03 11:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/06/03 | LS | 8260B 5030B |
| **QC Batch** | **V211061** | | | | | |
| **Dilution Factor** | **1** | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 2.88 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 101 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

[redacted]

000072

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 182

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073829

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073829

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1009

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 183

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-30
Field ID : MW-51-1

Matrix : AQUEOUS
Sample Date : 10/28/03 11:15:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/06/03 | LS | 8260B 5030B |
| **QC Batch** | V211061 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | 17 6 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 0.922J | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 5 54 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 94 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000074

** - Method Detection Limit

768 184

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073830

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073830

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 185

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID . 0310738-31
Field ID: MW-78-1

Matrix : AQUEOUS
Sample Date : 10/28/03 12:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/06/03 | LS | 8260B 5030B |
| **QC Batch** | V211061 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 97 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 186

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073831

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073831

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 187

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-32
Field ID : MW-68-1

Matrix : AQUEOUS
Sample Date : 10/28/03 12:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

000078

768 188

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073832

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073832

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 189

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-33
Field ID: MW-68-2

Matrix : AQUEOUS
Sample Date : 10/28/03 12:42:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 88 | 84 | 115 |
| S2 - Toluene-d8 | 90 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 88 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

[redacted]

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 190

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073833

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073833

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1013

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 191

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310738**

ETC Lab ID . **0310738-34**
Field ID . **ERB-2**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 12:45:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| Chloromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 107 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 192

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073834

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073834

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0401005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 193

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-35
Field ID : MW-76-1

Matrix : AQUEOUS
Sample Date : 10/28/03 12:55:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | |
| [illegible],1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | 0.831J | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 6.76 | ug/L | 1.00 | | | |
| Tetrachloroethene | 2.29 | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 17.6 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 1.74 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 110 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 84 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

768 194

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073835

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073835

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0501006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 195

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-36
Field ID: MW-76-2

Matrix : AQUEOUS
Sample Date : 10/28/03 13:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 1.93 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 8.08 | ug/L | 1.00 | | | |
| Tetrachloroethene | 1 87 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 33 8 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | 4 16 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 112 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 89 | 58 | 131 |

[redacted]

000086

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 196

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073836

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073836

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0601007

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 197

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-37
Field ID : MW-70-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 0.644J | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 2.50 | ug/L | 1 00 | | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 18.8 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 3,540E | ug/L | 1.00 | | | | |
| Tetrachloroethene | 17.3 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 6.92 | ug/L | 1.00 | | | | |
| Trichloroethene | 2,280E | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | 112 | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 114 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

[redacted]

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

000088

768 198

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073837

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073837

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0701008

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310739**

ETC Lab ID : **0310739-72**
Field ID . **MW-70-1-DIL**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 13:05:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | **V311081** | | | | | | |
| **Dilution Factor** | **200** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 8,270 | ug/L | 200 | | | | |
| Trichloroethene | 2,530 | ug/L | 200 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 113 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 200

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID : **0310738-38**
Field ID : **MW-70-2**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 13:10:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | **V311071** | | | | | | |
| **Dilution Factor** | **1** | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | 3.91 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | 2,850E | ug/L | 1.00 | | | | |
| Tetrachloroethene | 3.85 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 4 39 | ug/L | 1.00 | | | | |
| Trichloroethene | 1,410E | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | 10 3 | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 50.0 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 111 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 90 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

000091

FORM 1 768 201 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031073838

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073838

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0801009

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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768 202

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/29/03**
ETC Order Number **0310739**

ETC Lab ID : **0310739-73**
Field ID **MW-70-2-DIL**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 13:10:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B<br>5030B |
| **QC Batch** | **V311081** | | | | | |
| **Dilution Factor** | **200** | | | | | |
| 1,1,2,2-Tetrachloroethane | 4,170 | ug/L | 200 | | | |
| Trichloroethene | 1,280 | ug/L | 200 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 103 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 115 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000093

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID . 0310738-39
Field ID : MW-32-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | V311081 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 50.9 | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 7.82 | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 13.4 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 7.97 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 113 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 204

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073839

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073839

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0501007

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**
FID #:

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID : **0310738-40**
Field ID : **MW-37-1**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 13:25:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| Chloromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 101 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

000096

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 206

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073840

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073840

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1001011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 207

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-41
Field ID : MW-37-2

Matrix : AQUEOUS
Sample Date : 10/28/03 13:28:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 103 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 117 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 208

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073841

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073841

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1101012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 209

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-42
Field ID : MW-37-200

Matrix : AQUEOUS
Sample Date : 10/28/03 13:28:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted],1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 210

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073842

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073842

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1201013

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 211

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-43
Field ID : MW-37-3

Matrix : AQUEOUS
Sample Date : 10/28/03 13:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [illegible]oromethane | ND | ug/L | 1 00 | | | |
| [illegible]-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 117 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 101 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 212

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073843

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073843

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1301014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 213

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-44
Field ID : ERB-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:35:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [illegible]oromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 214

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073844

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073844

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1401015

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 215

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-45
Field ID : MW-71-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | 6 87 | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 88.8 | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 27.0 | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 17.4 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 1 59 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 123 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 104 | 58 | 131 |

000106

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 216

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073845

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073845

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1501016

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750 768 217

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-46
Field ID : MW-71-2

Matrix : AQUEOUS
Sample Date 10/28/03 13:55:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 15 3 | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 31.1 | ug/L | 1 00 | | | |
| [illegible]oromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 10 4 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 117 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 218

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073846

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073846

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1601017

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 219

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-47
Field ID : MW-33-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 101 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

cb
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 220

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073847

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073847

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1701018

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 221

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-48
Field ID: MW-30-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 111 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 222

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073848

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073848

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1801019

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 223

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-49
Field ID : MW-31-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:15:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | 8.38 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 1.46 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 224

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073849

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073849

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1901020

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 225

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-50
Field ID: MW-31-2

Matrix : AQUEOUS
Sample Date : 10/28/03 14:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 7.61 | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | 2.32 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 226

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073850

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073850

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 227

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-51
Field ID: MW-31-200

Matrix : AQUEOUS
Sample Date : 10/28/03 14:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| Chloromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 8.21 | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 1 08 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 1.97 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 92 | 84 | 115 |
| S2 - Toluene-d8 | 91 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 90 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 228

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073851

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073851

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
| 2. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 229

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #:

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-52
Field ID : MW-79-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 21 6 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 1.34 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | | |
| Tetrachloroethene | 2 10 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 11 2 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 1 41 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 230

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073852

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073852

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 231

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-53
Field ID : MW-79-100

Matrix : AQUEOUS
Sample Date : 10/28/03 14:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1 00 | | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | 23.4 | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | 1.36 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 1 81 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 11.2 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | 1 46 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 232

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073853

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073853

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1007

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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| 29. | | | | | |
| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 233

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/29/03**
ETC Order Number: **0310738**

ETC Lab ID : **0310738-54**
Field ID : **MW-79-2**

Matrix : **AQUEOUS**
Sample Date : **10/28/03 14:35:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]loromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | 23.9 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | 1 61 | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 1.95 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 12.4 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 2.07 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 94 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

000124

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 234

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073854

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073854

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1008

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 235

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-55
Field ID : ERB-3

Matrix : AQUEOUS
Sample Date : 10/28/03 14:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 95 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 236

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073855

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073855

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1009

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 237

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-56
Field ID : MW-95-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 87 | 84 | 115 |
| S2 - Toluene-d8 | 84 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 85 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 238

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073856

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073856

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 239

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-57
Field ID: MW-126-1

Matrix: AQUEOUS
Sample Date : 10/28/03 14:55:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 104 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 240

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073857

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 031073857

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 241

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-58
Field ID : MW-80-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 92 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 107 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

CB

Data Validator

000132

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 242

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073958

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073958

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 243

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-59
Field ID . MW-127-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted],1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 244

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073959

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073959

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1013

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 245

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID: 0310739-60
Field ID : MW-44-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:15:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | 1 96 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 1.15 | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 0 821J | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 91 | 84 | 115 |
| S2 - Toluene-d8 | 94 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 92 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 246

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073960

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073960

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 247

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-61
Field ID . MW-42-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:25:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 93 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 102 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 248

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073961

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073961

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1015

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 249

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-62
Field ID : MW-40-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | 1.11 | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 93 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

CB

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 250

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073962

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073962

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1016

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 251

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID . 0310739-63
Field ID : MW-43-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:45:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | 1 00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 114 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

000142

768 252

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073963

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073963

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0801010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 253

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-64
Field ID : MW-43-2

Matrix : AQUEOUS
Sample Date : 10/28/03 15:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted]1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 254

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073964

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073964

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0901011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 255

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-65
Field ID: MW-67-1

Matrix : AQUEOUS
Sample Date : 10/28/03 16:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 256

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073965

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073965

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1001012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 257

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID: 0310739-66
Field ID : MW-67-2

Matrix : AQUEOUS
Sample Date : 10/28/03 16:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | V311081 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1 00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 258

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073966

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073966

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1101013

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 259

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-67
Field ID : MW-67-3

Matrix: AQUEOUS
Sample Date : 10/28/03 16:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 116 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 260

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073967

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073967

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1201014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 261

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID . 0310739-68
Field ID : MW-69-1

Matrix : AQUEOUS
Sample Date 10/28/03 16:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted],1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 122 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

000152

768 262

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073968

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073968

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1301015

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 263

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-69
Field ID : MW-69-100

Matrix : AQUEOUS
Sample Date : 10/28/03 16:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

000154

768 264

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073969

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073969

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1401016

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 265

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-70
Field ID : MW-69-2

Matrix : AQUEOUS
Sample Date : 10/28/03 16:25:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | V311081 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 109 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 116 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 266

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073970

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073970

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1501017

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 267

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-71
Field ID : Trip Blank

Matrix : AQUEOUS
Sample Date : 10/28/03

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Biomodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Biomomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | |
| [illegible]-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 108 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 83 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000158

** - Method Detection Limit

768 268

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031073971

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 031073971

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0401006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level II
# GC/MS Volatiles

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs Engineering
**Project Name** Memphis Defense Depot

**ETC Order #** 0310-738, 0310-739

**SAMPLE PRESERVATION**

All water samples preserved with HCl to pH < 2 (verified at analysis) and maintained at 4oC until analysis

**HOLDING TIMES**

Sample Analysis All samples analyzed within 14 days of collection

**METHOD**

Preparation: SW-846 5030B
Analysis: SW-846 8260B

**QUALITY CONTROL**

| QC Batch | Form 4 Summary |
|---|---|
| V311031 | V3110311LB |
| V211051 | V2110511LB |
| V211061 | V2110611LB |
| V311071 | V3110711LB |
| V211071 | V2110711LB |
| V311081 | V3110811LB |

System Monitoring Compounds FORM 2

Surrogate recoveries within QC limits, except as listed below:
Bromofluorobenzene was flagged slightly high in 0310-738-08 (MW-07-1), 0310-738-09 (MW-07-2), 0310-738-10 (MW-09-1), 0310-738-12 (MW-29-1), 0310-738-14 (MW-29-3), 0310-738-15 (MW-36-1), 0310-738-45 (MW-71-1), 0310-738-48 (MW-30-1), 0310-739-65 (MW-67-1), and 0310-739-65 (MW-67-1).

Method Blank FORM 4

V3110311LB
V2110511LB
V2110611LB
V3110711LB
V2110711LB
V3110811LB

Target analytes were not detected in the method blank, except as listed below.
Chlorodibromomethane and methylene chloride were identified in V3110311LB. These analytes were not reported in any associated project samples. The data was not affected.
Chlorodibromomethane and bromodichloromethane were identified in V3110311LB. These analytes were not reported in any associated project samples The data was not affected
Methylene chloride was identified in V3110711LB. This analyte was not reported in any associated project samples The data was not affected.

Laboratory Control Sample FORM 3

V3110311LCS
V2110511LCS
V2110611LCS
V3110711LCS
V2110711LCS
V3110811LCS

All target analyte acceptance criteria met, except as listed below
Bromomethane was flagged for high recovery in V3110311LCS This analyte was not reported in any associated project sample The data was not affected
Chloroethane was flagged for high recovery in V2110511LCS. This analyte was not reported in any associated project sample The data was not affected.

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs Engineering
**Project Name** Memphis Defense Depot

**ETC Order #** 0310-738, 0310-739

Laboratory Control Sample FORM 3 (cont )

Acetone was flagged for high recovery in V3110711LCS. This analyte was not reported in any associated project sample The data was not affected.
Chloroform was flagged for high recovery in V3110811LCS Results for this analyte should be considered estimated value

Matrix Spike / Matrix Spike Dup. FORM 3

| | | |
|---|---|---|
| Batch V311031 | | |
| 0310-738-10 | RPD | All analytes within QC limits |
| MW-09-1 | Spike Recovery | All analytes within QC limits.* |

Multiple analytes were flagged high in the MS/MSD. Refer to Laboratory Control Sample(s) for system verification

| | | |
|---|---|---|
| Batch V211051 | | |
| 0310-738-20 | RPD | All analytes within QC limits. |
| MW-130-3 | Spike Recovery | All analytes within QC limits.* |

Multiple analytes were flagged high in the MS/MSD Refer to Laboratory Control Sample(s) for system verification

| | | |
|---|---|---|
| Batch V211061 | | |
| 0310-738-30 | RPD | All analytes within QC limits. |
| MW-51-1 | Spike Recovery | All analytes within QC limits.* |

Chloroethane was flagged for high recovery in the MS/MSD This analyte was not reported in any associated project samples Refer to Laboratory Control Sample(s) for system verification.

| | | |
|---|---|---|
| Batch V311071 | | |
| 0310-738-40 | RPD | All analytes within QC limits. |
| MW-37-1 | Spike Recovery | All analytes within QC limits.* |

Multiple analytes were flagged high in the MS/MSD. Refer to Laboratory Control Sample(s) for system verification

| | | |
|---|---|---|
| Batch V211071 | | |
| 0310-738-50 | RPD | All analytes within QC limits |
| MW-31-2 | Spike Recovery | All analytes within QC limits.* |

Chloroethane and cis-1,2-Dichloroethene were flagged for high recoveries in the MS/MSD 1,1-Dichloroethane was flagged high in the MSD These analytes were not reported in any associated project samples Refer to Laboratory Control Sample(s) for system verification.

| | | |
|---|---|---|
| Batch V311081 | | |
| 0310-739-70 | RPD | All analytes within QC limits. |
| MW-69-2 | Spike Recovery | All analytes within QC limits * |

Refer to Laboratory Control Sample(s) for system verification.

## CALIBRATION

| | |
|---|---|
| BFB Daily 12-Hour Tune | All criteria met FORM 5 |
| Initial Calibration | All criteria met FORM 6 |
| Calibration Verification | All criteria met FORM 7 |
| Calibration Verification | % Differences/% Drift (%D) >30%. FORM 7<br>Multiple analytes were flagged with % Differences >30% for high response in the CV These analytes were not reported in the associated project samples. The data was not affected |

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# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs Engineering
**Project Name** Memphis Defense Depot

**ETC Order #** 0310-738, 0310-739

**CALIBRATION (cont.)**

Samples in this sequence are listed on Form 5 (Instrument Performance Check) The CV passed SPCC/CCC evaluation criteria The CV is valid per SW-846 method 8000A/8260B.

USACOE Shell Document EM 200-1-2 specifies an additional requirement that all project-specified contaminants of concern are to be within +/- 20% D. Calibration verification forms have been provided that lists the %D of all analytes.

Volatile Internal Standard Area and RT FORM 8
Calibration Verification standard(s) Internal Standard Areas and Retention Times within QC limits.

**SAMPLE ANALYSIS**

| | |
|---|---|
| Instrumentation | HP 5890 Series II GC, 5971MSD |
| Dilutions Required | Dilutions performed, as indicated on the result sheets, to bring target analytes within calibration range. |

CB
Project Manager

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

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Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | V3110311LCS | 90 | 97 | 97 | 80 | 0 |
| 02 | V3110311LB | 95 | 101 | 111 | 80 | 0 |
| 03 | 031073801 | 98 | 105 | 111 | 83 | 0 |
| 04 | 031073802 | 100 | 106 | 113 | 87 | 0 |
| 05 | 031073803 | 102 | 102 | 116 | 91 | 0 |
| 06 | 031073804 | 98 | 104 | 118 | 86 | 0 |
| 07 | 031073805 | 102 | 107 | 120 | 95 | 0 |
| 08 | 031073806 | 108 | 104 | 119 | 94 | 0 |
| 09 | 031073807 | 105 | 104 | 120 | 94 | 0 |
| 10 | 031073808 | 103 | 104 | 121* | 99 | 1 |
| 11 | 031073809 | 107 | 103 | 121* | 98 | 1 |
| 12 | 031073810 | 104 | 109 | 121* | 98 | 1 |
| 13 | 031073811 | 108 | 108 | 118 | 101 | 0 |
| 14 | 031073812 | 109 | 107 | 123* | 103 | 1 |
| 15 | 031073813 | 105 | 106 | 120 | 100 | 0 |
| 16 | 031073814 | 107 | 108 | 121* | 102 | 1 |
| 17 | 031073815 | 106 | 108 | 121* | 105 | 1 |
| 18 | 031073810MS | 98 | 108 | 111 | 98 | 0 |
| 19 | 031073810MSD | 91 | 103 | 106 | 86 | 0 |
| 20 | V2110511LCS | 86 | 88 | 88 | 85 | 0 |
| 21 | V2110511LB | 96 | 95 | 94 | 94 | 0 |
| 22 | 031073816 | 95 | 103 | 105 | 98 | 0 |
| 23 | 031073817 | 100 | 101 | 105 | 95 | 0 |
| 24 | 031073818 | 96 | 94 | 96 | 88 | 0 |
| 25 | 031073819 | 94 | 103 | 95 | 86 | 0 |
| 26 | 031073820 | 90 | 95 | 90 | 86 | 0 |
| 27 | 031073821 | 98 | 93 | 102 | 89 | 0 |
| 28 | 031073822 | 99 | 110 | 98 | 98 | 0 |
| 29 | 031073823 | 94 | 101 | 104 | 89 | 0 |
| 30 | 031073824 | 100 | 102 | 99 | 91 | 0 |

| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER(DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | 031073820MS | 87 | 96 | 88 | 82 | 0 |
| 02 | 031073820MSD | 88 | 102 | 98 | 93 | 0 |
| 03 | V2110611LCS | 86 | 94 | 102 | 86 | 0 |
| 04 | V2110611LB | 94 | 98 | 111 | 96 | 0 |
| 05 | 031073825 | 99 | 106 | 96 | 104 | 0 |
| 06 | 031073826 | 99 | 104 | 103 | 97 | 0 |
| 07 | 031073827 | 98 | 103 | 99 | 96 | 0 |
| 08 | 031073828 | 91 | 96 | 106 | 93 | 0 |
| 09 | 031073829 | 101 | 103 | 100 | 91 | 0 |
| 10 | 031073830 | 96 | 99 | 94 | 97 | 0 |
| 11 | 031073831 | 97 | 97 | 106 | 100 | 0 |
| 12 | 031073832 | 97 | 112 | 100 | 98 | 0 |
| 13 | 031073833 | 88 | 90 | 88 | 92 | 0 |
| 14 | 031073830MS | 87 | 101 | 97 | 87 | 0 |
| 15 | 031073830MSD | 94 | 105 | 93 | 96 | 0 |
| 16 | V3110711LCS | 86 | 99 | 98 | 76 | 0 |
| 17 | V3110711LB | 94 | 102 | 106 | 76 | 0 |
| 18 | 031073834 | 94 | 105 | 107 | 80 | 0 |
| 19 | 031073835 | 98 | 107 | 110 | 84 | 0 |
| 20 | V2110711LCS | 95 | 102 | 99 | 100 | 0 |
| 21 | 031073836 | 98 | 106 | 112 | 89 | 0 |
| 22 | 031073837 | 96 | 101 | 114 | 88 | 0 |
| 23 | 031073838 | 96 | 103 | 111 | 90 | 0 |
| 24 | V2110711LB | 96 | 100 | 102 | 89 | 0 |
| 25 | 031073850 | 99 | 101 | 98 | 103 | 0 |
| 26 | 031073840 | 101 | 105 | 119 | 93 | 0 |
| 27 | 031073851 | 92 | 91 | 90 | 80 | 0 |
| 28 | 031073841 | 103 | 108 | 117 | 97 | 0 |
| 29 | 031073842 | 106 | 109 | 118 | 97 | 0 |
| 30 | 031073852 | 97 | 99 | 104 | 97 | 0 |

| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER(DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | 031073843 | 104 | 108 | 117 | 101 | 0 |
| 02 | 031073853 | 96 | 99 | 104 | 95 | 0 |
| 03 | 031073844 | 107 | 108 | 120 | 100 | 0 |
| 04 | 031073854 | 97 | 100 | 94 | 98 | 0 |
| 05 | 031073845 | 104 | 110 | 123* | 104 | 1 |
| 06 | 031073855 | 98 | 95 | 95 | 96 | 0 |
| 07 | 031073846 | 105 | 112 | 117 | 100 | 0 |
| 08 | 031073856 | 87 | 84 | 95 | 85 | 0 |
| 09 | 031073847 | 101 | 112 | 118 | 100 | 0 |
| 10 | 031073857 | 99 | 105 | 95 | 104 | 0 |
| 11 | 031073848 | 107 | 111 | 121* | 103 | 1 |
| 12 | 031073849 | 107 | 112 | 119 | 103 | 0 |
| 13 | 031073840MS | 98 | 109 | 111 | 101 | 0 |
| 14 | 031073840MSD | 95 | 103 | 101 | 93 | 0 |
| 15 | 031073850MS | 95 | 98 | 107 | 94 | 0 |
| 16 | 031073850MSD | 96 | 96 | 102 | 93 | 0 |
| 17 | V3110811LB | 94 | 104 | 108 | 77 | 0 |
| 18 | 031073839 | 100 | 101 | 113 | 86 | 0 |
| 19 | 031073837 | 104 | 102 | 113 | 92 | 0 |
| 20 | 031073838 | 103 | 99 | 115 | 93 | 0 |
| 21 | V3110811LCS | 104 | 105 | 112 | 107 | 0 |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER(DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

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FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3110311LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 0302004 Lab Prep Batch: V311031

Date Analyzed: 11/03/03 Time Analyzed: 1540

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC3 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V3110311LCS | 11LCS | 0202003LCS | 1422 |
| 02 | 031073801 | 031073801 | 0401005 | 1610 |
| 03 | 031073802 | 031073802 | 0501006 | 1640 |
| 04 | 031073803 | 031073803 | 0601007 | 1710 |
| 05 | 031073804 | 031073804 | 0701008 | 1740 |
| 06 | 031073805 | 031073805 | 0801009 | 1810 |
| 07 | 031073806 | 031073806 | 0901010 | 1840 |
| 08 | 031073807 | 031073807 | 1001011 | 1910 |
| 09 | 031073808 | 031073808 | 1101012 | 1939 |
| 10 | 031073809 | 031073809 | 1201013 | 2009 |
| 11 | 031073810 | 031073810 | 1301014 | 2039 |
| 12 | 031073811 | 031073811 | 1401015 | 2109 |
| 13 | 031073812 | 031073812 | 1501016 | 2139 |
| 14 | 031073813 | 031073813 | 1601017 | 2209 |
| 15 | 031073814 | 031073814 | 1701018 | 2239 |
| 16 | 031073815 | 031073815 | 1801019 | 2308 |
| 17 | 031073810MS | MS | 1901020 | 2338 |
| 18 | 031073810MSD | MSD | 2001021 | 0008 |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
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| 30 | | | | |

COMMENTS:

FORM 1 768 277 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V3110311LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V311031

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.10 | |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 1.42 | J |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3110311LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V311031

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-38-3 | Xylene-mp | 1.00 | U |
| 95-47-6 | Xylene-o | 1.00 | U |

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V3110311LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/03/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 110-54-3 | HEXANE | 6.05 | 36.42 | NJ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
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| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V311031

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V3110311LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 164.1 | 164* | 59-151 |
| Benzene | 100.0 | | 118.4 | 118 | 72-124 |
| Bromodichloromethane | 100.0 | | 104.8 | 105 | 68-119 |
| Bromoform | 100.0 | | 88.61 | 89 | 66-136 |
| Bromomethane | 100.0 | | 143.7 | 144* | 40-134 |
| 2-Butanone | 100.0 | | 104.0 | 104 | 55-151 |
| Carbon Disulfide | 100.0 | | 125.8 | 126 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 99.19 | 99 | 64-123 |
| Chlorobenzene | 100.0 | | 91.79 | 92 | 77-112 |
| Chlorodibromomethane | 100.0 | | 107.7 | 108 | 72-118 |
| Chloroethane | 100.0 | | 116.0 | 116 | 64-142 |
| Chloroform | 100.0 | | 110.7 | 111 | 70-115 |
| Chloromethane | 100.0 | | 87.82 | 88 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 108.0 | 108 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 103.0 | 103 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 115.4 | 115 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | | 112.4 | 112 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | | 117.1 | 117 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 104.2 | 104 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 108.8 | 109 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 110.9 | 111 | 73-124 |
| Ethylbenzene | 100.0 | | 97.31 | 97 | 77-111 |
| 2-Hexanone | 100.0 | | 117.6 | 118 | 53-144 |
| Methylene Chloride | 100.0 | | 107.5 | 108 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 104.4 | 104 | 42-144 |
| Styrene | 100.0 | | 95.80 | 96 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 91.11 | 91 | 67-126 |
| Tetrachloroethene | 100.0 | | 108.9 | 109 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

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Lab Name: ETC,INC. Lab Prep Batch: V311031

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V3110311LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 101.9 | 102 | 63-122 |
| Toluene | 100.0 | | 111.2 | 111 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | | 113.9 | 114 | 69-117 |
| Trichloroethene | 100.0 | | 103.9 | 104 | 75-113 |
| Vinyl Chloride | 100.0 | | 104.8 | 105 | 65-134 |
| Xylene-mp | 200.0 | | 187.4 | 94 | 77-115 |
| Xylene-o | 100.0 | | 92.36 | 92 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311031

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073810

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 133.1 | 133 | 59-151 |
| Benzene | 100.0 | 0.000 | 138.3 | 138* | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 145.4 | 145* | 68-119 |
| Bromoform | 100.0 | 0.000 | 100.3 | 100 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 119.8 | 120 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 38.45 | 38* | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 118.3 | 118 | 60-133 |
| Carbon Tetrachloride | 100.0 | 8.34 | 134.7 | 126* | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 94.42 | 94 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 137.1 | 137* | 72-118 |
| Chloroethane | 100.0 | 0.000 | 128.8 | 129 | 64-142 |
| Chloroform | 100.0 | 27.19 | 173.6 | 146* | 70-115 |
| Chloromethane | 100.0 | 0.000 | 64.66 | 65 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 124.4 | 124* | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 144.6 | 145* | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 138.6 | 139* | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 132.6 | 133* | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 108.4 | 108 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 124.9 | 125 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 131.5 | 132* | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 141.1 | 141* | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 105.9 | 106 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 118.9 | 119 | 53-144 |
| Methylene Chloride | 100.0 | 1.74 | 136.5 | 135* | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 121.1 | 121 | 42-144 |
| Styrene | 100.0 | 0.000 | 100.2 | 100 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 91.95 | 92 | 67-126 |
| Tetrachloroethene | 100.0 | 1.89 | 114.3 | 112 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 283

Lab Name: ETC,INC. Lab Prep Batch: V311031

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073810

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 133.7 | 134* | 63-122 |
| Toluene | 100.0 | 0.000 | 126.7 | 127* | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 136.8 | 137* | 69-117 |
| Trichloroethene | 100.0 | 3.32 | 121.5 | 118* | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 117.8 | 118 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 193.7 | 97 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 96.76 | 97 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311031

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073810

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 109.2 | 109 | 20 | 20 | 59-151 |
| Benzene | 100.0 | 135.0 | 135* | 2 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 127.4 | 127* | 13 | 20 | 68-119 |
| Bromoform | 100.0 | 92.36 | 92 | 8 | 20 | 66-136 |
| Bromomethane | 100.0 | 156.3 | 156* | 26* | 20 | 40-134 |
| 2-Butanone | 100.0 | 32.99 | 33* | 14 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 132.6 | 133 | 12 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 125.2 | 117 | 7 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 101.9 | 102 | 8 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 119.8 | 120* | 13 | 20 | 72-118 |
| Chloroethane | 100.0 | 144.8 | 145* | 12 | 20 | 64-142 |
| Chloroform | 100.0 | 157.5 | 130* | 12 | 20 | 70-115 |
| Chloromethane | 100.0 | 78.08 | 78 | 18 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 126.3 | 126* | 2 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 119.7 | 120 | 19 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 142.2 | 142* | 2 | 20 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 127.4 | 127* | 5 | 20 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 117.2 | 117 | 8 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 121.4 | 121 | 3 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 121.6 | 122* | 8 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 122.8 | 123 | 14 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 112.1 | 112* | 6 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 98.50 | 98 | 19 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 131.3 | 130* | 4 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 99.76 | 100 | 19 | 20 | 42-144 |
| Styrene | 100.0 | 104.7 | 105 | 5 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 88.28 | 88 | 4 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 116.2 | 114 | 2 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 285

Lab Name: ETC, INC. Lab Prep Batch: V311031

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073810

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 122.7 | 123* | 8 | 20 | 63-122 |
| Toluene | 100.0 | 125.6 | 126* | 1 | 20 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 127.3 | 127* | 8 | 20 | 69-117 |
| Trichloroethene | 100.0 | 121.6 | 118* | 0 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 121.1 | 121 | 2 | 20 | 65-134 |
| Xylene-mp | 200.0 | 205.7 | 103 | 6 | 20 | 77-115 |
| Xylene-o | 100.0 | 102.4 | 102 | 5 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 35 outside limits
Spike Recovery: 34 out of 70 outside limits

COMMENTS: _____

768 286

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V2110511LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 1004J Lab Prep Batch: V211051

Date Analyzed: 11/05/03 Time Analyzed: 1628

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2110511LCS | 11LCS | 1002J | 1508 |
| 02 | 031073816 | 031073816 | 1009 | 1925 |
| 03 | 031073817 | 031073817 | 1010 | 2001 |
| 04 | 031073818 | 031073818 | 1011 | 2036 |
| 05 | 031073819 | 031073819 | 1012 | 2111 |
| 06 | 031073820 | 031073820 | 1013J | 2147 |
| 07 | 031073821 | 031073821 | 1014 | 2222 |
| 08 | 031073822 | 031073822 | 1015 | 2257 |
| 09 | 031073823 | 031073823 | 1016 | 2333 |
| 10 | 031073824 | 031073824 | 1017 | 0008 |
| 11 | 031073820MS | MS | 1018J | 0044 |
| 12 | 031073820MSD | MSD | 1019J | 0119 |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
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| 30 | | | | |

COMMENTS:

FORM 1 768 287 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2110511LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V211051

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.58 | |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.49 | |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

768 288

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V2110511LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V211051

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

FORM 1 768 289 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V2110511LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/05/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
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| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: V211051

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V2110511LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 115.6 | 116 | 59-151 |
| Benzene | 100.0 | | 92.73 | 93 | 72-124 |
| Bromodichloromethane | 100.0 | | 96.64 | 97 | 68-119 |
| Bromoform | 100.0 | | 102.8 | 103 | 66-136 |
| Bromomethane | 100.0 | | 71.86 | 72 | 40-134 |
| 2-Butanone | 100.0 | | 123.8 | 124 | 55-151 |
| Carbon Disulfide | 100.0 | | 88.48 | 88 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 98.76 | 99 | 64-123 |
| Chlorobenzene | 100.0 | | 95.24 | 95 | 77-112 |
| Chlorodibromomethane | 100.0 | | 98.38 | 98 | 72-118 |
| Chloroethane | 100.0 | | 162.3 | 162* | 64-142 |
| Chloroform | 100.0 | | 89.65 | 90 | 70-115 |
| Chloromethane | 100.0 | | 80.02 | 80 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 101.4 | 101 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 103.1 | 103 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 90.12 | 90 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 91.13 | 91 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 90.98 | 91 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 100.4 | 100 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 99.44 | 99 | 73-124 |
| Ethylbenzene | 100.0 | | 92.06 | 92 | 77-111 |
| 2-Hexanone | 100.0 | | 121.0 | 121 | 53-144 |
| Methylene Chloride | 100.0 | | 92.98 | 93 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 106.0 | 106 | 42-144 |
| Styrene | 100.0 | | 102.3 | 102 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 95.20 | 95 | 67-126 |
| Tetrachloroethene | 100.0 | | 95.07 | 95 | 77-115 |
| Toluene | 100.0 | | 93.71 | 94 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: V211051

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V2110511LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 94.73 | 95 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 95.48 | 95 | 69-117 |
| Trichloroethene | 100.0 | | 98.16 | 98 | 75-113 |
| Vinyl Chloride | 100.0 | | 78.28 | 78 | 65-134 |
| Xylene-mp | 200.0 | | 171.9 | 86 | 77-115 |
| Xylene-o | 100.0 | | 89.23 | 89 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 91.14 | 91 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC. Lab Prep Batch: V211051

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073820

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 60.39 | 60 | 59-151 |
| Benzene | 100.0 | 0.000 | 102.1 | 102 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 95.81 | 96 | 68-119 |
| Bromoform | 100.0 | 0.000 | 91.10 | 91 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 80.09 | 80 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 74.03 | 74 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 86.80 | 87 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 92.82 | 93 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 96.69 | 97 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 93.15 | 93 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 154.7 | 155* | 64-142 |
| Chloroform | 100.0 | 0.000 | 100.2 | 100 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 67.04 | 67 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 2.67 | 109.0 | 106 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 101.1 | 101 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 38.44 | 124.7 | 86 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 97.44 | 97 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 100.6 | 101 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 99.14 | 99 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 97.78 | 98 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 89.74 | 90 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 91.37 | 91 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 94.93 | 95 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 88.33 | 88 | 42-144 |
| Styrene | 100.0 | 0.000 | 94.55 | 94 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 83.71 | 84 | 67-126 |
| Tetrachloroethene | 100.0 | 80.28 | 160.2 | 80 | 77-115 |
| Toluene | 100.0 | 0.000 | 95.78 | 96 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY 768 293

Lab Name: ETC,INC. Lab Prep Batch: V211051

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073820

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 4.39 | 99.81 | 95 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 97.25 | 97 | 69-117 |
| Trichloroethene | 100.0 | 60.38 | 154.9 | 94 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 71.54 | 72 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 171.6 | 86 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 88.08 | 88 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 102.4 | 102 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211051

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073820

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 70.70 | 71 | 17 | 20 | 59-151 |
| Benzene | 100.0 | 107.3 | 107 | 5 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 102.9 | 103 | 7 | 20 | 68-119 |
| Bromoform | 100.0 | 98.69 | 99 | 8 | 20 | 66-136 |
| Bromomethane | 100.0 | 86.78 | 87 | 8 | 20 | 40-134 |
| 2-Butanone | 100.0 | 85.60 | 86 | 15 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 83.94 | 84 | 4 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 94.28 | 94 | 1 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 98.50 | 98 | 1 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 103.6 | 104 | 11 | 20 | 72-118 |
| Chloroethane | 100.0 | 168.7 | 169* | 9 | 20 | 64-142 |
| Chloroform | 100.0 | 99.44 | 99 | 1 | 20 | 70-115 |
| Chloromethane | 100.0 | 72.11 | 72 | 7 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 114.4 | 112 | 6 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 106.3 | 106 | 5 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 132.8 | 94 | 9 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 97.57 | 98 | 1 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 112.7 | 113 | 11 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 111.3 | 111 | 11 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 106.9 | 107 | 9 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 92.99 | 93 | 3 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 116.4 | 116 | 24* | 20 | 53-144 |
| Methylene Chloride | 100.0 | 96.12 | 96 | 1 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 106.4 | 106 | 18 | 20 | 42-144 |
| Styrene | 100.0 | 98.14 | 98 | 4 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 92.52 | 92 | 9 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 174.5 | 94 | 16 | 20 | 77-115 |
| Toluene | 100.0 | 100.6 | 101 | 5 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211051

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073820

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 99.65 | 95 | 0 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 110.9 | 111 | 13 | 20 | 69-117 |
| Trichloroethene | 100.0 | 167.5 | 107 | 13 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 78.67 | 79 | 9 | 20 | 65-134 |
| Xylene-mp | 200.0 | 178.2 | 89 | 3 | 20 | 77-115 |
| Xylene-o | 100.0 | 93.16 | 93 | 6 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 101.7 | 102 | 0 | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 35 outside limits
Spike Recovery: 2 out of 70 outside limits

COMMENTS: _____

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V2110611LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 1004 Lab Prep Batch: V211061

Date Analyzed: 11/06/03 Time Analyzed: 1636

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2110611LCS | 11LCS | 1002LCS | 1511 |
| 02 | 031073825 | 031073825 | 1005 | 1712 |
| 03 | 031073826 | 031073826 | 1006 | 1747 |
| 04 | 031073827 | 031073827 | 1007 | 1822 |
| 05 | 031073828 | 031073828 | 1008 | 1858 |
| 06 | 031073829 | 031073829 | 1009 | 1933 |
| 07 | 031073830 | 031073830 | 1010 | 2009 |
| 08 | 031073831 | 031073831 | 1011 | 2045 |
| 09 | 031073832 | 031073832 | 1012 | 2120 |
| 10 | 031073833 | 031073833 | 1013 | 2156 |
| 11 | 031073830MS | MS | 1018 | 0053 |
| 12 | 031073830MSD | MSD | 1019 | 0129 |
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COMMENTS:

FORM 1 768 297 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2110611LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V211061

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

768 298

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V2110611LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V211061

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

768 299

FORM 1

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V2110611LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/06/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
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768 300

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V211061

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V2110611LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 114.8 | 115 | 59-151 |
| Benzene | 100.0 | | 92.10 | 92 | 72-124 |
| Bromodichloromethane | 100.0 | | 88.84 | 89 | 68-119 |
| Bromoform | 100.0 | | 102.3 | 102 | 66-136 |
| Bromomethane | 100.0 | | 90.46 | 90 | 40-134 |
| 2-Butanone | 100.0 | | 113.8 | 114 | 55-151 |
| Carbon Disulfide | 100.0 | | 82.31 | 82 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 87.92 | 88 | 64-123 |
| Chlorobenzene | 100.0 | | 90.60 | 91 | 77-112 |
| Chlorodibromomethane | 100.0 | | 97.04 | 97 | 72-118 |
| Chloroethane | 100.0 | | 101.8 | 102 | 64-142 |
| Chloroform | 100.0 | | 94.34 | 94 | 70-115 |
| Chloromethane | 100.0 | | 76.34 | 76 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 98.68 | 99 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 100.4 | 100 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 88.70 | 89 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 89.17 | 89 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 88.54 | 88 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 98.60 | 99 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 106.0 | 106 | 73-124 |
| Ethylbenzene | 100.0 | | 84.22 | 84 | 77-111 |
| 2-Hexanone | 100.0 | | 122.0 | 122 | 53-144 |
| Methylene Chloride | 100.0 | | 90.31 | 90 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 113.0 | 113 | 42-144 |
| Styrene | 100.0 | | 96.94 | 97 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 94.17 | 94 | 67-126 |
| Tetrachloroethene | 100.0 | | 92.90 | 93 | 77-115 |
| Toluene | 100.0 | | 92.04 | 92 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

768 301

Lab Name: ETC,INC. Lab Prep Batch: V211061

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V2110611LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 90.26 | 90 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 95.64 | 96 | 69-117 |
| Trichloroethene | 100.0 | | 90.31 | 90 | 75-113 |
| Vinyl Chloride | 100.0 | | 81.62 | 82 | 65-134 |
| Xylene-mp | 200.0 | | 168.3 | 84 | 77-115 |
| Xylene-o | 100.0 | | 88.11 | 88 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 96.55 | 96 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211061

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073830

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 87.20 | 87 | 59-151 |
| Benzene | 100.0 | 0.000 | 95.28 | 95 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 96.54 | 96 | 68-119 |
| Bromoform | 100.0 | 0.000 | 94.68 | 95 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 63.39 | 63 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 89.73 | 90 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 88.21 | 88 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 92.35 | 92 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 88.88 | 89 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 100.6 | 101 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 151.0 | 151* | 64-142 |
| Chloroform | 100.0 | 0.000 | 93.20 | 93 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 63.19 | 63 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 107.6 | 108 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 100.8 | 101 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 17.56 | 108.6 | 91 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 96.97 | 97 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 94.32 | 94 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 103.9 | 104 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 106.4 | 106 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 83.45 | 83 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 101.1 | 101 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 94.00 | 94 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 102.4 | 102 | 42-144 |
| Styrene | 100.0 | 0.000 | 97.55 | 98 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 92.54 | 92 | 67-126 |
| Tetrachloroethene | 100.0 | 0.922 | 95.87 | 95 | 77-115 |
| Toluene | 100.0 | 0.000 | 99.38 | 99 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY 768 303

Lab Name: ETC,INC. Lab Prep Batch: V211061

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073830

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 90.15 | 90 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 103.4 | 103 | 69-117 |
| Trichloroethene | 100.0 | 5.54 | 103.4 | 98 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 70.08 | 70 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 162.7 | 81 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 90.58 | 90 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 103.1 | 103 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211061

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073830

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 78.80 | 79 | 10 | 20 | 59-151 |
| Benzene | 100.0 | 99.94 | 100 | 5 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 107.1 | 107 | 11 | 20 | 68-119 |
| Bromoform | 100.0 | 97.78 | 98 | 3 | 20 | 66-136 |
| Bromomethane | 100.0 | 73.08 | 73 | 15 | 20 | 40-134 |
| 2-Butanone | 100.0 | 97.59 | 98 | 8 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 85.45 | 85 | 3 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 100.9 | 101 | 9 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 99.93 | 100 | 12 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 104.2 | 104 | 3 | 20 | 72-118 |
| Chloroethane | 100.0 | 163.1 | 163* | 8 | 20 | 64-142 |
| Chloroform | 100.0 | 97.18 | 97 | 4 | 20 | 70-115 |
| Chloromethane | 100.0 | 66.59 | 66 | 5 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 106.6 | 107 | 1 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 105.1 | 105 | 4 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 106.5 | 89 | 2 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 102.6 | 103 | 6 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 104.7 | 105 | 11 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 107.8 | 108 | 4 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 115.3 | 115 | 8 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 95.12 | 95 | 13 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 107.5 | 108 | 7 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 103.5 | 104 | 10 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 112.0 | 112 | 9 | 20 | 42-144 |
| Styrene | 100.0 | 101.6 | 102 | 4 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 94.10 | 94 | 2 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 97.42 | 96 | 1 | 20 | 77-115 |
| Toluene | 100.0 | 102.2 | 102 | 3 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 305

Lab Name: ETC,INC. Lab Prep Batch: V211061

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073830

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 100.8 | 101 | 12 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 108.8 | 109 | 6 | 20 | 69-117 |
| Trichloroethene | 100.0 | 110.5 | 105 | 7 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 75.59 | 76 | 8 | 20 | 65-134 |
| Xylene-mp | 200.0 | 183.8 | 92 | 13 | 20 | 77-115 |
| Xylene-o | 100.0 | 95.69 | 96 | 6 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 104.9 | 105 | 2 | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 2 out of 70 outside limits

COMMENTS: _____



000196

768 306

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3110711LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 0302004 Lab Prep Batch: V311071

Date Analyzed: 11/07/03 Time Analyzed: 1002

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC3 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V3110711LCS | 11LCS | 0201002LCS | 0841 |
| 02 | 031073834 | 031073834 | 0401005 | 1032 |
| 03 | 031073835 | 031073835 | 0501006 | 1102 |
| 04 | 031073836 | 031073836 | 0601007 | 1132 |
| 05 | 031073837 | 031073837 | 0701008 | 1201 |
| 06 | 031073838 | 031073838 | 0801009 | 1231 |
| 07 | 031073840 | 031073840 | 1001011 | 1350 |
| 08 | 031073841 | 031073841 | 1101012 | 1419 |
| 09 | 031073842 | 031073842 | 1201013 | 1449 |
| 10 | 031073843 | 031073843 | 1301014 | 1519 |
| 11 | 031073844 | 031073844 | 1401015 | 1549 |
| 12 | 031073845 | 031073845 | 1501016 | 1619 |
| 13 | 031073846 | 031073846 | 1601017 | 1649 |
| 14 | 031073847 | 031073847 | 1701018 | 1719 |
| 15 | 031073848 | 031073848 | 1801019 | 1749 |
| 16 | 031073849 | 031073849 | 1901020 | 1819 |
| 17 | 031073840MS | MS | 2001021 | 1849 |
| 18 | 031073840MSD | MSD | 2101022 | 1919 |
| 19 | | | | |
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COMMENTS:

768 307 CLIENT SAMPLE NO.

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V3110711LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V311071

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 1.59 | J |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |

768 308

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3110711LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V311071

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-38-3 | Xylene-mp | 1.00 | U |
| 95-47-6 | Xylene-o | 1.00 | U |

FORM 1 768 309 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V3110711LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
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768 310

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V311071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V3110711LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 153.6 | 154* | 59-151 |
| Benzene | 100.0 | | 112.6 | 113 | 72-124 |
| Bromodichloromethane | 100.0 | | 100.4 | 100 | 68-119 |
| Bromoform | 100.0 | | 92.84 | 93 | 66-136 |
| Bromomethane | 100.0 | | 125.9 | 126 | 40-134 |
| 2-Butanone | 100.0 | | 116.7 | 117 | 55-151 |
| Carbon Disulfide | 100.0 | | 102.2 | 102 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 90.20 | 90 | 64-123 |
| Chlorobenzene | 100.0 | | 94.96 | 95 | 77-112 |
| Chlorodibromomethane | 100.0 | | 103.2 | 103 | 72-118 |
| Chloroethane | 100.0 | | 110.8 | 111 | 64-142 |
| Chloroform | 100.0 | | 101.7 | 102 | 70-115 |
| Chloromethane | 100.0 | | 84.64 | 85 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 101.7 | 102 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 94.48 | 94 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 107.4 | 107 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | | 104.7 | 105 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | | 98.31 | 98 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 104.6 | 105 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 106.9 | 107 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 109.2 | 109 | 73-124 |
| Ethylbenzene | 100.0 | | 100.2 | 100 | 77-111 |
| 2-Hexanone | 100.0 | | 123.4 | 123 | 53-144 |
| Methylene Chloride | 100.0 | | 104.0 | 104 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 107.6 | 108 | 42-144 |
| Styrene | 100.0 | | 99.45 | 99 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 101.4 | 101 | 67-126 |
| Tetrachloroethene | 100.0 | | 102.8 | 103 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

768 311

Lab Name: ETC,INC. Lab Prep Batch: V311071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V3110711LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 91.09 | 91 | 63-122 |
| Toluene | 100.0 | | 107.0 | 107 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | | 114.7 | 115 | 69-117 |
| Trichloroethene | 100.0 | | 99.74 | 100 | 75-113 |
| Vinyl Chloride | 100.0 | | 95.02 | 95 | 65-134 |
| Xylene-mp | 200.0 | | 189.8 | 95 | 77-115 |
| Xylene-o | 100.0 | | 94.06 | 94 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073840

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 118.3 | 118 | 59-151 |
| Benzene | 100.0 | 0.000 | 134.6 | 135* | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 139.8 | 140* | 68-119 |
| Bromoform | 100.0 | 0.000 | 99.24 | 99 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 125.7 | 126 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 105.4 | 105 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 105.8 | 106 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 121.7 | 122 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 96.38 | 96 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 132.9 | 133* | 72-118 |
| Chloroethane | 100.0 | 0.000 | 110.6 | 111 | 64-142 |
| Chloroform | 100.0 | 0.000 | 139.2 | 139* | 70-115 |
| Chloromethane | 100.0 | 0.000 | 63.16 | 63 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 116.8 | 117 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 131.8 | 132* | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 130.6 | 131* | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 122.6 | 123* | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 98.96 | 99 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 121.4 | 121 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 128.3 | 128* | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 133.7 | 134* | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 108.3 | 108 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 118.5 | 118 | 53-144 |
| Methylene Chloride | 100.0 | 1.53 | 128.5 | 127* | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 116.3 | 116 | 42-144 |
| Styrene | 100.0 | 0.000 | 101.3 | 101 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 95.74 | 96 | 67-126 |
| Tetrachloroethene | 100.0 | 0.000 | 107.0 | 107 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073840

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 128.9 | 129* | 63-122 |
| Toluene | 100.0 | 0.000 | 124.6 | 125* | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 136.5 | 136* | 69-117 |
| Trichloroethene | 100.0 | 0.000 | 114.6 | 115* | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 96.37 | 96 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 199.5 | 100 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 100.7 | 101 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 314

Lab Name: ETC,INC. Lab Prep Batch: V311071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073840

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 120.0 | 120 | 2 | 20 | 59-151 |
| Benzene | 100.0 | 128.5 | 128* | 5 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 122.1 | 122* | 14 | 20 | 68-119 |
| Bromoform | 100.0 | 91.05 | 91 | 8 | 20 | 66-136 |
| Bromomethane | 100.0 | 137.5 | 138* | 9 | 20 | 40-134 |
| 2-Butanone | 100.0 | 112.4 | 112 | 6 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 113.5 | 114 | 7 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 102.1 | 102 | 18 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 87.60 | 88 | 9 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 113.8 | 114 | 15 | 20 | 72-118 |
| Chloroethane | 100.0 | 117.3 | 117 | 5 | 20 | 64-142 |
| Chloroform | 100.0 | 125.9 | 126* | 10 | 20 | 70-115 |
| Chloromethane | 100.0 | 73.34 | 73 | 15 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 118.2 | 118 | 1 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 120.7 | 121 | 9 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 127.4 | 127* | 3 | 20 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 117.3 | 117* | 5 | 20 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 106.6 | 107 | 8 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 114.8 | 115 | 5 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 115.0 | 115 | 11 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 119.9 | 120 | 11 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 96.74 | 97 | 11 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 116.6 | 117 | 1 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 126.0 | 124* | 2 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 113.9 | 114 | 2 | 20 | 42-144 |
| Styrene | 100.0 | 91.13 | 91 | 10 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 98.28 | 98 | 2 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 96.55 | 96 | 11 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 315

Lab Name: ETC, INC. Lab Prep Batch: V311071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073840

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 109.2 | 109 | 17 | 20 | 63-122 |
| Toluene | 100.0 | 107.7 | 108 | 14 | 20 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 125.6 | 126* | 8 | 20 | 69-117 |
| Trichloroethene | 100.0 | 104.2 | 104 | 10 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 98.32 | 98 | 2 | 20 | 65-134 |
| Xylene-mp | 200.0 | 176.3 | 88 | 13 | 20 | 77-115 |
| Xylene-o | 100.0 | 89.52 | 90 | 12 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 22 out of 70 outside limits

COMMENTS: _____



000206

768 316

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V2110711LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 1003 Lab Prep Batch: V211071

Date Analyzed: 11/07/03 Time Analyzed: 1304

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2110711LCS | 11LCS | 1001LCS | 1119 |
| 02 | 031073850 | 031073850 | 1004 | 1339 |
| 03 | 031073851 | 031073851 | 1005 | 1415 |
| 04 | 031073852 | 031073852 | 1006 | 1450 |
| 05 | 031073853 | 031073853 | 1007 | 1526 |
| 06 | 031073854 | 031073854 | 1008 | 1601 |
| 07 | 031073855 | 031073855 | 1009 | 1637 |
| 08 | 031073856 | 031073856 | 1010 | 1712 |
| 09 | 031073857 | 031073857 | 1011 | 1748 |
| 10 | 031073850MS | 031073850MS | 1017 | 2121 |
| 11 | 031073850MSD | 031073850MSD | 1018 | 2157 |
| 12 | | | | |
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COMMENTS:



FORM IV VOA-GCMS

000207

FORM 1 768 317 CLIENT SAMPLE NO.
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2110711LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V211071

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1003

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

768 318

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V2110711LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V211071

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1003

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

FORM 1 768 319 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V2110711LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1003

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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768 320

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V2110711LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 139.3 | 139 | 59-151 |
| Benzene | 100.0 | | 109.7 | 110 | 72-124 |
| Bromodichloromethane | 100.0 | | 105.6 | 106 | 68-119 |
| Bromoform | 100.0 | | 105.4 | 105 | 66-136 |
| Bromomethane | 100.0 | | 83.79 | 84 | 40-134 |
| 2-Butanone | 100.0 | | 142.0 | 142 | 55-151 |
| Carbon Disulfide | 100.0 | | 94.56 | 94 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 103.9 | 104 | 64-123 |
| Chlorobenzene | 100.0 | | 102.9 | 103 | 77-112 |
| Chlorodibromomethane | 100.0 | | 106.4 | 106 | 72-118 |
| Chloroethane | 100.0 | | 99.60 | 100 | 64-142 |
| Chloroform | 100.0 | | 103.6 | 104 | 70-115 |
| Chloromethane | 100.0 | | 87.92 | 88 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 113.2 | 113 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 114.1 | 114 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 101.5 | 102 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 101.1 | 101 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 108.7 | 109 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 107.0 | 107 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 111.2 | 111 | 73-124 |
| Ethylbenzene | 100.0 | | 96.39 | 96 | 77-111 |
| 2-Hexanone | 100.0 | | 127.2 | 127 | 53-144 |
| Methylene Chloride | 100.0 | | 107.0 | 107 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 116.1 | 116 | 42-144 |
| Styrene | 100.0 | | 106.9 | 107 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 86.05 | 86 | 67-126 |
| Tetrachloroethene | 100.0 | | 99.62 | 100 | 77-115 |
| Toluene | 100.0 | | 105.2 | 105 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

768 321

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V2110711LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 100.6 | 101 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 104.2 | 104 | 69-117 |
| Trichloroethene | 100.0 | | 105.4 | 105 | 75-113 |
| Vinyl Chloride | 100.0 | | 92.89 | 93 | 65-134 |
| Xylene-mp | 200.0 | | 195.9 | 98 | 77-115 |
| Xylene-o | 100.0 | | 98.16 | 98 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 108.6 | 109 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 71.93 | 72 | 59-151 |
| Benzene | 100.0 | 0.000 | 107.8 | 108 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 95.15 | 95 | 68-119 |
| Bromoform | 100.0 | 0.000 | 102.1 | 102 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 76.88 | 77 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 105.3 | 105 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 91.18 | 91 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 99.91 | 100 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 97.68 | 98 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 95.22 | 95 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 167.0 | 167* | 64-142 |
| Chloroform | 100.0 | 0.000 | 100.2 | 100 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 77.68 | 78 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 106.8 | 107 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 110.0 | 110 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 7.61 | 99.83 | 92 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 96.01 | 96 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 102.0 | 102 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 100.0 | 100 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 101.5 | 102 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 91.76 | 92 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 103.6 | 104 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 104.5 | 104 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 103.4 | 103 | 42-144 |
| Styrene | 100.0 | 0.000 | 107.6 | 108 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 97.81 | 98 | 67-126 |
| Tetrachloroethene | 100.0 | 0.000 | 94.85 | 95 | 77-115 |
| Toluene | 100.0 | 0.000 | 93.93 | 94 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 323

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 103.8 | 104 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 101.5 | 102 | 69-117 |
| Trichloroethene | 100.0 | 2.32 | 106.0 | 104 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 80.36 | 80 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 182.4 | 91 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 96.99 | 97 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 114.6 | 115* | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 82.67 | 83 | 14 | 20 | 59-151 |
| Benzene | 100.0 | 110.6 | 111 | 3 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 105.4 | 105 | 10 | 20 | 68-119 |
| Bromoform | 100.0 | 108.7 | 109 | 7 | 20 | 66-136 |
| Bromomethane | 100.0 | 84.57 | 84 | 9 | 20 | 40-134 |
| 2-Butanone | 100.0 | 112.7 | 113 | 7 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 98.44 | 98 | 7 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 100.6 | 101 | 1 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 96.52 | 96 | 2 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 102.9 | 103 | 8 | 20 | 72-118 |
| Chloroethane | 100.0 | 172.4 | 172* | 3 | 20 | 64-142 |
| Chloroform | 100.0 | 103.8 | 104 | 4 | 20 | 70-115 |
| Chloromethane | 100.0 | 76.98 | 77 | 1 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 119.2 | 119* | 11 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 117.4 | 117 | 6 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 107.6 | 100 | 8 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 100.8 | 101 | 5 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 102.8 | 103 | 1 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 104.2 | 104 | 4 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 105.1 | 105 | 3 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 91.99 | 92 | 0 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 113.2 | 113 | 8 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 107.4 | 107 | 3 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 110.7 | 111 | 7 | 20 | 42-144 |
| Styrene | 100.0 | 103.7 | 104 | 4 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 107.9 | 108 | 10 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 96.00 | 96 | 1 | 20 | 77-115 |
| Toluene | 100.0 | 93.02 | 93 | 1 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 100.6 | 101 | 3 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 108.6 | 109 | 7 | 20 | 69-117 |
| Trichloroethene | 100.0 | 102.0 | 100 | 4 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 83.23 | 83 | 4 | 20 | 65-134 |
| Xylene-mp | 200.0 | 177.0 | 88 | 3 | 20 | 77-115 |
| Xylene-o | 100.0 | 95.40 | 95 | 2 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 117.8 | 118* | 2 | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 5 out of 70 outside limits

COMMENTS: _____

768 326

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3110811LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 0302005 Lab Prep Batch: V311081

Date Analyzed: 11/08/03 Time Analyzed: 1225

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC3 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | 031073839 | 031073839 | 0501007 | 1324 |
| 02 | 031073837 | 031073837 | 0601008 | 1354 |
| 03 | 031073838 | 031073838 | 0701009 | 1424 |
| 04 | 031073970 | 031073970 | 1501017 | 1822 |
| 05 | V3110811LCS | 11LCS | 1601018LCS | 1852 |
| 06 | 031073970MS | MS | 1701019 | 1921 |
| 07 | 031073970MSD | MSD | 1801020 | 1951 |
| 08 | | | | |
| 09 | | | | |
| 10 | | | | |
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COMMENTS:

FORM 1 768 327 CLIENT SAMPLE NO.
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V3110811LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V311081

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |

768 328

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3110811LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Prep Batch: V311081

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-38-3 | Xylene-mp | 1.00 | U |
| 95-47-6 | Xylene-o | 1.00 | U |

FORM 1 768 329 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V3110811LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
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768 330

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V3110811LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 150.4 | 150 | 59-151 |
| Benzene | 100.0 | | 122.3 | 122 | 72-124 |
| Bromodichloromethane | 100.0 | | 115.7 | 116 | 68-119 |
| Bromoform | 100.0 | | 86.86 | 87 | 66-136 |
| Bromomethane | 100.0 | | 113.4 | 113 | 40-134 |
| 2-Butanone | 100.0 | | 110.5 | 110 | 55-151 |
| Carbon Disulfide | 100.0 | | 96.23 | 96 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 112.2 | 112 | 64-123 |
| Chlorobenzene | 100.0 | | 86.60 | 87 | 77-112 |
| Chlorodibromomethane | 100.0 | | 107.0 | 107 | 72-118 |
| Chloroethane | 100.0 | | 103.3 | 103 | 64-142 |
| Chloroform | 100.0 | | 123.2 | 123* | 70-115 |
| Chloromethane | 100.0 | | 60.72 | 61 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 101.3 | 101 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 117.8 | 118 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 113.4 | 113 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | | 110.0 | 110 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | | 92.68 | 93 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 100.6 | 101 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 104.7 | 105 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 110.6 | 111 | 73-124 |
| Ethylbenzene | 100.0 | | 99.30 | 99 | 77-111 |
| 2-Hexanone | 100.0 | | 105.0 | 105 | 53-144 |
| Methylene Chloride | 100.0 | | 110.6 | 111 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 99.38 | 99 | 42-144 |
| Styrene | 100.0 | | 92.51 | 92 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 84.49 | 84 | 67-126 |
| Tetrachloroethene | 100.0 | | 92.37 | 92 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

768 331

Lab Name: ETC, INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: V3110811LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 113.5 | 114 | 63-122 |
| Toluene | 100.0 | | 106.3 | 106 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | | 114.7 | 115 | 69-117 |
| Trichloroethene | 100.0 | | 99.03 | 99 | 75-113 |
| Vinyl Chloride | 100.0 | | 91.17 | 91 | 65-134 |
| Xylene-mp | 200.0 | | 185.2 | 93 | 77-115 |
| Xylene-o | 100.0 | | 92.24 | 92 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 35 outside limits

COMMENTS: _____



000222

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 100.5 | 100 | 59-151 |
| Benzene | 100.0 | 0.000 | 117.9 | 118 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 104.0 | 104 | 68-119 |
| Bromoform | 100.0 | 0.000 | 77.34 | 77 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 133.3 | 133 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 93.91 | 94 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 108.7 | 109 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 97.78 | 98 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 83.06 | 83 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 97.14 | 97 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 117.1 | 117 | 64-142 |
| Chloroform | 100.0 | 0.000 | 113.8 | 114 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 70.75 | 71 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 108.3 | 108 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 103.2 | 103 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 117.0 | 117 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 110.6 | 111 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 103.1 | 103 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 101.4 | 101 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 99.93 | 100 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 101.9 | 102 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 91.38 | 91 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 87.68 | 88 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 111.4 | 111 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 87.84 | 88 | 42-144 |
| Styrene | 100.0 | 0.000 | 85.77 | 86 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 84.37 | 84 | 67-126 |
| Tetrachloroethene | 100.0 | 0.000 | 86.14 | 86 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 101.3 | 101 | 63-122 |
| Toluene | 100.0 | 0.000 | 101.4 | 101 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 105.6 | 106 | 69-117 |
| Trichloroethene | 100.0 | 0.000 | 95.16 | 95 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 93.43 | 93 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 172.7 | 86 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 84.90 | 85 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 105.4 | 105 | 5 | 20 | 59-151 |
| Benzene | 100.0 | 117.7 | 118 | 0 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 102.3 | 102 | 2 | 20 | 68-119 |
| Bromoform | 100.0 | 82.18 | 82 | 6 | 20 | 66-136 |
| Bromomethane | 100.0 | 130.5 | 130 | 2 | 20 | 40-134 |
| 2-Butanone | 100.0 | 104.1 | 104 | 10 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 103.9 | 104 | 5 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 93.35 | 93 | 5 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 82.41 | 82 | 1 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 97.02 | 97 | 0 | 20 | 72-118 |
| Chloroethane | 100.0 | 112.4 | 112 | 4 | 20 | 64-142 |
| Chloroform | 100.0 | 110.8 | 111 | 3 | 20 | 70-115 |
| Chloromethane | 100.0 | 72.40 | 72 | 1 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 106.4 | 106 | 2 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 103.6 | 104 | 1 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 113.7 | 114 | 2 | 20 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 111.5 | 112 | 1 | 20 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 100.3 | 100 | 3 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 103.2 | 103 | 2 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 99.80 | 100 | 0 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 102.8 | 103 | 1 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 89.68 | 90 | 1 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 101.2 | 101 | 14 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 108.3 | 108 | 3 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 99.75 | 100 | 13 | 20 | 42-144 |
| Styrene | 100.0 | 86.67 | 87 | 1 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 91.21 | 91 | 8 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 84.19 | 84 | 2 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 335

Lab Name: ETC, INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 96.81 | 97 | 4 | 20 | 63-122 |
| Toluene | 100.0 | 98.22 | 98 | 3 | 20 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 110.1 | 110 | 4 | 20 | 69-117 |
| Trichloroethene | 100.0 | 93.67 | 94 | 1 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 91.21 | 91 | 2 | 20 | 65-134 |
| Xylene-mp | 200.0 | 168.0 | 84 | 2 | 20 | 77-115 |
| Xylene-o | 100.0 | 83.33 | 83 | 2 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 0 out of 70 outside limits

COMMENTS: _____

FORM 2

WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | V2110711LCS | 95 | 102 | 99 | 100 | 0 |
| 02 | V2110711LB | 96 | 100 | 102 | 89 | 0 |
| 03 | 031073958 | 96 | 92 | 107 | 93 | 0 |
| 04 | 031073959 | 98 | 98 | 101 | 91 | 0 |
| 05 | 031073960 | 91 | 94 | 92 | 87 | 0 |
| 06 | 031073961 | 100 | 93 | 102 | 94 | 0 |
| 07 | 031073962 | 102 | 100 | 93 | 99 | 0 |
| 08 | V3110811LB | 94 | 104 | 108 | 77 | 0 |
| 09 | 031073971 | 97 | 102 | 108 | 83 | 0 |
| 10 | 031073963 | 105 | 103 | 114 | 94 | 0 |
| 11 | 031073964 | 106 | 106 | 119 | 102 | 0 |
| 12 | 031073965 | 106 | 105 | 121* | 98 | 1 |
| 13 | 031073966 | 107 | 104 | 118 | 103 | 0 |
| 14 | 031073967 | 107 | 105 | 116 | 97 | 0 |
| 15 | 031073968 | 106 | 108 | 122* | 102 | 1 |
| 16 | 031073969 | 106 | 107 | 118 | 102 | 0 |
| 17 | 031073970 | 109 | 109 | 116 | 103 | 0 |
| 18 | V3110811LCS | 104 | 105 | 112 | 107 | 0 |
| 19 | 031073970MS | 97 | 101 | 100 | 90 | 0 |
| 20 | 031073970MSD | 96 | 100 | 102 | 91 | 0 |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
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| 29 | | | | | | |
| 30 | | | | | | |

| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER(DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

768 337

CLIENT SAMPLE NO.

V2110711LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID: 1003 Lab Prep Batch: V211071

Date Analyzed: 11/07/03 Time Analyzed: 1304

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2110711LCS | 11LCS | 1001LCS | 1119 |
| 02 | 031073850 | 031073850 | 1004 | 1339 |
| 03 | 031073958 | 031073958 | 1012 | 1824 |
| 04 | 031073959 | 031073959 | 1013 | 1859 |
| 05 | 031073960 | 031073960 | 1014 | 1935 |
| 06 | 031073961 | 031073961 | 1015 | 2010 |
| 07 | 031073962 | 031073962 | 1016 | 2046 |
| 08 | 031073850MS | 031073850MS | 1017 | 2121 |
| 09 | 031073850MSD | 031073850MSD | 1018 | 2157 |
| 10 | | | | |
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COMMENTS:

768 338

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V2110711LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Prep Batch: V211071

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1003

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

FORM 1 768 339 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2110711LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Prep Batch: V211071

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1003

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

768 340

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V2110711LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1003

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/07/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
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FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

768 341

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: V2110711LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 139.3 | 139 | 59-151 |
| Benzene | 100.0 | | 109.7 | 110 | 72-124 |
| Bromodichloromethane | 100.0 | | 105.6 | 106 | 68-119 |
| Bromoform | 100.0 | | 105.4 | 105 | 66-136 |
| Bromomethane | 100.0 | | 83.79 | 84 | 40-134 |
| 2-Butanone | 100.0 | | 142.0 | 142 | 55-151 |
| Carbon Disulfide | 100.0 | | 94.56 | 94 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 103.9 | 104 | 64-123 |
| Chlorobenzene | 100.0 | | 102.9 | 103 | 77-112 |
| Chlorodibromomethane | 100.0 | | 106.4 | 106 | 72-118 |
| Chloroethane | 100.0 | | 99.60 | 100 | 64-142 |
| Chloroform | 100.0 | | 103.6 | 104 | 70-115 |
| Chloromethane | 100.0 | | 87.92 | 88 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 113.2 | 113 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 114.1 | 114 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 101.5 | 102 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 101.1 | 101 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 108.7 | 109 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 107.0 | 107 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 111.2 | 111 | 73-124 |
| Ethylbenzene | 100.0 | | 96.39 | 96 | 77-111 |
| 2-Hexanone | 100.0 | | 127.2 | 127 | 53-144 |
| Methylene Chloride | 100.0 | | 107.0 | 107 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 116.1 | 116 | 42-144 |
| Styrene | 100.0 | | 106.9 | 107 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 86.05 | 86 | 67-126 |
| Tetrachloroethene | 100.0 | | 99.62 | 100 | 77-115 |
| Toluene | 100.0 | | 105.2 | 105 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: V2110711LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 100.6 | 101 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 104.2 | 104 | 69-117 |
| Trichloroethene | 100.0 | | 105.4 | 105 | 75-113 |
| Vinyl Chloride | 100.0 | | 92.89 | 93 | 65-134 |
| Xylene-mp | 200.0 | | 195.9 | 98 | 77-115 |
| Xylene-o | 100.0 | | 98.16 | 98 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 108.6 | 109 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 35 outside limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 343

Lab Name: ETC, INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 71.93 | 72 | 59-151 |
| Benzene | 100.0 | 0.000 | 107.8 | 108 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 95.15 | 95 | 68-119 |
| Bromoform | 100.0 | 0.000 | 102.1 | 102 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 76.88 | 77 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 105.3 | 105 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 91.18 | 91 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 99.91 | 100 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 97.68 | 98 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 95.22 | 95 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 167.0 | 167* | 64-142 |
| Chloroform | 100.0 | 0.000 | 100.2 | 100 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 77.68 | 78 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 106.8 | 107 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 110.0 | 110 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 7.61 | 99.83 | 92 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 96.01 | 96 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 102.0 | 102 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 100.0 | 100 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 101.5 | 102 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 91.76 | 92 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 103.6 | 104 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 104.5 | 104 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 103.4 | 103 | 42-144 |
| Styrene | 100.0 | 0.000 | 107.6 | 108 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 97.81 | 98 | 67-126 |
| Tetrachloroethene | 100.0 | 0.000 | 94.85 | 95 | 77-115 |
| Toluene | 100.0 | 0.000 | 93.93 | 94 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 103.8 | 104 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 101.5 | 102 | 69-117 |
| Trichloroethene | 100.0 | 2.32 | 106.0 | 104 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 80.36 | 80 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 182.4 | 91 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 96.99 | 97 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 114.6 | 115* | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 345

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 82.67 | 83 | 14 | 20 | 59-151 |
| Benzene | 100.0 | 110.6 | 111 | 3 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 105.4 | 105 | 10 | 20 | 68-119 |
| Bromoform | 100.0 | 108.7 | 109 | 7 | 20 | 66-136 |
| Bromomethane | 100.0 | 84.57 | 84 | 9 | 20 | 40-134 |
| 2-Butanone | 100.0 | 112.7 | 113 | 7 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 98.44 | 98 | 7 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 100.6 | 101 | 1 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 96.52 | 96 | 2 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 102.9 | 103 | 8 | 20 | 72-118 |
| Chloroethane | 100.0 | 172.4 | 172* | 3 | 20 | 64-142 |
| Chloroform | 100.0 | 103.8 | 104 | 4 | 20 | 70-115 |
| Chloromethane | 100.0 | 76.98 | 77 | 1 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 119.2 | 119* | 11 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 117.4 | 117 | 6 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 107.6 | 100 | 8 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 100.8 | 101 | 5 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 102.8 | 103 | 1 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 104.2 | 104 | 4 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 105.1 | 105 | 3 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 91.99 | 92 | 0 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 113.2 | 113 | 8 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 107.4 | 107 | 3 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 110.7 | 111 | 7 | 20 | 42-144 |
| Styrene | 100.0 | 103.7 | 104 | 4 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 107.9 | 108 | 10 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 96.00 | 96 | 1 | 20 | 77-115 |
| Toluene | 100.0 | 93.02 | 93 | 1 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211071

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073850

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 100.6 | 101 | 3 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 108.6 | 109 | 7 | 20 | 69-117 |
| Trichloroethene | 100.0 | 102.0 | 100 | 4 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 83.23 | 83 | 4 | 20 | 65-134 |
| Xylene-mp | 200.0 | 177.0 | 88 | 3 | 20 | 77-115 |
| Xylene-o | 100.0 | 95.40 | 95 | 2 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 117.8 | 118* | 2 | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 5 out of 70 outside limits

COMMENTS: _____

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

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CLIENT SAMPLE NO.

V3110811LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID: 0302005 Lab Prep Batch: V311081

Date Analyzed: 11/08/03 Time Analyzed: 1225

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC3 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | 031073971 | 031073971 | 0401006 | 1255 |
| 02 | 031073963 | 031073963 | 0801010 | 1454 |
| 03 | 031073964 | 031073964 | 0901011 | 1524 |
| 04 | 031073965 | 031073965 | 1001012 | 1553 |
| 05 | 031073966 | 031073966 | 1101013 | 1623 |
| 06 | 031073967 | 031073967 | 1201014 | 1653 |
| 07 | 031073968 | 031073968 | 1301015 | 1723 |
| 08 | 031073969 | 031073969 | 1401016 | 1753 |
| 09 | 031073970 | 031073970 | 1501017 | 1822 |
| 10 | V3110811LCS | 11LCS | 1601018LCS | 1852 |
| 11 | 031073970MS | MS | 1701019 | 1921 |
| 12 | 031073970MSD | MSD | 1801020 | 1951 |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
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| 22 | | | | |
| 23 | | | | |
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| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |

COMMENTS:

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3110811LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Prep Batch: V311081

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |

FORM 1 768 349 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V3110811LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Prep Batch: V311081

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-38-3 | Xylene-mp | 1.00 | U |
| 95-47-6 | Xylene-o | 1.00 | U |

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V3110811LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
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| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

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Lab Name: ETC,INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: V3110811LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 150.4 | 150 | 59-151 |
| Benzene | 100.0 | | 122.3 | 122 | 72-124 |
| Bromodichloromethane | 100.0 | | 115.7 | 116 | 68-119 |
| Bromoform | 100.0 | | 86.86 | 87 | 66-136 |
| Bromomethane | 100.0 | | 113.4 | 113 | 40-134 |
| 2-Butanone | 100.0 | | 110.5 | 110 | 55-151 |
| Carbon Disulfide | 100.0 | | 96.23 | 96 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 112.2 | 112 | 64-123 |
| Chlorobenzene | 100.0 | | 86.60 | 87 | 77-112 |
| Chlorodibromomethane | 100.0 | | 107.0 | 107 | 72-118 |
| Chloroethane | 100.0 | | 103.3 | 103 | 64-142 |
| Chloroform | 100.0 | | 123.2 | 123* | 70-115 |
| Chloromethane | 100.0 | | 60.72 | 61 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 101.3 | 101 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 117.8 | 118 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 113.4 | 113 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | | 110.0 | 110 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | | 92.68 | 93 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 100.6 | 101 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 104.7 | 105 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 110.6 | 111 | 73-124 |
| Ethylbenzene | 100.0 | | 99.30 | 99 | 77-111 |
| 2-Hexanone | 100.0 | | 105.0 | 105 | 53-144 |
| Methylene Chloride | 100.0 | | 110.6 | 111 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 99.38 | 99 | 42-144 |
| Styrene | 100.0 | | 92.51 | 92 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 84.49 | 84 | 67-126 |
| Tetrachloroethene | 100.0 | | 92.37 | 92 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____



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768 352

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: V3110811LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 113.5 | 114 | 63-122 |
| Toluene | 100.0 | | 106.3 | 106 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | | 114.7 | 115 | 69-117 |
| Trichloroethene | 100.0 | | 99.03 | 99 | 75-113 |
| Vinyl Chloride | 100.0 | | 91.17 | 91 | 65-134 |
| Xylene-mp | 200.0 | | 185.2 | 93 | 77-115 |
| Xylene-o | 100.0 | | 92.24 | 92 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 35 outside limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 100.5 | 100 | 59-151 |
| Benzene | 100.0 | 0.000 | 117.9 | 118 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 104.0 | 104 | 68-119 |
| Bromoform | 100.0 | 0.000 | 77.34 | 77 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 133.3 | 133 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 93.91 | 94 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 108.7 | 109 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 97.78 | 98 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 83.06 | 83 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 97.14 | 97 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 117.1 | 117 | 64-142 |
| Chloroform | 100.0 | 0.000 | 113.8 | 114 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 70.75 | 71 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 108.3 | 108 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 103.2 | 103 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 117.0 | 117 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 110.6 | 111 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 103.1 | 103 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 101.4 | 101 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 99.93 | 100 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 101.9 | 102 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 91.38 | 91 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 87.68 | 88 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 111.4 | 111 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 87.84 | 88 | 42-144 |
| Styrene | 100.0 | 0.000 | 85.77 | 86 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 84.37 | 84 | 67-126 |
| Tetrachloroethene | 100.0 | 0.000 | 86.14 | 86 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 101.3 | 101 | 63-122 |
| Toluene | 100.0 | 0.000 | 101.4 | 101 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 105.6 | 106 | 69-117 |
| Trichloroethene | 100.0 | 0.000 | 95.16 | 95 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 93.43 | 93 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 172.7 | 86 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 84.90 | 85 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY



Lab Name: ETC,INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 105.4 | 105 | 5 | 20 | 59-151 |
| Benzene | 100.0 | 117.7 | 118 | 0 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 102.3 | 102 | 2 | 20 | 68-119 |
| Bromoform | 100.0 | 82.18 | 82 | 6 | 20 | 66-136 |
| Bromomethane | 100.0 | 130.5 | 130 | 2 | 20 | 40-134 |
| 2-Butanone | 100.0 | 104.1 | 104 | 10 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 103.9 | 104 | 5 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 93.35 | 93 | 5 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 82.41 | 82 | 1 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 97.02 | 97 | 0 | 20 | 72-118 |
| Chloroethane | 100.0 | 112.4 | 112 | 4 | 20 | 64-142 |
| Chloroform | 100.0 | 110.8 | 111 | 3 | 20 | 70-115 |
| Chloromethane | 100.0 | 72.40 | 72 | 1 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 106.4 | 106 | 2 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 103.6 | 104 | 1 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 113.7 | 114 | 2 | 20 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 111.5 | 112 | 1 | 20 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 100.3 | 100 | 3 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 103.2 | 103 | 2 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 99.80 | 100 | 0 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 102.8 | 103 | 1 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 89.68 | 90 | 1 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 101.2 | 101 | 14 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 108.3 | 108 | 3 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 99.75 | 100 | 13 | 20 | 42-144 |
| Styrene | 100.0 | 86.67 | 87 | 1 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 91.21 | 91 | 8 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 84.19 | 84 | 2 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311081

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Matrix Spike - Sample No.: 031073970

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 96.81 | 97 | 4 | 20 | 63-122 |
| Toluene | 100.0 | 98.22 | 98 | 3 | 20 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 110.1 | 110 | 4 | 20 | 69-117 |
| Trichloroethene | 100.0 | 93.67 | 94 | 1 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 91.21 | 91 | 2 | 20 | 65-134 |
| Xylene-mp | 200.0 | 168.0 | 84 | 2 | 20 | 77-115 |
| Xylene-o | 100.0 | 83.33 | 83 | 2 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 0 out of 70 outside limits

COMMENTS: _____

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level III
# GC/MS Volatiles

768 358

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-3-03 | VOC3 | V311031 | US14632324 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | |
|---|---|---|---|
| 0310-738-1-15 | | | |
| | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 02-7-27-16 ✓

2.0 Initial Calibration (ICAL) : Method V309181.826 ICAL SRN 02-7-27-1

- 2.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-29-10 02-7-29-18

- 3.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
  Acetone T, Bromomethane T
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V311031MB | Methylene Chloride 2.0ppb<br>Carbon disulfide 1.0ppb<br>Methylene 1.4ppb | LS 11-4-03 | 0/4 |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V311031LCS | 0/35 | 0/0 | 0/4 |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-738-10 | 34/70 | 1/35 | 0/8 |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

8.0 Dilutions/Re-Analysis Required NA

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 359

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 0101001 BFB Injection Date: 11/03/03

Instrument ID: VOC3 BFB Injection Time: 1317

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 25.0 |
| 75 | 30.0 - 60.0% of mass 95 | 44.9 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.1 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 83.5 |
| 175 | 5.0 - 9.0% of mass 174 | 7.4 ( 8.8)1 |
| 176 | 95.0 - 101.0% of mass 174 | 84.0 (100.5)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.3 ( 6.3)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V3110311LCS | 11LCS | 0202003LCS | 11/03/03 | 1422 |
| 02 | CCV100PPB | | 0202003 | 11/03/03 | 1422 |
| 03 | V3110311LB | 11LB | 0302004 | 11/03/03 | 1540 |
| 04 | 031073801 | 031073801 | 0401005 | 11/03/03 | 1610 |
| 05 | 031073802 | 031073802 | 0501006 | 11/03/03 | 1640 |
| 06 | 031073803 | 031073803 | 0601007 | 11/03/03 | 1710 |
| 07 | 031073804 | 031073804 | 0701008 | 11/03/03 | 1740 |
| 08 | 031073805 | 031073805 | 0801009 | 11/03/03 | 1810 |
| 09 | 031073806 | 031073806 | 0901010 | 11/03/03 | 1840 |
| 10 | 031073807 | 031073807 | 1001011 | 11/03/03 | 1910 |
| 11 | 031073808 | 031073808 | 1101012 | 11/03/03 | 1939 |
| 12 | 031073809 | 031073809 | 1201013 | 11/03/03 | 2009 |
| 13 | 031073810 | 031073810 | 1301014 | 11/03/03 | 2039 |
| 14 | 031073811 | 031073811 | 1401015 | 11/03/03 | 2109 |
| 15 | 031073812 | 031073812 | 1501016 | 11/03/03 | 2139 |
| 16 | 031073813 | 031073813 | 1601017 | 11/03/03 | 2209 |
| 17 | 031073814 | 031073814 | 1701018 | 11/03/03 | 2239 |
| 18 | 031073815 | 031073815 | 1801019 | 11/03/03 | 2308 |
| 19 | 031073810MS | MS | 1901020 | 11/03/03 | 2338 |
| 20 | 031073810MSD | MSD | 2001021 | 11/04/03 | 0008 |
| 21 | | | | | |
| 22 | | | | | |

768 360

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC3 Calibration Date: 11/03/03 Time: 1422

Lab File ID: 0202003 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 164.1 | 100.0 | AVRG | 64.1 | 30.0 | <- |
| Benzene | 118.4 | 100.0 | AVRG | 18.4 | 30.0 | |
| Bromodichloromethane | 104.8 | 100.0 | LINR | 4.8 | 30.0 | |
| Bromoform | 88.61 | 100.0 | AVRG | 11.4 | 30.0 | |
| Bromomethane | 143.7 | 100.0 | AVRG | 43.7 | 30.0 | <- |
| 2-Butanone | 104.0 | 100.0 | AVRG | 4.0 | 30.0 | |
| Carbon Disulfide | 125.8 | 100.0 | AVRG | 25.8 | 30.0 | |
| Carbon Tetrachloride | 99.19 | 100.0 | AVRG | 0.8 | 30.0 | |
| Chlorobenzene | 91.79 | 100.0 | AVRG | 8.2 | 30.0 | |
| Chlorodibromomethane | 107.7 | 100.0 | AVRG | 7.7 | 30.0 | |
| Chloroethane | 116.0 | 100.0 | AVRG | 16.0 | 30.0 | |
| Chloroform | 110.7 | 100.0 | LINR | 10.7 | 20.0 | |
| Chloromethane | 87.82 | 100.0 | AVRG | 12.2 | 30.0 | |
| 1,1-Dichloroethane | 108.0 | 100.0 | AVRG | 8.0 | 30.0 | |
| 1,2-Dichloroethane | 103.0 | 100.0 | AVRG | 3.0 | 30.0 | |
| 1,1-Dichloroethene | 115.4 | 100.0 | AVRG | 15.4 | 20.0 | |
| cis-1,2-Dichloroethene | 112.4 | 100.0 | AVRG | 12.4 | 30.0 | |
| trans-1,2-Dichloroethene | 117.1 | 100.0 | AVRG | 17.1 | 30.0 | |
| 1,2-Dichloropropane | 104.2 | 100.0 | AVRG | 4.2 | 20.0 | |
| cis-1,3-Dichloropropene | 108.8 | 100.0 | AVRG | 8.8 | 30.0 | |
| trans-1,3-Dichloropropene | 110.9 | 100.0 | AVRG | 10.9 | 30.0 | |
| Ethylbenzene | 97.31 | 100.0 | AVRG | 2.7 | 20.0 | |
| 2-Hexanone | 117.6 | 100.0 | AVRG | 17.6 | 30.0 | |
| Methylene Chloride | 107.5 | 100.0 | LINR | 7.5 | 30.0 | |
| 4-Methyl-2-Pentanone | 104.4 | 100.0 | AVRG | 4.4 | 30.0 | |
| Styrene | 95.80 | 100.0 | AVRG | 4.2 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 91.11 | 100.0 | AVRG | 8.9 | 30.0 | |
| Tetrachloroethene | 108.9 | 100.0 | AVRG | 8.9 | 30.0 | |
| 1,1,1-Trichloroethane | 101.9 | 100.0 | AVRG | 1.9 | 30.0 | |
| Toluene | 111.2 | 100.0 | AVRG | 11.2 | 20.0 | |
| 1,1,2-Trichloroethane | 113.9 | 100.0 | AVRG | 13.9 | 30.0 | |
| Trichloroethene | 103.9 | 100.0 | AVRG | 3.9 | 30.0 | |
| Vinyl Chloride | 104.8 | 100.0 | AVRG | 4.8 | 20.0 | |
| Xylene-mp | 187.4 | 200.0 | AVRG | 6.3 | 30.0 | |
| Xylene-o | 92.36 | 100.0 | AVRG | 7.6 | 30.0 | |
| Dibromofluoromethane | 45.20 | 50.00 | AVRG | 9.6 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 361

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC3 Calibration Date: 11/03/03 Time: 1422

Lab File ID: 0202003 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Toluene-d8 | 48.52 | 50.00 | AVRG | 3.0 | 30.0 |
| Bromofluorobenzene | 48.43 | 50.00 | AVRG | 3.1 | 30.0 |
| 1,2-Dichloroethane-d4 | 39.89 | 50.00 | AVRG | 20.2 | 30.0 |

768 362

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 0202003 Date Analyzed: 11/03/03

Instrument ID: VOC3 Time Analyzed: 1422

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 757434 | 6.54 | 1064255 | 7.08 | 1040531 | 9.17 |
| | UPPER LIMIT | 1514868 | 7.04 | 2128510 | 7.58 | 2081062 | 9.67 |
| | LOWER LIMIT | 378717 | 6.04 | 532128 | 6.58 | 520266 | 8.67 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110311LB | 639910 | 6.54 | 851419 | 7.09 | 791630 | 9.18 |
| 02 | 031073801 | 554662 | 6.54 | 720038 | 7.09 | 702355 | 9.18 |
| 03 | 031073802 | 532652 | 6.54 | 697770 | 7.08 | 670159 | 9.18 |
| 04 | 031073803 | 503977 | 6.54 | 678732 | 7.09 | 616136 | 9.18 |
| 05 | 031073804 | 486240 | 6.54 | 638724 | 7.09 | 584918 | 9.18 |
| 06 | 031073805 | 467853 | 6.54 | 617582 | 7.09 | 589375 | 9.18 |
| 07 | 031073806 | 450200 | 6.54 | 611505 | 7.08 | 552162 | 9.18 |
| 08 | 031073807 | 452609 | 6.54 | 607170 | 7.08 | 545563 | 9.18 |
| 09 | 031073808 | 422278 | 6.54 | 579921 | 7.08 | 534658 | 9.18 |
| 10 | 031073809 | 432330 | 6.54 | 598993 | 7.09 | 551020 | 9.18 |
| 11 | 031073810 | 401663 | 6.54 | 540646 | 7.09 | 520328 | 9.18 |
| 12 | 031073811 | 421046 | 6.54 | 575774 | 7.09 | 552529 | 9.17 |
| 13 | 031073812 | 403220 | 6.54 | 556890 | 7.08 | 521338 | 9.18 |
| 14 | 031073813 | 388862 | 6.54 | 541274 | 7.09 | 493740* | 9.18 |
| 15 | 031073814 | 390190 | 6.54 | 547755 | 7.09 | 519712* | 9.18 |
| 16 | 031073815 | 384994 | 6.54 | 531968* | 7.09 | 502130* | 9.18 |
| 17 | 031073810MS | 432364 | 6.54 | 614321 | 7.09 | 639451 | 9.18 |
| 18 | 031073810MSD | 540383 | 6.54 | 743952 | 7.08 | 708271 | 9.18 |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 363

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 0202003 Date Analyzed: 11/03/03

Instrument ID: VOC3 Time Analyzed: 1422

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 438536 | 10.95 | | | | |
| | UPPER LIMIT | 877072 | 11.45 | | | | |
| | LOWER LIMIT | 219268 | 10.45 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110311LB | 382203 | 10.95 | | | | |
| 02 | 031073801 | 338107 | 10.95 | | | | |
| 03 | 031073802 | 330106 | 10.95 | | | | |
| 04 | 031073803 | 296453 | 10.95 | | | | |
| 05 | 031073804 | 278281 | 10.95 | | | | |
| 06 | 031073805 | 295204 | 10.95 | | | | |
| 07 | 031073806 | 273660 | 10.95 | | | | |
| 08 | 031073807 | 267425 | 10.95 | | | | |
| 09 | 031073808 | 265715 | 10.95 | | | | |
| 10 | 031073809 | 280883 | 10.95 | | | | |
| 11 | 031073810 | 261988 | 10.95 | | | | |
| 12 | 031073811 | 267565 | 10.95 | | | | |
| 13 | 031073812 | 257679 | 10.95 | | | | |
| 14 | 031073813 | 243863 | 10.95 | | | | |
| 15 | 031073814 | 260812 | 10.95 | | | | |
| 16 | 031073815 | 253935 | 10.95 | | | | |
| 17 | 031073810MS | 316041 | 10.95 | | | | |
| 18 | 031073810MSD | 332262 | 10.95 | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

768 364

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-7-03 | VOC3 | V311071 | US14632324 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | |
|---|---|---|---|
| 0310-738 | | | |
| 34-49 | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 02-7-27-16 ✓

2.0 Initial Calibration (ICAL) : Method V309181.8260 ICAL SRN 02-7-27-1 ✓

- 2.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-29-10 / 02-7-29-18 ✓

- 3.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓

_____

_____

- 3.5 Internal Standards – Retention Times within +/-30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V311071LCB | MeCl2 1.59ppb | | 014 |
| | | | |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V311071LCB | 135 | 010 | 014 |
| | | | |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-138-40 | 22/170 | 0/35 | 018 |
| | | | |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

_____

_____

8.0 Dilutions/Re-Analysis Required ✓

Narrative/Notes : _____

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 365

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 0101001 BFB Injection Date: 11/07/03

Instrument ID: VOC3 BFB Injection Time: 0823

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 27.4 |
| 75 | 30.0 - 60.0% of mass 95 | 49.4 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.1 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 89.4 |
| 175 | 5.0 - 9.0% of mass 174 | 7.9 ( 8.9)1 |
| 176 | 95.0 - 101.0% of mass 174 | 88.0 ( 98.4)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.9 ( 6.7)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V3110711LCS | 11LCS | 0201002LCS | 11/07/03 | 0841 |
| 02 | CCV100PPB | | 0201002 | 11/07/03 | 0841 |
| 03 | V3110711LB | 11LB | 0302004 | 11/07/03 | 1002 |
| 04 | 031073834 | 031073834 | 0401005 | 11/07/03 | 1032 |
| 05 | 031073835 | 031073835 | 0501006 | 11/07/03 | 1102 |
| 06 | 031073836 | 031073836 | 0601007 | 11/07/03 | 1132 |
| 07 | 031073837 | 031073837 | 0701008 | 11/07/03 | 1201 |
| 08 | 031073838 | 031073838 | 0801009 | 11/07/03 | 1231 |
| 09 | 031073840 | 031073840 | 1001011 | 11/07/03 | 1350 |
| 10 | 031073841 | 031073841 | 1101012 | 11/07/03 | 1419 |
| 11 | 031073842 | 031073842 | 1201013 | 11/07/03 | 1449 |
| 12 | 031073843 | 031073843 | 1301014 | 11/07/03 | 1519 |
| 13 | 031073844 | 031073844 | 1401015 | 11/07/03 | 1549 |
| 14 | 031073845 | 031073845 | 1501016 | 11/07/03 | 1619 |
| 15 | 031073846 | 031073846 | 1601017 | 11/07/03 | 1649 |
| 16 | 031073847 | 031073847 | 1701018 | 11/07/03 | 1719 |
| 17 | 031073848 | 031073848 | 1801019 | 11/07/03 | 1749 |
| 18 | 031073849 | 031073849 | 1901020 | 11/07/03 | 1819 |
| 19 | 031073840MS | MS | 2001021 | 11/07/03 | 1849 |
| 20 | 031073840MSD | MSD | 2101022 | 11/07/03 | 1919 |
| 21 | | | | | |
| 22 | | | | | |

768 366

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC3 Calibration Date: 11/07/03 Time: 0841

Lab File ID: 0201002 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 153.6 | 100.0 | AVRG | 53.6 | 30.0 | <- |
| Benzene | 112.6 | 100.0 | AVRG | 12.6 | 30.0 | |
| Bromodichloromethane | 100.4 | 100.0 | LINR | 0.4 | 30.0 | |
| Bromoform | 92.84 | 100.0 | AVRG | 7.2 | 30.0 | |
| Bromomethane | 125.9 | 100.0 | AVRG | 25.9 | 30.0 | |
| 2-Butanone | 116.7 | 100.0 | AVRG | 16.7 | 30.0 | |
| Carbon Disulfide | 102.2 | 100.0 | AVRG | 2.2 | 30.0 | |
| Carbon Tetrachloride | 90.20 | 100.0 | AVRG | 9.8 | 30.0 | |
| Chlorobenzene | 94.96 | 100.0 | AVRG | 5.0 | 30.0 | |
| Chlorodibromomethane | 103.2 | 100.0 | AVRG | 3.2 | 30.0 | |
| Chloroethane | 110.8 | 100.0 | AVRG | 10.8 | 30.0 | |
| Chloroform | 101.7 | 100.0 | LINR | 1.7 | 20.0 | |
| Chloromethane | 84.64 | 100.0 | AVRG | 15.4 | 30.0 | |
| 1,1-Dichloroethane | 101.7 | 100.0 | AVRG | 1.7 | 30.0 | |
| 1,2-Dichloroethane | 94.48 | 100.0 | AVRG | 5.5 | 30.0 | |
| 1,1-Dichloroethene | 107.4 | 100.0 | AVRG | 7.4 | 20.0 | |
| cis-1,2-Dichloroethene | 104.7 | 100.0 | AVRG | 4.7 | 30.0 | |
| trans-1,2-Dichloroethene | 98.31 | 100.0 | AVRG | 1.7 | 30.0 | |
| 1,2-Dichloropropane | 104.6 | 100.0 | AVRG | 4.6 | 20.0 | |
| cis-1,3-Dichloropropene | 106.9 | 100.0 | AVRG | 6.9 | 30.0 | |
| trans-1,3-Dichloropropene | 109.2 | 100.0 | AVRG | 9.2 | 30.0 | |
| Ethylbenzene | 100.2 | 100.0 | AVRG | 0.2 | 20.0 | |
| 2-Hexanone | 123.4 | 100.0 | AVRG | 23.4 | 30.0 | |
| Methylene Chloride | 104.0 | 100.0 | LINR | 4.0 | 30.0 | |
| 4-Methyl-2-Pentanone | 107.6 | 100.0 | AVRG | 7.6 | 30.0 | |
| Styrene | 99.45 | 100.0 | AVRG | 0.6 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 101.4 | 100.0 | AVRG | 1.4 | 30.0 | |
| Tetrachloroethene | 102.8 | 100.0 | AVRG | 2.8 | 30.0 | |
| 1,1,1-Trichloroethane | 91.09 | 100.0 | AVRG | 8.9 | 30.0 | |
| Toluene | 107.0 | 100.0 | AVRG | 7.0 | 20.0 | |
| 1,1,2-Trichloroethane | 114.7 | 100.0 | AVRG | 14.7 | 30.0 | |
| Trichloroethene | 99.74 | 100.0 | AVRG | 0.3 | 30.0 | |
| Vinyl Chloride | 95.02 | 100.0 | AVRG | 5.0 | 20.0 | |
| Xylene-mp | 189.8 | 200.0 | AVRG | 5.1 | 30.0 | |
| Xylene-o | 94.06 | 100.0 | AVRG | 5.9 | 30.0 | |
| Dibromofluoromethane | 43.10 | 50.00 | AVRG | 13.8 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 367

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC3 Calibration Date: 11/07/03 Time: 0841

Lab File ID: 0201002 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Toluene-d8 | 49.36 | 50.00 | AVRG | 1.3 | 30.0 |
| Bromofluorobenzene | 49.08 | 50.00 | AVRG | 1.8 | 30.0 |
| 1,2-Dichloroethane-d4 | 38.19 | 50.00 | AVRG | 23.6 | 30.0 |

768 368

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 0201002 Date Analyzed: 11/07/03

Instrument ID: VOC3 Time Analyzed: 0841

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2 (DFB) AREA # | RT # | IS3 (CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 797782 | 6.52 | 1092166 | 7.07 | 993858 | 9.16 |
| | UPPER LIMIT | 1595564 | 7.02 | 2184332 | 7.57 | 1987716 | 9.66 |
| | LOWER LIMIT | 398891 | 6.02 | 546083 | 6.57 | 496929 | 8.66 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110711LB | 687940 | 6.52 | 895603 | 7.06 | 801130 | 9.16 |
| 02 | 031073834 | 579782 | 6.52 | 757539 | 7.07 | 699249 | 9.16 |
| 03 | 031073835 | 518229 | 6.52 | 695177 | 7.07 | 641227 | 9.16 |
| 04 | 031073836 | 538217 | 6.52 | 712282 | 7.07 | 667803 | 9.16 |
| 05 | 031073837 | 492393 | 6.52 | 705163 | 7.07 | 603848 | 9.16 |
| 06 | 031073838 | 475125 | 6.52 | 670843 | 7.07 | 608825 | 9.16 |
| 07 | 031073840 | 459348 | 6.53 | 621162 | 7.07 | 563005 | 9.16 |
| 08 | 031073841 | 428130 | 6.53 | 582409 | 7.07 | 532092 | 9.16 |
| 09 | 031073842 | 423546 | 6.53 | 574572 | 7.07 | 530470 | 9.16 |
| 10 | 031073843 | 421633 | 6.53 | 592211 | 7.07 | 538954 | 9.16 |
| 11 | 031073844 | 396081* | 6.53 | 550258 | 7.07 | 501528 | 9.16 |
| 12 | 031073845 | 398406* | 6.52 | 561964 | 7.07 | 526405 | 9.16 |
| 13 | 031073846 | 383201* | 6.52 | 524203* | 7.07 | 497145 | 9.16 |
| 14 | 031073847 | 379754* | 6.52 | 516707* | 7.07 | 491471* | 9.16 |
| 15 | 031073848 | 376186* | 6.52 | 516680* | 7.07 | 496653* | 9.16 |
| 16 | 031073849 | 372961* | 6.52 | 522446* | 7.07 | 491627* | 9.16 |
| 17 | 031073840MS | 429283 | 6.53 | 609756 | 7.07 | 611014 | 9.16 |
| 18 | 031073840MSD | 550687 | 6.52 | 778429 | 7.07 | 749448 | 9.16 |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 369

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 0201002 Date Analyzed: 11/07/03

Instrument ID: VOC3 Time Analyzed: 0841

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 416823 | 10.93 | | | | |
| | UPPER LIMIT | 833646 | 11.43 | | | | |
| | LOWER LIMIT | 208412 | 10.43 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110711LB | 367597 | 10.93 | | | | |
| 02 | 031073834 | 319896 | 10.93 | | | | |
| 03 | 031073835 | 296208 | 10.93 | | | | |
| 04 | 031073836 | 311321 | 10.93 | | | | |
| 05 | 031073837 | 292314 | 10.93 | | | | |
| 06 | 031073838 | 288920 | 10.93 | | | | |
| 07 | 031073840 | 263966 | 10.93 | | | | |
| 08 | 031073841 | 251921 | 10.93 | | | | |
| 09 | 031073842 | 255001 | 10.93 | | | | |
| 10 | 031073843 | 263663 | 10.93 | | | | |
| 11 | 031073844 | 242484 | 10.93 | | | | |
| 12 | 031073845 | 259435 | 10.93 | | | | |
| 13 | 031073846 | 236972 | 10.93 | | | | |
| 14 | 031073847 | 239677 | 10.93 | | | | |
| 15 | 031073848 | 238730 | 10.93 | | | | |
| 16 | 031073849 | 240341 | 10.93 | | | | |
| 17 | 031073840MS | 298850 | 10.93 | | | | |
| 18 | 031073840MSD | 328587 | 10.93 | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

768 370

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-8-03 | VOC3 | V311081 | US1463232H | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0310-738 | 0310-739 | | | |
| 37-39 | 63-71 | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria/No analysis begins until criteria are met. (SOP) 02-7-27-16 ✓

2.0 Initial Calibration (ICAL) : Method V309181.8200m ICAL SRN 02-7-27-1

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-29-10 02-7-29-18 ✓

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
  Acetone ↑, MEK ↑, Bromomethane ↑, MBK ↑
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V311081LCB | MeCl2 BDL | | 014 |
| | | | |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V311081LCS | 1/35 | 010 | 014 |
| | | | |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-739-70 | 0170 | 0135 | 013 013 018 |
| | | | |

11-09-03 ✓

7.0 Surrogate Recoveries within QC Limits - Note failures only. NA

8.0 Dilutions/Re-Analysis Required

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 371

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 0101001 BFB Injection Date: 11/08/03

Instrument ID: VOC3 BFB Injection Time: 0950

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 28.0 |
| 75 | 30.0 - 60.0% of mass 95 | 48.8 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 5.9 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 81.9 |
| 175 | 5.0 - 9.0% of mass 174 | 5.0 ( 6.1)1 |
| 176 | 95.0 - 101.0% of mass 174 | 82.5 (100.7)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.3 ( 6.4)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | CCV100PPB | | 0201002 | 11/08/03 | 1010 |
| 02 | V3110811LB | 11LB | 0302005 | 11/08/03 | 1225 |
| 03 | 031073839 | 031073839 | 0501007 | 11/08/03 | 1324 |
| 04 | 031073837 | 031073837 | 0601008 | 11/08/03 | 1354 |
| 05 | 031073838 | 031073838 | 0701009 | 11/08/03 | 1424 |
| 06 | 031073970 | 031073970 | 1501017 | 11/08/03 | 1822 |
| 07 | V3110811LCS | 11LCS | 1601018LCS | 11/08/03 | 1852 |
| 08 | 031073970MS | MS | 1701019 | 11/08/03 | 1921 |
| 09 | 031073970MSD | MSD | 1801020 | 11/08/03 | 1951 |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | | | | | |
| 22 | | | | | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC3 Calibration Date: 11/08/03 Time: 1010

Lab File ID: 0201002 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 234.8 | 100.0 | AVRG | 134.8 | 30.0 | <- |
| Benzene | 124.5 | 100.0 | AVRG | 24.5 | 30.0 | |
| Bromodichloromethane | 109.4 | 100.0 | LINR | 9.4 | 30.0 | |
| Bromoform | 92.75 | 100.0 | AVRG | 7.2 | 30.0 | |
| Bromomethane | 141.7 | 100.0 | AVRG | 41.7 | 30.0 | <- |
| 2-Butanone | 151.9 | 100.0 | AVRG | 51.9 | 30.0 | <- |
| Carbon Disulfide | 120.6 | 100.0 | AVRG | 20.6 | 30.0 | |
| Carbon Tetrachloride | 100.3 | 100.0 | AVRG | 0.3 | 30.0 | |
| Chlorobenzene | 96.06 | 100.0 | AVRG | 3.9 | 30.0 | |
| Chlorodibromomethane | 111.1 | 100.0 | AVRG | 11.1 | 30.0 | |
| Chloroethane | 124.9 | 100.0 | AVRG | 24.9 | 30.0 | |
| Chloroform | 113.6 | 100.0 | LINR | 13.6 | 20.0 | |
| Chloromethane | 85.86 | 100.0 | AVRG | 14.1 | 30.0 | |
| 1,1-Dichloroethane | 109.1 | 100.0 | AVRG | 9.1 | 30.0 | |
| 1,2-Dichloroethane | 105.7 | 100.0 | AVRG | 5.7 | 30.0 | |
| 1,1-Dichloroethene | 116.8 | 100.0 | AVRG | 16.8 | 20.0 | |
| cis-1,2-Dichloroethene | 113.4 | 100.0 | AVRG | 13.4 | 30.0 | |
| trans-1,2-Dichloroethene | 105.8 | 100.0 | AVRG | 5.8 | 30.0 | |
| 1,2-Dichloropropane | 110.0 | 100.0 | AVRG | 10.0 | 20.0 | |
| cis-1,3-Dichloropropene | 111.8 | 100.0 | AVRG | 11.8 | 30.0 | |
| trans-1,3-Dichloropropene | 117.6 | 100.0 | AVRG | 17.6 | 30.0 | |
| Ethylbenzene | 106.4 | 100.0 | AVRG | 6.4 | 20.0 | |
| 2-Hexanone | 152.9 | 100.0 | AVRG | 52.9 | 30.0 | <- |
| Methylene Chloride | 121.4 | 100.0 | LINR | 21.4 | 30.0 | |
| 4-Methyl-2-Pentanone | 116.7 | 100.0 | AVRG | 16.7 | 30.0 | |
| Styrene | 103.5 | 100.0 | AVRG | 3.5 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 99.05 | 100.0 | AVRG | 1.0 | 30.0 | |
| Tetrachloroethene | 105.9 | 100.0 | AVRG | 5.9 | 30.0 | |
| 1,1,1-Trichloroethane | 102.8 | 100.0 | AVRG | 2.8 | 30.0 | |
| Toluene | 115.8 | 100.0 | AVRG | 15.8 | 20.0 | |
| 1,1,2-Trichloroethane | 121.6 | 100.0 | AVRG | 21.6 | 30.0 | |
| Trichloroethene | 105.4 | 100.0 | AVRG | 5.4 | 30.0 | |
| Vinyl Chloride | 104.8 | 100.0 | AVRG | 4.8 | 20.0 | |
| Xylene-mp | 204.7 | 200.0 | AVRG | 2.4 | 30.0 | |
| Xylene-o | 100.4 | 100.0 | AVRG | 0.4 | 30.0 | |
| Dibromofluoromethane | 46.91 | 50.00 | AVRG | 6.2 | 30.0 | |



FORM VII VOA-GCMS

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 373

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC3 Calibration Date: 11/08/03 Time: 1010

Lab File ID: 0201002 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Toluene-d8 | 51.68 | 50.00 | AVRG | 3.4 | 30.0 |
| Bromofluorobenzene | 52.34 | 50.00 | AVRG | 4.7 | 30.0 |
| 1,2-Dichloroethane-d4 | 43.49 | 50.00 | AVRG | 13.0 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 0201002 Date Analyzed: 11/08/03

Instrument ID: VOC3 Time Analyzed: 1010

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2 (DFB) AREA # | RT # | IS3 (CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 658065 | 6.52 | 940092 | 7.06 | 884932 | 9.15 |
| | UPPER LIMIT | 1316130 | 7.02 | 1880184 | 7.56 | 1769864 | 9.65 |
| | LOWER LIMIT | 329033 | 6.02 | 470046 | 6.56 | 442466 | 8.65 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110811LB | 676013 | 6.52 | 893787 | 7.06 | 789704 | 9.16 |
| 02 | 031073839 | 577037 | 6.52 | 800551 | 7.06 | 684910 | 9.16 |
| 03 | 031073837 | 551491 | 6.52 | 762795 | 7.06 | 634743 | 9.16 |
| 04 | 031073838 | 529428 | 6.52 | 744578 | 7.06 | 615474 | 9.16 |
| 05 | 031073970 | 399759 | 6.52 | 557494 | 7.06 | 518946 | 9.15 |
| 06 | V3110811LCS | 515937 | 6.52 | 759373 | 7.06 | 708124 | 9.15 |
| 07 | 031073970MS | 639542 | 6.52 | 903175 | 7.06 | 809142 | 9.16 |
| 08 | 031073970MSD | 687753 | 6.52 | 984191 | 7.06 | 886505 | 9.15 |
| 09 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 375

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 0201002 Date Analyzed: 11/08/03

Instrument ID: VOC3 Time Analyzed: 1010

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 399312 | 10.92 | | | | |
| | UPPER LIMIT | 798624 | 11.42 | | | | |
| | LOWER LIMIT | 199656 | 10.42 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110811LB | 362360 | 10.93 | | | | |
| 02 | 031073839 | 324624 | 10.93 | | | | |
| 03 | 031073837 | 302756 | 10.93 | | | | |
| 04 | 031073838 | 299917 | 10.93 | | | | |
| 05 | 031073970 | 245064 | 10.92 | | | | |
| 06 | V3110811LCS | 349876 | 10.93 | | | | |
| 07 | 031073970MS | 344366 | 10.92 | | | | |
| 08 | 031073970MSD | 384517 | 10.92 | | | | |
| 09 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

768 376

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-8-03 | VOC3 | V311081 | US1463232H | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0310-738 | 0310-739 | | | |
| 37-39 | 63-71 | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria/No analysis begins until criteria are met. (SOP) 02-7-27-16 ✓

2.0 Initial Calibration (ICAL) : Method 309181.8200m ICAL SRN 02-7-27-1 ✓

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-29-10 / 02-7-29-18 ✓

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) Acetone ↑, MEK ↑, Bromomethane ↑, MBK ↑ ✓
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V311081LCB | MeCl2 BDL | | 014 |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V311081LCS | 1/35 | 010 | 014 |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-739-70 | 0170 | 0135 | 015 / 018 |

11-09-03 ✓

7.0 Surrogate Recoveries within QC Limits - Note failures only.

NA

8.0 Dilutions/Re-Analysis Required

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 377

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID: 0101001 BFB Injection Date: 11/08/03

Instrument ID: VOC3 BFB Injection Time: 0950

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 28.0 |
| 75 | 30.0 - 60.0% of mass 95 | 48.8 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 5.9 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 81.9 |
| 175 | 5.0 - 9.0% of mass 174 | 5.0 ( 6.1)1 |
| 176 | 95.0 - 101.0% of mass 174 | 82.5 (100.7)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.3 ( 6.4)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | CCV100PPB | | 0201002 | 11/08/03 | 1010 |
| 02 | V3110811LB | 11LB | 0302005 | 11/08/03 | 1225 |
| 03 | 031073971 | 031073971 | 0401006 | 11/08/03 | 1255 |
| 04 | 031073963 | 031073963 | 0801010 | 11/08/03 | 1454 |
| 05 | 031073964 | 031073964 | 0901011 | 11/08/03 | 1524 |
| 06 | 031073965 | 031073965 | 1001012 | 11/08/03 | 1553 |
| 07 | 031073966 | 031073966 | 1101013 | 11/08/03 | 1623 |
| 08 | 031073967 | 031073967 | 1201014 | 11/08/03 | 1653 |
| 09 | 031073968 | 031073968 | 1301015 | 11/08/03 | 1723 |
| 10 | 031073969 | 031073969 | 1401016 | 11/08/03 | 1753 |
| 11 | 031073970 | 031073970 | 1501017 | 11/08/03 | 1822 |
| 12 | V3110811LCS | 11LCS | 1601018LCS | 11/08/03 | 1852 |
| 13 | 031073970MS | MS | 1701019 | 11/08/03 | 1921 |
| 14 | 031073970MSD | MSD | 1801020 | 11/08/03 | 1951 |
| 15 | | | | | |
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768 378

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Instrument ID: VOC3 Calibration Date: 11/08/03 Time: 1010

Lab File ID: 0201002 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 234.8 | 100.0 | AVRG | 134.8 | 30.0 | <- |
| Benzene | 124.5 | 100.0 | AVRG | 24.5 | 30.0 | |
| Bromodichloromethane | 109.4 | 100.0 | LINR | 9.4 | 30.0 | |
| Bromoform | 92.75 | 100.0 | AVRG | 7.2 | 30.0 | |
| Bromomethane | 141.7 | 100.0 | AVRG | 41.7 | 30.0 | <- |
| 2-Butanone | 151.9 | 100.0 | AVRG | 51.9 | 30.0 | <- |
| Carbon Disulfide | 120.6 | 100.0 | AVRG | 20.6 | 30.0 | |
| Carbon Tetrachloride | 100.3 | 100.0 | AVRG | 0.3 | 30.0 | |
| Chlorobenzene | 96.06 | 100.0 | AVRG | 3.9 | 30.0 | |
| Chlorodibromomethane | 111.1 | 100.0 | AVRG | 11.1 | 30.0 | |
| Chloroethane | 124.9 | 100.0 | AVRG | 24.9 | 30.0 | |
| Chloroform | 113.6 | 100.0 | LINR | 13.6 | 20.0 | |
| Chloromethane | 85.86 | 100.0 | AVRG | 14.1 | 30.0 | |
| 1,1-Dichloroethane | 109.1 | 100.0 | AVRG | 9.1 | 30.0 | |
| 1,2-Dichloroethane | 105.7 | 100.0 | AVRG | 5.7 | 30.0 | |
| 1,1-Dichloroethene | 116.8 | 100.0 | AVRG | 16.8 | 20.0 | |
| cis-1,2-Dichloroethene | 113.4 | 100.0 | AVRG | 13.4 | 30.0 | |
| trans-1,2-Dichloroethene | 105.8 | 100.0 | AVRG | 5.8 | 30.0 | |
| 1,2-Dichloropropane | 110.0 | 100.0 | AVRG | 10.0 | 20.0 | |
| cis-1,3-Dichloropropene | 111.8 | 100.0 | AVRG | 11.8 | 30.0 | |
| trans-1,3-Dichloropropene | 117.6 | 100.0 | AVRG | 17.6 | 30.0 | |
| Ethylbenzene | 106.4 | 100.0 | AVRG | 6.4 | 20.0 | |
| 2-Hexanone | 152.9 | 100.0 | AVRG | 52.9 | 30.0 | <- |
| Methylene Chloride | 121.4 | 100.0 | LINR | 21.4 | 30.0 | |
| 4-Methyl-2-Pentanone | 116.7 | 100.0 | AVRG | 16.7 | 30.0 | |
| Styrene | 103.5 | 100.0 | AVRG | 3.5 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 99.05 | 100.0 | AVRG | 1.0 | 30.0 | |
| Tetrachloroethene | 105.9 | 100.0 | AVRG | 5.9 | 30.0 | |
| 1,1,1-Trichloroethane | 102.8 | 100.0 | AVRG | 2.8 | 30.0 | |
| Toluene | 115.8 | 100.0 | AVRG | 15.8 | 20.0 | |
| 1,1,2-Trichloroethane | 121.6 | 100.0 | AVRG | 21.6 | 30.0 | |
| Trichloroethene | 105.4 | 100.0 | AVRG | 5.4 | 30.0 | |
| Vinyl Chloride | 104.8 | 100.0 | AVRG | 4.8 | 20.0 | |
| Xylene-mp | 204.7 | 200.0 | AVRG | 2.4 | 30.0 | |
| Xylene-o | 100.4 | 100.0 | AVRG | 0.4 | 30.0 | |
| Dibromofluoromethane | 46.91 | 50.00 | AVRG | 6.2 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 379

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Instrument ID: VOC3 Calibration Date: 11/08/03 Time: 1010

Lab File ID: 0201002 Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Toluene-d8 | 51.68 | 50.00 | AVRG | 3.4 | 30.0 |
| Bromofluorobenzene | 52.34 | 50.00 | AVRG | 4.7 | 30.0 |
| 1,2-Dichloroethane-d4 | 43.49 | 50.00 | AVRG | 13.0 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID (Standard): 0201002 Date Analyzed: 11/08/03

Instrument ID: VOC3 Time Analyzed: 1010

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2 (DFB) AREA # | RT # | IS3 (CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 658065 | 6.52 | 940092 | 7.06 | 884932 | 9.15 |
| | UPPER LIMIT | 1316130 | 7.02 | 1880184 | 7.56 | 1769864 | 9.65 |
| | LOWER LIMIT | 329033 | 6.02 | 470046 | 6.56 | 442466 | 8.65 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110811LB | 676013 | 6.52 | 893787 | 7.06 | 789704 | 9.16 |
| 02 | 031073971 | 621259 | 6.52 | 839846 | 7.06 | 723772 | 9.16 |
| 03 | 031073963 | 496723 | 6.52 | 691321 | 7.06 | 594514 | 9.16 |
| 04 | 031073964 | 486817 | 6.52 | 668264 | 7.06 | 592608 | 9.16 |
| 05 | 031073965 | 478692 | 6.52 | 650980 | 7.06 | 563750 | 9.16 |
| 06 | 031073966 | 458554 | 6.52 | 639837 | 7.06 | 549399 | 9.16 |
| 07 | 031073967 | 441237 | 6.52 | 610985 | 7.06 | 531433 | 9.16 |
| 08 | 031073968 | 432088 | 6.52 | 598447 | 7.06 | 535552 | 9.16 |
| 09 | 031073969 | 414185 | 6.52 | 574499 | 7.06 | 515688 | 9.16 |
| 10 | 031073970 | 399759 | 6.52 | 557494 | 7.06 | 518946 | 9.15 |
| 11 | V3110811LCS | 515937 | 6.52 | 759373 | 7.06 | 708124 | 9.15 |
| 12 | 031073970MS | 639542 | 6.52 | 903175 | 7.06 | 809142 | 9.16 |
| 13 | 031073970MSD | 687753 | 6.52 | 984191 | 7.06 | 886505 | 9.15 |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 381

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID (Standard): 0201002 Date Analyzed: 11/08/03

Instrument ID: VOC3 Time Analyzed: 1010

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 399312 | 10.92 | | | | |
| | UPPER LIMIT | 798624 | 11.42 | | | | |
| | LOWER LIMIT | 199656 | 10.42 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3110811LB | 362360 | 10.93 | | | | |
| 02 | 031073971 | 328917 | 10.93 | | | | |
| 03 | 031073963 | 278628 | 10.93 | | | | |
| 04 | 031073964 | 296127 | 10.93 | | | | |
| 05 | 031073965 | 278047 | 10.92 | | | | |
| 06 | 031073966 | 263847 | 10.93 | | | | |
| 07 | 031073967 | 250910 | 10.93 | | | | |
| 08 | 031073968 | 263044 | 10.92 | | | | |
| 09 | 031073969 | 249881 | 10.93 | | | | |
| 10 | 031073970 | 245064 | 10.92 | | | | |
| 11 | V3110811LCS | 349876 | 10.93 | | | | |
| 12 | 031073970MS | 344366 | 10.92 | | | | |
| 13 | 031073970MSD | 384517 | 10.92 | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Report Date : 30-Sep-2003 15:14

Page 1

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

SRN: 02-7-27-6
02-7-27-1

Calibration File Names:
Level 1: \\ETCBDC\DD\chem\voc3.i\V309182.B\0301007.D
Level 2: \\ETCBDC\DD\chem\voc3.i\V309182.B\0401008.D
Level 3: \\ETCBDC\DD\chem\voc3.i\V309182.B\0601010.D
Level 4: \\ETCBDC\DD\chem\voc3.i\V309182.B\0701011.D
Level 5: \\ETCBDC\DD\chem\voc3.i\V309182.B\0801012.D
Level 6: \\ETCBDC\DD\chem\voc3.i\V309182.B\0901013.D
Level 7: \\ETCBDC\DD\chem\voc3.i\V309182.B\1001014.D
Level 8: \\ETCBDC\DD\chem\voc3.i\V309182.B\1101015.D
Level 9: \\ETCBDC\DD\chem\voc3.i\V309182.B\1201016.D
Level 10: \\ETCBDC\DD\chem\voc3.i\V309182.B\1301017.D

| Compound | 0 5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 1 Dichlorodifluoromethane | 0 69949 | 0.73578 | 0.71470 | 0.85246 | 0 90155 | 0.78356 | | | | | |
| | 0 81913 | 0.99513 | 0.80990 | 0.79140 | | | AVRG | | 0.81031 | | 11 06793 |

00002713

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 2 Chloromethane | 0.93532 | 0 93426 | 0.77982 | 0.88307 | 0.86176 | 0.74914 | | | | | |
| | 0 78369 | 0.98852 | 0.78066 | 0.79621 | | | AVRG | | 0.84924 | | 9.77256 |
| 3 Vinyl Chloride | 0 55750 | 0.58963 | 0.59217 | 0.65422 | 0.70485 | 0.62472 | | | | | |
| | 0 66731 | 0.82213 | 0.66106 | 0.64387 | | | AVRG | | 0.65175 | | 11.35223 |
| 4 Bromomethane | 0 41441 | 0 42479 | 0.29204 | 0.36751 | 0.39541 | 0 38529 | | | | | |
| | 0 38137 | 0.48313 | 0.38155 | 0.37893 | | | AVRG | | 0.39044 | | 12.34188 |
| 5 Chloroethane | 0.27683 | 0.22559 | 0.28705 | 0.32804 | 0 32301 | 0.27602 | | | | | |
| | 0 29598 | 0 35545 | 0.28274 | 0.28718 | | | AVRG | | 0.29379 | | 12 06111 |
| 6 Acrolein | +++++ | +++++ | 0.01836 | 0.01801 | 0.01564 | 0.01513 | | | | | |
| | 0.01971 | +++++ | +++++ | +++++ | | | AVRG | | 0.01737 | | 11.10255 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 7 Trichlorofluoromethane | 1 04099 | 1.03979 | 1.01216 | 1.25972 | 1.15326 | 0 90180 | | | | | |
| | 1.00808 | 1.19362 | 0.92898 | 0.91949 | | | AVRG | | 1.04579 | | 11.58532 |
| 8 Acetonitrile | +++++ | 0.03908 | 0.04433 | 0.04612 | 0 04551 | 0 03748 | | | | | |
| | 0.04808 | 0.05337 | 0.04498 | 0.04317 | | | AVRG | | 0.04468 | | 10.48656 |
| 9 Acetone | +++++ | +++++ | 0.20923 | 0.20938 | 0.21262 | 0.16945 | | | | | |
| | 0.20712 | 0.22233 | 0.20351 | 0.17988 | | | AVRG | | 0.20169 | | 8.80796 |
| 10 Furan | +++++ | 1.32575 | 1.21599 | 1.58517 | 1.30915 | 1.12425 | | | | | |
| | 1.26087 | 1.57950 | 1.22039 | 1.15719 | | | AVRG | | 1.30870 | | 12.83498 |
| 11 1,1-Dichloroethene | 0.43051 | 0.47001 | 0.39070 | 0.54557 | 0.43377 | 0.41981 | | | | | |
| | 0.43066 | 0.55550 | 0.43346 | 0.41743 | | | AVRG | | 0.45274 | | 12.17983 |

S12000

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 / 120.0000 Level 7 | 1.0000 Level 2 / 150.0000 Level 8 | 5.0000 Level 3 / 170.0000 Level 9 | 20.0000 Level 4 / 200.0000 Level 10 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 Acrylonitrile | +++++ | +++++ | 0.14343 | 0.15239 | 0.14131 | 0.11290 | | | | | |
| | 0.12965 | 0.15174 | 0.13296 | 0.12627 | | | AVRG | | 0.13633 | | 9.90668 |
| 13 Iodomethane | 1545 | 5566 | 37284 | 125848 | 313779 | 655838 | | | | | |
| | +++++ | +++++ | +++++ | +++++ | | | LINR | -0.02246 | 0.47915 | | 0.99714 |
| 14 Methylene Chloride | +++++ | +++++ | 33856 | 116634 | 269453 | 547156 | | | | | |
| | 757422 | +++++ | +++++ | +++++ | | | LINR | -0.04946 | 0.41278 | | 0.99286 |
| 15 1,1,2-trichloro-1,2,2-trifluo | 0.42556 | 0.46814 | 0.45535 | 0.62161 | 0.52390 | 0.48993 | | | | | |
| | 0.45944 | 0.56603 | 0.45209 | 0.42028 | | | AVRG | | 0.48823 | | 13.18242 |
| 16 Allyl chloride | 0.90863 | 0.97560 | 0.82854 | 1.05191 | 0.87276 | 0.84358 | | | | | |
| | 0.83679 | 1.07537 | 0.83905 | 0.79961 | | | AVRG | | 0.90318 | | 10.84434 |

002769

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 17 Carbon Disulfide | 1.11748 | 1.20226 | 1.10954 | 1 41658 | 1.15703 | 1.09343 | | | | | |
| | 1.26715 | 1.65515 | 1 27052 | 1.22706 | | | AVRG | | 1.25162 | | 13 73136 |
| 18 trans-1,2-Dichloroethene | 0.47605 | 0.40667 | 0.41749 | 0.55382 | 0.44947 | 0.44827 | | | | | |
| | 0.44683 | 0.56322 | 0.45609 | 0.42430 | | | AVRG | | 0.46422 | | 11.55570 |
| 19 Methyl-tertbutyl-Ether | 1.04456 | 1.15388 | 1.17051 | 1.43919 | 1.25883 | 1.14424 | | | | | |
| | 1.18535 | 1.41073 | 1.12036 | 1.03823 | | | AVRG | | 1.19659 | | 11.41655 |
| 20 Propionitrile | 0 04529 | 0.04152 | 0.04237 | 0.04766 | 0.04916 | 0.04107 | | | | | |
| | 0.04980 | 0 05587 | 0.04743 | 0.04536 | | | AVRG | | 0 04655 | | 9.66096 |
| 21 1,1-Dichloroethane | 0.74490 | 0 86302 | 0.85737 | 1.13461 | 0.93774 | 0.90206 | | | | | |
| | 0.88750 | 1 11790 | 0.88531 | 0.84063 | | | AVRG | | 0.91710 | | 13.21341 |

768 386

222000

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150 0000 Level 8 | 170.0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 22 Vinyl Acetate | +++++ | +++++ | 1 00069 | 1.22350 | 1 07635 | 0.96475 | | | | | |
| | 1.01996 | 1.20948 | 0.98140 | 0 92903 | | | AVRG | | 1.05064 | | 10.56024 |
| 23 Chloroprene | 1 00397 | 1 07538 | 1.08737 | 1.39296 | 1.19629 | 1.12740 | | | | | |
| | 1.10420 | 1.40685 | 1.05043 | 1.03449 | | | AVRG | | 1.14793 | | 12.44836 |
| 24 2-Butanone | +++++ | +++++ | +++++ | 0 04949 | 0.04910 | 0.04194 | | | | | |
| | 0.04705 | 0 05393 | 0.04567 | 0.04223 | | | AVRG | | 0.04706 | | 9.04441 |
| 25 Hexane | +++++ | 0 81283 | 0.57895 | 0.74485 | 0.64999 | 0.60042 | | | | | |
| | 0 62010 | 0 79747 | 0.62759 | 0.61939 | | | AVRG | | 0.67240 | | 13.15359 |
| 26 Di isopropyl ether | 1 75052 | 1.67744 | 1.63809 | 2 02832 | 1 69897 | 1.59288 | | | | | |
| | 1 68545 | 2 06566 | 1.62023 | 1.56561 | | | AVRG | | 1.73232 | | 10.07347 |

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768 388

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 27 Methacrylonitrile | 0.27926 | 0.33631 | 0.30930 | 0.35460 | 0.33700 | 0.29431 | | | | | |
| | 0.32039 | 0.36264 | 0.30864 | 0.29169 | | | AVRG | | 0.31941 | | 8.68838 |
| 28 cis-1,2-Dichloroethene | 0.42212 | 0.46914 | 0.44599 | 0.54799 | 0.47293 | 0.45249 | | | | | |
| | 0.46568 | 0 58939 | 0.45915 | 0.44473 | | | AVRG | | 0.47696 | | 10.78417 |
| 29 Ethyl Acetate | +++++ | +++++ | 0.42379 | 0.49624 | 0 48979 | 0.43916 | | | | | |
| | 0.50320 | 0.55676 | 0.47627 | 0.45353 | | | AVRG | | 0.47984 | | 8.74722 |
| 30 Bromochloromethane | +++++ | 0.22803 | 0.21591 | 0 29965 | 0.25457 | 0.21537 | | | | | |
| | 0.25242 | 0.31445 | 0.24209 | 0.23192 | | | AVRG | | 0.25049 | | 14.02747 |
| 31 Chloroform | 14090 | 21386 | 75583 | 288861 | 675388 | 1418869 | | | | | Averaged |
| | 1767999 | +++++ | +++++ | +++++ | | | LINR | -0.03937 | 1.01192 | | 0.99779 17.3 |

0002179

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 32 Isobutyl Alcohol | +++++ | +++++ | 0.01781 | 0.01824 | 0.02131 | 0 01682 | | | | | |
| | 0.02036 | 0.02207 | 0 01875 | 0.01666 | | | AVRG | | 0.01900 | | 10.68691 |
| 33 2,2-Dichloropropane | 1.06603 | 1.01168 | 0 92800 | 1.19254 | 1.00114 | 0 94137 | | | | | |
| | 0.90800 | 1 13882 | 0.83935 | 0.80967 | | | AVRG | | 0.98366 | | 12 55622 |
| 35 Tetrahydrofuran | +++++ | +++++ | 0.16789 | 0 21842 | 0.19065 | 0.17954 | | | | | |
| | 0.20098 | 0 22581 | 0 19479 | 0.18447 | | | AVRG | | 0.19532 | | 9.93596 |
| 38 1,2-Dichloroethane | 0.90656 | 1.04101 | 0.91582 | 1.22081 | 1.10743 | 1.01596 | | | | | |
| | 1.01033 | 1.24321 | 0.94456 | 0.91857 | | | AVRG | | 1.03243 | | 11.92845 |
| 39 1,1,1-Trichloroethane | 0.99462 | 1 05309 | 1.01335 | 1 34682 | 1.19752 | 1.11075 | | | | | |
| | 1 07081 | 1 34240 | 0.97847 | 0.97800 | | | AVRG | | 1 10858 | | 12.75301 |

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Environmental Testing and Consulting, Inc.

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | ml | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 40 1,1-Dichloropropene | 0.61956 | 0.64922 | 0.64988 | 0.86757 | 0.78706 | 0.74488 | | | | | |
| | 0.75389 | 0.97756 | 0 69989 | 0.70364 | | | AVRG | | 0.74531 | | 14 74226 |
| 41 Carbon Tetrachloride | 0.81933 | 0.97725 | 0.89114 | 1.18785 | 1.02491 | 0.96705 | | | | | |
| | 0.93090 | 1.17780 | 0.84987 | 0.85262 | | | AVRG | | 0.96787 | | 13.44156 |
| 42 Benzene | 1.39197 | 1.42123 | 1.31364 | 1 66275 | 1.45108 | 1 33957 | | | | | |
| | 1.38018 | 1.79085 | 1.32793 | 1.33598 | | | AVRG | | 1.44152 | | 11.05315 |
| 44 Dibromomethane | 0.25822 | 0.26260 | 0.28938 | 0.35794 | 0.33872 | 0.30078 | | | | | |
| | 0.30131 | 0.35690 | 0.27691 | 0.26812 | | | AVRG | | 0.30109 | | 12.56978 |
| 45 1,2-Dichloropropane | 0.31076 | 0.30416 | 0.33537 | 0.41233 | 0.38460 | 0.35821 | | | | | |
| | 0.35659 | 0 45389 | 0.33778 | 0.34014 | | | AVRG | | 0.35938 | | 12.85476 |

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Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 46 Trichloroethene | 0.34282 | 0.37150 | 0.36080 | 0.46551 | 0.41765 | 0.39025 | | | | | |
| | 0.38016 | 0.48521 | 0.34972 | 0.34954 | | | AVRG | | 0.39132 | | 12.71761 |
| 47 Bromodichloromethane | +++++ | 17083 | 60025 | 228557 | 545368 | 1118127 | | | | | |
| | 1408002 | +++++ | +++++ | +++++ | | | LINR | -0.05670 | 0.63524 | | 0.99689 |
| 48 n-Propyl Acetate | +++++ | 1.03518 | 1.04776 | 1.22629 | 1.18741 | 0.98186 | | | | | |
| | 1.06346 | 1.17608 | 0.98127 | 0.91945 | | | AVRG | | 1.06875 | | 9.89703 |
| 49 Methyl methacrylate | 0.15622 | 0.16598 | 0.19166 | 0.23138 | 0.22396 | 0.19001 | | | | | |
| | 0.20457 | 0.23397 | 0.19221 | 0.18123 | | | AVRG | | 0.19712 | | 13.42883 |
| 50 1,4-Dioxane | +++++ | +++++ | 0.00198 | 0.00227 | 0.00263 | 0.00228 | | | | | |
| | 0.00269 | 0.00292 | 0.00241 | 0.00233 | | | AVRG | | 0.00244 | | 12.10419 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 51 2-Chloroethyl vinyl ether | +++++ | +++++ | 0.33537 | 0.41233 | 0.38460 | 0 35821 | | | | | |
| | 0.35659 | 0.45389 | 0.33778 | 0.33813 | | | AVRG | | 0.37211 | | 11.39238 |
| 52 cis-1,3-Dichloropropene | 0.55221 | 0.58528 | 0.57047 | 0 73866 | 0.69786 | 0.63461 | | | | | |
| | 0.63690 | 0 78836 | 0.59236 | 0.58039 | | | AVRG | | 0.63771 | | 12.41769 |
| 53 4-Methyl-2-Pentanone | +++++ | +++++ | 0.45977 | 0.49130 | 0.51256 | 0.42938 | | | | | |
| | 0.46251 | 0.50430 | 0.42822 | 0.38921 | | | AVRG | | 0.45966 | | 9.25533 |
| 54 trans-1,3-Dichloropropene | 0.48571 | 0.48017 | 0.53743 | 0.67146 | 0.64749 | 0.58190 | | | | | |
| | 0.58893 | 0.71043 | 0.54864 | 0.52884 | | | AVRG | | 0.57810 | | 13.42978 |
| 55 1,1,2-Trichloroethane | +++++ | 0.18292 | 0.22667 | 0.28865 | 0.27106 | 0.24227 | | | | | |
| | 0.24332 | 0.29632 | 0.23319 | 0.22393 | | | AVRG | | 0.24537 | | 14.40965 |

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Environmental Testing and Consulting, Inc.

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 57 Ethyl methacrylate | 0.22193 | 0.20897 | 0.19425 | 0.22616 | 0.22462 | 0.19667 | | | | | |
| | 0 20811 | 0.24019 | 0.19412 | 0.18136 | | | AVRG | | 0.20964 | | 8.75240 |
| 58 Toluene | 0.82134 | 0.73614 | 0.70481 | 0.84232 | 0.75655 | 0 67984 | | | | | |
| | 0.68761 | 0.86997 | 0.65007 | 0.64477 | | | AVRG | | 0.73934 | | 10 95319 |
| 59 1,3-Dichloropropane | 0.45207 | 0.44098 | 0.47779 | 0.56526 | 0.53867 | 0.47034 | | | | | |
| | 0 48418 | 0.59025 | 0.45439 | 0.44241 | | | AVRG | | 0.49163 | | 10.93267 |
| 60 2-Hexanone | +++++ | +++++ | 0.33441 | 0.34804 | 0.37039 | 0.30074 | | | | | |
| | 0.33469 | 0.35310 | 0.29963 | 0 27703 | | | AVRG | | 0.32725 | | 9 70163 |
| 61 Chlorodibromomethane | +++++ | 0.42847 | 0.44985 | 0.56705 | 0.55982 | 0.49737 | | | | | |
| | 0 49393 | 0 60138 | 0.45862 | 0.44072 | | | AVRG | | 0 49969 | | 12 50844 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 62 1,2-Dibromoethane | 0.31548 | 0.36646 | 0.36390 | 0.43641 | 0.42891 | 0.37443 | | | | | |
| | 0.38412 | 0.45317 | 0.35585 | 0.34468 | | | AVRG | | 0.38234 | | 11.48601 |
| 63 Tetrachloroethene | +++++ | 0.31470 | 0.33644 | 0.42367 | 0.41026 | 0 36573 | | | | | |
| | 0.35153 | 0.45018 | 0.32862 | 0.31988 | | | AVRG | | 0.36678 | | 13.49652 |
| 64 1,1,1,2-Tetrachloroethane | 0.39326 | 0.48168 | 0.43780 | 0.51754 | 0.47600 | 0.46839 | | | | | |
| | 0.48244 | 0 61670 | 0.42896 | 0 42482 | | | AVRG | | 0.47276 | | 13.13145 |
| 66 Chlorobenzene | 0.99912 | 0.91601 | 0.92178 | 1.10828 | 0.99800 | 0 96879 | | | | | |
| | 0.99321 | 1.31813 | 0.90953 | 0.89126 | | | AVRG | | 1.00241 | | 12.75294 |
| 67 Ethylbenzene | 1.79003 | 1.79476 | 1.58975 | 1.91567 | 1.67336 | 1.64689 | | | | | |
| | 1.66299 | 2.15841 | 1 50143 | 1 46537 | | | AVRG | | 1 71987 | | 11.96835 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 / 120.0000 Level 7 | 1 0000 Level 2 / 150 0000 Level 8 | 5.0000 Level 3 / 170.0000 Level 9 | 20.0000 Level 4 / 200.0000 Level 10 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 68 Xylene-mp | 0.56595 | 0.60442 | 0.53161 | 0.63450 | 0.56012 | 0 55537 | | | | | |
| | 0 56530 | 0 75565 | 0.52787 | 0.51605 | | | AVRG | | 0.58168 | | 12 14996 |
| 69 Bromoform | +++++ | 0.37000 | 0.37562 | 0.46809 | 0 44491 | 0.42385 | | | | | |
| | 0.45417 | 0.54743 | 0.39717 | 0.38201 | | | AVRG | | 0 42925 | | 13.28565 |
| 70 trans-1,4-Dichloro-2-butene | +++++ | 0 10454 | 0.13276 | 0.14503 | 0.14269 | 0.13400 | | | | | |
| | 0.14296 | 0 16752 | 0.12757 | 0 12206 | | | AVRG | | 0.13546 | | 12.88083 |
| 71 Styrene | 0.82045 | 0.85731 | 0.85021 | 0.97287 | 0.92132 | 0.86546 | | | | | |
| | 0.90654 | 1.18895 | 0.82149 | 0.80856 | | | AVRG | | 0.90132 | | 12 57565 |
| 72 Xylene-o | 0.51142 | 0.58723 | 0.48231 | 0.60284 | 0 53634 | 0.52430 | | | | | |
| | 0.52968 | 0.70482 | 0.49743 | 0.47879 | | | AVRG | | 0.54552 | | 12.68729 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 73 1,1,2,2-Tetrachloroethane | 0.75679 | 0.81062 | 0.81466 | 1.00739 | 0.92201 | 0.84656 | | | | | |
| | 0.92028 | 1.08567 | 0.88573 | 0.84792 | | | AVRG | | 0.88976 | | 11.07572 |
| 74 cis-1,4-Dichloro-2-butene | 0.20707 | 0.16655 | 0.19239 | 0.19190 | 0 19485 | 0 17978 | | | | | |
| | 0.19085 | 0.22326 | 0.16810 | 0.15678 | | | AVRG | | 0.18715 | | 10.66860 |
| 75 1,2,3-Trichloropropane | +++++ | 0.09551 | 0.12152 | 0.13715 | 0.13511 | 0.12391 | | | | | |
| | 0 13413 | 0.16043 | 0.11955 | 0.11470 | | | AVRG | | 0.12689 | | 14.13768 |
| 76 Isopropylbenzene | 1.64432 | 1.73289 | 1.45639 | 1.81113 | 1.55833 | 1 52794 | | | | | |
| | 1.55207 | 2.02631 | 1.37995 | 1.36914 | | | AVRG | | 1.60585 | | 12.74814 |
| 78 Bromobenzene | 0 42294 | 0.41295 | 0.40197 | 0.47027 | 0.43117 | 0.43267 | | | | | |
| | 0.44618 | 0 57441 | 0.40248 | 0.39175 | | | AVRG | | 0.43868 | | 12.09558 |

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 79 n-Propylbenzene | +++++ | 1.98435 | 1.70280 | 2.01857 | 1.76082 | 1 75617 | | | | | |
| | 1.74174 | 2.29036 | 1.55878 | 1.52925 | | | AVRG | | 1 81587 | | 13.31589 |
| 80 2-Chlorotoluene | +++++ | 1.26327 | 1.05658 | 1 23580 | 1.10878 | 1 06764 | | | | | |
| | 1 09246 | 1 41242 | 0.95775 | 0.94833 | | | AVRG | | 1.12700 | | 13 39972 |
| 81 4-Chlorotoluene | +++++ | 1.41415 | 1.22010 | 1 37067 | 1.18947 | 1.17315 | | | | | |
| | 1.18218 | 1.51016 | 1.05915 | 1.02456 | | | AVRG | | 1.23818 | | 13.09264 |
| 82 1,3,5-Trimethylbenzene | 1.25703 | 1.21641 | 1.12855 | 1.32951 | 1.14114 | 1.09282 | | | | | |
| | 1.11434 | 1.45207 | 0.99690 | 0.98712 | | | AVRG | | 1.17159 | | 12.39272 |
| 83 1,2,4-Trimethylbenzene | 1.36766 | 1 28399 | 1.16025 | 1.32008 | 1.15047 | 1 12403 | | | | | |
| | 1.14606 | +++++ | +++++ | +++++ | | | AVRG | | 1.22179 | | 8.11445 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 85 tert-Butylbenzene | 1 02752 | 1.11794 | 1.01030 | 1.20781 | 1.07885 | 1.04508 | | | | | |
| | 1.05928 | 1.38461 | 0.94682 | 0.94422 | | | AVRG | | 1.08224 | | 12.16306 |
| 86 sec-Butylbenzene | 1 72243 | 1.68431 | 1.52865 | 1.82504 | 1 61275 | 1.56788 | | | | | |
| | 1.55833 | 2.03814 | 1.41382 | 1.40010 | | | AVRG | | 1.63514 | | 11.79903 |
| 87 4-Isopropyltoluene | 1 34124 | 1.28507 | 1.09669 | 1.30269 | 1.16820 | 1.12100 | | | | | |
| | 1.11928 | +++++ | +++++ | +++++ | | | AVRG | | 1.20488 | | 8.43719 |
| 89 1,3-Dichlorobenzene | 1.83203 | 1 77105 | 1.48184 | 1.82221 | 1 64755 | 1 61131 | | | | | |
| | 1.63181 | 2 11441 | 1 55188 | 1.54574 | | | AVRG | | 1.70098 | | 11.04629 |
| 90 1,4-Dichlorobenzene | 1.45265 | 1.59503 | 1.43037 | 1.76609 | 1 59973 | 1.54621 | | | | | |
| | 1 56309 | 1.99199 | 1.49975 | 1.47303 | | | AVRG | | 1.59180 | | 10.70863 |

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 91 1,2-Dichlorobenzene | 1 32259 | 1 44556 | 1 28152 | 1.66861 | 1.52679 | 1 47879 | | | | | |
| | 1.50878 | 1 94186 | 1.41399 | 1.40932 | | | AVRG | | 1 49978 | | 12 62561 |
| 92 n-Butylbenzene | 3.08418 | 2.77441 | 2.45060 | 3.21594 | 2 93663 | 2.76597 | | | | | |
| | 2.71419 | 3.49647 | 2.57253 | 2.58370 | | | AVRG | | 2.85946 | | 11.37356 |
| 93 1,2-Dibromo-3-chloropropane | +++++ | +++++ | 0.18831 | 0.21208 | 0 23136 | 0.21510 | | | | | |
| | 0 23587 | 0.26040 | 0.21488 | 0,20161 | | | AVRG | | 0 21995 | | 10.12063 |
| 94 1,2,4-Trichlorobenzene | 0.96024 | 0.85958 | 0.99717 | 1.17436 | 1.13922 | 1.13819 | | | | | |
| | 1.19855 | +++++ | +++++ | +++++ | | | AVRG | | 1.06676 | | 12 00549 |
| 95 Naphthalene | 1.47198 | 1.54452 | 1.35162 | 1.58695 | 1.55117 | 1.45447 | | | | | |
| | 1.66104 | 2.01707 | 1.59662 | 1.55759 | | | AVRG | | 1 57930 | | 11 17024 |

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 96 Hexachlorobutadiene | +++++ | 1975 | 14391 | 71858 | 193080 | 403117 | | | | | |
| | 489683 | +++++ | +++++ | +++++ | | | LINR | -0.00478 | 0 71571 | | 0.99897 |
| 97 1,2,3-Trichlorobenzene | +++++ | 1.02870 | 0.87450 | 1.04815 | 0.97078 | 0.94759 | | | | | |
| | 1.03540 | 1.27421 | 0.98476 | 0.97588 | | | AVRG | | 1.01555 | | 10.87483 |
| $ 34 Dibromofluoromethane | +++++ | +++++ | +++++ | +++++ | 0.65021 | 0.61993 | | | | | |
| | 0.62581 | 0.79936 | 0.62849 | 0.58001 | | | AVRG | | 0.65063 | | 11.73671 |
| $ 37 1,2-Dichloroethane-d4 | 1 07900 | 0.89032 | 0.87518 | 0.99130 | 0.92953 | 0.82924 | | | | | |
| | 0.83024 | 0 99640 | 0.79849 | 0.80992 | | | AVRG | | 0.90296 | | 10.40574 |
| $ 56 Toluene-d8 | 1.54378 | 1.23987 | 1.17048 | 1.20602 | 1.19630 | 1.10700 | | | | | |
| | 1.09266 | 1.33811 | 1.06277 | 0.96113 | | | AVRG | | 1.19181 | | 13.56293 |

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Environmental Testing and Consulting, Inc.

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| $ 77 Bromofluorobenzene | +++++ | +++++ | 0.54846 | 0 51926 | 0.49450 | 0 46995 | | | | | |
| | 0.49741 | 0 63433 | 0 45214 | 0.41832 | | | AVRG | | 0 50429 | | 13.09344 |

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |

0002292

768 401

768 402

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-5-03 | VOC2 | V211051 | CP7415 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0311-040- | 0311-018 | 0310-738- | | |
| 1 | 12 | 16-24 | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 02-7-30-6 ✓

2.0 Initial Calibration (ICAL) : Method V211711.8260 ICAL SRN 02-7-30-16

- 2.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

02-7-29-10

3.0 Calibration Verification (CV): CV SRN 02-7-29-18

- 3.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V211051LCB | BDCM @ 1.58ppb<br>DBCM @ 1.49ppb<br>1,4-DCB @ 1.11ppb<br>Naphthalene @ 1.06ppb | | 014 |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V211051LCS | 2187 | 010 | 014 |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-738-20 | 5174 | 2187 | 018 |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

8.0 Dilutions/Re-Analysis Required NA

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 403

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 1 BFB Injection Date: 11/05/03

Instrument ID: VOC2 BFB Injection Time: 1410

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 24.0 |
| 75 | 30.0 - 60.0% of mass 95 | 45.3 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 5.4 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 71.2 |
| 175 | 5.0 - 9.0% of mass 174 | 5.2 ( 7.2)1 |
| 176 | 95.0 - 101.0% of mass 174 | 70.6 ( 99.1)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.7 ( 8.0)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | CCV100PPB | CCV100PPB | 1001 | 11/05/03 | 1433 |
| 02 | V2110511LCS | 11LCS | 1002J | 11/05/03 | 1508 |
| 03 | V2110511LB | 11LB | 1004J | 11/05/03 | 1628 |
| 04 | 031073816 | 031073816 | 1009 | 11/05/03 | 1925 |
| 05 | 031073817 | 031073817 | 1010 | 11/05/03 | 2001 |
| 06 | 031073818 | 031073818 | 1011 | 11/05/03 | 2036 |
| 07 | 031073819 | 031073819 | 1012 | 11/05/03 | 2111 |
| 08 | 031073820 | 031073820 | 1013J | 11/05/03 | 2147 |
| 09 | 031073821 | 031073821 | 1014 | 11/05/03 | 2222 |
| 10 | 031073822 | 031073822 | 1015 | 11/05/03 | 2257 |
| 11 | 031073823 | 031073823 | 1016 | 11/05/03 | 2333 |
| 12 | 031073824 | 031073824 | 1017 | 11/06/03 | 0008 |
| 13 | 031073820MS | MS | 1018J | 11/06/03 | 0044 |
| 14 | 031073820MSD | MSD | 1019J | 11/06/03 | 0119 |
| 15 | | | | | |
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| 21 | | | | | |
| 22 | | | | | |



FORM V VOA

768 404

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC2 Calibration Date: 11/05/03 Time: 1433

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Acetone | 120.3 | 100.0 | 2ORDR | 20.3 | 30.0 |
| Benzene | 100.2 | 100.0 | AVRG | 0.2 | 30.0 |
| Bromodichloromethane | 104.8 | 100.0 | LINR | 4.8 | 30.0 |
| Bromoform | 105.0 | 100.0 | AVRG | 5.0 | 30.0 |
| Bromomethane | 82.52 | 100.0 | 2ORDR | 17.5 | 30.0 |
| 2-Butanone | 124.2 | 100.0 | AVRG | 24.2 | 30.0 |
| Carbon Disulfide | 96.04 | 100.0 | AVRG | 4.0 | 30.0 |
| Carbon Tetrachloride | 105.7 | 100.0 | AVRG | 5.7 | 30.0 |
| Chlorobenzene | 105.1 | 100.0 | AVRG | 5.1 | 30.0 |
| Chlorodibromomethane | 97.46 | 100.0 | LINR | 2.5 | 30.0 |
| Chloroethane | 100.4 | 100.0 | AVRG | 0.4 | 30.0 |
| (2) | 100.4 | 100.0 | AVRG | 0.4 | 30.0 |
| Chloroform | 103.5 | 100.0 | AVRG | 3.5 | 20.0 |
| Chloromethane | 95.42 | 100.0 | AVRG | 4.6 | 30.0 |
| 1,1-Dichloroethane | 107.6 | 100.0 | AVRG | 7.6 | 30.0 |
| 1,2-Dichloroethane | 107.0 | 100.0 | AVRG | 7.0 | 30.0 |
| 1,1-Dichloroethene | 98.56 | 100.0 | AVRG | 1.4 | 20.0 |
| trans-1,2-Dichloroethene | 96.03 | 100.0 | AVRG | 4.0 | 30.0 |
| 1,2-Dichloropropane | 101.8 | 100.0 | AVRG | 1.8 | 20.0 |
| cis-1,3-Dichloropropene | 105.0 | 100.0 | AVRG | 5.0 | 30.0 |
| trans-1,3-Dichloropropene | 103.6 | 100.0 | AVRG | 3.6 | 30.0 |
| Ethylbenzene | 102.3 | 100.0 | AVRG | 2.3 | 20.0 |
| 2-Hexanone | 122.1 | 100.0 | AVRG | 22.1 | 30.0 |
| Methylene Chloride | 97.68 | 100.0 | LINR | 2.3 | 30.0 |
| 4-Methyl-2-Pentanone | 108.8 | 100.0 | AVRG | 8.8 | 30.0 |
| Styrene | 119.1 | 100.0 | AVRG | 19.1 | 30.0 |
| 1,1,2,2-Tetrachloroethane | 98.01 | 100.0 | AVRG | 2.0 | 30.0 |
| Tetrachloroethene | 100.7 | 100.0 | AVRG | 0.7 | 30.0 |
| Toluene | 95.35 | 100.0 | AVRG | 4.6 | 20.0 |
| 1,1,1-Trichloroethane | 105.0 | 100.0 | AVRG | 5.0 | 30.0 |
| 1,1,2-Trichloroethane | 99.64 | 100.0 | AVRG | 0.4 | 30.0 |
| Trichloroethene | 104.5 | 100.0 | AVRG | 4.5 | 30.0 |
| Vinyl Chloride | 97.00 | 100.0 | AVRG | 3.0 | 20.0 |
| Xylene-mp | 199.4 | 200.0 | AVRG | 0.3 | 30.0 |
| Xylene-o | 106.3 | 100.0 | AVRG | 6.3 | 30.0 |
| cis-1,2-Dichloroethene | 107.3 | 100.0 | AVRG | 7.3 | 30.0 |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 405

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC2 Calibration Date: 11/05/03 Time: 1433

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 47.41 | 50.00 | AVRG | 5.2 | 30.0 |
| Toluene-d8 | 46.78 | 50.00 | AVRG | 6.4 | 30.0 |
| Bromofluorobenzene | 47.49 | 50.00 | AVRG | 5.0 | 30.0 |
| 1,2-Dichloroethane-d4 | 43.43 | 50.00 | AVRG | 13.1 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 1001 Date Analyzed: 11/05/03

Instrument ID: VOC2 Time Analyzed: 1433

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2 (DFB) AREA # | RT # | IS3 (CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 459490 | 13.87 | 913385 | 15.28 | 831466 | 20.66 |
| | UPPER LIMIT | 918980 | 14.37 | 1826770 | 15.78 | 1662932 | 21.16 |
| | LOWER LIMIT | 229745 | 13.37 | 456693 | 14.78 | 415733 | 20.16 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110511LCS | 511983 | 13.88 | 1013782 | 15.29 | 946088 | 20.66 |
| 02 | V2110511LB | 422807 | 13.88 | 814440 | 15.28 | 808428 | 20.67 |
| 03 | 031073816 | 403800 | 13.88 | 743327 | 15.28 | 679420 | 20.67 |
| 04 | 031073817 | 398806 | 13.87 | 793278 | 15.28 | 739971 | 20.65 |
| 05 | 031073818 | 387707 | 13.87 | 798339 | 15.28 | 735456 | 20.65 |
| 06 | 031073819 | 400197 | 13.87 | 764017 | 15.29 | 744525 | 20.66 |
| 07 | 031073820 | 403343 | 13.87 | 788460 | 15.27 | 756039 | 20.66 |
| 08 | 031073821 | 413010 | 13.86 | 791582 | 15.28 | 696052 | 20.65 |
| 09 | 031073822 | 369874 | 13.87 | 725318 | 15.28 | 752302 | 20.66 |
| 10 | 031073823 | 388570 | 13.87 | 722248 | 15.28 | 675276 | 20.65 |
| 11 | 031073824 | 385074 | 13.87 | 740245 | 15.27 | 708739 | 20.66 |
| 12 | 031073820MS | 420977 | 13.88 | 824212 | 15.28 | 812262 | 20.66 |
| 13 | 031073820MSD | 408996 | 13.88 | 759204 | 15.28 | 753435 | 20.66 |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 407

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 1001 Date Analyzed: 11/05/03

Instrument ID: VOC2 Time Analyzed: 1433

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 660990 | 25.03 | | | | |
| | UPPER LIMIT | 1321980 | 25.53 | | | | |
| | LOWER LIMIT | 330495 | 24.53 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110511LCS | 699197 | 25.03 | | | | |
| 02 | V2110511LB | 437096 | 25.02 | | | | |
| 03 | 031073816 | 432970 | 25.03 | | | | |
| 04 | 031073817 | 424044 | 25.01 | | | | |
| 05 | 031073818 | 420054 | 25.01 | | | | |
| 06 | 031073819 | 390303 | 25.01 | | | | |
| 07 | 031073820 | 448120 | 25.02 | | | | |
| 08 | 031073821 | 434543 | 25.02 | | | | |
| 09 | 031073822 | 434004 | 25.02 | | | | |
| 10 | 031073823 | 414543 | 25.01 | | | | |
| 11 | 031073824 | 421203 | 25.02 | | | | |
| 12 | 031073820MS | 604581 | 25.02 | | | | |
| 13 | 031073820MSD | 581436 | 25.03 | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

768 408

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-6-03 | VOC7 | V211061 | CP7415 | RS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0310-138- | 0310-806- | | | |
| 25-33 | / | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 02-7-30-6 ✓

2.0 Initial Calibration (ICAL) : Method V2 10211.8260 ICAL SRN 02-7-30-16

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

02-7-29-10

3.0 Calibration Verification (CV): CV SRN 02-7-29-18

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓

MBLT

- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V211061LCB | MeCl2 CBOL | | 0/4 |
| | | | |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V211061LCS | 0/35 | 0/0 | 0/4 |
| | | | |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-138-30 | 2/70 | 0/35 | 0/8 |
| | | | |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

8.0 Dilutions/Re-Analysis Required ✓

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 1 BFB Injection Date: 11/06/03

Instrument ID: VOC2 BFB Injection Time: 1357

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 25.5 |
| 75 | 30.0 - 60.0% of mass 95 | 41.7 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.8 |
| 173 | Less than 2.0% of mass 174 | 0.4 ( 0.5)1 |
| 174 | Greater than 50.0% of mass 95 | 72.0 |
| 175 | 5.0 - 9.0% of mass 174 | 5.5 ( 7.7)1 |
| 176 | 95.0 - 101.0% of mass 174 | 69.5 ( 96.5)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.4 ( 7.8)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | CCV100PPB | CCV100PPB | 1001 | 11/06/03 | 1425 |
| 02 | V2110611LCS | 11LCS | 1002LCS | 11/06/03 | 1511 |
| 03 | V2110611LB | 11LB | 1004 | 11/06/03 | 1636 |
| 04 | 031073825 | 031073825 | 1005 | 11/06/03 | 1712 |
| 05 | 031073826 | 031073826 | 1006 | 11/06/03 | 1747 |
| 06 | 031073827 | 031073827 | 1007 | 11/06/03 | 1822 |
| 07 | 031073828 | 031073828 | 1008 | 11/06/03 | 1858 |
| 08 | 031073829 | 031073829 | 1009 | 11/06/03 | 1933 |
| 09 | 031073830 | 031073830 | 1010 | 11/06/03 | 2009 |
| 10 | 031073831 | 031073831 | 1011 | 11/06/03 | 2045 |
| 11 | 031073832 | 031073832 | 1012 | 11/06/03 | 2120 |
| 12 | 031073833 | 031073833 | 1013 | 11/06/03 | 2156 |
| 13 | 031073830MS | MS | 1018 | 11/07/03 | 0053 |
| 14 | 031073830MSD | MSD | 1019 | 11/07/03 | 0129 |
| 15 | | | | | |
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| 20 | | | | | |
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| 22 | | | | | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC2 Calibration Date: 11/06/03 Time: 1425

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 129.5 | 100.0 | 2ORDR | 29.5 | 30.0 | |
| Benzene | 104.5 | 100.0 | AVRG | 4.5 | 30.0 | |
| Bromodichloromethane | 107.2 | 100.0 | LINR | 7.2 | 30.0 | |
| Bromoform | 96.81 | 100.0 | AVRG | 3.2 | 30.0 | |
| Bromomethane | 102.6 | 100.0 | 2ORDR | 2.6 | 30.0 | |
| 2-Butanone | 122.3 | 100.0 | AVRG | 22.3 | 30.0 | |
| Carbon Disulfide | 96.10 | 100.0 | AVRG | 3.9 | 30.0 | |
| Carbon Tetrachloride | 99.82 | 100.0 | AVRG | 0.2 | 30.0 | |
| Chlorobenzene | 104.8 | 100.0 | AVRG | 4.8 | 30.0 | |
| Chlorodibromomethane | 110.0 | 100.0 | LINR | 10.0 | 30.0 | |
| Chloroethane | 105.7 | 100.0 | AVRG | 5.7 | 30.0 | |
| (2) | 105.7 | 100.0 | AVRG | 5.7 | 30.0 | |
| Chloroform | 108.7 | 100.0 | AVRG | 8.7 | 20.0 | |
| Chloromethane | 98.76 | 100.0 | AVRG | 1.2 | 30.0 | |
| 1,1-Dichloroethane | 107.2 | 100.0 | AVRG | 7.2 | 30.0 | |
| 1,2-Dichloroethane | 108.0 | 100.0 | AVRG | 8.0 | 30.0 | |
| 1,1-Dichloroethene | 105.9 | 100.0 | AVRG | 5.9 | 20.0 | |
| trans-1,2-Dichloroethene | 96.95 | 100.0 | AVRG | 3.0 | 30.0 | |
| 1,2-Dichloropropane | 104.1 | 100.0 | AVRG | 4.1 | 20.0 | |
| cis-1,3-Dichloropropene | 119.6 | 100.0 | AVRG | 19.6 | 30.0 | |
| trans-1,3-Dichloropropene | 117.5 | 100.0 | AVRG | 17.5 | 30.0 | |
| Ethylbenzene | 98.79 | 100.0 | AVRG | 1.2 | 20.0 | |
| 2-Hexanone | 136.8 | 100.0 | AVRG | 36.8 | 30.0 | <- |
| Methylene Chloride | 97.23 | 100.0 | LINR | 2.8 | 30.0 | |
| 4-Methyl-2-Pentanone | 120.7 | 100.0 | AVRG | 20.7 | 30.0 | |
| Styrene | 104.4 | 100.0 | AVRG | 4.4 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 90.55 | 100.0 | AVRG | 9.4 | 30.0 | |
| Tetrachloroethene | 112.3 | 100.0 | AVRG | 12.3 | 30.0 | |
| Toluene | 110.7 | 100.0 | AVRG | 10.7 | 20.0 | |
| 1,1,1-Trichloroethane | 102.9 | 100.0 | AVRG | 2.9 | 30.0 | |
| 1,1,2-Trichloroethane | 115.3 | 100.0 | AVRG | 15.3 | 30.0 | |
| Trichloroethene | 109.8 | 100.0 | AVRG | 9.8 | 30.0 | |
| Vinyl Chloride | 101.1 | 100.0 | AVRG | 1.1 | 20.0 | |
| Xylene-mp | 192.4 | 200.0 | AVRG | 3.8 | 30.0 | |
| Xylene-o | 94.77 | 100.0 | AVRG | 5.2 | 30.0 | |
| cis-1,2-Dichloroethene | 111.8 | 100.0 | AVRG | 11.8 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 411

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC2 Calibration Date: 11/06/03 Time: 1425

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 45.71 | 50.00 | AVRG | 8.6 | 30.0 |
| Toluene-d8 | 54.70 | 50.00 | AVRG | 9.4 | 30.0 |
| Bromofluorobenzene | 49.04 | 50.00 | AVRG | 1.9 | 30.0 |
| 1,2-Dichloroethane-d4 | 46.01 | 50.00 | AVRG | 8.0 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 1001 Date Analyzed: 11/06/03

Instrument ID: VOC2 Time Analyzed: 1425

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2 (DFB) AREA # | RT # | IS3 (CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 424770 | 13.85 | 797544 | 15.26 | 829043 | 20.64 |
| | UPPER LIMIT | 849540 | 14.35 | 1595088 | 15.76 | 1658086 | 21.14 |
| | LOWER LIMIT | 212385 | 13.35 | 398772 | 14.76 | 414522 | 20.14 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110611LCS | 471044 | 13.86 | 920247 | 15.26 | 853976 | 20.64 |
| 02 | V2110611LB | 409056 | 13.86 | 789019 | 15.26 | 709701 | 20.64 |
| 03 | 031073825 | 405823 | 13.85 | 706785 | 15.26 | 721782 | 20.64 |
| 04 | 031073826 | 410932 | 13.86 | 727589 | 15.26 | 704890 | 20.64 |
| 05 | 031073827 | 395876 | 13.84 | 746852 | 15.26 | 754598 | 20.64 |
| 06 | 031073828 | 429617 | 13.85 | 812166 | 15.26 | 725382 | 20.63 |
| 07 | 031073829 | 404541 | 13.84 | 802162 | 15.25 | 756772 | 20.64 |
| 08 | 031073830 | 389099 | 13.85 | 752966 | 15.26 | 728405 | 20.64 |
| 09 | 031073831 | 404080 | 13.84 | 753666 | 15.25 | 683976 | 20.62 |
| 10 | 031073832 | 398054 | 13.83 | 706025 | 15.24 | 734734 | 20.62 |
| 11 | 031073833 | 428726 | 13.85 | 823666 | 15.25 | 822613 | 20.63 |
| 12 | 031073830MS | 418275 | 13.84 | 803089 | 15.26 | 796234 | 20.63 |
| 13 | 031073830MSD | 399693 | 13.85 | 737325 | 15.25 | 786256 | 20.63 |
| 14 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 413

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 1001 Date Analyzed: 11/06/03

Instrument ID: VOC2 Time Analyzed: 1425

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4(DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 696664 | 25.01 | | | | |
| | UPPER LIMIT | 1393328 | 25.51 | | | | |
| | LOWER LIMIT | 348332 | 24.51 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110611LCS | 673214 | 25.01 | | | | |
| 02 | V2110611LB | 417914 | 24.99 | | | | |
| 03 | 031073825 | 431858 | 25.00 | | | | |
| 04 | 031073826 | 402306 | 25.01 | | | | |
| 05 | 031073827 | 447135 | 24.99 | | | | |
| 06 | 031073828 | 418547 | 25.01 | | | | |
| 07 | 031073829 | 436251 | 25.01 | | | | |
| 08 | 031073830 | 398302 | 25.00 | | | | |
| 09 | 031073831 | 421012 | 24.99 | | | | |
| 10 | 031073832 | 406813 | 24.98 | | | | |
| 11 | 031073833 | 444427 | 24.99 | | | | |
| 12 | 031073830MS | 618249 | 25.00 | | | | |
| 13 | 031073830MSD | 594881 | 24.99 | | | | |
| 14 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

768 414

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-7-03 | VOC2 | V211071 | CP7415 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | |
|---|---|---|---|
| 0310-738 | 0310-739 | | |
| 50-57 | 58-62 | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 03-7-30-6 ✓

2.0 Initial Calibration (ICAL) : Method V2102701.M ICAL SRN 03-7-30-16

- 2.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 03-7-29-10 / 03-7-29-18

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
  Acetone ↑, MEK ↑
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V211071LB | MeCl2 Blk | | 014 |
| | | | |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V211071LCS | 0135 | 010 | 014 |
| | | | |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-738-50 | 5170 | 0135 | 018 |
| | | | |

✓

7.0 Surrogate Recoveries within QC Limits - Note failures only.

NA

8.0 Dilutions/Re-Analysis Required

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 415

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID: 1 BFB Injection Date: 11/07/03

Instrument ID: VOC2 BFB Injection Time: 1102

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 25.6 |
| 75 | 30.0 - 60.0% of mass 95 | 47.1 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.6 |
| 173 | Less than 2.0% of mass 174 | 0.6 ( 0.8)1 |
| 174 | Greater than 50.0% of mass 95 | 73.0 |
| 175 | 5.0 - 9.0% of mass 174 | 5.9 ( 8.1)1 |
| 176 | 95.0 - 101.0% of mass 174 | 70.1 ( 96.0)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.7 ( 8.2)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V2110711LCS | 11LCS | 1001LCS | 11/07/03 | 1119 |
| 02 | CCV100PPB | CCV100PPB | 1001 | 11/07/03 | 1119 |
| 03 | V2110711LB | 11LB | 1003 | 11/07/03 | 1304 |
| 04 | 031073850 | 031073850 | 1004 | 11/07/03 | 1339 |
| 05 | 031073851 | 031073851 | 1005 | 11/07/03 | 1415 |
| 06 | 031073852 | 031073852 | 1006 | 11/07/03 | 1450 |
| 07 | 031073853 | 031073853 | 1007 | 11/07/03 | 1526 |
| 08 | 031073854 | 031073854 | 1008 | 11/07/03 | 1601 |
| 09 | 031073855 | 031073855 | 1009 | 11/07/03 | 1637 |
| 10 | 031073856 | 031073856 | 1010 | 11/07/03 | 1712 |
| 11 | 031073857 | 031073857 | 1011 | 11/07/03 | 1748 |
| 12 | 031073850MS | 031073850MS | 1017 | 11/07/03 | 2121 |
| 13 | 031073850MSD | 031073850MSD | 1018 | 11/07/03 | 2157 |
| 14 | | | | | |
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| 22 | | | | | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC2 Calibration Date: 11/07/03 Time: 1119

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 139.3 | 100.0 | 2ORDR | 39.3 | 30.0 | <- |
| Benzene | 109.7 | 100.0 | AVRG | 9.7 | 30.0 | |
| Bromodichloromethane | 105.6 | 100.0 | LINR | 5.6 | 30.0 | |
| Bromoform | 105.4 | 100.0 | AVRG | 5.4 | 30.0 | |
| Bromomethane | 83.79 | 100.0 | 2ORDR | 16.2 | 30.0 | |
| 2-Butanone | 142.0 | 100.0 | AVRG | 42.0 | 30.0 | <- |
| Carbon Disulfide | 94.56 | 100.0 | AVRG | 5.4 | 30.0 | |
| Carbon Tetrachloride | 103.9 | 100.0 | AVRG | 3.9 | 30.0 | |
| Chlorobenzene | 102.9 | 100.0 | AVRG | 2.9 | 30.0 | |
| Chlorodibromomethane | 106.4 | 100.0 | LINR | 6.4 | 30.0 | |
| Chloroethane | 99.60 | 100.0 | AVRG | 0.4 | 30.0 | |
| (2) | 99.60 | 100.0 | AVRG | 0.4 | 30.0 | |
| Chloroform | 103.6 | 100.0 | AVRG | 3.6 | 20.0 | |
| Chloromethane | 87.92 | 100.0 | AVRG | 12.1 | 30.0 | |
| 1,1-Dichloroethane | 113.2 | 100.0 | AVRG | 13.2 | 30.0 | |
| 1,2-Dichloroethane | 114.1 | 100.0 | AVRG | 14.1 | 30.0 | |
| 1,1-Dichloroethene | 101.5 | 100.0 | AVRG | 1.5 | 20.0 | |
| trans-1,2-Dichloroethene | 101.1 | 100.0 | AVRG | 1.1 | 30.0 | |
| 1,2-Dichloropropane | 108.7 | 100.0 | AVRG | 8.7 | 20.0 | |
| cis-1,3-Dichloropropene | 107.0 | 100.0 | AVRG | 7.0 | 30.0 | |
| trans-1,3-Dichloropropene | 111.2 | 100.0 | AVRG | 11.2 | 30.0 | |
| Ethylbenzene | 96.39 | 100.0 | AVRG | 3.6 | 20.0 | |
| 2-Hexanone | 127.2 | 100.0 | AVRG | 27.2 | 30.0 | |
| Methylene Chloride | 107.0 | 100.0 | LINR | 7.0 | 30.0 | |
| 4-Methyl-2-Pentanone | 116.1 | 100.0 | AVRG | 16.1 | 30.0 | |
| Styrene | 106.9 | 100.0 | AVRG | 6.9 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 86.05 | 100.0 | AVRG | 14.0 | 30.0 | |
| Tetrachloroethene | 99.62 | 100.0 | AVRG | 0.4 | 30.0 | |
| Toluene | 105.2 | 100.0 | AVRG | 5.2 | 20.0 | |
| 1,1,1-Trichloroethane | 100.6 | 100.0 | AVRG | 0.6 | 30.0 | |
| 1,1,2-Trichloroethane | 104.2 | 100.0 | AVRG | 4.2 | 30.0 | |
| Trichloroethene | 105.4 | 100.0 | AVRG | 5.4 | 30.0 | |
| Vinyl Chloride | 92.89 | 100.0 | AVRG | 7.1 | 20.0 | |
| Xylene-mp | 195.9 | 200.0 | AVRG | 2.0 | 30.0 | |
| Xylene-o | 98.16 | 100.0 | AVRG | 1.8 | 30.0 | |
| cis-1,2-Dichloroethene | 108.6 | 100.0 | AVRG | 8.6 | 30.0 | |



FORM VII VOA-GCMS

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 417

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Instrument ID: VOC2 Calibration Date: 11/07/03 Time: 1119

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 47.33 | 50.00 | AVRG | 5.3 | 30.0 |
| Toluene-d8 | 50.91 | 50.00 | AVRG | 1.8 | 30.0 |
| Bromofluorobenzene | 49.63 | 50.00 | AVRG | 0.7 | 30.0 |
| 1,2-Dichloroethane-d4 | 49.96 | 50.00 | AVRG | 0.1 | 30.0 |

768 418

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 1001 Date Analyzed: 11/07/03

Instrument ID: VOC2 Time Analyzed: 1119

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2 (DFB) AREA # | RT # | IS3 (CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 415175 | 13.84 | 815512 | 15.24 | 781447 | 20.63 |
| | UPPER LIMIT | 830350 | 14.34 | 1631024 | 15.74 | 1562894 | 21.13 |
| | LOWER LIMIT | 207588 | 13.34 | 407756 | 14.74 | 390724 | 20.13 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110711LB | 373357 | 13.84 | 792900 | 15.25 | 751780 | 20.63 |
| 02 | 031073850 | 383484 | 13.83 | 744665 | 15.23 | 753727 | 20.62 |
| 03 | 031073851 | 395461 | 13.84 | 831521 | 15.24 | 756441 | 20.63 |
| 04 | 031073852 | 389893 | 13.85 | 725908 | 15.26 | 728642 | 20.63 |
| 05 | 031073853 | 379143 | 13.83 | 753882 | 15.24 | 645436 | 20.63 |
| 06 | 031073854 | 366152 | 13.84 | 729361 | 15.25 | 713475 | 20.63 |
| 07 | 031073855 | 386814 | 13.85 | 760196 | 15.25 | 710154 | 20.63 |
| 08 | 031073856 | 392045 | 13.84 | 833015 | 15.26 | 744412 | 20.64 |
| 09 | 031073857 | 389833 | 13.84 | 720296 | 15.24 | 720888 | 20.63 |
| 10 | 031073850MS | 384558 | 13.82 | 763623 | 15.23 | 734225 | 20.62 |
| 11 | 031073850MSD | 373342 | 13.83 | 787870 | 15.24 | 728692 | 20.62 |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
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| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 419

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310738

Lab File ID (Standard): 1001 Date Analyzed: 11/07/03

Instrument ID: VOC2 Time Analyzed: 1119

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 693934 | 25.00 | | | | |
| | UPPER LIMIT | 1387868 | 25.50 | | | | |
| | LOWER LIMIT | 346967 | 24.50 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110711LB | 442995 | 24.99 | | | | |
| 02 | 031073850 | 439032 | 24.98 | | | | |
| 03 | 031073851 | 471314 | 24.99 | | | | |
| 04 | 031073852 | 425425 | 24.99 | | | | |
| 05 | 031073853 | 414764 | 24.99 | | | | |
| 06 | 031073854 | 412109 | 24.99 | | | | |
| 07 | 031073855 | 392317 | 24.99 | | | | |
| 08 | 031073856 | 447272 | 25.00 | | | | |
| 09 | 031073857 | 422749 | 24.99 | | | | |
| 10 | 031073850MS | 577136 | 24.98 | | | | |
| 11 | 031073850MSD | 554190 | 24.99 | | | | |
| 12 | | | | | | | |
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| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

768 420

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-7-03 | VOC2 | V211071 | CP7415 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0310-738 | 0310-739 | | | |
| 50-57 | 58-62 | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 02-7-30-16 ✓

2.0 Initial Calibration (ICAL) : Method V2102701.M ICAL SRN 02-7-30-16

- 2.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-29-10 02-7-29-18

- 3.1 SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
  Acetone ↑, MEK ↑
- 3.5 Internal Standards - Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards - Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) - Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V211071LB | MeCl2 | | 0/4 |

5.0 Laboratory Control Sample(s) - Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V211071LCS | 0/35 | 0/0 | 0/4 |

6.0 Matrix Spike/Matrix Spike Duplicate - Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-738-50 | 5/70 | 0/35 | 0/8 |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

NA

8.0 Dilutions/Re-Analysis Required

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 421

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID: 1 BFB Injection Date: 11/07/03

Instrument ID: VOC2 BFB Injection Time: 1102

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 25.6 |
| 75 | 30.0 - 60.0% of mass 95 | 47.1 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.6 |
| 173 | Less than 2.0% of mass 174 | 0.6 ( 0.8)1 |
| 174 | Greater than 50.0% of mass 95 | 73.0 |
| 175 | 5.0 - 9.0% of mass 174 | 5.9 ( 8.1)1 |
| 176 | 95.0 - 101.0% of mass 174 | 70.1 ( 96.0)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.7 ( 8.2)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V2110711LCS | 11LCS | 1001LCS | 11/07/03 | 1119 |
| 02 | CCV100PPB | CCV100PPB | 1001 | 11/07/03 | 1119 |
| 03 | V2110711LB | 11LB | 1003 | 11/07/03 | 1304 |
| 04 | 031073850 | 031073850 | 1004 | 11/07/03 | 1339 |
| 05 | 031073958 | 031073958 | 1012 | 11/07/03 | 1824 |
| 06 | 031073959 | 031073959 | 1013 | 11/07/03 | 1859 |
| 07 | 031073960 | 031073960 | 1014 | 11/07/03 | 1935 |
| 08 | 031073961 | 031073961 | 1015 | 11/07/03 | 2010 |
| 09 | 031073962 | 031073962 | 1016 | 11/07/03 | 2046 |
| 10 | 031073850MS | 031073850MS | 1017 | 11/07/03 | 2121 |
| 11 | 031073850MSD | 031073850MSD | 1018 | 11/07/03 | 2157 |
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FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Instrument ID: VOC2 Calibration Date: 11/07/03 Time: 1119

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 139.3 | 100.0 | 2ORDR | 39.3 | 30.0 | <- |
| Benzene | 109.7 | 100.0 | AVRG | 9.7 | 30.0 | |
| Bromodichloromethane | 105.6 | 100.0 | LINR | 5.6 | 30.0 | |
| Bromoform | 105.4 | 100.0 | AVRG | 5.4 | 30.0 | |
| Bromomethane | 83.79 | 100.0 | 2ORDR | 16.2 | 30.0 | |
| 2-Butanone | 142.0 | 100.0 | AVRG | 42.0 | 30.0 | <- |
| Carbon Disulfide | 94.56 | 100.0 | AVRG | 5.4 | 30.0 | |
| Carbon Tetrachloride | 103.9 | 100.0 | AVRG | 3.9 | 30.0 | |
| Chlorobenzene | 102.9 | 100.0 | AVRG | 2.9 | 30.0 | |
| Chlorodibromomethane | 106.4 | 100.0 | LINR | 6.4 | 30.0 | |
| Chloroethane | 99.60 | 100.0 | AVRG | 0.4 | 30.0 | |
| (2) | 99.60 | 100.0 | AVRG | 0.4 | 30.0 | |
| Chloroform | 103.6 | 100.0 | AVRG | 3.6 | 20.0 | |
| Chloromethane | 87.92 | 100.0 | AVRG | 12.1 | 30.0 | |
| 1,1-Dichloroethane | 113.2 | 100.0 | AVRG | 13.2 | 30.0 | |
| 1,2-Dichloroethane | 114.1 | 100.0 | AVRG | 14.1 | 30.0 | |
| 1,1-Dichloroethene | 101.5 | 100.0 | AVRG | 1.5 | 20.0 | |
| trans-1,2-Dichloroethene | 101.1 | 100.0 | AVRG | 1.1 | 30.0 | |
| 1,2-Dichloropropane | 108.7 | 100.0 | AVRG | 8.7 | 20.0 | |
| cis-1,3-Dichloropropene | 107.0 | 100.0 | AVRG | 7.0 | 30.0 | |
| trans-1,3-Dichloropropene | 111.2 | 100.0 | AVRG | 11.2 | 30.0 | |
| Ethylbenzene | 96.39 | 100.0 | AVRG | 3.6 | 20.0 | |
| 2-Hexanone | 127.2 | 100.0 | AVRG | 27.2 | 30.0 | |
| Methylene Chloride | 107.0 | 100.0 | LINR | 7.0 | 30.0 | |
| 4-Methyl-2-Pentanone | 116.1 | 100.0 | AVRG | 16.1 | 30.0 | |
| Styrene | 106.9 | 100.0 | AVRG | 6.9 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 86.05 | 100.0 | AVRG | 14.0 | 30.0 | |
| Tetrachloroethene | 99.62 | 100.0 | AVRG | 0.4 | 30.0 | |
| Toluene | 105.2 | 100.0 | AVRG | 5.2 | 20.0 | |
| 1,1,1-Trichloroethane | 100.6 | 100.0 | AVRG | 0.6 | 30.0 | |
| 1,1,2-Trichloroethane | 104.2 | 100.0 | AVRG | 4.2 | 30.0 | |
| Trichloroethene | 105.4 | 100.0 | AVRG | 5.4 | 30.0 | |
| Vinyl Chloride | 92.89 | 100.0 | AVRG | 7.1 | 20.0 | |
| Xylene-mp | 195.9 | 200.0 | AVRG | 2.0 | 30.0 | |
| Xylene-o | 98.16 | 100.0 | AVRG | 1.8 | 30.0 | |
| cis-1,2-Dichloroethene | 108.6 | 100.0 | AVRG | 8.6 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Instrument ID: VOC2 Calibration Date: 11/07/03 Time: 1119

Lab File ID: 1001 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 47.33 | 50.00 | AVRG | 5.3 | 30.0 |
| Toluene-d8 | 50.91 | 50.00 | AVRG | 1.8 | 30.0 |
| Bromofluorobenzene | 49.63 | 50.00 | AVRG | 0.7 | 30.0 |
| 1,2-Dichloroethane-d4 | 49.96 | 50.00 | AVRG | 0.1 | 30.0 |

# FORM 8
## VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID (Standard): 1001 Date Analyzed: 11/07/03

Instrument ID: VOC2 Time Analyzed: 1119

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2 (DFB) AREA # | RT # | IS3 (CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 415175 | 13.84 | 815512 | 15.24 | 781447 | 20.63 |
| | UPPER LIMIT | 830350 | 14.34 | 1631024 | 15.74 | 1562894 | 21.13 |
| | LOWER LIMIT | 207588 | 13.34 | 407756 | 14.74 | 390724 | 20.13 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110711LB | 373357 | 13.84 | 792900 | 15.25 | 751780 | 20.63 |
| 02 | 031073850 | 383484 | 13.83 | 744665 | 15.23 | 753727 | 20.62 |
| 03 | 031073958 | 384122 | 13.84 | 750093 | 15.24 | 672208 | 20.63 |
| 04 | 031073959 | 372790 | 13.83 | 738063 | 15.24 | 665431 | 20.61 |
| 05 | 031073960 | 402653 | 13.84 | 795214 | 15.25 | 711049 | 20.63 |
| 06 | 031073961 | 385133 | 13.84 | 752466 | 15.24 | 671792 | 20.62 |
| 07 | 031073962 | 368093 | 13.84 | 725505 | 15.25 | 733213 | 20.63 |
| 08 | 031073850MS | 384558 | 13.82 | 763623 | 15.23 | 734225 | 20.62 |
| 09 | 031073850MSD | 373342 | 13.83 | 787870 | 15.24 | 728692 | 20.62 |
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IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310739

Lab File ID (Standard): 1001 Date Analyzed: 11/07/03

Instrument ID: VOC2 Time Analyzed: 1119

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 693934 | 25.00 | | | | |
| | UPPER LIMIT | 1387868 | 25.50 | | | | |
| | LOWER LIMIT | 346967 | 24.50 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110711LB | 442995 | 24.99 | | | | |
| 02 | 031073850 | 439032 | 24.98 | | | | |
| 03 | 031073958 | 384161 | 24.99 | | | | |
| 04 | 031073959 | 411096 | 24.98 | | | | |
| 05 | 031073960 | 424285 | 24.99 | | | | |
| 06 | 031073961 | 388053 | 24.99 | | | | |
| 07 | 031073962 | 419657 | 24.99 | | | | |
| 08 | 031073850MS | 577136 | 24.98 | | | | |
| 09 | 031073850MSD | 554190 | 24.99 | | | | |
| 10 | | | | | | | |
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IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Report Date : 05-Nov-2003 13:12

Lisa Savage 11-5-03



11/5/03 11-5-03

768 426

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

SRN: O2-7-30-6
O2-7-30-16

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

Calibration File Names:
Level 1: \\ETCBDC\DD\chem\voc2.i\V210271.B\1003.d
Level 2: \\ETCBDC\DD\chem\voc2.i\V210271.B\1005.d
Level 3: \\ETCBDC\DD\chem\voc2.i\V210271.B\1006.d
Level 4: \\ETCBDC\DD\chem\voc2.i\V210271.B\1007.d
Level 5: \\ETCBDC\DD\chem\voc2.i\V210271.B\1008.d
Level 6: \\ETCBDC\DD\chem\voc2.i\V210271.B\1009.d
Level 7: \\ETCBDC\DD\chem\voc2.i\V210271.B\1010.d
Level 8: \\ETCBDC\DD\chem\voc2.i\V210271.B\1011.d
Level 9: \\ETCBDC\DD\chem\voc2.i\V210271.B\1012.d

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 1 Dichlorodifluoromethane | 1.08728 | 1.06940 | 1.06991 | 0.99436 | 1.12786 | 1.15447 | | | | | |
| | 1.23917 | 1.13565 | 1.30901 | | | | AVRG | | 1.13190 | | 8.38548 |

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 2 Chloromethane | 0.27418 | 0.25884 | 0.30096 | 0.25679 | 0.29987 | 0.29740 | | | | | |
| | 0.29933 | 0.27135 | 0.28648 | | | | AVRG | | 0.28280 | | 6.34699 |
| 3 Vinyl Chloride | 0.79719 | 0.66594 | 0.80826 | 0.70850 | 0.82670 | 0.82943 | | | | | |
| | 0.86205 | 0.74856 | 0.83056 | | | | AVRG | | 0.78635 | | 8.26019 |
| 4 Bromomethane | 2110 | 3432 | 15721 | 75189 | 183627 | 453577 | | | | | |
| | 546924 | 729908 | 863874 | | | | QUAD | 0.02038 | 2.46256 | -0.28367 | 0.99615 |
| 5 Chloroethane(1) | 0.23396 | 0.19256 | 0.20013 | 0.18019 | 0.17504 | 0.17645 | | | | | |
| | 0.16422 | 0.14138 | 0.16216 | | | | AVRG | | 0.18068 | | 14.60003 |
| (2) | 0.07101 | 0.06385 | 0.06364 | 0.05549 | 0.05708 | 0.05855 | | | | | |
| | 0.05386 | 0.04644 | 0.05379 | | | | AVRG | | 0.05819 | | 12.31241 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 6 Trichlorofluoromethane | 1.58369 | 1.39006 | 1.31962 | 1.31655 | 1.47848 | 1.50796 | | | | | |
| | 1.58664 | 1.37742 | 1.60302 | | | | AVRG | | 1.46260 | | 7.88373 |
| 7 Furan | +++++ | 0.99259 | 0.96446 | 0.86343 | 0.92189 | 0.98384 | | | | | |
| | 0.99804 | 0.83692 | 1.00509 | | | | AVRG | | 0.94578 | | 6.85665 |
| 8 Acrolein | +++++ | +++++ | +++++ | +++++ | 0.00842 | 0.00984 | | | | | |
| | 0.00880 | 0.00823 | 0.00961 | | | | AVRG | | 0.00898 | | 7.95149 |
| 9 1,1,2-trichloro-1,2,2-trifluo | 0.97208 | 0.83702 | 0.87387 | 0.80153 | 0.92849 | 0.85917 | | | | | |
| | 0.96046 | 0.84495 | 0.96093 | | | | AVRG | | 0.89317 | | 7.08084 |
| 10 1,1-Dichloroethene | 1.96281 | 1.78409 | 1.82834 | 1.66904 | 1.89362 | 1.77145 | | | | | |
| | 1.83212 | 1.64314 | 1.85076 | | | | AVRG | | 1.80393 | | 5.62486 |

000319

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 11 Acetone | +++++ | +++++ | 9574 | 35938 | 83842 | 163015 | | | | | |
| | 200629 | 272236 | 320295 | | | | QUAD | -0.07262 | 6.82609 | -2.06270 | 0.99550 |
| 12 Iodomethane | 1005 | 1984 | 16654 | 200624 | 728248 | 1776382 | | | | | |
| | 2297406 | 2969978 | 3416909 | | | | QUAD | 0.07430 | 0.57635 | -0.01308 | 0.99504 |
| 13 Carbon Disulfide | 1.94144 | 1.73129 | 1.72043 | 1.50405 | 1.76386 | 1.70954 | | | | | |
| | 1.85513 | 1.70904 | 1.80786 | | | | AVRG | | 1.74918 | | 6.89210 |
| 14 Acetonitrile | +++++ | 0.09669 | 0.09970 | 0.08679 | 0.10259 | 0.09817 | | | | | |
| | 0.10276 | 0.09279 | 0.10322 | | | | AVRG | | 0.09784 | | 5.83775 |
| 15 Allyl chloride | +++++ | 1 02633 | 0.99512 | 0.86786 | 1.02807 | 0.98315 | | | | | |
| | 1.02764 | 0 92983 | 1.03179 | . | | | AVRG | | 0.98623 | | 5.98999 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 16 Methylene Chloride | +++++ | 137729 | 184366 | 444125 | 931692 | 1768727 | | | | | |
| | 2136499 | 2890759 | 3355601 | | | | LINR | -0.07667 | 1.84018 | | 0.99344 |
| 17 Acrylonitrile | +++++ | +++++ | +++++ | 0.16328 | 0.17399 | 0 16451 | | | | | |
| | 0.15178 | 0.13899 | 0.15121 | | | | AVRG | | 0.15729 | | 7.88474 |
| 18 Methyl-tertbutyl-Ether | 1.39749 | 1.25385 | 1.18731 | 1.17886 | 1.33501 | 1.27871 | | | | | |
| | 1.30857 | 1.21106 | 1.33384 | | | | AVRG | | 1.27608 | | 5.85545 |
| 19 trans-1,2-Dichloroethene | 1.99800 | 1.77406 | 1.63776 | 1.60091 | 1.79173 | 1.65841 | | | | | |
| | 1.70061 | 1.52806 | 1.62360 | | | | AVRG | | 1.70146 | | 8.14134 |
| 20 Hexane | 25439 | 30026 | 67694 | 231884 | 553271 | 1030611 | | | | | |
| | 1407868 | 1824231 | 1997707 | | | | LINR | -0.02276 | 0.97348 | | 0.99780 |

000321

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | | | | | | | | |
| 21 Tetrahydrofuran | +++++ | +++++ | 0.34341 | 0.34707 | 0.37803 | 0.34695 | | | | | |
| | 0.36380 | 0.31073 | 0.33708 | | | | AVRG | | 0.34672 | | 6.08542 |
| 22 1,1-Dichloroethane | 1.72298 | 1.67930 | 1.63297 | 1.58044 | 1.64762 | 1.58341 | | | | | |
| | 1.60589 | 1 39715 | 1.59890 | | | | AVRG | | 1.60541 | | 5.67258 |
| 23 Ethyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7.41378 |
| 24 Vinyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7.41378 |
| 25 Di isopropyl ether | 2 32559 | 2.21279 | 2.06739 | 2.03145 | 2.10213 | 1.90142 | | | | | |
| | 1.87642 | 1.65522 | 1.90035 | | | | AVRG | | 2.00808 | | 9.96672 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 26 Chloroprene | 1.73492 | 1.69886 | 1.54157 | 1.51071 | 1.77374 | 1.52793 | | | | | |
| | 1.71860 | 1.53071 | 1.71474 | | | | AVRG | | 1.63909 | | 6.57893 |
| 27 2-Butanone | +++++ | 0.18597 | 0.17600 | 0.16363 | 0.16153 | 0.16763 | | | | | |
| | 0.17684 | 0.18320 | 0.17521 | | | | AVRG | | 0.17375 | | 5.07669 |
| 28 2,2-Dichloropropane | 1.20793 | 1.16396 | 1.13790 | 1.05105 | 1.21931 | 1.13073 | | | | | |
| | 1.22747 | 1.12257 | 1.20808 | | | | AVRG | | 1.16322 | | 5.01435 |
| 29 cis-1,2-Dichloroethene | 0.93480 | 0.81969 | 0.84559 | 0.76941 | 0.85561 | 0.82321 | | | | | |
| | 0.91076 | 0.78553 | 0.90186 | | | | AVRG | | 0.84961 | | 6.69847 |
| 30 Propionitrile | 0.03458 | 0.03619 | 0.04725 | 0.04105 | 0.04076 | 0.03601 | | | | | |
| | 0.03634 | +++++ | +++++ | | | | AVRG | | 0.03888 | | 11.44021 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 31 Bromochloromethane | 0.42771 | 0.33008 | 0 38402 | 0.33930 | 0.37696 | 0.36359 | | | | | |
| | 0.35675 | 0.31847 | 0.34601 | | | | AVRG | | 0.36032 | | 9.16041 |
| 32 Chloroform | +++++ | 1.94057 | 1.72069 | 1.45106 | 1.62845 | 1.54955 | | | | | |
| | 1.59697 | 1.42710 | 1.62305 | | | | AVRG | | 1.61718 | | 10.02992 |
| 35 1,1,1-Trichloroethane | 2.49608 | 1.98780 | 2.02337 | 1.77720 | 2.08485 | 1 97610 | | | | | |
| | 2.14747 | 1 88856 | 2.08454 | | | | AVRG | | 2.05177 | | 9.76881 |
| 36 Carbon Tetrachloride | 1.38722 | 1 18129 | 1.14897 | 1.06672 | 1.26097 | 1.20375 | | | | | |
| | 1.33038 | 1.21328 | 1.30384 | | | | AVRG | | 1.23294 | | 7.99326 |
| 37 1,1-Dichloropropene | 1.02319 | 0.74722 | 0 76464 | 0.66756 | 0.77553 | 0.71591 | | | | | |
| | 0.78079 | 0.83278 | 0 74469 | | | | AVRG | | 0.78359 | | 12.85227 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 39 Benzene | 2.16787 | 1.92638 | 1.84891 | 1.90071 | 2.05859 | 1.97517 | | | | | |
| | 2.15374 | 1.93548 | 2.18167 | | | | AVRG | | 2.01650 | | 6.28955 |
| 40 1,2-Dichloroethane | 1.50787 | 1.38094 | 1.37914 | 1.28682 | 1.32957 | 1.21492 | | | | | |
| | 1.20473 | 1.09502 | 1.25076 | | | | AVRG | | 1.29442 | | 9.36465 |
| 42 Trichloroethene | +++++ | 0.38385 | 0.44715 | 0.38102 | 0.44967 | 0.48524 | | | | | |
| | 0.50147 | 0.44285 | 0.50707 | | | | AVRG | | 0.44979 | | 10.74179 |
| 43 1,2-Dichloropropane | 0.37873 | 0.31831 | 0.36991 | 0.30942 | 0.33859 | 0.31613 | | | | | |
| | 0.34040 | 0.25833 | 0.30165 | | | | AVRG | | 0.32572 | | 11.21690 |
| 44 Methyl methacrylate | 0.18420 | 0.15062 | 0.18853 | 0.16225 | 0.17528 | 0.17300 | | | | | |
| | 0.18243 | 0.15733 | 0.18656 | | | | AVRG | | 0.17336 | | 7.91278 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 45 n-Propyl Acetate | +++++ | 0.58382 | 0.71055 | 0.60229 | 0.62213 | 0 57016 | | | | | |
| | 0.58523 | 0.48441 | 0.53312 | | | | AVRG | | 0 58646 | | 11.24720 |
| 46 Isobutyl Alcohol | 0.08170 | 0.08560 | 0.09292 | 0.08710 | 0.08810 | 0.07417 | | | | | |
| | 0.07720 | 0.07095 | 0.07510 | | | | AVRG | | 0.08143 | | 9.17609 |
| 47 1,4-Dioxane | +++++ | +++++ | 0.00287 | 0.00225 | 0.00244 | 0.00237 | | | | | |
| | 0.00232 | 0.00200 | 0.00212 | | | | AVRG | | 0.00234 | | 11.92316 |
| 48 Dibromomethane | 0.24033 | 0.20665 | 0.24449 | 0.20137 | 0.22516 | 0.22799 | | | | | |
| | 0.23304 | 0.19637 | 0.21615 | | | | AVRG | | 0.22128 | | 7.75757 |
| 49 Bromodichloromethane | 15329 | 21223 | 62045 | 233500 | 549076 | 1043517 | | | | | |
| | 1310741 | 1873366 | 2105667 | | | | LINR | 0.00385 | 0 63264 | | 0.99548 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 50 cis-1,3-Dichloropropene | 0.55873 | 0.43357 | 0.53771 | 0.43338 | 0.50941 | 0.53573 | | | | | |
| | 0.54806 | 0.48978 | 0.54713 | | | | AVRG | | 0.51039 | | 9.48588 |
| 51 4-Methyl-2-Pentanone | +++++ | +++++ | 0.24942 | 0.19062 | 0.21328 | 0.21927 | | | | | |
| | 0.21671 | 0.18314 | 0.21567 | | | | AVRG | | 0.21259 | | 10.12219 |
| 53 Toluene | +++++ | 2.14006 | 2.25713 | 1.83592 | 2.21801 | 2.22063 | | | | | |
| | 2.30623 | 2.00062 | 2.15564 | | | | AVRG | | 2.14178 | | 7.19113 |
| 54 trans-1,3-Dichloropropene | +++++ | 0.36207 | 0.42674 | 0.35710 | 0.41006 | 0.42913 | | | | | |
| | 0.40013 | 0.34541 | 0.37425 | | | | AVRG | | 0.38811 | | 8.40899 |
| 55 Ethyl methacrylate | 0.21300 | 0.17525 | 0.20577 | 0.18313 | 0.22501 | 0.24632 | | | | | |
| | 0.24892 | 0.22554 | 0.25836 | | | | AVRG | | 0.22014 | | 13.11586 |

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Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 56 1,1,2-Trichloroethane | 0.38453 | 0.32371 | 0.38211 | 0.31196 | 0.36150 | 0.37384 | | | | | |
| | 0.37699 | 0.33422 | 0.38025 | | | | AVRG | | 0.35879 | | 7.79622 |
| 57 2-Hexanone | +++++ | +++++ | 0.18219 | 0.17094 | 0.19537 | 0.19277 | | | | | |
| | 0.21044 | 0.18382 | 0.21636 | | | | AVRG | | 0.19313 | | 8.30281 |
| 58 Tetrachloroethene | +++++ | 0.29703 | 0.32185 | 0.28649 | 0.34014 | 0.30667 | | | | | |
| | 0.37608 | 0.29365 | 0.33218 | | | | AVRG | | 0.31926 | | 9.33722 |
| 59 1,3-Dichloropropane | 0.53282 | 0.38670 | 0.46948 | 0.42407 | 0.50813 | 0.54797 | | | | | |
| | 0.59797 | 0.52953 | +++++ | | | | AVRG | | 0.49958 | | 13.83598 |
| 60 Chlorodibromomethane | 9118 | 12073 | 37967 | 139386 | 338548 | 634506 | | | | | |
| | 799459 | 1139690 | 1268794 | | | | LINR | 0.00052 | 0.38320 | | 0.99586 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 61 1,2-Dibromoethane | 0.43816 | 0.32466 | 0.37627 | 0.32455 | 0.37806 | 0.37115 | | | | | |
| | 0 38978 | 0.34864 | 0.40176 | | | | AVRG | | 0.37256 | | 9.80291 |
| 63 Chlorobenzene | 1.54330 | 1.24715 | 1.31378 | 1.27232 | 1.41544 | 1.32125 | | | | | |
| | 1.48365 | 1.33124 | 1.42145 | | | | AVRG | | 1.37218 | | 7.25539 |
| 64 Ethylbenzene | 2.88333 | 2.31113 | 2 38637 | 2.30352 | 2.58022 | 2.30369 | | | | | |
| | 2.69046 | 2.28665 | 2.31989 | | | | AVRG | | 2.45170 | | 8.79945 |
| 65 2-Chloroethyl vinyl ether | +++++ | 0.17290 | 0.20290 | 0.16128 | 0.17116 | 0.15426 | | | | | |
| | 0.16781 | 0.13142 | 0.14766 | | | | AVRG | | 0.16368 | | 12.83210 |
| 66 1,1,1,2-Tetrachloroethane | 0.65800 | 0.54495 | 0.60537 | 0.55887 | 0.58119 | 0.49907 | | | | | |
| | 0.54050 | 0.43840 | 0.42948 | | | | AVRG | | 0 53954 | | 13.82105 |

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 67 Xylene-mp | 2.68057 | 2.10709 | 2.09676 | 1.96837 | 2.13818 | 1.92281 | | | | | |
| | 2.22755 | 1 97216 | 1.95471 | | | | AVRG | | 2.11869 | | 11.04250 |
| 68 Xylene-o | 2.45286 | 2.03736 | 1.92376 | 1.90413 | 2.06673 | 2.01442 | | | | | |
| | 2.14972 | 1.90370 | 1.77529 | | | | AVRG | | 2.02533 | | 9.60198 |
| 69 Styrene | 1.36148 | 1.16608 | 1.11345 | 1.11325 | 1.34022 | 1.40010 | | | | | |
| | 1.63015 | 1.53207 | 1.49043 | | | | AVRG | | 1.34969 | | 13.85928 |
| 70 Bromoform | 0.18695 | 0.15844 | 0.15910 | 0.14982 | 0.15908 | 0.17490 | | | | | |
| | 0.16718 | 0.14767 | 0.15660 | | | | AVRG | | 0.16219 | | 7.63747 |
| 71 Isopropylbenzene | 2.73708 | 2.45738 | 2.24127 | 2.37198 | 2.42651 | 2.50860 | | | | | |
| | 2.75746 | 2.29550 | 2.27300 | | | | AVRG | | 2.45209 | | 7.70813 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Target Version : 4.00
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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 72 trans-1,4-Dichloro-2-butene | 1209 | 2201 | 10687 | 52203 | 115915 | 253131 | | | | | |
| | 303067 | 406067 | 449246 | | | | QUAD | 0.04103 | 5.41254 | 2.91465 | 0.99621 |
| 74 1,1,2,2-Tetrachloroethane | +++++ | 0.46749 | 0.51133 | 0.45123 | 0.46145 | 0.42996 | | | | | |
| | 0.39987 | 0.32402 | +++++ | | | | AVRG | | 0.43505 | | 13.73442 |
| 75 cis-1,4-Dichloro-2-butene | +++++ | 0.15425 | 0.14002 | 0.12777 | 0.14233 | 0.15057 | | | | | |
| | 0.14178 | 0.13009 | 0.12690 | | | | AVRG | | 0.13921 | | 7.37562 |
| 76 1,2,3-Trichloropropane | 0.42312 | 0 37748 | 0.41774 | 0.38518 | 0.42720 | 0.42794 | | | | | |
| | 0.43121 | 0.37139 | 0.38033 | | | | AVRG | | 0.40462 | | 6.23009 |
| 77 Bromobenzene | 1.01802 | 0.85644 | 0.83267 | 0.77610 | 0.85233 | 0.80724 | | | | | |
| | 0.83833 | 0.69970 | 0.70888 | | | | AVRG | | 0.82108 | | 11.47214 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 78 n-Propylbenzene | 3.10958 | 2.68395 | 2.53920 | 2.40741 | 2.65323 | 2.56535 | | | | | |
| | 2.92483 | 2.55236 | 2.52244 | | | | AVRG | | 2.66204 | | 8.30160 |
| 79 2-Chlorotoluene | 2.17728 | 1.94037 | 1.76537 | 1 85905 | 2.01312 | 1.90344 | | | | | |
| | 2.02982 | 1.83416 | 1.90146 | | | | AVRG | | 1.93601 | | 6.34307 |
| 80 1,3,5-Trimethylbenzene | 2.41519 | 2.18407 | 1 99441 | 2.00766 | 2.22535 | 2.07357 | | | | | |
| | 2 20538 | 2.02859 | 2.05630 | | | | AVRG | | 2.13228 | | 6.44821 |
| 81 4-Chlorotoluene | 2.07628 | 1.61342 | 1.51853 | 1.56823 | 1.66843 | 1.47878 | | | | | |
| | 1.72526 | 1.52782 | 1.59306 | | | | AVRG | | 1.64109 | | 10.98094 |
| 82 tert-Butylbenzene | 2.64308 | 2.21011 | 2.16559 | 2.25262 | 2.46373 | 2.21315 | | | | | |
| | 2.58999 | 2 24803 | 2.24537 | | | | AVRG | | 2.33685 | | 7.68483 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | | | | | | | | |
| 83 1,2,4-Trimethylbenzene | 2.69288 | 2.10289 | 1.86077 | 1.89560 | 2.14903 | 1.87078 | | | | | |
| | 2.14108 | 1.90262 | 1.93376 | | | | AVRG | | 2.06105 | | 12.83804 |
| 84 sec-Butylbenzene | 3.05850 | 2.64497 | 2.52445 | 2.49690 | 2.73935 | 2.48127 | | | | | |
| | 2.82657 | 2 52940 | 2.52763 | | | | AVRG | | 2.64767 | | 7.35281 |
| 85 4-Isopropyltoluene | 2.46534 | 2.18453 | 2.05135 | 2.03199 | 2.20056 | 2.06891 | | | | | |
| | 2.30569 | 2.11512 | 2.08492 | | | | AVRG | | 2.16760 | | 6.53097 |
| 86 1,3-Dichlorobenzene | +++++ | 1.56527 | 1.51691 | 1.38604 | 1.42619 | 1.17645 | | | | | |
| | 1.22068 | 1.03834 | +++++ | | | | AVRG | | 1.33284 | | 14.47136 |
| 88 1,4-Dichlorobenzene | 9742 | 17227 | 72695 | 308927 | 671173 | 1272820 | | | | | |
| | 1717395 | 2398553 | 2581039 | | | | QUAD | 0.01837 | 0.57609 | 0.14649 | 0.99620 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 89 n-Butylbenzene | +++++ | 2.80335 | 2.68476 | 2.62002 | 2.58046 | 2 26980 | | | | | |
| | 2.28374 | 1.90978 | +++++ | | | | AVRG | | 2 45027 | | 12.66533 |
| 90 1,2-Dichlorobenzene | +++++ | 1.29464 | 1.26604 | 1.16103 | 1.13151 | 1.05822 | | | | | |
| | 1.05232 | 0.88210 | 0.88260 | | | | AVRG | | 1.09106 | | 14.21160 |
| 91 1,2-Dibromo-3-chloropropane | +++++ | 0.10998 | 0.11665 | 0.10370 | 0.10379 | 0.08617 | | | | | |
| | 0.08535 | +++++ | +++++ | | | | AVRG | | 0.10094 | | 12.57527 |
| 92 1,2,4-Trichlorobenzene | +++++ | 0.47508 | 0.44425 | 0.38028 | 0.46860 | 0.36372 | | | | | |
| | 0.39765 | 0.33440 | +++++ | | | | AVRG | | 0.40914 | | 13.28624 |
| 93 Hexachlorobutadiene | +++++ | 0.62921 | 0.63757 | 0 52836 | 0.61272 | 0.47314 | | | | | |
| | 0.50322 | +++++ | +++++ | | | | AVRG | | 0.56404 | | 12.60134 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 94 Naphthalene | +++++ | 0.92286 | 0.82883 | 0.70421 | 0.79676 | 0.64921 | | | | | |
| | 0.71795 | 0.65252 | +++++ | | | | AVRG | | 0.75319 | | 13.38633 |
| 95 1,2,3-Trichlorobenzene | +++++ | 5124 | 22270 | 77613 | 214055 | 373381 | | | | | |
| | 503201 | +++++ | +++++ | | | | LINR | -0.04537 | 0.32325 | | 0.99104 |
| $ 33 Dibromofluoromethane | 0.95459 | 0.77135 | 0.89134 | 0.73777 | 0.81296 | 0.86282 | | | | | |
| | 0.84310 | 0.75554 | 0.84995 | | | | AVRG | | 0.83105 | | 8.36964 |
| $ 38 1,2-Dichloroethane-d4 | +++++ | +++++ | 0.33864 | 0.27514 | 0.30876 | 0.34271 | | | | | |
| | 0.34586 | 0.29811 | +++++ | | | | AVRG | | 0.31821 | | 9.03277 |
| $ 52 Toluene-d8 | 2.00621 | 1.48673 | 1.96157 | 1.40532 | 1.74527 | 1.96950 | | | | | |
| | 1.75526 | 1.58461 | 1.79532 | | | | AVRG | | 1.74553 | | 12.41956 |

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Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| $ 73 Bromofluorobenzene | 0.95914 | 0.71940 | 0.74619 | 0.66607 | 0.67991 | 0.79907 | | | | | |
| | 0.70006 | 0.64044 | 0.65976 | | | | AVRG | | 0.73000 | | 13.53469 |

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |
| Quad | Amt = b + m1*Rsp + m2*Rsp^2 | Response |

**ENVIRONMENTAL TESTING & CONSULTING, INC.**
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

*Founded 1972*

December 5, 2003

Mr. Kraig Smith
Jacobs
600 William Northern Blvd.
Tullahoma, TN 37388

Ref: Analytical Testing
ETC Order # 0311458
Project Description Memphis Defense Depot

Project Number C5X51115

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The EPA requires that analysis for pH, dissolved oxygen and total residual chlorine be analyzed in the field. Analyses and results reported which do not indicate "Field" for these parameters were analyzed outside the holding time as specified in Table II of 40 CFR Part 136.3.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the USEPA.

The results are shown on the attached analysis report(s). Please do not hesitate to contact our office if you have any questions.

Sincerely,

Connie Bradberry for NAP

Nathan A. Pera, IV
Laboratory Project Manager

sh
Attachment

JACOBS_DDMT

Certifications
*NELAP - National Evironmental Laboratory Accreditation Program*
*USACE - Approved Laboratory US Army Corps of Engineers*

| | | | | | |
|---|---|---|---|---|---|
| *Alabama* | *#40750* | *Mississippi* | | *EPA* | *#TN00012* |
| *Arkansas* | *#88-0650* | *Oklahoma* | *#9311* | *USDA* | *#S-46279* |
| *Illinois* | *#000537* | *Tennessee* | *#02027* | | |
| *Kentucky* | *#90047* | *Virginia* | *#00106* | | |
| *Louisiana* | *#04015* | | | | |

# Environmental Testing & Consulting, Inc.

## Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

| | |
|---|---|
| **Q** | Surrogate Recovery Outside QC Limits |
| **J** | Estimated Value. Presence of the compound was confirmed but less than the |
| | reported detection limit.[1] |
| **E** | Concentration exceeds the established method calibration range but is within |
| | the working range of the instrument. |
| **B** | Analyte detected in the associated Method Blank. |
| **U** | Reported result was unconfirmed. Refer to Case Narrative. |
| **C** | Result reported from GC/MS confirmation analysis. |
| **M** | Result reported represents a minimum value. Refer to Case Narrative. |
| **NC** | Result reported from Primary Column. Result did not confirm. |
| * | QC Data (percent recovery/RPD for a particular analyte was outside QC Limits) |

1 Estimated values are not reported for the following common laboratory contaminants:

Acetone
Methylene Chloride
Toluene
Phthalates
Sodium
Zinc

# ENVIRONMENTAL TESTING & CONSULTING, INC.

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## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Jacobs ETC Order #0311458
Site ID Memphis Defense Depot C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031145801 | MW-54-1 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145802 | MW-54-2 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145803 | MW-54-3 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145804 | MW-54-300 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145805 | MW-77-1 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145806 | ERB-1 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

12/5/03 SF

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Environmental Testing & Consulting, Inc.

# Login
# Chain-of-Custody

Environmental Testing & Consulting, Inc 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0311458
ETC Quote No

| Company Name | Phone # | RUSH[2] |
|---|---|---|
| Jacobs | 731393 6445 | |
| | PO # | Ice |
| Project/Site (Include State) | FID # | |
| Memphis Depot | E-Mail | |

Type of Event[1] Single Daily Weekly Monthly Quarterly Semi-Annual Annual

Project # 05X51115

Project Manager/Contact KRAIG SMITH

Matrix
1 Wastewater 4 Sludge
2 Aqueous 5 Oil/Solvent
3 Soil/Sediment 6 Other

Analysis Requested (Note special detection limits / methods)

Which Regs Apply?
- NPDES
- Wastewater
- RCRA
- UST
- Risk Based Limits
- TRRP 13
- LA RECAP
- USACE

| # of Cont | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | MW-54-1 | ← | 11/18 | 1030 | Water | GRAB | X | |
| 3 | MW-54-2 | | | 1035 | | | X | |
| 3 | MW-54-3 | | | 1040 | | | X | |
| 3 | MW-54-300 | | | 1045 | | | X | |
| 3 | MW-77-1 | | | 1100 | | | X | |
| 3 | ERB-1 | ↓ | ↓ | 1145 | ↓ | ↓ | X | |
| | | | | | | | | |
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| | | | | | | | | |

Sampled By K. Smith

Method of Shipment Hand Deliver

Blank/Cooler Temp 4.4 °C (R3)

Remarks

| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
|---|---|---|---|---|---|
| K. Smith | 11/18/13 | 1215 | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
| | | | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) | DATE | TIME |
| | | | S. Heinemann | 11/18/13 | 1215 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

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Please return ETC Sample Kit Request Form with chain of custody

Distribution Original accompanies samples to the laboratory Pink copy for Field Crew

# Environmental Testing & Consulting, Inc.
## Cooler Receipt Form

Date/Time Received 11/18/03-12:15
Date/Time Checked In 11/18/03-12:15
Carrier/Bill# Client Hand Delivered

LIMS# 0311-458
Project Memphis Depot

By Sally Herrmann

| | | |
|---|---|---|
| 1. | Custody Seals?/Location- | No |
| 2. | Samples are non-radioactive? | Yes |
| 3. | Chain of Custody in plastic? | Yes |
| 4. | Temperature at receipt (ok = 4 ± 2 °C)<4oC | OK |
| 5. | Ice & Packing- bags, ice, bubble wrap | Yes |
| 6. | Chain of Custody filled out properly? | Yes |
| 7. | All containers in separate bags? | No |
| 8. | Sample containers intact? | Yes |
| 9. | Label(s) complete and in good condition? | Yes |
| 10. | Label(s) agree with Chain of Custody? | Yes |
| 11. | Correct containers used? | Yes |
| 12. | Sufficient sample? | Yes |
| 13. | VOA vials bubble-free ($H_2O$) or no head space (soil)? | Yes |
| 14. | Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____ | Yes |

**Comments** _____

*Validated Date and Time of Sample Receipt (VDTSR)

Environmental Testing & Consulting, Inc.

# Sample Reports

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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **11/18/03**
ETC Order Number: **0311458**

ETC Lab ID : **0311458-01**
Field ID : **MW-54-1**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | **V311261** | | | | | | |
| **Dilution Factor** | **1** | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 4.16 | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 253E | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 2.05 | ug/L | 1.00 | | | | |
| Trichloroethene | 200E | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | 26.3 | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 90 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 99 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 75 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031145801

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 031145801

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1001011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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768 455

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID **0311458-01**
Field ID : **MW-54-1-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B 5030B |
| **QC Batch** | **V212021** | | | | | | |
| **Dilution Factor** | **10** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 301 | ug/L | 10.0 | | | | |
| Trichloroethene | 216 | ug/L | 10.0 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 96 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 112 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 456

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-02**
Field ID : **MW-54-2**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/26/03 | LS | 8260B 5030B |
| **QC Batch** | V311261 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 3.35 | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 3.18 | ug/L | 1.00 | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | |
| [redacted],1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 15.3 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1 00 | | | |
| 1,1,2,2-Tetrachloroethane | 1,200E | ug/L | 1.00 | | | |
| Tetrachloroethene | 7.37 | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | 7 86 | ug/L | 1.00 | | | |
| Trichloroethene | 1,440E | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 75 5 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 92 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 457

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031145802

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 031145802

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1101012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 458

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-02**
Field ID . **MW-54-2-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B<br>5030B |
| **QC Batch** | **V212021** | | | | | | |
| **Dilution Factor** | **100** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 1,680 | ug/L | 100 | | | | |
| Trichloroethene | 1,530 | ug/L | 100 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 109 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-03**
Field ID **MW-54-3**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | **V311261** | | | | | | |
| **Dilution Factor** | **1** | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 2.58 | ug/L | 1 00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 3.68 | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 16 0 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 1,400E | ug/L | 1.00 | | | | |
| Tetrachloroethene | 10.1 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 10 4 | ug/L | 1 00 | | | | |
| Trichloroethene | 1,630E | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | 85 3 | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 85 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
031145803

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 031145803

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1201013

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 461

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-03**
Field ID : **MW-54-3-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | LS | 8260B<br>5030B |
| **QC Batch** | **V212021** | | | | | |
| **Dilution Factor** | **100** | | | | | |
| 1,1,2,2-Tetrachloroethane | 1,760 | ug/L | 100 | | | |
| Trichloroethene | 1,900 | ug/L | 100 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 90 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 109 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 462

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID **0311458-04**
Field ID : **MW-54-300**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/26/03 | LS | 8260B 5030B |
| **QC Batch** | **V311261** | | | | | |
| **Dilution Factor** | **1** | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 2 73 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | 3.82 | ug/L | 1 00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 16.9 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 1,320E | ug/L | 1.00 | | | |
| Tetrachloroethene | 10.4 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | 9.80 | ug/L | 1 00 | | | |
| Trichloroethene | 1,720 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 87.7 | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 84 | 58 | 131 |

[redacted]

WB

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

768 463

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031145804

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 031145804

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1301014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 464

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-04**
Field ID : **MW-54-300-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | LS | 8260B 5030B |
| **QC Batch** | **V212021** | | | | | |
| **Dilution Factor** | **100** | | | | | |
| 1,1,2,2-Tetrachloroethane | 1,610 | ug/L | 100 | | | |
| Trichloroethene | 1,760 | ug/L | 100 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 84 | 84 | 115 |
| S2 - Toluene-d8 | 90 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 79 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 465

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-05**
Field ID : **MW-77-1**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | V311261 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 0.864J | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 4.96 | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 37.8 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 3,770E | ug/L | 1 00 | | | | |
| Tetrachloroethene | 14 8 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 8.53 | ug/L | 1.00 | | | | |
| Trichloroethene | 2,410E | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | 189 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
031145805

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 031145805

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1401015

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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768 467

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-05**
Field ID : **MW-77-1-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B<br>5030B |
| **QC Batch** | **V212021** | | | | | | |
| **Dilution Factor** | **100** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 12,800 | ug/L | 100 | | | | |
| Trichloroethene | 4,550 | ug/L | 100 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 107 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 468

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-06**
Field ID : **ERB-1**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | LS | 8260B 5030B |
| **QC Batch** | V212021 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [illegible]oromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 89 | 84 | 115 |
| S2 - Toluene-d8 | 95 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 469

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031145806

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 031145806

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level II
# GC/MS Volatiles

768 471

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0311-458

**SAMPLE PRESERVATION**

All water samples preserved with HCl to pH < 2 (verified at analysis) and maintained at 4oC until analysis

**HOLDING TIMES**

Sample Analysis All samples analyzed within 14 days of collection

**METHOD**

Preparation: SW-846 5030B
Analysis: SW-846 8260B

**QUALITY CONTROL**

| QC Batch | Form 4 Summary |
|---|---|
| V311261 | V3112611LB |
| V212021 | V2120212LB |

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Method Blank FORM 4
V3112611LB
V2120212LB
Target analytes were not detected in the method blanks

Laboratory Control Sample FORM 3
V3112611LCS
V2120211LCS
All target analyte acceptance criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
Batch V311261

| | | |
|---|---|---|
| 0311-458-05 | RPD | All analytes within QC limits.* |
| MW-77-1 | Spike Recovery | All analytes within QC limits * |

*RPDs and recoveries for multiple analytes were flagged as outside QC limits in the MS/MSD. Refer to Laboratory Control Sample(s) for system verification

Batch V212021

| | | |
|---|---|---|
| 0311-459-01 | RPD | All analytes within QC limits.* |
| EFF-11-18-03 | Spike Recovery | All analytes within QC limits.* |

*RPDs and recoveries for multiple analytes were flagged as outside QC limits in the MS/MSD Refer to Laboratory Control Sample(s) for system verification

**CALIBRATION**

| | |
|---|---|
| BFB Daily 12-Hour Tune | All criteria met FORM 5 |
| Initial Calibration | All criteria met. FORM 6 |
| Calibration Verification | % Differences/% Drift (%D) >30%. FORM 7<br>Multiple analytes were flagged with % Differences >30% for high response in the CV These analytes were not reported in the associated project samples. The data was not affected. |

Samples in this sequence are listed on Form 5 (Instrument Performance Check) The CV passed SPCC/CCC evaluation criteria. The CV is valid per SW-846 method 8000A/8260B

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0311-458

USACOE Shell Document EM 200-1-2 specifies an additional requirement that all project-specified contaminants of concern are to be within +/- 20% D Calibration verification forms have been provided that lists the %D of all analytes

Volatile Internal Standard Area and RT FORM 8
Calibration Verification standard(s) Internal Standard Areas and Retention Times within QC limits

**SAMPLE ANALYSIS**

| | |
|---|---|
| Instrumentation | HP 5890 Series II GC, 5971MSD |
| Dilutions Required | Dilutions performed, as indicated on the result sheets, to bring target analytes within calibration range |

CB
Project Manager

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | V3112611LCS | 88 | 96 | 91 | 78 | 0 |
| 02 | V3112611LB | 90 | 102 | 103 | 74 | 0 |
| 03 | 031145801 | 90 | 99 | 99 | 75 | 0 |
| 04 | 031145802 | 92 | 102 | 101 | 80 | 0 |
| 05 | 031145803 | 93 | 102 | 106 | 85 | 0 |
| 06 | 031145804 | 93 | 104 | 104 | 84 | 0 |
| 07 | 031145805 | 93 | 98 | 106 | 87 | 0 |
| 08 | 031145805MS | 93 | 100 | 100 | 92 | 0 |
| 09 | 031145805MSD | 93 | 95 | 99 | 87 | 0 |
| 10 | V2120211LCS | 89 | 110 | 118 | 82 | 0 |
| 11 | V2120212LB | 92 | 106 | 104 | 92 | 0 |
| 12 | 031145806 | 89 | 95 | 105 | 80 | 0 |
| 13 | 031145801 | 94 | 96 | 112 | 88 | 0 |
| 14 | 031145802 | 94 | 98 | 109 | 92 | 0 |
| 15 | 031145803 | 90 | 102 | 109 | 95 | 0 |
| 16 | 031145804 | 84 | 90 | 100 | 79 | 0 |
| 17 | 031145805 | 93 | 101 | 107 | 88 | 0 |
| 18 | | | | | | |
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| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER(DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

768 474 CLIENT SAMPLE NO.

V3112611LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID: 0302004J Lab Prep Batch: V311261

Date Analyzed: 11/26/03 Time Analyzed: 1217

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC3 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V3112611LCS | 11LCS | 0202003LJ | 1103 |
| 02 | 031145801 | 031145801 | 1001011 | 1543 |
| 03 | 031145802 | 031145802 | 1101012 | 1613 |
| 04 | 031145803 | 031145803 | 1201013 | 1642 |
| 05 | 031145804 | 031145804 | 1301014 | 1712 |
| 06 | 031145805 | 031145805 | 1401015 | 1742 |
| 07 | 031145805MS | MS | 1801019 | 1941 |
| 08 | 031145805MSD | MSD | 1901020 | 2010 |
| 09 | | | | |
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COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3112611LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Prep Batch: V311261

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |

FORM 1 768 476 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V3112611LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Prep Batch: V311261

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-38-3 | Xylene-mp | 1.00 | U |
| 95-47-6 | Xylene-o | 1.00 | U |

768 477

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V3112611LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/26/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
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FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V311261

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: V3112611LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 128.8 | 129 | 59-151 |
| Benzene | 100.0 | | 101.0 | 101 | 72-124 |
| Bromodichloromethane | 100.0 | | 89.57 | 90 | 68-119 |
| Bromoform | 100.0 | | 81.27 | 81 | 66-136 |
| Bromomethane | 100.0 | | 130.1 | 130 | 40-134 |
| 2-Butanone | 100.0 | | 98.82 | 99 | 55-151 |
| Carbon Disulfide | 100.0 | | 97.80 | 98 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 76.00 | 76 | 64-123 |
| Chlorobenzene | 100.0 | | 84.20 | 84 | 77-112 |
| Chlorodibromomethane | 100.0 | | 89.02 | 89 | 72-118 |
| Chloroethane | 100.0 | | 111.5 | 112 | 64-142 |
| Chloroform | 100.0 | | 94.86 | 95 | 70-115 |
| Chloromethane | 100.0 | | 92.00 | 92 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 92.53 | 92 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 85.98 | 86 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 92.02 | 92 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | | 97.25 | 97 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | | 88.81 | 89 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 94.60 | 95 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 94.62 | 95 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 93.66 | 94 | 73-124 |
| Ethylbenzene | 100.0 | | 87.01 | 87 | 77-111 |
| 2-Hexanone | 100.0 | | 98.34 | 98 | 53-144 |
| Methylene Chloride | 100.0 | | 91.69 | 92 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 89.52 | 90 | 42-144 |
| Styrene | 100.0 | | 87.37 | 87 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 97.25 | 97 | 67-126 |
| Tetrachloroethene | 100.0 | | 88.07 | 88 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V311261

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: V3112611LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 81.01 | 81 | 63-122 |
| Toluene | 100.0 | | 92.57 | 92 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | | 102.0 | 102 | 69-117 |
| Trichloroethene | 100.0 | | 87.04 | 87 | 75-113 |
| Vinyl Chloride | 100.0 | | 95.79 | 96 | 65-134 |
| Xylene-mp | 200.0 | | 168.6 | 84 | 77-115 |
| Xylene-o | 100.0 | | 82.26 | 82 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY 768 480

Lab Name: ETC,INC. Lab Prep Batch: V311261

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145805

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 78.75 | 79 | 59-151 |
| Benzene | 100.0 | 0.000 | 100.0 | 100 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 101.2 | 101 | 68-119 |
| Bromoform | 100.0 | 0.000 | 74.19 | 74 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 128.4 | 128 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 77.76 | 78 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 84.99 | 85 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.864 | 86.26 | 85 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 77.69 | 78 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 89.51 | 90 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 99.15 | 99 | 64-142 |
| Chloroform | 100.0 | 4.96 | 105.0 | 100 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 74.93 | 75 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 86.36 | 86 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 95.42 | 95 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 89.02 | 89 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 188.6 | 240.2 | 52* | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 37.83 | 107.0 | 69* | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 96.99 | 97 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 92.55 | 92 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 94.50 | 94 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 85.78 | 86 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 67.43 | 67 | 53-144 |
| Methylene Chloride | 100.0 | 1.56 | 89.33 | 88 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 72.57 | 72 | 42-144 |
| Styrene | 100.0 | 0.000 | 80.19 | 80 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 3773 | 3229 | -544* | 67-126 |
| Tetrachloroethene | 100.0 | 14.78 | 92.39 | 78 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311261

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145805

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 90.35 | 90 | 63-122 |
| Toluene | 100.0 | 0.000 | 88.37 | 88 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 8.53 | 104.4 | 96 | 69-117 |
| Trichloroethene | 100.0 | 2410 | 2179 | -231* | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 92.81 | 93 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 158.5 | 79 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 65.11 | 65* | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 482

Lab Name: ETC, INC. Lab Prep Batch: V311261

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145805

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 91.36 | 91 | 14 | 20 | 59-151 |
| Benzene | 100.0 | 108.2 | 108 | 8 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 103.9 | 104 | 3 | 20 | 68-119 |
| Bromoform | 100.0 | 86.31 | 86 | 15 | 20 | 66-136 |
| Bromomethane | 100.0 | 136.6 | 137* | 7 | 20 | 40-134 |
| 2-Butanone | 100.0 | 92.90 | 93 | 18 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 101.6 | 102 | 18 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 90.79 | 90 | 6 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 93.20 | 93 | 18 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 92.32 | 92 | 2 | 20 | 72-118 |
| Chloroethane | 100.0 | 109.9 | 110 | 10 | 20 | 64-142 |
| Chloroform | 100.0 | 111.1 | 106 | 6 | 20 | 70-115 |
| Chloromethane | 100.0 | 84.69 | 85 | 12 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 97.01 | 97 | 12 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 97.82 | 98 | 3 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 99.44 | 99 | 11 | 20 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 252.8 | 64* | 21* | 20 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 119.6 | 82 | 17 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 96.53 | 96 | 1 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 99.45 | 99 | 7 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 97.81 | 98 | 4 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 100.5 | 100 | 15 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 77.48 | 77 | 14 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 98.35 | 97 | 10 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 81.49 | 81 | 12 | 20 | 42-144 |
| Styrene | 100.0 | 95.42 | 95 | 17 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 3217 | -556* | -2 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 98.55 | 84 | 7 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V311261

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145805

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 95.83 | 96 | 6 | 20 | 63-122 |
| Toluene | 100.0 | 96.63 | 97 | 10 | 20 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 111.9 | 103 | 7 | 20 | 69-117 |
| Trichloroethene | 100.0 | 1935 | -475* | -69 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 98.14 | 98 | 5 | 20 | 65-134 |
| Xylene-mp | 200.0 | 187.7 | 94 | 17 | 20 | 77-115 |
| Xylene-o | 100.0 | 69.03 | 69* | 6 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 35 outside limits
Spike Recovery: 10 out of 70 outside limits

COMMENTS: _____

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

768 484 CLIENT SAMPLE NO.

V2120212LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID: 1012 Lab Prep Batch: V212021

Date Analyzed: 12/02/03 Time Analyzed: 1630

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 12LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2120211LCS | 11LCS | 1003LJ | 1038 |
| 02 | 031145901 | 031145901 | 1006 | 1243 |
| 03 | 031145806 | 031145806 | 1014 | 1741 |
| 04 | 031145801 | 031145801 | 1015 | 1816 |
| 05 | 031145802 | 031145802 | 1016 | 1851 |
| 06 | 031145803 | 031145803 | 1017 | 1927 |
| 07 | 031145804 | 031145804 | 1018 | 2002 |
| 08 | 031145805 | 031145805 | 1019 | 2037 |
| 09 | 031145901MS | MS | 1021 | 2148 |
| 10 | 031145901MSD | MSD | 1022 | 2223 |
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COMMENTS:

768 485

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
V2120212LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Prep Batch: V212021

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

FORM 1 768 486 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2120212LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Prep Batch: V212021

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

768 487

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V2120212LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix: (soil/water) WATER Lab Sample ID: 12LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
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FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: V2120211LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 112.5 | 112 | 59-151 |
| Benzene | 100.0 | | 113.1 | 113 | 72-124 |
| Bromodichloromethane | 100.0 | | 103.0 | 103 | 68-119 |
| Bromoform | 100.0 | | 86.60 | 87 | 66-136 |
| Bromomethane | 100.0 | | 127.5 | 128 | 40-134 |
| 2-Butanone | 100.0 | | 112.8 | 113 | 55-151 |
| Carbon Disulfide | 100.0 | | 84.88 | 85 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 103.0 | 103 | 64-123 |
| Chlorobenzene | 100.0 | | 101.6 | 102 | 77-112 |
| Chlorodibromomethane | 100.0 | | 93.16 | 93 | 72-118 |
| Chloroethane | 100.0 | | 131.8 | 132 | 64-142 |
| Chloroform | 100.0 | | 103.8 | 104 | 70-115 |
| Chloromethane | 100.0 | | 111.6 | 112 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 111.7 | 112 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 106.1 | 106 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 93.23 | 93 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 103.0 | 103 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 105.7 | 106 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 111.9 | 112 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 107.9 | 108 | 73-124 |
| Ethylbenzene | 100.0 | | 101.9 | 102 | 77-111 |
| 2-Hexanone | 100.0 | | 114.1 | 114 | 53-144 |
| Methylene Chloride | 100.0 | | 103.8 | 104 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 102.1 | 102 | 42-144 |
| Styrene | 100.0 | | 100.6 | 101 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 88.77 | 89 | 67-126 |
| Tetrachloroethene | 100.0 | | 108.2 | 108 | 77-115 |
| Toluene | 100.0 | | 106.3 | 106 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

768 489

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: V2120211LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 104.6 | 105 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 99.85 | 100 | 69-117 |
| Trichloroethene | 100.0 | | 107.5 | 108 | 75-113 |
| Vinyl Chloride | 100.0 | | 114.4 | 114 | 65-134 |
| Xylene-mp | 200.0 | | 200.3 | 100 | 77-115 |
| Xylene-o | 100.0 | | 93.33 | 93 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 107.8 | 108 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 35 outside limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY 768 490

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 71.21 | 71 | 59-151 |
| Benzene | 100.0 | 0.000 | 114.4 | 114 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 106.3 | 106 | 68-119 |
| Bromoform | 100.0 | 0.000 | 98.17 | 98 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 105.6 | 106 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 101.1 | 101 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 77.15 | 77 | 60-133 |
| Carbon Tetrachloride | 100.0 | 6.57 | 110.2 | 104 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 106.2 | 106 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 104.9 | 105 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 118.9 | 119 | 64-142 |
| Chloroform | 100.0 | 70.98 | 164.1 | 93 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 89.58 | 90 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 114.5 | 114 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 113.2 | 113 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 4.07 | 98.56 | 94 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 12.05 | 103.5 | 91 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 104.7 | 105 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 110.2 | 110 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 115.6 | 116 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 97.49 | 97 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 66.04 | 66 | 53-144 |
| Methylene Chloride | 100.0 | 3.04 | 97.10 | 94 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 103.4 | 103 | 42-144 |
| Styrene | 100.0 | 0.000 | 109.1 | 109 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 121.5 | 188.0 | 66* | 67-126 |
| Tetrachloroethene | 100.0 | 10.52 | 103.8 | 93 | 77-115 |
| Toluene | 100.0 | 0.000 | 95.59 | 96 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 105.8 | 106 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 2.09 | 110.3 | 108 | 69-117 |
| Trichloroethene | 100.0 | 139.3 | 215.5 | 76 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 100.3 | 100 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 199.2 | 100 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 102.4 | 102 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 60.70 | 173.4 | 113 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 61.25 | 61 | 15 | 20 | 59-151 |
| Benzene | 100.0 | 104.8 | 105 | 8 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 98.31 | 98 | 8 | 20 | 68-119 |
| Bromoform | 100.0 | 90.35 | 90 | 8 | 20 | 66-136 |
| Bromomethane | 100.0 | 96.54 | 96 | 10 | 20 | 40-134 |
| 2-Butanone | 100.0 | 93.07 | 93 | 8 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 77.17 | 77 | 0 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 102.6 | 96 | 8 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 98.48 | 98 | 8 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 93.24 | 93 | 12 | 20 | 72-118 |
| Chloroethane | 100.0 | 119.7 | 120 | 1 | 20 | 64-142 |
| Chloroform | 100.0 | 155.0 | 84 | 10 | 20 | 70-115 |
| Chloromethane | 100.0 | 84.68 | 85 | 6 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 104.5 | 104 | 9 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 104.8 | 105 | 7 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 89.26 | 85 | 10 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 100.2 | 88 | 3 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 98.44 | 98 | 7 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 103.3 | 103 | 6 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 107.5 | 108 | 7 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 92.42 | 92 | 5 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 102.9 | 103 | 44* | 20 | 53-144 |
| Methylene Chloride | 100.0 | 95.51 | 92 | 2 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 98.32 | 98 | 5 | 20 | 42-144 |
| Styrene | 100.0 | 98.51 | 98 | 11 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 187.8 | 66* | 0 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 100.9 | 90 | 3 | 20 | 77-115 |
| Toluene | 100.0 | 95.73 | 96 | 0 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 99.00 | 99 | 7 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 108.6 | 106 | 2 | 20 | 69-117 |
| Trichloroethene | 100.0 | 207.2 | 68* | 11 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 98.15 | 98 | 2 | 20 | 65-134 |
| Xylene-mp | 200.0 | 174.5 | 87 | 14 | 20 | 77-115 |
| Xylene-o | 100.0 | 89.36 | 89 | 14 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 152.0 | 91 | 22* | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 35 outside limits
Spike Recovery: 3 out of 70 outside limits

COMMENTS: _____

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level III
# GC/MS Volatiles

768 495

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-26-03 | VOC3 | V311261 | US1463232H | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0311-380-3 | 0311-318-2 | 0311-442-1 | 0311-458-1-6 | 0311-459-1 |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) ✓

2.0 Initial Calibration (ICAL) : Method V309181.8260 ICAL SRN 02-7-27-16 02-7-27-1

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-31-12, 02-7-31-22 ✓

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
  Acrolein ↑, Bromomethane ↑, Iodomethane ↑, Vinyl Acetate ↓
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V311261LB | MeCl2 eBDL | | 0/4 |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V311261LCS | 3/88 | 0/0 | 0/4 |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0311-458-5 | 135<br>10/70 | 1/35 | 0/8 |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

8.0 Dilutions/Re-Analysis Required ✓

Narrative/Notes :

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 496

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID: 0101003 BFB Injection Date: 11/26/03

Instrument ID: VOC3 BFB Injection Time: 1046

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 25.1 |
| 75 | 30.0 - 60.0% of mass 95 | 45.4 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.1 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 84.4 |
| 175 | 5.0 - 9.0% of mass 174 | 7.3 ( 8.6)1 |
| 176 | 95.0 - 101.0% of mass 174 | 81.5 ( 96.6)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.9 ( 6.1)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V3112611LCS | 11LCS | 0202003LJ | 11/26/03 | 1103 |
| 02 | CCV100PPB | | 0202003J | 11/26/03 | 1103 |
| 03 | V3112611LB | 11LB | 0302004J | 11/26/03 | 1217 |
| 04 | 031145801 | 031145801 | 1001011 | 11/26/03 | 1543 |
| 05 | 031145802 | 031145802 | 1101012 | 11/26/03 | 1613 |
| 06 | 031145803 | 031145803 | 1201013 | 11/26/03 | 1642 |
| 07 | 031145804 | 031145804 | 1301014 | 11/26/03 | 1712 |
| 08 | 031145805 | 031145805 | 1401015 | 11/26/03 | 1742 |
| 09 | 031145805MS | MS | 1801019 | 11/26/03 | 1941 |
| 10 | 031145805MSD | MSD | 1901020 | 11/26/03 | 2010 |
| 11 | | | | | |
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FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Instrument ID: VOC3 Calibration Date: 11/26/03 Time: 1103

Lab File ID: 0202003J Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 128.8 | 100.0 | AVRG | 28.8 | 30.0 | |
| Benzene | 101.0 | 100.0 | AVRG | 1.0 | 30.0 | |
| Bromodichloromethane | 89.57 | 100.0 | LINR | 10.4 | 30.0 | |
| Bromoform | 81.27 | 100.0 | AVRG | 18.7 | 30.0 | |
| Bromomethane | 130.1 | 100.0 | AVRG | 30.1 | 30.0 | <- |
| 2-Butanone | 98.82 | 100.0 | AVRG | 1.2 | 30.0 | |
| Carbon Disulfide | 97.80 | 100.0 | AVRG | 2.2 | 30.0 | |
| Carbon Tetrachloride | 76.00 | 100.0 | AVRG | 24.0 | 30.0 | |
| Chlorobenzene | 84.20 | 100.0 | AVRG | 15.8 | 30.0 | |
| Chlorodibromomethane | 89.02 | 100.0 | AVRG | 11.0 | 30.0 | |
| Chloroethane | 111.5 | 100.0 | AVRG | 11.5 | 30.0 | |
| Chloroform | 94.86 | 100.0 | LINR | 5.1 | 20.0 | |
| Chloromethane | 92.00 | 100.0 | AVRG | 8.0 | 30.0 | |
| 1,1-Dichloroethane | 92.53 | 100.0 | AVRG | 7.5 | 30.0 | |
| 1,2-Dichloroethane | 85.98 | 100.0 | AVRG | 14.0 | 30.0 | |
| 1,1-Dichloroethene | 92.02 | 100.0 | AVRG | 8.0 | 20.0 | |
| cis-1,2-Dichloroethene | 97.25 | 100.0 | AVRG | 2.8 | 30.0 | |
| trans-1,2-Dichloroethene | 88.81 | 100.0 | AVRG | 11.2 | 30.0 | |
| 1,2-Dichloropropane | 94.60 | 100.0 | AVRG | 5.4 | 20.0 | |
| cis-1,3-Dichloropropene | 94.62 | 100.0 | AVRG | 5.4 | 30.0 | |
| trans-1,3-Dichloropropene | 93.66 | 100.0 | AVRG | 6.3 | 30.0 | |
| Ethylbenzene | 87.01 | 100.0 | AVRG | 13.0 | 20.0 | |
| 2-Hexanone | 98.34 | 100.0 | AVRG | 1.7 | 30.0 | |
| Methylene Chloride | 91.69 | 100.0 | LINR | 8.3 | 30.0 | |
| 4-Methyl-2-Pentanone | 89.52 | 100.0 | AVRG | 10.5 | 30.0 | |
| Styrene | 87.37 | 100.0 | AVRG | 12.6 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 97.25 | 100.0 | AVRG | 2.8 | 30.0 | |
| Tetrachloroethene | 88.07 | 100.0 | AVRG | 11.9 | 30.0 | |
| 1,1,1-Trichloroethane | 81.01 | 100.0 | AVRG | 19.0 | 30.0 | |
| Toluene | 92.57 | 100.0 | AVRG | 7.4 | 20.0 | |
| 1,1,2-Trichloroethane | 102.0 | 100.0 | AVRG | 2.0 | 30.0 | |
| Trichloroethene | 87.04 | 100.0 | AVRG | 13.0 | 30.0 | |
| Vinyl Chloride | 95.79 | 100.0 | AVRG | 4.2 | 20.0 | |
| Xylene-mp | 168.6 | 200.0 | AVRG | 15.7 | 30.0 | |
| Xylene-o | 82.26 | 100.0 | AVRG | 17.7 | 30.0 | |
| Dibromofluoromethane | 43.88 | 50.00 | AVRG | 12.2 | 30.0 | |



FORM VII VOA-GCMS

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Instrument ID: VOC3 Calibration Date: 11/26/03 Time: 1103

Lab File ID: 0202003J Init. Calib. Date(s): 09/18/03 09/18/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1815 2316

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Toluene-d8 | 47.98 | 50.00 | AVRG | 4.0 | 30.0 |
| Bromofluorobenzene | 45.44 | 50.00 | AVRG | 9.1 | 30.0 |
| 1,2-Dichloroethane-d4 | 38.92 | 50.00 | AVRG | 22.2 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID (Standard): 0202003J Date Analyzed: 11/26/03

Instrument ID: VOC3 Time Analyzed: 1103

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 908444 | 6.54 | 1272362 | 7.08 | 1113809 | 9.17 |
| | UPPER LIMIT | 1816888 | 7.04 | 2544724 | 7.58 | 2227618 | 9.67 |
| | LOWER LIMIT | 454222 | 6.04 | 636181 | 6.58 | 556905 | 8.67 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3112611LB | 791616 | 6.54 | 1010356 | 7.09 | 848718 | 9.18 |
| 02 | 031145801 | 760475 | 6.55 | 991684 | 7.09 | 822802 | 9.18 |
| 03 | 031145802 | 659901 | 6.54 | 899450 | 7.09 | 771742 | 9.18 |
| 04 | 031145803 | 646778 | 6.54 | 886305 | 7.09 | 746687 | 9.18 |
| 05 | 031145804 | 602621 | 6.54 | 838979 | 7.09 | 713927 | 9.18 |
| 06 | 031145805 | 584903 | 6.54 | 843406 | 7.09 | 677778 | 9.18 |
| 07 | 031145805MS | 645204 | 6.54 | 916380 | 7.09 | 798507 | 9.18 |
| 08 | 031145805MSD | 746165 | 6.54 | 1040228 | 7.08 | 832073 | 9.18 |
| 09 | | | | | | | |
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IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID (Standard): 0202003J Date Analyzed: 11/26/03

Instrument ID: VOC3 Time Analyzed: 1103

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4(DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 422599 | 10.95 | | | | |
| | UPPER LIMIT | 845198 | 11.45 | | | | |
| | LOWER LIMIT | 211300 | 10.45 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3112611LB | 370618 | 10.95 | | | | |
| 02 | 031145801 | 364016 | 10.95 | | | | |
| 03 | 031145802 | 347592 | 10.94 | | | | |
| 04 | 031145803 | 341160 | 10.95 | | | | |
| 05 | 031145804 | 324702 | 10.95 | | | | |
| 06 | 031145805 | 306258 | 10.95 | | | | |
| 07 | 031145805MS | 342170 | 10.94 | | | | |
| 08 | 031145805MSD | 353604 | 10.95 | | | | |
| 09 | | | | | | | |
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| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

768 501

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

SRN: 02-7-27-6
02-7-27-1

Calibration File Names:
Level 1: \\ETCBDC\DD\chem\voc3.i\V309182.B\0301007.D
Level 2: \\ETCBDC\DD\chem\voc3.i\V309182.B\0401008.D
Level 3: \\ETCBDC\DD\chem\voc3.i\V309182.B\0601010.D
Level 4: \\ETCBDC\DD\chem\voc3.i\V309182.B\0701011.D
Level 5: \\ETCBDC\DD\chem\voc3.i\V309182.B\0801012.D
Level 6: \\ETCBDC\DD\chem\voc3.i\V309182.B\0901013.D
Level 7: \\ETCBDC\DD\chem\voc3.i\V309182.B\1001014.D
Level 8: \\ETCBDC\DD\chem\voc3.i\V309182.B\1101015.D
Level 9: \\ETCBDC\DD\chem\voc3.i\V309182.B\1201016.D
Level 10: \\ETCBDC\DD\chem\voc3.i\V309182.B\1301017.D

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 1 Dichlorodifluoromethane | 0.69949 | 0 73578 | 0.71470 | 0.85246 | 0.90155 | 0.78356 | | | | | |
| | 0 81913 | 0 99513 | 0.80990 | 0.79140 | | | AVRG | | 0.81031 | | 11 06793 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 2 Chloromethane | 0.93532 | 0.93426 | 0.77982 | 0.88307 | 0.86176 | 0.74914 | | | | | |
| | 0 78369 | 0.98852 | 0.78066 | 0.79621 | | | AVRG | | 0.84924 | | 9.77256 |
| 3 Vinyl Chloride | 0.55750 | 0 58963 | 0.59217 | 0.65422 | 0 70485 | 0 62472 | | | | | |
| | 0.66731 | 0.82213 | 0.66106 | 0.64387 | | | AVRG | | 0.65175 | | 11.35223 |
| 4 Bromomethane | 0 41441 | 0.42479 | 0.29204 | 0.36751 | 0.39541 | 0.38529 | | | | | |
| | 0.38137 | 0.48313 | 0.38155 | 0.37893 | | | AVRG | | 0 39044 | | 12 34188 |
| 5 Chloroethane | 0 27683 | 0.22559 | 0.28705 | 0.32804 | 0.32301 | 0.27602 | | | | | |
| | 0.29598 | 0 35545 | 0.28274 | 0.28718 | | | AVRG | | 0.29379 | | 12.06111 |
| 6 Acrolein | +++++ | +++++ | 0.01836 | 0.01801 | 0 01564 | 0.01513 | | | | | |
| | 0.01971 | +++++ | +++++ | +++++ | | | AVRG | | 0.01737 | | 11 10255 |

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 7 Trichlorofluoromethane | 1.04099 | 1.03979 | 1.01216 | 1.25972 | 1.15326 | 0.90180 | | | | | |
| | 1.00808 | 1.19362 | 0.92898 | 0.91949 | | | AVRG | | 1.04579 | | 11.58532 |
| 8 Acetonitrile | +++++ | 0.03908 | 0.04433 | 0.04612 | 0.04551 | 0.03748 | | | | | |
| | 0 04808 | 0.05337 | 0 04498 | 0.04317 | | | AVRG | | 0.04468 | | 10.48656 |
| 9 Acetone | +++++ | +++++ | 0.20923 | 0.20938 | 0.21262 | 0.16945 | | | | | |
| | 0.20712 | 0.22233 | 0 20351 | 0.17988 | | | AVRG | | 0 20169 | | 8.80796 |
| 10 Furan | +++++ | 1.32575 | 1 21599 | 1 58517 | 1.30915 | 1.12425 | | | | | |
| | 1 26087 | 1 57950 | 1 22039 | 1.15719 | | | AVRG | | 1.30870 | | 12 83498 |
| 11 1,1-Dichloroethene | 0 43051 | 0.47001 | 0.39070 | 0.54557 | 0.43377 | 0 41981 | | | | | |
| | 0.43066 | 0.55550 | 0 43346 | 0.41743 | | | AVRG | | 0.45274 | | 12.17983 |

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 12 Acrylonitrile | +++++ | +++++ | 0.14343 | 0.15239 | 0.14131 | 0.11290 | | | | | |
| | 0.12965 | 0 15174 | 0.13296 | 0.12627 | | | AVRG | | 0.13633 | | 9.90668 |
| 13 Iodomethane | 1545 | 5566 | 37284 | 125848 | 313779 | 655838 | | | | | |
| | +++++ | +++++ | +++++ | +++++ | | | LINR | -0.02246 | 0.47915 | | 0.99714 |
| 14 Methylene Chloride | +++++ | +++++ | 33856 | 116634 | 269453 | 547156 | | | | | |
| | 757422 | +++++ | +++++ | +++++ | | | LINR | -0.04946 | 0.41278 | | 0 99286 |
| 15 1,1,2-trichloro-1,2,2-trifluo | 0.42556 | 0.46814 | 0.45535 | 0 62161 | 0.52390 | 0.48993 | | | | | |
| | 0.45944 | 0.56603 | 0.45209 | 0.42028 | | | AVRG | | 0.48823 | | 13.18242 |
| 16 Allyl chloride | 0.90863 | 0.97560 | 0 82854 | 1 05191 | 0 87276 | 0 84358 | | | | | |
| | 0.83679 | 1 07537 | 0 83905 | 0.79961 | | | AVRG | | 0.90318 | | 10 84434 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 17 Carbon Disulfide | 1.11748 | 1.20226 | 1.10954 | 1.41658 | 1.15703 | 1.09343 | | | | | |
| | 1 26715 | 1.65515 | 1.27052 | 1 22706 | | | AVRG | | 1.25162 | | 13 73136 |
| 18 trans-1,2-Dichloroethene | 0.47605 | 0.40667 | 0 41749 | 0 55382 | 0.44947 | 0.44827 | | | | | |
| | 0.44683 | 0.56322 | 0 45609 | 0.42430 | | | AVRG | | 0.46422 | | 11 55570 |
| 19 Methyl-tertbutyl-Ether | 1.04456 | 1.15388 | 1.17051 | 1.43919 | 1 25883 | 1.14424 | | | | | |
| | 1 18535 | 1.41073 | 1.12036 | 1 03823 | | | AVRG | | 1.19659 | | 11 41655 |
| 20 Propionitrile | 0 04529 | 0.04152 | 0.04237 | 0.04766 | 0.04916 | 0.04107 | | | | | |
| | 0.04980 | 0.05587 | 0.04743 | 0.04536 | | | AVRG | | 0.04655 | | 9.66096 |
| 21 1,1-Dichloroethane | 0 74490 | 0.86302 | 0.85737 | 1.13461 | 0.93774 | 0.90206 | | | | | |
| | 0 88750 | 1.11790 | 0.88531 | 0.84063 | | | AVRG | | 0.91710 | | 13.21341 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 22 Vinyl Acetate | +++++ | +++++ | 1.00069 | 1.22350 | 1.07635 | 0.96475 | | | | | |
| | 1.01996 | 1.20948 | 0.98140 | 0.92903 | | | AVRG | | 1.05064 | | 10.56024 |
| 23 Chloroprene | 1.00397 | 1.07538 | 1.08737 | 1.39296 | 1.19629 | 1.12740 | | | | | |
| | 1.10420 | 1.40685 | 1.05043 | 1.03449 | | | AVRG | | 1.14793 | | 12.44836 |
| 24 2-Butanone | +++++ | +++++ | +++++ | 0.04949 | 0.04910 | 0.04194 | | | | | |
| | 0.04705 | 0.05393 | 0.04567 | 0.04223 | | | AVRG | | 0.04706 | | 9.04441 |
| 25 Hexane | +++++ | 0.81283 | 0.57895 | 0.74485 | 0.64999 | 0.60042 | | | | | |
| | 0.62010 | 0.79747 | 0.62759 | 0.61939 | | | AVRG | | 0.67240 | | 13.15359 |
| 26 Di-isopropyl ether | 1.75052 | 1.67744 | 1.63809 | 2.02832 | 1.69897 | 1.59288 | | | | | |
| | 1.68545 | 2.06566 | 1.62023 | 1.56561 | | | AVRG | | 1.73232 | | 10.07347 |

768 507

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 27 Methacrylonitrile | 0.27926 | 0.33631 | 0.30930 | 0 35460 | 0.33700 | 0.29431 | | | | | |
| | 0 32039 | 0.36264 | 0.30864 | 0.29169 | | | AVRG | | 0.31941 | | 8.68838 |
| 28 cis-1,2-Dichloroethene | 0.42212 | 0 46914 | 0.44599 | 0.54799 | 0.47293 | 0.45249 | | | | | |
| | 0 46568 | 0.58939 | 0.45915 | 0.44473 | | | AVRG | | 0.47696 | | 10 78417 |
| 29 Ethyl Acetate | +++++ | +++++ | 0.42379 | 0.49624 | 0.48979 | 0.43916 | | | | | |
| | 0.50320 | 0.55676 | 0.47627 | 0.45353 | | | AVRG | | 0.47984 | | 8.74722 |
| 30 Bromochloromethane | +++++ | 0.22803 | 0 21591 | 0 29965 | 0 25457 | 0 21537 | | | | | |
| | 0.25242 | 0.31445 | 0 24209 | 0 23192 | | | AVRG | | 0 25049 | | 14.02747 |
| 31 Chloroform | 14090 | 21386 | 75583 | 288861 | 675388 | 1418869 | | | | | Averaged 17.3 |
| | 1767999 | +++++ | +++++ | +++++ | | | LINR | -0.03937 | 1.01192 | | 0.99779 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 32 Isobutyl Alcohol | +++++ | +++++ | 0.01781 | 0.01824 | 0.02131 | 0.01682 | | | | | |
| | 0.02036 | 0.02207 | 0.01875 | 0.01666 | | | AVRG | | 0.01900 | | 10.68691 |
| 33 2,2-Dichloropropane | 1.06603 | 1.01168 | 0.92800 | 1 19254 | 1.00114 | 0.94137 | | | | | |
| | 0.90800 | 1.13882 | 0.83935 | 0.80967 | | | AVRG | | 0.98366 | | 12.55622 |
| 35 Tetrahydrofuran | +++++ | +++++ | 0.16789 | 0.21842 | 0.19065 | 0.17954 | | | | | |
| | 0.20098 | 0.22581 | 0 19479 | 0.18447 | | | AVRG | | 0.19532 | | 9 93596 |
| 38 1,2-Dichloroethane | 0.90656 | 1.04101 | 0.91582 | 1.22081 | 1.10743 | 1.01596 | | | | | |
| | 1.01033 | 1.24321 | 0.94456 | 0.91857 | | | AVRG | | 1.03243 | | 11.92845 |
| 39 1,1,1-Trichloroethane | 0 99462 | 1.05309 | 1.01335 | 1.34682 | 1.19752 | 1.11075 | | | | | |
| | 1.07081 | 1.34240 | 0.97847 | 0.97800 | | | AVRG | | 1.10858 | | 12 75301 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150 0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 40 1,1-Dichloropropene | 0.61956 | 0.64922 | 0.64988 | 0.86757 | 0.78706 | 0.74488 | | | | | |
| | 0.75389 | 0.97756 | 0.69989 | 0.70364 | | | AVRG | | 0.74531 | | 14 74226 |
| 41 Carbon Tetrachloride | 0.81933 | 0.97725 | 0 89114 | 1.18785 | 1.02491 | 0.96705 | | | | | |
| | 0.93090 | 1.17780 | 0 84987 | 0.85262 | | | AVRG | | 0.96787 | | 13.44156 |
| 42 Benzene | 1 39197 | 1.42123 | 1.31364 | 1.66275 | 1.45108 | 1.33957 | | | | | |
| | 1.38018 | 1.79085 | 1.32793 | 1.33598 | | | AVRG | | 1.44152 | | 11.05315 |
| 44 Dibromomethane | 0.25822 | 0.26260 | 0 28938 | 0.35794 | 0.33872 | 0.30078 | | | | | |
| | 0 30131 | 0.35690 | 0.27691 | 0.26812 | | | AVRG | | 0.30109 | | 12.56978 |
| 45 1,2-Dichloropropane | 0.31076 | 0.30416 | 0.33537 | 0.41233 | 0.38460 | 0.35821 | | | | | |
| | 0.35659 | 0.45389 | 0 33778 | 0.34014 | | | AVRG | | 0.35938 | | 12.85476 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150 0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 46 Trichloroethene | 0.34282 | 0.37150 | 0.36080 | 0.46551 | 0 41765 | 0.39025 | | | | | |
| | 0.38016 | 0 48521 | 0.34972 | 0.34954 | | | AVRG | | 0.39132 | | 12 71761 |
| 47 Bromodichloromethane | +++++ | 17083 | 60025 | 228557 | 545368 | 1118127 | | | | | |
| | 1408002 | +++++ | +++++ | +++++ | | | LINR | -0.05670 | 0.63524 | | 0.99689 |
| 48 n-Propyl Acetate | +++++ | 1.03518 | 1.04776 | 1.22629 | 1.18741 | 0.98186 | | | | | |
| | 1 06346 | 1.17608 | 0.98127 | 0.91945 | | | AVRG | | 1.06875 | | 9.89703 |
| 49 Methyl methacrylate | 0.15622 | 0.16598 | 0.19166 | 0.23138 | 0.22396 | 0.19001 | | | | | |
| | 0 20457 | 0 23397 | 0.19221 | 0.18123 | | | AVRG | | 0.19712 | | 13.42883 |
| 50 1,4-Dioxane | +++++ | +++++ | 0.00198 | 0.00227 | 0 00263 | 0.00228 | | | | | |
| | 0.00269 | 0.00292 | 0.00241 | 0.00233 | | | AVRG | | 0.00244 | | 12.10419 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 51 2-Chloroethyl vinyl ether | +++++ | +++++ | 0 33537 | 0.41233 | 0.38460 | 0.35821 | | | | | |
| | 0.35659 | 0.45389 | 0.33778 | 0.33813 | | | AVRG | | 0.37211 | | 11.39238 |
| 52 cis-1,3-Dichloropropene | 0.55221 | 0.58528 | 0.57047 | 0.73866 | 0.69786 | 0.63461 | | | | | |
| | 0.63690 | 0.78836 | 0.59236 | 0.58039 | | | AVRG | | 0.63771 | | 12.41769 |
| 53 4-Methyl-2-Pentanone | +++++ | +++++ | 0.45977 | 0.49130 | 0.51256 | 0.42938 | | | | | |
| | 0.46251 | 0.50430 | 0.42822 | 0.38921 | | | AVRG | | 0.45966 | | 9.25533 |
| 54 trans-1,3-Dichloropropene | 0.48571 | 0.48017 | 0.53743 | 0.67146 | 0.64749 | 0.58190 | | | | | |
| | 0.58893 | 0.71043 | 0.54864 | 0.52884 | | | AVRG | | 0.57810 | | 13.42978 |
| 55 1,1,2-Trichloroethane | +++++ | 0.18292 | 0.22667 | 0.28865 | 0.27106 | 0.24227 | | | | | |
| | 0.24332 | 0.29632 | 0.23319 | 0.22393 | | | AVRG | | 0.24537 | | 14.40965 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 57 Ethyl methacrylate | 0.22193 | 0.20897 | 0.19425 | 0.22616 | 0.22462 | 0.19667 | | | | | |
| | 0.20811 | 0.24019 | 0.19412 | 0.18136 | | | AVRG | | 0.20964 | | 8.75240 |
| 58 Toluene | 0.82134 | 0.73614 | 0.70481 | 0.84232 | 0 75655 | 0.67984 | | | | | |
| | 0.68761 | 0.86997 | 0.65007 | 0.64477 | | | AVRG | | 0.73934 | | 10.95319 |
| 59 1,3-Dichloropropane | 0.45207 | 0.44098 | 0 47779 | 0 56526 | 0.53867 | 0 47034 | | | | | |
| | 0.48418 | 0.59025 | 0.45439 | 0.44241 | | | AVRG | | 0.49163 | | 10 93267 |
| 60 2-Hexanone | +++++ | +++++ | 0 33441 | 0.34804 | 0.37039 | 0.30074 | | | | | |
| | 0.33469 | 0.35310 | 0.29963 | 0.27703 | | | AVRG | | 0 32725 | | 9.70163 |
| 61 Chlorodibromomethane | +++++ | 0.42847 | 0 44985 | 0.56705 | 0.55982 | 0.49737 | | | | | |
| | 0.49393 | 0.60138 | 0 45862 | 0.44072 | | | AVRG | | 0.49969 | | 12.50844 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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End Cal Date : 18-SEP-2003 23:16
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 62 1,2-Dibromoethane | 0.31548 | 0.36646 | 0.36390 | 0.43641 | 0.42891 | 0.37443 | | | | | |
| | 0.38412 | 0.45317 | 0.35585 | 0.34468 | | | AVRG | | 0.38234 | | 11.48601 |
| 63 Tetrachloroethene | +++++ | 0.31470 | 0.33644 | 0.42367 | 0.41026 | 0.36573 | | | | | |
| | 0 35153 | 0.45018 | 0.32862 | 0.31988 | | | AVRG | | 0.36678 | | 13.49652 |
| 64 1,1,1,2-Tetrachloroethane | 0.39326 | 0.48168 | 0.43780 | 0.51754 | 0.47600 | 0.46839 | | | | | |
| | 0.48244 | 0.61670 | 0.42896 | 0.42482 | | | AVRG | | 0.47276 | | 13 13145 |
| 66 Chlorobenzene | 0.99912 | 0.91601 | 0.92178 | 1.10828 | 0.99800 | 0 96879 | | | | | |
| | 0.99321 | 1.31813 | 0.90953 | 0.89126 | | | AVRG | | 1.00241 | | 12.75294 |
| 67 Ethylbenzene | 1.79003 | 1.79476 | 1.58975 | 1.91567 | 1.67336 | 1 64689 | | | | | |
| | 1.66299 | 2.15841 | 1.50143 | 1.46537 | | | AVRG | | 1 71987 | | 11.96835 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 68 Xylene-mp | 0.56595 | 0.60442 | 0.53161 | 0.63450 | 0.56012 | 0.55537 | | | | | |
| | 0.56530 | 0 75565 | 0 52787 | 0 51605 | | | AVRG | | 0.58168 | | 12.14996 |
| 69 Bromoform | +++++ | 0.37000 | 0.37562 | 0.46809 | 0.44491 | 0.42385 | | | | | |
| | 0.45417 | 0.54743 | 0.39717 | 0.38201 | | | AVRG | | 0.42925 | | 13.28565 |
| 70 trans-1,4-Dichloro-2-butene | +++++ | 0.10454 | 0 13276 | 0.14503 | 0.14269 | 0 13400 | | | | | |
| | 0 14296 | 0.16752 | 0 12757 | 0.12206 | | | AVRG | | 0.13546 | | 12 88083 |
| 71 Styrene | 0.82045 | 0.85731 | 0.85021 | 0.97287 | 0.92132 | 0 86546 | | | | | |
| | 0.90654 | 1.18895 | 0.82149 | 0.80856 | | | AVRG | | 0.90132 | | 12.57565 |
| 72 Xylene-o | 0 51142 | 0 58723 | 0 48231 | 0.60284 | 0.53634 | 0.52430 | | | | | |
| | 0 52968 | 0.70482 | 0 49743 | 0.47879 | | | AVRG | | 0.54552 | | 12.68729 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-SEP-2003 18:15
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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 73 1,1,2,2-Tetrachloroethane | 0.75679 | 0.81062 | 0.81466 | 1 00739 | 0.92201 | 0.84656 | | | | | |
| | 0.92028 | 1.08567 | 0.88573 | 0.84792 | | | AVRG | | 0.88976 | | 11.07572 |
| 74 cis-1,4-Dichloro-2-butene | 0.20707 | 0.16655 | 0.19239 | 0 19190 | 0.19485 | 0.17978 | | | | | |
| | 0.19085 | 0.22326 | 0.16810 | 0.15678 | | | AVRG | | 0.18715 | | 10 66860 |
| 75 1,2,3-Trichloropropane | +++++ | 0.09551 | 0.12152 | 0.13715 | 0.13511 | 0.12391 | | | | | |
| | 0.13413 | 0 16043 | 0 11955 | 0.11470 | | | AVRG | | 0.12689 | | 14.13768 |
| 76 Isopropylbenzene | 1 64432 | 1 73289 | 1.45639 | 1.81113 | 1.55833 | 1.52794 | | | | | |
| | 1 55207 | 2 02631 | 1.37995 | 1.36914 | | | AVRG | | 1 60585 | | 12.74814 |
| 78 Bromobenzene | 0 42294 | 0.41295 | 0.40197 | 0.47027 | 0 43117 | 0.43267 | | | | | |
| | 0 44618 | 0 57441 | 0 40248 | 0.39175 | | | AVRG | | 0.43868 | | 12.09558 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 79 n-Propylbenzene | +++++ | 1.98435 | 1.70280 | 2.01857 | 1.76082 | 1.75617 | | | | | |
| | 1 74174 | 2.29036 | 1.55878 | 1 52925 | | | AVRG | | 1.81587 | | 13.31589 |
| 80 2-Chlorotoluene | +++++ | 1 26327 | 1.05658 | 1.23580 | 1.10878 | 1.06764 | | | | | |
| | 1.09246 | 1 41242 | 0.95775 | 0.94833 | | | AVRG | | 1.12700 | | 13.39972 |
| 81 4-Chlorotoluene | +++++ | 1.41415 | 1.22010 | 1.37067 | 1.18947 | 1.17315 | | | | | |
| | 1.18218 | 1.51016 | 1.05915 | 1.02456 | | | AVRG | | 1 23818 | | 13.09264 |
| 82 1,3,5-Trimethylbenzene | 1.25703 | 1 21641 | 1.12855 | 1.32951 | 1.14114 | 1 09282 | | | | | |
| | 1 11434 | 1.45207 | 0.99690 | 0.98712 | | | AVRG | | 1.17159 | | 12.39272 |
| 83 1,2,4-Trimethylbenzene | 1.36766 | 1 28399 | 1 16025 | 1.32008 | 1 15047 | 1.12403 | | | | | |
| | 1.14606 | +++++ | +++++ | +++++ | | | AVRG | | 1.22179 | | 8.11445 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150 0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 85 tert-Butylbenzene | 1.02752 | 1.11794 | 1.01030 | 1.20781 | 1.07885 | 1.04508 | | | | | |
| | 1.05928 | 1.38461 | 0.94682 | 0.94422 | | | AVRG | | 1.08224 | | 12.16306 |
| 86 sec-Butylbenzene | 1.72243 | 1.68431 | 1.52865 | 1.82504 | 1.61275 | 1.56788 | | | | | |
| | 1.55833 | 2.03814 | 1.41382 | 1.40010 | | | AVRG | | 1 63514 | | 11.79903 |
| 87 4-Isopropyltoluene | 1.34124 | 1.28507 | 1.09669 | 1.30269 | 1.16820 | 1.12100 | | | | | |
| | 1.11928 | +++++ | +++++ | +++++ | | | AVRG | | 1.20488 | | 8.43719 |
| 89 1,3-Dichlorobenzene | 1.83203 | 1 77105 | 1.48184 | 1.82221 | 1 64755 | 1.61131 | | | | | |
| | 1.63181 | 2.11441 | 1.55188 | 1.54574 | | | AVRG | | 1.70098 | | 11.04629 |
| 90 1,4-Dichlorobenzene | 1.45265 | 1.59503 | 1.43037 | 1.76609 | 1 59973 | 1 54621 | | | | | |
| | 1.56309 | 1.99199 | 1.49975 | 1.47303 | | | AVRG | | 1.59180 | | 10.70863 |

Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 91 1,2-Dichlorobenzene | 1.32259 | 1.44556 | 1 28152 | 1 66861 | 1 52679 | 1.47879 | | | | | |
| | 1 50878 | 1.94186 | 1.41399 | 1 40932 | | | AVRG | | 1.49978 | | 12.62561 |
| 92 n-Butylbenzene | 3.08418 | 2.77441 | 2.45060 | 3.21594 | 2.93663 | 2.76597 | | | | | |
| | 2.71419 | 3.49647 | 2.57253 | 2.58370 | | | AVRG | | 2.85946 | | 11 37356 |
| 93 1,2-Dibromo-3-chloropropane | +++++ | +++++ | 0 18831 | 0 21208 | 0 23136 | 0.21510 | | | | | |
| | 0 23587 | 0.26040 | 0 21488 | 0.20161 | | | AVRG | | 0.21995 | | 10.12063 |
| 94 1,2,4-Trichlorobenzene | 0.96024 | 0.85958 | 0.99717 | 1.17436 | 1.13922 | 1.13819 | | | | | |
| | 1.19855 | +++++ | +++++ | +++++ | | | AVRG | | 1.06676 | | 12.00549 |
| 95 Naphthalene | 1 47198 | 1.54452 | 1.35162 | 1.58695 | 1.55117 | 1.45447 | | | | | |
| | 1.66104 | 2.01707 | 1 59662 | 1 55759 | | | AVRG | | 1 57930 | | 11 17024 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 96 Hexachlorobutadiene | +++++ | 1975 | 14391 | 71858 | 193080 | 403117 | | | | | |
| | 489683 | +++++ | +++++ | +++++ | | | LINR | -0 00478 | 0.71571 | | 0.99897 |
| 97 1,2,3-Trichlorobenzene | +++++ | 1.02870 | 0.87450 | 1.04815 | 0.97078 | 0.94759 | | | | | |
| | 1.03540 | 1.27421 | 0.98476 | 0.97588 | | | AVRG | | 1.01555 | | 10.87483 |
| $ 34 Dibromofluoromethane | +++++ | +++++ | +++++ | +++++ | 0.65021 | 0 61993 | | | | | |
| | 0.62581 | 0.79936 | 0.62849 | 0.58001 | | | AVRG | | 0.65063 | | 11.73671 |
| $ 37 1,2-Dichloroethane-d4 | 1.07900 | 0.89032 | 0.87518 | 0.99130 | 0.92953 | 0.82924 | | | | | |
| | 0.83024 | 0.99640 | 0.79849 | 0.80992 | | | AVRG | | 0.90296 | | 10.40574 |
| $ 56 Toluene-d8 | 1.54378 | 1.23987 | 1.17048 | 1.20602 | 1.19630 | 1.10700 | | | | | |
| | 1.09266 | 1.33811 | 1.06277 | 0.96113 | | | AVRG | | 1.19181 | | 13.56293 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V309241.B\v309181.8260.m
Cal Date : 25-Sep-2003 08:39 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| $ 77 Bromofluorobenzene | +++++ | +++++ | 0.54846 | 0.51926 | 0.49450 | 0 46995 | | | | | |
| | 0.49741 | 0.63433 | 0.45214 | 0.41832 | | | AVRG | | 0.50429 | | 13.09344 |

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |

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# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 12-2-03 | VOC2 | V21202 | CP7417 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0311-459- | 0312-016- | 0312-017- | 0311-458- | |
| 1 | 1, 2 | 1 | 1-6 | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) ✓

2.0 Initial Calibration (ICAL) : Method V21027.M ICAL SRN 02-7-30-16 02-7-30-6

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-31-12, 02-7-31-22

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V21202-11LB | MeCl2 2.98 ppb, Hexane 5.88 ppb | 1,4-DCB 4.16 ppb, naphthalene 1.33 ppb | 014 |
| V21202-12-LB | naphthalene 1.94 ppb | | 014 |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V21202-11LCS | 187 | 010 | 014 |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0311-459-1 | 3/70 | 2/35 | 018 |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

8.0 Dilutions/Re-Analysis Required NA

Narrative/Notes : MS, MSD are outside 12hr time criteria. SEE LCS

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

768 522

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID: 1001 BFB Injection Date: 12/02/03

Instrument ID: VOC2 BFB Injection Time: 0926

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 24.5 |
| 75 | 30.0 - 60.0% of mass 95 | 44.2 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.3 |
| 173 | Less than 2.0% of mass 174 | 0.4 ( 0.5)1 |
| 174 | Greater than 50.0% of mass 95 | 71.7 |
| 175 | 5.0 - 9.0% of mass 174 | 5.2 ( 7.3)1 |
| 176 | 95.0 - 101.0% of mass 174 | 72.3 (100.8)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.4 ( 7.4)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V2120211LCS | 11LCS | 1003LJ | 12/02/03 | 1038 |
| 02 | CCV100PPB | CCV100PPB | 1003J | 12/02/03 | 1038 |
| 03 | 031145901 | 031145901 | 1006 | 12/02/03 | 1243 |
| 04 | V2120212LB | 12LB | 1012 | 12/02/03 | 1630 |
| 05 | 031145806 | 031145806 | 1014 | 12/02/03 | 1741 |
| 06 | 031145801 | 031145801 | 1015 | 12/02/03 | 1816 |
| 07 | 031145802 | 031145802 | 1016 | 12/02/03 | 1851 |
| 08 | 031145803 | 031145803 | 1017 | 12/02/03 | 1927 |
| 09 | 031145804 | 031145804 | 1018 | 12/02/03 | 2002 |
| 10 | 031145805 | 031145805 | 1019 | 12/02/03 | 2037 |
| 11 | 031145901MS | MS | 1021 | 12/02/03 | 2148 |
| 12 | 031145901MSD | MSD | 1022 | 12/02/03 | 2223 |
| 13 | | | | | |
| 14 | | | | | |
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768 523

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Instrument ID: VOC2 Calibration Date: 12/02/03 Time: 1038

Lab File ID: 1003J Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 112.5 | 100.0 | 2ORDR | 12.5 | 30.0 | |
| Benzene | 113.1 | 100.0 | AVRG | 13.1 | 30.0 | |
| Bromodichloromethane | 103.0 | 100.0 | LINR | 3.0 | 30.0 | |
| Bromoform | 86.60 | 100.0 | AVRG | 13.4 | 30.0 | |
| Bromomethane | 127.5 | 100.0 | 2ORDR | 27.5 | 30.0 | |
| 2-Butanone | 112.8 | 100.0 | AVRG | 12.8 | 30.0 | |
| Carbon Disulfide | 84.88 | 100.0 | AVRG | 15.1 | 30.0 | |
| Carbon Tetrachloride | 103.0 | 100.0 | AVRG | 3.0 | 30.0 | |
| Chlorobenzene | 101.6 | 100.0 | AVRG | 1.6 | 30.0 | |
| Chlorodibromomethane | 93.16 | 100.0 | LINR | 6.8 | 30.0 | |
| Chloroethane | 131.8 | 100.0 | AVRG | 31.8 | 30.0 | <- |
| (2) | 131.8 | 100.0 | AVRG | 31.8 | 30.0 | <- |
| Chloroform | 103.8 | 100.0 | AVRG | 3.8 | 20.0 | |
| Chloromethane | 111.6 | 100.0 | AVRG | 11.6 | 30.0 | |
| 1,1-Dichloroethane | 111.7 | 100.0 | AVRG | 11.7 | 30.0 | |
| 1,2-Dichloroethane | 106.1 | 100.0 | AVRG | 6.1 | 30.0 | |
| 1,1-Dichloroethene | 93.23 | 100.0 | AVRG | 6.8 | 20.0 | |
| trans-1,2-Dichloroethene | 103.0 | 100.0 | AVRG | 3.0 | 30.0 | |
| 1,2-Dichloropropane | 105.7 | 100.0 | AVRG | 5.7 | 20.0 | |
| cis-1,3-Dichloropropene | 111.9 | 100.0 | AVRG | 11.9 | 30.0 | |
| trans-1,3-Dichloropropene | 107.9 | 100.0 | AVRG | 7.9 | 30.0 | |
| Ethylbenzene | 101.9 | 100.0 | AVRG | 1.9 | 20.0 | |
| 2-Hexanone | 114.1 | 100.0 | AVRG | 14.1 | 30.0 | |
| Methylene Chloride | 103.8 | 100.0 | LINR | 3.8 | 30.0 | |
| 4-Methyl-2-Pentanone | 102.1 | 100.0 | AVRG | 2.1 | 30.0 | |
| Styrene | 100.6 | 100.0 | AVRG | 0.6 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 88.77 | 100.0 | AVRG | 11.2 | 30.0 | |
| Tetrachloroethene | 108.2 | 100.0 | AVRG | 8.2 | 30.0 | |
| Toluene | 106.3 | 100.0 | AVRG | 6.3 | 20.0 | |
| 1,1,1-Trichloroethane | 104.6 | 100.0 | AVRG | 4.6 | 30.0 | |
| 1,1,2-Trichloroethane | 99.85 | 100.0 | AVRG | 0.2 | 30.0 | |
| Trichloroethene | 107.5 | 100.0 | AVRG | 7.5 | 30.0 | |
| Vinyl Chloride | 114.4 | 100.0 | AVRG | 14.4 | 20.0 | |
| Xylene-mp | 200.3 | 200.0 | AVRG | 0.2 | 30.0 | |
| Xylene-o | 93.33 | 100.0 | AVRG | 6.7 | 30.0 | |
| cis-1,2-Dichloroethene | 107.8 | 100.0 | AVRG | 7.8 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 524

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Instrument ID: VOC2 Calibration Date: 12/02/03 Time: 1038

Lab File ID: 1003J Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 44.43 | 50.00 | AVRG | 11.1 | 30.0 |
| Toluene-d8 | 55.26 | 50.00 | AVRG | 10.5 | 30.0 |
| Bromofluorobenzene | 59.04 | 50.00 | AVRG | 18.1 | 30.0 |
| 1,2-Dichloroethane-d4 | 41.24 | 50.00 | AVRG | 17.5 | 30.0 |

768 525

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID (Standard): 1003J Date Analyzed: 12/02/03

Instrument ID: VOC2 Time Analyzed: 1038

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 313332 | 13.81 | 596997 | 15.22 | 588790 | 20.60 |
| | UPPER LIMIT | 626664 | 14.31 | 1193994 | 15.72 | 1177580 | 21.10 |
| | LOWER LIMIT | 156666 | 13.31 | 298499 | 14.72 | 294395 | 20.10 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | 031145901 | 330796 | 13.82 | 660825 | 15.23 | 653527 | 20.61 |
| 02 | V2120212LB | 321210 | 13.84 | 645226 | 15.25 | 644929 | 20.63 |
| 03 | 031145806 | 306443 | 13.83 | 660706 | 15.25 | 618417 | 20.63 |
| 04 | 031145801 | 322194 | 13.83 | 654419 | 15.25 | 580540 | 20.63 |
| 05 | 031145802 | 325100 | 13.83 | 615426 | 15.24 | 602845 | 20.63 |
| 06 | 031145803 | 330764 | 13.84 | 595443 | 15.25 | 624652 | 20.63 |
| 07 | 031145804 | 318044 | 13.84 | 689143 | 15.25 | 635066 | 20.63 |
| 08 | 031145805 | 310195 | 13.85 | 617348 | 15.26 | 573220 | 20.64 |
| 09 | 031145901MS | 351273 | 13.84 | 710024 | 15.25 | 680200 | 20.64 |
| 10 | 031145901MSD | 391639 | 13.84 | 768654 | 15.25 | 739837 | 20.64 |
| 11 | | | | | | | |
| 12 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 526

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311458

Lab File ID (Standard): 1003J Date Analyzed: 12/02/03

Instrument ID: VOC2 Time Analyzed: 1038

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4(DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 435875 | 24.98 | | | | |
| | UPPER LIMIT | 871750 | 25.48 | | | | |
| | LOWER LIMIT | 217938 | 24.48 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | 031145901 | 411273 | 24.97 | | | | |
| 02 | V2120212LB | 389350 | 24.99 | | | | |
| 03 | 031145806 | 376563 | 24.99 | | | | |
| 04 | 031145801 | 381520 | 24.99 | | | | |
| 05 | 031145802 | 351199 | 25.00 | | | | |
| 06 | 031145803 | 372552 | 25.00 | | | | |
| 07 | 031145804 | 369299 | 25.00 | | | | |
| 08 | 031145805 | 321898 | 25.01 | | | | |
| 09 | 031145901MS | 556694 | 25.00 | | | | |
| 10 | 031145901MSD | 557194 | 25.00 | | | | |
| 11 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Report Date : 05-Nov-2003 13:12

Lisa Savage 11-5-03



11/11/5/03 Cathy 11-5-03

768 527

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

SRN: O2-7-30-6
O2-7-30-16

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

Calibration File Names:
Level 1: \\ETCBDC\DD\chem\voc2.i\V210271.B\1003.d
Level 2: \\ETCBDC\DD\chem\voc2.i\V210271.B\1005.d
Level 3: \\ETCBDC\DD\chem\voc2.i\V210271.B\1006.d
Level 4: \\ETCBDC\DD\chem\voc2.i\V210271.B\1007.d
Level 5: \\ETCBDC\DD\chem\voc2.i\V210271.B\1008.d
Level 6: \\ETCBDC\DD\chem\voc2.i\V210271.B\1009.d
Level 7: \\ETCBDC\DD\chem\voc2.i\V210271.B\1010.d
Level 8: \\ETCBDC\DD\chem\voc2.i\V210271.B\1011.d
Level 9: \\ETCBDC\DD\chem\voc2.i\V210271.B\1012.d

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 1 Dichlorodifluoromethane | 1.08728 | 1.06940 | 1.06991 | 0.99436 | 1.12786 | 1.15447 | | | | | |
| | 1.23917 | 1.13565 | 1.30901 | | | | AVRG | | 1.13190 | | 8.38548 |

T9CC

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 2 Chloromethane | 0.27418 | 0.25884 | 0.30096 | 0.25679 | 0.29987 | 0.29740 | | | | | |
| | 0.29933 | 0.27135 | 0.28648 | | | | AVRG | | 0.28280 | | 6.34699 |
| 3 Vinyl Chloride | 0.79719 | 0.66594 | 0.80826 | 0.70850 | 0.82670 | 0.82943 | | | | | |
| | 0 86205 | 0.74856 | 0.83056 | | | | AVRG | | 0.78635 | | 8.26019 |
| 4 Bromomethane | 2110 | 3432 | 15721 | 75189 | 183627 | 453577 | | | | | |
| | 546924 | 729908 | 863874 | | | | QUAD | 0.02038 | 2.46256 | -0.28367 | 0.99615 |
| 5 Chloroethane(1) | 0 23396 | 0.19256 | 0.20013 | 0.18019 | 0.17504 | 0.17645 | | | | | |
| | 0 16422 | 0.14138 | 0.16216 | | | | AVRG | | 0.18068 | | 14.60003 |
| (2) | 0.07101 | 0.06385 | 0.06364 | 0.05549 | 0.05708 | 0.05855 | | | | | |
| | 0.05386 | 0.04644 | 0.05379 | | | | AVRG | | 0 05819 | | 12.31241 |

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768 528

768 529

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 6 Trichlorofluoromethane | 1.58369 | 1.39006 | 1.31962 | 1.31655 | 1.47848 | 1.50796 | | | | | |
| | 1.58664 | 1.37742 | 1.60302 | | | | AVRG | | 1.46260 | | 7.88373 |
| 7 Furan | +++++ | 0.99259 | 0.96446 | 0.86343 | 0.92189 | 0.98384 | | | | | |
| | 0.99804 | 0.83692 | 1.00509 | | | | AVRG | | 0.94578 | | 6.85665 |
| 8 Acrolein | +++++ | +++++ | +++++ | +++++ | 0.00842 | 0.00984 | | | | | |
| | 0.00880 | 0.00823 | 0.00961 | | | | AVRG | | 0.00898 | | 7.95149 |
| 9 1,1,2-trichloro-1,2,2-trifluo | 0.97208 | 0.83702 | 0.87387 | 0.80153 | 0.92849 | 0.85917 | | | | | |
| | 0.96046 | 0.84495 | 0.96093 | | | | AVRG | | 0.89317 | | 7.08084 |
| 10 1,1-Dichloroethene | 1.96281 | 1.78409 | 1.82834 | 1.66904 | 1.89362 | 1.77145 | | | | | |
| | 1.83212 | 1.64314 | 1.85076 | | | | AVRG | | 1.80393 | | 5.62486 |

000083

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 11 Acetone | +++++ | +++++ | 9574 | 35938 | 83842 | 163015 | | | | | |
| | 200629 | 272236 | 320295 | | | | QUAD | -0.07262 | 6.82609 | -2.06270 | 0.99550 |
| 12 Iodomethane | 1005 | 1984 | 16654 | 200624 | 728248 | 1776382 | | | | | |
| | 2297406 | 2969978 | 3416909 | | | | QUAD | 0.07430 | 0.57635 | -0.01308 | 0.99504 |
| 13 Carbon Disulfide | 1.94144 | 1.73129 | 1.72043 | 1.50405 | 1.76386 | 1.70954 | | | | | |
| | 1.85513 | 1.70904 | 1.80786 | | | | AVRG | | 1.74918 | | 6.89210 |
| 14 Acetonitrile | +++++ | 0.09669 | 0.09970 | 0 08679 | 0.10259 | 0.09817 | | | | | |
| | 0.10276 | 0.09279 | 0.10322 | | | | AVRG | | 0.09784 | | 5.83775 |
| 15 Allyl chloride | +++++ | 1.02633 | 0.99512 | 0.86786 | 1.02807 | 0.98315 | | | | | |
| | 1.02764 | 0 92983 | 1.03179 | | | | AVRG | | 0.98623 | | 5.98999 |

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768 530

768 531

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 16 Methylene Chloride | +++++ | 137729 | 184366 | 444125 | 931692 | 1768727 | | | | | |
| | 2136499 | 2890759 | 3355601 | | | | LINR | -0.07667 | 1.84018 | | 0.99344 |
| 17 Acrylonitrile | +++++ | +++++ | +++++ | 0.16328 | 0.17399 | 0.16451 | | | | | |
| | 0.15178 | 0.13899 | 0.15121 | | | | AVRG | | 0.15729 | | 7.88474 |
| 18 Methyl-tertbutyl-Ether | 1.39749 | 1.25385 | 1.18731 | 1.17886 | 1.33501 | 1.27871 | | | | | |
| | 1.30857 | 1.21106 | 1.33384 | | | | AVRG | | 1.27608 | | 5.85545 |
| 19 trans-1,2-Dichloroethene | 1.99800 | 1.77406 | 1.63776 | 1.60091 | 1.79173 | 1.65841 | | | | | |
| | 1.70061 | 1.52806 | 1.62360 | | | | AVRG | | 1.70146 | | 8.14134 |
| 20 Hexane | 25439 | 30026 | 67694 | 231884 | 553271 | 1030611 | | | | | |
| | 1407868 | 1824231 | 1997707 | | | | LINR | -0.02276 | 0.97348 | | 0.99780 |

000085

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 21 Tetrahydrofuran | +++++ | +++++ | 0.34341 | 0.34707 | 0.37803 | 0.34695 | | | | | |
| | 0.36380 | 0.31073 | 0.33708 | | | | AVRG | | 0.34672 | | 6.08542 |
| 22 1,1-Dichloroethane | 1.72298 | 1.67930 | 1.63297 | 1.58044 | 1.64762 | 1.58341 | | | | | |
| | 1.60589 | 1.39715 | 1.59890 | | | | AVRG | | 1.60541 | | 5.67258 |
| 23 Ethyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7.41378 |
| 24 Vinyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7.41378 |
| 25 Di isopropyl ether | 2.32559 | 2.21279 | 2.06739 | 2.03145 | 2.10213 | 1.90142 | | | | | |
| | 1.87642 | 1.65522 | 1.90035 | | | | AVRG | | 2.00808 | | 9.96672 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
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Quant Method : ISTD
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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 26 Chloroprene | 1.73492 | 1.69886 | 1.54157 | 1.51071 | 1.77374 | 1.52793 | | | | | |
| | 1.71860 | 1.53071 | 1.71474 | | | | AVRG | | 1.63909 | | 6.57893 |
| 27 2-Butanone | +++++ | 0.18597 | 0.17600 | 0.16363 | 0.16153 | 0.16763 | | | | | |
| | 0.17684 | 0.18320 | 0.17521 | | | | AVRG | | 0.17375 | | 5.07669 |
| 28 2,2-Dichloropropane | 1.20793 | 1.16396 | 1.13790 | 1.05105 | 1.21931 | 1.13073 | | | | | |
| | 1.22747 | 1.12257 | 1.20808 | | | | AVRG | | 1.16322 | | 5.01435 |
| 29 cis-1,2-Dichloroethene | 0.93480 | 0.81969 | 0.84559 | 0.76941 | 0.85561 | 0.82321 | | | | | |
| | 0.91076 | 0.78553 | 0.90186 | | | | AVRG | | 0.84961 | | 6.69847 |
| 30 Propionitrile | 0.03458 | 0.03619 | 0.04725 | 0.04105 | 0.04076 | 0.03601 | | | | | |
| | 0.03634 | +++++ | +++++ | | | | AVRG | | 0.03888 | | 11.44021 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 31 Bromochloromethane | 0 42771 | 0.33008 | 0.38402 | 0.33930 | 0.37696 | 0.36359 | | | | | |
| | 0.35675 | 0.31847 | 0.34601 | | | | AVRG | | 0.36032 | | 9.16041 |
| 32 Chloroform | +++++ | 1.94057 | 1.72069 | 1.45106 | 1.62845 | 1.54955 | | | | | |
| | 1 59697 | 1 42710 | 1.62305 | | | | AVRG | | 1.61718 | | 10.02992 |
| 35 1,1,1-Trichloroethane | 2.49608 | 1.98780 | 2.02337 | 1.77720 | 2.08485 | 1.97610 | | | | | |
| | 2.14747 | 1.88856 | 2.08454 | | | | AVRG | | 2.05177 | | 9.76881 |
| 36 Carbon Tetrachloride | 1 38722 | 1.18129 | 1.14897 | 1.06672 | 1.26097 | 1.20375 | | | | | |
| | 1 33038 | 1 21328 | 1.30384 | | | | AVRG | | 1.23294 | | 7.99326 |
| 37 1,1-Dichloropropene | 1.02319 | 0.74722 | 0.76464 | 0.66756 | 0.77553 | 0.71591 | | | | | |
| | 0.78079 | 0.83278 | 0 74469 | | | | AVRG | | 0.78359 | | 12.85227 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 39 Benzene | 2.16787 | 1.92638 | 1.84891 | 1.90071 | 2.05859 | 1.97517 | | | | | |
| | 2.15374 | 1.93548 | 2.18167 | | | | AVRG | | 2.01650 | | 6.28955 |
| 40 1,2-Dichloroethane | 1.50787 | 1.38094 | 1.37914 | 1.28682 | 1.32957 | 1.21492 | | | | | |
| | 1.20473 | 1.09502 | 1.25076 | | | | AVRG | | 1.29442 | | 9.36465 |
| 42 Trichloroethene | +++++ | 0.38385 | 0.44715 | 0.38102 | 0.44967 | 0.48524 | | | | | |
| | 0.50147 | 0.44285 | 0.50707 | | | | AVRG | | 0.44979 | | 10.74179 |
| 43 1,2-Dichloropropane | 0.37873 | 0.31831 | 0.36991 | 0.30942 | 0.33859 | 0.31613 | | | | | |
| | 0.34040 | 0.25833 | 0.30165 | | | | AVRG | | 0.32572 | | 11.21690 |
| 44 Methyl methacrylate | 0.18420 | 0.15062 | 0.18853 | 0.16225 | 0 17528 | 0.17300 | | | | | |
| | 0.18243 | 0.15733 | 0.18656 | | | | AVRG | | 0.17336 | | 7.91278 |

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Environmental Testing and Consulting, Inc.

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 45 n-Propyl Acetate | +++++ | 0.58382 | 0.71055 | 0.60229 | 0.62213 | 0.57016 | | | | | |
| | 0.58523 | 0.48441 | 0.53312 | | | | AVRG | | 0.58646 | | 11.24720 |
| 46 Isobutyl Alcohol | 0.08170 | 0.08560 | 0.09292 | 0.08710 | 0.08810 | 0.07417 | | | | | |
| | 0.07720 | 0.07095 | 0.07510 | | | | AVRG | | 0.08143 | | 9.17609 |
| 47 1,4-Dioxane | +++++ | +++++ | 0.00287 | 0.00225 | 0.00244 | 0.00237 | | | | | |
| | 0.00232 | 0.00200 | 0.00212 | | | | AVRG | | 0.00234 | | 11.92316 |
| 48 Dibromomethane | 0.24033 | 0 20665 | 0.24449 | 0.20137 | 0.22516 | 0.22799 | | | | | |
| | 0.23304 | 0.19637 | 0.21615 | | | | AVRG | | 0.22128 | | 7.75757 |
| 49 Bromodichloromethane | 15329 | 21223 | 62045 | 233500 | 549076 | 1043517 | | | | | |
| | 1310741 | 1873366 | 2105667 | | | | LINR | 0.00385 | 0.63264 | | 0 99548 |

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Environmental Testing and Consulting, Inc.

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 50 cis-1,3-Dichloropropene | 0.55873 | 0.43357 | 0.53771 | 0.43338 | 0.50941 | 0.53573 | | | | | |
| | 0.54806 | 0.48978 | 0.54713 | | | | AVRG | | 0.51039 | | 9.48588 |
| 51 4-Methyl-2-Pentanone | +++++ | +++++ | 0.24942 | 0.19062 | 0.21328 | 0.21927 | | | | | |
| | 0.21671 | 0.18314 | 0.21567 | | | | AVRG | | 0.21259 | | 10.12219 |
| 53 Toluene | +++++ | 2.14006 | 2.25713 | 1.83592 | 2.21801 | 2.22063 | | | | | |
| | 2.30623 | 2.00062 | 2.15564 | | | | AVRG | | 2.14178 | | 7.19113 |
| 54 trans-1,3-Dichloropropene | +++++ | 0.36207 | 0.42674 | 0.35710 | 0.41006 | 0.42913 | | | | | |
| | 0.40013 | 0.34541 | 0.37425 | | | | AVRG | | 0.38811 | | 8.40899 |
| 55 Ethyl methacrylate | 0.21300 | 0.17525 | 0.20577 | 0.18313 | 0.22501 | 0.24632 | | | | | |
| | 0.24892 | 0.22554 | 0.25836 | | | | AVRG | | 0.22014 | | 13.11586 |

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Environmental Testing and Consulting, Inc.

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Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 / 120.0000 Level 7 | 1.0000 Level 2 / 150.0000 Level 8 | 5.0000 Level 3 / 170.0000 Level 9 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 56 1,1,2-Trichloroethane | 0.38453 | 0.32371 | 0.38211 | 0.31196 | 0.36150 | 0.37384 | | | | | |
| | 0.37699 | 0.33422 | 0.38025 | | | | AVRG | | 0.35879 | | 7.79622 |
| 57 2-Hexanone | +++++ | +++++ | 0.18219 | 0.17094 | 0.19537 | 0.19277 | | | | | |
| | 0.21044 | 0.18382 | 0.21636 | | | | AVRG | | 0.19313 | | 8.30281 |
| 58 Tetrachloroethene | +++++ | 0.29703 | 0.32185 | 0.28649 | 0.34014 | 0.30667 | | | | | |
| | 0.37608 | 0.29365 | 0.33218 | | | | AVRG | | 0.31926 | | 9.33722 |
| 59 1,3-Dichloropropane | 0.53282 | 0.38670 | 0.46948 | 0.42407 | 0.50813 | 0.54797 | | | | | |
| | 0.59797 | 0.52953 | +++++ | | | | AVRG | | 0.49958 | | 13.83598 |
| 60 Chlorodibromomethane | 9118 | 12073 | 37967 | 139386 | 338548 | 634506 | | | | | |
| | 799459 | 1139690 | 1268794 | | | | LINR | 0.00052 | 0.38320 | | 0.99586 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 61 1,2-Dibromoethane | 0.43816 | 0.32466 | 0.37627 | 0.32455 | 0.37806 | 0.37115 | | | | | |
| | 0.38978 | 0.34864 | 0.40176 | | | | AVRG | | 0.37256 | | 9.80291 |
| 63 Chlorobenzene | 1.54330 | 1.24715 | 1.31378 | 1.27232 | 1.41544 | 1.32125 | | | | | |
| | 1.48365 | 1.33124 | 1.42145 | | | | AVRG | | 1.37218 | | 7.25539 |
| 64 Ethylbenzene | 2.88333 | 2.31113 | 2.38637 | 2.30352 | 2.58022 | 2.30369 | | | | | |
| | 2.69046 | 2.28665 | 2.31989 | | | | AVRG | | 2.45170 | | 8.79945 |
| 65 2-Chloroethyl vinyl ether | +++++ | 0.17290 | 0.20290 | 0.16128 | 0.17116 | 0.15426 | | | | | |
| | 0.16781 | 0.13142 | 0.14766 | | | | AVRG | | 0.16368 | | 12.83210 |
| 66 1,1,1,2-Tetrachloroethane | 0.65800 | 0.54495 | 0.60537 | 0.55887 | 0.58119 | 0.49907 | | | | | |
| | 0.54050 | 0.43840 | 0.42948 | | | | AVRG | | 0.53954 | | 13.82105 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 67 Xylene-mp | 2.68057 | 2.10709 | 2.09676 | 1.96837 | 2.13818 | 1.92281 | | | | | |
| | 2 22755 | 1.97216 | 1.95471 | | | | AVRG | | 2.11869 | | 11.04250 |
| 68 Xylene-o | 2.45286 | 2.03736 | 1.92376 | 1.90413 | 2.06673 | 2.01442 | | | | | |
| | 2.14972 | 1.90370 | 1.77529 | | | | AVRG | | 2.02533 | | 9.60198 |
| 69 Styrene | 1 36148 | 1.16608 | 1.11345 | 1.11325 | 1.34022 | 1.40010 | | | | | |
| | 1 63015 | 1 53207 | 1.49043 | | | | AVRG | | 1.34969 | | 13.85928 |
| 70 Bromoform | 0.18695 | 0.15844 | 0.15910 | 0.14982 | 0.15908 | 0.17490 | | | | | |
| | 0.16718 | 0.14767 | 0.15660 | | | | AVRG | | 0.16219 | | 7.63747 |
| 71 Isopropylbenzene | 2.73708 | 2.45738 | 2.24127 | 2.37198 | 2.42651 | 2.50860 | | | | | |
| | 2 75746 | 2 29550 | 2.27300 | | | | AVRG | | 2 45209 | | 7.70813 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 72 trans-1,4-Dichloro-2-butene | 1209 | 2201 | 10687 | 52203 | 115915 | 253131 | | | | | |
| | 303067 | 406067 | 449246 | | | | QUAD | 0.04103 | 5.41254 | 2.91465 | 0.99621 |
| 74 1,1,2,2-Tetrachloroethane | +++++ | 0.46749 | 0.51133 | 0.45123 | 0.46145 | 0.42996 | | | | | |
| | 0.39987 | 0.32402 | +++++ | | | | AVRG | | 0.43505 | | 13.73442 |
| 75 cis-1,4-Dichloro-2-butene | +++++ | 0.15425 | 0.14002 | 0.12777 | 0.14233 | 0.15057 | | | | | |
| | 0.14178 | 0.13009 | 0.12690 | | | | AVRG | | 0.13921 | | 7.37562 |
| 76 1,2,3-Trichloropropane | 0.42312 | 0.37748 | 0.41774 | 0.38518 | 0.42720 | 0.42794 | | | | | |
| | 0.43121 | 0.37139 | 0.38033 | | | | AVRG | | 0.40462 | | 6.23009 |
| 77 Bromobenzene | 1.01802 | 0.85644 | 0.83267 | 0.77610 | 0.85233 | 0.80724 | | | | | |
| | 0.83833 | 0.69970 | 0.70888 | | | | AVRG | | 0.82108 | | 11.47214 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 / 120.0000 Level 7 | 1.0000 Level 2 / 150.0000 Level 8 | 5.0000 Level 3 / 170.0000 Level 9 | 20 0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 78 n-Propylbenzene | 3.10958 | 2.68395 | 2.53920 | 2.40741 | 2.65323 | 2.56535 | | | | | |
| | 2.92483 | 2.55236 | 2.52244 | | | | AVRG | | 2.66204 | | 8.30160 |
| 79 2-Chlorotoluene | 2.17728 | 1.94037 | 1.76537 | 1.85905 | 2.01312 | 1 90344 | | | | | |
| | 2.02982 | 1.83416 | 1.90146 | | | | AVRG | | 1.93601 | | 6.34307 |
| 80 1,3,5-Trimethylbenzene | 2.41519 | 2.18407 | 1.99441 | 2.00766 | 2.22535 | 2.07357 | | | | | |
| | 2.20538 | 2.02859 | 2.05630 | | | | AVRG | | 2.13228 | | 6.44821 |
| 81 4-Chlorotoluene | 2.07628 | 1.61342 | 1.51853 | 1.56823 | 1.66843 | 1.47878 | | | | | |
| | 1 72526 | 1.52782 | 1.59306 | | | | AVRG | | 1.64109 | | 10.98094 |
| 82 tert-Butylbenzene | 2 64308 | 2 21011 | 2.16559 | 2.25262 | 2.46373 | 2.21315 | | | | | |
| | 2.58999 | 2.24803 | 2.24537 | | | | AVRG | | 2.33685 | | 7.68483 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 83 1,2,4-Trimethylbenzene | 2.69288 | 2.10289 | 1.86077 | 1.89560 | 2.14903 | 1.87078 | | | | | |
| | 2.14108 | 1.90262 | 1.93376 | | | | AVRG | | 2.06105 | | 12.83804 |
| 84 sec-Butylbenzene | 3.05850 | 2.64497 | 2.52445 | 2.49690 | 2.73935 | 2.48127 | | | | | |
| | 2.82657 | 2.52940 | 2.52763 | | | | AVRG | | 2.64767 | | 7.35281 |
| 85 4-Isopropyltoluene | 2.46534 | 2.18453 | 2.05135 | 2.03199 | 2.20056 | 2.06891 | | | | | |
| | 2.30569 | 2.11512 | 2.08492 | | | | AVRG | | 2.16760 | | 6.53097 |
| 86 1,3-Dichlorobenzene | +++++ | 1.56527 | 1.51691 | 1.38604 | 1.42619 | 1.17645 | | | | | |
| | 1.22068 | 1.03834 | +++++ | | | | AVRG | | 1.33284 | | 14.47136 |
| 88 1,4-Dichlorobenzene | 9742 | 17227 | 72695 | 308927 | 671173 | 1272820 | | | | | |
| | 1717395 | 2398553 | 2581039 | | | | QUAD | 0.01837 | 0.57609 | 0.14649 | 0.99620 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 89 n-Butylbenzene | +++++ | 2.80335 | 2.68476 | 2.62002 | 2.58046 | 2.26980 | | | | | |
| | 2.28374 | 1 90978 | +++++ | | | | AVRG | | 2.45027 | | 12.66533 |
| 90 1,2-Dichlorobenzene | +++++ | 1.29464 | 1.26604 | 1.16103 | 1.13151 | 1.05822 | | | | | |
| | 1 05232 | 0.88210 | 0.88260 | | | | AVRG | | 1.09106 | | 14.21160 |
| 91 1,2-Dibromo-3-chloropropane | +++++ | 0.10998 | 0.11665 | 0.10370 | 0.10379 | 0.08617 | | | | | |
| | 0.08535 | +++++ | +++++ | | | | AVRG | | 0.10094 | | 12.57527 |
| 92 1,2,4-Trichlorobenzene | +++++ | 0.47508 | 0.44425 | 0.38028 | 0.46860 | 0.36372 | | | | | |
| | 0.39765 | 0.33440 | +++++ | | | | AVRG | | 0.40914 | | 13.28624 |
| 93 Hexachlorobutadiene | +++++ | 0.62921 | 0.63757 | 0.52836 | 0.61272 | 0.47314 | | | | | |
| | 0.50322 | +++++ | +++++ | | | | AVRG | | 0.56404 | | 12.60134 |

000098

768 511

768 545

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 / 120.0000 Level 7 | 1.0000 Level 2 / 150.0000 Level 8 | 5.0000 Level 3 / 170.0000 Level 9 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 94 Naphthalene | +++++ / 0.71795 | 0.92286 / 0.65252 | 0.82883 / +++++ | 0.70421 | 0.79676 | 0.64921 | AVRG | | 0.75319 | | 13.38633 |
| 95 1,2,3-Trichlorobenzene | +++++ / 503201 | 5124 / +++++ | 22270 / +++++ | 77613 | 214055 | 373381 | LINR | -0.04537 | 0.32325 | | 0.99104 |
| $ 33 Dibromofluoromethane | 0.95459 / 0.84310 | 0.77135 / 0.75554 | 0.89134 / 0.84995 | 0.73777 | 0 81296 | 0.86282 | AVRG | | 0.83105 | | 8.36964 |
| $ 38 1,2-Dichloroethane-d4 | +++++ / 0.34586 | +++++ / 0.29811 | 0.33864 / +++++ | 0.27514 | 0.30876 | 0.34271 | AVRG | | 0.31821 | | 9.03277 |
| $ 52 Toluene-d8 | 2.00621 / 1.75526 | 1.48673 / 1.58461 | 1.96157 / 1.79532 | 1.40532 | 1.74527 | 1.96950 | AVRG | | 1.74553 | | 12.41956 |

0000099

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| $ 73 Bromofluorobenzene | 0.95914 | 0.71940 | 0.74619 | 0.66607 | 0.67991 | 0.79907 | | | | | |
| | 0.70006 | 0.64044 | 0.65976 | | | | AVRG | | 0.73000 | | 13.53469 |

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |
| Quad | Amt = b + m1*Rsp + m2*Rsp^2 | Response |

0001100

768 546

**ENVIRONMENTAL TESTING & CONSULTING, INC.**
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

*Founded 1972*

November 13, 2003

Mr. Kraig Smith
Jacobs
600 William Northern Blvd.
Tullahoma, TN 37388

Ref: Analytical Testing
ETC Order # 0310781
Project Description Memphis Defense Depot

Project Number C5X51115

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The EPA requires that analysis for pH, dissolved oxygen and total residual chlorine be analyzed in the field. Analyses and results reported which do not indicate "Field" for these parameters were analyzed outside the holding time as specified in Table II of 40 CFR Part 136.3.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the USEPA.

The results are shown on the attached analysis report(s). Please do not hesitate to contact our office if you have any questions.

Sincerely,

Connie Bradberry

Connie Bradberry
Laboratory Project Manager

sh
Attachment

JACOBS_DDMT

Certifications
*NELAP - National Evironmental Laboratory Accreditation Program*
*USACE - Approved Laboratory US Army Corps of Engineers*

| | | | | | |
|---|---|---|---|---|---|
| *Alabama* | *#40750* | *Mississippi* | | *EPA* | *#TN00012* |
| *Arkansas* | *#88-0650* | *Oklahoma* | *#9311* | *USDA* | *#S-46279* |
| *Illinois* | *#000537* | *Tennessee* | *#02027* | | |
| *Kentucky* | *#90047* | *Virginia* | *#00106* | | |
| *Louisiana* | *#04015* | | | | |

# Environmental Testing & Consulting, Inc.

## Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

| | |
|---|---|
| **Q** | Surrogate Recovery Outside QC Limits |
| **J** | Estimated Value. Presence of the compound was confirmed but less than the |
| | reported detection limit.[1] |
| **E** | Concentration exceeds the established method calibration range but is within |
| | the working range of the instrument. |
| **B** | Analyte detected in the associated Method Blank. |
| **U** | Reported result was unconfirmed. Refer to Case Narrative. |
| **C** | Result reported from GC/MS confirmation analysis. |
| **M** | Result reported represents a minimum value. Refer to Case Narrative. |
| **NC** | Result reported from Primary Column. Result did not confirm. |
| * | QC Data (percent recovery/RPD for a particular analyte was outside QC Limits) |

**1** Estimated values are not reported for the following common laboratory contaminants:

Acetone
Methylene Chloride
Toluene
Phthalates
Sodium
Zinc

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

768 549

Client Name Jacobs ETC Order #0310781

Site ID Memphis Defense Depot C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031078101 | RW-9 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078102 | RW-900 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078103 | ERB-5 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078104 | RW-8 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078105 | RW-7 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078106 | RW-6 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078107 | RW-5 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078108 | RW-3 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078109 | RW-2 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078110 | RW-200 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078111 | RW-1B | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078112 | RW-1A | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078113 | RW-1 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

11/4/03 CS

768 550

Environmental Testing & Consulting, Inc.

# Login
# Chain-of-Custody

Environmental Testing & Consulting, Inc 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0310783
ETC Quote No

| Company Name | Phone # 931-343-6448 | RUSH[2] | |
|---|---|---|---|
| Jacobs | PO # | Ice | |
| Project/Site (Include State) Memphis Depot, TN | FID # | | |
| | E-Mail | | |

Type of Event[1] Single Daily Weekly Monthly Quarterly Semi-Annual Annual

Project # CS251115

Project Manager/Contact Kenny Smith

Matrix
1 Wastewater 4 Sludge
2 Aqueous 5 Oil/Solvent
3 Soil/Sediment 6 Other

Analysis Requested (Note special detection limits / methods)

VOC

Which Regs Apply?
- NPDES
- Wastewater
- RCRA
- UST
- Risk Based Limits
- TRRP 13
- LA RECAP
- USACE

| # of Cont | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 2 | RW-9 | | 10/29/03 | 1545 | water | GRAB | X | |
| 3 | RW-90C | | | 1545 | | | X | |
| 3 | ERB-5 | | | 1550 | | | X | |
| 3 | RW-8 | | | 1610 | | | X | |
| 3 | RW-7 | | | 1615 | | | X | |
| 3 | RW-6 | | | 1620 | | | X | |
| 3 | RW-5 | | | 1630 | | | X | |
| 3 | RW-3 | | | 1640 | | | X | |
| 3 | RW-2 | | | 1700 | | | X | |
| 3 | RW-200 | | | 1700 | | | X | |
| 3 | RW-18 | | | 1705 | | | X | |

| Sampled By | Method of Shipment | Blank/Cooler Temp | Remarks |
|---|---|---|---|
| K. Smith | Hand Delivery | ICE | |

| | DATE | TIME | | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY (sign) | 10/29/03 | 1750 | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) | DATE 10/30/03 | TIME 1755 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

768 551

Please return ETC Sample Kit Request Form with chain of custody
Distribution: Original accompanies samples to the laboratory Pink copy for Field Crew

Environmental Testing & Consulting, Inc 2924 Walnut Grove Road
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 0310782
ETC Quote No

768 552

| Company Name | Phone # 931-393-6448 | RUSH[2] |
|---|---|---|
| Jacobs | PO # | Ice |
| Project/Site (Include State) | FID # | |
| Memphis Dept, TN | E-Mail | |

Type of Event[1] : Single Daily Weekly Monthly Quarterly Semi-Annual Annual

| Project # | Matrix | |
|---|---|---|
| CSX51115 | 1 Wastewater | 4 Sludge |
| Project Manager/Contact | 2 Aqueous | 5 Oil/Solvent |
| Kraig Smith | 3 Soil/Sediment | 6 Other |

| # of Cont | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | Analysis Requested (Note special detection limits / methods) VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | RW-1A | | 10/29/13 | 1710 | Water | Grab | X | |
| 3 | RW-1 | | 10/29/13 | 1720 | Water | Grab | X | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Which Regs Apply?
- NPDES
- Wastewater
- RCRA
- UST
- Risk Based Limits
- TRRP 13
- LA RECAP
- USACE

| Sampled By | Method of Shipment | Blank/Cooler Temp | Remarks |
|---|---|---|---|
| K. Smith | Hand Deliver | Ice | |

| | DATE | TIME | | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY (sign) Kraig Smith | 10/29/13 | 1750 | RECEIVED BY (sign) | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) | 10/29/13 | 1750 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return Empty Sample Kit Request Form with chain of custody
Distribution Original accompanies samples to the laboratory Pink copy for Field Crew

# Environmental Testing & Consulting, Inc.
## Cooler Receipt Form

Date/Time Received 10/29/03-17:55
Date/Time Checked In 10/30/03-08:00
Carrier/Bill# Client Hand-Delivered

LIMS# 0310-781
Project Memphis Denfense Depot
By Rebekah Barger

| | | |
|---|---|---|
| 1. | Custody Seals?/Location- | No |
| 2. | Samples are non-radioactive? | Yes |
| 3. | Chain of Custody in plastic? | Yes |
| 4. | Temperature at receipt (ok = 4 ± 2 °C)<4oC | OK |
| 5. | Ice & Packing- bags, ice, bubble wrap | Yes |
| 6. | Chain of Custody filled out properly? | Yes |
| 7. | All containers in separate bags? | No |
| 8. | Sample containers intact? | Yes |
| 9. | Label(s) complete and in good condition? | Yes |
| 10. | Label(s) agree with Chain of Custody? | Yes |
| 11. | Correct containers used? | Yes |
| 12. | Sufficient sample? | Yes |
| 13. | VOA vials bubble-free ($H_2O$) or no head space (soil)? | Yes |
| 14. | Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____ | Yes |

**Comments** _____

*Validated Date and Time of Sample Receipt (VDTSR)

Environmental Testing & Consulting, Inc.

# Sample Reports

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 555

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-01
Field ID : RW-9

Matrix : AQUEOUS
Sample Date : 10/29/03 15:45:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | V211081 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | 1.32 | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | 6.55 | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | 69.7 | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 7 46 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | 9.51 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 90.3 | ug/L | 1.00 | | | |
| Tetrachloroethene | 26 5 | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | 1.70 | ug/L | 1.00 | | | |
| Trichloroethene | 120 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | 47 0 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  [illegible] - Method Detection Limit

000003

768 556

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031078101

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078101

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1007

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 557

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-02
Field ID : RW-900

Matrix : AQUEOUS
Sample Date : 10/29/03 15:45:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | V211081 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 5.72 | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 62.2 | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | 9.20 | ug/L | 1 00 | | | |
| trans-1,2-Dichloroethene | 8.33 | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 79.5 | ug/L | 1.00 | | | |
| Tetrachloroethene | 24 6 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | 1 41 | ug/L | 1 00 | | | |
| Trichloroethene | 97 3 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 45 2 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 91 | 84 | 115 |
| S2 - Toluene-d8 | 93 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 88 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 558

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031078102

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078102

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1008

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 559

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-03
Field ID : ERB-5

Matrix : AQUEOUS
Sample Date : 10/29/03 15:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | 1.36 | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]bromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 102 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  [illegible] - Method Detection Limit

768 560

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031078103

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078103

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1009

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 561

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-04
Field ID : RW-8

Matrix : AQUEOUS
Sample Date : 10/29/03 16:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 1.79 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 18.7 | ug/L | 1 00 | | | |
| [redacted]omethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 14.2 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 26 1 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 192E | ug/L | 1.00 | | | |
| Tetrachloroethene | 11.0 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | 3 12 | ug/L | 1.00 | | | |
| Trichloroethene | 201E | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 116 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 101 | 58 | 131 |

000014

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  [illegible] - Method Detection Limit

768 562

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031078104

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078104

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1010

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 563

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID: 0310781-04
Field ID : RW-8-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 16:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | LS | 8260B<br>5030B |
| QC Batch | V211091 | | | | | |
| Dilution Factor | 10 | | | | | |
| 1,1,2,2-Tetrachloroethane | 223 | ug/L | 10 0 | | | |
| Trichloroethene | 232 | ug/L | 10.0 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |



Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 564

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-05
Field ID : RW-7

Matrix : AQUEOUS
Sample Date : 10/29/03 16:15:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1 00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 3.87 | ug/L | - | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 12.0 | ug/L | | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | 214E | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 5.35 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 2.21 | ug/L | | 1.00 | | | | |
| Trichloroethene | 102 | ug/L | | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1 00 | | | | |
| Xylenes-o | ND | ug/L | | 1 00 | | | | |
| cis-1,2-Dichloroethene | 56 8 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 103 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

FORM 1 768 565 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031078105

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078105

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1011

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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768 566

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **10/30/03**
ETC Order Number: **0310781**

ETC Lab ID : **0310781-05**
Field ID : **RW-7-DIL**

Matrix : **AQUEOUS**
Sample Date : **10/29/03 16:15:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/09/03 | LS | 8260B<br>5030B |
| **QC Batch** | V211091 | | | | | |
| **Dilution Factor** | 10 | | | | | |
| 1,1,2,2-Tetrachloroethane | 208 | ug/L | 10.0 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 90 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 567

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-06
Field ID : RW-6

Matrix : AQUEOUS
Sample Date : 10/29/03 16:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 2.15 | ug/L | 1.00 | | | |
| [redacted]romethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 4.01 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5 00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 00 | | | |
| Tetrachloroethene | 37 1 | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 40.7 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 11.2 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 111 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  * - Method Detection Limit

768 568

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031078106

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078106

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1012

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 569

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-07
Field ID : RW-5

Matrix : AQUEOUS
Sample Date : 10/29/03 16:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211081** | | | | | | |
| **Dilution Factor** | **1** | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | 1 26 | ug/L | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 1 04 | ug/L | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 2 23 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | 14.9 | ug/L | 1.00 | | | | |
| Tetrachloroethene | 7 47 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 186E | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | 7 08 | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

LJB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 570

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031078107

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078107

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1013

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 571

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-07
Field ID : RW-5-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 16:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | | LS | 8260B 5030B |
| QC Batch | V211091 | | | | | | |
| Dilution Factor | 10 | | | | | | |
| Trichloroethene | 193 | ug/L | 10.0 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  * - Method Detection Limit

000024

768 572

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-08
Field ID : RW-3

Matrix : AQUEOUS
Sample Date : 10/29/03 16:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 10.9 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 2.08 | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 1.73 | ug/L | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | 1.10 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 66.4 | ug/L | 1 00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 9.04 | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 573 CLIENT SAMPLE NO.

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031078108

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078108

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1014

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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768 574

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-09
Field ID : RW-2

Matrix : AQUEOUS
Sample Date : 10/29/03 17:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 14.0 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | 11.4 | ug/L | 1 00 | | | | |
| Chloromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 4.57 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | 95.9 | ug/L | 1.00 | | | | |
| Tetrachloroethene | 1.56 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 3 02 | ug/L | 1.00 | | | | |
| Trichloroethene | 83 4 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 78.6 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  *1 - Method Detection Limit

FORM 1 768 575 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031078109

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078109

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1015

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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768 576

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-10
Field ID : RW-200

Matrix : AQUEOUS
Sample Date : 10/29/03 17:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20 0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 14 1 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 11.3 | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 4.70 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | 87 1 | ug/L | 1 00 | | | | |
| Tetrachloroethene | 1 52 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 2 95 | ug/L | 1.00 | | | | |
| Trichloroethene | 86.5 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 79.5 | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 95 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 114 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

CS
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

FORM 1 768 577 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031078110

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078110

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1016

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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768 578

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-11
Field ID : RW-1B

Matrix : AQUEOUS
Sample Date : 10/29/03 17:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 19.5 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 40.8 | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 1.69 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | 3.75 | ug/L | 1.00 | | | | |
| Tetrachloroethene | 2.93 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 42.4 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | 14.5 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

000031

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  * - Method Detection Limit

FORM 1 768 579 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031078111

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078111

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1017

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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768 580

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-12
Field ID : RW-1A

Matrix : AQUEOUS
Sample Date : 10/29/03 17:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | V211081 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | 1.26 | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | 38.8 | ug/L | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | | |
| Carbon Tetrachloride | 33.6 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | 776E | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1 00 | | | | |
| 1,2-Dichloroethane | 1.14 | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 3.64 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 169 | ug/L | 1 00 | | | | |
| Tetrachloroethene | 11.3 | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 4 22 | ug/L | 1.00 | | | | |
| Trichloroethene | 278E | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 11 1 | ug/L | 1 00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

FORM 1 768 581 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031078112

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078112

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1018

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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768 582

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/30/03**
ETC Order Number **0310781**

ETC Lab ID : **0310781-12**
Field ID : **RW-1A-DIL**

Matrix : **AQUEOUS**
Sample Date : **10/29/03 17:10:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | | LS | 8260B<br>5030B |
| QC Batch | V211091 | | | | | | |
| Dilution Factor | 50 | | | | | | |
| Chloroform | 754 | ug/L | 50.0 | | | | |
| Trichloroethene | 285 | ug/L | 50 0 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 103 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 106 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000035

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 583

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-13
Field ID : RW-1

Matrix : AQUEOUS
Sample Date : 10/29/03 17:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | LS | 8260B 5030B |
| QC Batch | V211091 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1 00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 49.1 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1 00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 220E | ug/L | 1.00 | | | |
| [redacted]omethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 2.86 | ug/L | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 9 36 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1 00 | | | |
| Trichloroethene | 154 | ug/L | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | 4.30 | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 87 | 84 | 115 |
| S2 - Toluene-d8 | 94 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 87 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 83 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  * - Method Detection Limit

768 584

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031078113

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 031078113

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1009

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/09/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 585

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-13
Field ID: RW-1-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 17:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | LS | 8260B<br>5030B |
| QC Batch | V211091 | | | | | |
| Dilution Factor | 10 | | | | | |
| Chloroform | 286 | ug/L | 10.0 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

' - Method Detection Limit

000038

768 586

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level II
# GC/MS Volatiles

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
# CASE NARRATIVE
## GC/MS VOLATILE COMPOUNDS – AQUEOUS

768 587

**Client Name** Jacbos Engineering
**Project Name** Memphis Defense Depot

**ETC Order #** 0310-781

**SAMPLE PRESERVATION**

All water samples preserved with HCl to pH < 2 (verified at analysis) and maintained at 4oC until analysis

**HOLDING TIMES**

Sample Analysis All samples analyzed within 14 days of collection

**METHOD**

Preparation SW-846 5030B
Analysis SW-846 8260B

**QUALITY CONTROL**

| QC Batch | Form 4 Summary |
|---|---|
| V211081 | V2110811LB |
| V211091 | V2110911LB |

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits, except as listed below.

Method Blank FORM 4
V2110811LB
V2110911LB
Target analytes were not detected in the method blank

Laboratory Control Sample FORM 3
V2110811LCS
V2110911LCS
All target analyte acceptance criteria met, except as listed below
Chloroethane was flagged for high recovery in the V2110811LCS. This analyte was not reported in any associated project sample. The data was not affected
Cis-1,2-Dichloroethene was flagged for high recovery in the V2110911LCS. This analyte was not reported in any associated project sample The data was not affected

Matrix Spike / Matrix Spike Dup FORM 3
Batch V211081

| | | |
|---|---|---|
| 0310-781-10 | RPD | All analytes within QC limits |
| RW-200 | Spike Recovery | All analytes within QC limits.* |

The MS for cis-1,2-Dichloroethene was flagged high Refer to Laboratory Control Sample(s) for system verification.

Batch V211091

| | | |
|---|---|---|
| 0310-781-10 | RPD | All analytes within QC limits |
| RW-200 | Spike Recovery | All analytes within QC limits * |

Chloroethane was flagged for high recovery in the MS/MSD. 1,1-Dichloroethane recovery was flagged high in the MSD. Refer to Laboratory Control Sample(s) for system verification

768 588

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

| | |
|---|---|
| **Client Name** | Jacbos Engineering |
| **Project Name** | Memphis Defense Depot |
| **ETC Order #** | 0310-781 |

**CALIBRATION**

| | |
|---|---|
| BFB Daily 12-Hour Tune | All criteria met. FORM 5 |
| Initial Calibration | All criteria met. FORM 6 |
| Calibration Verification | % Differences/% Drift (%D) >30% FORM 7<br>Multiple analytes were flagged with % Differences >30% for high response in the CV. These analytes were not reported in the associated project samples. The data was not affected |

Samples in this sequence are listed on Form 5 (Instrument Performance Check) The CV passed SPCC/CCC evaluation criteria The CV is valid per SW-846 method 8000A/8260B.

USACOE Shell Document EM 200-1-2 specifies an additional requirement that all project-specified contaminants of concern are to be within +/- 20% D. Calibration verification forms have been provided that lists the %D of all analytes

Volatile Internal Standard Area and RT FORM 8
Calibration Verification standard(s) Internal Standard Areas and Retention Times within QC limits

**SAMPLE ANALYSIS**

| | |
|---|---|
| Instrumentation | HP 5890 Series II GC, 5971MSD |
| Dilutions Required | Dilutions performed, as indicated on the result sheets, to bring target analytes within calibration range. |

CB
Project Manager

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

768 589

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | V2110811LCS | 88 | 96 | 100 | 90 | 0 |
| 02 | V2110811LB | 96 | 99 | 95 | 91 | 0 |
| 03 | 031078101 | 96 | 102 | 105 | 92 | 0 |
| 04 | 031078102 | 91 | 93 | 88 | 87 | 0 |
| 05 | 031078103 | 98 | 100 | 102 | 92 | 0 |
| 06 | 031078104 | 99 | 102 | 100 | 101 | 0 |
| 07 | 031078105 | 99 | 102 | 103 | 100 | 0 |
| 08 | 031078106 | 96 | 110 | 111 | 96 | 0 |
| 09 | 031078107 | 97 | 101 | 101 | 96 | 0 |
| 10 | 031078108 | 94 | 98 | 98 | 94 | 0 |
| 11 | 031078109 | 97 | 101 | 100 | 97 | 0 |
| 12 | 031078110 | 95 | 100 | 114 | 91 | 0 |
| 13 | 031078111 | 97 | 110 | 104 | 95 | 0 |
| 14 | 031078112 | 100 | 109 | 105 | 99 | 0 |
| 15 | 031078110MS | 90 | 99 | 103 | 87 | 0 |
| 16 | 031078110MSD | 95 | 102 | 101 | 95 | 0 |
| 17 | V2110911LCS | 94 | 105 | 92 | 92 | 0 |
| 18 | V2110911LB | 94 | 94 | 97 | 85 | 0 |
| 19 | 031078104 | 98 | 104 | 101 | 94 | 0 |
| 20 | 031078105 | 98 | 104 | 90 | 91 | 0 |
| 21 | 031078107 | 102 | 103 | 104 | 102 | 0 |
| 22 | 031078112 | 98 | 108 | 103 | 106 | 0 |
| 23 | 031078113 | 87 | 94 | 87 | 83 | 0 |
| 24 | 031078113 | 100 | 102 | 98 | 99 | 0 |
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| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER(DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

768 590

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V2110811LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID: 1006 Lab Prep Batch: V211081

Date Analyzed: 11/08/03 Time Analyzed: 1439

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2110811LCS | 11LCS | 1004LCS | 1311 |
| 02 | 031078101 | 031078101 | 1007 | 1514 |
| 03 | 031078102 | 031078102 | 1008 | 1549 |
| 04 | 031078103 | 031078103 | 1009 | 1625 |
| 05 | 031078104 | 031078104 | 1010 | 1700 |
| 06 | 031078105 | 031078105 | 1011 | 1735 |
| 07 | 031078106 | 031078106 | 1012 | 1810 |
| 08 | 031078107 | 031078107 | 1013 | 1846 |
| 09 | 031078108 | 031078108 | 1014 | 1921 |
| 10 | 031078109 | 031078109 | 1015 | 1956 |
| 11 | 031078110 | 031078110 | 1016 | 2031 |
| 12 | 031078111 | 031078111 | 1017 | 2107 |
| 13 | 031078112 | 031078112 | 1018 | 2142 |
| 14 | 031078110MS | MS | 1020 | 2252 |
| 15 | 031078110MSD | MSD | 1021 | 2327 |
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COMMENTS:

FORM 1 768 591 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2110811LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Prep Batch: V211081

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

768 592

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V2110811LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Prep Batch: V211081

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

FORM 1 768 593 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V2110811LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/08/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
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FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V211081

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: V2110811LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 113.4 | 113 | 59-151 |
| Benzene | 100.0 | | 101.0 | 101 | 72-124 |
| Bromodichloromethane | 100.0 | | 106.4 | 106 | 68-119 |
| Bromoform | 100.0 | | 98.18 | 98 | 66-136 |
| Bromomethane | 100.0 | | 90.83 | 91 | 40-134 |
| 2-Butanone | 100.0 | | 113.0 | 113 | 55-151 |
| Carbon Disulfide | 100.0 | | 87.93 | 88 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 96.14 | 96 | 64-123 |
| Chlorobenzene | 100.0 | | 96.32 | 96 | 77-112 |
| Chlorodibromomethane | 100.0 | | 95.10 | 95 | 72-118 |
| Chloroethane | 100.0 | | 169.1 | 169* | 64-142 |
| Chloroform | 100.0 | | 98.54 | 98 | 70-115 |
| Chloromethane | 100.0 | | 86.43 | 86 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 99.69 | 100 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 100.5 | 100 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 90.87 | 91 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 94.42 | 94 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 102.5 | 102 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 108.0 | 108 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 105.3 | 105 | 73-124 |
| Ethylbenzene | 100.0 | | 93.16 | 93 | 77-111 |
| 2-Hexanone | 100.0 | | 114.1 | 114 | 53-144 |
| Methylene Chloride | 100.0 | | 89.98 | 90 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 98.68 | 99 | 42-144 |
| Styrene | 100.0 | | 103.4 | 103 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 91.76 | 92 | 67-126 |
| Tetrachloroethene | 100.0 | | 103.6 | 104 | 77-115 |
| Toluene | 100.0 | | 100.4 | 100 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

768 595

Lab Name: ETC,INC. Lab Prep Batch: V211081

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: V2110811LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 98.22 | 98 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 103.6 | 104 | 69-117 |
| Trichloroethene | 100.0 | | 103.1 | 103 | 75-113 |
| Vinyl Chloride | 100.0 | | 87.84 | 88 | 65-134 |
| Xylene-mp | 200.0 | | 183.8 | 92 | 77-115 |
| Xylene-o | 100.0 | | 98.15 | 98 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 102.0 | 102 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211081

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031078110

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 76.61 | 77 | 59-151 |
| Benzene | 100.0 | 0.000 | 119.4 | 119 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 101.0 | 101 | 68-119 |
| Bromoform | 100.0 | 0.000 | 100.9 | 101 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 94.27 | 94 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 112.4 | 112 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 88.29 | 88 | 60-133 |
| Carbon Tetrachloride | 100.0 | 14.14 | 110.3 | 96 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 99.94 | 100 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 98.27 | 98 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 182.8 | 183* | 64-142 |
| Chloroform | 100.0 | 11.32 | 123.6 | 112 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 83.34 | 83 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 117.5 | 118 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 117.6 | 118 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 101.9 | 102 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 4.70 | 104.0 | 99 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 104.8 | 105 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 108.9 | 109 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 107.3 | 107 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 94.55 | 94 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 98.93 | 99 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 101.3 | 101 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 105.0 | 105 | 42-144 |
| Styrene | 100.0 | 0.000 | 95.23 | 95 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 87.12 | 168.6 | 81 | 67-126 |
| Tetrachloroethene | 100.0 | 1.52 | 99.37 | 98 | 77-115 |
| Toluene | 100.0 | 0.000 | 99.19 | 99 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 597

Lab Name: ETC,INC. Lab Prep Batch: V211081

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031078110

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 102.0 | 102 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 2.95 | 114.0 | 111 | 69-117 |
| Trichloroethene | 100.0 | 86.53 | 188.6 | 102 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 98.68 | 99 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 176.0 | 88 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 92.69 | 93 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 79.52 | 196.7 | 117* | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211081

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031078110

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 66.68 | 67 | 14 | 20 | 59-151 |
| Benzene | 100.0 | 117.4 | 117 | 2 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 107.8 | 108 | 7 | 20 | 68-119 |
| Bromoform | 100.0 | 99.47 | 99 | 2 | 20 | 66-136 |
| Bromomethane | 100.0 | 95.95 | 96 | 2 | 20 | 40-134 |
| 2-Butanone | 100.0 | 95.63 | 96 | 15 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 90.32 | 90 | 2 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 113.6 | 99 | 3 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 98.99 | 99 | 1 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 105.6 | 106 | 8 | 20 | 72-118 |
| Chloroethane | 100.0 | 184.9 | 185* | 1 | 20 | 64-142 |
| Chloroform | 100.0 | 115.9 | 104 | 7 | 20 | 70-115 |
| Chloromethane | 100.0 | 79.51 | 80 | 4 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 107.7 | 108 | 9 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 118.2 | 118 | 0 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 92.83 | 93 | 9 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 102.7 | 98 | 1 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 111.5 | 112 | 6 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 114.8 | 115 | 5 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 109.3 | 109 | 2 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 93.54 | 94 | 0 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 106.8 | 107 | 8 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 96.04 | 96 | 5 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 112.7 | 113 | 7 | 20 | 42-144 |
| Styrene | 100.0 | 92.76 | 93 | 2 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 161.0 | 74 | 9 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 95.04 | 94 | 4 | 20 | 77-115 |
| Toluene | 100.0 | 104.1 | 104 | 5 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 599

Lab Name: ETC,INC. Lab Prep Batch: V211081

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031078110

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 103.4 | 103 | 1 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 110.8 | 108 | 3 | 20 | 69-117 |
| Trichloroethene | 100.0 | 189.9 | 103 | 1 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 91.94 | 92 | 7 | 20 | 65-134 |
| Xylene-mp | 200.0 | 180.1 | 90 | 2 | 20 | 77-115 |
| Xylene-o | 100.0 | 92.82 | 93 | 0 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 186.8 | 107 | 9 | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 3 out of 70 outside limits

COMMENTS: _____

768 600

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V2110911LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID: 1004 Lab Prep Batch: V211091

Date Analyzed: 11/09/03 Time Analyzed: 1513

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2110911LCS | 11LCS | 1002J | 1402 |
| 02 | 031078104 | 031078104 | 1005 | 1548 |
| 03 | 031078105 | 031078105 | 1006 | 1623 |
| 04 | 031078107 | 031078107 | 1007 | 1658 |
| 05 | 031078112 | 031078112 | 1008 | 1734 |
| 06 | 031078113 | 031078113 | 1009 | 1809 |
| 07 | 031078113 | 031078113 | 1010 | 1844 |
| 08 | 031115207 | 031115207 | 1017 | 2250 |
| 09 | 031115207MS | MS | 1018J | 2326 |
| 10 | 031115207MSD | MSD | 1019J | 0001 |
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COMMENTS:

FORM 1 768 601 CLIENT SAMPLE NO.
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2110911LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Prep Batch: V211091

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/09/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

768 602

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V2110911LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Prep Batch: V211091

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/09/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

FORM 1 768 603 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V2110911LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1004

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/09/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

768 604

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: V211091

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: V2110911LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 135.9 | 136 | 59-151 |
| Benzene | 100.0 | | 111.9 | 112 | 72-124 |
| Bromodichloromethane | 100.0 | | 104.5 | 104 | 68-119 |
| Bromoform | 100.0 | | 94.99 | 95 | 66-136 |
| Bromomethane | 100.0 | | 108.2 | 108 | 40-134 |
| 2-Butanone | 100.0 | | 136.0 | 136 | 55-151 |
| Carbon Disulfide | 100.0 | | 107.1 | 107 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 104.6 | 105 | 64-123 |
| Chlorobenzene | 100.0 | | 108.6 | 109 | 77-112 |
| Chlorodibromomethane | 100.0 | | 105.3 | 105 | 72-118 |
| Chloroethane | 100.0 | | 118.7 | 119 | 64-142 |
| Chloroform | 100.0 | | 107.4 | 107 | 70-115 |
| Chloromethane | 100.0 | | 94.96 | 95 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 109.5 | 110 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 110.4 | 110 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 111.1 | 111 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 107.0 | 107 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 101.7 | 102 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 110.9 | 111 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 109.1 | 109 | 73-124 |
| Ethylbenzene | 100.0 | | 102.6 | 103 | 77-111 |
| 2-Hexanone | 100.0 | | 125.6 | 126 | 53-144 |
| Methylene Chloride | 100.0 | | 100.7 | 101 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 106.3 | 106 | 42-144 |
| Styrene | 100.0 | | 105.6 | 106 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 93.64 | 94 | 67-126 |
| Tetrachloroethene | 100.0 | | 107.8 | 108 | 77-115 |
| Toluene | 100.0 | | 111.8 | 112 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

768 605

Lab Name: ETC, INC. Lab Prep Batch: V211091

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: V2110911LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 107.7 | 108 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 104.8 | 105 | 69-117 |
| Trichloroethene | 100.0 | | 109.6 | 110 | 75-113 |
| Vinyl Chloride | 100.0 | | 101.2 | 101 | 65-134 |
| Xylene-mp | 200.0 | | 201.8 | 101 | 77-115 |
| Xylene-o | 100.0 | | 100.0 | 100 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 118.3 | 118* | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211091

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031115207

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 69.63 | 70 | 59-151 |
| Benzene | 100.0 | 0.000 | 109.5 | 110 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 111.3 | 111 | 68-119 |
| Bromoform | 100.0 | 0.000 | 93.61 | 94 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 97.76 | 98 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 95.68 | 96 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 89.40 | 89 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 100.8 | 101 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 97.00 | 97 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 103.8 | 104 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 185.2 | 185* | 64-142 |
| Chloroform | 100.0 | 0.000 | 107.9 | 108 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 76.31 | 76 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 111.1 | 111 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 108.8 | 109 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 101.5 | 102 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 94.89 | 95 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 106.6 | 107 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 111.3 | 111 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 109.8 | 110 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 90.28 | 90 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 102.8 | 103 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 98.05 | 98 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 108.0 | 108 | 42-144 |
| Styrene | 100.0 | 0.000 | 101.2 | 101 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 88.10 | 88 | 67-126 |
| Tetrachloroethene | 100.0 | 0.000 | 94.49 | 94 | 77-115 |
| Toluene | 100.0 | 0.000 | 101.9 | 102 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 607

Lab Name: ETC,INC. Lab Prep Batch: V211091

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031115207

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 103.9 | 104 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 113.9 | 114 | 69-117 |
| Trichloroethene | 100.0 | 0.000 | 105.2 | 105 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 88.15 | 88 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 176.9 | 88 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 93.85 | 94 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 108.7 | 109 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V211091

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031115207

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 71.26 | 71 | 1 | 20 | 59-151 |
| Benzene | 100.0 | 115.7 | 116 | 5 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 114.9 | 115 | 4 | 20 | 68-119 |
| Bromoform | 100.0 | 94.08 | 94 | 0 | 20 | 66-136 |
| Bromomethane | 100.0 | 102.7 | 103 | 5 | 20 | 40-134 |
| 2-Butanone | 100.0 | 95.01 | 95 | 1 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 96.58 | 96 | 8 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 103.1 | 103 | 2 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 100.4 | 100 | 3 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 103.4 | 103 | 1 | 20 | 72-118 |
| Chloroethane | 100.0 | 194.5 | 194* | 5 | 20 | 64-142 |
| Chloroform | 100.0 | 110.8 | 111 | 3 | 20 | 70-115 |
| Chloromethane | 100.0 | 84.78 | 85 | 11 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 119.5 | 120* | 8 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 113.2 | 113 | 4 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 106.1 | 106 | 4 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 108.6 | 109 | 14 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 114.4 | 114 | 6 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 113.2 | 113 | 2 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 121.4 | 121 | 10 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 95.14 | 95 | 5 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 109.3 | 109 | 6 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 105.1 | 105 | 7 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 110.5 | 110 | 2 | 20 | 42-144 |
| Styrene | 100.0 | 103.5 | 104 | 3 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 87.39 | 87 | 1 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 102.4 | 102 | 8 | 20 | 77-115 |
| Toluene | 100.0 | 113.9 | 114 | 11 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 609

Lab Name: ETC, INC. Lab Prep Batch: V211091

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Matrix Spike - Sample No.: 031115207

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 109.4 | 109 | 5 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 116.2 | 116 | 2 | 20 | 69-117 |
| Trichloroethene | 100.0 | 110.5 | 110 | 5 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 98.13 | 98 | 11 | 20 | 65-134 |
| Xylene-mp | 200.0 | 186.5 | 93 | 6 | 20 | 77-115 |
| Xylene-o | 100.0 | 101.2 | 101 | 7 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 111.8 | 112 | 3 | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 35 outside limits
Spike Recovery: 3 out of 70 outside limits

COMMENTS: _____

768 610

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level III
# GC/MS Volatiles

# ENVIRONMENTAL TESTING & CONSULTING, INC
# GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-8-03 | VOC2 | V211081 | CP7415 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0310-781 | | | | |
| 1-13 | | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 02-7-30-6 ✓

2.0 Initial Calibration (ICAL) : Method V2102101.M ICAL SRN 02-7-30-16

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-29-10 02-1-29-18

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
  Chloroethane ↑
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V211081LB | MeCl2 BDL | | 014 |
| | | | |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V211081LCS | 135 | 010 | 014 |
| | | | |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0310-781-10 | 3/70 | 0/35 | 018 |
| | | | |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

8.0 Dilutions/Re-Analysis Required NA

Narrative/Notes :

768 612

FORM 5

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID: 1001 BFB Injection Date: 11/08/03

Instrument ID: VOC2 BFB Injection Time: 1221

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 22.9 |
| 75 | 30.0 - 60.0% of mass 95 | 42.9 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.3 |
| 173 | Less than 2.0% of mass 174 | 0.4 ( 0.5)1 |
| 174 | Greater than 50.0% of mass 95 | 69.5 |
| 175 | 5.0 - 9.0% of mass 174 | 4.7 ( 6.8)1 |
| 176 | 95.0 - 101.0% of mass 174 | 66.1 ( 95.1)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.6 ( 7.0)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V2110811LCS | 11LCS | 1004LCS | 11/08/03 | 1311 |
| 02 | CCV100PPB | CCV100PPB | 1004 | 11/08/03 | 1311 |
| 03 | V2110811LB | 11LB | 1006 | 11/08/03 | 1439 |
| 04 | 031078101 | 031078101 | 1007 | 11/08/03 | 1514 |
| 05 | 031078102 | 031078102 | 1008 | 11/08/03 | 1549 |
| 06 | 031078103 | 031078103 | 1009 | 11/08/03 | 1625 |
| 07 | 031078104 | 031078104 | 1010 | 11/08/03 | 1700 |
| 08 | 031078105 | 031078105 | 1011 | 11/08/03 | 1735 |
| 09 | 031078106 | 031078106 | 1012 | 11/08/03 | 1810 |
| 10 | 031078107 | 031078107 | 1013 | 11/08/03 | 1846 |
| 11 | 031078108 | 031078108 | 1014 | 11/08/03 | 1921 |
| 12 | 031078109 | 031078109 | 1015 | 11/08/03 | 1956 |
| 13 | 031078110 | 031078110 | 1016 | 11/08/03 | 2031 |
| 14 | 031078111 | 031078111 | 1017 | 11/08/03 | 2107 |
| 15 | 031078112 | 031078112 | 1018 | 11/08/03 | 2142 |
| 16 | 031078110MS | MS | 1020 | 11/08/03 | 2252 |
| 17 | 031078110MSD | MSD | 1021 | 11/08/03 | 2327 |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | | | | | |
| 22 | | | | | |



FORM V VOA

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

768 613

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Instrument ID: VOC2 Calibration Date: 11/08/03 Time: 1311

Lab File ID: 1004 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 113.4 | 100.0 | 2ORDR | 13.4 | 30.0 | |
| Benzene | 101.0 | 100.0 | AVRG | 1.0 | 30.0 | |
| Bromodichloromethane | 106.4 | 100.0 | LINR | 6.4 | 30.0 | |
| Bromoform | 98.18 | 100.0 | AVRG | 1.8 | 30.0 | |
| Bromomethane | 90.83 | 100.0 | 2ORDR | 9.2 | 30.0 | |
| 2-Butanone | 113.0 | 100.0 | AVRG | 13.0 | 30.0 | |
| Carbon Disulfide | 87.93 | 100.0 | AVRG | 12.1 | 30.0 | |
| Carbon Tetrachloride | 96.14 | 100.0 | AVRG | 3.9 | 30.0 | |
| Chlorobenzene | 96.32 | 100.0 | AVRG | 3.7 | 30.0 | |
| Chlorodibromomethane | 95.10 | 100.0 | LINR | 4.9 | 30.0 | |
| Chloroethane | 169.1 | 100.0 | AVRG | 69.1 | 30.0 | <- |
| (2) | 169.1 | 100.0 | AVRG | 69.1 | 30.0 | <- |
| Chloroform | 98.54 | 100.0 | AVRG | 1.5 | 20.0 | |
| Chloromethane | 86.43 | 100.0 | AVRG | 13.6 | 30.0 | |
| 1,1-Dichloroethane | 99.69 | 100.0 | AVRG | 0.3 | 30.0 | |
| 1,2-Dichloroethane | 100.5 | 100.0 | AVRG | 0.5 | 30.0 | |
| 1,1-Dichloroethene | 90.87 | 100.0 | AVRG | 9.1 | 20.0 | |
| trans-1,2-Dichloroethene | 94.42 | 100.0 | AVRG | 5.6 | 30.0 | |
| 1,2-Dichloropropane | 102.5 | 100.0 | AVRG | 2.5 | 20.0 | |
| cis-1,3-Dichloropropene | 108.0 | 100.0 | AVRG | 8.0 | 30.0 | |
| trans-1,3-Dichloropropene | 105.3 | 100.0 | AVRG | 5.3 | 30.0 | |
| Ethylbenzene | 93.16 | 100.0 | AVRG | 6.8 | 20.0 | |
| 2-Hexanone | 114.1 | 100.0 | AVRG | 14.1 | 30.0 | |
| Methylene Chloride | 89.98 | 100.0 | LINR | 10.0 | 30.0 | |
| 4-Methyl-2-Pentanone | 98.68 | 100.0 | AVRG | 1.3 | 30.0 | |
| Styrene | 103.4 | 100.0 | AVRG | 3.4 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 91.76 | 100.0 | AVRG | 8.2 | 30.0 | |
| Tetrachloroethene | 103.6 | 100.0 | AVRG | 3.6 | 30.0 | |
| Toluene | 100.4 | 100.0 | AVRG | 0.4 | 20.0 | |
| 1,1,1-Trichloroethane | 98.22 | 100.0 | AVRG | 1.8 | 30.0 | |
| 1,1,2-Trichloroethane | 103.6 | 100.0 | AVRG | 3.6 | 30.0 | |
| Trichloroethene | 103.1 | 100.0 | AVRG | 3.1 | 30.0 | |
| Vinyl Chloride | 87.84 | 100.0 | AVRG | 12.2 | 20.0 | |
| Xylene-mp | 183.8 | 200.0 | AVRG | 8.1 | 30.0 | |
| Xylene-o | 98.15 | 100.0 | AVRG | 1.8 | 30.0 | |
| cis-1,2-Dichloroethene | 102.0 | 100.0 | AVRG | 2.0 | 30.0 | |

768 614

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Instrument ID: VOC2 Calibration Date: 11/08/03 Time: 1311

Lab File ID: 1004 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 44.13 | 50.00 | AVRG | 11.7 | 30.0 |
| Toluene-d8 | 48.29 | 50.00 | AVRG | 3.4 | 30.0 |
| Bromofluorobenzene | 50.02 | 50.00 | AVRG | 0.0 | 30.0 |
| 1,2-Dichloroethane-d4 | 45.03 | 50.00 | AVRG | 9.9 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID (Standard): 1004 Date Analyzed: 11/08/03

Instrument ID: VOC2 Time Analyzed: 1311

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 433675 | 13.83 | 798370 | 15.24 | 786184 | 20.61 |
| | UPPER LIMIT | 867350 | 14.33 | 1596740 | 15.74 | 1572368 | 21.11 |
| | LOWER LIMIT | 216838 | 13.33 | 399185 | 14.74 | 393092 | 20.11 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110811LB | 359810 | 13.83 | 711771 | 15.25 | 721411 | 20.62 |
| 02 | 031078101 | 383185 | 13.84 | 708864 | 15.25 | 663360 | 20.63 |
| 03 | 031078102 | 383994 | 13.83 | 782254 | 15.24 | 783593 | 20.62 |
| 04 | 031078103 | 340579 | 13.84 | 694719 | 15.24 | 695430 | 20.62 |
| 05 | 031078104 | 351627 | 13.83 | 688204 | 15.24 | 699370 | 20.61 |
| 06 | 031078105 | 385467 | 13.84 | 701854 | 15.24 | 735682 | 20.62 |
| 07 | 031078106 | 388732 | 13.83 | 684948 | 15.24 | 656831 | 20.62 |
| 08 | 031078107 | 386277 | 13.81 | 696707 | 15.23 | 668204 | 20.61 |
| 09 | 031078108 | 371833 | 13.82 | 729252 | 15.23 | 715665 | 20.61 |
| 10 | 031078109 | 363881 | 13.83 | 713842 | 15.24 | 756188 | 20.62 |
| 11 | 031078110 | 362253 | 13.82 | 712825 | 15.23 | 660465 | 20.60 |
| 12 | 031078111 | 354986 | 13.82 | 706242 | 15.23 | 683982 | 20.62 |
| 13 | 031078112 | 379072 | 13.83 | 705623 | 15.23 | 683122 | 20.61 |
| 14 | 031078110MS | 359892 | 13.82 | 742817 | 15.23 | 723683 | 20.61 |
| 15 | 031078110MSD | 381554 | 13.82 | 736974 | 15.22 | 750451 | 20.60 |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID (Standard): 1004 Date Analyzed: 11/08/03

Instrument ID: VOC2 Time Analyzed: 1311

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 606629 | 24.98 | | | | |
| | UPPER LIMIT | 1213258 | 25.48 | | | | |
| | LOWER LIMIT | 303315 | 24.48 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110811LB | 414086 | 24.99 | | | | |
| 02 | 031078101 | 424939 | 24.99 | | | | |
| 03 | 031078102 | 459375 | 24.98 | | | | |
| 04 | 031078103 | 419526 | 24.98 | | | | |
| 05 | 031078104 | 442739 | 24.98 | | | | |
| 06 | 031078105 | 440157 | 24.98 | | | | |
| 07 | 031078106 | 406262 | 24.98 | | | | |
| 08 | 031078107 | 425397 | 24.97 | | | | |
| 09 | 031078108 | 447084 | 24.97 | | | | |
| 10 | 031078109 | 435348 | 24.98 | | | | |
| 11 | 031078110 | 446381 | 24.97 | | | | |
| 12 | 031078111 | 432098 | 24.98 | | | | |
| 13 | 031078112 | 436605 | 24.98 | | | | |
| 14 | 031078110MS | 552551 | 24.97 | | | | |
| 15 | 031078110MSD | 607523 | 24.97 | | | | |
| 16 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

# ENVIRONMENTAL TESTING & CONSULTING, INC
# GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 11-9-03 | VOC2 | V211091 | CP7415 | LS | |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0311-781 | 0311-152 | | | |
| 4,5,7,12,13 | = 1-7 | | | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) ✓

2.0 Initial Calibration (ICAL) : Method V2102901.M ICAL SRN 02-7-30-06 ✓

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-29-10 02-7-29-18 ✓

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓
  Acetone ↑, MEK ↑,
- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V211091LB | Methods BDL | | 0/4 |
| | | | |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V211091LCS | 2/87 | 0/0 | 0/4 |
| | | | |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0311-152 | 2/87 25 | 2/87 | 0/8 |
| 7 | 6/174 11-10-03 | | |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

8.0 Dilutions/Re-Analysis Required NA

Narrative/Notes :

768 618

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID: 1 BFB Injection Date: 11/09/03

Instrument ID: VOC2 BFB Injection Time: 1239

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 24.5 |
| 75 | 30.0 - 60.0% of mass 95 | 43.6 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.5 |
| 173 | Less than 2.0% of mass 174 | 0.7 ( 1.0)1 |
| 174 | Greater than 50.0% of mass 95 | 67.0 |
| 175 | 5.0 - 9.0% of mass 174 | 5.7 ( 8.5)1 |
| 176 | 95.0 - 101.0% of mass 174 | 63.9 ( 95.3)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.0 ( 7.8)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V2110911LCS | 11LCS | 1002J | 11/09/03 | 1402 |
| 02 | CCV100PPB | CCV100PPB | 1002 | 11/09/03 | 1402 |
| 03 | V2110911LB | 11LB | 1004 | 11/09/03 | 1513 |
| 04 | 031078104 | 031078104 | 1005 | 11/09/03 | 1548 |
| 05 | 031078105 | 031078105 | 1006 | 11/09/03 | 1623 |
| 06 | 031078107 | 031078107 | 1007 | 11/09/03 | 1658 |
| 07 | 031078112 | 031078112 | 1008 | 11/09/03 | 1734 |
| 08 | 031078113 | 031078113 | 1009 | 11/09/03 | 1809 |
| 09 | 031078113 | 031078113 | 1010 | 11/09/03 | 1844 |
| 10 | 031115207 | 031115207 | 1017 | 11/09/03 | 2250 |
| 11 | 031115207MS | MS | 1018J | 11/09/03 | 2326 |
| 12 | 031115207MSD | MSD | 1019J | 11/10/03 | 0001 |
| 13 | | | | | |
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FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Instrument ID: VOC2 Calibration Date: 11/09/03 Time: 1402

Lab File ID: 1002 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 135.9 | 100.0 | 2ORDR | 35.9 | 30.0 | <- |
| Benzene | 111.9 | 100.0 | AVRG | 11.9 | 30.0 | |
| Bromodichloromethane | 104.5 | 100.0 | LINR | 4.5 | 30.0 | |
| Bromoform | 94.99 | 100.0 | AVRG | 5.0 | 30.0 | |
| Bromomethane | 108.2 | 100.0 | 2ORDR | 8.2 | 30.0 | |
| 2-Butanone | 136.0 | 100.0 | AVRG | 36.0 | 30.0 | <- |
| Carbon Disulfide | 107.1 | 100.0 | AVRG | 7.1 | 30.0 | |
| Carbon Tetrachloride | 104.6 | 100.0 | AVRG | 4.6 | 30.0 | |
| Chlorobenzene | 108.6 | 100.0 | AVRG | 8.6 | 30.0 | |
| Chlorodibromomethane | 105.3 | 100.0 | LINR | 5.3 | 30.0 | |
| Chloroethane | 118.7 | 100.0 | AVRG | 18.7 | 30.0 | |
| (2) | 118.7 | 100.0 | AVRG | 18.7 | 30.0 | |
| Chloroform | 107.4 | 100.0 | AVRG | 7.4 | 20.0 | |
| Chloromethane | 94.96 | 100.0 | AVRG | 5.0 | 30.0 | |
| 1,1-Dichloroethane | 109.5 | 100.0 | AVRG | 9.5 | 30.0 | |
| 1,2-Dichloroethane | 110.4 | 100.0 | AVRG | 10.4 | 30.0 | |
| 1,1-Dichloroethene | 111.1 | 100.0 | AVRG | 11.1 | 20.0 | |
| trans-1,2-Dichloroethene | 107.0 | 100.0 | AVRG | 7.0 | 30.0 | |
| 1,2-Dichloropropane | 101.7 | 100.0 | AVRG | 1.7 | 20.0 | |
| cis-1,3-Dichloropropene | 110.9 | 100.0 | AVRG | 10.9 | 30.0 | |
| trans-1,3-Dichloropropene | 109.1 | 100.0 | AVRG | 9.1 | 30.0 | |
| Ethylbenzene | 102.6 | 100.0 | AVRG | 2.6 | 20.0 | |
| 2-Hexanone | 125.6 | 100.0 | AVRG | 25.6 | 30.0 | |
| Methylene Chloride | 100.7 | 100.0 | LINR | 0.7 | 30.0 | |
| 4-Methyl-2-Pentanone | 106.3 | 100.0 | AVRG | 6.3 | 30.0 | |
| Styrene | 105.6 | 100.0 | AVRG | 5.6 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 93.64 | 100.0 | AVRG | 6.4 | 30.0 | |
| Tetrachloroethene | 107.8 | 100.0 | AVRG | 7.8 | 30.0 | |
| Toluene | 111.8 | 100.0 | AVRG | 11.8 | 20.0 | |
| 1,1,1-Trichloroethane | 107.7 | 100.0 | AVRG | 7.7 | 30.0 | |
| 1,1,2-Trichloroethane | 104.8 | 100.0 | AVRG | 4.8 | 30.0 | |
| Trichloroethene | 109.6 | 100.0 | AVRG | 9.6 | 30.0 | |
| Vinyl Chloride | 101.2 | 100.0 | AVRG | 1.2 | 20.0 | |
| Xylene-mp | 201.8 | 200.0 | AVRG | 0.9 | 30.0 | |
| Xylene-o | 100.0 | 100.0 | AVRG | 0.0 | 30.0 | |
| cis-1,2-Dichloroethene | 118.3 | 100.0 | AVRG | 18.3 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Instrument ID: VOC2 Calibration Date: 11/09/03 Time: 1402

Lab File ID: 1002 Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 46.98 | 50.00 | AVRG | 6.0 | 30.0 |
| Toluene-d8 | 52.50 | 50.00 | AVRG | 5.0 | 30.0 |
| Bromofluorobenzene | 46.28 | 50.00 | AVRG | 7.4 | 30.0 |
| 1,2-Dichloroethane-d4 | 46.16 | 50.00 | AVRG | 7.7 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID (Standard): 1002 Date Analyzed: 11/09/03

Instrument ID: VOC2 Time Analyzed: 1402

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 393113 | 13.82 | 759104 | 15.23 | 755488 | 20.62 |
| | UPPER LIMIT | 786226 | 14.32 | 1518208 | 15.73 | 1510976 | 21.12 |
| | LOWER LIMIT | 196557 | 13.32 | 379552 | 14.73 | 377744 | 20.12 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110911LB | 393952 | 13.83 | 794890 | 15.24 | 736248 | 20.61 |
| 02 | 031078104 | 370257 | 13.83 | 709536 | 15.23 | 636573 | 20.62 |
| 03 | 031078105 | 355325 | 13.82 | 683429 | 15.24 | 698477 | 20.62 |
| 04 | 031078107 | 343665 | 13.83 | 708700 | 15.24 | 651017 | 20.62 |
| 05 | 031078112 | 360512 | 13.84 | 654161 | 15.24 | 681065 | 20.63 |
| 06 | 031078113 | 383681 | 13.83 | 756778 | 15.24 | 731482 | 20.62 |
| 07 | 031078113 | 335221 | 13.82 | 686481 | 15.23 | 672524 | 20.60 |
| 08 | 031115207 | 344098 | 13.84 | 685073 | 15.24 | 712092 | 20.62 |
| 09 | 031115207MS | 396512 | 13.84 | 740011 | 15.24 | 752495 | 20.62 |
| 10 | 031115207MSD | 372826 | 13.84 | 693927 | 15.24 | 691564 | 20.62 |
| 11 | | | | | | | |
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| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0310781

Lab File ID (Standard): 1002 Date Analyzed: 11/09/03

Instrument ID: VOC2 Time Analyzed: 1402

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 545516 | 24.99 | | | | |
| | UPPER LIMIT | 1091032 | 25.49 | | | | |
| | LOWER LIMIT | 272758 | 24.49 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2110911LB | 453485 | 24.98 | | | | |
| 02 | 031078104 | 364730 | 24.98 | | | | |
| 03 | 031078105 | 354963 | 24.98 | | | | |
| 04 | 031078107 | 395956 | 24.99 | | | | |
| 05 | 031078112 | 373282 | 24.99 | | | | |
| 06 | 031078113 | 448046 | 24.99 | | | | |
| 07 | 031078113 | 421815 | 24.96 | | | | |
| 08 | 031115207 | 449967 | 24.98 | | | | |
| 09 | 031115207MS | 601600 | 24.99 | | | | |
| 10 | 031115207MSD | 556867 | 24.99 | | | | |
| 11 | | | | | | | |
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| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

Report Date : 05-Nov-2003 13:12

Lisa Savage 11-5-03



MM 11/5/03

Cathy 11-5-03

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

SRN: O2-7-30-6
O2-7-30-16

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

Calibration File Names:
Level 1: \\ETCBDC\DD\chem\voc2.i\V210271.B\1003.d
Level 2: \\ETCBDC\DD\chem\voc2.i\V210271.B\1005.d
Level 3: \\ETCBDC\DD\chem\voc2.i\V210271.B\1006.d
Level 4: \\ETCBDC\DD\chem\voc2.i\V210271.B\1007.d
Level 5: \\ETCBDC\DD\chem\voc2.i\V210271.B\1008.d
Level 6: \\ETCBDC\DD\chem\voc2.i\V210271.B\1009.d
Level 7: \\ETCBDC\DD\chem\voc2.i\V210271.B\1010.d
Level 8: \\ETCBDC\DD\chem\voc2.i\V210271.B\1011.d
Level 9: \\ETCBDC\DD\chem\voc2.i\V210271.B\1012.d

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 1 Dichlorodifluoromethane | 1.08728 | 1.06940 | 1.06991 | 0.99436 | 1.12786 | 1.15447 | | | | | |
| | 1.23917 | 1.13565 | 1.30901 | | | | AVRG | | 1.13190 | | 8.38548 |

9200000

768 623

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 / 120.0000 Level 7 | 1.0000 Level 2 / 150.0000 Level 8 | 5.0000 Level 3 / 170.0000 Level 9 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 Chloromethane | 0.27418 | 0.25884 | 0.30096 | 0.25679 | 0.29987 | 0.29740 | | | | | |
| | 0.29933 | 0.27135 | 0.28648 | | | | AVRG | | 0.28280 | | 6.34699 |
| 3 Vinyl Chloride | 0.79719 | 0.66594 | 0.80826 | 0.70850 | 0.82670 | 0.82943 | | | | | |
| | 0.86205 | 0.74856 | 0.83056 | | | | AVRG | | 0.78635 | | 8.26019 |
| 4 Bromomethane | 2110 | 3432 | 15721 | 75189 | 183627 | 453577 | | | | | |
| | 546924 | 729908 | 863874 | | | | QUAD | 0.02038 | 2.46256 | -0.28367 | 0.99615 |
| 5 Chloroethane(1) | 0.23396 | 0.19256 | 0.20013 | 0.18019 | 0.17504 | 0.17645 | | | | | |
| | 0.16422 | 0.14138 | 0.16216 | | | | AVRG | | 0.18068 | | 14.60003 |
| (2) | 0.07101 | 0.06385 | 0.06364 | 0.05549 | 0.05708 | 0.05855 | | | | | |
| | 0.05386 | 0.04644 | 0.05379 | | | | AVRG | | 0.05819 | | 12.31241 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 / 120.0000 Level 7 | 1.0000 Level 2 / 150.0000 Level 8 | 5.0000 Level 3 / 170.0000 Level 9 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 Trichlorofluoromethane | 1.58369 | 1.39006 | 1.31962 | 1.31655 | 1.47848 | 1.50796 | | | | | |
| | 1.58664 | 1.37742 | 1.60302 | | | | AVRG | | 1.46260 | | 7.88373 |
| 7 Furan | +++++ | 0.99259 | 0.96446 | 0.86343 | 0.92189 | 0.98384 | | | | | |
| | 0.99804 | 0.83692 | 1.00509 | | | | AVRG | | 0 94578 | | 6.85665 |
| 8 Acrolein | +++++ | +++++ | +++++ | +++++ | 0.00842 | 0.00984 | | | | | |
| | 0.00880 | 0.00823 | 0.00961 | | | | AVRG | | 0.00898 | | 7.95149 |
| 9 1,1,2-trichloro-1,2,2-trifluo | 0.97208 | 0.83702 | 0.87387 | 0.80153 | 0.92849 | 0.85917 | | | | | |
| | 0.96046 | 0.84495 | 0.96093 | | | | AVRG | | 0.89317 | | 7.08084 |
| 10 1,1-Dichloroethene | 1.96281 | 1.78409 | 1.82834 | 1.66904 | 1.89362 | 1.77145 | | | | | |
| | 1.83212 | 1.64314 | 1.85076 | | | | AVRG | | 1.80393 | | 5.62486 |

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Environmental Testing and Consulting, Inc.

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Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 11 Acetone | +++++ | +++++ | 9574 | 35938 | 83842 | 163015 | | | | | |
| | 200629 | 272236 | 320295 | | | | QUAD | -0.07262 | 6.82609 | -2.06270 | 0.99550 |
| 12 Iodomethane | 1005 | 1984 | 16654 | 200624 | 728248 | 1776382 | | | | | |
| | 2297406 | 2969978 | 3416909 | | | | QUAD | 0.07430 | 0.57635 | -0.01308 | 0.99504 |
| 13 Carbon Disulfide | 1.94144 | 1.73129 | 1.72043 | 1.50405 | 1.76386 | 1.70954 | | | | | |
| | 1.85513 | 1.70904 | 1.80786 | | | | AVRG | | 1 74918 | | 6.89210 |
| 14 Acetonitrile | +++++ | 0.09669 | 0.09970 | 0.08679 | 0.10259 | 0.09817 | | | | | |
| | 0.10276 | 0.09279 | 0.10322 | | | | AVRG | | 0.09784 | | 5.83775 |
| 15 Allyl chloride | +++++ | 1.02633 | 0.99512 | 0.86786 | 1.02807 | 0.98315 | | | | | |
| | 1.02764 | 0.92983 | 1.03179 | | | | AVRG | | 0.98623 | | 5.98999 |

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Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 16 Methylene Chloride | +++++ | 137729 | 184366 | 444125 | 931692 | 1768727 | | | | | |
| | 2136499 | 2890759 | 3355601 | | | | LINR | -0.07667 | 1.84018 | | 0.99344 |
| 17 Acrylonitrile | +++++ | +++++ | +++++ | 0.16328 | 0.17399 | 0.16451 | | | | | |
| | 0.15178 | 0.13899 | 0.15121 | | | | AVRG | | 0.15729 | | 7.88474 |
| 18 Methyl-tertbutyl-Ether | 1.39749 | 1.25385 | 1.18731 | 1.17886 | 1.33501 | 1.27871 | | | | | |
| | 1 30857 | 1.21106 | 1.33384 | | | | AVRG | | 1.27608 | | 5.85545 |
| 19 trans-1,2-Dichloroethene | 1.99800 | 1.77406 | 1.63776 | 1.60091 | 1.79173 | 1.65841 | | | | | |
| | 1.70061 | 1 52806 | 1.62360 | | | | AVRG | | 1.70146 | | 8.14134 |
| 20 Hexane | 25439 | 30026 | 67694 | 231884 | 553271 | 1030611 | | | | | |
| | 1407868 | 1824231 | 1997707 | | | | LINR | -0.02276 | 0.97348 | | 0.99780 |

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Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 21 Tetrahydrofuran | +++++ | +++++ | 0.34341 | 0.34707 | 0.37803 | 0.34695 | | | | | |
| | 0.36380 | 0.31073 | 0.33708 | | | | AVRG | | 0.34672 | | 6.08542 |
| 22 1,1-Dichloroethane | 1.72298 | 1.67930 | 1.63297 | 1.58044 | 1.64762 | 1.58341 | | | | | |
| | 1.60589 | 1.39715 | 1.59890 | | | | AVRG | | 1.60541 | | 5.67258 |
| 23 Ethyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7 41378 |
| 24 Vinyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7.41378 |
| 25 Di isopropyl ether | 2.32559 | 2.21279 | 2.06739 | 2.03145 | 2.10213 | 1.90142 | | | | | |
| | 1.87642 | 1 65522 | 1.90035 | | | | AVRG | | 2.00808 | | 9.96672 |

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 26 Chloroprene | 1.73492 | 1.69886 | 1.54157 | 1.51071 | 1.77374 | 1.52793 | | | | | |
| | 1.71860 | 1.53071 | 1.71474 | | | | AVRG | | 1.63909 | | 6.57893 |
| 27 2-Butanone | +++++ | 0.18597 | 0.17600 | 0.16363 | 0.16153 | 0.16763 | | | | | |
| | 0.17684 | 0.18320 | 0.17521 | | | | AVRG | | 0.17375 | | 5.07669 |
| 28 2,2-Dichloropropane | 1.20793 | 1.16396 | 1.13790 | 1.05105 | 1.21931 | 1.13073 | | | | | |
| | 1.22747 | 1.12257 | 1.20808 | | | | AVRG | | 1.16322 | | 5.01435 |
| 29 cis-1,2-Dichloroethene | 0.93480 | 0.81969 | 0.84559 | 0.76941 | 0.85561 | 0.82321 | | | | | |
| | 0.91076 | 0.78553 | 0.90186 | | | | AVRG | | 0.84961 | | 6.69847 |
| 30 Propionitrile | 0 03458 | 0.03619 | 0.04725 | 0.04105 | 0.04076 | 0.03601 | | | | | |
| | 0.03634 | +++++ | +++++ | | | | AVRG | | 0.03888 | | 11.44021 |

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Environmental Testing and Consulting, Inc.

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Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 31 Bromochloromethane | 0.42771 | 0.33008 | 0.38402 | 0.33930 | 0.37696 | 0.36359 | | | | | |
| | 0.35675 | 0.31847 | 0.34601 | | | | AVRG | | 0.36032 | | 9.16041 |
| 32 Chloroform | +++++ | 1.94057 | 1.72069 | 1.45106 | 1.62845 | 1.54955 | | | | | |
| | 1.59697 | 1 42710 | 1.62305 | | | | AVRG | | 1.61718 | | 10.02992 |
| 35 1,1,1-Trichloroethane | 2.49608 | 1.98780 | 2.02337 | 1.77720 | 2.08485 | 1.97610 | | | | | |
| | 2.14747 | 1.88856 | 2.08454 | | | | AVRG | | 2.05177 | | 9.76881 |
| 36 Carbon Tetrachloride | 1.38722 | 1.18129 | 1.14897 | 1.06672 | 1.26097 | 1.20375 | | | | | |
| | 1.33038 | 1.21328 | 1.30384 | | | | AVRG | | 1.23294 | | 7.99326 |
| 37 1,1-Dichloropropene | 1.02319 | 0.74722 | 0.76464 | 0.66756 | 0.77553 | 0.71591 | | | | | |
| | 0.78079 | 0.83278 | 0.74469 | | | | AVRG | | 0.78359 | | 12.85227 |

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Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 39 Benzene | 2.16787 | 1.92638 | 1.84891 | 1.90071 | 2.05859 | 1.97517 | | | | | |
| | 2.15374 | 1.93548 | 2.18167 | | | | AVRG | | 2.01650 | | 6.28955 |
| 40 1,2-Dichloroethane | 1.50787 | 1.38094 | 1.37914 | 1.28682 | 1.32957 | 1.21492 | | | | | |
| | 1.20473 | 1.09502 | 1.25076 | | | | AVRG | | 1.29442 | | 9.36465 |
| 42 Trichloroethene | +++++ | 0.38385 | 0.44715 | 0.38102 | 0.44967 | 0.48524 | | | | | |
| | 0.50147 | 0.44285 | 0.50707 | | | | AVRG | | 0.44979 | | 10.74179 |
| 43 1,2-Dichloropropane | 0.37873 | 0.31831 | 0.36991 | 0.30942 | 0.33859 | 0.31613 | | | | | |
| | 0.34040 | 0.25833 | 0.30165 | | | | AVRG | | 0.32572 | | 11.21690 |
| 44 Methyl methacrylate | 0.18420 | 0.15062 | 0.18853 | 0.16225 | 0.17528 | 0.17300 | | | | | |
| | 0.18243 | 0.15733 | 0.18656 | | | | AVRG | | 0.17336 | | 7.91278 |

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Environmental Testing and Consulting, Inc.

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Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 45 n-Propyl Acetate | +++++ | 0.58382 | 0.71055 | 0.60229 | 0.62213 | 0.57016 | | | | | |
| | 0.58523 | 0.48441 | 0.53312 | | | | AVRG | | 0.58646 | | 11.24720 |
| 46 Isobutyl Alcohol | 0.08170 | 0.08560 | 0.09292 | 0.08710 | 0.08810 | 0.07417 | | | | | |
| | 0.07720 | 0.07095 | 0.07510 | | | | AVRG | | 0.08143 | | 9.17609 |
| 47 1,4-Dioxane | +++++ | +++++ | 0.00287 | 0.00225 | 0.00244 | 0.00237 | | | | | |
| | 0.00232 | 0.00200 | 0.00212 | | | | AVRG | | 0.00234 | | 11 92316 |
| 48 Dibromomethane | 0.24033 | 0 20665 | 0.24449 | 0.20137 | 0.22516 | 0.22799 | | | | | |
| | 0.23304 | 0.19637 | 0 21615 | | | | AVRG | | 0.22128 | | 7.75757 |
| 49 Bromodichloromethane | 15329 | 21223 | 62045 | 233500 | 549076 | 1043517 | | | | | |
| | 1310741 | 1873366 | 2105667 | | | | LINR | 0.00385 | 0.63264 | | 0.99548 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 50 cis-1,3-Dichloropropene | 0.55873 | 0.43357 | 0.53771 | 0.43338 | 0.50941 | 0.53573 | | | | | |
| | 0.54806 | 0.48978 | 0.54713 | | | | AVRG | | 0.51039 | | 9.48588 |
| 51 4-Methyl-2-Pentanone | +++++ | +++++ | 0.24942 | 0.19062 | 0.21328 | 0.21927 | | | | | |
| | 0.21671 | 0.18314 | 0.21567 | | | | AVRG | | 0.21259 | | 10.12219 |
| 53 Toluene | +++++ | 2.14006 | 2.25713 | 1.83592 | 2.21801 | 2.22063 | | | | | |
| | 2.30623 | 2.00062 | 2.15564 | | | | AVRG | | 2.14178 | | 7.19113 |
| 54 trans-1,3-Dichloropropene | +++++ | 0.36207 | 0.42674 | 0.35710 | 0.41006 | 0.42913 | | | | | |
| | 0.40013 | 0.34541 | 0.37425 | | | | AVRG | | 0.38811 | | 8.40899 |
| 55 Ethyl methacrylate | 0.21300 | 0.17525 | 0.20577 | 0.18313 | 0.22501 | 0.24632 | | | | | |
| | 0.24892 | 0.22554 | 0.25836 | | | | AVRG | | 0.22014 | | 13.11586 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 56 1,1,2-Trichloroethane | 0.38453 | 0.32371 | 0.38211 | 0.31196 | 0.36150 | 0.37384 | | | | | |
| | 0.37699 | 0.33422 | 0.38025 | | | | AVRG | | 0.35879 | | 7.79622 |
| 57 2-Hexanone | +++++ | +++++ | 0.18219 | 0.17094 | 0.19537 | 0.19277 | | | | | |
| | 0.21044 | 0.18382 | 0.21636 | | | | AVRG | | 0.19313 | | 8.30281 |
| 58 Tetrachloroethene | +++++ | 0.29703 | 0.32185 | 0.28649 | 0.34014 | 0.30667 | | | | | |
| | 0.37608 | 0.29365 | 0.33218 | | | | AVRG | | 0.31926 | | 9.33722 |
| 59 1,3-Dichloropropane | 0.53282 | 0.38670 | 0.46948 | 0.42407 | 0.50813 | 0.54797 | | | | | |
| | 0.59797 | 0.52953 | +++++ | | | | AVRG | | 0.49958 | | 13.83598 |
| 60 Chlorodibromomethane | 9118 | 12073 | 37967 | 139386 | 338548 | 634506 | | | | | |
| | 799459 | 1139690 | 1268794 | | | | LINR | 0.00052 | 0.38320 | | 0.99586 |

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Environmental Testing and Consulting, Inc.

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Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 61 1,2-Dibromoethane | 0.43816 | 0 32466 | 0.37627 | 0.32455 | 0.37806 | 0.37115 | | | | | |
| | 0.38978 | 0.34864 | 0.40176 | | | | AVRG | | 0.37256 | | 9.80291 |
| 63 Chlorobenzene | 1.54330 | 1.24715 | 1.31378 | 1.27232 | 1.41544 | 1.32125 | | | | | |
| | 1.48365 | 1.33124 | 1.42145 | | | | AVRG | | 1.37218 | | 7.25539 |
| 64 Ethylbenzene | 2.88333 | 2.31113 | 2.38637 | 2.30352 | 2.58022 | 2.30369 | | | | | |
| | 2.69046 | 2.28665 | 2.31989 | | | | AVRG | | 2.45170 | | 8.79945 |
| 65 2-Chloroethyl vinyl ether | +++++ | 0.17290 | 0.20290 | 0.16128 | 0.17116 | 0.15426 | | | | | |
| | 0.16781 | 0.13142 | 0.14766 | | | | AVRG | | 0.16368 | | 12.83210 |
| 66 1,1,1,2-Tetrachloroethane | 0.65800 | 0.54495 | 0.60537 | 0.55887 | 0.58119 | 0.49907 | | | | | |
| | 0.54050 | 0.43840 | 0.42948 | | | | AVRG | | 0.53954 | | 13.82105 |

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Environmental Testing and Consulting, Inc.

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 67 Xylene-mp | 2.68057 | 2.10709 | 2.09676 | 1.96837 | 2.13818 | 1.92281 | | | | | |
| | 2.22755 | 1.97216 | 1.95471 | | | | AVRG | | 2.11869 | | 11.04250 |
| 68 Xylene-o | 2.45286 | 2.03736 | 1.92376 | 1.90413 | 2.06673 | 2.01442 | | | | | |
| | 2.14972 | 1.90370 | 1.77529 | | | | AVRG | | 2.02533 | | 9.60198 |
| 69 Styrene | 1.36148 | 1.16608 | 1.11345 | 1.11325 | 1.34022 | 1.40010 | | | | | |
| | 1.63015 | 1.53207 | 1.49043 | | | | AVRG | | 1.34969 | | 13.85928 |
| 70 Bromoform | 0.18695 | 0.15844 | 0.15910 | 0.14982 | 0.15908 | 0.17490 | | | | | |
| | 0.16718 | 0.14767 | 0.15660 | | | | AVRG | | 0.16219 | | 7.63747 |
| 71 Isopropylbenzene | 2.73708 | 2.45738 | 2.24127 | 2.37198 | 2.42651 | 2.50860 | | | | | |
| | 2.75746 | 2.29550 | 2.27300 | | | | AVRG | | 2.45209 | | 7.70813 |

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Environmental Testing and Consulting, Inc.

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Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 72 trans-1,4-Dichloro-2-butene | 1209 | 2201 | 10687 | 52203 | 115915 | 253131 | | | | | |
| | 303067 | 406067 | 449246 | | | | QUAD | 0.04103 | 5.41254 | 2.91465 | 0.99621 |
| 74 1,1,2,2-Tetrachloroethane | +++++ | 0.46749 | 0.51133 | 0.45123 | 0.46145 | 0.42996 | | | | | |
| | 0.39987 | 0.32402 | +++++ | | | | AVRG | | 0.43505 | | 13.73442 |
| 75 cis-1,4-Dichloro-2-butene | +++++ | 0.15425 | 0.14002 | 0.12777 | 0.14233 | 0.15057 | | | | | |
| | 0.14178 | 0.13009 | 0.12690 | | | | AVRG | | 0.13921 | | 7.37562 |
| 76 1,2,3-Trichloropropane | 0.42312 | 0.37748 | 0.41774 | 0.38518 | 0.42720 | 0.42794 | | | | | |
| | 0.43121 | 0.37139 | 0.38033 | | | | AVRG | | 0.40462 | | 6.23009 |
| 77 Bromobenzene | 1.01802 | 0.85644 | 0.83267 | 0.77610 | 0.85233 | 0.80724 | | | | | |
| | 0.83833 | 0.69970 | 0.70888 | | | | AVRG | | 0.82108 | | 11.47214 |

0000090

768 637

768 638

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | | | | | | | | |
| 78 n-Propylbenzene | 3 10958 | 2.68395 | 2.53920 | 2.40741 | 2.65323 | 2.56535 | | | | | |
| | 2.92483 | 2.55236 | 2.52244 | | | | AVRG | | 2.66204 | | 8.30160 |
| 79 2-Chlorotoluene | 2.17728 | 1.94037 | 1.76537 | 1.85905 | 2.01312 | 1.90344 | | | | | |
| | 2.02982 | 1.83416 | 1.90146 | | | | AVRG | | 1.93601 | | 6.34307 |
| 80 1,3,5-Trimethylbenzene | 2.41519 | 2.18407 | 1.99441 | 2.00766 | 2.22535 | 2.07357 | | | | | |
| | 2.20538 | 2.02859 | 2.05630 | | | | AVRG | | 2.13228 | | 6.44821 |
| 81 4-Chlorotoluene | 2.07628 | 1.61342 | 1.51853 | 1.56823 | 1.66843 | 1.47878 | | | | | |
| | 1.72526 | 1.52782 | 1.59306 | | | | AVRG | | 1.64109 | | 10.98094 |
| 82 tert-Butylbenzene | 2.64308 | 2.21011 | 2.16559 | 2.25262 | 2.46373 | 2.21315 | | | | | |
| | 2.58999 | 2.24803 | 2 24537 | | | | AVRG | | 2.33685 | | 7.68483 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 83 1,2,4-Trimethylbenzene | 2.69288 | 2.10289 | 1.86077 | 1.89560 | 2.14903 | 1.87078 | | | | | |
| | 2.14108 | 1.90262 | 1.93376 | | | | AVRG | | 2.06105 | | 12.83804 |
| 84 sec-Butylbenzene | 3.05850 | 2 64497 | 2.52445 | 2.49690 | 2.73935 | 2.48127 | | | | | |
| | 2.82657 | 2.52940 | 2.52763 | | | | AVRG | | 2.64767 | | 7.35281 |
| 85 4-Isopropyltoluene | 2.46534 | 2.18453 | 2.05135 | 2.03199 | 2.20056 | 2.06891 | | | | | |
| | 2.30569 | 2.11512 | 2.08492 | | | | AVRG | | 2.16760 | | 6.53097 |
| 86 1,3-Dichlorobenzene | +++++ | 1.56527 | 1.51691 | 1.38604 | 1.42619 | 1.17645 | | | | | |
| | 1.22068 | 1.03834 | +++++ | | | | AVRG | | 1.33284 | | 14.47136 |
| 88 1,4-Dichlorobenzene | 9742 | 17227 | 72695 | 308927 | 671173 | 1272820 | | | | | |
| | 1717395 | 2398553 | 2581039 | | | | QUAD | 0.01837 | 0.57609 | 0.14649 | 0.99620 |

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768 640

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 89 n-Butylbenzene | +++++ | 2.80335 | 2.68476 | 2.62002 | 2.58046 | 2.26980 | | | | | |
| | 2.28374 | 1.90978 | +++++ | | | | AVRG | | 2.45027 | | 12.66533 |
| 90 1,2-Dichlorobenzene | +++++ | 1.29464 | 1.26604 | 1.16103 | 1.13151 | 1.05822 | | | | | |
| | 1.05232 | 0.88210 | 0.88260 | | | | AVRG | | 1.09106 | | 14.21160 |
| 91 1,2-Dibromo-3-chloropropane | +++++ | 0.10998 | 0.11665 | 0.10370 | 0.10379 | 0.08617 | | | | | |
| | 0.08535 | +++++ | +++++ | | | | AVRG | | 0.10094 | | 12.57527 |
| 92 1,2,4-Trichlorobenzene | +++++ | 0.47508 | 0.44425 | 0.38028 | 0.46860 | 0.36372 | | | | | |
| | 0.39765 | 0.33440 | +++++ | | | | AVRG | | 0.40914 | | 13.28624 |
| 93 Hexachlorobutadiene | +++++ | 0.62921 | 0.63757 | 0.52836 | 0.61272 | 0.47314 | | | | | |
| | 0.50322 | +++++ | +++++ | | | | AVRG | | 0.56404 | | 12.60134 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 94 Naphthalene | +++++ | 0.92286 | 0.82883 | 0.70421 | 0.79676 | 0.64921 | | | | | |
| | 0.71795 | 0 65252 | +++++ | | | | AVRG | | 0.75319 | | 13.38633 |
| 95 1,2,3-Trichlorobenzene | +++++ | 5124 | 22270 | 77613 | 214055 | 373381 | | | | | |
| | 503201 | +++++ | +++++ | | | | LINR | -0.04537 | 0.32325 | | 0.99104 |
| $ 33 Dibromofluoromethane | 0.95459 | 0.77135 | 0.89134 | 0.73777 | 0.81296 | 0.86282 | | | | | |
| | 0.84310 | 0.75554 | 0.84995 | | | | AVRG | | 0.83105 | | 8.36964 |
| $ 38 1,2-Dichloroethane-d4 | +++++ | +++++ | 0.33864 | 0.27514 | 0.30876 | 0.34271 | | | | | |
| | 0.34586 | 0.29811 | +++++ | | | | AVRG | | 0.31821 | | 9.03277 |
| $ 52 Toluene-d8 | 2.00621 | 1.48673 | 1.96157 | 1.40532 | 1.74527 | 1.96950 | | | | | |
| | 1.75526 | 1.58461 | 1.79532 | | | | AVRG | | 1.74553 | | 12.41956 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| $ 73 Bromofluorobenzene | 0.95914 | 0.71940 | 0.74619 | 0.66607 | 0 67991 | 0.79907 | | | | | |
| | 0.70006 | 0.64044 | 0.65976 | | | | AVRG | | 0.73000 | | 13.53469 |

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |
| Quad | Amt = b + m1*Rsp + m2*Rsp^2 | Response |

000095

# APPENDIX C

## QUARTERLY EFFLUENT SAMPLES
## ANALYTICAL LABORATY DATA

**ENVIRONMENTAL TESTING & CONSULTING, INC.**
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

*Founded 1972*

August 7, 2003

Mr. Kraig Smith
Jacobs
600 William Northern Blvd.
Tullahoma, TN 37388

Ref: Analytical Testing
ETC Order # 0307550
Project Description Memphis Depot

Project Number C5X51115

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the USEPA.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

Nathan A. Pera, IV
Laboratory Project Manager

rt
Attachment

JACOBS_DDMT

Certifications

| | | | | | |
|---|---|---|---|---|---|
| *Tennessee* | *#02027* | *Mississippi* | | *USDA* | *#S-46279* |
| *Arkansas* | | *Oklahoma* | *#9311* | EPA | #TN00012 |
| *Kentucky* | *#90047* | *Virginia* | *#00106* | NELAP | |
| Alabama | #40750 | *Louisiana DEQ* | *#04015* | | |
| Illinois | #000537 | *USACE_HTRW* | | | |

# Environmental Testing & Consulting, Inc.

## Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

| | |
|---|---|
| Q | Surrogate Recovery Outside QC Limits |
| J | Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.[1] |
| E | Concentration exceeds the established method calibration range but is within the working range of the instrument. |
| B | Analyte detected in the associated Method Blank. |
| U | Reported result was unconfirmed. Refer to Case Narrative. |
| C | Result reported from GC/MS confirmation analysis |
| M | Result reported represents a minimum value. Refer to Case Narrative. |
| NC | Result reported from Primary Column. Result did not confirm. |
| * | QC Data (percent recovery/RPD for a particular analyte was outside QC Limits) |

1 Estimated values are not reported for the following common laboratory contaminants:

Acetone
Methylene Chloride
Toluene
Bis(2-ethylhexyl)phthalate
Sodium
Zinc

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

768 646

Client Name Jacobs
Site ID Memphis Depot

C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 030755001 | EFF-7-28-03 | 07/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

7/31/03



660002

768 647

Environmental Testing & Consulting, Inc.

# Login
# Chain-of-Custody

# CHAIN OF CUSTODY RECORD

Environmental Testing & Consulting, Inc.
2924 Walnut Grove Rd.
Memphis, TN 38111
(901)327-2750 FAX (901)327-6334

ETC Work Order : 030750

| Company Name | Phone # : 931 393 6448 | Fax Results |
|---|---|---|
| JACOBS | Fax # : 931 393 6211 | RUSH |
| Project/Site | FID # : | Ice |
| Memphis Depot | PO # : | |
| Project # | Matrix | |
| C5X51115 | 1 Wastewater 4 Sludge | |
| Project Manager/Contact | (2) Aqueous 5 Oil/Solvent | |
| K. Smith | 3 Soil/Sediment 6 Other | |

| # of cont. | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | Analysis Requested (Note special detection limits or methods) VOC | Comments |
|---|---|---|---|---|---|---|---|---|
| 3 | EFF-7-28-03 | | 7/28 | 1530 | water | Grab | X | |

| Sampled By | Method of Shipment | Blank/Cooler Temp | Remarks |
|---|---|---|---|
| K. Smith | Hand Deliver | 4°C (23) | EDD |

| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME | Sample Delivery Group ID |
|---|---|---|---|---|---|---|
| K. Smith | 7/28/03 | 1605 | | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME | |
| | | | | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) | DATE | TIME | |
| | | | RBOYD | 7/28/03 | 1605 | |

Distribution : Original and Yellow accompany samples to the laboratory. Pink copy for Field Crew.
Original copy returned with results. Yellow copy for ETC, Inc. files

768 648

F:\QAQC\SLOP\COC0895.XLS

Version 1.0 08/03

768 619

# Environmental Testing & Consulting, Inc.
## Cooler Receipt Form

Date/Time Received 7/28/03-16:05
Date/Time Checked In 7/28/03-16:05
Carrier/Bill# Client Hand-Delivered

LIMS# 0307-550
Project Memphis Depot

By Rebekah Barger

| | | |
|---|---|---|
| 1. | Custody Seals?/Location- | No |
| 2. | Samples are non-radioactive? | Yes |
| 3. | Chain of Custody in plastic? | Yes |
| 4. | Temperature at receipt (ok = 4 ± 2 °C)<4oC | OK |
| 5. | Ice & Packing- bags, ice, bubble wrap | Yes |
| 6. | Chain of Custody filled out properly? | Yes |
| 7. | All containers in separate bags? | No |
| 8. | Sample containers intact? | Yes |
| 9. | Label(s) complete and in good condition? | Yes |
| 10. | Label(s) agree with Chain of Custody? | Yes |
| 11. | Correct containers used? | Yes |
| 12 | Sufficient sample? | Yes |
| 13. | VOA vials bubble-free ($H_2O$) or no head space (soil)? | Yes |
| 14. | Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____ | Yes |

Comments _____

*Validated Date and Time of Sample Receipt (VDTSR)

Environmental Testing & Consulting, Inc.

# Sample Reports

768 651

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Depot

FID #

Date Arrived: 07/28/03
ETC Order Number: 0307550

ETC Lab ID: 0307550-01
Field ID : EFF-7-28-03

Matrix : AQUEOUS
Sample Date : 07/28/03 15:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 08/01/03 | LS | 8260B 5030B |
| **QC Batch** | **V308011** | | | | | |
| **Dilution Factor** | **1** | | | | | |
| Acetone | ND | ug/L | 20 0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20 0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 6 08 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1 00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | 67.5 | ug/L | 1 00 | | | |
| Chloromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 8 56 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 8 00 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1 00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 148 | ug/L | 1.00 | | | |
| Tetrachloroethene | 17 4 | ug/L | 1 00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | 1 40 | ug/L | 1.00 | | | |
| Trichloroethene | 164 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | |
| cis-1,2-Dichloroethene | 41.1 | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 84 | 84 | 115 |
| S2 - Toluene-d8 | 84 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 88 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 64 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  [illegible] - Method Detection Limit

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level II
# GC/MS Volatiles

768 653

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0307-550

**SAMPLE PRESERVATION**

All water samples preserved with HCl to pH < 2 (verified at analysis) and maintained at 4oC until analysis

**HOLDING TIMES**

Sample Analysis All samples analyzed within 14 days of collection

**METHOD**

Preparation. SW-846 5030B
Analysis: SW-846 8260B

**QUALITY CONTROL**

| QC Batch | Form 4 Summary |
|---|---|
| V308011 | V3080111LB |

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits, except as listed below:
Surrogate Dibromofluoromethane was flagged for low recovery in sample 0307-550-01 (EFF-7-28-03).

Method Blank FORM 4
V3080111LB
Target analytes were not detected in the method blank.

Laboratory Control Sample FORM 3
V3080111LCS
All target analyte acceptance criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
Batch V308011

| | | |
|---|---|---|
| 0307-551-08 (FB-1) | RPD | All analytes within QC limits. |
| | Spike Recovery | All analytes within QC limits |

Refer to Laboratory Control Sample(s) for system verification

**CALIBRATION**

| | |
|---|---|
| BFB Daily 12-Hour Tune | All criteria met. FORM 5 |
| Initial Calibration | All criteria met FORM 6 |
| Calibration Verification | % Differences/% Drift (%D) >30%. FORM 7<br>Multiple analytes were flagged for high % Differences in the CV. These analytes were not reported in the associated project samples The data was not affected |

Samples in this sequence are listed on Form 5 (Instrument Performance Check) The CV passed SPCC/CCC evaluation criteria. The CV is valid per SW-846 method 8000A/8260B.

USACOE Shell Document EM 200-1-2 specifies an additional requirement that all project-specified contaminants of concern are to be within +/- 20% D Calibration verification forms have been provided that lists the %D of all analytes

Volatile Internal Standard Area and RT FORM 8
Calibration Verification standard(s) Internal Standard Areas and Retention Times within QC limits.

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0307-550

**SAMPLE ANALYSIS**

| | |
|---|---|
| Instrumentation | HP 5890 Series II GC, 5971MSD |
| Dilutions | Dilutions were not required |

Project Manager

768 655

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | V3080111LCS | 84 | 92 | 81 | 71 | 0 |
| 02 | V3080111LB | 84 | 84 | 87 | 62 | 0 |
| 03 | 030755001 | 84* | 84 | 88 | 64 | 1 |
| 04 | | | | | | |
| 05 | | | | | | |
| 06 | | | | | | |
| 07 | | | | | | |
| 08 | | | | | | |
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| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |

| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER(DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

768 656 CLIENT SAMPLE NO.

V3080111LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Lab File ID: 0302004J Lab Prep Batch: V308011

Date Analyzed: 08/01/03 Time Analyzed: 1404

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC3 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V3080111LCS | 11LCS | 0201002LCSJ | 1155 |
| 02 | 030755001 | 030755001 | 0401005 | 1434 |
| 03 | 030755108 | 030755108 | 1801018 | 2155 |
| 04 | 030755108MS | MS | 1901019J | 2225 |
| 05 | 030755108MSD | MSD | 2001020J | 2255 |
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COMMENTS:

768 657

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3080111LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix: (soil/water) WATER Lab Prep Batch: V308011

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 75-05-8 | Acetonitrile | 20.00 | U |
| 107-02-8 | Acrolein | 20.00 | U |
| 107-13-1 | Acrylonitrile | 20.00 | U |
| 107-05-1 | Allyl chloride | 1.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 108-86-1 | Bromobenzene | 1.00 | U |
| 74-97-5 | Bromochloromethane | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 104-51-8 | n-Butylbenzene | 1.00 | U |
| 135-98-8 | sec-Butylbenzene | 1.00 | U |
| 98-06-6 | tert-Butylbenzene | 1.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 110-75-8 | 2-Chloroethyl vinyl ether | 20.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 126-99-8 | Chloroprene | 1.00 | U |
| 95-49-8 | 2-Chlorotoluene | 1.00 | U |
| 106-43-4 | 4-Chlorotoluene | 1.00 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1.00 | U |
| 106-93-4 | 1,2-Dibromoethane | 1.00 | U |
| 74-95-3 | Dibromomethane | 1.00 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1.00 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1.00 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1.00 | U |
| 1476-11-5 | cis-1,4-Dichloro-2-butene | 1.00 | U |

FORM 1 768 658 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V3080111LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix: (soil/water) WATER Lab Prep Batch: V308011

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 110-57-6 | trans-1,4-Dichloro-2-butene | 1.00 | U |
| 75-71-8 | Dichlorodifluoromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 142-28-9 | 1,3-Dichloropropane | 1.00 | U |
| 594-20-7 | 2,2-Dichloropropane | 1.00 | U |
| 563-58-6 | 1,1-Dichloropropene | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 108-20-3 | Di isopropyl ether | 1.00 | U |
| 123-91-1 | 1,4-Dioxane | 100.0 | U |
| 141-78-6 | Ethyl Acetate | 5.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 97-63-2 | Ethyl methacrylate | 1.00 | U |
| 110-00-9 | Furan | 1.00 | U |
| 87-68-3 | Hexachlorobutadiene | 1.00 | U |
| 110-54-3 | Hexane | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 74-88-4 | Iodomethane | 1.00 | U |
| 78-83-1 | Isobutyl Alcohol | 100.0 | U |
| 98-82-8 | Isopropylbenzene | 1.00 | U |
| 99-87-6 | 4-Isopropyltoluene | 1.00 | U |
| 126-98-7 | Methacrylonitrile | 10.00 | U |
| 75-09-2 | Methylene Chloride | 5.00 | U |
| 80-62-6 | Methyl methacrylate | 1.00 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 1634-04-4 | Methyl-tertbutyl-Ether | 1.00 | U |
| 91-20-3 | Naphthalene | 1.00 | U |
| 107-12-0 | Propionitrile | 10.00 | U |

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3080111LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix: (soil/water) WATER Lab Prep Batch: V308011

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 109-60-4 | n-Propyl Acetate | 1.00 | U |
| 103-65-1 | n-Propylbenzene | 1.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 109-99-9 | Tetrahydrofuran | 1.00 | U |
| 87-61-6 | 1,2,3-Trichlorobenzene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 76-13-1 | 1,1,2-trichloro-1,2,2-triflu | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-69-4 | Trichlorofluoromethane | 1.00 | U |
| 96-18-4 | 1,2,3-Trichloropropane | 1.00 | U |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1.00 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.00 | U |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1.00 | U |
| 108-05-4 | Vinyl Acetate | 20.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |
| 95-47-6 | Xylene-o | 1.00 | U |

FORM 1 768 660 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V3080111LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0302004J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
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FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V308011

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix Spike - Sample No.: V3080111LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 145.8 | 146 | 59-151 |
| Benzene | 100.0 | | 90.42 | 90 | 72-124 |
| Bromodichloromethane | 100.0 | | 89.94 | 90 | 68-119 |
| Bromoform | 100.0 | | 90.55 | 90 | 66-136 |
| 2-Butanone | 100.0 | | 131.4 | 131 | 55-151 |
| Bromomethane | 100.0 | | 84.57 | 84 | 40-134 |
| Carbon Disulfide | 100.0 | | 72.99 | 73 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 84.81 | 85 | 64-123 |
| Chlorobenzene | 100.0 | | 84.26 | 84 | 77-112 |
| Chlorodibromomethane | 100.0 | | 89.78 | 90 | 72-118 |
| Chloroethane | 100.0 | | 83.98 | 84 | 64-142 |
| Chloroform | 100.0 | | 92.89 | 93 | 70-115 |
| Chloromethane | 100.0 | | 89.10 | 89 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 86.21 | 86 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 93.02 | 93 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 80.16 | 80 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | | 90.62 | 91 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | | 86.44 | 86 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 88.56 | 88 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 101.3 | 101 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 103.2 | 103 | 73-124 |
| Ethylbenzene | 100.0 | | 87.27 | 87 | 77-111 |
| 2-Hexanone | 100.0 | | 128.0 | 128 | 53-144 |
| Methylene Chloride | 100.0 | | 87.35 | 87 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 106.8 | 107 | 42-144 |
| Styrene | 100.0 | | 91.54 | 92 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 110.2 | 110 | 67-126 |
| Tetrachloroethene | 100.0 | | 83.32 | 83 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: V308011

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix Spike - Sample No.: V3080111LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 85.55 | 86 | 63-122 |
| Toluene | 100.0 | | 90.34 | 90 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | | 100.4 | 100 | 69-117 |
| Trichloroethene | 100.0 | | 89.69 | 90 | 75-113 |
| Vinyl Acetate | 100.0 | | 88.98 | 89 | 28-146 |
| Vinyl Chloride | 100.0 | | 84.64 | 85 | 65-134 |
| Xylene-mp | 200.0 | | 172.1 | 86 | 77-115 |
| Xylene-o | 100.0 | | 84.77 | 85 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 36 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC. Lab Prep Batch: V308011

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix Spike - Sample No.: 030755108

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 73.00 | 73 | 59-151 |
| Benzene | 100.0 | 0.000 | 91.93 | 92 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 92.04 | 92 | 68-119 |
| Bromoform | 100.0 | 0.000 | 87.11 | 87 | 66-136 |
| 2-Butanone | 100.0 | 0.000 | 91.21 | 91 | 55-151 |
| Bromomethane | 100.0 | 0.000 | 87.49 | 87 | 40-134 |
| Carbon Disulfide | 100.0 | 0.000 | 86.83 | 87 | 60-133 |
| Carbon Tetrachloride | 100.0 | 0.000 | 94.48 | 94 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 85.35 | 85 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 91.45 | 91 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 88.67 | 89 | 64-142 |
| Chloroform | 100.0 | 0.000 | 102.4 | 102 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 85.81 | 86 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 93.44 | 93 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 95.52 | 96 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 0.000 | 95.12 | 95 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 0.000 | 96.50 | 96 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 0.000 | 91.98 | 92 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 89.65 | 90 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 97.66 | 98 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 97.33 | 97 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 85.89 | 86 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 89.67 | 90 | 53-144 |
| Methylene Chloride | 100.0 | 0.000 | 95.49 | 95 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 94.34 | 94 | 42-144 |
| Styrene | 100.0 | 0.000 | 89.23 | 89 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 0.000 | 101.2 | 101 | 67-126 |
| Tetrachloroethene | 100.0 | 0.000 | 86.15 | 86 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V308011

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix Spike - Sample No.: 030755108

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 95.88 | 96 | 63-122 |
| Toluene | 100.0 | 0.000 | 90.64 | 91 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 0.000 | 98.44 | 98 | 69-117 |
| Trichloroethene | 100.0 | 0.000 | 92.88 | 93 | 75-113 |
| Vinyl Acetate | 100.0 | 0.000 | 77.80 | 78 | 28-146 |
| Vinyl Chloride | 100.0 | 0.000 | 87.80 | 88 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 175.2 | 88 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 89.68 | 90 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC. Lab Prep Batch: V308011

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix Spike - Sample No.: 030755108

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 75.17 | 75 | 3 | 20 | 59-151 |
| Benzene | 100.0 | 100.8 | 101 | 9 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 95.43 | 95 | 3 | 20 | 68-119 |
| Bromoform | 100.0 | 98.92 | 99 | 13 | 20 | 66-136 |
| 2-Butanone | 100.0 | 97.34 | 97 | 6 | 20 | 55-151 |
| Bromomethane | 100.0 | 97.34 | 97 | 11 | 20 | 40-134 |
| Carbon Disulfide | 100.0 | 101.1 | 101 | 15 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 98.42 | 98 | 4 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 97.22 | 97 | 13 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 90.30 | 90 | 1 | 20 | 72-118 |
| Chloroethane | 100.0 | 94.76 | 95 | 6 | 20 | 64-142 |
| Chloroform | 100.0 | 105.2 | 105 | 3 | 20 | 70-115 |
| Chloromethane | 100.0 | 91.22 | 91 | 6 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 98.17 | 98 | 5 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 97.98 | 98 | 2 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 104.2 | 104 | 9 | 20 | 69-121 |
| cis-1,2-Dichloroethene | 100.0 | 101.9 | 102 | 6 | 20 | 76-114 |
| trans-1,2-Dichloroethen | 100.0 | 104.2 | 104 | 12 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 97.04 | 97 | 7 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 105.0 | 105 | 7 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 102.8 | 103 | 6 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 97.30 | 97 | 12 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 96.24 | 96 | 6 | 20 | 53-144 |
| Methylene Chloride | 100.0 | 101.7 | 102 | 7 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 102.9 | 103 | 9 | 20 | 42-144 |
| Styrene | 100.0 | 97.23 | 97 | 9 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 106.9 | 107 | 6 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 91.60 | 92 | 7 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____



000923

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

768 666

Lab Name: ETC, INC. Lab Prep Batch: V308011

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix Spike - Sample No.: 030755108

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 98.17 | 98 | 2 | 20 | 63-122 |
| Toluene | 100.0 | 98.36 | 98 | 7 | 20 | 77-115 |
| 1,1,2-Trichloroethane | 100.0 | 103.2 | 103 | 5 | 20 | 69-117 |
| Trichloroethene | 100.0 | 101.0 | 101 | 8 | 20 | 75-113 |
| Vinyl Acetate | 100.0 | 82.60 | 83 | 6 | 20 | 28-146 |
| Vinyl Chloride | 100.0 | 93.34 | 93 | 6 | 20 | 65-134 |
| Xylene-mp | 200.0 | 193.3 | 97 | 10 | 20 | 77-115 |
| Xylene-o | 100.0 | 98.64 | 99 | 10 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 36 outside limits
Spike Recovery: 0 out of 72 outside limits

COMMENTS: _____

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level III
# GC/MS Volatiles

768 668

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

**Sequence ID:** V308011 **Matrix:** H2O **HBN:** _____ **Analyst** SS

**Date:** 8-2-03 **Super** MM

**Applicable ETC Order Nos. for this sequence:**
0307-550-1 0307-537-1 0307-487-1
0307-471-1 0307-499-1, 2
0307-551-1-5, 7, 8

| | Validated |
|---|---|
| **1. BFB Daily 12-Hour Tune Meets Criteria.** No analyses begins until criteria are met. (SOP) | ✓ |
| **2. Initial Calibration Verification Criteria - Method :** V307312, 8260M | |
| a. SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 1122-Tetrachloroethene) | ✓ |
| b. CCC - RSD of RF for CCCs and Target Analytes MUST BE <= 30% | ✓ |
| c. RSD of analytes <=15% may use Average RF for quantitation | ✓ |
| d. Analytes w/RSD >15% use Linear Regression - correlation coefficient >=0.99 | ✓ |
| **3. Calibration Verification - Each 12-Hour Shift** | |
| a. SPCC - Mean RF >=0.10 (>=0.30 for Chlorobenzene / 1122-Tetrachloroethene) | ✓ |
| b. CCC - % Difference for Average RF Calibration - <=20% | ✓ |
| c. CCC - % Drift for Linear Regression Calibration - <=20% | ✓ |
| d. % Difference/% Drift for all other Target Analytes - <=30% Acetone ↑, MEK ↑, 2-HEXE ↓ | ✓ |
| e. Internal Standards - Retention Times within +/-30 seconds from Mid-Point ICAL STD | ✓ |
| f. Internal Standards - Areas within (-50% to +100%) form Mid-Point ICAL STD | ✓ |
| **4. Method Blanks included in this sequence :** V308011MB3 | ✓ |
| Analyze daily or for each analytical batch (20 samples): | |
| List compounds identified in Method Blank w/concentration. | |
| Flag final result "B-Detected in Blank" Methine Cl2 BDL | |
| **5. Matrix Spike/Matrix Spike Duplicates included in this sequence :** | * ✓ |
| Analyze daily or for each matrix (ms/msd per 20 samples of same matrix) | |
| List MS/MSD(s) performed with any failures : 0307-551-8 MS, MSD 0/88 - RPD +4/176 - recovery outside limits | |
| **6. Laboratory Control Samples included in this sequence :** | ✓ |
| Must contain all Target Analytes. 0/88 | ✓ |
| **7. Surrogate Recoveries within QC Limits** | ✓ |
| **8. All positive compounds within calibration range** | ✓ |

Narrative/Notes :

* 0307-551-8 MS, MSD 0/88 - RPD +4/176 - recovery outside limits

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Lab File ID: 0102002 BFB Injection Date: 08/01/03

Instrument ID: VOC3 BFB Injection Time: 1137

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 18.3 |
| 75 | 30.0 - 60.0% of mass 95 | 43.6 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.5 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 73.1 |
| 175 | 5.0 - 9.0% of mass 174 | 5.7 ( 7.8)1 |
| 176 | 95.0 - 101.0% of mass 174 | 71.5 ( 97.8)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.1 ( 7.1)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V3080111LCS | 11LCS | 0201002LCSJ | 08/01/03 | 1155 |
| 02 | CCV100PPB | | 0201002J | 08/01/03 | 1155 |
| 03 | V3080111LB | 11LB | 0302004J | 08/01/03 | 1404 |
| 04 | 030755001 | 030755001 | 0401005 | 08/01/03 | 1434 |
| 05 | 030755108 | 030755108 | 1801018 | 08/01/03 | 2155 |
| 06 | 030755108MS | MS | 1901019J | 08/01/03 | 2225 |
| 07 | 030755108MSD | MSD | 2001020J | 08/01/03 | 2255 |
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FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Instrument ID: VOC3 Calibration Date: 08/01/03 Time: 1155

Lab File ID: 0201002J Init. Calib. Date(s): 07/31/03 07/31/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1652 2154

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 145.8 | 100.0 | AVRG | 45.8 | 30.0 | <- |
| Benzene | 90.42 | 100.0 | AVRG | 9.6 | 30.0 | |
| Bromodichloromethane | 89.94 | 100.0 | LINR | 10.1 | 30.0 | |
| Bromoform | 90.55 | 100.0 | AVRG | 9.4 | 30.0 | |
| 2-Butanone | 131.4 | 100.0 | AVRG | 31.4 | 30.0 | <- |
| Bromomethane | 84.57 | 100.0 | AVRG | 15.4 | 30.0 | |
| Carbon Disulfide | 72.99 | 100.0 | AVRG | 27.0 | 30.0 | |
| Carbon Tetrachloride | 84.81 | 100.0 | AVRG | 15.2 | 30.0 | |
| Chlorobenzene | 84.26 | 100.0 | AVRG | 15.7 | 30.0 | |
| Chlorodibromomethane | 89.78 | 100.0 | AVRG | 10.2 | 30.0 | |
| Chloroethane | 83.98 | 100.0 | AVRG | 16.0 | 30.0 | |
| Chloroform | 92.89 | 100.0 | LINR | 7.1 | 20.0 | |
| Chloromethane | 89.10 | 100.0 | AVRG | 10.9 | 30.0 | |
| 1,1-Dichloroethane | 86.21 | 100.0 | AVRG | 13.8 | 30.0 | |
| 1,2-Dichloroethane | 93.02 | 100.0 | AVRG | 7.0 | 30.0 | |
| 1,1-Dichloroethene | 80.16 | 100.0 | AVRG | 19.8 | 20.0 | |
| cis-1,2-Dichloroethene | 90.62 | 100.0 | AVRG | 9.4 | 30.0 | |
| trans-1,2-Dichloroethene | 86.44 | 100.0 | AVRG | 13.6 | 30.0 | |
| 1,2-Dichloropropane | 88.56 | 100.0 | AVRG | 11.4 | 20.0 | |
| cis-1,3-Dichloropropene | 101.3 | 100.0 | AVRG | 1.3 | 30.0 | |
| trans-1,3-Dichloropropene | 103.2 | 100.0 | AVRG | 3.2 | 30.0 | |
| Ethylbenzene | 87.27 | 100.0 | AVRG | 12.7 | 20.0 | |
| 2-Hexanone | 128.0 | 100.0 | AVRG | 28.0 | 30.0 | |
| Methylene Chloride | 87.35 | 100.0 | LINR | 12.6 | 30.0 | |
| 4-Methyl-2-Pentanone | 106.8 | 100.0 | AVRG | 6.8 | 30.0 | |
| Styrene | 91.54 | 100.0 | AVRG | 8.5 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 110.2 | 100.0 | AVRG | 10.2 | 30.0 | |
| Tetrachloroethene | 83.32 | 100.0 | AVRG | 16.7 | 30.0 | |
| 1,1,1-Trichloroethane | 85.55 | 100.0 | AVRG | 14.4 | 30.0 | |
| Toluene | 90.34 | 100.0 | AVRG | 9.7 | 20.0 | |
| 1,1,2-Trichloroethane | 100.4 | 100.0 | AVRG | 0.4 | 30.0 | |
| Trichloroethene | 89.69 | 100.0 | AVRG | 10.3 | 30.0 | |
| Vinyl Acetate | 88.98 | 100.0 | AVRG | 11.0 | 30.0 | |
| Vinyl Chloride | 84.64 | 100.0 | AVRG | 15.4 | 20.0 | |
| Xylene-mp | 172.1 | 200.0 | AVRG | 14.0 | 30.0 | |
| Xylene-o | 84.77 | 100.0 | AVRG | 15.2 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Instrument ID: VOC3 Calibration Date: 08/01/03 Time: 1155

Lab File ID: 0201002J Init. Calib. Date(s): 07/31/03 07/31/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1652 2154

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 42.29 | 50.00 | AVRG | 15.4 | 30.0 |
| Toluene-d8 | 46.19 | 50.00 | AVRG | 7.6 | 30.0 |
| Bromofluorobenzene | 40.60 | 50.00 | AVRG | 18.8 | 30.0 |
| 1,2-Dichloroethane-d4 | 35.39 | 50.00 | AVRG | 29.2 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Lab File ID (Standard): 0201002J Date Analyzed: 08/01/03

Instrument ID: VOC3 Time Analyzed: 1155

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 942023 | 6.67 | 1268045 | 7.22 | 1169104 | 9.31 |
| | UPPER LIMIT | 1884046 | 7.17 | 2536090 | 7.72 | 2338208 | 9.81 |
| | LOWER LIMIT | 471012 | 6.17 | 634023 | 6.72 | 584552 | 8.81 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3080111LB | 1022016 | 6.67 | 1345595 | 7.22 | 1188472 | 9.32 |
| 02 | 030755001 | 911230 | 6.67 | 1244170 | 7.22 | 1081309 | 9.31 |
| 03 | 030755108 | 754341 | 6.67 | 1032201 | 7.22 | 919462 | 9.31 |
| 04 | 030755108MS | 807534 | 6.67 | 1104524 | 7.22 | 1030179 | 9.31 |
| 05 | 030755108MSD | 840090 | 6.67 | 1132979 | 7.22 | 1005984 | 9.31 |
| 06 | | | | | | | |
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IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

820928

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Lab File ID (Standard): 0201002J Date Analyzed: 08/01/03

Instrument ID: VOC3 Time Analyzed: 1155

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA # | RT # | AREA # | RT # | AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 390345 | 11.09 | | | | |
| | UPPER LIMIT | 780690 | 11.59 | | | | |
| | LOWER LIMIT | 195173 | 10.59 | | | | |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V3080111LB | 472599 | 11.09 | | | | |
| 02 | 030755001 | 424973 | 11.10 | | | | |
| 03 | 030755108 | 358651 | 11.09 | | | | |
| 04 | 030755108MS | 366240 | 11.09 | | | | |
| 05 | 030755108MSD | 365575 | 11.09 | | | | |
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IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

Report Date : 04-Aug-2003 14:27

Lisa Savage 8-4-03 11/8/4/03 RW 8/5/03



Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52 SLN: 02-7-23-1
End Cal Date : 31-JUL-2003 21:54 02-7-23-10
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

Calibration File Names:
Level 1: \\ETCBDC\DD\chem\voc3.i\V307312.B\0301005.D
Level 2: \\ETCBDC\DD\chem\voc3.i\V307312.B\0401006.D
Level 3: \\ETCBDC\DD\chem\voc3.i\V307312.B\0601008.D
Level 4: \\ETCBDC\DD\chem\voc3.i\V307312.B\0701009.D
Level 5: \\ETCBDC\DD\chem\voc3.i\V307312.B\0801010.D
Level 6: \\ETCBDC\DD\chem\voc3.i\V307312.B\0901011.D
Level 7: \\ETCBDC\DD\chem\voc3.i\V307312.B\1001012.D
Level 8: \\ETCBDC\DD\chem\voc3.i\V307312.B\1101013.D
Level 9: \\ETCBDC\DD\chem\voc3.i\V307312.B\1201014.D
Level 10: \\ETCBDC\DD\chem\voc3.i\V307312.B\1301015.D

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 1 Dichlorodifluoromethane | 0 92326 | 0.78885 | 1.03936 | 0.90383 | 0.93868 | 0.90464 | | | | | |
| | 0.99542 | 0.85976 | 0.98234 | 0.90434 | | | AVRG | | 0 92405 | | 7 70229 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52
End Cal Date : 31-JUL-2003 21:54
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 2 Chloromethane | 1.02318 | 1.05830 | 1.16079 | 0.96739 | 1.00629 | 0.94761 | | | | | |
| | 1.04319 | 0.87926 | 0.99246 | 0.91162 | | | AVRG | | 0.99901 | | 8.03143 |
| 3 Vinyl Chloride | 0.62520 | 0.67950 | 0.79749 | 0.68298 | 0.65910 | 0.61782 | | | | | |
| | 0.66138 | 0.56520 | 0.63109 | 0.57600 | | | AVRG | | 0.64958 | | 10.08171 |
| 4 Bromomethane | 0.54500 | 0.55780 | 0.49034 | 0.42391 | 0.44254 | 0.45481 | | | | | |
| | 0.50081 | 0.44376 | 0.50434 | 0.47224 | | | AVRG | | 0.48355 | | 9.20757 |
| 5 Chloroethane | 0.35652 | 0.37909 | 0.37839 | 0.32336 | 0.32362 | 0.31806 | | | | | |
| | 0.34381 | 0.29459 | 0.33708 | 0.31233 | | | AVRG | | 0.33669 | | 8.30835 |
| 6 Acrolein | +++++ | +++++ | +++++ | 0.01658 | 0.01912 | 0.01892 | | | | | |
| | 0.01993 | 0.01820 | 0.01670 | 0.02051 | | | AVRG | | 0.01857 | | 8.11397 |

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52
End Cal Date : 31-JUL-2003 21:54
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 7 Trichlorofluoromethane | 0.93722 | 0 89288 | 1.06774 | 0 93914 | 0.91082 | 0.88337 | | | | | |
| | 0 95124 | 0.79708 | 0.88850 | 0.78972 | | | AVRG | | 0 90577 | | 8.76139 |
| 8 Acetonitrile | 1135 | 10717 | 38388 | 130487 | 298038 | 674341 | | | | | |
| | 758913 | 1057142 | 1210810 | 1677454 | | | LINR | 0.19996 | 0.04662 | | 0.99681 |
| 9 Acetone | +++++ | +++++ | +++++ | 0 19325 | 0.16410 | 0.18152 | | | | | |
| | 0.17462 | 0 16183 | 0 15405 | 0.16725 | | | AVRG | | 0 17095 | | 7.74515 |
| 10 Furan | +++++ | 1 05670 | 1.09052 | 0 99464 | 0 94469 | 0 95643 | | | | | |
| | 1 01708 | 0.86496 | 0.90294 | 0.82148 | | | AVRG | | 0.96105 | | 9.20141 |
| 11 1,1-Dichloroethene | 0 43902 | 0 44422 | 0.47136 | 0.42248 | 0.40647 | 0 40939 | | | | | |
| | 0 45653 | 0.39076 | 0.43039 | 0.39845 | | | AVRG | | 0 42691 | | 6.13439 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52
End Cal Date : 31-JUL-2003 21:54
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 12 Acrylonitrile | +++++ | +++++ | +++++ | 0.10200 | 0.09636 | 0 10359 | | | | | |
| | 0.10922 | 0.10099 | 0.09577 | 0.11559 | | | AVRG | | 0 10336 | | 6 82046 |
| 13 Iodomethane | +++++ | +++++ | 0.87956 | 0.92302 | 0.91227 | 0.91555 | | | | | |
| | 0.99533 | 0.85751 | 0.95463 | 0.86329 | | | AVRG | | 0.91265 | | 5 12046 |
| 14 Methylene Chloride | 15141 | 18839 | 44815 | 126652 | 278732 | 574681 | | | | | |
| | 671809 | 858756 | 1063256 | 1274357 | | | LINR | -0.07143 | 0.37317 | | 0.99408 |
| 15 1,1,2-trichloro-1,2,2-trifluo | 0.43542 | 0.50445 | 0.50876 | 0 42533 | 0 43293 | 0.43304 | | | | | |
| | 0 46637 | 0 39689 | 0 44179 | 0 40359 | | | AVRG | | 0 44486 | | 8.49861 |
| 16 Allyl chloride | +++++ | 1.06728 | 0.89461 | 0.88264 | 0.83195 | 0 83582 | | | | | |
| | 0.90199 | 0 75589 | 0.80956 | 0.75352 | | | AVRG | | 0.85925 | | 11.08110 |

2003

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52
End Cal Date : 31-JUL-2003 21:54
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150 0000 Level 8 | 170 0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 17 Carbon Disulfide | 1 51231 | 1.55744 | 1.72680 | 1 46989 | 1 42953 | 1.49872 | | | | | |
| | 1.62403 | 1 41585 | 1 54781 | 1.41696 | | | AVRG | | 1.51993 | | 6 52189 |
| 18 trans-1,2-Dichloroethene | 0.49978 | 0.51695 | 0.59368 | 0.52475 | 0.50484 | 0.51426 | | | | | |
| | 0 56467 | 0.48752 | 0.51621 | 0.47259 | | | AVRG | | 0.51952 | | 6 86321 |
| 19 Methyl-tertbutyl-Ether | 0.83657 | 0 80105 | 1.11090 | 0.99437 | 0.90490 | 0.96547 | | | | | |
| | 1.04798 | 0.91026 | 0.96222 | 0 97253 | | | AVRG | | 0.95063 | | 9.73096 |
| 20 Propionitrile | 0 03865 | 0 04726 | 0 05830 | 0 04715 | 0.04397 | 0.04970 | | | | | |
| | 0 05428 | 0 04929 | 0.05143 | 0.05630 | | | AVRG | | 0 04963 | | 11 80711 |
| 21 1,1-Dichloroethane | 0 92916 | 0 96935 | 1.11624 | 0.99938 | 0 91210 | 0 92607 | | | | | |
| | 0 99638 | 0.86388 | 0 91918 | 0.85354 | | | AVRG | | 0.94853 | | 8 06671 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52
End Cal Date : 31-JUL-2003 21:54
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 22 Vinyl Acetate | +++++ | +++++ | 0.86246 | 0.72815 | 0.65846 | 0.69878 | | | | | |
| | 0.72108 | 0.64261 | 0.68589 | 0 69111 | | | AVRG | | 0.71107 | | 9.50103 |
| 23 Chloroprene | 0.89417 | 0.98694 | 1.07471 | 0.96400 | 0 91265 | 0.89571 | | | | | |
| | 0.97339 | 0.81742 | 0.86746 | 0.77592 | | | AVRG | | 0.91624 | | 9.51572 |
| 24 2-Butanone | +++++ | +++++ | 0.04208 | 0.05262 | 0 04618 | 0.04712 | | | | | |
| | 0.05433 | 0.04553 | 0.05230 | 0 05805 | | | AVRG | | 0.04978 | | 10.76186 |
| 25 Hexane | +++++ | +++++ | 83605 | 263436 | 630397 | 1260996 | | | | | |
| | 1445814 | +++++ | +++++ | +++++ | | | LINR | -0.02473 | 0.74910 | | 0.99735 |
| 26 Di isopropyl ether | 1.86480 | 1.99362 | 2 35325 | 2 05959 | 1 87550 | 1.83630 | | | | | |
| | 1.96244 | 1 65313 | 1.71221 | 1 58580 | | | AVRG | | 1 88967 | | 11 74508 |

Environmental Testing and Consulting, Inc.

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 27 Methacrylonitrile | 0.30622 | 0.32144 | 0.38548 | 0.30983 | 0.27867 | 0.29794 | | | | | |
| | 0 30736 | 0.26979 | 0.27584 | 0 27864 | | | AVRG | | 0.30312 | | 11.14397 |
| 28 cis-1,2-Dichloroethene | 0 54586 | 0 57374 | 0.68405 | 0 55171 | 0 52191 | 0.53362 | | | | | |
| | 0 56613 | 0.48938 | 0 53196 | 0 49302 | | | AVRG | | 0.54914 | | 9.99482 |
| 29 Ethyl Acetate | +++++ | +++++ | 0.48893 | 0.39412 | 0 41104 | 0.47211 | | | | | |
| | 0 47786 | 0.45759 | 0 47815 | 0.52352 | | | AVRG | | 0.46292 | | 9.07107 |
| 30 Bromochloromethane | 0 25846 | 0.27563 | 0.32203 | 0.28076 | 0.29031 | 0 27936 | | | | | |
| | 0.30158 | 0 25962 | 0.27873 | 0.26335 | | | AVRG | | 0.28098 | | 7.02495 |
| 31 Chloroform | +++++ | 23825 | 86706 | 294194 | 690272 | 1374817 | | | | | |
| | 1599805 | 2008049 | 2423522 | +++++ | | | LINR | -0 05451 | 0 89292 | | 0.99128 |

Average = 17.8

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Environmental Testing and Consulting, Inc.

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Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 32 Isobutyl Alcohol | +++++ | +++++ | 0.02500 | 0.02165 | 0 01936 | 0.02089 | | | | | |
| | 0.02231 | 0.02034 | 0.02030 | 0.02182 | | | AVRG | | 0 02146 | | 8.03174 |
| 33 2,2-Dichloropropane | 0.81829 | 0.92799 | 0 91020 | 0.79434 | 0.74041 | 0.74303 | | | | | |
| | 0.80217 | 0 68771 | 0.72567 | 0 65744 | | | AVRG | | 0.78073 | | 11.33113 |
| 35 Tetrahydrofuran | +++++ | +++++ | 0.20199 | 0.21346 | 0.19750 | 0.21461 | | | | | |
| | 0.22997 | 0.21687 | 0.22981 | 0.25135 | | | AVRG | | 0 21944 | | 7 87069 |
| 38 1,2-Dichloroethane | 0.72066 | 0 73500 | 0.80580 | 0 73573 | 0.69080 | 0.72164 | | | | | |
| | 0.75075 | 0.64382 | 0.67480 | 0 64364 | | | AVRG | | 0.71226 | | 7.05337 |
| 39 1,1,1-Trichloroethane | 0.86033 | 0.94996 | 1 07994 | 0.96053 | 0.94891 | 0.92226 | | | | | |
| | 0 99587 | 0 84376 | 0.91807 | 0 82896 | | | AVRG | | 0.93086 | | 8.10309 |

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Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 40 1,1-Dichloropropene | 0 51692 | 0 71468 | 0.83602 | 0.73934 | 0 73854 | 0 74347 | | | | | |
| | 0.78803 | 0.68560 | 0.72586 | 0.66540 | | | AVRG | | 0.71539 | | 11.84395 |
| 41 Carbon Tetrachloride | 0.82477 | 0.82683 | 0 99223 | 0.88748 | 0 86966 | 0.87560 | | | | | |
| | 0.94158 | 0 79670 | 0.87864 | 0.80122 | | | AVRG | | 0.86947 | | 7.11963 |
| 42 Benzene | 1 88020 | 1.87135 | 2.13063 | 1 79044 | 1.71985 | 1.70839 | | | | | |
| | 1.81210 | 1.56160 | 1 70116 | 1.54988 | | | AVRG | | 1.77256 | | 9 54306 |
| 44 Dibromomethane | 0.25299 | 0 35186 | 0.35008 | 0.30974 | 0 28432 | 0.28751 | | | | | |
| | 0 30587 | 0.26213 | 0 26337 | 0.24999 | | | AVRG | | 0.29179 | | 12.79299 |
| 45 1,2-Dichloropropane | 0.48935 | 0.45312 | 0.47212 | 0.39444 | 0.39961 | 0.39726 | | | | | |
| | 0.42033 | 0.35412 | 0.36843 | 0.33462 | | | AVRG | | 0 40834 | | 12.41753 |

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200 0000 Level 10 | | | | | | | |
| 46 Trichloroethene | 0.41441 | 0 44288 | 0 50695 | 0.44864 | 0.42178 | 0.41469 | | | | | |
| | 0.44040 | 0.36787 | 0.38111 | 0 34188 | | | AVRG | | 0.41806 | | 11 18520 |
| 47 Bromodichloromethane | +++++ | 22748 | 71178 | 235010 | 545236 | 1086711 | | | | | |
| | 1256208 | +++++ | +++++ | +++++ | | | LINR | -0.02458 | 0.57391 | | 0.99778 |
| 48 n-Propyl Acetate | +++++ | 1.15642 | 1.28135 | 1.07260 | 0.98547 | 1.10828 | | | | | |
| | 1 11041 | 0.97274 | 0.96816 | 1.00749 | | | AVRG | | 1.07366 | | 9.65742 |
| 49 Methyl methacrylate | 0.16824 | 0.17019 | 0.22540 | 0 19007 | 0.18249 | 0.19575 | | | | | |
| | 0.20285 | 0.17606 | 0 17951 | 0 18622 | | | AVRG | | 0 18768 | | 9 12305 |
| 50 1,4-Dioxane | +++++ | +++++ | 0.00234 | 0.00246 | 0.00204 | 0.00235 | | | | | |
| | 0.00229 | 0.00234 | 0.00239 | 0.00243 | | | AVRG | | 0.00233 | | 5.63587 |

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 51 2-Chloroethyl vinyl ether | +++++ | +++++ | 3126 | 15119 | 53136 | 142166 | | | | | |
| | 168888 | 246856 | 286688 | 413459 | | | LINR | 0.22842 | 0.08604 | | 0.99138 |
| 52 cis-1,3-Dichloropropene | 0.60221 | 0.56720 | 0.74322 | 0.64060 | 0.62171 | 0.64576 | | | | | |
| | 0.67214 | 0.57587 | 0.59483 | 0.55218 | | | AVRG | | 0.62157 | | 9.17231 |
| 53 4-Methyl-2-Pentanone | +++++ | +++++ | 0.54393 | 0.45149 | 0.44297 | 0.48706 | | | | | |
| | 0.48519 | 0.43557 | 0.42870 | 0.45142 | | | AVRG | | 0.46579 | | 8.17700 |
| 54 trans-1,3-Dichloropropene | 0.50454 | 0.45240 | 0.60081 | 0.55255 | 0.53320 | 0.55156 | | | | | |
| | 0.57752 | 0.48481 | 0.50381 | 0.47718 | | | AVRG | | 0.52384 | | 9.01378 |
| 55 1,1,2-Trichloroethane | 0.24989 | 0.31874 | 0.32293 | 0.29401 | 0.28028 | 0.28010 | | | | | |
| | 0.29676 | 0.25305 | 0.25834 | 0.24750 | | | AVRG | | 0.28016 | | 9.93981 |

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| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5 0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 57 Ethyl methacrylate | 0.22932 | 0.23126 | 0.23576 | 0.20714 | 0 19657 | 0.21044 | | | | | |
| | 0.21399 | 0.19094 | 0.19343 | 0 19121 | | | AVRG | | 0 21001 | | 8 22376 |
| 58 Toluene | 0 94400 | 1.00315 | 1.01564 | 0.83648 | 0.83160 | 0.81336 | | | | | |
| | 0.85068 | 0.73693 | 0.76716 | 0.69876 | | | AVRG | | 0.84978 | | 12.65674 |
| 59 1,3-Dichloropropane | 0.44445 | 0.51567 | 0.61409 | 0.54807 | 0.50814 | 0.50768 | | | | | |
| | 0.52837 | 0.45335 | 0.46517 | 0.44698 | | | AVRG | | 0 50320 | | 10.61675 |
| 60 2-Hexanone | +++++ | +++++ | 0.40095 | 0.33123 | 0.32077 | 0 35085 | | | | | |
| | 0 34421 | 0.32537 | 0.30262 | 0 33614 | | | AVRG | | 0 33902 | | 8.57481 |
| 61 Chlorodibromomethane | +++++ | 0.66629 | 0.60527 | 0.54553 | 0 53802 | 0.52705 | | | | | |
| | 0.55066 | 0.47106 | 0 47917 | 0 45734 | | | AVRG | | 0.53782 | | 12 43264 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150 0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 62 1,2-Dibromoethane | 0 39046 | 0 39348 | 0.50750 | 0 41266 | 0 40756 | 0.44067 | | | | | |
| | 0 45323 | 0 39552 | 0.39872 | 0 38958 | | | AVRG | | 0.41894 | | 9 05050 |
| 63 Tetrachloroethene | 0 49667 | 0.47254 | 0.50757 | 0.41713 | 0.40323 | 0 39207 | | | | | |
| | 0 40775 | 0.34243 | 0.36343 | +++++ | | | AVRG | | 0.42253 | | 13 66890 |
| 64 1,1,1,2-Tetrachloroethane | 0.44479 | 0.51211 | 0 55101 | 0.48885 | 0.47063 | 0.49733 | | | | | |
| | 0.54589 | 0 44651 | 0.48559 | 0 43841 | | | AVRG | | 0.48811 | | 8.17924 |
| 66 Chlorobenzene | 1 20619 | 1 23171 | 1.28085 | 1 01621 | 0 99125 | 1 05054 | | | | | |
| | 1.16185 | 0 96041 | 1.05214 | 0 95761 | | | AVRG | | 1 09088 | | 10.91804 |
| 67 Ethylbenzene | 2 13974 | 2.08341 | 2 13061 | 1 71526 | 1 70796 | 1 76185 | | | | | |
| | 1 91378 | 1 56880 | 1.71502 | 1 56325 | | | AVRG | | 1.82997 | | 12.12169 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150 0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 68 Xylene-mp | 0.74070 | 0.76935 | 0.75454 | 0.62201 | 0.60504 | 0.59238 | | | | | |
| | 0 65106 | 0.53516 | 0.59101 | 0 53341 | | | AVRG | | 0.63947 | | 13 66041 |
| 69 Bromoform | +++++ | 0 46637 | 0.43562 | 0.41827 | 0.40151 | 0.43641 | | | | | |
| | 0.47806 | 0 40028 | 0 42042 | 0.40421 | | | AVRG | | 0 42902 | | 6 53341 |
| 70 trans-1,4-Dichloro-2-butene | +++++ | 0.08260 | 0.12762 | 0.12557 | 0.12397 | 0.13432 | | | | | |
| | 0 14273 | 0.12481 | 0.13090 | 0 12833 | | | AVRG | | 0.12454 | | 13.47029 |
| 71 Styrene | 0.98354 | 1.04161 | 1.18608 | 0.95218 | 0 94717 | 0.97013 | | | | | |
| | 1.08147 | 0.88830 | 0.97968 | 0.88342 | | | AVRG | | 0.99136 | | 9 20643 |
| 72 Xylene-o | +++++ | 0 70709 | 0.77526 | 0.60918 | 0.57327 | 0 56783 | | | | | |
| | 0.62963 | 0.51755 | 0 55788 | 0.50267 | | | AVRG | | 0 60448 | | 14.65248 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 73 1,1,2,2-Tetrachloroethane | 1.06204 | 1.07746 | 1.14647 | 0.91875 | 0.84382 | 0.93107 | | | | | |
| | 0.98305 | 0.85752 | 0.89929 | 0.88218 | | | AVRG | | 0.96016 | | 10.74466 |
| 74 cis-1,4-Dichloro-2-butene | +++++ | 0.11332 | 0.14251 | 0.12242 | 0.11339 | 0.12365 | | | | | |
| | 0.13705 | 0.11278 | 0.11837 | 0.12084 | | | AVRG | | 0.12270 | | 8.61744 |
| 75 1,2,3-Trichloropropane | +++++ | 0.13766 | 0.15155 | 0.12592 | 0.11139 | 0.11751 | | | | | |
| | 0.12598 | 0.10518 | 0.10891 | 0.10841 | | | AVRG | | 0.12139 | | 12.75596 |
| 76 Isopropylbenzene | 1.82249 | 1.99944 | 2.01289 | 1.71276 | 1.68089 | 1.62279 | | | | | |
| | 1.78922 | 1.45116 | 1.59219 | 1.41371 | | | AVRG | | 1.70975 | | 11.88407 |
| 78 Bromobenzene | 0.50619 | 0.54709 | 0.55728 | 0.48296 | 0.47577 | 0.48137 | | | | | |
| | 0.54099 | 0.45221 | 0.48458 | 0.43870 | | | AVRG | | 0.49671 | | 8.11213 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 79 n-Propylbenzene | +++++ | 2.21714 | 2.31643 | 1.97478 | 1.90320 | 1.84094 | | | | | |
| | 2.05597 | 1.65738 | 1.79325 | 1.60850 | | | AVRG | | 1.92973 | | 12.35423 |
| 80 2-Chlorotoluene | +++++ | 1 45260 | 1.40856 | 1.11508 | 1.12513 | 1.11761 | | | | | |
| | 1.20581 | 1 00912 | 1 10825 | 1.00844 | | | AVRG | | 1.17229 | | 13.54091 |
| 81 4-Chlorotoluene | +++++ | 1 47951 | 1 57022 | 1.27654 | 1.18832 | 1 16586 | | | | | |
| | 1.31309 | 1.08594 | 1 17072 | 1.04717 | | | AVRG | | 1 25526 | | 13.93778 |
| 82 1,3,5-Trimethylbenzene | 12740 | 26713 | 134219 | 454900 | 1099633 | 2063390 | | | | | |
| | 2289582 | 3034402 | 3581383 | +++++ | | | LINR | -0.03969 | 1 14225 | | 0.99032 |
| 83 1,2,4-Trimethylbenzene | 13172 | 27934 | 133703 | 461600 | 1127930 | 2117883 | | | | | |
| | 2334136 | +++++ | +++++ | +++++ | | | LINR | -0.00509 | 1.27206 | | 0 99722 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 85 tert-Butylbenzene | 1.31169 | 1 32226 | 1.30533 | 1 14063 | 1.10741 | 1.07010 | | | | | |
| | 1.16894 | 0 95669 | 1 04765 | 0.93432 | | | AVRG | | 1.13650 | | 12.48245 |
| 86 sec-Butylbenzene | 2.11270 | 2 17033 | 2.12647 | 1 85385 | 1.74175 | 1.68256 | | | | | |
| | 1.86357 | 1.49448 | 1.64408 | 1.45165 | | | AVRG | | 1.81414 | | 14.26380 |
| 87 4-Isopropyltoluene | 13353 | 25041 | 124422 | 437441 | 1066966 | 1950471 | | | | | |
| | 2184419 | +++++ | +++++ | +++++ | | | LINR | -0.00709 | 1.18465 | | 0.99613 |
| 89 1,3-Dichlorobenzene | 1.91842 | 1.96580 | 1 96327 | 1.67008 | 1 59270 | 1 57337 | | | | | |
| | 1.76690 | 1 51710 | 1.63645 | 1.46939 | | | AVRG | | 1.70735 | | 10.88277 |
| 90 1,4-Dichlorobenzene | 2.06629 | 1.97209 | 1.97748 | 1.52228 | 1 54513 | 1 56524 | | | | | |
| | 1.69858 | 1 46487 | 1.61790 | 1.44498 | | | AVRG | | 1.68748 | | 13 74845 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 91 1,2-Dichlorobenzene | 1.62323 | 1.69163 | 1.80692 | 1.46586 | 1.46873 | 1.47183 | | | | | |
| | 1.61537 | 1.38339 | 1.51329 | 1.37439 | | | AVRG | | 1.54147 | | 9.03888 |
| 92 n-Butylbenzene | 3.26743 | 3.03223 | 3.20732 | 2.92773 | 2.92273 | 2.90846 | | | | | |
| | 3.10889 | 2.57942 | 2.88128 | 2.54970 | | | AVRG | | 2.93852 | | 8.04454 |
| 93 1,2-Dibromo-3-chloropropane | +++++ | +++++ | 0.15534 | 0.15081 | 0.14650 | 0.17468 | | | | | |
| | 0.18274 | 0.16349 | 0.17468 | 0.18453 | | | AVRG | | 0.16660 | | 8.79382 |
| 94 1,2,4-Trichlorobenzene | 1.23315 | 1.17438 | 1.21263 | 1.14315 | 1.16298 | 1.24830 | | | | | |
| | 1.31183 | 1.15627 | 1.28990 | +++++ | | | AVRG | | 1.21473 | | 4.99015 |
| 95 Naphthalene | +++++ | +++++ | 1.99457 | 1.76829 | 1.67266 | 1.77040 | | | | | |
| | 1.97680 | 1.74414 | 1.90033 | 1.81565 | | | AVRG | | 1.83036 | | 6.30670 |

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52
End Cal Date : 31-JUL-2003 21:54
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0.5000000 Level 1 | 1 0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| 96 Hexachlorobutadiene | 967 | 4283 | 27514 | 109658 | 271367 | 525640 | | | | | |
| | 590282 | 777849 | 954031 | +++++ | | | LINR | 0.02091 | 0.80006 | | 0 99196 |
| 97 1,2,3-Trichlorobenzene | +++++ | 1.11626 | 1.05599 | 0 99395 | 1 00697 | 1.06669 | | | | | |
| | 1.16563 | 1.01729 | 1.14766 | 1.04761 | | | AVRG | | 1 06867 | | 5 78189 |
| $ 34 Dibromofluoromethane | +++++ | +++++ | +++++ | 0 61485 | 0.65093 | 0 68758 | | | | | |
| | 0 70936 | 0.66718 | +++++ | +++++ | | | AVRG | | 0 66598 | | 5 40879 |
| $ 37 1,2-Dichloroethane-d4 | 0.82529 | 0.65806 | 0.68343 | 0 61497 | 0.59286 | 0.66410 | | | | | |
| | 0.75364 | 0.59868 | 0.67315 | 0 64732 | | | AVRG | | 0.67115 | | 10.65713 |
| $ 56 Toluene-d8 | +++++ | +++++ | 1 36782 | 1 26256 | 1 27246 | 1.24874 | | | | | |
| | 1 39188 | 1 15256 | 1.15270 | 1 09798 | | | AVRG | | 1 24334 | | 8 40196 |

768 693

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 31-JUL-2003 16:52
End Cal Date : 31-JUL-2003 21:54
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc3.i\V308011.B\v307312.8260.m
Cal Date : 04-Aug-2003 13:22 Lisa

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | 200.0000 Level 10 | | | | | | | |
| $ 77 Bromofluorobenzene | +++++ | +++++ | 0.56133 | 0.50296 | 0.48534 | 0.48514 | | | | | |
| | 0 59438 | 0.46948 | 0.47521 | 0.46474 | | | AVRG | | 0.50482 | | 9 38645 |

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |

660949

FORM 1 768 694 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

030755001

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0307550

Matrix: (soil/water) WATER Lab Sample ID: 030755001

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0401005

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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FORM I VOA-GCMS-TIC

**ENVIRONMENTAL TESTING & CONSULTING, INC.**
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

*Founded 1972*

December 5, 2003

Mr. Kraig Smith
Jacobs
600 William Northern Blvd.
Tullahoma, TN 37388

Ref: Analytical Testing
ETC Order # 0311459
Project Description Memphis Defense Depot

Project Number C5X51115

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The EPA requires that analysis for pH, dissolved oxygen and total residual chlorine be analyzed in the field. Analyses and results reported which do not indicate "Field" for these parameters were analyzed outside the holding time as specified in Table II of 40 CFR Part 136.3.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the USEPA.

The results are shown on the attached analysis report(s). Please do not hesitate to contact our office if you have any questions.

Sincerely,

Connie Bradberry for NAP

Nathan A Pera, IV
Laboratory Project Manager

sh
Attachment

JACOBS_DDMT

Certifications
*NELAP - National Evironmental Laboratory Accreditation Program*
*USACE - Approved Laboratory US Army Corps of Engineers*

| | | | | | |
|---|---|---|---|---|---|
| *Alabama* | *#40750* | *Mississippi* | | *EPA* | *#TN00012* |
| *Arkansas* | *#88-0650* | *Oklahoma* | *#9311* | *USDA* | *#S-46279* |
| *Illinois* | *#000537* | *Tennessee* | *#02027* | | |
| *Kentucky* | *#90047* | *Virginia* | *#00106* | | |
| *Louisiana* | *#04015* | | | | |

# Environmental Testing & Consulting, Inc.

## Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

| | |
|---|---|
| **Q** | Surrogate Recovery Outside QC Limits |
| **J** | Estimated Value. Presence of the compound was confirmed but less than the |
| | reported detection limit.[1] |
| **E** | Concentration exceeds the established method calibration range but is within |
| | the working range of the instrument. |
| **B** | Analyte detected in the associated Method Blank. |
| **U** | Reported result was unconfirmed. Refer to Case Narrative. |
| **C** | Result reported from GC/MS confirmation analysis. |
| **M** | Result reported represents a minimum value. Refer to Case Narrative. |
| **NC** | Result reported from Primary Column. Result did not confirm. |
| * | QC Data (percent recovery/RPD for a particular analyte was outside QC Limits) |

**1** Estimated values are not reported for the following common laboratory contaminants:

Acetone
Methylene Chloride
Toluene
Phthalates
Sodium
Zinc

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

768 697

Client Name Jacobs ETC Order #0311459

Site ID Memphis Defense Depot C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Silver |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Aluminum |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Arsenic |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Barium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Beryllium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Calcium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Cadmium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Cobalt |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Chromium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Copper |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Iron |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 245.1 | Mercury |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Potassium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Magnesium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200 7 | Manganese |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Sodium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Nickel |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Lead |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Antimony |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Selenium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Thallium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200.7 | Vanadium |
| 031145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 200 7 | Zinc |
| [redacted]145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| [redacted]145901 | EFF-11-18-03 | 11/18/03 | AQUEOUS | 8270C | GC/MS Base/Neutral & Acid |

12/5/03 JB

768 698

Environmental Testing & Consulting, Inc.

# Login
# Chain-of-Custody

Environmental Testing & Consulting, Inc 2924 Walnut Grove Ro
Memphis, TN 38111 (901) 327-2750 Fax (901)327-6334
clientservices@etcmemphis.com

# CHAIN OF CUSTODY RECORD

ETC Work Order 03114591
ETC Quote No

| Company Name | Phone # | RUSH[2] |
|---|---|---|
| JACOBS | 931-393-6448 | |
| | PO # | ice |
| Project/Site (Include State) | FID # | |
| MEMPHIS DEPOT | E-Mail | |

Type of Event[1] Single Daily Weekly Monthly Quarterly Semi-Annual Annual

Project # CSXS1115

Project Manager/Contact KRAIG SMITH

Matrix
1 Wastewater 4 Sludge
2 Aqueous 5 Oil/Solvent
3 Soil/Sediment 6 Other

Analysis Requested (Note special detection limits / methods)

Which Regs Apply?
- NPDES
- Wastewater
- RCRA
- UST
- Risk Based Limits
- TRRP 13
- LA RECAP
- USACE

| # of Cont | Sample ID/ Number | Depth | Sample Date | Sample Time | Matrix | Type Grab/Comp | VOCs | SVOCs | Metals | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | EFF-11-18-03 | | 11-18 | | Water | GRAB | X | X | X | |
| | | | | | | | | | | |
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Sampled By: K Smith
Method of Shipment: Hand Deliver
Blank/Cooler Temp: 4°C (R5)
Remarks:

| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
|---|---|---|---|---|---|
| Kraig Smith | 11/18/03 | 1215 | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY (sign) | DATE | TIME |
| | | | | | |
| RELINQUISHED BY (sign) | DATE | TIME | RECEIVED BY LAB (print/sign) | DATE | TIME |
| | | | S. Herrmann | 11/18/03 | 1215 |

1 - Routine Sampling Events Only
2 - Surcharges may apply

Please return ETC Sample Kit Request Form with chain of custody

Distribution Original accompanies samples to the laboratory Pink copy for Field Crew



768 699

768 700

# Environmental Testing & Consulting, Inc.
## Cooler Receipt Form

Date/Time Received 11/18/03-12:15
Date/Time Checked In 11/18/03-12:15
Carrier/Bill# Client Hand Delivered

LIMS# 0311-459
Project Memphis Depot
By Sally Herrmann

| | | |
|---|---|---|
| 1. | Custody Seals?/Location- | No |
| 2. | Samples are non-radioactive? | Yes |
| 3. | Chain of Custody in plastic? | Yes |
| 4. | Temperature at receipt (ok = 4 ± 2 °C)<4oC | OK |
| 5. | Ice & Packing- bags, ice, bubble wrap | Yes |
| 6. | Chain of Custody filled out properly? | Yes |
| 7. | All containers in separate bags? | No |
| 8. | Sample containers intact? | Yes |
| 9. | Label(s) complete and in good condition? | Yes |
| 10. | Label(s) agree with Chain of Custody? | Yes |
| 11. | Correct containers used? | Yes |
| 12. | Sufficient sample? | Yes |
| 13. | VOA vials bubble-free ($H_2O$) or no head space (soil)? | Yes |
| 14. | Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____ | Yes |

Comments _____

*Validated Date and Time of Sample Receipt (VDTSR)

Environmental Testing & Consulting, Inc.

# Sample Reports

768 702

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311459

ETC Lab ID : 0311459-01
Field ID . EFF-11-18-03

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | TIME ANALYZED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| Aluminum | <0.040 | mg/L | 0 040 | 11/26/03 | 1427 | SH | 200.7 |
| Antimony | <0.005 | mg/L | 0.005 | 11/26/03 | 1427 | SH | 200.7 |
| Arsenic | <0.004 | mg/L | 0.004 | 11/26/03 | 1427 | SH | 200.7 |
| Barium | 0.098 | mg/L | 0.001 | 11/26/03 | 1427 | SH | 200.7 |
| Beryllium | <0 001 | mg/L | 0.001 | 11/26/03 | 1427 | SH | 200.7 |
| Cadmium | <0.001 | mg/L | 0.001 | 12/04/03 | 0934 | JF | 200 7 |
| Calcium | 23.7 | mg/L | 0.125 | 11/26/03 | 1427 | SH | 200 7 |
| Chromium | 0 0052 | mg/L | 0.002 | 11/26/03 | 1427 | SH | 200.7 |
| Cobalt | <0.002 | mg/L | 0.002 | 11/26/03 | 1427 | SH | 200.7 |
| Copper | 0.007 | mg/L | 0.002 | 12/04/03 | 0934 | JF | 200.7 |
| Iron | 0.086 | mg/L | 0.035 | 11/26/03 | 1427 | SH | 200 7 |
| Lead | <0.002 | mg/L | 0.002 | 12/04/03 | 0934 | JF | 200 7 |
| Magnesium | 11 5 | mg/L | 0.125 | 11/26/03 | 1427 | SH | 200.7 |
| Manganese | 0.060 | mg/L | 0.001 | 11/26/03 | 1427 | SH | 200.7 |
| Mercury | <0 0002 | mg/L | 0 0002 | 11/20/03 | 1431 | JF | 245.1 |
| Mercury Digestion Batch | V11-AQ-38 | | | | | JF | 245.1 |
| Metals Digestion Batch | V39-AQ-78 | | | | | BB | 200.7 |
| Nickel | <0.002 | mg/L | 0.002 | 12/04/03 | 0934 | JF | 200.7 |
| Potassium | 0.789 | mg/L | 0.125 | 11/26/03 | 1427 | SH | 200.7 |
| Selenium | <0.004 | mg/L | 0 004 | 11/26/03 | 1427 | SH | 200.7 |
| Silver | <0 001 | mg/L | 0.001 | 11/26/03 | 1427 | SH | 200.7 |
| Sodium | 23 3 | mg/L | 0.125 | 11/26/03 | 1427 | SH | 200 7 |
| Thallium | <0.010 | mg/L | 0 010 | 11/26/03 | 1427 | SH | 200 7 |
| Vanadium | <0.002 | mg/L | 0.002 | 11/26/03 | 1427 | SH | 200.7 |
| Zinc | 0.062 | mg/L | 0 010 | 12/04/03 | 0934 | JF | 200.7 |

Data Validator

ND - Not Detected

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 703

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311459

ETC Lab ID : 0311459-01
Field ID : EFF-11-18-03

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | LS | 8260B 5030B |
| **QC Batch** | V212021 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 6.57 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 71.0 | ug/L | 1 00 | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | |
| [illegible]-Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 4.07 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 12 0 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 122 | ug/L | 1.00 | | | |
| Tetrachloroethene | 10.5 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2 00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | |
| 1,1,2-Trichloroethane | 2 09 | ug/L | 1.00 | | | |
| Trichloroethene | 139 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 60.7 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 704

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

031145901

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Sample ID: 031145901

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1006

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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| 1. | | | | | |
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# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 705

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311459

ETC Lab ID : 0311459-01
Field ID : EFF-11-18-03

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Base/Neutral & Acid | | | | 11/22/03 | 11/21/03 | ES | 8270C 3510C |
| QC Batch | BA10085 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acenaphthene | ND | ug/L | 2.02 | | | | |
| Acenaphthylene | ND | ug/L | 2.02 | | | | |
| Anthracene | ND | ug/L | 2.02 | | | | |
| Benzo(a)anthracene | ND | ug/L | 2.02 | | | | |
| Benzo(b)fluoranthene | ND | ug/L | 2.02 | | | | |
| Benzo(k)fluoranthene | ND | ug/L | 2.02 | | | | |
| Benzo(g,h,i)perylene | ND | ug/L | 2 02 | | | | |
| Benzo(a)pyrene | ND | ug/L | 2.02 | | | | |
| Benzoic Acid | ND | ug/L | 50.5 | | | | |
| Benzyl Alcohol | ND | ug/L | 10.1 | | | | |
| Bis(2-chloroethoxy)methane | ND | ug/L | 5.05 | | | | |
| Bis(2-chloroethyl)ether | ND | ug/L | 5.05 | | | | |
| [redacted]2-chloroisopropyl)ether | ND | ug/L | 5.05 | | | | |
| [redacted](2-ethylhexyl)phthalate | ND | ug/L | 10.1 | | | | |
| 4-Bromophenyl phenyl ether | ND | ug/L | 5.05 | | | | |
| Butyl benzyl phthalate | ND | ug/L | 5.05 | | | | |
| 4-Chloroaniline | ND | ug/L | 5.05 | | | | |
| 2-Chloronaphthalene | ND | ug/L | 5.05 | | | | |
| 4-Chloro-3-methylphenol | ND | ug/L | 5.05 | | | | |
| 2-Chlorophenol | ND | ug/L | 5.05 | | | | |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 5.05 | | | | |
| Chrysene | ND | ug/L | 2.02 | | | | |
| Dibenzo(a,h)anthracene | ND | ug/L | 2.02 | | | | |
| Dibenzofuran | ND | ug/L | 5 05 | | | | |
| Di-n-butyl phthalate | ND | ug/L | 5.05 | | | | |
| 3,3'-Dichlorobenzidine | ND | ug/L | 10.1 | | | | |
| 2,4-Dichlorophenol | ND | ug/L | 5 05 | | | | |
| Diethyl phthalate | ND | ug/L | 5.05 | | | | |
| 2,4-Dimethylphenol | ND | ug/L | 5.05 | | | | |
| Dimethyl phthalate | ND | ug/L | 5.05 | | | | |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 10 1 | | | | |
| 2,4-Dinitrophenol | ND | ug/L | 50.5 | | | | |
| 2,4-Dinitrotoluene | ND | ug/L | 5 05 | | | | |
| 2,6-Dinitrotoluene | ND | ug/L | 5.05 | | | | |
| Di-n-octyl phthalate | ND | ug/L | 5.05 | | | | |
| Fluoranthene | ND | ug/L | 2.02 | | | | |
| Fluorene | ND | ug/L | 2.02 | | | | |
| Hexachlorobenzene | ND | ug/L | 5.05 | | | | |
| Hexachlorobutadiene | ND | ug/L | 5.05 | | | | |
| Hexachlorocyclopentadiene | ND | ug/L | 5.05 | | | | |
| Hexachloroethane | ND | ug/L | 5 05 | | | | |
| Indeno(1,2,3-cd)pyrene | ND | ug/L | 2.02 | | | | |
| [redacted]horone | ND | ug/L | 5.05 | | | | |
| [redacted]ethylnaphthalene | ND | ug/L | 2.02 | | | | |
| 2-Methylphenol (o-cresol) | ND | ug/L | 5 05 | | | | |
| 4-Methylphenol (p-cresol) | ND | ug/L | 5 05 | | | | |
| Naphthalene | ND | ug/L | 2.02 | | | | |

CS
Data Validator

000010

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 706

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311459

ETC Lab ID : 0311459-01
Field ID : EFF-11-18-03

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Base/Neutral & Acid | | | | 11/22/03 | 11/21/03 | ES | 8270C 3510C |
| Nitrobenzene | ND | ug/L | 5.05 | | | | |
| 2-Nitroaniline | ND | ug/L | 5.05 | | | | |
| 3-Nitroaniline | ND | ug/L | 10.1 | | | | |
| 4-Nitroaniline | ND | ug/L | 5.05 | | | | |
| 2-Nitrophenol | ND | ug/L | 5.05 | | | | |
| 4-Nitrophenol | ND | ug/L | 5.05 | | | | |
| N-Nitrosodiphenylamine | ND | ug/L | 5.05 | | | | |
| N-Nitrosodipropylamine | ND | ug/L | 5.05 | | | | |
| Pentachlorophenol | ND | ug/L | 10.1 | | | | |
| Phenanthrene | ND | ug/L | 2.02 | | | | |
| Phenol | ND | ug/L | 5.05 | | | | |
| Pyrene | ND | ug/L | 2.02 | | | | |
| 2,4,5-Trichlorphenol | ND | ug/L | 5 05 | | | | |
| 2,4,6-Trichlorophenol | ND | ug/L | 5 05 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Nitrobenzene-d5 | 72 | 29 | 110 |
| S2 - 2-Fluorobiphenyl | 70 | 38 | 107 |
| S3 - 4-Terphenyl-d14 | 66 | 33 | 122 |
| S4 - Phenol-d6 | 30 | 7 | 58 |
| S5 - 2,4,6-Tribromophenol | 67 | 16 | 138 |
| S6 - 2-Fluorophenol | 42 | 8 | 88 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

- Method Detection Limit

FORM 1 768 707 CLIENT SAMPLE NO.

BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

031145901

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Sample ID: 031145901

Sample wt/vol: 990.0 (g/mL) ML Lab File ID: 2001019

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1(mL) Date Analyzed: 11/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 79-01-6 | TRICHLOROETHYLENE | 3.85 | 17.26 | NJ |
| 2. | 79-34-5 | ETHANE, 1,1,2,2-TETRACHLORO- | 6.28 | 55.08 | NJ |
| 3. | | | | | |
| 4. | | | | | |
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Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level II
# Metals (ICP/GFAA/CV)

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### METALS – AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0311-459

**PRESERVATION**

All aqueous samples preserved to pH < 2.

**HOLDING TIMES**

| | | |
|---|---|---|
| QC Batch(s) for this order | ICP Metals | V39-AQ-78 |
| | Mercury | V11-AQ-38 |
| Sample Preparation/Analysis | All samples digested/ analyzed within holding time | |
| Mercury Preparation/Analysis | All samples analyzed within 28 days of collection. | |

**METHOD**

| | |
|---|---|
| Preparation: | SW-846 200.7/245.1 |
| Analysis: | SW-846 200.7/245.1 |

**CALIBRATION**

| | |
|---|---|
| Initial Calibration | All criteria met |
| Continuing Calibration | All criteria met. |

**SAMPLE ANALYSIS**

| | |
|---|---|
| Instrumentation | Thermo Jarrell Ash Enviro-I ICP |
| | CETAC M-6000A Mercury Analyzer |
| Dilutions Required | Dilutions performed as indicated on the Dilution Summary Table. |

**QUALITY CONTROL**

Method Blank

| | |
|---|---|
| V39-AQ-78BLK | ICP Metals |
| V11-AQ-38BLK | Mercury |

No target analytes detected in the method blank.

Laboratory Control Sample(s)

| | |
|---|---|
| QC V39-AQ-78LCS | ICP Metals |
| V11-AQ-38LCS | Mercury |

All acceptance criteria met

Matrix Spike / Matrix Spike Dup - ICP Metals

| | | |
|---|---|---|
| 0311-459-01 | RPD | All analytes within QC limits. |
| EFF-11-18-03 | Spike Recovery | All analytes within QC limits. |

Refer to Form 9 Serial Dilutions for Sodium All acceptance criteria met. Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Hg

| | | |
|---|---|---|
| 0311-459-01 | RPD | All analytes within QC limits. |
| EFF-11-18-03 | Spike Recovery | All analytes within QC limits. |

All acceptance criteria met. Refer to Laboratory Control Sample(s) for system verification

Dilution Test five — Dilution result must agree within 10% of original result when sample is diluted by a factor of

Project Manager

768 710

FORM 3A
WATER METHOD BLANK
METALS

Lab Name Environmental Testing and Consulting, Inc

| | | | QC Batch |
|---|---|---|---|
| Laboratory ID | ICP/GFAA Metals | V39-AQ-78 BLK | V39-AQ-78 |
| Laboratory ID | Mercury | V11-AQ-38 BLK | V11-AQ-38 |

| | | |
|---|---|---|
| Date Sample Prepared | 11/24/03 | ICP/GFAA Metals |
| | 11/20/03 | Mercury |

| Metals | Concentration mg/L | Detection Limit mg/L | Date Analyzed | Method |
|---|---|---|---|---|
| Silver | ND | 0.001 | 11/26/03 | 200.7 |
| Aluminum | ND | 0 040 | 11/26/03 | 200.7 |
| Arsenic | ND | 0.004 | 11/26/03 | 200 7 |
| Barium | ND | 0 001 | 11/26/03 | 200.7 |
| Beryllium | ND | 0.001 | 11/26/03 | 200 7 |
| Calcium | ND | 0 125 | 11/26/03 | 200.7 |
| Cadmium | ND | 0 001 | 12/4/03 | 200.7 |
| Cobalt | ND | 0.002 | 11/26/03 | 200.7 |
| Chromium | ND | 0.002 | 11/26/03 | 200 7 |
| Copper | ND | 0.005 | 12/4/03 | 200 7 |
| Iron | ND | 0 035 | 11/26/03 | 200.7 |
| Potassium | ND | 0.125 | 11/26/03 | 200.7 |
| Magnesium | ND | 0.125 | 11/26/03 | 200.7 |
| Manganese | ND | 0.001 | 11/26/03 | 200 7 |
| Sodium | ND | 0 125 | 11/26/03 | 200.7 |
| Nickel | ND | 0.002 | 12/4/03 | 200 7 |
| Lead | ND | 0.002 | 12/4/03 | 200 7 |
| Antimony | ND | 0 005 | 11/26/03 | 200.7 |
| Selenium | ND | 0.004 | 11/26/03 | 200.7 |
| Thallium | ND | 0.010 | 11/26/03 | 200 7 |
| Vanadium | ND | 0.002 | 11/26/03 | 200 7 |
| Zinc | ND | 0 010 | 12/4/03 | 200 7 |
| Mercury | ND | 0.0002 | 11/20/03 | 245.1 |

ND - Not Detected

Reviewed by _____

FORM 7
WATER LABORATORY CONTROL SAMPLE
METALS

Lab Name: Environmental Testing and Consulting, Inc

| | | | | QC Batch |
|---|---|---|---|---|
| Laboratory Control ID | ICP/GFAA Metals | V39-AQ-78 | LCS | V39-AQ-78 |
| | Mercury | V11-AQ-38 | LCS | V11-AQ-38 |
| Date Prepared | ICP/GFAA Metals | 11/24/03 | | |
| | Mercury | 11/20/03 | | |

| Metals | Spike Added mg/L | Found mg/L | % R | # | QC Limits | |
|---|---|---|---|---|---|---|
| Silver | 0.100 | 0 100 | 100 | | 80 | 120 |
| Aluminum | 10.0 | 10 3 | 103 | | 80 | 120 |
| Arsenic | 0.100 | 0 099 | 99 | | 80 | 120 |
| Barium | 1 00 | 1.00 | 100 | | 80 | 120 |
| Beryllium | 0 100 | 0.105 | 105 | | 80 | 120 |
| Calcium | 10 0 | 10.6 | 106 | | 80 | 120 |
| Cadmium | 0.100 | 0.102 | 102 | | 80 | 120 |
| Cobalt | 1 00 | 1 02 | 102 | | 80 | 120 |
| Chromium | 1.00 | 1.00 | 100 | | 80 | 120 |
| Copper | 1.00 | 1 07 | 107 | | 80 | 120 |
| Iron | 10 0 | 10 5 | 105 | | 80 | 120 |
| Potassium | 1 00 | 1 05 | 105 | | 80 | 120 |
| Magnesium | 10 0 | 10.4 | 104 | | 80 | 120 |
| Manganese | 1 00 | 1 04 | 104 | | 80 | 120 |
| Sodium | 1 00 | 0.913 | 91 | | 80 | 120 |
| Nickel | 1.00 | 1 03 | 103 | | 80 | 120 |
| Lead | 0.100 | 0.106 | 106 | | 80 | 120 |
| Antimony | 0 100 | 0.104 | 104 | | 80 | 120 |
| Selenium | 0.100 | 0 101 | 101 | | 80 | 120 |
| Thallium | 0.100 | 0 101 | 101 | | 80 | 120 |
| Vanadium | 1 00 | 1.02 | 102 | | 80 | 120 |
| Zinc | 1 00 | 1.06 | 106 | | 80 | 120 |
| Mercury | 0.0050 | 0.0052 | 104 | | 85 | 115 |

# Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

Reviewed by

FORM 6
WATER MATRIX SPIKE / MATRIX SPIKE DUPLICATE
METALS

Lab Name. Environmental Testing and Consulting, Inc

| | | QC Batch |
|---|---|---|
| Laboratory ID MS ICP/GFAA Metals | 0311-459-01 | V39-AQ-78 |
| Laboratory ID MS Mercury | 0311-459-01 | V11-AQ-38 |

| | | |
|---|---|---|
| Date Sample Prepared | 11/24/03 | ICP/GFAA Metals |
| | 11/20/03 | Mercury |

| Metals | SPIKE Added mg/L | SAMPLE Conc mg/L | MS Conc mg/L | RPD <20% # | MS % Rec # | QC Limits | |
|---|---|---|---|---|---|---|---|
| Silver | 0.100 | ND | 0.101 | 2 | 101 | 75 | 125 |
| Aluminum | 10.0 | ND | 10 4 | 2 | 104 | 75 | 125 |
| Arsenic | 0.100 | ND | 0.101 | 1 | 101 | 75 | 125 |
| Barium | 1.00 | 0 098 | 1.11 | 2 | 101 | 75 | 125 |
| Beryllium | 0.100 | ND | 0.106 | 2 | 106 | 75 | 125 |
| Calcium | 10.0 | 23.7 | 34 6 | 2 | 109 | 75 | 125 |
| Cadmium | 0.100 | ND | 0.102 | 3 | 102 | 75 | 125 |
| Cobalt | 1.00 | ND | 1.03 | 2 | 103 | 75 | 125 |
| Chromium | 1.00 | 0.005 | 1.01 | 1 | 101 | 75 | 125 |
| Copper | 1 00 | 0.007 | 1 09 | 4 | 108 | 75 | 125 |
| Iron | 10.0 | 0 086 | 10.6 | 1 | 105 | 75 | 125 |
| Potassium | 1.00 | 0.789 | 1.91 | 3 | 112 | 75 | 125 |
| Magnesium | 10.0 | 11 5 | 22.3 | 2 | 108 | 75 | 125 |
| Manganese | 1 00 | 0.060 | 1 11 | 2 | 105 | 75 | 125 |
| Sodium | 1 00 | 23.8 | 23.6 | 1 | -20 * | 75 | 125 |
| Nickel | 1 00 | ND | 1.04 | 4 | 104 | 75 | 125 |
| Lead | 0.100 | ND | 0.104 | 2 | 104 | 75 | 125 |
| Antimony | 0 100 | ND | 0.102 | 1 | 102 | 75 | 125 |
| Selenium | 0 100 | ND | 0 100 | 1 | 100 | 75 | 125 |
| Thallium | 0 100 | ND | 0.103 | 2 | 103 | 75 | 125 |
| Vanadium | 1 00 | ND | 1.03 | 2 | 103 | 75 | 125 |
| Zinc | 1.00 | 0.073 | 1.12 | 4 | 105 | 75 | 125 |
| Mercury | 0.0050 | ND | 0.0052 | 4 | 104 | 80 | 120 |

ND - Not Detected
# Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

Reviewed by _____

FORM 6
WATER MATRIX SPIKE / MATRIX SPIKE DUPLICATE
METALS

Lab Name: Environmental Testing and Consulting, Inc

| | | QC Batch |
|---|---|---|
| Laboratory ID MS ICP/GFAA Metals | 0311-459-01 | V39-AQ-78 |
| Laboratory ID MS Mercury | 0311-459-01 | V11-AQ-38 |

| | | |
|---|---|---|
| Date Sample Prepared | 11/24/03 | ICP/GFAA Metals |
| | 11/20/03 | Mercury |

| Metals | SPIKE Added mg/L | SAMPLE Conc mg/L | MSD Conc mg/L | | MSD % Rec | # | QC Limits | |
|---|---|---|---|---|---|---|---|---|
| Silver | 0 100 | ND | 0.099 | | 99 | | 75 | 125 |
| Aluminum | 10 0 | ND | 10.2 | | 102 | | 75 | 125 |
| Arsenic | 0.100 | ND | 0.100 | | 100 | | 75 | 125 |
| Barium | 1.00 | 0 098 | 1.09 | | 99 | | 75 | 125 |
| Beryllium | 0 100 | ND | 0 104 | | 104 | | 75 | 125 |
| Calcium | 10.0 | 23.7 | 34 0 | | 103 | | 75 | 125 |
| Cadmium | 0.100 | ND | 0 099 | | 99 | | 75 | 125 |
| Cobalt | 1.00 | ND | 1 01 | | 101 | | 75 | 125 |
| Chromium | 1 00 | 0 005 | 0.999 | | 99 | | 75 | 125 |
| Copper | 1.00 | 0 007 | 1.05 | | 104 | | 75 | 125 |
| Iron | 10 0 | 0 086 | 10 5 | | 104 | | 75 | 125 |
| Potassium | 1.00 | 0.789 | 1 85 | | 106 | | 75 | 125 |
| Magnesium | 10 0 | 11.5 | 21 9 | | 104 | | 75 | 125 |
| Manganese | 1.00 | 0 060 | 1.09 | | 103 | | 75 | 125 |
| Sodium | 1.00 | 23 8 | 23 3 | | -50 | * | 75 | 125 |
| Nickel | 1 00 | ND | 1 00 | | 100 | | 75 | 125 |
| Lead | 0 100 | ND | 0.102 | | 102 | | 75 | 125 |
| Antimony | 0.100 | ND | 0.101 | | 101 | | 75 | 125 |
| Selenium | 0.100 | ND | 0.101 | | 101 | | 75 | 125 |
| Thallium | 0.100 | ND | 0.105 | | 105 | | 75 | 125 |
| Vanadium | 1.00 | ND | 1.01 | | 101 | | 75 | 125 |
| Zinc | 1.00 | 0 073 | 1.08 | | 101 | | 75 | 125 |
| Mercury | 0 0050 | ND | 0.0054 | | 108 | | 80 | 120 |

*ND - Not Detected*
# Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

Reviewed by ✓

768 714

FORM 9
SERIAL DILUTIONS
METALS

Lab Name Enviornmental Testing and Consulting, Inc.

QC Batch ICP/GFAA Metals V39-AQ-78

Date Sample Prepared 11/24/03 ICP/GFAA Metals

| Analyte | Initial Sample Result | Serial Dilution Result | Serial Dilution | % Difference |
|---|---|---|---|---|
| Sodium | 1 5 23.3 | 21.2 | 1:25 | 9 |

ND - Not Detected
% Difference should be within 10% of the undiluted/lowest dilution result.

Reviewed by

Serial Dilution 0311-459.mqc

WATER
DILUTIONS
METALS

Lab Name: Enviornmental Testing and Consulting, Inc.

QC Batch ICP/GFAA Metals V39-AQ-78

Date Sample Prepared 11/24/03 ICP/GFAA Metals

| Analyte | Dilution | Code | Sample ID |
|---|---|---|---|
| Sodium | 1:5 | C | 0311-459-01 |

Dilutions were performed on several samples to bring the Target Analyte(s) within calibration range (C) or to remove spectral interference (I) as indicated

Reviewed by: _____

DIL 0311-459 mqc

768 716

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level II
# GC/MS Volatiles

# ENVIRONMENTAL TESTING AND CONSULTING, INC. 768 717
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0311-459

**SAMPLE PRESERVATION**

All water samples preserved with HCl to pH < 2 (verified at analysis) and maintained at 4oC until analysis

**HOLDING TIMES**

Sample Analysis All samples analyzed within 14 days of collection.

**METHOD**

Preparation SW-846 5030B
Analysis: SW-846 8260B

**QUALITY CONTROL**

| QC Batch | Form 4 Summary |
|---|---|
| V212021 | V2120211LB |

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits, except as listed below:
Surrogate Dibromofluoromethane was flagged for low recovery in the MSD of sample 0311-459-01 (EFF-11-18-03)

Method Blank FORM 4
V2120211LB
Target analytes were not detected in the method blank, except as listed below:
Methylene Chloride was identified in the method blank. This analyte was not reported in any associated project samples. The data was not affected.

Laboratory Control Sample FORM 3
V2120211LCS
All target analyte acceptance criteria met

Matrix Spike / Matrix Spike Dup. FORM 3
Batch V212021

| | | |
|---|---|---|
| 0311-459-01 | RPD | All analytes within QC limits.* |
| EFF-11-18-03 | Spike Recovery | All analytes within QC limits.* |

*RPDs and recoveries for several analytes were flagged as outside QC limits in the MS/MSD Refer to Laboratory Control Sample(s) for system verification

**CALIBRATION**

| | |
|---|---|
| BFB Daily 12-Hour Tune | All criteria met. FORM 5 |
| Initial Calibration | All criteria met FORM 6 |
| Calibration Verification | % Differences/% Drift (%D) >30%. FORM 7<br>Multiple analytes were flagged with % Differences >30% for high response in the CV. These analytes were not reported in the associated project samples. The data was not affected |

Samples in this sequence are listed on Form 5 (Instrument Performance Check). The CV passed SPCC/CCC evaluation criteria The CV is valid per SW-846 method 8000A/8260B

USACOE Shell Document EM 200-1-2 specifies an additional requirement that all project-specified contaminants of concern are to be within +/- 20% D Calibration verification forms have been provided that lists the %D of all analytes

Volatile Internal Standard Area and RT FORM 8
Calibration Verification standard(s) Internal Standard Areas and Retention Times within QC limits

# ENVIRONMENTAL TESTING AND CONSULTING, INC.
## CASE NARRATIVE
### GC/MS VOLATILE COMPOUNDS – AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0311-459

**SAMPLE ANALYSIS**

Instrumentation HP 5890 Series II GC, 5971MSD
Dilutions Dilutions were not required.

Project Manager

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

768 719

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

| | CLIENT SAMPLE NO. | SMC1 (DFM) # | SMC2 (TOL) # | SMC3 (BFB) # | OTHER (DCE) # | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | V2120211LCS | 89 | 110 | 118 | 82 | 0 |
| 02 | V2120211LB | 93 | 104 | 98 | 83 | 0 |
| 03 | 031145901 | 96 | 106 | 100 | 96 | 0 |
| 04 | 031145901MS | 89 | 95 | 105 | 86 | 0 |
| 05 | 031145901MSD | 81* | 93 | 98 | 79 | 1 |
| 06 | | | | | | |
| 07 | | | | | | |
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| 30 | | | | | | |

| | | QC LIMITS |
|---|---|---|
| SMC1 (DFM) | = Dibromofluoromethane | (84-115) |
| SMC2 (TOL) | = Toluene-d8 | (69-133) |
| SMC3 (BFB) | = Bromofluorobenzene | (80-120) |
| OTHER (DCE) | = 1,2-Dichloroethane-d4 | (58-131) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

768 720

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V2120211LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID: 1005J Lab Prep Batch: V212021

Date Analyzed: 12/02/03 Time Analyzed: 1207

GC Column: ID: 2 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOC2 Lab Sample ID: 11LB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | V2120211LCS | 11LCS | 1003LJ | 1038 |
| 02 | 031145901 | 031145901 | 1006 | 1243 |
| 03 | 031145901MS | MS | 1021 | 2148 |
| 04 | 031145901MSD | MSD | 1022 | 2223 |
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COMMENTS:

FORM 1 768 721 CLIENT SAMPLE NO.
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

V2120211LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Prep Batch: V212021

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1005J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 67-64-1 | Acetone | 20.00 | U |
| 71-43-2 | Benzene | 1.00 | U |
| 75-27-4 | Bromodichloromethane | 1.00 | U |
| 75-25-2 | Bromoform | 1.00 | U |
| 74-83-9 | Bromomethane | 1.00 | U |
| 78-93-3 | 2-Butanone | 20.00 | U |
| 75-15-0 | Carbon Disulfide | 1.00 | U |
| 56-23-5 | Carbon Tetrachloride | 1.00 | U |
| 108-90-7 | Chlorobenzene | 1.00 | U |
| 124-48-1 | Chlorodibromomethane | 1.00 | U |
| 75-00-3 | Chloroethane | 1.00 | U |
| 67-66-3 | Chloroform | 1.00 | U |
| 74-87-3 | Chloromethane | 1.00 | U |
| 75-34-3 | 1,1-Dichloroethane | 1.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 1.00 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1.00 | U |
| 78-87-5 | 1,2-Dichloropropane | 1.00 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1.00 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1.00 | U |
| 100-41-4 | Ethylbenzene | 1.00 | U |
| 591-78-6 | 2-Hexanone | 5.00 | U |
| 75-09-2 | Methylene Chloride | 2.98 | J |
| 108-10-1 | 4-Methyl-2-Pentanone | 5.00 | U |
| 100-42-5 | Styrene | 1.00 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1.00 | U |
| 127-18-4 | Tetrachloroethene | 1.00 | U |
| 108-88-3 | Toluene | 1.00 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1.00 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1.00 | U |
| 79-01-6 | Trichloroethene | 1.00 | U |
| 75-01-4 | Vinyl Chloride | 1.00 | U |
| 108-38-3 | Xylene-mp | 1.00 | U |

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FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V2120211LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Prep Batch: V212021

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1005J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 95-47-6 | Xylene-o | 1.00 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1.00 | U |

FORM 1 768 723 CLIENT SAMPLE NO.

VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

V2120211LB

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Sample ID: 11LB

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 1005J

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 12/02/03

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: V2120211LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | | 112.5 | 112 | 59-151 |
| Benzene | 100.0 | | 113.1 | 113 | 72-124 |
| Bromodichloromethane | 100.0 | | 103.0 | 103 | 68-119 |
| Bromoform | 100.0 | | 86.60 | 87 | 66-136 |
| Bromomethane | 100.0 | | 127.5 | 128 | 40-134 |
| 2-Butanone | 100.0 | | 112.8 | 113 | 55-151 |
| Carbon Disulfide | 100.0 | | 84.88 | 85 | 60-133 |
| Carbon Tetrachloride | 100.0 | | 103.0 | 103 | 64-123 |
| Chlorobenzene | 100.0 | | 101.6 | 102 | 77-112 |
| Chlorodibromomethane | 100.0 | | 93.16 | 93 | 72-118 |
| Chloroethane | 100.0 | | 131.8 | 132 | 64-142 |
| Chloroform | 100.0 | | 103.8 | 104 | 70-115 |
| Chloromethane | 100.0 | | 111.6 | 112 | 58-139 |
| 1,1-Dichloroethane | 100.0 | | 111.7 | 112 | 76-118 |
| 1,2-Dichloroethane | 100.0 | | 106.1 | 106 | 62-124 |
| 1,1-Dichloroethene | 100.0 | | 93.23 | 93 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | | 103.0 | 103 | 72-121 |
| 1,2-Dichloropropane | 100.0 | | 105.7 | 106 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | | 111.9 | 112 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | | 107.9 | 108 | 73-124 |
| Ethylbenzene | 100.0 | | 101.9 | 102 | 77-111 |
| 2-Hexanone | 100.0 | | 114.1 | 114 | 53-144 |
| Methylene Chloride | 100.0 | | 103.8 | 104 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | | 102.1 | 102 | 42-144 |
| Styrene | 100.0 | | 100.6 | 101 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | | 88.77 | 89 | 67-126 |
| Tetrachloroethene | 100.0 | | 108.2 | 108 | 77-115 |
| Toluene | 100.0 | | 106.3 | 106 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: V2120211LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | | 104.6 | 105 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | | 99.85 | 100 | 69-117 |
| Trichloroethene | 100.0 | | 107.5 | 108 | 75-113 |
| Vinyl Chloride | 100.0 | | 114.4 | 114 | 65-134 |
| Xylene-mp | 200.0 | | 200.3 | 100 | 77-115 |
| Xylene-o | 100.0 | | 93.33 | 93 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | | 107.8 | 108 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 35 outside limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acetone | 100.0 | 0.000 | 71.21 | 71 | 59-151 |
| Benzene | 100.0 | 0.000 | 114.4 | 114 | 72-124 |
| Bromodichloromethane | 100.0 | 0.000 | 106.3 | 106 | 68-119 |
| Bromoform | 100.0 | 0.000 | 98.17 | 98 | 66-136 |
| Bromomethane | 100.0 | 0.000 | 105.6 | 106 | 40-134 |
| 2-Butanone | 100.0 | 0.000 | 101.1 | 101 | 55-151 |
| Carbon Disulfide | 100.0 | 0.000 | 77.15 | 77 | 60-133 |
| Carbon Tetrachloride | 100.0 | 6.57 | 110.2 | 104 | 64-123 |
| Chlorobenzene | 100.0 | 0.000 | 106.2 | 106 | 77-112 |
| Chlorodibromomethane | 100.0 | 0.000 | 104.9 | 105 | 72-118 |
| Chloroethane | 100.0 | 0.000 | 118.9 | 119 | 64-142 |
| Chloroform | 100.0 | 70.98 | 164.1 | 93 | 70-115 |
| Chloromethane | 100.0 | 0.000 | 89.58 | 90 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 0.000 | 114.5 | 114 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 0.000 | 113.2 | 113 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 4.07 | 98.56 | 94 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 12.05 | 103.5 | 91 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 0.000 | 104.7 | 105 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 0.000 | 110.2 | 110 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 0.000 | 115.6 | 116 | 73-124 |
| Ethylbenzene | 100.0 | 0.000 | 97.49 | 97 | 77-111 |
| 2-Hexanone | 100.0 | 0.000 | 66.04 | 66 | 53-144 |
| Methylene Chloride | 100.0 | 3.04 | 97.10 | 94 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 0.000 | 103.4 | 103 | 42-144 |
| Styrene | 100.0 | 0.000 | 109.1 | 109 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 121.5 | 188.0 | 66* | 67-126 |
| Tetrachloroethene | 100.0 | 10.52 | 103.8 | 93 | 77-115 |
| Toluene | 100.0 | 0.000 | 95.59 | 96 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 0.000 | 105.8 | 106 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 2.09 | 110.3 | 108 | 69-117 |
| Trichloroethene | 100.0 | 139.3 | 215.5 | 76 | 75-113 |
| Vinyl Chloride | 100.0 | 0.000 | 100.3 | 100 | 65-134 |
| Xylene-mp | 200.0 | 0.000 | 199.2 | 100 | 77-115 |
| Xylene-o | 100.0 | 0.000 | 102.4 | 102 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 60.70 | 173.4 | 113 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acetone | 100.0 | 61.25 | 61 | 15 | 20 | 59-151 |
| Benzene | 100.0 | 104.8 | 105 | 8 | 20 | 72-124 |
| Bromodichloromethane | 100.0 | 98.31 | 98 | 8 | 20 | 68-119 |
| Bromoform | 100.0 | 90.35 | 90 | 8 | 20 | 66-136 |
| Bromomethane | 100.0 | 96.54 | 96 | 10 | 20 | 40-134 |
| 2-Butanone | 100.0 | 93.07 | 93 | 8 | 20 | 55-151 |
| Carbon Disulfide | 100.0 | 77.17 | 77 | 0 | 20 | 60-133 |
| Carbon Tetrachloride | 100.0 | 102.6 | 96 | 8 | 20 | 64-123 |
| Chlorobenzene | 100.0 | 98.48 | 98 | 8 | 20 | 77-112 |
| Chlorodibromomethane | 100.0 | 93.24 | 93 | 12 | 20 | 72-118 |
| Chloroethane | 100.0 | 119.7 | 120 | 1 | 20 | 64-142 |
| Chloroform | 100.0 | 155.0 | 84 | 10 | 20 | 70-115 |
| Chloromethane | 100.0 | 84.68 | 85 | 6 | 20 | 58-139 |
| 1,1-Dichloroethane | 100.0 | 104.5 | 104 | 9 | 20 | 76-118 |
| 1,2-Dichloroethane | 100.0 | 104.8 | 105 | 7 | 20 | 62-124 |
| 1,1-Dichloroethene | 100.0 | 89.26 | 85 | 10 | 20 | 69-121 |
| trans-1,2-Dichloroethen | 100.0 | 100.2 | 88 | 3 | 20 | 72-121 |
| 1,2-Dichloropropane | 100.0 | 98.44 | 98 | 7 | 20 | 64-133 |
| cis-1,3-Dichloropropene | 100.0 | 103.3 | 103 | 6 | 20 | 77-120 |
| trans-1,3-Dichloroprope | 100.0 | 107.5 | 108 | 7 | 20 | 73-124 |
| Ethylbenzene | 100.0 | 92.42 | 92 | 5 | 20 | 77-111 |
| 2-Hexanone | 100.0 | 102.9 | 103 | 44* | 20 | 53-144 |
| Methylene Chloride | 100.0 | 95.51 | 92 | 2 | 20 | 76-115 |
| 4-Methyl-2-Pentanone | 100.0 | 98.32 | 98 | 5 | 20 | 42-144 |
| Styrene | 100.0 | 98.51 | 98 | 11 | 20 | 77-117 |
| 1,1,2,2-Tetrachloroetha | 100.0 | 187.8 | 66* | 0 | 20 | 67-126 |
| Tetrachloroethene | 100.0 | 100.9 | 90 | 3 | 20 | 77-115 |
| Toluene | 100.0 | 95.73 | 96 | 0 | 20 | 77-115 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC,INC. Lab Prep Batch: V212021

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: 031145901

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 100.0 | 99.00 | 99 | 7 | 20 | 63-122 |
| 1,1,2-Trichloroethane | 100.0 | 108.6 | 106 | 2 | 20 | 69-117 |
| Trichloroethene | 100.0 | 207.2 | 68* | 11 | 20 | 75-113 |
| Vinyl Chloride | 100.0 | 98.15 | 98 | 2 | 20 | 65-134 |
| Xylene-mp | 200.0 | 174.5 | 87 | 14 | 20 | 77-115 |
| Xylene-o | 100.0 | 89.36 | 89 | 14 | 20 | 77-115 |
| cis-1,2-Dichloroethene | 100.0 | 152.0 | 91 | 22* | 20 | 76-114 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 35 outside limits
Spike Recovery: 3 out of 70 outside limits

COMMENTS: _____

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level II
# GC/MS Semi-Volatiles

# ENVIRONMENTAL TESTING AND CONSULTING, INC.

768 731

## CASE NARRATIVE

### GC/MS SEMI-VOLATILE COMPOUNDS –AQUEOUS

**Client Name** Jacobs
**Project Name** Memphis Defense Depot

**ETC Order #** 0311-459

**SAMPLE PRESERVATION**

All aqueous samples maintained at 4 degrees C until extraction

**HOLDING TIMES**

| | |
|---|---|
| Sample Extraction | All aqueous samples extracted within 7 days. |
| Sample Analysis | All samples analyzed within 40 days of extraction. |

**METHOD**

| | |
|---|---|
| Preparation | SW-846 3510C |
| Analysis: | SW-846 8270C |

**QUALITY CONTROL**

| QC Batch | Form 4 Summary |
|---|---|
| BA10085 | BA10085 |

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Method Blank FORM 4
BA10085LB
Target analytes were not detected in the method blanks, except as listed below:
Bis(2-ethylhexyl)phthalate was identified in the method blank This analyte was not reported in any of the associated project samples. The data was not affected

Laboratory Control Sample FORM 3
BA10085CLCS/LCSD
All target analyte acceptance criteria met, except as listed below.
Multiple RPD's were flagged outside QC limits The respective LCS and LCSD's were within QC limits.

Matrix Spike / Matrix Spike Dup FORM 3
Batch BA10085
Due to the limited amount of sample available, no MS/MSD was extracted/analyzed Refer to Laboratory Control Sample(s) for system verification.

**CALIBRATION**

| | |
|---|---|
| DFTPP Daily 12-Hour Tune | All criteria met. FORM 5 |
| Initial Calibration | All criteria met FORM 6 |
| Calibration Verification | All criteria met. FORM 7 |

Samples in this sequence are listed on Form 5 (Instrument Performance Check) The CV passed SPCC/CCC evaluation criteria. The CV is valid per SW-846 method 8000A/8270C.
USACOE Shell Document EM 200-1-2 specifies an additional requirement that all project-specified contaminants of concern are to be within +/- 20% D Calibration verification forms have been provided that lists the %D of all analytes
Semi-Volatile Internal Standard Area and RT FORM 8
Calibration Verification standard(s) Internal Standard Areas and Retention Times within QC limits.

**SAMPLE ANALYSIS**

| | |
|---|---|
| Instrumentation | HP 5890 Series II GC, 5971MSD/HP 6890 GC, 5973MSD |
| Dilutions Required | No dilutions required |

CB
Project Manager

FORM 2
WATER BNA-GCMS SURROGATE RECOVERY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

| | CLIENT SAMPLE NO. | S1 (NBZ) # | S2 (FBP) # | S3 (TPH) # | S4 (PHL) # | S5 (TBP) # | S6 (2FP) # | S7 # | S8 # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | BA10085LB | 73 | 71 | 65 | 31 | 64 | 46 | | | 0 |
| 02 | BA10085LCS | 76 | 77 | 66 | 32 | 72 | 47 | | | 0 |
| 03 | BA10085LCSD | 72 | 71 | 67 | 30 | 69 | 43 | | | 0 |
| 04 | 031145901 | 72 | 70 | 66 | 30 | 67 | 42 | | | 0 |
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| | QC LIMITS |
|---|---|
| S1 (NBZ) = Nitrobenzene-d5 | (29-110) |
| S2 (FBP) = 2-Fluorobiphenyl | (38-107) |
| S3 (TPH) = Terphenyl-d14 | (33-122) |
| S4 (PHL) = Phenol-d6 | ( 7- 58) |
| S5 (TBP) = 2,4,6-Tribromophenol | (16-138) |
| S6 (2FP) = 2-Fluorophenol | ( 8- 88) |

# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

768 733 CLIENT SAMPLE NO.

BA10085LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID: 1701016 Lab Prep Batch: BA10085

Instrument ID: BNA2 Lab Sample ID: BA10085LB

Matrix: (soil/water) WATER Date Analyzed: 11/22/03

Level: (low/med) LOW Time Analyzed: 2129

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

| | CLIENT SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 01 | BA10085LCS | BA10085LCS | 1801017 | 11/22/03 |
| 02 | BA10085LCSD | BA10085LCSD | 1901018 | 11/22/03 |
| 03 | 031145901 | 031145901 | 2001019 | 11/22/03 |
| 04 | | | | |
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COMMENTS:



FORM IV BNA-GCMS

768 734

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BA10085LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Prep Batch: BA10085

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1701016

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1(mL) Date Analyzed: 11/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 83-32-9 | Acenaphthene | 2.00 | U |
| 208-96-8 | Acenaphthylene | 2.00 | U |
| 98-86-2 | Acetophenone | 5.00 | U |
| 62-53-3 | Aniline | 5.00 | U |
| 120-12-7 | Anthracene | 2.00 | U |
| 92-87-5 | Benzidine | 20.00 | U |
| 56-55-3 | Benz(a)Anthracene | 2.00 | U |
| 205-99-2 | Benzo(b)fluoranthene | 2.00 | U |
| 207-08-9 | Benzo(k)fluoranthene | 2.00 | U |
| 191-24-2 | Benzo(ghi)perylene | 2.00 | U |
| 50-32-8 | Benzo(a)pyrene | 2.00 | U |
| 65-85-0 | Benzoic acid | 50.00 | U |
| 100-51-6 | Benzyl alcohol | 5.00 | U |
| 111-91-1 | Bis(2-chloroethoxy)methane | 5.00 | U |
| 111-44-4 | Bis(2-chloroethyl)ether | 5.00 | U |
| 108-60-1 | Bis(2-chloroisopropyl)ether | 5.00 | U |
| 117-81-7 | Bis(2-ethylhexyl)phthalate | 0.487 | J |
| 101-55-3 | 4-Bromophenyl phenyl ether | 5.00 | U |
| 85-68-7 | Butyl benzyl phthalate | 5.00 | U |
| 86-74-8 | Carbazole | 5.00 | U |
| 106-47-8 | 4-Chloroaniline | 5.00 | U |
| 510-15-6 | Chlorobenzilate | 5.00 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 5.00 | U |
| 91-58-7 | 2-Chloronaphthalene | 5.00 | U |
| 95-57-8 | 2-Chlorophenol | 5.00 | U |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | 5.00 | U |
| 218-01-9 | Chrysene | 2.00 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 2.00 | U |
| 132-64-9 | Dibenzofuran | 5.00 | U |
| 84-74-2 | Di-n-butyl phthalate | 5.00 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 2.00 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 2.00 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 2.00 | U |

FORM 1 768 735 CLIENT SAMPLE NO.

BNA-GCMS ORGANICS ANALYSIS DATA SHEET

BA10085LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Prep Batch: BA10085

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1701016

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1(mL) Date Analyzed: 11/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 91-94-1 | 3,3'-Dichlorobenzidine | 10.00 | U |
| 120-83-2 | 2,4-Dichlorophenol | 5.00 | U |
| 87-65-0 | 2,6-Dichlorophenol | 5.00 | U |
| 84-66-2 | Diethyl phthalate | 5.00 | U |
| 119-93-7 | 3,3-Dimethylbenzidine | 10.00 | U |
| 105-67-9 | 2,4-Dimethyphenol | 5.00 | U |
| 131-11-3 | Dimethyl phthalate | 5.00 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 10.00 | U |
| 51-28-5 | 2,4-Dinitrophenol | 25.00 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 5.00 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 5.00 | U |
| 122-39-4 | N-Nitrsdiphylam/Diphenylamin | 5.00 | U |
| 117-84-0 | Di-n-octyl phthalate | 5.00 | U |
| 62-50-0 | Ethyl methanesulfonate | 5.00 | U |
| 206-44-0 | Fluoranthene | 2.00 | U |
| 86-73-7 | Fluorene | 2.00 | U |
| 118-74-1 | Hexachlorobenzene | 5.00 | U |
| 87-68-3 | Hexachlorobutadiene | 5.00 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 5.00 | U |
| 67-72-1 | Hexachloroethane | 5.00 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 2.00 | U |
| 78-59-1 | Isophorone | 5.00 | U |
| 66-27-3 | Methyl methanesulfonate | 5.00 | U |
| 91-57-6 | 2-Methylnaphthalene | 2.00 | U |
| 95-48-7 | 2-Methylphenol | 5.00 | U |
| 108-39-4 | 3&4-Methylphenol | 5.00 | U |
| 91-20-3 | Naphthalene | 2.00 | U |
| 88-74-4 | 2-Nitroaniline | 5.00 | U |
| 608-9-35 | Pentachlorobenzene | 5.00 | U |
| 99-09-2 | 3-Nitroaniline | 10.00 | U |
| 100-01-6 | 4-Nitroaniline | 5.00 | U |
| 98-95-3 | Nitrobenzene | 5.00 | U |
| 88-75-5 | 2-Nitrophenol | 5.00 | U |

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FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
BA10085LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Prep Batch: BA10085

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1701016

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1(mL) Date Analyzed: 11/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 100-02-7 | 4-Nitrophenol | 5.00 | U |
| 924-16-3 | N-Nitrosodibutylamine | 5.00 | U |
| 55-18-5 | N-Nitrosodiethylamine | 5.00 | U |
| 62-75-9 | N-Nitrosodimethylamine | 5.00 | U |
| 621-64-7 | N-Nitrosodi-n-propylamine | 5.00 | U |
| 82-68-8 | Pentachloronitrobenzene | 10.00 | U |
| 87-86-5 | Pentachlorophenol | 10.00 | U |
| 62-44-2 | Phenacetin | 5.00 | U |
| 85-01-8 | Phenanthrene | 2.00 | U |
| 108-95-2 | Phenol | 5.00 | U |
| 129-00-0 | Pyrene | 2.00 | U |
| 110-86-1 | Pyridine | 5.00 | U |
| 95-94-3 | 1,2,4,5-Tetrachlorobenzene | 5.00 | U |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | 5.00 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 2.00 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 5.00 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 5.00 | U |
| 103-33-3 | 1,2-Dphnylhydrzine/Azobenzen | 5.00 | U |

FORM 1 768 737 CLIENT SAMPLE NO.

BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BA10085LB

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix: (soil/water) WATER Lab Sample ID: BA10085LB

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1701016

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1(mL) Date Analyzed: 11/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: BA10085

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: BA10085LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Acenaphthene | 50.00 | | 40.07 | 80 | 38-117 |
| Acenaphthylene | 50.00 | | 39.24 | 78 | 37-114 |
| Acetophenone | 50.00 | | 33.97 | 68 | 32-108 |
| Aniline | 50.00 | | 30.32 | 61 | 16-133 |
| Anthracene | 50.00 | | 40.86 | 82 | 34-128 |
| Benzidine | | | | | 22-176 |
| Benz(a)Anthracene | 50.00 | | 49.00 | 98 | 36-127 |
| Benzo(b)fluoranthene | 50.00 | | 45.52 | 91 | 36-131 |
| Benzo(k)fluoranthene | 50.00 | | 45.22 | 90 | 32-132 |
| Benzo(ghi)perylene | 50.00 | | 43.65 | 87 | 26-123 |
| Benzo(a)pyrene | 50.00 | | 47.01 | 94 | 34-131 |
| Benzoic acid | 50.00 | | 17.77 | 36 | 11- 58 |
| Benzyl alcohol | 50.00 | | 30.46 | 61 | 20-109 |
| Bis(2-chloroethoxy)meth | 50.00 | | 39.51 | 79 | 20-126 |
| Bis(2-chloroethyl)ether | 50.00 | | 37.24 | 74 | 16-122 |
| Bis(2-chloroisopropyl)e | 50.00 | | 42.81 | 86 | 28-108 |
| Bis(2-ethylhexyl)phthal | 50.00 | | 44.24 | 88 | 21-162 |
| 4-Bromophenyl phenyl et | 50.00 | | 38.64 | 77 | 31-124 |
| Butyl benzyl phthalate | 50.00 | | 41.84 | 84 | 33-142 |
| Carbazole | 50.00 | | 41.52 | 83 | 20-147 |
| 4-Chloroaniline | 50.00 | | 36.84 | 74 | 24-127 |
| Chlorobenzilate | 50.00 | | 41.14 | 82 | 35-118 |
| 4-Chloro-3-methylphenol | 50.00 | | 37.31 | 75 | 35-117 |
| 2-Chloronaphthalene | 50.00 | | 38.68 | 77 | 29-137 |
| 2-Chlorophenol | 50.00 | | 35.44 | 71 | 27-102 |
| 4-Chlorophenyl phenyl e | 50.00 | | 41.22 | 82 | 39-110 |
| Chrysene | 50.00 | | 44.78 | 90 | 30-124 |
| Dibenz(a,h)anthracene | 50.00 | | 45.26 | 90 | 27-124 |

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: BA10085

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: BA10085LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| Dibenzofuran | 50.00 | | 40.44 | 81 | 40-108 |
| Di-n-butyl phthalate | 50.00 | | 39.43 | 79 | 19-158 |
| 1,2-Dichlorobenzene | 50.00 | | 33.17 | 66 | 26-100 |
| 1,3-Dichlorobenzene | 50.00 | | 33.49 | 67 | 21-102 |
| 1,4-Dichlorobenzene | 50.00 | | 33.39 | 67 | 24- 99 |
| 3,3'-Dichlorobenzidine | 50.00 | | 38.80 | 78 | 6-192 |
| 2,4-Dichlorophenol | 50.00 | | 35.86 | 72 | 32-110 |
| 2,6-Dichlorophenol | 50.00 | | 33.02 | 66 | 31-112 |
| Diethyl phthalate | 50.00 | | 41.44 | 83 | 36-130 |
| 3,3-Dimethylbenzidine | 50.00 | | 7.09 | 14 | 6-192 |
| 2,4-Dimethyphenol | 50.00 | | 38.04 | 76 | 34-105 |
| Dimethyl phthalate | 50.00 | | 40.95 | 82 | 34-123 |
| 4,6-Dinitro-2-methylphe | 50.00 | | 38.03 | 76 | 27-128 |
| 2,4-Dinitrophenol | 50.00 | | 40.01 | 80 | 10-132 |
| 2,4-Dinitrotoluene | 50.00 | | 46.63 | 93 | 24-147 |
| 2,6-Dinitrotoluene | 50.00 | | 43.53 | 87 | 36-125 |
| N-NitrsdiphylAm/Dipheny | 100.0 | | 47.52 | 48 | 35-116 |
| Di-n-octyl phthalate | 50.00 | | 43.29 | 86 | 29-136 |
| Ethyl methanesulfonate | 50.00 | | 37.40 | 75 | 20-121 |
| Fluoranthene | 50.00 | | 42.28 | 84 | 28-127 |
| Fluorene | 50.00 | | 42.76 | 86 | 41-116 |
| Hexachlorobenzene | 50.00 | | 39.19 | 78 | 18-136 |
| Hexachlorobutadiene | 50.00 | | 35.18 | 70 | 22-109 |
| Hexachlorocyclopentadie | 50.00 | | 37.78 | 76 | 10-102 |
| Hexachloroethane | 50.00 | | 35.22 | 70 | 16-107 |
| Indeno(1,2,3-cd)pyrene | 50.00 | | 45.82 | 92 | 22-126 |
| Isophorone | 50.00 | | 40.49 | 81 | 31-116 |
| Methyl methanesulfonate | 50.00 | | 30.46 | 61 | 15- 82 |

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: BA10085

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: BA10085LCS

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | LCS CONCENTRATION (ug/L) | LCS % REC # | QC. LIMITS REC. |
|---|---|---|---|---|---|
| 2-Methylnaphthalene | 50.00 | | 33.91 | 68 | 34-108 |
| 2-Methylphenol | 50.00 | | 36.30 | 73 | 22- 97 |
| 3&4-Methylphenol | 50.00 | | 30.16 | 60 | 21- 96 |
| Naphthalene | 50.00 | | 35.24 | 70 | 33-108 |
| 2-Nitroaniline | 50.00 | | 44.22 | 88 | 32-127 |
| 3-Nitroaniline | 50.00 | | 43.24 | 86 | 28-142 |
| 4-Nitroaniline | 50.00 | | 43.28 | 86 | 23-139 |
| Nitrobenzene | 50.00 | | 43.39 | 87 | 27-117 |
| 2-Nitrophenol | 50.00 | | 38.18 | 76 | 25-114 |
| 4-Nitrophenol | 50.00 | | 18.92 | 38 | 1- 76 |
| N-Nitrosodibutylamine | 50.00 | | 41.04 | 82 | 31-126 |
| N-Nitrosodiethylamine | 50.00 | | 38.07 | 76 | 28-107 |
| N-Nitrosodimethylamine | 50.00 | | 33.00 | 66 | 14- 84 |
| N-Nitrosodi-n-propylami | 50.00 | | 41.91 | 84 | 29-114 |
| Pentachloronitrobenzene | 50.00 | | 38.78 | 78 | 34-135 |
| Pentachlorophenol | 50.00 | | 36.66 | 73 | 17-142 |
| Phenacetin | 50.00 | | 41.34 | 83 | 29-141 |
| Phenanthrene | 50.00 | | 41.83 | 84 | 40-120 |
| Phenol | 50.00 | | 16.63 | 33 | 11- 55 |
| Pyrene | 50.00 | | 43.05 | 86 | 20-154 |
| Pyridine | 50.00 | | 14.96 | 30 | 10- 71 |
| 1,2,4,5-Tetrachlorobenz | 50.00 | | 37.49 | 75 | 28-110 |
| 2,3,4,6-Tetrachlorophen | 50.00 | | 42.64 | 85 | 28-118 |
| 1,2,4-Trichlorobenzene | 50.00 | | 38.49 | 77 | 23-106 |
| 2,4,5-Trichlorophenol | 50.00 | | 41.55 | 83 | 26-118 |
| 2,4,6-Trichlorophenol | 50.00 | | 40.13 | 80 | 26-115 |
| 1,2-Dphnylhydrzine/Azob | 50.00 | | 42.83 | 86 | 45-135 |

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: BA10085

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: BA10085LCS

| COMPOUND | SPIKE ADDED (ug/L) | LCSD CONCENTRATION (ug/L) | LCSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Acenaphthene | 50.00 | 38.89 | 78 | 2 | 20 | 38-117 |
| Acenaphthylene | 50.00 | 37.38 | 75 | 4 | 20 | 37-114 |
| Acetophenone | 50.00 | 32.02 | 64 | 6 | 20 | 32-108 |
| Aniline | 50.00 | 31.04 | 62 | 2 | 20 | 16-133 |
| Anthracene | 50.00 | 40.47 | 81 | 1 | 20 | 34-128 |
| Benzidine | 50.00 | 4.28 | 8* | | 20 | 22-176 |
| Benz(a)Anthracene | 50.00 | 48.84 | 98 | 0 | 20 | 36-127 |
| Benzo(b)fluoranthene | 50.00 | 45.45 | 91 | 0 | 20 | 36-131 |
| Benzo(k)fluoranthene | 50.00 | 42.71 | 85 | 6 | 20 | 32-132 |
| Benzo(ghi)perylene | 50.00 | 44.29 | 88 | 1 | 20 | 26-123 |
| Benzo(a)pyrene | 50.00 | 46.23 | 92 | 2 | 20 | 34-131 |
| Benzoic acid | 50.00 | 19.15 | 38 | 5 | 20 | 11- 58 |
| Benzyl alcohol | 50.00 | 26.80 | 54 | 12 | 20 | 20-109 |
| Bis(2-chloroethoxy)meth | 50.00 | 37.00 | 74 | 6 | 20 | 20-126 |
| Bis(2-chloroethyl)ether | 50.00 | 34.66 | 69 | 7 | 20 | 16-122 |
| Bis(2-chloroisopropyl)e | 50.00 | 41.20 | 82 | 5 | 20 | 28-108 |
| Bis(2-ethylhexyl)phthal | 50.00 | 44.27 | 88 | 0 | 20 | 21-162 |
| 4-Bromophenyl phenyl et | 50.00 | 37.13 | 74 | 4 | 20 | 31-124 |
| Butyl benzyl phthalate | 50.00 | 41.25 | 82 | 2 | 20 | 33-142 |
| Carbazole | 50.00 | 40.30 | 81 | 2 | 20 | 20-147 |
| 4-Chloroaniline | 50.00 | 33.87 | 68 | 8 | 20 | 24-127 |
| Chlorobenzilate | 50.00 | 40.48 | 81 | 1 | 20 | 35-118 |
| 4-Chloro-3-methylphenol | 50.00 | 35.87 | 72 | 4 | 20 | 35-117 |
| 2-Chloronaphthalene | 50.00 | 37.60 | 75 | 3 | 20 | 29-137 |
| 2-Chlorophenol | 50.00 | 32.99 | 66 | 7 | 20 | 27-102 |
| 4-Chlorophenyl phenyl e | 50.00 | 40.07 | 80 | 2 | 20 | 39-110 |
| Chrysene | 50.00 | 43.86 | 88 | 2 | 20 | 30-124 |
| Dibenz(a,h)anthracene | 50.00 | 45.54 | 91 | 1 | 20 | 27-124 |

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: BA10085

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: BA10085LCS

| COMPOUND | SPIKE ADDED (ug/L) | LCSD CONCENTRATION (ug/L) | LCSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Dibenzofuran | 50.00 | 37.78 | 76 | 6 | 20 | 40-108 |
| Di-n-butyl phthalate | 50.00 | 38.21 | 76 | 4 | 20 | 19-158 |
| 1,2-Dichlorobenzene | 50.00 | 31.06 | 62 | 6 | 20 | 26-100 |
| 1,3-Dichlorobenzene | 50.00 | 31.45 | 63 | 6 | 20 | 21-102 |
| 1,4-Dichlorobenzene | 50.00 | 30.25 | 60 | 11 | 20 | 24- 99 |
| 3,3'-Dichlorobenzidine | 50.00 | 43.38 | 87 | 11 | 20 | 6-192 |
| 2,4-Dichlorophenol | 50.00 | 33.73 | 67 | 7 | 20 | 32-110 |
| 2,6-Dichlorophenol | 50.00 | 30.43 | 61 | 8 | 20 | 31-112 |
| Diethyl phthalate | 50.00 | 38.94 | 78 | 6 | 20 | 36-130 |
| 3,3-Dimethylbenzidine | 50.00 | 22.66 | 45 | 105* | 20 | 6-192 |
| 2,4-Dimethyphenol | 50.00 | 37.84 | 76 | 0 | 20 | 34-105 |
| Dimethyl phthalate | 50.00 | 39.01 | 78 | 5 | 20 | 34-123 |
| 4,6-Dinitro-2-methylphe | 50.00 | 36.41 | 73 | 4 | 20 | 27-128 |
| 2,4-Dinitrophenol | 50.00 | 38.60 | 77 | 4 | 20 | 10-132 |
| 2,4-Dinitrotoluene | 50.00 | 44.50 | 89 | 4 | 20 | 24-147 |
| 2,6-Dinitrotoluene | 50.00 | 41.78 | 84 | 4 | 20 | 36-125 |
| N-NitrsdiphylAm/Dipheny | 100.0 | 45.46 | 45 | 6 | 20 | 35-116 |
| Di-n-octyl phthalate | 50.00 | 43.06 | 86 | 0 | 20 | 29-136 |
| Ethyl methanesulfonate | 50.00 | 35.78 | 72 | 4 | 20 | 20-121 |
| Fluoranthene | 50.00 | 41.50 | 83 | 1 | 20 | 28-127 |
| Fluorene | 50.00 | 41.32 | 83 | 4 | 20 | 41-116 |
| Hexachlorobenzene | 50.00 | 37.50 | 75 | 4 | 20 | 18-136 |
| Hexachlorobutadiene | 50.00 | 27.40 | 55 | 24* | 20 | 22-109 |
| Hexachlorocyclopentadie | 50.00 | 35.44 | 71 | 7 | 20 | 10-102 |
| Hexachloroethane | 50.00 | 33.17 | 66 | 6 | 20 | 16-107 |
| Indeno(1,2,3-cd)pyrene | 50.00 | 46.15 | 92 | 0 | 20 | 22-126 |
| Isophorone | 50.00 | 38.64 | 77 | 5 | 20 | 31-116 |
| Methyl methanesulfonate | 50.00 | 28.53 | 57 | 7 | 20 | 15- 82 |

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC. Lab Prep Batch: BA10085

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Matrix Spike - Sample No.: BA10085LCS

| COMPOUND | SPIKE ADDED (ug/L) | LCSD CONCENTRATION (ug/L) | LCSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | 50.00 | 32.40 | 65 | 4 | 20 | 34-108 |
| 2-Methylphenol | 50.00 | 34.34 | 69 | 6 | 20 | 22- 97 |
| 3&4-Methylphenol | 50.00 | 28.79 | 58 | 3 | 20 | 21- 96 |
| Naphthalene | 50.00 | 32.71 | 65 | 7 | 20 | 33-108 |
| 2-Nitroaniline | 50.00 | 41.60 | 83 | 6 | 20 | 32-127 |
| 3-Nitroaniline | 50.00 | 41.63 | 83 | 4 | 20 | 28-142 |
| 4-Nitroaniline | 50.00 | 42.41 | 85 | 1 | 20 | 23-139 |
| Nitrobenzene | 50.00 | 39.99 | 80 | 8 | 20 | 27-117 |
| 2-Nitrophenol | 50.00 | 36.09 | 72 | 5 | 20 | 25-114 |
| 4-Nitrophenol | 50.00 | 17.67 | 35 | 8 | 20 | 1- 76 |
| N-Nitrosodibutylamine | 50.00 | 39.80 | 80 | 2 | 20 | 31-126 |
| N-Nitrosodiethylamine | 50.00 | 35.61 | 71 | 7 | 20 | 28-107 |
| N-Nitrosodimethylamine | 50.00 | 31.60 | 63 | 5 | 20 | 14- 84 |
| N-Nitrosodi-n-propylami | 50.00 | 39.52 | 79 | 6 | 20 | 29-114 |
| Pentachloronitrobenzene | 50.00 | 37.23 | 74 | 5 | 20 | 34-135 |
| Pentachlorophenol | 50.00 | 35.38 | 71 | 3 | 20 | 17-142 |
| Phenacetin | 50.00 | 39.50 | 79 | 5 | 20 | 29-141 |
| Phenanthrene | 50.00 | 39.87 | 80 | 5 | 20 | 40-120 |
| Phenol | 50.00 | 15.15 | 30 | 10 | 20 | 11- 55 |
| Pyrene | 50.00 | 42.66 | 85 | 1 | 20 | 20-154 |
| Pyridine | 50.00 | 22.37 | 45 | 40* | 20 | 10- 71 |
| 1,2,4,5-Tetrachlorobenz | 50.00 | 35.93 | 72 | 4 | 20 | 28-110 |
| 2,3,4,6-Tetrachlorophen | 50.00 | 41.03 | 82 | 4 | 20 | 28-118 |
| 1,2,4-Trichlorobenzene | 50.00 | 35.69 | 71 | 8 | 20 | 23-106 |
| 2,4,5-Trichlorophenol | 50.00 | 40.25 | 80 | 4 | 20 | 26-118 |
| 2,4,6-Trichlorophenol | 50.00 | 38.35 | 77 | 4 | 20 | 26-115 |
| 1,2-Dphnylhydrzine/Azob | 50.00 | 42.09 | 84 | 2 | 20 | 45-135 |

# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 83 outside limits
Spike Recovery: 1 out of 166 outside limits

COMMENTS: _____

Environmental Testing & Consulting, Inc.

# Quality Control Reports
## Level III
## Metals (ICP/GFAA/CV)

# ENVIRONMENTAL TESTING & CONSULTING, INC
## ICP Metals Sequence Check List

Sequence ID : 112603 System ID : ICP1 Date: 11-26-03 Analyst : SH

Time: 1427 Supervisor: JF

4250

768 745

1. **Instrument Profile Intensity Check (Arsenic)**

2. **Initial Calibration**
   a. Initial Calibration Blank (STD1-Blank)
   b Initial Calibration Standard 1 (C1) 3 Exposures at less than 5% RSD
   c. Initial Calibration Standard 2 (C2) 3 Exposures at less than 5% RSD
   d. Initial Calibration Standard 3 (C3) 3 Exposures at less than 5% RSD
   e. Initial Calibration Standard 4 (C4) 3 Exposures at less than 5% RSD
   f. Standardization Report

| 3. **Initial Calibration Readback (+/- 5% Difference Check Table)** | | **Failures** |
|---|---|---|
| a. Initial Calibration Standard 1 (C1) | ✓ | |
| b. Initial Calibration Standard 2 (C2) | ✓ | |
| c. Initial Calibration Standard 3 (C3) | ✓ | |
| d. Initial Calibration Standard 4 (C4) | ✓ | |

| 4. **Initial Calibration Verification** | | |
|---|---|---|
| e. Initial Calibration Blank (ICB) – All elements below 1 times MDL | ✓ | Mo |
| f. Low Level Check (LLC1) – (20%) | ✓ | |
| g. Low Level Check (LLC2) – (20%) | — | NA |
| h. Initial Calibration Verification (ICV1) – (10%) | ✓ | |
| i. Initial Interference Check Standard, ICS-A (Interferents at 20%) all others 2 X MDL | ✓ | Cu, Pb, Zn |
| j. Initial Interelement Correction Standard – (ICSAB) – (20%) | ✓ | |
| k. Final Interference Check Standard, ICS-A (Interferents at 20%) all others 2 X MDL | ✓ | Cu, Mo, Pb, Zn |
| l. Final Interelement Correction Standard – (ICSAB) – (20%) | ✓ | |

Comments

**Applicable ETC Order Nos. for this sequence:**

| | | | | |
|---|---|---|---|---|
| V39AQ78 | V39AQ79 | 311480 | 311513 | |
| 311406 | 80 | 482 | 474 | |
| 459 | 311450 | 487 | 492 | |
| 334 | 460 | 488 | 495 | |
| V39AQ71 | 461 | 489 | 514 | |
| 72 | 464 | 4606 | 404 | |
| 73 | 465 | 468 | 405 | |
| 74 | 475 | 432 | 553 | |
| 75 | 478 | 438 | V185089 | |
| 76 | 479 | 474 | 408 | |

AutoSampler Report  Table: AQ1  11/28/03 10:16:13 AM  page 1

Table Name: AQ1  Autosampler Type: TYPE TJA
Sample Positions: 42/192  QC Positions: 19/19  # Sets: 1
Rinse Station location is rack -1, pos. -1.

--- Racks ---

| Rack # | Type | Usage | #Pos Left | Analyses/Pos |
|---|---|---|---|---|
| 1 | Aux. (L) Rack | STD/QC/BLANK | 19 | 10 |
| 2 | Sample (16mm) | Samples | 0 | 1 |
| 3 | Sample (16mm) | Samples | 0 | 1 |
| 4 | Sample (16mm) | Samples | 0 | 1 |
| 5 | Sample (16mm) | Samples | 42 | 1 |

--- Sample Sets ---

| Set# | Type | Prepare? | Description | Method | #Pos | Rack# | StartPos |
|---|---|---|---|---|---|---|---|
| 1 | Normal | No | 112603 | AQ1 | 150 | 2 | 1 |

--- Preparation Info ---

| Set# | Uptake | Uptake#2 | Final | Dil.Factor |
|---|---|---|---|---|

No Samples Prepared.

Rack #1

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| (1...19 | Not Used) | | | | | |

Rack #2

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | V39AQ78 SB | 1 | -NA- | Sample |
| 2 | 1 | 2 | V39AQ78 LC | 1 | -NA- | Sample |
| 3 | 1 | 3 | 31140601 100 | 1 | -NA- | Sample |
| 4 | 1 | 4 | 31145901 5 | 1 | -NA- | Sample |
| 5 | 1 | 5 | 31145901 25 | 1 | -NA- | Sample |
| 6 | 1 | 6 | 31145901 MS 5 | 1 | -NA- | Sample |
| 7 | 1 | 7 | 31145901 MSD 5 | 1 | -NA- | Sample |
| 8 | 1 | 8 | 31133401 5 | 1 | -NA- | Sample |
| 9 | 1 | 9 | 31145901 | 1 | -NA- | Sample |
| 10 | 1 | 10 | 31145901 MS | 1 | -NA- | Sample |
| 11 | 1 | 11 | CCB1 | 1 | -NA- | Sample |
| 12 | 1 | 12 | CCV1 | 1 | -NA- | Sample |
| 13 | 2 | 1 | 31145901 MSD | 1 | -NA- | Sample |
| 14 | 2 | 2 | 31133401 | 1 | -NA- | Sample |
| 15 | 2 | 3 | V39AQ71 SB | 1 | -NA- | Sample |
| 16 | 2 | 4 | V39AQ72 SB | 1 | -NA- | Sample |
| 17 | 2 | 5 | V39AQ73 SB | 1 | -NA- | Sample |
| 18 | 2 | 6 | V39AQ74 SB | 1 | -NA- | Sample |
| 19 | 2 | 7 | V39AQ75 SB | 1 | -NA- | Sample |
| 20 | 2 | 8 | V39AQ76 SB | 1 | -NA- | Sample |
| 21 | 2 | 9 | V39AQ79 SB | 1 | -NA- | Sample |

Rack #2

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 22 | 2 | 10 | V39AQ80 SB | 1 | -NA- | Sample |
| 23 | 2 | 11 | CCB2 | 1 | -NA- | Sample |
| 24 | 2 | 12 | CCV2 | 1 | -NA- | Sample |
| 25 | 3 | 1 | V39AQ73 LC | 1 | -NA- | Sample |
| 26 | 3 | 2 | V39AQ72 LC | 1 | -NA- | Sample |
| 27 | 3 | 3 | V39AQ71 LC | 1 | -NA- | Sample |
| 28 | 3 | 4 | V39AQ74 LC | 1 | -NA- | Sample |
| 29 | 3 | 5 | V39AQ75 LC | 1 | -NA- | Sample |
| 30 | 3 | 6 | V39AQ76 LC | 1 | -NA- | Sample |
| 31 | 3 | 7 | V39AQ79 LC | 1 | -NA- | Sample |
| 32 | 3 | 8 | V39AQ80 LC | 1 | -NA- | Sample |
| 33 | 3 | 9 | 31145001 | 1 | -NA- | Sample |
| 34 | 3 | 10 | 31145002 | 1 | -NA- | Sample |
| 35 | 3 | 11 | CCB3 | 1 | -NA- | Sample |
| 36 | 3 | 12 | CCV3 | 1 | -NA- | Sample |
| 37 | 4 | 1 | 31146001 | 1 | -NA- | Sample |
| 38 | 4 | 2 | 31146002 | 1 | -NA- | Sample |
| 39 | 4 | 3 | 31146101 | 1 | -NA- | Sample |
| 40 | 4 | 4 | 31146401 | 1 | -NA- | Sample |
| 41 | 4 | 5 | 31146501 | 1 | -NA- | Sample |
| 42 | 4 | 6 | 31146501 MS | 1 | -NA- | Sample |
| 43 | 4 | 7 | 31146501 MSD | 1 | -NA- | Sample |
| 44 | 4 | 8 | 31147501 | 1 | -NA- | Sample |
| 45 | 4 | 9 | 31147801 | 1 | -NA- | Sample |
| [redacted] | 4 | 10 | 31147902 | 1 | -NA- | Sample |
| 47 | 4 | 11 | CCB4 | 1 | -NA- | Sample |
| 48 | 4 | 12 | CCV4 | 1 | -NA- | Sample |

Rack #3

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 31148001 | 1 | -NA- | Sample |
| 2 | 1 | 2 | 31148201 | 1 | -NA- | Sample |
| 3 | 1 | 3 | 31148202 | 1 | -NA- | Sample |
| 4 | 1 | 4 | 31148701 D | 1 | -NA- | Sample |
| 5 | 1 | 5 | 31148701 | 1 | -NA- | Sample |
| 6 | 1 | 6 | 31148801 | 1 | -NA- | Sample |
| 7 | 1 | 7 | 31148901 | 1 | -NA- | Sample |
| 8 | 1 | 8 | 31148901 MS | 1 | -NA- | Sample |
| 9 | 1 | 9 | 31148901 MSD | 1 | -NA- | Sample |
| 10 | 1 | 10 | 31146601 | 1 | -NA- | Sample |
| 11 | 1 | 11 | CCB5 | 1 | -NA- | Sample |
| 12 | 1 | 12 | CCV5 | 1 | -NA- | Sample |
| 13 | 2 | 1 | 31146801 | 1 | -NA- | Sample |
| 14 | 2 | 2 | 31146802 | 1 | -NA- | Sample |
| 15 | 2 | 3 | 31146803 | 1 | -NA- | Sample |
| 16 | 2 | 4 | 31146804 | 1 | -NA- | Sample |
| 17 | 2 | 5 | 31143201 | 1 | -NA- | Sample |
|  | 2 | 6 | 31143801 | 1 | -NA- | Sample |
|  | 2 | 7 | 31143802 | 1 | -NA- | Sample |
| 20 | 2 | 8 | 31147401 | 1 | -NA- | Sample |
| 21 | 2 | 9 | 31147403 | 1 | -NA- | Sample |

Rack #3

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 22 | 2 | 10 | 31151301 | 1 | -NA- | Sample |
| 23 | 2 | 11 | CCB6 | 1 | -NA- | Sample |
| 24 | 2 | 12 | CCV6 | 1 | -NA- | Sample |
| 25 | 3 | 1 | 31147403 MS | 1 | -NA- | Sample |
| 26 | 3 | 2 | 31147403 MSD | 1 | -NA- | Sample |
| 27 | 3 | 3 | 31149201 | 1 | -NA- | Sample |
| 28 | 3 | 4 | 31149502 | 1 | -NA- | Sample |
| 29 | 3 | 5 | 31149206 | 1 | -NA- | Sample |
| 30 | 3 | 6 | 31151401 | 1 | -NA- | Sample |
| 31 | 3 | 7 | 31151402 | 1 | -NA- | Sample |
| 32 | 3 | 8 | 31151403 | 1 | -NA- | Sample |
| 33 | 3 | 9 | 31151403 MS | 1 | -NA- | Sample |
| 34 | 3 | 10 | 31151403 MSD | 1 | -NA- | Sample |
| 35 | 3 | 11 | CCB7 | 1 | -NA- | Sample |
| 36 | 3 | 12 | CCV7 | 1 | -NA- | Sample |
| 37 | 4 | 1 | 31140401 | 1 | -NA- | Sample |
| 38 | 4 | 2 | 31140501 | 1 | -NA- | Sample |
| 39 | 4 | 3 | 31155301 | 1 | -NA- | Sample |
| 40 | 4 | 4 | 31155301 MS | 1 | -NA- | Sample |
| 41 | 4 | 5 | V18SO89 SB | 1 | -NA- | Sample |
| 42 | 4 | 6 | V18SO89 LC | 1 | -NA- | Sample |
| 43 | 4 | 7 | 31140801 | 1 | -NA- | Sample |
| 44 | 4 | 8 | 31140802 | 1 | -NA- | Sample |
| 45 | 4 | 9 | 31140803 | 1 | -NA- | Sample |
| 46 | 4 | 10 | 31140803 MS | 1 | -NA- | Sample |
| 47 | 4 | 11 | CCB8 | 1 | -NA- | Sample |
| 48 | 4 | 12 | CCV8 | 1 | -NA- | Sample |

Rack #4

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 31140803 MSD | 1 | -NA- | Sample |
| 2 | 1 | 2 | CCB9 | 1 | -NA- | Sample |
| 3 | 1 | 3 | CCV9 | 1 | -NA- | Sample |
| 4 | 1 | 4 | ICSA | 1 | -NA- | Sample |
| 5 | 1 | 5 | ICSAB | 1 | -NA- | Sample |
| 6 | 1 | 6 | ( empty ) | 1 | -NA- | -NA- |
| 7 | 1 | 7 | ( empty ) | 1 | -NA- | -NA- |
| 8 | 1 | 8 | ( empty ) | 1 | -NA- | -NA- |
| 9 | 1 | 9 | ( empty ) | 1 | -NA- | -NA- |
| 10 | 1 | 10 | ( empty ) | 1 | -NA- | -NA- |
| 11 | 1 | 11 | ( empty ) | 1 | -NA- | -NA- |
| 12 | 1 | 12 | ( empty ) | 1 | -NA- | -NA- |
| 13 | 2 | 1 | ( empty ) | 1 | -NA- | -NA- |
| 14 | 2 | 2 | ( empty ) | 1 | -NA- | -NA- |
| 15 | 2 | 3 | ( empty ) | 1 | -NA- | -NA- |
| 16 | 2 | 4 | ( empty ) | 1 | -NA- | -NA- |
| 17 | 2 | 5 | ( empty ) | 1 | -NA- | -NA- |
| 18 | 2 | 6 | ( empty ) | 1 | -NA- | -NA- |
| 19 | 2 | 7 | ( empty ) | 1 | -NA- | -NA- |
| 20 | 2 | 8 | ( empty ) | 1 | -NA- | -NA- |
| 21 | 2 | 9 | ( empty ) | 1 | -NA- | -NA- |

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/26/03 1427 Instrument ICPT

Initial Calibration Source C1 M7-56-14 C2 M7-54-03 C3 M7-36-12 C4 M7-45-07

Continuing Calibration Source ICV/CCV M7-58-21

| Analyte | Initial Calibration Verification | | | | Continuing CCV1 | | | | Continuing CCV2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %Diff(1) | Flag | True | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag |
| Silver | 500 | 485 | 3 | <5 | 500 | 482 | 4 | <5 | 487 | 2 6 | <5 | | | |
| Aluminum | 50000 | 48300 | 3 | <5 | 50000 | 47900 | 4 | <5 | 48400 | 3 | <5 | | | |
| Arsenic | 500 | 482 | 4 | <5 | 500 | 477 | 5 | <5 | 478 | 4 | <5 | | | |
| Barium | 5000 | 4810 | 4 | <5 | 5000 | 4780 | 4 | <5 | 4830 | 3 | <5 | | | |
| Beryllium | 500 | 502 | 0 | <5 | 500 | 498 | 0 | <5 | 501 | 0 | <5 | | | |
| Calcium | 50000 | 49200 | 2 | <5 | 50000 | 49300 | 1 | <5 | 49300 | 1 | <5 | | | |
| Cadmium | 500 | 476 | 5 | <5 | 500 | 471 | 3 | <5 | 473 | 5 | <5 | | | |
| Cobalt | 5000 | 4900 | 2 | <5 | 5000 | 4860 | 3 | <5 | 4880 | 2 | <5 | | | |
| Chromium | 5000 | 4820 | 4 | <5 | 5000 | 4780 | 4 | <5 | 4810 | 4 | <5 | | | |
| Copper | 5000 | 5090 | 2 | <5 | 5000 | 5010 | 0 | <5 | 5090 | 2 | <5 | | | |
| Iron | 50000 | 48900 | 2 | <5 | 50000 | 48600 | 3 | <5 | 48700 | 3 | <5 | | | |
| Potassium | 5000 | 5260 | 5 | <5 | 5000 | 5160 | 3 | <5 | 5210 | 4 | <5 | | | |
| Magnesium | 50000 | 49300 | 1 | <5 | 50000 | 49200 | 2 | <5 | 49200 | 2 | <5 | | | |
| Manganese | 5000 | 4940 | 1 | <5 | 5000 | 4910 | 2 | <5 | 4930 | 1 | <5 | | | |
| Sodium | 5000 | 4820 | 4 | <5 | 5000 | 5020 | 0 | <5 | 4960 | 1 | <5 | | | |
| Nickel | 5000 | 4820 | 4 | <5 | 5000 | 4770 | 5 | <5 | 4800 | 4 | <5 | | | |
| Lead | 500 | 481 | 4 | <5 | 500 | 483 | 3 | <5 | 483 | 3 | <5 | | | |
| Antimony | 500 | 504 | 1 | <5 | 500 | 499 | 0 | <5 | 506 | 1 | <5 | | | |
| Selenium | 500 | 479 | 4 | <5 | 500 | 476 | 5 | <5 | 478 | 4 | <5 | | | |
| Thallium | 500 | 488 | 2 | <5 | 500 | 488 | 2 | <5 | 488 | 2 | <5 | | | |
| Vanadium | 5000 | 4930 | 1 | <5 | 5000 | 4890 | 2 | <5 | 4930 | 1 | <5 | | | |
| Zinc | 5000 | 4870 | 3 | <5 | 5000 | 4850 | 3 | <5 | 4860 | 3 | <5 | | | |

(1) Percent difference from true value ICP Method 6010B - 10% ICP Method 200 7 - 5%

FORM 3
INITIAL AND CONTINUING CALIBRATION BLANKS
ICP METALS

Lab Name: Environmental Testing and Consulting, Inc

Date/Time of Sequence: 11/26/03 1427 Instrument: ICPT

| Analyte | Initial Calibration Blank ug/L | Continuing Calibration Blank ug/L | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCB1 | CCB2 | | | | | | | | |
| Silver | ND | ND | ND | | | | | | | | |
| Aluminum | ND | ND | ND | | | | | | | | |
| Arsenic | ND | ND | ND | | | | | | | | |
| Barium | ND | ND | ND | | | | | | | | |
| Beryllium | ND | ND | ND | | | | | | | | |
| Calcium | ND | ND | ND | | | | | | | | |
| Cadmium | ND | ND | ND | | | | | | | | |
| Cobalt | ND | ND | ND | | | | | | | | |
| Chromium | ND | ND | ND | | | | | | | | |
| Copper | ND | ND | ND | | | | | | | | |
| Iron | ND | ND | ND | | | | | | | | |
| Potassium | ND | ND | ND | | | | | | | | |
| Magnesium | ND | ND | ND | | | | | | | | |
| Manganese | ND | ND | ND | | | | | | | | |
| Sodium | ND | ND | ND | | | | | | | | |
| Nickel | ND | ND | ND | | | | | | | | |
| Lead | ND | ND | ND | | | | | | | | |
| Antimony | ND | ND | ND | | | | | | | | |
| Selenium | ND | ND | ND | | | | | | | | |
| Thallium | ND | ND | ND | | | | | | | | |
| Vanadium | ND | ND | ND | | | | | | | | |
| Zinc | ND | ND | ND | | | | | | | | |

FORM 4
INTERFERENCE CHECK SAMPLE
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/26/03 1427 Instrument ICPT

Concentration Units ug/L

| Analyte | True Sol AB | Initial Found Sol AB | %REC | Final Found Sol AB | %REC |
|---|---|---|---|---|---|
| Silver | 200 | 206 | 103 | | |
| Aluminum | 100000 | 101000 | 101 | | |
| Arsenic | 200 | 201 | 101 | | |
| Barium | 200 | 215 | 108 | | |
| Beryllium | 200 | 208 | 104 | | |
| Calcium | 100000 | 101000 | 101 | | |
| Cadmium | 200 | 198 | 99 | | |
| Cobalt | 200 | 200 | 100 | | |
| Chromium | 200 | 201 | 101 | | |
| Copper | 200 | 214 | 107 | | |
| Iron | 100000 | 101000 | 101 | | |
| Potassium | 5000 | 5500 | 110 | | |
| Magnesium | 100000 | 101000 | 101 | | |
| Manganese | 200 | 209 | 105 | | |
| Sodium | 5000 | 5350 | 107 | | |
| Nickel | 200 | 201 | 101 | | |
| Lead | 200 | 200 | 100 | | |
| Antimony | 200 | 215 | 108 | | |
| Selenium | 200 | 200 | 100 | | |
| Thallium | 200 | 196 | 98 | | |
| Vanadium | 500 | 508 | 102 | | |
| Zinc | 250 | 247 | 99 | | |

%R - Recovery should be within 20%.

FORM 4
INTERFERENCE CHECK SAMPLE
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/26/03 1427 Instrument ICPT

Concentration Units. ug/L

| Analyte | True Sol A | Initial Found Sol A | %REC | Final Found Sol A | %REC |
|---|---|---|---|---|---|
| Silver | 0 | ND | 0 | | |
| Aluminum | 100000 | 101000 | 101 | | |
| Arsenic | 0 | ND | 0 | | |
| Barium | 0 | ND | 0 | | |
| Beryllium | 0 | ND | 0 | | |
| Calcium | 100000 | 101000 | 101 | | |
| Cadmium | 0 | ND | 0 | | |
| Cobalt | 0 | ND | 0 | | |
| Chromium | 0 | ND | 0 | | |
| Copper | 0 | 15.4 | 0 | | |
| Iron | 100000 | 101000 | 101 | | |
| Potassium | 0 | ND | 0 | | |
| Magnesium | 100000 | 101000 | 101 | | |
| Manganese | 0 | ND | 0 | | |
| Sodium | 0 | ND | 0 | | |
| Nickel | 0 | ND | 0 | | |
| Lead | 0 | 3.66 | 0 | | |
| Antimony | 0 | ND | 0 | | |
| Selenium | 0 | ND | 0 | | |
| Thallium | 0 | ND | 0 | | |
| Vanadium | 0 | ND | 0 | | |
| Zinc | 0 | 9 81 | 0 | | |

%R - Recovery should be within 20%.

# ENVIRONMENTAL TESTING & CONSULTING, INC
## Mercury Sequence Check List

Sequence ID : 03112000,DL,DB  Date/Time: 11/20/3 1431  Analyst : JF
Supervisor:

Instrument ID: CETAC M-6000A

768 753

1. General Maintenance Check — Action Taken
   a. Lamp Warm-up ✓
   b. Pump Winding ✓
   c. Check GLS ✓
   d. Nafion Dryer ✓

2. Sequence Check List
   Initial Calibration
   a. Initial Calibration Blank (STD1-Blank) ✓
   b. Initial Calibration Standard 1 0.20 ug/L ✓
   c. Initial Calibration Standard 2 1.0 ug/L ✓
   d. Initial Calibration Standard 3 2.0 ug/L ✓
   e. Initial Calibration Standard 4 5.0 ug/L ✓
   f. Initial Calibration Standard 5 10.0 ug/L ✓
3. Regression coefficient (minimum = 0.995) ✓
4. Initial Calibration Blank (ICB) – All elements below MQL
   Water = 0.20 ug/L Soil = 0.02 mg/Kg
5. Initial Calibration Verification (ICV) – 2cnd Source SRN: M7-53-12
   Concentration 5.0 ug/L +/- 10%  Found: 5.28  %Difference: 6
6. Continuing Calibration Blank (CCB) – All elements below MQL indicate by √

| Metal | CCB1 | CCB2 | CCB3 | CCB4 | CCB5 | CCB6 | CCB7 | CCB8 | CCB9 | CCB10 | CCB11 | CCB12 | CCB13 | CCB14 | CCB15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hg | ✓ | ✓ | ✓ | | | | | | | | | | | | |

7. Continuing Calibration Verification (CCV) – Range: EPA 90-110% SW-846 80-120%
   All elements within QC limits indicate by √ (Concentration same as ICV) SRN: M7-53-12

| Metal | CCV1 | CCV2 | CCV3 | CCV4 | CCV5 | CCV6 | CCV7 | CCV8 | CCV9 | CCV10 | CCV11 | CCV12 | CCV13 | CCV14 | CCV15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hg | ✓ | ✓ | ✓ | | | | | | | | | | | | |

8 Method Blank (USACE) <1/2 MQL: _____  LCS % Recovery 80-120%: _____

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| SBLC VIIA038 | 311489 | 311317 | 311459 | |
| 311483 | 311385 | 311327 | | |
| 311488 | 311387 | 311350 | | |

Thursday, November 20, 2003 Page: 1

| Tube | Rack ID | Sample ID | Weight | Volume | Sample Type |
|---|---|---|---|---|---|
| 1 | 11/20/3 | ICB | 1 | 1 | Unknown |
| 2 | | ICV | 1 | 1 | Unknown |
| 3 | | V11AQ38 SB | 1 | 1 | Unknown |
| 4 | | V11AQ38 LC | 1 | 1 | Unknown |
| 5 | | 31148301 | 1 | 1 | Unknown |
| 6 | | 31148601 | 1 | 1 | Unknown |
| 7 | | 31148901 | 1 | 1 | Unknown |
| 8 | | 31138504 | 1 | 1 | Unknown |
| 9 | | 31138505 | 1 | 1 | Unknown |
| 10 | | 31138506 | 1 | 1 | Unknown |
| 11 | | 31138507 | 1 | 1 | Unknown |
| 12 | | 31138508 | 1 | 1 | Unknown |
| 13 | | CCB1 | 1 | 1 | Unknown |
| 14 | | CCV1 | 1 | 1 | Unknown |
| 15 | | 31138701 | 1 | 1 | Unknown |
| 16 | | 31138702 | 1 | 1 | Unknown |
| 17 | | 31131701 | 1 | 1 | Unknown |
| 18 | | 31131701 MS | 1 | 1 | Unknown |
| 19 | | 31132701 | 1 | 1 | Unknown |
| 20 | | 31132701 MS | 1 | 1 | Unknown |
| 21 | | 31135016 | 1 | 1 | Unknown |
| 22 | | 31135017 | 1 | 1 | Unknown |
| 23 | | 31135018 | 1 | 1 | Unknown |
| 24 | | 31135018 MS | 1 | 1 | Unknown |
| 25 | | CCB2 | 1 | 1 | Unknown |
| 26 | | CCV2 | 1 | 1 | Unknown |
| 27 | | 31135018 MSD | 1 | 1 | Unknown |
| 28 | | 31145901 | 1 | 1 | Unknown |
| 29 | | 31145901 MS | 1 | 1 | Unknown |
| 30 | | 31145901 MSD | 1 | 1 | Unknown |
| 31 | | 31145901 PDS | 1 | 1 | Unknown |
| 32 | | CCB3 | 1 | 1 | Unknown |
| 33 | | CCV3 | 1 | 1 | Unknown |

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
MERCURY

Lab Name: Environmental Testing and Consulting, Inc

Date/Time of Sequence: 11/20/03 1431 Instrument: M6000

Initial Calibration Source: C1 M7-58-14

Continuing Calibration Source: ICV/CCV M7-58-15

| Analyte | Initial Calibration Verification | | | | Continuing CCV1 | | | | Continuing CCV2 | | | Continuing CCV3 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %Diff(1) | Flag | True | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag |
| Mercury | 5 00 | 5 28 | 5.6 | <10 | 5 00 | 5 37 | 7 4 | <20 | 5.34 | 6.8 | <20 | 5 39 | 7 8 | <20 |

(1) Percent difference from true value <= 10%

FORM 3
INITIAL AND CONTINUING CALIBRATION BLANKS
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/20/03 1431 Instrument M6000

| Analyte | MDL ug/L | Initial Cal Blank (ICB) ug/L | Continuing Calibration Blank ug/L | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CCB1 | CCB2 | CCB3 | | | | | | | | |
| Mercury | 0 06 | ND | ND | ND | ND | | | | | | | | |

# ENVIRONMENTAL TESTING & CONSULTING, INC
## ICP Metals Sequence Check List

**Sequence ID :** 112603 **System ID : ICP1** **Date:** 11-26-03 **Analyst :** SH

**Time:** 1427 **Supervisor:** JF

4250

768 757

**1. Instrument Profile Intensity Check (Arsenic)**

**2. Initial Calibration**

a. Initial Calibration Blank (STD1-Blank)
b. Initial Calibration Standard 1 (C1) 3 Exposures at less than 5% RSD
c. Initial Calibration Standard 2 (C2) 3 Exposures at less than 5% RSD
d. Initial Calibration Standard 3 (C3) 3 Exposures at less than 5% RSD
e Initial Calibration Standard 4 (C4) 3 Exposures at less than 5% RSD
f. Standardization Report

| **3. Initial Calibration Readback (+/- 5% Difference Check Table)** | | **Failures** |
|---|---|---|
| a. Initial Calibration Standard 1 (C1) | ✓ | |
| b. Initial Calibration Standard 2 (C2) | ✓ | |
| c. Initial Calibration Standard 3 (C3) | ✓ | |
| d. Initial Calibration Standard 4 (C4) | ✓ | |

| **4. Initial Calibration Verification** | | |
|---|---|---|
| e. Initial Calibration Blank (ICB) – All elements below 1 times MDL | ✓ | Mo |
| f. Low Level Check (LLC1) – (20%) | ✓ | |
| g. Low Level Check (LLC2) – (20%) | — | NA |
| h. Initial Calibration Verification (ICV1) – (10%) | ✓ | |
| i. Initial Interference Check Standard, ICS-A (Interferents at 20%) all others 2 X MDL | ✓ | Cu, Pb, Zn |
| j. Initial Interelement Correction Standard – (ICSAB) – (20%) | ✓ | |
| k. Final Interference Check Standard, ICS-A (Interferents at 20%) all others 2 X MDL | ✓ | Cu, Mo, Pb, Zn |
| l. Final Interelement Correction Standard – (ICSAB) – (20%) | ✓ | |

Comments

**Applicable ETC Order Nos. for this sequence:**

| | | | | |
|---|---|---|---|---|
| V39AQ78 | V39AQ79 | 311480 | 311513 | |
| 311406 | 80 | 487 | 474 | |
| 459 | 311450 | 487 | 492 | |
| 334 | 460 | 488 | 495 | |
| V39AQ71 | 461 | 489 | 514 | |
| 72 | 464 | 4606 | 404 | |
| 73 | 465 | 468 | 405 | |
| 74 | 475 | 432 | 553 | |
| 75 | 478 | 438 | V185089 | |
| 76 | 479 | 474 | 408 | |

768 758

AutoSampler Report  Table: AQ1  11/28/03 10:16:13 AM  page 1

Table Name: AQ1  Autosampler Type: TYPE TJA
Sample Positions: 42/192  QC Positions: 19/19  # Sets: 1
Rinse Station location is rack -1, pos. -1.

--- Racks ---

| Rack # | Type | Usage | #Pos Left | Analyses/Pos |
|---|---|---|---|---|
| 1 | Aux. (L) Rack | STD/QC/BLANK | 19 | 10 |
| 2 | Sample (16mm) | Samples | 0 | 1 |
| 3 | Sample (16mm) | Samples | 0 | 1 |
| 4 | Sample (16mm) | Samples | 0 | 1 |
| 5 | Sample (16mm) | Samples | 42 | 1 |

--- Sample Sets ---

| Set# | Type | Prepare? | Description | Method | #Pos | Rack# | StartPos |
|---|---|---|---|---|---|---|---|
| 1 | Normal | No | 112603 | AQ1 | 150 | 2 | 1 |

--- Preparation Info ---

| Set# | Uptake | Uptake#2 | Final | Dil.Factor |
|---|---|---|---|---|

No Samples Prepared.

Rack #1

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| (1...19 | Not Used) | | | | | |

Rack #2

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | V39AQ78 SB | 1 | -NA- | Sample |
| 2 | 1 | 2 | V39AQ78 LC | 1 | -NA- | Sample |
| 3 | 1 | 3 | 31140601 100 | 1 | -NA- | Sample |
| 4 | 1 | 4 | 31145901 5 | 1 | -NA- | Sample |
| 5 | 1 | 5 | 31145901 25 | 1 | -NA- | Sample |
| 6 | 1 | 6 | 31145901 MS 5 | 1 | -NA- | Sample |
| 7 | 1 | 7 | 31145901 MSD 5 | 1 | -NA- | Sample |
| 8 | 1 | 8 | 31133401 5 | 1 | -NA- | Sample |
| 9 | 1 | 9 | 31145901 | 1 | -NA- | Sample |
| 10 | 1 | 10 | 31145901 MS | 1 | -NA- | Sample |
| 11 | 1 | 11 | CCB1 | 1 | -NA- | Sample |
| 12 | 1 | 12 | CCV1 | 1 | -NA- | Sample |
| 13 | 2 | 1 | 31145901 MSD | 1 | -NA- | Sample |
| 14 | 2 | 2 | 31133401 | 1 | -NA- | Sample |
| 15 | 2 | 3 | V39AQ71 SB | 1 | -NA- | Sample |
| 16 | 2 | 4 | V39AQ72 SB | 1 | -NA- | Sample |
| 17 | 2 | 5 | V39AQ73 SB | 1 | -NA- | Sample |
| 18 | 2 | 6 | V39AQ74 SB | 1 | -NA- | Sample |
| 19 | 2 | 7 | V39AQ75 SB | 1 | -NA- | Sample |
| 20 | 2 | 8 | V39AQ76 SB | 1 | -NA- | Sample |
| 21 | 2 | 9 | V39AQ79 SB | 1 | -NA- | Sample |

Rack #2

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 22 | 2 | 10 | V39AQ80 SB | 1 | -NA- | Sample |
| 23 | 2 | 11 | CCB2 | 1 | -NA- | Sample |
| 24 | 2 | 12 | CCV2 | 1 | -NA- | Sample |
| 25 | 3 | 1 | V39AQ73 LC | 1 | -NA- | Sample |
| 26 | 3 | 2 | V39AQ72 LC | 1 | -NA- | Sample |
| 27 | 3 | 3 | V39AQ71 LC | 1 | -NA- | Sample |
| 28 | 3 | 4 | V39AQ74 LC | 1 | -NA- | Sample |
| 29 | 3 | 5 | V39AQ75 LC | 1 | -NA- | Sample |
| 30 | 3 | 6 | V39AQ76 LC | 1 | -NA- | Sample |
| 31 | 3 | 7 | V39AQ79 LC | 1 | -NA- | Sample |
| 32 | 3 | 8 | V39AQ80 LC | 1 | -NA- | Sample |
| 33 | 3 | 9 | 31145001 | 1 | -NA- | Sample |
| 34 | 3 | 10 | 31145002 | 1 | -NA- | Sample |
| 35 | 3 | 11 | CCB3 | 1 | -NA- | Sample |
| 36 | 3 | 12 | CCV3 | 1 | -NA- | Sample |
| 37 | 4 | 1 | 31146001 | 1 | -NA- | Sample |
| 38 | 4 | 2 | 31146002 | 1 | -NA- | Sample |
| 39 | 4 | 3 | 31146101 | 1 | -NA- | Sample |
| 40 | 4 | 4 | 31146401 | 1 | -NA- | Sample |
| 41 | 4 | 5 | 31146501 | 1 | -NA- | Sample |
| 42 | 4 | 6 | 31146501 MS | 1 | -NA- | Sample |
| 43 | 4 | 7 | 31146501 MSD | 1 | -NA- | Sample |
| 44 | 4 | 8 | 31147501 | 1 | -NA- | Sample |
| 45 | 4 | 9 | 31147801 | 1 | -NA- | Sample |
| [redacted] | 4 | 10 | 31147902 | 1 | -NA- | Sample |
| 47 | 4 | 11 | CCB4 | 1 | -NA- | Sample |
| 48 | 4 | 12 | CCV4 | 1 | -NA- | Sample |

Rack #3

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 31148001 | 1 | -NA- | Sample |
| 2 | 1 | 2 | 31148201 | 1 | -NA- | Sample |
| 3 | 1 | 3 | 31148202 | 1 | -NA- | Sample |
| 4 | 1 | 4 | 31148701 D | 1 | -NA- | Sample |
| 5 | 1 | 5 | 31148701 | 1 | -NA- | Sample |
| 6 | 1 | 6 | 31148801 | 1 | -NA- | Sample |
| 7 | 1 | 7 | 31148901 | 1 | -NA- | Sample |
| 8 | 1 | 8 | 31148901 MS | 1 | -NA- | Sample |
| 9 | 1 | 9 | 31148901 MSD | 1 | -NA- | Sample |
| 10 | 1 | 10 | 31146601 | 1 | -NA- | Sample |
| 11 | 1 | 11 | CCB5 | 1 | -NA- | Sample |
| 12 | 1 | 12 | CCV5 | 1 | -NA- | Sample |
| 13 | 2 | 1 | 31146801 | 1 | -NA- | Sample |
| 14 | 2 | 2 | 31146802 | 1 | -NA- | Sample |
| 15 | 2 | 3 | 31146803 | 1 | -NA- | Sample |
| 16 | 2 | 4 | 31146804 | 1 | -NA- | Sample |
| 17 | 2 | 5 | 31143201 | 1 | -NA- | Sample |
|  | 2 | 6 | 31143801 | 1 | -NA- | Sample |
|  | 2 | 7 | 31143802 | 1 | -NA- | Sample |
| 20 | 2 | 8 | 31147401 | 1 | -NA- | Sample |
| 21 | 2 | 9 | 31147403 | 1 | -NA- | Sample |

Rack #3

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 22 | 2 | 10 | 31151301 | 1 | -NA- | Sample |
| 23 | 2 | 11 | CCB6 | 1 | -NA- | Sample |
| 24 | 2 | 12 | CCV6 | 1 | -NA- | Sample |
| 25 | 3 | 1 | 31147403 MS | 1 | -NA- | Sample |
| 26 | 3 | 2 | 31147403 MSD | 1 | -NA- | Sample |
| 27 | 3 | 3 | 31149201 | 1 | -NA- | Sample |
| 28 | 3 | 4 | 31149502 | 1 | -NA- | Sample |
| 29 | 3 | 5 | 31149206 | 1 | -NA- | Sample |
| 30 | 3 | 6 | 31151401 | 1 | -NA- | Sample |
| 31 | 3 | 7 | 31151402 | 1 | -NA- | Sample |
| 32 | 3 | 8 | 31151403 | 1 | -NA- | Sample |
| 33 | 3 | 9 | 31151403 MS | 1 | -NA- | Sample |
| 34 | 3 | 10 | 31151403 MSD | 1 | -NA- | Sample |
| 35 | 3 | 11 | CCB7 | 1 | -NA- | Sample |
| 36 | 3 | 12 | CCV7 | 1 | -NA- | Sample |
| 37 | 4 | 1 | 31140401 | 1 | -NA- | Sample |
| 38 | 4 | 2 | 31140501 | 1 | -NA- | Sample |
| 39 | 4 | 3 | 31155301 | 1 | -NA- | Sample |
| 40 | 4 | 4 | 31155301 MS | 1 | -NA- | Sample |
| 41 | 4 | 5 | V18SO89 SB | 1 | -NA- | Sample |
| 42 | 4 | 6 | V18SO89 LC | 1 | -NA- | Sample |
| 43 | 4 | 7 | 31140801 | 1 | -NA- | Sample |
| 44 | 4 | 8 | 31140802 | 1 | -NA- | Sample |
| 45 | 4 | 9 | 31140803 | 1 | -NA- | Sample |
| 46 | 4 | 10 | 31140803 MS | 1 | -NA- | Sample |
| 47 | 4 | 11 | CCB8 | 1 | -NA- | Sample |
| 48 | 4 | 12 | CCV8 | 1 | -NA- | Sample |

Rack #4

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 31140803 MSD | 1 | -NA- | Sample |
| 2 | 1 | 2 | CCB9 | 1 | -NA- | Sample |
| 3 | 1 | 3 | CCV9 | 1 | -NA- | Sample |
| 4 | 1 | 4 | ICSA | 1 | -NA- | Sample |
| 5 | 1 | 5 | ICSAB | 1 | -NA- | Sample |
| 6 | 1 | 6 | ( empty ) | 1 | -NA- | -NA- |
| 7 | 1 | 7 | ( empty ) | 1 | -NA- | -NA- |
| 8 | 1 | 8 | ( empty ) | 1 | -NA- | -NA- |
| 9 | 1 | 9 | ( empty ) | 1 | -NA- | -NA- |
| 10 | 1 | 10 | ( empty ) | 1 | -NA- | -NA- |
| 11 | 1 | 11 | ( empty ) | 1 | -NA- | -NA- |
| 12 | 1 | 12 | ( empty ) | 1 | -NA- | -NA- |
| 13 | 2 | 1 | ( empty ) | 1 | -NA- | -NA- |
| 14 | 2 | 2 | ( empty ) | 1 | -NA- | -NA- |
| 15 | 2 | 3 | ( empty ) | 1 | -NA- | -NA- |
| 16 | 2 | 4 | ( empty ) | 1 | -NA- | -NA- |
| 17 | 2 | 5 | ( empty ) | 1 | -NA- | -NA- |
| 18 | 2 | 6 | ( empty ) | 1 | -NA- | -NA- |
| 19 | 2 | 7 | ( empty ) | 1 | -NA- | -NA- |
| 20 | 2 | 8 | ( empty ) | 1 | -NA- | -NA- |
| 21 | 2 | 9 | ( empty ) | 1 | -NA- | -NA- |

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/26/03 1427 Instrument ICPT

Initial Calibration Source C1 M7-56-14 C2 M7-54-03 C3 M7-36-12 C4 M7-45-07

Continuing Calibration Source ICV/CCV M7-58-21

| | Initial Calibration Verification | | | | Continuing CCV1 | | | | Continuing CCV2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | True | Found | %Diff(1) | Flag | True | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag |
| Silver | 500 | 485 | 3 | <5 | 500 | 482 | 4 | <5 | 487 | 2.6 | <5 | | | |
| Aluminum | 50000 | 48300 | 3 | <5 | 50000 | 47900 | 4 | <5 | 48400 | 3 | <5 | | | |
| Arsenic | 500 | 482 | 4 | <5 | 500 | 477 | 5 | <5 | 478 | 4 | <5 | | | |
| Barium | 5000 | 4810 | 4 | <5 | 5000 | 4780 | 4 | <5 | 4830 | 3 | <5 | | | |
| Beryllium | 500 | 502 | 0 | <5 | 500 | 498 | 0 | <5 | 501 | 0 | <5 | | | |
| Calcium | 50000 | 49200 | 2 | <5 | 50000 | 49300 | 1 | <5 | 49300 | 1 | <5 | | | |
| Cadmium | 500 | 476 | 5 | <5 | 500 | 471 | 3 | <5 | 473 | 5 | <5 | | | |
| Cobalt | 5000 | 4900 | 2 | <5 | 5000 | 4860 | 3 | <5 | 4880 | 2 | <5 | | | |
| Chromium | 5000 | 4820 | 4 | <5 | 5000 | 4780 | 4 | <5 | 4810 | 4 | <5 | | | |
| Copper | 5000 | 5090 | 2 | <5 | 5000 | 5010 | 0 | <5 | 5090 | 2 | <5 | | | |
| Iron | 50000 | 48900 | 2 | <5 | 50000 | 48600 | 3 | <5 | 48700 | 3 | <5 | | | |
| Potassium | 5000 | 5260 | 5 | <5 | 5000 | 5160 | 3 | <5 | 5210 | 4 | <5 | | | |
| Magnesium | 50000 | 49300 | 1 | <5 | 50000 | 49200 | 2 | <5 | 49200 | 2 | <5 | | | |
| Manganese | 5000 | 4940 | 1 | <5 | 5000 | 4910 | 2 | <5 | 4930 | 1 | <5 | | | |
| Sodium | 5000 | 4820 | 4 | <5 | 5000 | 5020 | 0 | <5 | 4960 | 1 | <5 | | | |
| Nickel | 5000 | 4820 | 4 | <5 | 5000 | 4770 | 5 | <5 | 4800 | 4 | <5 | | | |
| Lead | 500 | 481 | 4 | <5 | 500 | 483 | 3 | <5 | 483 | 3 | <5 | | | |
| Antimony | 500 | 504 | 1 | <5 | 500 | 499 | 0 | <5 | 506 | 1 | <5 | | | |
| Selenium | 500 | 479 | 4 | <5 | 500 | 476 | 5 | <5 | 478 | 4 | <5 | | | |
| Thallium | 500 | 488 | 2 | <5 | 500 | 488 | 2 | <5 | 488 | 2 | <5 | | | |
| Vanadium | 5000 | 4930 | 1 | <5 | 5000 | 4890 | 2 | <5 | 4930 | 1 | <5 | | | |
| Zinc | 5000 | 4870 | 3 | <5 | 5000 | 4850 | 3 | <5 | 4860 | 3 | <5 | | | |

(1) Percent difference from true value. ICP Method 6010B - 10% ICP Method 200 7 - 5%

FORM 3
INITIAL AND CONTINUING CALIBRATION BLANKS
ICP METALS

768 762

Lab Name: Environmental Testing and Consulting, Inc

Date/Time of Sequence: 11/26/03 1427 Instrument: ICPT

| Analyte | Initial Calibration Blank ug/L | Continuing Calibration Blank ug/L | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCB1 | CCB2 | | | | | | | | |
| Silver | ND | ND | ND | | | | | | | | |
| Aluminum | ND | ND | ND | | | | | | | | |
| Arsenic | ND | ND | ND | | | | | | | | |
| Barium | ND | ND | ND | | | | | | | | |
| Beryllium | ND | ND | ND | | | | | | | | |
| Calcium | ND | ND | ND | | | | | | | | |
| Cadmium | ND | ND | ND | | | | | | | | |
| Cobalt | ND | ND | ND | | | | | | | | |
| Chromium | ND | ND | ND | | | | | | | | |
| Copper | ND | ND | ND | | | | | | | | |
| Iron | ND | ND | ND | | | | | | | | |
| Potassium | ND | ND | ND | | | | | | | | |
| Magnesium | ND | ND | ND | | | | | | | | |
| Manganese | ND | ND | ND | | | | | | | | |
| Sodium | ND | ND | ND | | | | | | | | |
| Nickel | ND | ND | ND | | | | | | | | |
| Lead | ND | ND | ND | | | | | | | | |
| Antimony | ND | ND | ND | | | | | | | | |
| Selenium | ND | ND | ND | | | | | | | | |
| Thallium | ND | ND | ND | | | | | | | | |
| Vanadium | ND | ND | ND | | | | | | | | |
| Zinc | ND | ND | ND | | | | | | | | |

190067

FORM 4
INTERFERENCE CHECK SAMPLE
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/26/03 1427 Instrument ICPT

Concentration Units: ug/L

| Analyte | True Sol AB | Initial Found Sol AB | %REC | Final Found Sol AB | %REC |
|---|---|---|---|---|---|
| Silver | 200 | 206 | 103 | | |
| Aluminum | 100000 | 101000 | 101 | | |
| Arsenic | 200 | 201 | 101 | | |
| Barium | 200 | 215 | 108 | | |
| Beryllium | 200 | 208 | 104 | | |
| Calcium | 100000 | 101000 | 101 | | |
| Cadmium | 200 | 198 | 99 | | |
| Cobalt | 200 | 200 | 100 | | |
| Chromium | 200 | 201 | 101 | | |
| Copper | 200 | 214 | 107 | | |
| Iron | 100000 | 101000 | 101 | | |
| Potassium | 5000 | 5500 | 110 | | |
| Magnesium | 100000 | 101000 | 101 | | |
| Manganese | 200 | 209 | 105 | | |
| Sodium | 5000 | 5350 | 107 | | |
| Nickel | 200 | 201 | 101 | | |
| Lead | 200 | 200 | 100 | | |
| Antimony | 200 | 215 | 108 | | |
| Selenium | 200 | 200 | 100 | | |
| Thallium | 200 | 196 | 98 | | |
| Vanadium | 500 | 508 | 102 | | |
| Zinc | 250 | 247 | 99 | | |

%R - Recovery should be within 20%

FORM 4
INTERFERENCE CHECK SAMPLE
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/26/03 1427 Instrument ICPT

Concentration Units ug/L

| Analyte | True Sol A | Initial Found Sol A | %REC | Final Found Sol A | %REC |
|---|---|---|---|---|---|
| Silver | 0 | ND | 0 | | |
| Aluminum | 100000 | 101000 | 101 | | |
| Arsenic | 0 | ND | 0 | | |
| Barium | 0 | ND | 0 | | |
| Beryllium | 0 | ND | 0 | | |
| Calcium | 100000 | 101000 | 101 | | |
| Cadmium | 0 | ND | 0 | | |
| Cobalt | 0 | ND | 0 | | |
| Chromium | 0 | ND | 0 | | |
| Copper | 0 | 15.4 | 0 | | |
| Iron | 100000 | 101000 | 101 | | |
| Potassium | 0 | ND | 0 | | |
| Magnesium | 100000 | 101000 | 101 | | |
| Manganese | 0 | ND | 0 | | |
| Sodium | 0 | ND | 0 | | |
| Nickel | 0 | ND | 0 | | |
| Lead | 0 | 3.66 | 0 | | |
| Antimony | 0 | ND | 0 | | |
| Selenium | 0 | ND | 0 | | |
| Thallium | 0 | ND | 0 | | |
| Vanadium | 0 | ND | 0 | | |
| Zinc | 0 | 9.81 | 0 | | |

%R - Recovery should be within 20%.

# ENVIRONMENTAL TESTING & CONSULTING, INC
## ICP Metals Sequence Check List

Sequence ID : 120403 System ID : ICP1 Date: 12/4/13 Analyst : JF

Time: 0934 Supervisor: [illegible]

2720

768 765

1. **Instrument Profile Intensity Check (Arsenic)**

2. **Initial Calibration**
   a. Initial Calibration Blank (STD1-Blank)
   b. Initial Calibration Standard 1 (C1) 3 Exposures at less than 5% RSD
   c. Initial Calibration Standard 2 (C2) 3 Exposures at less than 5% RSD
   d. Initial Calibration Standard 3 (C3) 3 Exposures at less than 5% RSD
   e. Initial Calibration Standard 4 (C4) 3 Exposures at less than 5% RSD
   f. Standardization Report

| 3. **Initial Calibration Readback (+/- 5% Difference Check Table)** | | Failures |
|---|---|---|
| a. Initial Calibration Standard 1 (C1) | ✓ | NONE |
| b. Initial Calibration Standard 2 (C2) | ✓ | NONE |
| c. Initial Calibration Standard 3 (C3) | ✓ | NONE |
| d. Initial Calibration Standard 4 (C4) | ✓ | NONE |

| 4. **Initial Calibration Verification** | | |
|---|---|---|
| e. Initial Calibration Blank (ICB) – All elements below 1 times MDL | ✓ | no |
| f. Low Level Check (LLC1) – (20%) | ✓ | Mg, Mo, Na, V, Zn |
| g. Low Level Check (LLC2) – (20%) | ✓ | Ni, Pb, Se, Ag, Be, Co, Cr, Cu, K |
| h. Initial Calibration Verification (ICV1) – (10%) | ✓ | Ti |
| i. Initial Interference Check Standard, ICS-A (Interferents at 20%) all others 2 X MDL | ✓ | |
| j. Initial Interelement Correction Standard – (ICSAB) – (20%) | ✓ | |
| k. Final Interference Check Standard, ICS-A (Interferents at 20%) all others 2 X MDL | ✓ | no |
| l. Final Interelement Correction Standard – (ICSAB) – (20%) | ✓ | |

Comments

**Applicable ETC Order Nos. for this sequence:**

| | | | | |
|---|---|---|---|---|
| 312028 | 311533 | 311624 | 311657 | 311648 |
| SB,LC V39AQ78 | 311552 | SB,LC V39AQ82 | 311667 | |
| 311459 | 311557 | 311616 | 311660 | |
| 312070 | 311573 | 311602 | 311661 | |
| 312071 | 311575 | 311603 | 311688 | |
| 312127 | 311588 | 311637 | SB,LC V39AQ84 | |
| 311497 | SB,LC V39AQ81 | 311638 | 311650 | |
| 311521 | 311645 | 311639 | 311651 | |
| 311523 | 311627 | SB,LC V39AQ83 | 311670 | |
| | | | | |

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AutoSampler Report  Table: AQ1  12/05/03 08:20:39 AM  page 1

Table Name: AQ1  Autosampler Type: TYPE TJA
Sample Positions: 42/192  QC Positions: 19/19  # Sets: 1
Rinse Station location is rack -1, pos. -1.

--- Racks ---

| Rack # | Type | Usage | #Pos Left | Analyses/Pos |
|---|---|---|---|---|
| 1 | Aux. (L) Rack | STD/QC/BLANK | 19 | 10 |
| 2 | Sample (16mm) | Samples | 0 | 1 |
| 3 | Sample (16mm) | Samples | 0 | 1 |
| 4 | Sample (16mm) | Samples | 0 | 1 |
| 5 | Sample (16mm) | Samples | 42 | 1 |

--- Sample Sets ---

| Set# | Type | Prepare? | Description | Method | #Pos | Rack# | StartPos |
|---|---|---|---|---|---|---|---|
| 1 | Normal | No | 120403 | AQ1 | 150 | 2 | 1 |

--- Preparation Info ---

| Set# | Uptake | Uptake#2 | Final | Dil.Factor |
|---|---|---|---|---|

No Samples Prepared.

Rack #1

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| (1...19 | Not Used) | | | | | |

Rack #2

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 31202802 D | 1 | -NA- | Sample |
| 2 | 1 | 2 | V39AQ78 SB | 1 | -NA- | Sample |
| 3 | 1 | 3 | V39AQ78 LC | 1 | -NA- | Sample |
| 4 | 1 | 4 | 31145901 | 1 | -NA- | Sample |
| 5 | 1 | 5 | 31145901 MS | 1 | -NA- | Sample |
| 6 | 1 | 6 | 31145901 MSD | 1 | -NA- | Sample |
| 7 | 1 | 7 | CCB1 | 1 | -NA- | Sample |
| 8 | 1 | 8 | CCV1 | 1 | -NA- | Sample |
| 9 | 1 | 9 | 31202802 | 1 | -NA- | Sample |
| 10 | 1 | 10 | 31202801 | 1 | -NA- | Sample |
| 11 | 1 | 11 | 31207001 | 1 | -NA- | Sample |
| 12 | 1 | 12 | 31207102 D | 1 | -NA- | Sample |
| 13 | 2 | 1 | 31207102 | 1 | -NA- | Sample |
| 14 | 2 | 2 | 31207101 | 1 | -NA- | Sample |
| 15 | 2 | 3 | 31212701 | 1 | -NA- | Sample |
| 16 | 2 | 4 | 31149701 | 1 | -NA- | Sample |
| 17 | 2 | 5 | 31152102 | 1 | -NA- | Sample |
| 18 | 2 | 6 | 31152302 | 1 | -NA- | Sample |
| 19 | 2 | 7 | CCB2 | 1 | -NA- | Sample |
| 20 | 2 | 8 | CCV2 | 1 | -NA- | Sample |
| 21 | 2 | 9 | 31153301 | 1 | -NA- | Sample |

Rack #2

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 22 | 2 | 10 | 31155201 | 1 | -NA- | Sample |
| 23 | 2 | 11 | 31155702 | 1 | -NA- | Sample |
| 24 | 2 | 12 | 31157301 | 1 | -NA- | Sample |
| 25 | 3 | 1 | 31157301 MS | 1 | -NA- | Sample |
| 26 | 3 | 2 | 31157301 MSD | 1 | -NA- | Sample |
| 27 | 3 | 3 | 31157501 | 1 | -NA- | Sample |
| 28 | 3 | 4 | 31157502 | 1 | -NA- | Sample |
| 29 | 3 | 5 | 31157503 | 1 | -NA- | Sample |
| 30 | 3 | 6 | 31157504 | 1 | -NA- | Sample |
| 31 | 3 | 7 | CCB3 | 1 | -NA- | Sample |
| 32 | 3 | 8 | CCV3 | 1 | -NA- | Sample |
| 33 | 3 | 9 | 31157505 | 1 | -NA- | Sample |
| 34 | 3 | 10 | 31158801 | 1 | -NA- | Sample |
| 35 | 3 | 11 | 31158805 | 1 | -NA- | Sample |
| 36 | 3 | 12 | 31158809 | 1 | -NA- | Sample |
| 37 | 4 | 1 | 31158810 | 1 | -NA- | Sample |
| 38 | 4 | 2 | 31158810 MS | 1 | -NA- | Sample |
| 39 | 4 | 3 | 31158801 MSD | 1 | -NA- | Sample |
| 40 | 4 | 4 | V39AQ81 SB | 1 | -NA- | Sample |
| 41 | 4 | 5 | V39AQ81 LC | 1 | -NA- | Sample |
| 42 | 4 | 6 | 31164501 | 1 | -NA- | Sample |
| 43 | 4 | 7 | CCB4 | 1 | -NA- | Sample |
| 44 | 4 | 8 | CCV4 | 1 | -NA- | Sample |
| 45 | 4 | 9 | 31164501 MS | 1 | -NA- | Sample |
| 46 | 4 | 10 | 31164501 MSD | 1 | -NA- | Sample |
| 47 | 4 | 11 | 31162701 | 1 | -NA- | Sample |
| 48 | 4 | 12 | 31162702 | 1 | -NA- | Sample |

Rack #3

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 31162401 | 1 | -NA- | Sample |
| 2 | 1 | 2 | 31158811 | 1 | -NA- | Sample |
| 3 | 1 | 3 | 31158812 | 1 | -NA- | Sample |
| 4 | 1 | 4 | 31158813 | 1 | -NA- | Sample |
| 5 | 1 | 5 | V39AQ82 SB | 1 | -NA- | Sample |
| 6 | 1 | 6 | V39AQ82 LC | 1 | -NA- | Sample |
| 7 | 1 | 7 | CCB5 | 1 | -NA- | Sample |
| 8 | 1 | 8 | CCV5 | 1 | -NA- | Sample |
| 9 | 1 | 9 | 31161601 | 1 | -NA- | Sample |
| 10 | 1 | 10 | 31160201 | 1 | -NA- | Sample |
| 11 | 1 | 11 | 31160202 | 1 | -NA- | Sample |
| 12 | 1 | 12 | 31160301 | 1 | -NA- | Sample |
| 13 | 2 | 1 | 31160302 | 1 | -NA- | Sample |
| 14 | 2 | 2 | 31163702 | 1 | -NA- | Sample |
| 15 | 2 | 3 | 31163704 | 1 | -NA- | Sample |
| 16 | 2 | 4 | 31163802 | 1 | -NA- | Sample |
| 17 | 2 | 5 | 31163902 | 1 | -NA- | Sample |
| 18 | 2 | 6 | 31163903 | 1 | -NA- | Sample |
| 19 | 2 | 7 | CCB6 | 1 | -NA- | Sample |
| 20 | 2 | 8 | CCV6 | 1 | -NA- | Sample |
| 21 | 2 | 9 | 31163903 MS | 1 | -NA- | Sample |

Rack #3

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 22 | 2 | 10 | 31163903 MSD | 1 | -NA- | Sample |
| 23 | 2 | 11 | V39AQ83 SB | 1 | -NA- | Sample |
| 24 | 2 | 12 | V39AQ83 LC | 1 | -NA- | Sample |
| 25 | 3 | 1 | 31165701 | 1 | -NA- | Sample |
| 26 | 3 | 2 | 31165702 | 1 | -NA- | Sample |
| 27 | 3 | 3 | 31165703 | 1 | -NA- | Sample |
| 28 | 3 | 4 | 31165704 | 1 | -NA- | Sample |
| 29 | 3 | 5 | 31166701 | 1 | -NA- | Sample |
| 30 | 3 | 6 | 31166702 | 1 | -NA- | Sample |
| 31 | 3 | 7 | CCB7 | 1 | -NA- | Sample |
| 32 | 3 | 8 | CCV7 | 1 | -NA- | Sample |
| 33 | 3 | 9 | 31166002 | 1 | -NA- | Sample |
| 34 | 3 | 10 | 31166102 | 1 | -NA- | Sample |
| 35 | 3 | 11 | 31168802 | 1 | -NA- | Sample |
| 36 | 3 | 12 | 31168804 | 1 | -NA- | Sample |
| 37 | 4 | 1 | 31168804 MS | 1 | -NA- | Sample |
| 38 | 4 | 2 | 31168804 MSD | 1 | -NA- | Sample |
| 39 | 4 | 3 | 31155101 100 | 1 | -NA- | Sample |
| 40 | 4 | 4 | V39AQ84 SB | 1 | -NA- | Sample |
| 41 | 4 | 5 | V39AQ84 LC | 1 | -NA- | Sample |
| 42 | 4 | 6 | 31165001 | 1 | -NA- | Sample |
| 43 | 4 | 7 | CCB8 | 1 | -NA- | Sample |
| 44 | 4 | 8 | CCV8 | 1 | -NA- | Sample |
| 45 | 4 | 9 | 31165002 | 1 | -NA- | Sample |
| 46 | 4 | 10 | 31165003 | 1 | -NA- | Sample |
| 47 | 4 | 11 | 31165004 | 1 | -NA- | Sample |
| 48 | 4 | 12 | 31165101 | 1 | -NA- | Sample |

Rack #4

| Pos | Row | Col | Sample Name | Set # | #Used | Type |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 31167001 | 1 | -NA- | Sample |
| 2 | 1 | 2 | 31164802 | 1 | -NA- | Sample |
| 3 | 1 | 3 | 31164802 MS | 1 | -NA- | Sample |
| 4 | 1 | 4 | 31164802 MSD | 1 | -NA- | Sample |
| 5 | 1 | 5 | CCB9 | 1 | -NA- | Sample |
| 6 | 1 | 6 | CCV9 | 1 | -NA- | Sample |
| 7 | 1 | 7 | ICSA | 1 | -NA- | Sample |
| 8 | 1 | 8 | ICSAB | 1 | -NA- | Sample |
| 9 | 1 | 9 | ( empty ) | 1 | -NA- | -NA- |
| 10 | 1 | 10 | ( empty ) | 1 | -NA- | -NA- |
| 11 | 1 | 11 | ( empty ) | 1 | -NA- | -NA- |
| 12 | 1 | 12 | ( empty ) | 1 | -NA- | -NA- |
| 13 | 2 | 1 | ( empty ) | 1 | -NA- | -NA- |
| 14 | 2 | 2 | ( empty ) | 1 | -NA- | -NA- |
| 15 | 2 | 3 | ( empty ) | 1 | -NA- | -NA- |
| 16 | 2 | 4 | ( empty ) | 1 | -NA- | -NA- |
| 17 | 2 | 5 | ( empty ) | 1 | -NA- | -NA- |
| 18 | 2 | 6 | ( empty ) | 1 | -NA- | -NA- |
| 19 | 2 | 7 | ( empty ) | 1 | -NA- | -NA- |
| 20 | 2 | 8 | ( empty ) | 1 | -NA- | -NA- |
| 21 | 2 | 9 | ( empty ) | 1 | -NA- | -NA- |

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 12/04/03 0934 Instrument ICPT

Initial Calibration Source C1 M7-56-14 C2 M7-54-03 C3 M7-36-12 C4 M7-45-07

Continuing Calibration Source ICV/CCV M7-58-21

| Analyte | Initial Calibration Verification | | | | Continuing CCV1 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %Diff(1) | Flag | True | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag |
| Cadmium | 500 | 489 | 2 | <5 | 500 | 494 | 1 | <5 | | | | | | |
| Copper | 5000 | 5090 | 2 | <5 | 5000 | 5140 | 3 | <5 | | | | | | |
| Nickel | 5000 | 4890 | 2 | <5 | 5000 | 4950 | 1 | <5 | | | | | | |
| Lead | 500 | 500 | 0 | <5 | 500 | 503 | 1 | <5 | | | | | | |
| Zinc | 5000 | 4990 | 0 | <5 | 5000 | 5020 | 0 | <5 | | | | | | |

(1) Percent difference from true value ICP Method 6010B - 10% ICP Method 200 7 - 5%

FORM 3
INITIAL AND CONTINUING CALIBRATION BLANKS
ICP METALS

Lab Name: Environmental Testing and Consulting, Inc

Date/Time of Sequence: 12/04/03 0934 Instrument: ICPT

| Analyte | Initial Calibration Blank ug/L | Continuing Calibration Blank ug/L | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCB1 | | | | | | | | | |
| Cadmium | ND | ND | | | | | | | | | |
| Copper | ND | ND | | | | | | | | | |
| Nickel | ND | ND | | | | | | | | | |
| Lead | ND | ND | | | | | | | | | |
| Zinc | ND | ND | | | | | | | | | |

FORM 4
INTERFERENCE CHECK SAMPLE
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 12/04/03 0934 Instrument ICPT

Concentration Units: ug/L

| Analyte | True Sol AB | Initial Found Sol AB | %REC | Final Found Sol AB | %REC |
|---|---|---|---|---|---|
| Aluminum | 100000 | 99500 | 100 | | |
| Calcium | 100000 | 98800 | 99 | | |
| Cadmium | 200 | 200 | 100 | | |
| Copper | 200 | 210 | 105 | | |
| Iron | 100000 | 99800 | 100 | | |
| Magnesium | 100000 | 100000 | 100 | | |
| Nickel | 200 | 199 | 100 | | |
| Lead | 200 | 203 | 102 | | |
| Zinc | 250 | 247 | 99 | | |

| Analyte | True Sol A | Initial Found Sol A | %REC | Final Found Sol A | %REC |
|---|---|---|---|---|---|
| Aluminum | 100000 | 100000 | 100 | | |
| Calcium | 100000 | 99800 | 100 | | |
| Cadmium | 0 | ND | 0 | | |
| Copper | 0 | ND | 0 | | |
| Iron | 100000 | 101000 | 101 | | |
| Magnesium | 100000 | 100000 | 100 | | |
| Nickel | 0 | ND | 0 | | |
| Lead | 0 | ND | 0 | | |
| Zinc | 0 | ND | 0 | | |

%R - Recovery should be within 20%

768 772

# ENVIRONMENTAL TESTING & CONSULTING, INC
## Mercury Sequence Check List

Sequence ID : 03112000,01.DB  Date/Time: 11/20/13 1431  Analyst : JF
Supervisor: [signature]

Instrument ID: CETAC M-6000A

1. General Maintenance Check — Action Taken
   a. Lamp Warm-up ☑ _____
   b. Pump Winding ☑ _____
   c. Check GLS ☑ _____
   d. Nafion Dryer ☑ _____

2. Sequence Check List
   Initial Calibration
   a. Initial Calibration Blank (STD1-Blank) ✓
   b. Initial Calibration Standard 1 0.20 ug/L ✓
   c. Initial Calibration Standard 2 1.0 ug/L ✓
   d. Initial Calibration Standard 3 2.0 ug/L ✓
   e. Initial Calibration Standard 4 5.0 ug/L ✓
   f. Initial Calibration Standard 5 10.0 ug/L ✓
3. Regression coefficient (minimum = 0.995) ✓
4. Initial Calibration Blank (ICB) – All elements below MQL ✓
   Water = 0.20 ug/L Soil = 0.02 mg/Kg
5. Initial Calibration Verification (ICV) – 2cnd Source SRN: M7-53-12
   Concentration 5.0 ug/L +/- 10% Found: 5.28 %Difference: 6
6. Continuing Calibration Blank (CCB) – All elements below MQL indicate by √

| Metal | CCB1 | CCB2 | CCB3 | CCB4 | CCB5 | CCB6 | CCB7 | CCB8 | CCB9 | CCB10 | CCB11 | CCB12 | CCB13 | CCB14 | CCB15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hg | ✓ | ✓ | ✓ | | | | | | | | | | | | |

7. Continuing Calibration Verification (CCV) – Range: EPA 90-110% SW-846 80-120%
   All elements within QC limits indicate by √ (Concentration same as ICV) SRN: M7-53-12

| Metal | CCV1 | CCV2 | CCV3 | CCV4 | CCV5 | CCV6 | CCV7 | CCV8 | CCV9 | CCV10 | CCV11 | CCV12 | CCV13 | CCV14 | CCV15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hg | ✓ | ✓ | ✓ | | | | | | | | | | | | |

8 Method Blank (USACE) <1/2 MQL:_____ LCS % Recovery 80-120%:_____

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| SBLC VIIAQ38 | 311489 | 311317 | 311459 | |
| 311483 | 311385 | 311327 | | |
| 311488 | 311387 | 311350 | | |

Thursday, November 20, 2003 Page: 1

| Tube | Rack ID | Sample ID | Weight | Volume | Sample Type |
|---|---|---|---|---|---|
| 1 | 11/20/3 1 | ICB | 1 | 1 | Unknown |
| 2 | | ICV | 1 | 1 | Unknown |
| 3 | | V11AQ38 SB | 1 | 1 | Unknown |
| 4 | | V11AQ38 LC | 1 | 1 | Unknown |
| 5 | | 31148301 | 1 | 1 | Unknown |
| 6 | | 31148801 | 1 | 1 | Unknown |
| 7 | | 31148901 | 1 | 1 | Unknown |
| 8 | | 31138504 | 1 | 1 | Unknown |
| 9 | | 31138505 | 1 | 1 | Unknown |
| 10 | | 31138506 | 1 | 1 | Unknown |
| 11 | | 31138507 | 1 | 1 | Unknown |
| 12 | | 31138508 | 1 | 1 | Unknown |
| 13 | | CCB1 | 1 | 1 | Unknown |
| 14 | | CCV1 | 1 | 1 | Unknown |
| 15 | | 31138701 | 1 | 1 | Unknown |
| 16 | | 31138702 | 1 | 1 | Unknown |
| 17 | | 31131701 | 1 | 1 | Unknown |
| 18 | | 31131701 MS | 1 | 1 | Unknown |
| 19 | | 31132701 | 1 | 1 | Unknown |
| 20 | | 31132701 MS | 1 | 1 | Unknown |
| 21 | | 31135016 | 1 | 1 | Unknown |
| 22 | | 31135017 | 1 | 1 | Unknown |
| 23 | | 31135018 | 1 | 1 | Unknown |
| 24 | | 31135018 MS | 1 | 1 | Unknown |
| 25 | | CCB2 | 1 | 1 | Unknown |
| 26 | | CCV2 | 1 | 1 | Unknown |
| 27 | | 31135018 MSD | 1 | 1 | Unknown |
| 28 | | 31145901 | 1 | 1 | Unknown |
| 29 | | 31145901 MS | 1 | 1 | Unknown |
| 30 | | 31145901 MSD | 1 | 1 | Unknown |
| 31 | | 31145901 PDS | 1 | 1 | Unknown |
| 32 | | CCB3 | 1 | 1 | Unknown |
| 33 | | CCV3 | 1 | 1 | Unknown |

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
MERCURY

768 774

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/20/03 1431 Instrument M6000

Initial Calibration Source C1 M7-58-14

Continuing Calibration Source ICV/CCV M7-58-15

| Analyte | Initial Calibration Verification | | | | Continuing CCV1 | | | | Continuing CCV2 | | | Continuing CCV3 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found | %Diff(1) | Flag | True | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag | Found | %Diff(1) | Flag |
| Mercury | 5 00 | 5.28 | 5.6 | <10 | 5 00 | 5.37 | 7 4 | <20 | 5 34 | 6.8 | <20 | 5.39 | 7 8 | <20 |

(1) Percent difference from true value <= 10%

670009

FORM 3
INITIAL AND CONTINUING CALIBRATION BLANKS
ICP METALS

Lab Name Environmental Testing and Consulting, Inc

Date/Time of Sequence 11/20/03 1431 Instrument M6000

| Analyte | MDL ug/L | Initial Cal Blank (ICB) ug/L | Continuing Calibration Blank ug/L | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CCB1 | CCB2 | CCB3 | | | | | | | | |
| Mercury | 0 06 | ND | ND | ND | ND | | | | | | | | |

080009

768 775

Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level III
# GC/MS Volatiles

768 777

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS VOC Method 8260B Sequence Check List (SW-846)

| Date of Analysis | System ID | Sequence ID | Column Ser # | Analyst | Supervisor |
|---|---|---|---|---|---|
| 12-2-03 | VOC7 | V21202.1 | CP7411 | LS | MM |

Applicable ETC Order Nos. for this sequence:

| | | | | |
|---|---|---|---|---|
| 0311-459- | 0312-016- | 0312-017- | 0311-458- | |
| 1 | 1, 2 | 1 | 1-6 | |

1.0 BFB Daily 12-Hour Tune Meets Criteria. No analysis begins until criteria are met. (SOP) 02-7-30-16 ✓

2.0 Initial Calibration (ICAL) : Method V21027.M ICAL SRN 02-7-30-6

- 2.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 2.2 CCC - RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
- 2.3 RSD of analytes <=15% may use Average RF for quantitation or Linear Regression ✓
- 2.4 RSD of analytes >15%, use Linear Regression: First Order r2>0.990/Second Order r2>0.995 ✓

3.0 Calibration Verification (CV): CV SRN 02-7-31-12, 02-7-31-22 ✓

- 3.1 SPCC – Mean RF >=0.10 (>=0.30 for Chlorobenzene / 11122-Tetrachloroethane) ✓
- 3.2 CCC - % Difference for Average RF Calibration - <=20% ✓
- 3.3 CCC - % Drift for Linear Regression Calibration - <=20% ✓
- 3.4 % Difference/%Drift for all other Target Analytes - <=30% (<=20% USCOE Projects) ✓

_____

_____

- 3.5 Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL Standard ✓
- 3.6 Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL Standard ✓

4.0 Method Blank(s) – Note positive results. 1 per 20 samples per matrix

| Method Blank | Aqueous | Solid | Surrogate |
|---|---|---|---|
| V21202.11LB | Methylene Chloride 2.98 ppb, Hexane 3.83 ppb | 1,4-DCB at 110 ppb, naphthalene @ 1.33 ppb | 014 |
| V21202.12-LB | naphthalene @ 1.94 ppb | | 014 |

5.0 Laboratory Control Sample(s) – Note failures only. 1 per 20 per matrix . Duplicate LCS when no MS/MSD.

| LCS/LCSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| V21202.11LCS | 187 | 0.0 | 014 |

6.0 Matrix Spike/Matrix Spike Duplicate – Note failures only. 1 per 20 per matrix.

| MS/MSD | % Rec | % RPD | Surrogate |
|---|---|---|---|
| 0311-459-1 | 3170 | 2.35 | 018 |

7.0 Surrogate Recoveries within QC Limits - Note failures only. ✓

_____

_____

8.0 Dilutions/Re-Analysis Required NA

Narrative/Notes : MS, MSD are outside 12 hr time criteria. SEE LCS

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID: 1001 BFB Injection Date: 12/02/03

Instrument ID: VOC2 BFB Injection Time: 0926

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) N

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 24.5 |
| 75 | 30.0 - 60.0% of mass 95 | 44.2 |
| 95 | Base Peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 7.3 |
| 173 | Less than 2.0% of mass 174 | 0.4 ( 0.5)1 |
| 174 | Greater than 50.0% of mass 95 | 71.7 |
| 175 | 5.0 - 9.0% of mass 174 | 5.2 ( 7.3)1 |
| 176 | 95.0 - 101.0% of mass 174 | 72.3 (100.8)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.4 ( 7.4)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | V2120211LCS | 11LCS | 1003LJ | 12/02/03 | 1038 |
| 02 | CCV100PPB | CCV100PPB | 1003J | 12/02/03 | 1038 |
| 03 | V2120211LB | 11LB | 1005J | 12/02/03 | 1207 |
| 04 | 031145901 | 031145901 | 1006 | 12/02/03 | 1243 |
| 05 | 031145901MS | MS | 1021 | 12/02/03 | 2148 |
| 06 | 031145901MSD | MSD | 1022 | 12/02/03 | 2223 |
| 07 | | | | | |
| 08 | | | | | |
| 09 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | | | | | |
| 22 | | | | | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Instrument ID: VOC2 Calibration Date: 12/02/03 Time: 1038

Lab File ID: 1003J Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d | |
|---|---|---|---|---|---|---|
| Acetone | 112.5 | 100.0 | 2ORDR | 12.5 | 30.0 | |
| Benzene | 113.1 | 100.0 | AVRG | 13.1 | 30.0 | |
| Bromodichloromethane | 103.0 | 100.0 | LINR | 3.0 | 30.0 | |
| Bromoform | 86.60 | 100.0 | AVRG | 13.4 | 30.0 | |
| Bromomethane | 127.5 | 100.0 | 2ORDR | 27.5 | 30.0 | |
| 2-Butanone | 112.8 | 100.0 | AVRG | 12.8 | 30.0 | |
| Carbon Disulfide | 84.88 | 100.0 | AVRG | 15.1 | 30.0 | |
| Carbon Tetrachloride | 103.0 | 100.0 | AVRG | 3.0 | 30.0 | |
| Chlorobenzene | 101.6 | 100.0 | AVRG | 1.6 | 30.0 | |
| Chlorodibromomethane | 93.16 | 100.0 | LINR | 6.8 | 30.0 | |
| Chloroethane | 131.8 | 100.0 | AVRG | 31.8 | 30.0 | <- |
| (2) | 131.8 | 100.0 | AVRG | 31.8 | 30.0 | <- |
| Chloroform | 103.8 | 100.0 | AVRG | 3.8 | 20.0 | |
| Chloromethane | 111.6 | 100.0 | AVRG | 11.6 | 30.0 | |
| 1,1-Dichloroethane | 111.7 | 100.0 | AVRG | 11.7 | 30.0 | |
| 1,2-Dichloroethane | 106.1 | 100.0 | AVRG | 6.1 | 30.0 | |
| 1,1-Dichloroethene | 93.23 | 100.0 | AVRG | 6.8 | 20.0 | |
| trans-1,2-Dichloroethene | 103.0 | 100.0 | AVRG | 3.0 | 30.0 | |
| 1,2-Dichloropropane | 105.7 | 100.0 | AVRG | 5.7 | 20.0 | |
| cis-1,3-Dichloropropene | 111.9 | 100.0 | AVRG | 11.9 | 30.0 | |
| trans-1,3-Dichloropropene | 107.9 | 100.0 | AVRG | 7.9 | 30.0 | |
| Ethylbenzene | 101.9 | 100.0 | AVRG | 1.9 | 20.0 | |
| 2-Hexanone | 114.1 | 100.0 | AVRG | 14.1 | 30.0 | |
| Methylene Chloride | 103.8 | 100.0 | LINR | 3.8 | 30.0 | |
| 4-Methyl-2-Pentanone | 102.1 | 100.0 | AVRG | 2.1 | 30.0 | |
| Styrene | 100.6 | 100.0 | AVRG | 0.6 | 30.0 | |
| 1,1,2,2-Tetrachloroethane | 88.77 | 100.0 | AVRG | 11.2 | 30.0 | |
| Tetrachloroethene | 108.2 | 100.0 | AVRG | 8.2 | 30.0 | |
| Toluene | 106.3 | 100.0 | AVRG | 6.3 | 20.0 | |
| 1,1,1-Trichloroethane | 104.6 | 100.0 | AVRG | 4.6 | 30.0 | |
| 1,1,2-Trichloroethane | 99.85 | 100.0 | AVRG | 0.2 | 30.0 | |
| Trichloroethene | 107.5 | 100.0 | AVRG | 7.5 | 30.0 | |
| Vinyl Chloride | 114.4 | 100.0 | AVRG | 14.4 | 20.0 | |
| Xylene-mp | 200.3 | 200.0 | AVRG | 0.2 | 30.0 | |
| Xylene-o | 93.33 | 100.0 | AVRG | 6.7 | 30.0 | |
| cis-1,2-Dichloroethene | 107.8 | 100.0 | AVRG | 7.8 | 30.0 | |

FORM 7
VOA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Instrument ID: VOC2 Calibration Date: 12/02/03 Time: 1038

Lab File ID: 1003J Init. Calib. Date(s): 10/27/03 10/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1801 2319

GC Column: ID: 2.00 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL100 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Dibromofluoromethane | 44.43 | 50.00 | AVRG | 11.1 | 30.0 |
| Toluene-d8 | 55.26 | 50.00 | AVRG | 10.5 | 30.0 |
| Bromofluorobenzene | 59.04 | 50.00 | AVRG | 18.1 | 30.0 |
| 1,2-Dichloroethane-d4 | 41.24 | 50.00 | AVRG | 17.5 | 30.0 |

FORM 8
VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

768 781

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID (Standard): 1003J Date Analyzed: 12/02/03

Instrument ID: VOC2 Time Analyzed: 1038

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS1 AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 313332 | 13.81 | 596997 | 15.22 | 588790 | 20.60 |
| | UPPER LIMIT | 626664 | 14.31 | 1193994 | 15.72 | 1177580 | 21.10 |
| | LOWER LIMIT | 156666 | 13.31 | 298499 | 14.72 | 294395 | 20.10 |
| | CLIENT SAMPLE NO. | | | | | | |
| 01 | V2120211LB | 322019 | 13.83 | 636009 | 15.24 | 635112 | 20.63 |
| 02 | 031145901 | 330796 | 13.82 | 660825 | 15.23 | 653527 | 20.61 |
| 03 | 031145901MS | 351273 | 13.84 | 710024 | 15.25 | 680200 | 20.64 |
| 04 | 031145901MSD | 391639 | 13.84 | 768654 | 15.25 | 739837 | 20.64 |
| 05 | | | | | | | |
| 06 | | | | | | | |
| 07 | | | | | | | |
| 08 | | | | | | | |
| 09 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
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| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8

VOA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID (Standard): 1003J Date Analyzed: 12/02/03

Instrument ID: VOC2 Time Analyzed: 1038

GC Column: ID: 2.00 (mm) Heated Purge: (Y/N) Y

| | | IS4 (DCB) AREA | # | RT | # | AREA | # | RT | # | AREA | # | RT | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 435875 | | 24.98 | | | | | | | | | |
| | UPPER LIMIT | 871750 | | 25.48 | | | | | | | | | |
| | LOWER LIMIT | 217938 | | 24.48 | | | | | | | | | |
| | CLIENT SAMPLE NO. | | | | | | | | | | | | |
| 01 | V2120211LB | 383867 | | 24.98 | | | | | | | | | |
| 02 | 031145901 | 411273 | | 24.97 | | | | | | | | | |
| 03 | 031145901MS | 556694 | | 25.00 | | | | | | | | | |
| 04 | 031145901MSD | 557194 | | 25.00 | | | | | | | | | |
| 05 | | | | | | | | | | | | | |
| 06 | | | | | | | | | | | | | |
| 07 | | | | | | | | | | | | | |
| 08 | | | | | | | | | | | | | |
| 09 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | |

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.



FORM VIII VOA-GCMS

Report Date : 05-Nov-2003 13:12

Lisa Savage 11-5-03



MM 11/5/03

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

SRN: O2-7-30-6
O2-7-30-16

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

Calibration File Names:
Level 1: \\ETCBDC\DD\chem\voc2.i\V210271.B\1003.d
Level 2: \\ETCBDC\DD\chem\voc2.i\V210271.B\1005.d
Level 3: \\ETCBDC\DD\chem\voc2.i\V210271.B\1006.d
Level 4: \\ETCBDC\DD\chem\voc2.i\V210271.B\1007.d
Level 5: \\ETCBDC\DD\chem\voc2.i\V210271.B\1008.d
Level 6: \\ETCBDC\DD\chem\voc2.i\V210271.B\1009.d
Level 7: \\ETCBDC\DD\chem\voc2.i\V210271.B\1010.d
Level 8: \\ETCBDC\DD\chem\voc2.i\V210271.B\1011.d
Level 9: \\ETCBDC\DD\chem\voc2.i\V210271.B\1012.d

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170 0000 Level 9 | | | | | | | | |
| 1 Dichlorodifluoromethane | 1.08728 | 1.06940 | 1.06991 | 0.99436 | 1.12786 | 1.15447 | | | | | |
| | 1.23917 | 1.13565 | 1.30901 | | | | AVRG | | 1.13190 | | 8.38548 |

768 784

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 2 Chloromethane | 0.27418 | 0.25884 | 0.30096 | 0.25679 | 0.29987 | 0.29740 | | | | | |
| | 0.29933 | 0.27135 | 0.28648 | | | | AVRG | | 0.28280 | | 6.34699 |
| 3 Vinyl Chloride | 0.79719 | 0.66594 | 0.80826 | 0.70850 | 0.82670 | 0.82943 | | | | | |
| | 0.86205 | 0.74856 | 0.83056 | | | | AVRG | | 0.78635 | | 8.26019 |
| 4 Bromomethane | 2110 | 3432 | 15721 | 75189 | 183627 | 453577 | | | | | |
| | 546924 | 729908 | 863874 | | | | QUAD | 0.02038 | 2.46256 | -0.28367 | 0.99615 |
| 5 Chloroethane(1) | 0.23396 | 0.19256 | 0.20013 | 0.18019 | 0.17504 | 0.17645 | | | | | |
| | 0.16422 | 0.14138 | 0.16216 | | | | AVRG | | 0.18068 | | 14.60003 |
| (2) | 0.07101 | 0.06385 | 0.06364 | 0.05549 | 0.05708 | 0.05855 | | | | | |
| | 0.05386 | 0.04644 | 0.05379 | | | | AVRG | | 0.05819 | | 12 31241 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 6 Trichlorofluoromethane | 1.58369 | 1.39006 | 1.31962 | 1.31655 | 1 47848 | 1.50796 | | | | | |
| | 1.58664 | 1.37742 | 1.60302 | | | | AVRG | | 1.46260 | | 7.88373 |
| 7 Furan | +++++ | 0.99259 | 0.96446 | 0.86343 | 0.92189 | 0.98384 | | | | | |
| | 0.99804 | 0.83692 | 1.00509 | | | | AVRG | | 0.94578 | | 6.85665 |
| 8 Acrolein | +++++ | +++++ | +++++ | +++++ | 0.00842 | 0.00984 | | | | | |
| | 0.00880 | 0.00823 | 0.00961 | | | | AVRG | | 0.00898 | | 7.95149 |
| 9 1,1,2-trichloro-1,2,2-trifluo | 0.97208 | 0.83702 | 0.87387 | 0 80153 | 0 92849 | 0.85917 | | | | | |
| | 0.96046 | 0 84495 | 0.96093 | | | | AVRG | | 0.89317 | | 7.08084 |
| 10 1,1-Dichloroethene | 1.96281 | 1.78409 | 1 82834 | 1.66904 | 1.89362 | 1.77145 | | | | | |
| | 1 83212 | 1.64314 | 1 85076 | | | | AVRG | | 1.80393 | | 5.62486 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 11 Acetone | +++++ | +++++ | 9574 | 35938 | 83842 | 163015 | | | | | |
| | 200629 | 272236 | 320295 | | | | QUAD | -0.07262 | 6.82609 | -2.06270 | 0.99550 |
| 12 Iodomethane | 1005 | 1984 | 16654 | 200624 | 728248 | 1776382 | | | | | |
| | 2297406 | 2969978 | 3416909 | | | | QUAD | 0.07430 | 0.57635 | -0.01308 | 0.99504 |
| 13 Carbon Disulfide | 1.94144 | 1.73129 | 1.72043 | 1.50405 | 1.76386 | 1.70954 | | | | | |
| | 1.85513 | 1.70904 | 1.80786 | | | | AVRG | | 1.74918 | | 6.89210 |
| 14 Acetonitrile | +++++ | 0.09669 | 0.09970 | 0.08679 | 0.10259 | 0.09817 | | | | | |
| | 0.10276 | 0.09279 | 0.10322 | | | | AVRG | | 0.09784 | | 5.83775 |
| 15 Allyl chloride | +++++ | 1.02633 | 0.99512 | 0.86786 | 1.02807 | 0.98315 | | | | | |
| | 1.02764 | 0.92983 | 1.03179 | | | | AVRG | | 0.98623 | | 5.98999 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 16 Methylene Chloride | +++++ | 137729 | 184366 | 444125 | 931692 | 1768727 | | | | | |
| | 2136499 | 2890759 | 3355601 | | | | LINR | -0.07667 | 1.84018 | | 0.99344 |
| 17 Acrylonitrile | +++++ | +++++ | +++++ | 0.16328 | 0.17399 | 0.16451 | | | | | |
| | 0.15178 | 0.13899 | 0.15121 | | | | AVRG | | 0.15729 | | 7.88474 |
| 18 Methyl-tertbutyl-Ether | 1.39749 | 1.25385 | 1.18731 | 1.17886 | 1.33501 | 1.27871 | | | | | |
| | 1.30857 | 1.21106 | 1.33384 | | | | AVRG | | 1.27608 | | 5.85545 |
| 19 trans-1,2-Dichloroethene | 1 99800 | 1.77406 | 1.63776 | 1.60091 | 1.79173 | 1.65841 | | | | | |
| | 1.70061 | 1.52806 | 1.62360 | | | | AVRG | | 1.70146 | | 8.14134 |
| 20 Hexane | 25439 | 30026 | 67694 | 231884 | 553271 | 1030611 | | | | | |
| | 1407868 | 1824231 | 1997707 | | | | LINR | -0.02276 | 0.97348 | | 0.99780 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 21 Tetrahydrofuran | +++++ | +++++ | 0.34341 | 0.34707 | 0.37803 | 0.34695 | | | | | |
| | 0.36380 | 0.31073 | 0 33708 | | | | AVRG | | 0.34672 | | 6.08542 |
| 22 1,1-Dichloroethane | 1.72298 | 1.67930 | 1.63297 | 1.58044 | 1.64762 | 1.58341 | | | | | |
| | 1.60589 | 1.39715 | 1.59890 | | | | AVRG | | 1.60541 | | 5.67258 |
| 23 Ethyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7.41378 |
| 24 Vinyl Acetate | 1.10509 | 1.03940 | 1.06452 | 1.07230 | 1.19359 | 1.16100 | | | | | |
| | 1.20302 | 1.12087 | 1.30721 | | | | AVRG | | 1.14078 | | 7 41378 |
| 25 Di isopropyl ether | 2.32559 | 2.21279 | 2.06739 | 2.03145 | 2.10213 | 1.90142 | | | | | |
| | 1.87642 | 1.65522 | 1.90035 | | | | AVRG | | 2.00808 | | 9.96672 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 26 Chloroprene | 1.73492 | 1.69886 | 1.54157 | 1.51071 | 1.77374 | 1.52793 | | | | | |
| | 1.71860 | 1.53071 | 1.71474 | | | | AVRG | | 1.63909 | | 6.57893 |
| 27 2-Butanone | +++++ | 0.18597 | 0.17600 | 0.16363 | 0.16153 | 0.16763 | | | | | |
| | 0.17684 | 0.18320 | 0.17521 | | | | AVRG | | 0.17375 | | 5.07669 |
| 28 2,2-Dichloropropane | 1.20793 | 1.16396 | 1.13790 | 1.05105 | 1.21931 | 1.13073 | | | | | |
| | 1.22747 | 1.12257 | 1.20808 | | | | AVRG | | 1.16322 | | 5.01435 |
| 29 cis-1,2-Dichloroethene | 0.93480 | 0.81969 | 0.84559 | 0.76941 | 0.85561 | 0.82321 | | | | | |
| | 0.91076 | 0.78553 | 0.90186 | | | | AVRG | | 0.84961 | | 6.69847 |
| 30 Propionitrile | 0.03458 | 0.03619 | 0.04725 | 0.04105 | 0.04076 | 0.03601 | | | | | |
| | 0.03634 | +++++ | +++++ | | | | AVRG | | 0.03888 | | 11.44021 |

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768 790

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 31 Bromochloromethane | 0.42771 | 0.33008 | 0.38402 | 0.33930 | 0.37696 | 0.36359 | | | | | |
| | 0.35675 | 0.31847 | 0.34601 | | | | AVRG | | 0.36032 | | 9.16041 |
| 32 Chloroform | +++++ | 1.94057 | 1.72069 | 1.45106 | 1.62845 | 1.54955 | | | | | |
| | 1.59697 | 1.42710 | 1.62305 | | | | AVRG | | 1.61718 | | 10.02992 |
| 35 1,1,1-Trichloroethane | 2.49608 | 1 98780 | 2.02337 | 1.77720 | 2.08485 | 1.97610 | | | | | |
| | 2.14747 | 1.88856 | 2.08454 | | | | AVRG | | 2.05177 | | 9.76881 |
| 36 Carbon Tetrachloride | 1.38722 | 1.18129 | 1.14897 | 1.06672 | 1.26097 | 1.20375 | | | | | |
| | 1.33038 | 1.21328 | 1.30384 | | | | AVRG | | 1.23294 | | 7.99326 |
| 37 1,1-Dichloropropene | 1.02319 | 0.74722 | 0.76464 | 0.66756 | 0.77553 | 0.71591 | | | | | |
| | 0 78079 | 0.83278 | 0.74469 | | | | AVRG | | 0.78359 | | 12.85227 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 39 Benzene | 2.16787 | 1.92638 | 1.84891 | 1.90071 | 2.05859 | 1.97517 | | | | | |
| | 2.15374 | 1.93548 | 2.18167 | | | | AVRG | | 2.01650 | | 6.28955 |
| 40 1,2-Dichloroethane | 1.50787 | 1.38094 | 1.37914 | 1.28682 | 1.32957 | 1.21492 | | | | | |
| | 1.20473 | 1.09502 | 1.25076 | | | | AVRG | | 1.29442 | | 9.36465 |
| 42 Trichloroethene | +++++ | 0.38385 | 0.44715 | 0.38102 | 0.44967 | 0 48524 | | | | | |
| | 0 50147 | 0.44285 | 0.50707 | | | | AVRG | | 0.44979 | | 10.74179 |
| 43 1,2-Dichloropropane | 0.37873 | 0.31831 | 0.36991 | 0.30942 | 0.33859 | 0.31613 | | | | | |
| | 0.34040 | 0.25833 | 0.30165 | | | | AVRG | | 0.32572 | | 11 21690 |
| 44 Methyl methacrylate | 0.18420 | 0.15062 | 0.18853 | 0.16225 | 0.17528 | 0.17300 | | | | | |
| | 0.18243 | 0.15733 | 0.18656 | | | | AVRG | | 0.17336 | | 7.91278 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 45 n-Propyl Acetate | +++++ | 0.58382 | 0.71055 | 0.60229 | 0.62213 | 0.57016 | | | | | |
| | 0.58523 | 0.48441 | 0.53312 | | | | AVRG | | 0.58646 | | 11.24720 |
| 46 Isobutyl Alcohol | 0.08170 | 0.08560 | 0.09292 | 0.08710 | 0.08810 | 0.07417 | | | | | |
| | 0.07720 | 0.07095 | 0.07510 | | | | AVRG | | 0.08143 | | 9.17609 |
| 47 1,4-Dioxane | +++++ | +++++ | 0.00287 | 0.00225 | 0.00244 | 0.00237 | | | | | |
| | 0.00232 | 0.00200 | 0.00212 | | | | AVRG | | 0.00234 | | 11.92316 |
| 48 Dibromomethane | 0.24033 | 0.20665 | 0.24449 | 0.20137 | 0.22516 | 0 22799 | | | | | |
| | 0.23304 | 0.19637 | 0.21615 | | | | AVRG | | 0.22128 | | 7.75757 |
| 49 Bromodichloromethane | 15329 | 21223 | 62045 | 233500 | 549076 | 1043517 | | | | | |
| | 1310741 | 1873366 | 2105667 | | | | LINR | 0.00385 | 0.63264 | | 0.99548 |

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Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 50 cis-1,3-Dichloropropene | 0.55873 | 0.43357 | 0.53771 | 0.43338 | 0.50941 | 0.53573 | | | | | |
| | 0.54806 | 0.48978 | 0.54713 | | | | AVRG | | 0.51039 | | 9.48588 |
| 51 4-Methyl-2-Pentanone | +++++ | +++++ | 0.24942 | 0.19062 | 0.21328 | 0.21927 | | | | | |
| | 0.21671 | 0.18314 | 0.21567 | | | | AVRG | | 0.21259 | | 10.12219 |
| 53 Toluene | +++++ | 2.14006 | 2.25713 | 1.83592 | 2.21801 | 2.22063 | | | | | |
| | 2.30623 | 2.00062 | 2.15564 | | | | AVRG | | 2.14178 | | 7.19113 |
| 54 trans-1,3-Dichloropropene | +++++ | 0.36207 | 0.42674 | 0.35710 | 0.41006 | 0.42913 | | | | | |
| | 0.40013 | 0.34541 | 0.37425 | | | | AVRG | | 0.38811 | | 8.40899 |
| 55 Ethyl methacrylate | 0.21300 | 0.17525 | 0.20577 | 0.18313 | 0.22501 | 0.24632 | | | | | |
| | 0.24892 | 0.22554 | 0.25836 | | | | AVRG | | 0.22014 | | 13.11586 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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End Cal Date : 27-OCT-2003 23:19
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 56 1,1,2-Trichloroethane | 0.38453 | 0.32371 | 0.38211 | 0.31196 | 0.36150 | 0.37384 | | | | | |
| | 0.37699 | 0.33422 | 0.38025 | | | | AVRG | | 0.35879 | | 7.79622 |
| 57 2-Hexanone | +++++ | +++++ | 0.18219 | 0.17094 | 0.19537 | 0.19277 | | | | | |
| | 0.21044 | 0.18382 | 0.21636 | | | | AVRG | | 0.19313 | | 8.30281 |
| 58 Tetrachloroethene | +++++ | 0.29703 | 0.32185 | 0.28649 | 0.34014 | 0.30667 | | | | | |
| | 0.37608 | 0.29365 | 0.33218 | | | | AVRG | | 0.31926 | | 9.33722 |
| 59 1,3-Dichloropropane | 0.53282 | 0.38670 | 0.46948 | 0.42407 | 0.50813 | 0.54797 | | | | | |
| | 0.59797 | 0.52953 | +++++ | | | | AVRG | | 0.49958 | | 13.83598 |
| 60 Chlorodibromomethane | 9118 | 12073 | 37967 | 139386 | 338548 | 634506 | | | | | |
| | 799459 | 1139690 | 1268794 | | | | LINR | 0.00052 | 0.38320 | | 0.99586 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2003 18:01
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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 61 1,2-Dibromoethane | 0 43816 | 0.32466 | 0.37627 | 0.32455 | 0.37806 | 0.37115 | | | | | |
| | 0.38978 | 0 34864 | 0.40176 | | | | AVRG | | 0.37256 | | 9.80291 |
| 63 Chlorobenzene | 1.54330 | 1.24715 | 1.31378 | 1.27232 | 1.41544 | 1.32125 | | | | | |
| | 1.48365 | 1.33124 | 1.42145 | | | | AVRG | | 1.37218 | | 7.25539 |
| 64 Ethylbenzene | 2.88333 | 2.31113 | 2.38637 | 2.30352 | 2.58022 | 2 30369 | | | | | |
| | 2.69046 | 2 28665 | 2.31989 | | | | AVRG | | 2.45170 | | 8.79945 |
| 65 2-Chloroethyl vinyl ether | +++++ | 0.17290 | 0.20290 | 0.16128 | 0.17116 | 0.15426 | | | | | |
| | 0.16781 | 0.13142 | 0.14766 | | | | AVRG | | 0.16368 | | 12.83210 |
| 66 1,1,1,2-Tetrachloroethane | 0.65800 | 0.54495 | 0.60537 | 0.55887 | 0.58119 | 0.49907 | | | | | |
| | 0 54050 | 0.43840 | 0.42948 | | | | AVRG | | 0.53954 | | 13.82105 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0 5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50 0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 67 Xylene-mp | 2.68057 | 2.10709 | 2.09676 | 1.96837 | 2.13818 | 1.92281 | | | | | |
| | 2.22755 | 1.97216 | 1.95471 | | | | AVRG | | 2.11869 | | 11.04250 |
| 68 Xylene-o | 2.45286 | 2.03736 | 1.92376 | 1.90413 | 2.06673 | 2.01442 | | | | | |
| | 2.14972 | 1.90370 | 1.77529 | | | | AVRG | | 2.02533 | | 9.60198 |
| 69 Styrene | 1.36148 | 1.16608 | 1.11345 | 1 11325 | 1 34022 | 1.40010 | | | | | |
| | 1.63015 | 1.53207 | 1.49043 | | | | AVRG | | 1.34969 | | 13.85928 |
| 70 Bromoform | 0.18695 | 0.15844 | 0.15910 | 0 14982 | 0.15908 | 0.17490 | | | | | |
| | 0.16718 | 0.14767 | 0.15660 | | | | AVRG | | 0.16219 | | 7.63747 |
| 71 Isopropylbenzene | 2.73708 | 2.45738 | 2.24127 | 2.37198 | 2.42651 | 2 50860 | | | | | |
| | 2 75746 | 2.29550 | 2.27300 | | | | AVRG | | 2.45209 | | 7.70813 |

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Environmental Testing and Consulting, Inc.

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 72 trans-1,4-Dichloro-2-butene | 1209 | 2201 | 10687 | 52203 | 115915 | 253131 | | | | | |
| | 303067 | 406067 | 449246 | | | | QUAD | 0 04103 | 5.41254 | 2.91465 | 0.99621 |
| 74 1,1,2,2-Tetrachloroethane | +++++ | 0.46749 | 0.51133 | 0.45123 | 0.46145 | 0.42996 | | | | | |
| | 0.39987 | 0.32402 | +++++ | | | | AVRG | | 0.43505 | | 13.73442 |
| 75 cis-1,4-Dichloro-2-butene | +++++ | 0.15425 | 0.14002 | 0.12777 | 0.14233 | 0.15057 | | | | | |
| | 0 14178 | 0.13009 | 0.12690 | | | | AVRG | | 0.13921 | | 7 37562 |
| 76 1,2,3-Trichloropropane | 0.42312 | 0.37748 | 0.41774 | 0.38518 | 0.42720 | 0.42794 | | | | | |
| | 0.43121 | 0.37139 | 0.38033 | | | | AVRG | | 0.40462 | | 6 23009 |
| 77 Bromobenzene | 1 01802 | 0 85644 | 0.83267 | 0.77610 | 0.85233 | 0.80724 | | | | | |
| | 0.83833 | 0.69970 | 0.70888 | | | | AVRG | | 0.82108 | | 11.47214 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20 0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 78 n-Propylbenzene | 3.10958 | 2.68395 | 2.53920 | 2.40741 | 2.65323 | 2.56535 | | | | | |
| | 2.92483 | 2.55236 | 2.52244 | | | | AVRG | | 2.66204 | | 8.30160 |
| 79 2-Chlorotoluene | 2.17728 | 1.94037 | 1.76537 | 1.85905 | 2.01312 | 1.90344 | | | | | |
| | 2.02982 | 1.83416 | 1.90146 | | | | AVRG | | 1.93601 | | 6.34307 |
| 80 1,3,5-Trimethylbenzene | 2.41519 | 2.18407 | 1.99441 | 2.00766 | 2.22535 | 2.07357 | | | | | |
| | 2.20538 | 2.02859 | 2.05630 | | | | AVRG | | 2.13228 | | 6.44821 |
| 81 4-Chlorotoluene | 2.07628 | 1.61342 | 1.51853 | 1.56823 | 1.66843 | 1.47878 | | | | | |
| | 1.72526 | 1.52782 | 1.59306 | | | | AVRG | | 1.64109 | | 10.98094 |
| 82 tert-Butylbenzene | 2.64308 | 2.21011 | 2.16559 | 2.25262 | 2.46373 | 2.21315 | | | | | |
| | 2.58999 | 2.24803 | 2.24537 | | | | AVRG | | 2.33685 | | 7.68483 |

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 83 1,2,4-Trimethylbenzene | 2.69288 | 2.10289 | 1 86077 | 1.89560 | 2.14903 | 1.87078 | | | | | |
| | 2.14108 | 1.90262 | 1 93376 | | | | AVRG | | 2.06105 | | 12.83804 |
| 84 sec-Butylbenzene | 3.05850 | 2.64497 | 2.52445 | 2.49690 | 2.73935 | 2.48127 | | | | | |
| | 2.82657 | 2.52940 | 2.52763 | | | | AVRG | | 2.64767 | | 7.35281 |
| 85 4-Isopropyltoluene | 2.46534 | 2.18453 | 2.05135 | 2.03199 | 2.20056 | 2.06891 | | | | | |
| | 2.30569 | 2.11512 | 2.08492 | | | | AVRG | | 2.16760 | | 6.53097 |
| 86 1,3-Dichlorobenzene | +++++ | 1.56527 | 1.51691 | 1.38604 | 1.42619 | 1.17645 | | | | | |
| | 1 22068 | 1.03834 | +++++ | | | | AVRG | | 1.33284 | | 14.47136 |
| 88 1,4-Dichlorobenzene | 9742 | 17227 | 72695 | 308927 | 671173 | 1272820 | | | | | |
| | 1717395 | 2398553 | 2581039 | | | | QUAD | 0.01837 | 0.57609 | 0.14649 | 0 99620 |

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Environmental Testing and Consulting, Inc.

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 89 n-Butylbenzene | +++++ | 2.80335 | 2.68476 | 2.62002 | 2.58046 | 2.26980 | | | | | |
| | 2.28374 | 1.90978 | +++++ | | | | AVRG | | 2.45027 | | 12.66533 |
| 90 1,2-Dichlorobenzene | +++++ | 1.29464 | 1.26604 | 1.16103 | 1.13151 | 1.05822 | | | | | |
| | 1.05232 | 0.88210 | 0.88260 | | | | AVRG | | 1.09106 | | 14.21160 |
| 91 1,2-Dibromo-3-chloropropane | +++++ | 0.10998 | 0.11665 | 0.10370 | 0.10379 | 0.08617 | | | | | |
| | 0.08535 | +++++ | +++++ | | | | AVRG | | 0.10094 | | 12.57527 |
| 92 1,2,4-Trichlorobenzene | +++++ | 0.47508 | 0.44425 | 0.38028 | 0.46860 | 0.36372 | | | | | |
| | 0.39765 | 0.33440 | +++++ | | | | AVRG | | 0.40914 | | 13.28624 |
| 93 Hexachlorobutadiene | +++++ | 0.62921 | 0.63757 | 0.52836 | 0.61272 | 0.47314 | | | | | |
| | 0.50322 | +++++ | +++++ | | | | AVRG | | 0.56404 | | 12.60134 |

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Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| 94 Naphthalene | +++++ | 0.92286 | 0.82883 | 0.70421 | 0.79676 | 0.64921 | | | | | |
| | 0.71795 | 0 65252 | +++++ | | | | AVRG | | 0.75319 | | 13.38633 |
| 95 1,2,3-Trichlorobenzene | +++++ | 5124 | 22270 | 77613 | 214055 | 373381 | | | | | |
| | 503201 | +++++ | +++++ | | | | LINR | -0.04537 | 0.32325 | | 0.99104 |
| $ 33 Dibromofluoromethane | 0.95459 | 0.77135 | 0.89134 | 0.73777 | 0.81296 | 0.86282 | | | | | |
| | 0.84310 | 0.75554 | 0.84995 | | | | AVRG | | 0.83105 | | 8.36964 |
| $ 38 1,2-Dichloroethane-d4 | +++++ | +++++ | 0.33864 | 0.27514 | 0.30876 | 0.34271 | | | | | |
| | 0.34586 | 0.29811 | +++++ | | | | AVRG | | 0.31821 | | 9.03277 |
| $ 52 Toluene-d8 | 2.00621 | 1.48673 | 1.96157 | 1.40532 | 1.74527 | 1.96950 | | | | | |
| | 1.75526 | 1.58461 | 1.79532 | | | | AVRG | | 1.74553 | | 12.41956 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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Integrator : HP RTE
Method file : \\ETCBDC\DD\chem\voc2.i\V210281.B\v2102701.m
Cal Date : 05-Nov-2003 13:10 lisa

| Compound | 0.5000000 Level 1 | 1.0000 Level 2 | 5.0000 Level 3 | 20.0000 Level 4 | 50.0000 Level 5 | 100.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120.0000 Level 7 | 150.0000 Level 8 | 170.0000 Level 9 | | | | | | | | |
| $ 73 Bromofluorobenzene | 0.95914 | 0.71940 | 0.74619 | 0.66607 | 0.67991 | 0.79907 | | | | | |
| | 0.70006 | 0.64044 | 0.65976 | | | | AVRG | | 0.73000 | | 13.53469 |

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |
| Quad | Amt = b + m1*Rsp + m2*Rsp^2 | Response |

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Environmental Testing & Consulting, Inc.

# Quality Control Reports
# Level III
# GC/MS Semi-Volatiles

768 804

# ENVIRONMENTAL TESTING & CONSULTING, INC
## GC/MS BNA Sequence Check List (SW-846)

Sequence ID B2111201.B  System ID BNA2

Date 11/22/03  Analyst EDS

Applicable ETC Order Nos. for this sequence:

0311-334  0311-459

0311-387

Validated

1. **DFTPP Daily 12-Hour Tune Meets Criteria.** No analysis begins until criteria are met. (SOP) ✓
2. **Degradation/Peak Tailing Check** (may be combined with DFTPP Tune): ✓
   a. DDT to DDE/DDD <=20% Benzidine/PCP – Normal Response with no visible peak tailing. ✓

2. **Initial Calibration Verification Criteria - Method :** B2111801.M
   a. SPCC – Mean RF >=0.050 ✓
   b. CCC – RSD of RF for CCCs and Target Analytes MUST BE <=30% ✓
   c. RSD of analytes <=15% may use Average RF for quantitation ✓
   d. Analytes w/RSD >15% use Linear Regression – correlation coefficient >=0.99 ✓

3. **Calibration Verification – Each 12-Hour Shift**
   a. SPCC – RF >=0.050 ✓
   b. CCC - % Difference for Average RF Calibration - <=20% ✓
   c. CCC - % Drift for Linear Regression Calibration - <=20% ✓
   d. % Difference/% Drift for all other Target Analytes - <=30% ✓

   e. Internal Standards – Retention Times within +/- 30 seconds from Mid-Point ICAL STD ✓
   f. Internal Standards – Areas within (-50% to +100%) from Mid-Point ICAL STD ✓

3. **Method Blanks included in this sequence :** ✓
   Analyze for each analytical batch (20 samples): BA10083LB, BS2072LB, BA10085LB
   List compounds identified in Method Blank w/concentration.
   Flag final result "B-Detected in Blank"
   BA10083LB – Di-n-butyl phthalate below reporting limit (0.789 ug/L)
   " " " " " " (150.3 ug/kg)
   BS2072LB –
   BA10085LB – Bis(2ethylhexyl)phthalate below MDL (0.487 ug/L)

4. **Matrix Spike/Matrix Spike Duplicates included in this sequence :** ✓
   Analyze for each analytical batch (20 samples). List MS/MSD(s) performed with any failures :
   0311387-04MS/MSD – 3 %Rec out, low RPD – 1/83 out

   ✓

5. **Laboratory Control Samples included in this sequence :**
   Must contain all Target Analytes.
   BA10083LCS/D – 1/%Rec low, Benzidine RPD – 4/83 out ✓
   BS2072LCS – 1/83 out low, 3,3'-Dimethylbenzidine, BA10085LCS/D – 1/%Rec out, low Benzidine RPD – 3/83 out ✓

6. **Surrogate Recoveries within QC Limits** ✓

7. **All positive compounds within calibration range** ✓

Narrative/Notes :

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

768 805

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID: 0101001 DFTPP Injection Date: 11/22/03

Instrument ID: BNA2 DFTPP Injection Time: 1157

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 42.9 |
| 68 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 69 | Mass 69 relative abundance | 55.9 |
| 70 | Less than 2.0% of mass 69 | 0.0 ( 0.0)1 |
| 127 | 40.0 - 60.0% of mass 198 | 49.3 |
| 197 | Less than 1.0% of mass 198 | 0.0 |
| 198 | Base Peak, 100% relative abundance | 100.0 |
| 199 | 5.0 to 9.0% of mass 198 | 6.0 |
| 275 | 10.0 - 30.0% of mass 198 | 19.0 |
| 365 | Greater than 1.0% of mass 198 | 1.33 |
| 441 | Present, but less than mass 443 | 6.5 |
| 442 | Greater than 40.0% of mass 198 | 50.7 |
| 443 | 17.0 - 23.0% of mass 442 | 9.4 ( 18.4)2 |

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | DCS 50 | DCS 50 | 0201001 | 11/22/03 | 1216 |
| 02 | BA10085LB | BA10085LB | 1701016 | 11/22/03 | 2129 |
| 03 | BA10085LCS | BA10085LCS | 1801017 | 11/22/03 | 2206 |
| 04 | BA10085LCSD | BA10085LCSD | 1901018 | 11/22/03 | 2242 |
| 05 | 031145901 | 031145901 | 2001019 | 11/22/03 | 2319 |
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FORM V SV

768 806

DFTPP TUNE/TAILING FACTOR/DEGRADATION SUMMARY RESULTS

DFTPP Ion Abundance/Ratio Criteria Chart

| Ion | Abundance Criteria | Base Peak | Other | Test |
|---|---|---|---|---|
| 198 | Base Peak, 100% relative abundance | 100.00 | | PASS |
| 51 | 30 - 60% of mass 198 | 42.86 | | PASS |
| 68 | Less than 2% of mass 69 | 0.00 | ( 0.00) | PASS |
| 69 | Mass 69 relative abundance | 55.90 | | PASS |
| 70 | Less than 2% of mass 69 | 0.00 | ( 0.00) | PASS |
| 127 | 40 - 60% of mass 198 | 49.32 | | PASS |
| 197 | 0 - 1% of mass 198 | 0.00 | | PASS |
| 199 | 5 - 9% of mass 198 | 5.97 | | PASS |
| 275 | 10 - 30% of mass 198 | 19.03 | | PASS |
| 365 | Greater than 1% of mass 198 | 1.33 | | PASS |
| 441 | Present, but less than mass 443 | 6.52 | ( 69.72) | PASS |
| 442 | Greater than 40% of mass 198 | 50.74 | | PASS |
| 443 | 17 - 23% of mass 442 | 9.36 | ( 18.44) | PASS |

TAILING ANALYSIS SUMMARY

| Compound | Tail Factor | Max Allowed | Test |
|---|---|---|---|
| Pentachlorophenol | 1.3082040 | 5.000 | PASS |
| Benzidine | 1.0592168 | 3.000 | PASS |

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

| Compound | Response | %Breakdown | Max Allowed | Test |
|---|---|---|---|---|
| 4,4-DDT | 178144 | | | N/A |
| 4,4-DDE | 0 | 0.0 | 20.0 | PASS |
| 4,4-DDD | 2930 | 1.6 | 20.0 | PASS |
| 4,4-DDD + DDE | 2930 | 1.6 | 20.0 | PASS |

**********

Tuning Sample, //ETCBDC/CHEM/bna2.i/B2112201.B/0101001.D/0101001.D,*** PASSED ***

**********

FORM 7
BNA-GCMS CONTINUING CALIBRATION CHECK

768 807

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Instrument ID: BNA2 Calibration Date: 11/22/03 Time: 1216

Lab File ID: 0201001 Init. Calib. Date(s): 11/18/03 11/18/03

Init. Calib. Times: 1005 1728

GC Column: DB-5MS ID: 0.25 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL50 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Acenaphthene | 49.79 | 50.00 | 2ORDR | 0.4 | 20.0 |
| Acenaphthylene | 48.97 | 50.00 | 2ORDR | 2.1 | 30.0 |
| Acetophenone | 47.27 | 50.00 | 2ORDR | 5.5 | 30.0 |
| Aniline | 53.72 | 50.00 | AVRG | 7.4 | 30.0 |
| Anthracene | 47.69 | 50.00 | 2ORDR | 4.6 | 30.0 |
| Benzidine | 53.40 | 50.00 | 2ORDR | 6.8 | 35.0 |
| Benz(a)Anthracene | 55.26 | 50.00 | LINR | 10.5 | 30.0 |
| Benzo(b)fluoranthene | 46.11 | 50.00 | AVRG | 7.8 | 30.0 |
| Benzo(k)fluoranthene | 51.87 | 50.00 | AVRG | 3.7 | 30.0 |
| Benzo(ghi)perylene | 51.91 | 50.00 | AVRG | 3.8 | 30.0 |
| Benzo(a)pyrene | 51.26 | 50.00 | AVRG | 2.5 | 20.0 |
| Benzoic acid | 49.42 | 50.00 | 2ORDR | 1.2 | 35.0 |
| Benzyl alcohol | 52.43 | 50.00 | AVRG | 4.9 | 30.0 |
| Bis(2-chloroethoxy)methane | 50.48 | 50.00 | AVRG | 1.0 | 30.0 |
| Bis(2-chloroethyl)ether | 53.62 | 50.00 | AVRG | 7.2 | 30.0 |
| Bis(2-chloroisopropyl)ether | 58.28 | 50.00 | AVRG | 16.6 | 30.0 |
| Bis(2-ethylhexyl)phthalate | 49.55 | 50.00 | AVRG | 0.9 | 30.0 |
| 4-Bromophenyl phenyl ether | 45.37 | 50.00 | AVRG | 9.3 | 30.0 |
| Butyl benzyl phthalate | 46.25 | 50.00 | AVRG | 7.5 | 30.0 |
| Carbazole | 45.90 | 50.00 | AVRG | 8.2 | 30.0 |
| 4-Chloroaniline | 52.03 | 50.00 | 2ORDR | 4.1 | 30.0 |
| Chlorobenzilate | 47.80 | 50.00 | AVRG | 4.4 | 35.0 |
| 4-Chloro-3-methylphenol | 48.80 | 50.00 | AVRG | 2.4 | 20.0 |
| 2-Chloronaphthalene | 49.77 | 50.00 | 2ORDR | 0.4 | 30.0 |
| 2-Chlorophenol | 51.52 | 50.00 | AVRG | 3.0 | 30.0 |
| 4-Chlorophenyl phenyl ether | 49.72 | 50.00 | 2ORDR | 0.6 | 30.0 |
| Chrysene | 48.62 | 50.00 | 2ORDR | 2.8 | 30.0 |
| Dibenz(a,h)anthracene | 51.83 | 50.00 | AVRG | 3.7 | 30.0 |
| Dibenzofuran | 52.54 | 50.00 | 2ORDR | 5.1 | 30.0 |
| Di-n-butyl phthalate | 45.51 | 50.00 | AVRG | 9.0 | 30.0 |
| 1,2-Dichlorobenzene | 47.50 | 50.00 | 2ORDR | 5.0 | 30.0 |
| 1,3-Dichlorobenzene | 48.17 | 50.00 | 2ORDR | 3.7 | 30.0 |
| 1,4-Dichlorobenzene | 47.66 | 50.00 | 2ORDR | 4.7 | 20.0 |
| 3,3'-Dichlorobenzidine | 52.94 | 50.00 | AVRG | 5.9 | 30.0 |
| 2,4-Dichlorophenol | 49.71 | 50.00 | AVRG | 0.6 | 20.0 |
| 2,6-Dichlorophenol | 46.62 | 50.00 | 2ORDR | 6.8 | 30.0 |
| Diethyl phthalate | 46.93 | 50.00 | AVRG | 6.1 | 30.0 |

768 808

FORM 7
BNA-GCMS CONTINUING CALIBRATION CHECK

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Instrument ID: BNA2 Calibration Date: 11/22/03 Time: 1216

Lab File ID: 0201001 Init. Calib. Date(s): 11/18/03 11/18/03

Init. Calib. Times: 1005 1728

GC Column: DB-5MS ID: 0.25 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL50 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| 3,3-Dimethylbenzidine | 51.41 | 50.00 | LINR | 2.8 | 35.0 |
| 2,4-Dimethyphenol | 50.72 | 50.00 | AVRG | 1.4 | 30.0 |
| Dimethyl phthalate | 47.64 | 50.00 | AVRG | 4.7 | 30.0 |
| 4,6-Dinitro-2-methylphenol | 53.08 | 50.00 | 2ORDR | 6.2 | 30.0 |
| 2,4-Dinitrophenol | 55.54 | 50.00 | 2ORDR | 11.1 | 30.0 |
| 2,4-Dinitrotoluene | 51.88 | 50.00 | AVRG | 3.8 | 30.0 |
| 2,6-Dinitrotoluene | 49.89 | 50.00 | AVRG | 0.2 | 30.0 |
| N-Nitrsdiphylam/Diphenylamin | 54.14 | 50.00 | LINR | 8.3 | 20.0 |
| Di-n-octyl phthalate | 51.14 | 50.00 | LINR | 2.3 | 20.0 |
| Ethyl methanesulfonate | 54.82 | 50.00 | AVRG | 9.6 | 30.0 |
| Fluoranthene | 48.59 | 50.00 | AVRG | 2.8 | 20.0 |
| Fluorene | 51.00 | 50.00 | 2ORDR | 2.0 | 30.0 |
| Hexachlorobenzene | 44.20 | 50.00 | AVRG | 11.6 | 30.0 |
| Hexachlorobutadiene | 45.70 | 50.00 | AVRG | 8.6 | 20.0 |
| Hexachlorocyclopentadiene | 53.34 | 50.00 | AVRG | 6.7 | 30.0 |
| Hexachloroethane | 49.34 | 50.00 | AVRG | 1.3 | 30.0 |
| Indeno(1,2,3-cd)pyrene | 53.00 | 50.00 | AVRG | 6.0 | 30.0 |
| Isophorone | 51.41 | 50.00 | AVRG | 2.8 | 30.0 |
| Methyl methanesulfonate | 53.40 | 50.00 | AVRG | 6.8 | 30.0 |
| 2-Methylnaphthalene | 49.73 | 50.00 | 2ORDR | 0.5 | 30.0 |
| 2-Methylphenol | 50.02 | 50.00 | AVRG | 0.0 | 30.0 |
| 3&4-Methylphenol | 50.44 | 50.00 | AVRG | 0.9 | 30.0 |
| Naphthalene | 48.15 | 50.00 | 2ORDR | 3.7 | 30.0 |
| 2-Nitroaniline | 54.48 | 50.00 | AVRG | 9.0 | 30.0 |
| Pentachlorobenzene | 53.47 | 50.00 | LINR | 6.9 | 30.0 |
| 3-Nitroaniline | 55.28 | 50.00 | AVRG | 10.6 | 30.0 |
| 4-Nitroaniline | 54.79 | 50.00 | 2ORDR | 9.6 | 30.0 |
| Nitrobenzene | 54.68 | 50.00 | AVRG | 9.4 | 30.0 |
| 2-Nitrophenol | 51.56 | 50.00 | AVRG | 3.1 | 20.0 |
| 4-Nitrophenol | 52.58 | 50.00 | LINR | 5.2 | 30.0 |
| N-Nitrosodibutylamine | 52.90 | 50.00 | AVRG | 5.8 | 30.0 |
| N-Nitrosodiethylamine | 53.60 | 50.00 | AVRG | 7.2 | 30.0 |
| N-Nitrosodimethylamine | 59.63 | 50.00 | AVRG | 19.3 | 30.0 |
| N-Nitrosodi-n-propylamine | 52.28 | 50.00 | AVRG | 4.6 | 30.0 |
| Pentachloronitrobenzene | 47.67 | 50.00 | AVRG | 4.7 | 30.0 |
| Pentachlorophenol | 49.36 | 50.00 | LINR | 1.3 | 20.0 |
| Phenacetin | 49.55 | 50.00 | AVRG | 0.9 | 35.0 |

FORM 7
BNA-GCMS CONTINUING CALIBRATION CHECK

768 809

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Instrument ID: BNA2 Calibration Date: 11/22/03 Time: 1216

Lab File ID: 0201001 Init. Calib. Date(s): 11/18/03 11/18/03

Init. Calib. Times: 1005 1728

GC Column: DB-5MS ID: 0.25 (mm)

| COMPOUND | SAMPLE AMOUNT | CAL50 AMOUNT | CURVE | %D | MAX %d |
|---|---|---|---|---|---|
| Phenanthrene | 49.26 | 50.00 | 2ORDR | 1.5 | 30.0 |
| Phenol | 51.88 | 50.00 | AVRG | 3.8 | 20.0 |
| Pyrene | 50.14 | 50.00 | 2ORDR | 0.3 | 30.0 |
| Pyridine | 50.98 | 50.00 | AVRG | 2.0 | 30.0 |
| 1,2,4,5-Tetrachlorobenzene | 52.05 | 50.00 | 2ORDR | 4.1 | 30.0 |
| 2,3,4,6-Tetrachlorophenol | 51.50 | 50.00 | AVRG | 3.0 | 30.0 |
| 1,2,4-Trichlorobenzene | 50.80 | 50.00 | AVRG | 1.6 | 30.0 |
| 2,4,5-Trichlorophenol | 52.66 | 50.00 | AVRG | 5.3 | 30.0 |
| 2,4,6-Trichlorophenol | 52.32 | 50.00 | AVRG | 4.6 | 20.0 |
| 1,2-Dphnylhydrzine/Azobenzen | 51.71 | 50.00 | AVRG | 3.4 | 30.0 |
| Nitrobenzene-d5 | 55.54 | 50.00 | AVRG | 11.1 | 30.0 |
| 2-Fluorobiphenyl | 52.76 | 50.00 | 2ORDR | 5.5 | 30.0 |
| Terphenyl-d14 | 42.41 | 50.00 | AVRG | 15.2 | 30.0 |
| Phenol-d6 | 52.61 | 50.00 | AVRG | 5.2 | 30.0 |
| 2,4,6-Tribromophenol | 47.21 | 50.00 | AVRG | 5.6 | 30.0 |
| 2-Fluorophenol | 50.56 | 50.00 | AVRG | 1.1 | 30.0 |

768 810

FORM 8
BNA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID (Standard): 0201001 Date Analyzed: 11/22/03

Instrument ID: BNA2 Time Analyzed: 1216

| | CLIENT SAMPLE NO. | IS1(DCB) AREA # | RT # | IS2(NPT) AREA # | RT # | IS3(ANT) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 924566 | 7.27 | 3488516 | 8.81 | 1301337 | 10.98 |
| | UPPER LIMIT | 1849132 | 7.77 | 6977032 | 9.31 | 2602674 | 11.48 |
| | LOWER LIMIT | 462283 | 6.77 | 1744258 | 8.31 | 650669 | 10.48 |
| 01 | BA10085LB | 926163 | 7.27 | 3229335 | 8.79 | 1078961 | 10.97 |
| 02 | BA10085LCS | 801746 | 7.27 | 2920175 | 8.80 | 1067669 | 10.98 |
| 03 | BA10085LCSD | 732253 | 7.27 | 2709882 | 8.79 | 997417 | 10.98 |
| 04 | 031145901 | 886456 | 7.27 | 3179283 | 8.79 | 1143397 | 10.97 |
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
BNA-GCMS INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 0311459

Lab File ID (Standard): 0201001 Date Analyzed: 11/22/03

Instrument ID: BNA2 Time Analyzed: 1216

| | CLIENT SAMPLE NO. | IS4 (PHN) AREA | # | RT | # | IS5 (CRY) AREA | # | RT | # | IS6 (PRY) AREA | # | RT | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 1762441 | | 12.81 | | 1139159 | | 16.45 | | 981565 | | 19.91 | |
| | UPPER LIMIT | 3524882 | | 13.31 | | 2278318 | | 16.95 | | 1963130 | | 20.41 | |
| | LOWER LIMIT | 881221 | | 12.31 | | 569580 | | 15.95 | | 490783 | | 19.41 | |
| 01 | BA10085LB | 1418873 | | 12.79 | | 743683 | | 16.43 | | 591558 | | 19.88 | |
| 02 | BA10085LCS | 1476735 | | 12.80 | | 890445 | | 16.44 | | 717800 | | 19.89 | |
| 03 | BA10085LCSD | 1370507 | | 12.80 | | 832124 | | 16.44 | | 688626 | | 19.88 | |
| 04 | 031145901 | 1572331 | | 12.79 | | 868521 | | 16.43 | | 687703 | | 19.88 | |
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

Elizabeth D. Simpson 11/20/03

11/20/03

11/20/03

768 812

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28 SRN:01-14-77-01
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE ICN:01-14-6000
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

Calibration File Names:
Level 1: \\ETCBDC\CHEM\bna2.i\B2111801.B\0301004.D
Level 2: \\ETCBDC\CHEM\bna2.i\B2111801.B\1301014.D
Level 3: \\ETCBDC\CHEM\bna2.i\B2111801.B\0501006.D
Level 4: \\ETCBDC\CHEM\bna2.i\B2111801.B\0601007.D
Level 5: \\ETCBDC\CHEM\bna2.i\B2111801.B\0701008.D
Level 6: \\ETCBDC\CHEM\bna2.i\B2111801.B\0801009.D
Level 7: \\ETCBDC\CHEM\bna2.i\B2111801.B\1401015.D
Level 8: \\ETCBDC\CHEM\bna2.i\B2111801.B\0901010.D
Level 9: \\ETCBDC\CHEM\bna2.i\B2111801.B\1001011.D
Level 10: \\ETCBDC\CHEM\bna2.i\B2111801.B\1101012.D
Level 11: \\ETCBDC\CHEM\bna2.i\B2111801.B\1201013.D

| Compound | 0 2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10 0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80.0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 1 N-Nitrosodimethylamine | 0 89627 | 1 36432 | 1.28650 | 1.33391 | 1.35631 | 1.37184 | | | | | |
| | 1.36994 | 1 40985 | 1.29176 | 1.30776 | 1 31392 | | AVRG | | 1 30022 | | 10 71457 |

000117

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0 5000000 Level 2 | 2 0000 Level 3 | 5.0000 Level 4 | 10.0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80 0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 2 Pyridine | +++++ | +++++ | 1.35933 | 2.04405 | 2.13124 | 1 99232 | | | | | |
| | 2.26049 | 2 19477 | 1.91787 | 2.05744 | 1.85835 | | AVRG | | 1.97954 | | 13 38711 |
| 3 Methyl methanesulfonate | 0 61554 | 0 65095 | 0.76932 | 0.71247 | 0.67184 | 0.65896 | | | | | |
| | 0 67620 | 0 71723 | 0.71953 | 0.67149 | 0.77356 | | AVRG | | 0.69428 | | 7 06870 |
| 5 N-Nitrosodiethylamine | 0 67938 | 0 77445 | 0.82549 | 0.81610 | 0.78099 | 0 79281 | | | | | |
| | 0 85308 | 0 88058 | 0.85970 | 0 83065 | 0.92786 | | AVRG | | 0.82010 | | 7 92517 |
| 6 Ethyl methanesulfonate | 1 16059 | 1.30036 | 1.27396 | 1 19694 | 1 13293 | 1.12025 | | | | | |
| | 1 15310 | 1.22626 | 1 23130 | 1 18495 | +++++ | | AVRG | | 1 19807 | | 4 97874 |
| 8 Phenol | 2 49550 | 2 20838 | 2.33196 | 2 19721 | 2 09248 | 2.04741 | | | | | |
| CCC | 1 98000 | 1 94511 | 1 81453 | 1 76654 | 1 74187 | | AVRG | | 2 05645 | | 11.63732 |

768 814

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0 2000000 Level 1 | 0.5000000 Level 2 | 2 0000 Level 3 | 5 0000 Level 4 | 10.0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80 0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 9 Aniline | 0.91293 | 1.01381 | 1.01490 | 0 92459 | 0.88042 | 0.86546 | | | | | |
| | 0.89453 | 0 89811 | 0.86282 | +++++ | +++++ | | AVRG | | 0.91862 | | 6 30049 |
| 10 Bis(2-chloroethyl)ether | +++++ | +++++ | 2.17104 | 2 20549 | 1.88790 | 1.76889 | | | | | |
| | 1 76605 | 2.01225 | 1 66202 | 1.62624 | 1.40343 | | AVRG | | 1.83370 | | 14.34161 |
| 11 2-Chlorophenol | 1.54642 | 1.45020 | 1.71475 | 1 61512 | 1.52429 | 1.52290 | | | | | |
| | 1 49647 | 1.51881 | 1 44045 | 1 40781 | 1.45694 | | AVRG | | 1 51765 | | 5 74272 |
| 12 1,3-Dichlorobenzene | +++++ | +++++ | 66879 | 168159 | 339045 | 666106 | | | | | |
| | 1353333 | 2607675 | 3018846 | 3012438 | 4351979 | | QUAD | 0.03141 | 0 50487 | 0 06743 | 0.99764 |
| 14 1,4-Dichlorobenzene | +++++ | +++++ | 69971 | 169757 | 347390 | 678342 | | | | | |
| CCC | 1379466 | 2572876 | 3054038 | 3017539 | 4187089 | | QUAD | 0.05059 | 0 42977 | 0 08963 | 0 99630 |

* Avg %RSD = 14.8

0001119

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2112401.B\B2111801.M
Cal Date : 24-Nov-2003 14:07 target

| Compound | 0 2000000 Level 1 | 0 5000000 Level 2 | 2 0000 Level 3 | 5.0000 Level 4 | 10 0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80.0000 Level 8 | 100 0000 Level 9 | 120 0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 15 Benzyl alcohol | +++++ | +++++ | 0 93382 | 0.89256 | 0.89569 | 0 92400 | | | | | |
| | 0 93443 | 0 96726 | 0 89063 | 0.86456 | 0 83973 | | AVRG | | 0.90474 | | 4 32999 |
| 16 2-Methylphenol | +++++ | +++++ | 1 30229 | 1 21288 | 1 14912 | 1 12358 | | | | | |
| | 1 10946 | 1 11228 | 1 08131 | 1 00384 | 1.04570 | | AVRG | | 1 12672 | | 7 87553 |
| 17 1,2-Dichlorobenzene | +++++ | +++++ | 60151 | 152261 | 312294 | 617952 | | | | | |
| | 1252248 | 2407208 | 2853435 | 2806775 | 3988711 | | QUAD | 0 04517 | 0 50690 | 0 08812 | 0 99759 |
| 18 Bis(2-chloroisopropyl)ether | 3 34742 | 2.98925 | 3.18554 | 2 98543 | 2.81033 | 2.84685 | | | | | |
| | 2 91331 | 2.81641 | 2.63362 | +++++ | +++++ | | AVRG | | 2.94757 | | 7 25263 |
| 19 3&4-Methylphenol | +++++ | +++++ | 1 83373 | 1 69819 | 1.58960 | 1 63313 | | | | | |
| | 1.61969 | 1.58959 | 1.54358 | 1.49345 | 1.49479 | | AVRG | | 1.61064 | | 6 60588 |

0004120

768 815

768 816

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10 0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80 0000 Level 8 | 100 0000 Level 9 | 120 0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 20 N-Nitrosodi-n-propylamine | +++++ | +++++ | 0.23059 | 0.24227 | 0 22735 | 0 22905 | | | | | |
| SPCC | 0.22416 | 0.23584 | 0.22271 | 0.21164 | 0 20211 | | AVRG | | 0.22508 | | 5.38979 |
| 21 Acetophenone | +++++ | +++++ | 74123 | 187337 | 354941 | 709592 | | | | | |
| | 1490675 | 2844995 | 3540250 | 3318196 | 5452782 | | QUAD | 0 03163 | 1 70173 | 0.76308 | 0 99887 |
| 22 Hexachloroethane | +++++ | +++++ | 0 18408 | 0 17767 | 0 16814 | 0 16769 | | | | | |
| | 0 16267 | 0 16443 | 0 14435 | 0 14519 | +++++ | | AVRG | | 0.16428 | | 8 49090 |
| 24 Nitrobenzene | +++++ | +++++ | 0.35137 | 0.37258 | 0 34599 | 0 35370 | | | | | |
| | 0 35384 | 0.35871 | 0 32866 | 0 32166 | 0.30405 | | AVRG | | 0 34340 | | 6 18549 |
| 25 Isophorone | +++++ | +++++ | 0.66071 | 0.62132 | 0.60583 | 0.61924 | | | | | |
| | 0 63472 | 0.65267 | 0.62876 | 0.58588 | 0 63032 | | AVRG | | 0 62661 | | 3 61261 |

000121

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10.0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80.0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 26 2,4-Dimethyphenol | +++++ | +++++ | 0.33752 | 0.30874 | 0.30045 | 0.30107 | | | | | |
| | 0.28552 | 0.29505 | 0.28050 | 0.25894 | 0.28382 | | AVRG | | 0.29462 | | 7.38490 |
| 27 Benzoic acid | +++++ | +++++ | +++++ | 29801 | 96766 | 271488 | | | | | |
| | 753237 | 1635704 | 2345891 | +++++ | +++++ | | QUAD | 0.10722 | 4.33966 | -1.07329 | 0.99962 |
| 28 2-Nitrophenol | +++++ | +++++ | 0.18772 | 0.19894 | 0.19389 | 0.20003 | | | | | |
| CCC | 0.18751 | 0.18764 | 0.17134 | 0.16365 | 0.16590 | | AVRG | | 0.18407 | | 7.48668 |
| 29 Bis(2-chloroethoxy)methane | +++++ | +++++ | 0.47889 | 0.44129 | 0.42818 | 0.42292 | | | | | |
| | 0.41875 | 0.42603 | 0.39006 | 0.37476 | 0.36461 | | AVRG | | 0.41617 | | 8.45910 |
| 30 2,4-Dichlorophenol | +++++ | +++++ | 0.24950 | 0.23690 | 0.22617 | 0.23406 | | | | | |
| CCC | 0.23137 | 0.23514 | 0.21927 | 0.20568 | 0.20365 | | AVRG | | 0.22686 | | 6.61129 |

000122

768 817

768 818

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2112401.B\B2111801.M
Cal Date : 24-Nov-2003 14:07 target

| Compound | 0 2000000 Level 1 | 0 5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10 0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80.0000 Level 8 | 100.0000 Level 9 | 120 0000 Level 10 | 160 0000 Level 11 | | | | | | |
| 31 1,2,4-Trichlorobenzene | +++++ | +++++ | 0 27661 | 0 26155 | 0 23994 | 0.24207 | | | | | |
| | 0.23233 | 0 23061 | 0.21121 | 0.20458 | 0 18961 | | AVRG | | 0.23206 | | 11.81273 |
| 33 Naphthalene | 15367 | 40524 | 156345 | 376831 | 764399 | 1466694 | | | | | |
| | 3052170 | 5569083 | 6689637 | 6444261 | 9724818 | | QUAD | 0 04102 | 0 60584 | 0.35747 | 0 99620 |
| 34 4-Chloroaniline | +++++ | +++++ | 63184 | 158318 | 309195 | 608780 | | | | | |
| | 1292864 | 2281213 | 2898001 | 2578106 | 4281181 | | QUAD | 0.03875 | 1.76535 | 1.61516 | 0.99839 |
| 35 2,6-Dichlorophenol | +++++ | +++++ | 36446 | 87188 | 173722 | 343793 | | | | | |
| | 711503 | 1340072 | 1665039 | 1533075 | 2488550 | | QUAD | 0 04518 | 3.15824 | 4 49189 | 0.99869 |
| 36 Hexachlorobutadiene | +++++ | +++++ | 0 06316 | 0.06726 | 0.05634 | 0 05784 | | | | | |
| CCC | 0 05461 | 0.05636 | 0.05115 | 0.05052 | +++++ | | AVRG | | 0.05716 | | 9 95423 |

000123

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2112101.B\B2111801.M
Cal Date : 21-Nov-2003 14:20 target

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10.0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80.0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 37 N-Nitrosodibutylamine | +++++ | +++++ | 0.17629 | 0.17640 | 0.18069 | 0.17278 | | | | | |
| | 0.18629 | 0.18642 | 0.18510 | 0.16084 | 0.18449 | | AVRG | | 0.17881 | | 4.68227 |
| 38 4-Chloro-3-methylphenol | +++++ | +++++ | 0.25510 | 0.23802 | 0.22919 | 0.24606 | | | | | |
| CCC | 0.24706 | 0.25762 | 0.24752 | 0.22573 | 0.24194 | | AVRG | | 0.24314 | | 4.41391 |
| 39 2-Methylnaphthalene | 9303 | 23617 | 91616 | 222595 | 433782 | 852781 | | | | | |
| | 1816671 | 3215482 | 4098310 | 3780719 | 6088119 | | QUAD | 0.02361 | 1.30262 | 0.74994 | 0.99956 |
| 40 1,2,4,5-Tetrachlorobenzene | +++++ | +++++ | 25930 | 62711 | 116302 | 236063 | | | | | |
| | 505149 | 852437 | 1069129 | 990125 | 1617272 | | QUAD | 0.00410 | 2.12742 | 1.30119 | 0.99671 |
| 41 Hexachlorocyclopentadiene | +++++ | +++++ | 0.22744 | 0.21898 | 0.19917 | 0.20459 | | | | | |
| SPCC | 0.17442 | 0.18157 | 0.16596 | +++++ | +++++ | | AVRG | | 0.19602 | | 11.73849 |

000126

768 819

768 820

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0 2000000 Level 1 | 0 5000000 Level 2 | 2.0000 Level 3 | 5 0000 Level 4 | 10 0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80 0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160 0000 Level 11 | | | | | | |
| 42 2,4,6-Trichlorophenol | +++++ | +++++ | 0.31620 | 0 30784 | 0 29647 | 0.29879 | | | | | |
| CCC | 0.29243 | 0 29534 | 0 26566 | 0 26236 | 0 27539 | | AVRG | | 0 29005 | | 6.36671 |
| 43 2,4,5-Trichlorophenol | +++++ | +++++ | 0.32673 | 0 32151 | 0.30614 | 0.30862 | | | | | |
| | 0.30613 | 0.29634 | 0.26421 | 0.25926 | 0.25002 | | AVRG | | 0.29322 | | 9.61945 |
| 45 2-Chloronaphthalene | 7198 | 17976 | 73684 | 170421 | 335884 | 672483 | | | | | |
| | 1405926 | 2617034 | 3335787 | 2979169 | 5008773 | | QUAD | 0 00500 | 0 77141 | 0 11157 | 0 99869 |
| 46 2-Nitroaniline | +++++ | +++++ | 0.37033 | 0 39129 | 0.39400 | 0 38726 | | | | | |
| | 0.41944 | 0 40522 | 0.39174 | 0.36949 | 0.40157 | | AVRG | | 0.39226 | | 4.05311 |
| 47 Dimethyl phthalate | +++++ | +++++ | 1.30469 | 1 20196 | 1 16185 | 1 11651 | | | | | |
| | 1.11603 | 1 09496 | 1 02990 | 0.98286 | 1.06039 | | AVRG | | 1 11879 | | 8.57915 |

0001125

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10.0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80.0000 Level 8 | 100 0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 48 2,6-Dinitrotoluene | +++++ | +++++ | 0 26583 | 0 31038 | 0.28924 | 0.30144 | | | | | |
| | 0 30682 | 0 31271 | 0 29648 | 0 27856 | 0.28815 | | AVRG | | 0 29440 | | 5 27818 |
| 49 Acenaphthylene | 9921 | 27690 | 109847 | 255887 | 507734 | 1009232 | | | | | |
| | 2163172 | 3867770 | 5014518 | 4455115 | 7427275 | | QUAD | 0 00773 | 0.49422 | 0 05566 | 0 99918 |
| 50 3-Nitroaniline | +++++ | +++++ | 0 33459 | 0 37799 | 0.38408 | 0 38583 | | | | | |
| | 0 40914 | 0 41576 | 0 40556 | 0 37559 | 0.38698 | | AVRG | | 0 38617 | | 6 22523 |
| 51 4-Nitrophenol SPCC | +++++ | +++++ | 12564 | 37212 | 78779 | 170314 | | | | | |
| | 405964 | 828756 | 1234234 | 982522 | 1975751 | | LINR | 0.05541 | 0 33755 | | 0 99477 |
| 52 2,4-Dinitrophenol SPCC | +++++ | +++++ | 3389 | 11988 | 30781 | 80705 | | | | | |
| | 222797 | 486816 | 706920 | +++++ | +++++ | | QUAD | 0.07231 | 5 86590 | -2.02498 | 0.99859 |

768 822

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0 5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10.0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80 0000 Level 8 | 100 0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 54 Acenaphthene | 7497 | 17979 | 71965 | 169353 | 321039 | 639732 | | | | | |
| CCC | 1337553 | 2439960 | 3041199 | 2764348 | 4619349 | | QUAD | 0 00091 | 0 81564 | 0 13837 | 0 99790 |
| 55 2,4-Dinitrotoluene | +++++ | +++++ | 0 34930 | 0.33964 | 0.35227 | 0.33167 | | | | | |
| | 0 33126 | 0 30872 | 0 28279 | 0 26872 | 0.28815 | | AVRG | | 0.31695 | | 9 73784 |
| 56 Dibenzofuran | +++++ | +++++ | 89548 | 211677 | 405891 | 811294 | | | | | |
| | 1773676 | 3031346 | 3955824 | 3537728 | 5854533 | | QUAD | 0 01181 | 0 60115 | 0.09591 | 0 99886 |
| 57 Pentachlorobenzene | +++++ | +++++ | 21876 | 47247 | 91444 | 177691 | | | | | |
| | 377525 | 636975 | 817694 | +++++ | +++++ | | LINR | -0 06876 | 0.35269 | | 0.99414 |
| 58 Diethyl phthalate | +++++ | +++++ | 1 15906 | 1 06605 | 1.01468 | 0.99018 | | | | | |
| | 0.97517 | 0 96171 | 0 88510 | 0 82325 | 0.86361 | | AVRG | | 0.97098 | | 10 77210 |

* Avg %RSD = 17.5

0001227

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2 0000 Level 3 | 5 0000 Level 4 | 10.0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | ml | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80 0000 Level 8 | 100 0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 59 2,3,4,6-Tetrachlorophenol | +++++ | +++++ | 0.12654 | 0 19120 | 0.19058 | 0.20290 | | | | | |
| | 0 20137 | 0 19798 | 0.18545 | 0.17497 | 0 18326 | | AVRG | | 0 18381 | | 12 66520 |
| 60 4-Chlorophenyl phenyl ether | +++++ | +++++ | 27818 | 65681 | 127690 | 249197 | | | | | |
| | 537646 | 970168 | 1242324 | 1093591 | 1867503 | | QUAD | 0 00243 | 2 06751 | 0 81929 | 0 99824 |
| 61 4-Nitroaniline | +++++ | +++++ | 17355 | 42358 | 80278 | 163375 | | | | | |
| | 421528 | 868782 | 1383013 | +++++ | +++++ | | QUAD | 0 00370 | 3.52036 | -0 96156 | 0 99978 |
| 62 Fluorene | 6736 | 17752 | 70214 | 168121 | 323810 | 641105 | | | | | |
| | 1373662 | 2464449 | 3221936 | 2823797 | 4857385 | | QUAD | -0 00207 | 0 83804 | 0 10883 | 0 99901 |
| 63 4,6-Dinitro-2-methylphenol | +++++ | +++++ | 7454 | 20819 | 49814 | 116453 | | | | | |
| | 274337 | 511398 | 673026 | 553611 | +++++ | | QUAD | 0.06101 | 4 89108 | 5 44612 | 0 99770 |

768 824

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0 2000000 Level 1 | 0.5000000 Level 2 | 2 0000 Level 3 | 5 0000 Level 4 | 10 0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80 0000 Level 8 | 100.0000 Level 9 | 120 0000 Level 10 | 160 0000 Level 11 | | | | | | |
| 64 N-NitrsdiphylAm/Diphenylamine | 2740 | 7751 | 27288 | 63719 | 132056 | 258315 | | | | | |
| CCC | 552606 | 1001959 | 1315727 | 1121670 | +++++ | | LINR | -0.04713 | 0.27992 | | 0 99509 |
| 65 1,2-Dphnylhydrzine/Azobenzene | +++++ | +++++ | 1 16946 | 1.13428 | 1.05739 | 1.05363 | | | | | |
| | 1.03945 | 1.00890 | 0 98646 | 0 93232 | 0.85652 | | AVRG | | 1.02649 | | 9 34348 |
| 67 Phenacetin | +++++ | +++++ | 0.38139 | 0 37213 | 0 38909 | 0.42112 | | | | | |
| | 0 43814 | 0.44725 | 0.42325 | 0.40948 | +++++ | | AVRG | | 0 41023 | | 6 62330 |
| 68 4-Bromophenyl phenyl ether | +++++ | +++++ | 0.19044 | 0.17697 | 0.17173 | 0 17385 | | | | | |
| | 0 15982 | 0 16034 | 0 14411 | 0.14701 | +++++ | | AVRG | | 0 16553 | | 9 47036 |
| 69 Hexachlorobenzene | +++++ | +++++ | 0.19199 | 0 18493 | 0.17123 | 0.17619 | | | | | |
| | 0.15665 | 0.15727 | 0.14370 | 0 14506 | +++++ | | AVRG | | 0.16588 | | 10.84310 |

* Avg %RSD = 15.2

0001129

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10 0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80 0000 Level 8 | 100 0000 Level 9 | 120 0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 70 Pentachlorophenol | +++++ | +++++ | +++++ | 6827 | 25937 | 72265 | | | | | |
| CCC | 186306 | 372553 | 514986 | 425075 | 880179 | | LINR | 0 06329 | 0.11001 | | 0.99838 |
| 71 Pentachloronitrobenzene | +++++ | +++++ | 0.04699 | 0 04720 | 0.04692 | 0.05137 | | | | | |
| | 0.04931 | 0.05106 | 0 04860 | 0 04537 | 0.04693 | | AVRG | | 0 04819 | | 4.23572 |
| 73 Phenanthrene | 9223 | 26392 | 86179 | 202693 | 393641 | 768000 | | | | | |
| | 1676532 | 3007058 | 3987534 | 3446666 | 6048836 | | QUAD | 0.01552 | 0.79908 | 0 17178 | 0 99681 |
| 74 Anthracene | 8186 | 22965 | 87654 | 204888 | 400587 | 793642 | | | | | |
| | 1712418 | 3023633 | 3933171 | 3342320 | 5948359 | | QUAD | 0.01816 | 0 74091 | 0 20646 | 0 99772 |
| 75 Carbazole | 0 98169 | 1 00271 | 1.05119 | 0.98363 | 0 84670 | 0 81562 | | | | | |
| | 0.83689 | 0 87780 | 0 83869 | 0.77969 | +++++ | | AVRG | | 0 90146 | | 10 44050 |

* Avg %RSD = 28.5

768 825

0001130

768 826

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0 2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5 0000 Level 4 | 10.0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80 0000 Level 8 | 100.0000 Level 9 | 120 0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 76 Di-n-butyl phthalate | +++++ | +++++ | 1.43445 | 1.30951 | 1 23380 | 1.23509 | | | | | |
| | 1 19039 | 1.16548 | 1.06471 | 1 03254 | +++++ | | AVRG | | 1.20825 | | 10 67352 |
| 77 Fluoranthene | 0.88913 | 0 88591 | 0.96575 | 0.91100 | 0.87505 | 0.86693 | | | | | |
| CCC | 0 80615 | 0 78599 | 0.72483 | 0 68946 | +++++ | | AVRG | | 0 84002 | | 10 29575 |
| 78 Benzidine | +++++ | +++++ | 24441 | 45169 | 60126 | 145394 | | | | | |
| | 297807 | 742532 | +++++ | +++++ | +++++ | | QUAD | -0.06506 | 4 32153 | -2 09244 | 0.99791 |
| 79 Pyrene | 7198 | 17650 | 74518 | 168236 | 334786 | 660584 | | | | | |
| | 1420423 | 2600374 | 3566983 | 2781992 | 5447677 | | QUAD | 0 00400 | 1.03295 | 0 17739 | 0.99904 |
| 81 Chlorobenzilate | +++++ | +++++ | 0 33711 | 0 32522 | 0 32054 | 0 32973 | | | | | |
| | 0.34848 | 0.33301 | 0 26743 | 0 32973 | 0 25384 | | AVRG | | 0 31612 | | 10.30883 |

0001311

Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-NOV-2003 10:05
End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10.0000 Level 5 | 20.0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80.0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 82 Butyl benzyl phthalate | +++++ | +++++ | 0.80064 | 0.76977 | 0.75271 | 0.75513 | | | | | |
| | 0.78425 | 0.77107 | 0.61401 | +++++ | +++++ | | AVRG | | 0.74965 | | 8.27673 |
| 83 3,3-Dimethylbenzidine | +++++ | +++++ | 23252 | 43802 | 67464 | 133946 | | | | | |
| | 308380 | 613132 | 1012516 | +++++ | +++++ | | LINR | -0.01474 | 0.29702 | | 0.99772 |
| 84 Bis(2-ethylhexyl)phthalate | +++++ | +++++ | +++++ | 0.95255 | 0.92713 | 0.93915 | | | | | |
| | 0.98653 | 0.96452 | 0.83066 | 0.93263 | 0.78003 | | AVRG | | 0.91415 | | 7.77329 |
| 85 3,3'-Dichlorobenzidine | +++++ | +++++ | 0.38879 | 0.31830 | 0.29610 | 0.30495 | | | | | |
| | 0.32885 | 0.34200 | 0.34175 | 0.30111 | 0.31123 | | AVRG | | 0.32590 | | 8.87262 |
| 86 Benz(a)Anthracene | 5758 | 15457 | 58748 | 123616 | 241925 | 490745 | | | | | |
| | 1051861 | 2013864 | 3216812 | 1971476 | 4957645 | | LINR | -0.05581 | 0.90414 | | 0.99292 |

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Environmental Testing and Consulting, Inc.

INITIAL CALIBRATION DATA

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End Cal Date : 18-NOV-2003 17:28
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0.5000000 Level 2 | 2 0000 Level 3 | 5 0000 Level 4 | 10.0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80.0000 Level 8 | 100 0000 Level 9 | 120.0000 Level 10 | 160.0000 Level 11 | | | | | | |
| 88 Chrysene | 5439 | 14537 | 54506 | 117599 | 236170 | 470080 | | | | | |
| | 980876 | 1897338 | 2929924 | 1813511 | 4557700 | | QUAD | 0.01393 | 0 85341 | 0.12375 | 0.99732 |
| 89 Di-n-octyl phthalate | +++++ | +++++ | 66660 | 153361 | 323746 | 708506 | | | | | |
| CCC | 1698138 | 3441594 | 5728091 | 3328866 | +++++ | | LINR | 0.02000 | 1 66620 | | 0.99773 |
| 90 Benzo(b)fluoranthene | 1.09260 | 1.28155 | 1 25729 | 1.07222 | 1 07177 | 1.20773 | | | | | |
| | 1.28773 | 1.34237 | 1.26101 | 1 22703 | 1.20544 | | AVRG | | 1.20970 | | 7 65303 |
| 91 Benzo(k)fluoranthene | 1 20562 | 1 08570 | 1 14678 | 1 17390 | 1 13418 | 1.05827 | | | | | |
| | 1.15838 | 1.10804 | 0 84283 | +++++ | +++++ | | AVRG | | 1 10152 | | 9 70923 |
| 92 Benzo(a)pyrene | +++++ | +++++ | 0.99533 | 0 97754 | 0 93756 | 0.96400 | | | | | |
| CCC | 1 03661 | 1.04813 | 0.93310 | 0.98190 | 0.84935 | | AVRG | | 0 96928 | | 6 14502 |

Avg %RSD = 9.6

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Environmental Testing and Consulting, Inc.

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Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0.2000000 Level 1 | 0 5000000 Level 2 | 2 0000 Level 3 | 5 0000 Level 4 | 10 0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | Coefficients m1 | Coefficients m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 0000 Level 7 | 80.0000 Level 8 | 100 0000 Level 9 | 120 0000 Level 10 | 160 0000 Level 11 | | | | | | |
| 94 Dibenz(a,h)anthracene | 0 90651 | 0.86476 | 0.97687 | 0 87915 | 0.80928 | 0.79946 | | | | | |
| | 0.80506 | 0 86228 | 0 81461 | 0 80903 | 0.74480 | | AVRG | | 0 84289 | | 7.52026 |
| 95 Indeno(1,2,3-cd)pyrene | 0 85030 | 1.12105 | 1 09144 | 1 04867 | 0 97022 | 0.94454 | | | | | |
| | 0 95518 | 1.05096 | 1 00676 | 0 97048 | 0.91324 | | AVRG | | 0 99298 | | 8.07314 |
| 96 Benzo(ghi)perylene | 0 87041 | 0.99280 | 0 95969 | 0 88481 | 0.78969 | 0.75180 | | | | | |
| | 0 77135 | 0.89381 | 0 84755 | 0.81913 | 0.79324 | | AVRG | | 0.85221 | | 9 05635 |
| $ 4 2-Fluorophenol | 1 95354 | 1.81785 | 1 97942 | 1 95202 | 1.89164 | 1.88174 | | | | | |
| | 1 83706 | 1 78549 | 1.65131 | 1 64986 | 1.58316 | | AVRG | | 1.81664 | | 7 47660 |
| $ 7 Phenol-d6 | 2 14966 | 2.21747 | 2 49671 | 2.37817 | 2 24234 | 2 18372 | | | | | |
| | 2.14309 | 2.10281 | 1.95423 | 1 90891 | 1 92864 | | AVRG | | 2 15507 | | 8 47948 |

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Environmental Testing and Consulting, Inc.

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Integrator : HP RTE
Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Compound | 0 2000000 Level 1 | 0.5000000 Level 2 | 2.0000 Level 3 | 5.0000 Level 4 | 10 0000 Level 5 | 20 0000 Level 6 | Curve | Coefficients b | m1 | m2 | %RSD or R^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50.0000 Level 7 | 80 0000 Level 8 | 100.0000 Level 9 | 120.0000 Level 10 | 160 0000 Level 11 | | | | | | |
| $ 23 Nitrobenzene-d5 | +++++ | +++++ | 0 41118 | 0.38910 | 0 36806 | 0.37632 | | | | | |
| | 0 38655 | 0.38145 | 0 35842 | 0.34366 | 0 33363 | | AVRG | | 0.37204 | | 6.46080 |
| $ 44 2-Fluorobiphenyl | +++++ | +++++ | 72127 | 173127 | 332613 | 665643 | | | | | |
| | 1448728 | 2468829 | 3139659 | 2864532 | 4489083 | | QUAD | 0 04277 | 0.59179 | 0 21478 | 0 99703 |
| $ 66 2,4,6-Tribromophenol | +++++ | +++++ | 0.03897 | 0.04118 | 0.03376 | 0.03684 | | | | | |
| | 0.03525 | 0 03591 | 0 03480 | 0 03355 | 0.03191 | | AVRG | | 0.03580 | | 8 00602 |
| $ 80 Terphenyl-d14 | 1 02894 | 0 90708 | 0 93961 | 0 86204 | 0.82213 | 0 81661 | | | | | |
| | 0.82112 | 0 76508 | +++++ | +++++ | +++++ | | AVRG | | 0.87033 | | 9 71893 |

Environmental Testing and Consulting, Inc.

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Method file : \\ETCBDC\CHEM\bna2.i\B2111801.B\B2111801.M
Cal Date : 20-Nov-2003 09:56 elizabeth

| Curve | Formula | Units |
|---|---|---|
| Averaged | Amt = Rsp/m1 | Response |
| Linear | Amt = b + Rsp/m1 | Response |
| Quad | Amt = b + m1*Rsp + m2*Rsp^2 | Response |

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# APPENDIX D

## DATA EVALUATION OF SEMI-ANNUAL GROUNDWATER SAMPLES

# Technical Memorandum

*Jacobs Eastern Federal Operations*
*Oak Ridge, Tennessee*

**TO:** Kraig Smith, Project Manager

**FROM:** Mike Houck, Project Chemist

**DATE:** 17 December 2003

**SUBJECT:** Quality Control Review of Chemical Analytical Data

**REFERENCE:** Memphis Depot – Dunn Field Groundwater Systems
Jacobs Project Number C5X51115; WBS 040100L

## 1.0 PURPOSE

This Technical Memorandum (Memorandum) presents an evaluation of the quality of the analytical chemistry data generated in support of the referenced project. The purpose of the evaluation is to document the quality of the reported data and any limitations to the use of the data. Data use limitations are conveyed to data users through the text of this memorandum and the application of qualifiers to project data as a result of this evaluation. Laboratory data sheets with these qualifiers applied are included as Attachment 1 to this Memorandum. The data users are urged to review the findings of this evaluation and associated data qualification before using the data for decision-making.

## 1.1 DATA QUALITY OBJECTIVES

Analytical support for this project required the collection of definitive data. Definitive data are defined in "*Data Quality Objectives Process for Superfund*," EPA540-R-93-071, U.S EPA Office of Emergency and Remedial Response, September 1993, as follows:

> "Definitive data are generated using rigorous analytical methods, such as approved EPA reference methods. Data are analyte-specific, with confirmation of analyte identity and concentration Methods produce tangible raw data (e.g., chromatograms, spectra, digital values) in the form of paper printouts or computer-generated electronic files. Data may be generated at the site or at an off-site location, as long as the QA/QC requirements are satisfied. For the data to be definitive, either analytical or total measurement error must be determined."

Specific data quality criteria and procedures to achieve the desired level of quality are documented in the approved Quality Assurance Project Plan (QAPP). Key elements of the quality program relating to this evaluation include:

- Use of an approved, USACE-validated laboratory
- Use of a sampling program designed to meet the project objectives
- Use of appropriate analytical methods
- Evaluation of reported QA/QC to verify compliance with data quality objectives.

### 1.1.1 Analytical Laboratory

The analytical laboratory employed on this project, Environmental Testing & Consulting, Inc. (ETC), was evaluated by the USACE Hazardous, Toxic and Radioactive Waste Center of Expertise (HTRW-CX) and holds a current letter of validation from HTRW-CX to perform sample analyses in support of the USACE HTRW Program. This validation confirms their ability to produce reliable and defensible data. In addition, the laboratory was approved by USACE to provide the required project-specific analyses. USACE approval of the laboratory is documented in the approved QAPP. The laboratory can be contacted as follows:

Environmental Testing & Consulting, Inc. (ETC)
Contact: Ms. Connie Bradberry, Project Manager
2924 Walnut Grove Road
Memphis, TN 38111
Phone: (901) 327-2750
Fax: (901) 327-6334

### 1.1.2 Sampling Program Design/Project Samples

The sampling program was designed to collect samples representative of site conditions at the time of sampling and to generate data of sufficient quality and quantity to make the intended decisions. The basis for selecting the sampling locations, sample collection procedures, frequency and type of samples collected, and the analytical parameters for each sample were documented in the approved project Work Plans.

Project samples included in this evaluation consist of groundwater and associated field QC samples collected in October and November of 2003 and distributed to the laboratory for chemical analysis of volatile organic compounds (VOCs). The laboratory reported the analyses in three Laboratory Data Packages (LDPs), each designated by an order number. LDPs included in this evaluation are:

1. ETC Order # 0310738/0310739, dated November 13, 2003
2. ETC Order # 0310781, dated November 13, 2003
3. ETC Order # 0311458, dated December 5, 2003

A listing of specific project samples contained in the LDPs, along with a cross reference of sample field ID numbers to laboratory ID numbers, is included in Attachment 2.

### 1.1.3 Analytical Methods

In order to obtain definitive data and promote data comparability, the laboratory was required to perform testing within the guidelines of standardized EPA methods included in the following approved protocol:

- "*Test Methods for Evaluating Solid Waste*," SW-846, 3rd Edition, Update III, U.S. EPA, November 1986, (SW-846).

The specific analytical method used in the analysis of the evaluated project samples was:

- 8260B – VOCs by Gas Chromatography/Mass Spectrometry (GC/MS).

### 1.1.4 Data Evaluation Procedure

The quality of these data has been evaluated according to procedures consistent with those included in the approved QAPP. The procedures are based on "*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*," EPA-540/R-94-012, February 1999 (*Functional Guidelines*). Data evaluation was also based on the QC requirements of the analytical method, project DQOs, and the informed professional judgment of the evaluator. Data evaluation was performed by qualified Jacobs personnel, experienced in the evaluation of analytical data quality.

The following data quality issues were addressed in this evaluation:

- Review of chain-of-custody and sample receipt forms to evaluate sample receipt data, damaged sample containers, etc.
- Review of laboratory testing methods, detection limits, holding times, data qualifiers, etc.
- Review of field QC blank data to detect contamination from outside sources.
- Review of field QC duplicates to evaluate data reproducibility.
- Review of laboratory QC including laboratory blanks, spike recovery, and duplicates.
- Review of calibrations as provided by the laboratory.
- Qualification of data with appropriate review qualifiers to document data use limitations.
- Documentation of data evaluation findings in terms of the precision, accuracy, representativeness, comparability, and completeness (PARCC) data quality parameters.

The PARCC data quality parameters were evaluated as follows:

- Accuracy - by evaluation of surrogate (SUR), laboratory control sample (LCS), internal standard (IS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries (%Rs).
- Precision - by evaluation of MS/MSD, laboratory duplicate, and field duplicate relative percent differences (RPDs).
- Representativeness - by evaluation of sample receipt records, technical holding times, and blank sample results (field and laboratory).
- Comparability - by evaluation of laboratory detection limits, reporting units, and the overall performance of the chosen method.
- Completeness - by comparing the number of valid measurements obtained to the number of measurements planned for these samples.

**Field QC Duplicate Sample Evaluation Procedure**

Field QC duplicate samples were collected and analyzed at a frequency of approximately 10 percent of the primary samples. Typically, no data qualification is required based solely on non-conforming QC duplicate results unless an individual non-conformance is deemed to be extreme or the data evaluation revealed negative trends Data qualification, if deemed necessary, may be limited to individual sample results or may include entire data sets. Since no published EPA procedure exists for the evaluation of field duplicate results, the following overview is included to document the procedure and criteria used in this report.

Duplicate results for liquid sample matrices that differ by more than a factor of two (RPD > 67) would be considered to be in 'disagreement'. In the special case where one or both sample results were less than five

times the laboratory RL, a difference of two times the RL was used as the evaluation criterion. Data found to be out of control would be further examined to determine whether the disagreement was extreme or an isolated occurrence, or whether negative trends exist.

Duplicate samples found to be in disagreement do not necessarily indicate that an error has been made or that inappropriate procedures were used. Factors including the natural variability of the sample matrix, high or low analyte concentrations, or the presence of compounds that interfere with analysis can contribute to duplicate disagreement. Negative trends may indicate systematic errors made in sampling, handling, analytical procedures; or the selection of an inappropriate protocol. If negative trends or extreme non-conformances exist, associated data are evaluated carefully to determine their validity. Data severely affected by duplicate sample results, if any, are reported with qualifiers and/or notations as to data usability.

### 1.1.5 Data Qualifier Definitions

The following definitions describe the data qualifiers that may have been assigned to results during this review. Data qualifier definitions are based on those included in the *Functional Guidelines*.

U The analyte was analyzed for, but was not detected above the laboratory Reporting Limit (RL).

J The analyte was positively identified; however, the associated numerical value is an estimate of the concentration of the analyte in the sample.

UJ The analyte was not detected above the RL. However, the RL is an estimate and may or may not represent the actual RL necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected and is therefore unusable due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## 1.2 STATEMENT OF DATA QUALITY AND DATA USE LIMITATIONS

QA/QC results indicate that the data meet definitive data standards, are of known quality, and are acceptable for their intended uses with the qualifiers applied. No results were found to be unusable due to QC deficiencies. QC data demonstrated that the QA mechanisms were effective in ensuring measurement data reliability within expected limits of sampling and analytical error. Sample data, as qualified, are considered to be representative of actual site conditions at the time sampled.

### 1.2.1 Summary of Qualifiers Applied to Data During This Evaluation

This section presents a summary of qualifiers applied to sample data as a result of this review. Laboratory data sheets with these qualifiers applied are included as Attachment 1 to this Memorandum. Section 1.1.5 presents complete qualifier definitions and Section 2 0 contains the review findings, along with descriptions of the impact of the findings on project data. Sample data may also have qualifiers applied by the laboratory. Laboratory qualifiers are defined on page 1 of each LDP. Based on this review, project data were qualified as follows:

1. Reported concentrations of bromomethane in the samples EW-9 and RW-5 from SDG 0310781 were qualified nondetect "U" at the reported concentration due to equipment blank contamination.
2. The carbon tetrachloride results for all samples in SDG 0311458 were qualified as estimated "J" for detects and "UJ" for non-detects due to a marginally low continuing calibration outlier.
3. The acetone and bromomethane results for all samples in SDG 0311458 were qualified as estimated "J" for detects and "UJ" for non-detects due to continuing calibration outliers with high or positive bias.
4. The surrogate compound bromofluorobenzene was marginally high for 10 samples in SDG 0310738/0310739. Four of the samples were not affected by the high surrogate recovery because the samples were non-detect for all analytes. The detects in the following six samples were qualified as estimated "J" as a result of the potential high bias due to the marginally high surrogate recoveries.

   MW-07-1
   MW-07-2
   MW-09-1
   MW-29-1
   MW-29-3
   MW-71-1

5. The detect for chloroform in sample MW-32-1 from SDG 0310738/0310739 was qualified as estimated "J" due to a marginally high reported LCS recovery.
6. The reported nondetects for acetone, bromomethane, and carbon disulfide in lab batch V311031 were qualified as estimated "UJ" due to high %D's in the calibration verification. All three compounds had a high recovery in the CCAL run indicating a potential high bias. The affected samples are MW-57-1, MW-57-2, MW-58-1, MW-56-1, MW-34-1, MW-34-2, MW-34-3, MW-07-1, MW-07-2, MW-09-1, MW-08-1, MW-29-1, MW-29-2, MW-29-3, and MW-36-1.
7. The results for samples MW-29-2, MW-29-3, and MW-36-1 were qualified as estimated "J" for detects and "UJ" for non-detects due to marginally low internal standard recoveries.
8. The reported nondetects for acetone, bromomethane, and 2-hexanone in lab batch V311071 were qualified as estimated "UJ" due to high %D's in the calibration verification. All three compounds had a high recovery in the CCAL run indicating a potential high bias. The affected samples are ERB-2, MW-76-1, MW-76-2, MW-70-1, MW-70-2, MW-37-1, MW-37-2, MW-37-200, MW-37-3, ERB-1, MW-71-1, MW-71-2, MW-33-1, MW-30-1, and MW-31-1.
9. The results for samples ERB-1, MW-71-1, MW-71-2, MW-33-1, MW-30-1, and MW-31-1 were qualified as estimated "J" for detects and "UJ" for non-detects due to marginally low internal standard recoveries.
10. The reported nondetects for acetone, benzene, bromomethane, 2-butanone, chloroethane, 2-hexanone, methylene chloride, and 1,1,2-trichloroethane in lab batch V311081 were qualified as estimated "UJ" due to high %D's in the calibration verification. All eight compounds had high recoveries in the CCAL run indicating a potential high bias. The affected samples are MW-32-1, MW-43-1, MW-43-2, MW-67-1, MW-67-2, MW-67-3, MW-69-1, MW-69-100, MW-69-2, and trip blank.

11. The reported nondetects for 2-butanone and 2-hexanone in lab batch V211051 were qualified as estimated "UJ" due to high %D's in the calibration verification. Both compounds had high recoveries in the CCAL run indicating a potential high bias. The affected samples are MW-36-2, MW-36-3, MW-130-1, MW-130-2, MW-130-3, MW-130-4, MW-129-1, MW-129-100, and MW-129-2.
12. The reported nondetects for acetone, 2-butanone, and 2-hexanone in lab batch V211061 were qualified as estimated "UJ" due to high %D's in the calibration verification. All three compounds had high recoveries in the CCAL run indicating a potential high bias. The affected samples are MW-129-3, MW-128-1, MW-128-2, MW-128-3, MW-128-4, MW-51-1, MW-78-1, MW-68-1, and MW-68-2.
13. The reported nondetects for acetone, 2-butanone, and 2-hexanone in lab batch V211071 were qualified as estimated "UJ" due to high %D's in the calibration verification. All three compounds had high recoveries in the CCAL run indicating a potential high bias. The affected samples are MW-31-2, MW-31-200, MW-79-1, MW-79-100, MW-79-2, ERB-3, MW-95-1, MW-126-1, MW-80-1, MW-127-1, MW-44-1, MW-42-1, and MW-40-1.

### 1.2.2 Additional Data Use Concerns

Some analyte concentrations were detected beyond the calibration range of the respective instrument and were designated as such by the laboratory with an "E" flag. In each case, these concentrations were replaced with concentrations from the appropriate secondary dilutions. See section 2.4.2 for specific samples and analytes affected. In these cases the dilution sample results should be used instead of the initial sample analysis.

## 2.0 DATA QUALITY NARRATIVES

Specific findings of this evaluation are discussed in data quality narratives in terms of the PARCC data quality parameters. The discussions present a compilation of laboratory QC results found to be outside project acceptance criteria and provide an assessment of the potential impact those results have on the analytical data. The bulk of the QC results were in control and, therefore, were not summarized in these discussions.

Project sample analyses were grouped into QC batches as defined in SW-846. The laboratory analyzed QC samples with each analytical batch. Data qualification, when necessary, may be based on non-conforming batch QC results. Thus, specific findings of this evaluation may be discussed in terms of analytical batches.

### 2.1 ACCURACY

In general, project accuracy indicators (SUR, LCS, and MS/MSD %Rs) were found to be in control. Some exceptions were noted and are summarized below as Specific Findings. Each exception was evaluated to determine whether it had any impact on data use or resulted in data qualification. LCS and MS/MSD compounds that were spiked by the lab, but not target compounds for the project were not evaluated.

**Specific Findings:**

1. The following LCS recoveries were outside their specified ranges.

| Analyte | Bias | Qualifier | Lab SDG (affected samples) |
|---|---|---|---|
| Chloroethane | High | J detects | 310781, all samples in batch V211081, all ND no qualification.<br><br>310738/310739, all samples in batch V311031, all ND no qualification.<br><br>310738/310739, all samples in batch V211051, all ND no qualification. |
| cis-1,2-Dichloroethene | High | J detects | 310781, all samples in batch V211091 dilution analysis, not a target for dilution, no qualification. |
| Acetone | High | J detects | 310738/310739, all samples in batch V311031, all ND no qualification.<br><br>310738/310739, all samples in batch V311071, all ND no qualification. |
| Bromomethane | High | J detects | 310738/310739, all samples in batch V311031, all ND no qualification |
| Chloroform | High | J detects | 310738/310739, all samples in batch V311081, MW-32-1 qualified detect as "J", all others ND no qualification. |

2. The following MS/MSD recoveries were outside their specified ranges. No qualification is required for MS/MSD outliers alone. The recoveries were closely evaluated and determined not to have a negative impact on the sample results and therefore no qualification was deemed necessary based on these outliers.

| Analyte | Bias | Qualifier | Lab SDG (Batch) |
|---|---|---|---|
| Bromomethane | Low | None | 311458 (V311261)<br>310738/310739 (V311031) |
| cis-1,2-Dichloroethene | High | None | 310781 (V211081)<br>311458 (V311261)<br>310738/310739 (V311071)<br>310738/310739 (V311031) |
| Benzene | High | None | 310738/310739 (V311031)<br>310738/310739 (V311071) |
| Bromodichloromethane | High | None | 310738/310739 (V311031)<br>310738/310739 (V311071) |
| 2-Butanone | Low | None | 310738/310739 (V311031) |
| Carbon tetrachloride | High | None | 310738/310739 (V311031) |
| Chlorodibromomethane | High | None | 310738/310739 (V311031)<br>310738/310739 (V311071) |
| Chloroethane | High | None | 310738/310739 (V311031)<br>310738/310739 (V211051)<br>310738/310739 (V211061)<br>310738/310739 (V311071)<br>310781 (V211081) |
| Chloroform | High | None | 310738/310739 (V311031)<br>310738/310739 (V311071) |
| 1,1-Dichloroethane | High | None | 310738/310739 (V311031)<br>310738/310739 (V311071) |
| 1,2-Dichloroethane | High | None | 310738/310739 (V311031)<br>310738/310739 (V311071) |
| 1,1-Dichloroethene | High | None | 310738/310739 (V311031) |
| trans-1,2-Dichloroethene | Low | None | 311458 (V311261) |
| cis-1,3-Dichloropropene | High | None | 310738/310739 (V311031) |
| trans-1,3-Dichloropropene | High | None | 310738/310739 (V311031) |
| Ethylbenzene | High | None | 310738/310739 (V311031) |
| Methylene Chloride | High | None | 310738/310739 (V311031) |
| 1,1,1-Trichloroethane | High | None | 310738/310739 (V311031) |
| Toluene | High | None | 310738/310739 (V311031) |
| 1,1,2,2-Tetrachloroethane | Low | None | 311458 (V311261) |
| 1,1,2-Trichloroethane | High | None | 310738/310739 (V311031) |
| Trichloroethene | High | None | 310738/310739 (V311031)<br>311458 (V311261) |
| o-Xylene | Low | None | 311458 (V311261) |

3. Calibration verification %D were found to be outside the criterion for the analytes listed below. The associated samples in the batches were qualified as estimated ("J" for detects and "UJ" for non-detects) since the failures were high in all cases except one, indicative of a positive bias for the specific compounds failing the calibration verification criteria.

| Analyte | Outlier | Bias | Qualifier | Lab Batch (affected samples) |
|---|---|---|---|---|
| Acetone | CCV | High | J detects / UJ non-detects | SDG 311458, batch V311261, all samples. |
| Bromomethane | | | | |
| Carbon tetrachloride | CCV | Low | J detects / UJ non-detects | SDG 311458, batch V311261, all samples |
| Chloroethane | CCV | High | J detects / UJ non-detects | SDG 310781, batch V211081, all samples. |
| Acetone | CCV | High | J detects / UJ non-detects | SDG 310738/310739, batch V311031 all samples. |
| Bromomethane | | | | |
| Carbon disulfide | | | | |
| 2-Butanone | CCV | High | J detects / UJ non-detects | SDG 310738/310739, batch V211051 all samples. |
| 2-Hexanone | | | | |
| Acetone | CCV | High | J detects / UJ non-detects | SDG 310738/310739, batch V211061 all samples. |
| 2-Butanone | | | | |
| 2-Hexanone | | | | |
| Acetone | CCV | High | J detects / UJ non-detects | SDG 310738/310739, batch V311071 all samples. |
| Bromomethane | | | | |
| 2-Hexanone | | | | |
| Acetone | CCV | High | J detects / UJ non-detects | SDG 310738/310739, batch V211071 all samples. |
| 2-Butanone | | | | |
| 2-Hexanone | | | | |
| Acetone | CCV | High | J detects / UJ non-detects | SDG 310738/310739, batch V211071 all samples. |
| Benzene | | | | |
| Bromomethane | | | | |
| 2-Butanone | | | | |
| Chloroethane | | | | |
| 2-Hexanone | | | | |
| Methylene chloride | | | | |
| 1,1,2-Trichloroethane | | | | |

## 2.2 PRECISION

### 2.2.1 Field QC Duplicate Sample Precision

Project precision indicators for field QC duplicate samples were found to be in control for eight parent sample and field duplicate pairs.

### 2.2.2 Laboratory Internal QC Sample Precision

In general, QC data indicated that requirements for laboratory internal QC duplicate samples (MS/MSD) were met for each sample analysis. The exceptions are noted and summarized below as a Specific Finding. The exceptions were evaluated to determine whether it had any impact on data use or resulted in data qualification.

**Specific Findings:**

1. The compounds listed below in the table were found to be outside the criterion in the MS/MSD analyses for the samples listed below. This finding does not appear to be indicative of a trend. The reported results for these compounds were qualified as estimated (J) for detects only in the parent sample of the MS/MSD.

| Analyte | Bias | Affected Samples | Qualifier |
|---|---|---|---|
| 2-Hexanone | RPD>20 | SDG 310738/310739 batch V211051 | None (sample ND) |
| 2-Hexanone | RPD>20 | SDG 311458 batch V311261 | None (sample ND) |
| 2-Butanone | RPD>20 | SDG 310738/310739 batch V211051 | None (sample ND) |
| cis-Dichloroethene | RPD>20 | SDG 311458 batch V311261 | None (sample ND) |

## 2.3 REPRESENTATIVENESS

### 2.3.1 Sample Custody/Handling Documentation Review

The project samples were received at the laboratory adequately preserved, chilled within the required range of 4 ± 2 degrees Celsius, in good condition, and with required custody documentation in order.

### 2.3.2 Sample Holding Time Review

QC data indicated that requirements for holding times were met for each sample analysis.

### 2.3.3 Blank Sample Results Review

QC data indicated that requirements for blank sample results were met, with the exceptions noted below.

**Specific Finding:**

1. Bromomethane was detected at 1.36 ug/L in the equipment blank associated with all samples in SDG 310781. There were reported detections in samples RW-9 and RW-5 less than 5 times the blank results. The positive bromomethane results reported as detects by the laboratory were qualified as a nondetect (U) in the samples RW-9 and RW-5.
2. Methylene chloride and chlorodibromomethane were detected in the method blank for all samples in SDG 310738/310739 batch V311031. However, none of the samples had positive

detects for either compound. No data was adversely affected, and no data qualification resulted.

3. Bromodichloromethane and chlorodibromomethane were detected in the method blank for all samples in SDG 310738/310739 batch V211051. However, none of the samples had positive detects for either compound. No data were adversely affected, and no data qualification resulted.
4. Methylene chloride was detected in the method blank for all samples in SDG 310738/310739 batch V311071. However, none of the samples had positive detects for methylene chloride. No data was adversely affected, and no data qualification resulted.

### 2.3.4 Internal Standard (IS) Recoveries

IS recoveries were found to be within the acceptable range for the samples with the exceptions noted below.

**Specific Finding:**

1. IS #3, Chlorobenzene-d5, failed marginally low for samples MW-29-2 and MW-29-3 in SDG 310738/310739. All analytes were qualified as estimated "J" for detects and "UJ" for non-detects in the samples to indicate the potential low bias.
2. IS #2, 1,4-Difluorobenzene, and IS #3, Chlorobenzene-d5, failed marginally low for sample MW-36-1 in SDG 310738/310739. All analytes were qualified as estimated "J" for detects and "UJ" for non-detects in the sample to indicate the potential low bias.
3. IS #1, Pentafluorobenzene, failed marginally low for samples ERB-1 and MW-71-1 in SDG 310738/310739. All analytes were qualified as estimated "J" for detects and "UJ" for non-detects in the samples to indicate the potential low bias.
4. IS #1, Pentafluorobenzene, and IS #2, 1,4-Difluorobenzene, failed marginally low for sample MW-71-2 in SDG 310738/310739. All analytes were qualified as estimated "J" for detects and "UJ" for non-detects in the sample to indicate the potential low bias.
5. IS #1, Pentafluorobenzene, IS #2, 1,4-Difluorobenzene, and IS #3, Chlorobenzene-d5, failed marginally low for samples MW-33-1, MW-30-1, and MW-31-1 in SDG 310738/310739. All analytes were qualified as estimated "J" for detects and "UJ" for non-detects in the samples to indicate the potential low bias.

## 2.4 COMPARABILITY

Comparability was assessed by evaluation of laboratory detection limits, reporting units, and the overall performance of the chosen method. Project data comparability was found to be acceptable

### 2.4.1 Concentrations Below the Reporting Limit

Although comparability was acceptable, analyte concentrations found to be below the RLs but above the method detection limits (MDLs) were qualified as estimated "J" by the laboratory. These data were qualified in compliance with the USACE reporting protocol and were not flagged due to quality non-conformances.

### 2.4.2 Data Reporting Guidelines For "E" Flagged Concentrations

The laboratory reported some concentrations flagged with an "E" to indicate that the concentrations were beyond the linear range of the instrument. The affected samples were re-analyzed at a secondary dilution designed to bring the "E" concentrations into the calibration range. The laboratory reported results for both the initial and diluted sample analyses. In these cases, it was necessary to report the concentration for each compound from the initial analysis (lowest dilution) that was not flagged with "E." In other words, all results from the initial analyses, except those qualified "E," were accepted. The "E" flagged concentrations were replaced with results for that compound from the next lowest dilution not flagged with an "E." Samples and parameters flagged "E" by the laboratory and reported from a secondary dilution include the following:

| Sample ID | Lab ID | Method | Parameter |
|---|---|---|---|
| RW-8 | 0310781-04 | 8260 | 1,1,2,2-Tetrachloroethane |
| RW-8 | 0310781-04 | 8260 | Trichloroethene |
| RW-7 | 0310781-05 | 8260 | 1,1,2,2-Tetrachloroethane |
| RW-5 | 0310781-07 | 8260 | Trichloroethene |
| RW-1A | 0310781-12 | 8260 | Chloroform |
| RW-1A | 0310781-12 | 8260 | Trichloroethene |
| RW-1 | 0310781-13 | 8260 | Chloroform |
| MW-54-1 | 0311458-01 | 8260 | Trichloroethene |
| MW-54-1 | 0311458-01 | 8260 | 1,1,2,2-Tetrachloroethane |
| MW-54-2 | 0311458-02 | 8260 | Trichloroethene |
| MW-54-2 | 0311458-02 | 8260 | 1,1,2,2-Tetrachloroethane |
| MW-54-3 | 0311458-03 | 8260 | Trichloroethene |
| MW-54-3 | 0311458-03 | 8260 | 1,1,2,2-Tetrachloroethane |
| MW-54-300 | 0311458-04 | 8260 | Trichloroethene |
| MW-54-300 | 0311458-04 | 8260 | 1,1,2,2-Tetrachloroethane |
| MW-77-1 | 0311458-05 | 8260 | Trichloroethene |
| MW-77-1 | 0311458-05 | 8260 | 1,1,2,2-Tetrachloroethane |
| MW-70-1 | 0310738-37 | 8260 | Trichloroethene |
| MW-70-1 | 0310738-37 | 8260 | 1,1,2,2-Tetrachloroethane |
| MW-70-2 | 0310738-38 | 8260 | Trichloroethene |
| MW-70-2 | 0310738-38 | 8260 | 1,1,2,2-Tetrachloroethane |

Occurrences of "E" flagged data do not indicate quality non-conformances if the LDP includes appropriately diluted sample analyses (secondary dilutions) for each "E" flagged concentration All laboratory "E" flagged concentrations in the evaluated data were accompanied by appropriate secondary dilution analyses.

## 2.5 COMPLETENESS

Completeness was found to be 100% for all evaluated data.

# ATTACHMENT 1
# QUALIFIED DATA SHEETS

# ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750


768 846

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-01
Field ID : MW-57-1

Matrix : AQUEOUS
Sample Date : 10/28/03 08:25:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1.00 | | | | |
| Carbon Tetrachloride | 24.3 | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 12.2 | ug/L | | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 0.973J | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 5.32 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 57.3 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 111 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 83 | 58 | 131 |

1/3

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

768 847

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-02
Field ID : MW-57-2

Matrix : AQUEOUS
Sample Date : 10/28/03 08:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 33.3 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 18.2 | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 1.45 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 5.28 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 71.6 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 113 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

**ENVIRONMENTAL TESTING & CONSULTING, INC.**
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 848

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-03
Field ID : MW-58-1

Matrix : AQUEOUS
Sample Date : 10/28/03 08:40:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20 0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 116 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 849

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-04
Field ID : MW-56-1

Matrix : AQUEOUS
Sample Date : 10/28/03 08:50:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | 26.0 | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5 00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1 00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

000022

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 850

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-05
Field ID : MW-34-1

Matrix : AQUEOUS
Sample Date : 10/28/03 08:55:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 3.00 | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

[redacted]

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

2024

768 851

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-06
Field ID : MW-34-2

Matrix : AQUEOUS
Sample Date : 10/28/03 09:00:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | uJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | uJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | uJ | 1.00 | | | | |
| Carbon Tetrachlorde | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 108 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

000026

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 852

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-07
Field ID : MW-34-3

Matrix : AQUEOUS
Sample Date : 10/28/03 09:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | | |
| Benzene | ND | ug/L | 1 00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L UJ | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 5.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 1.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 2.00 | | | | |
| Toluene | ND | ug/L | 1.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 20.0 | | | | |
| Vinyl Acetate | ND | ug/L | 1.00 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | | | | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 853

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-08
Field ID : MW-07-1

Matrix : AQUEOUS
Sample Date : 10/28/03 09:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L UJ | 1.00 | | | |
| Carbon Tetrachloride | 1.23 | ug/L J | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 139 | ug/L J | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 18.7 | ug/L J | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5 00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 15.0 | ug/L J | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 21.2 | ug/L J | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 103 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 854

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-09
Field ID : MW-07-2

Matrix : AQUEOUS
Sample Date : 10/28/03 09:15:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | 1.68 | ug/L | J | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 40.9 | ug/L | J | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 42.6 | ug/L | J | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | 1.69 | ug/L | J | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 27.6 | ug/L | J | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 855

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-10
Field ID : MW-09-1

Matrix : AQUEOUS
Sample Date : 10/28/03 09:25:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | EJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | EJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | EJ | 1.00 | | | | |
| Carbon Tetrachloride | 8.34 | ug/L | J | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 27.2 | ug/L | J | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 1.89 | ug/L | J | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 3.32 | ug/L | J | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 856

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-11
Field ID : MW-08-1

Matrix : AQUEOUS
Sample Date : 10/28/03 09:30:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | **V311031** | | | | | | | |
| **Dilution Factor** | **1** | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 1 43 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 108 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 101 | 58 | 131 |

[redacted]

CB

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 857

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-12
Field ID : MW-29-1

Matrix : AQUEOUS
Sample Date : 10/28/03 09:40:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | 1.45 | ug/L | J | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 33.2 | ug/L | J | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 25.0 | ug/L | J | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | 3.36 | ug/L | J | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 27.9 | ug/L | J | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 109 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 123 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 858

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-13
Field ID : MW-29-2

Matrix : AQUEOUS
Sample Date : 10/28/03 09:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L UJ | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | 1.56 | ug/L J | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L UJ | 1.00 | | | |
| 1,1-Dichloroethene | 34.8 | ug/L J | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L UJ | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 27.1 | ug/L J | 1 00 | | | |
| Toluene | ND | ug/L UJ | 2.00 | | | |
| 1,1,1-Trichloroethane | 3.58 | ug/L J | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L UJ | 1.00 | | | |
| Trichloroethene | 29.6 | ug/L J | 1.00 | | | |
| Vinyl Acetate | ND | ug/L UJ | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 859

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-14
Field ID : MW-29-3

Matrix : AQUEOUS
Sample Date : 10/28/03 09:55:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/03/03 | | LS | 8260B 5030B |
| **QC Batch** | V311031 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | UJ | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | 1.52 | ug/L | J | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | UJ | 1.00 | | | |
| 1,1-Dichloroethene | 32.8 | ug/L | J | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | UJ | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | 26.0 | ug/L | J | 1.00 | | | |
| Toluene | ND | ug/L | UJ | 2.00 | | | |
| 1,1,1-Trichloroethane | 3.61 | ug/L | J | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | UJ | 1 00 | | | |
| Trichloroethene | 28.5 | ug/L | J | 1 00 | | | |
| Vinyl Acetate | ND | ug/L | UJ | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 860

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-15
Field ID : MW-36-1

Matrix : AQUEOUS
Sample Date : 10/28/03 10:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/03/03 | | LS | 8260B 5030B |
| QC Batch | V311031 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | UJ 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | UJ 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 105 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 861

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-16
Field ID : MW-36-2

Matrix : AQUEOUS
Sample Date : 10/28/03 10:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/05/03 | | LS | 8260B 5030B |
| **QC Batch** | V211051 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1 00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 95 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000046

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 862

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-17
Field ID : MW-36-3

Matrix : AQUEOUS
Sample Date : 10/28/03 10:10:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/05/03 | | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1 00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

VB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000048

** - Method Detection Limit

768 863

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-18
Field ID : MW-130-1

Matrix : AQUEOUS
Sample Date : 10/28/03 10:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/05/03 | LS | 8260B 5030B |
| **QC Batch** | V211051 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | 2.76 | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 42.2 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 74.3 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | 4.62 | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 61.1 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 0.599J | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 94 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 96 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

000050

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 864

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-19
Field ID : MW-130-2

Matrix : AQUEOUS
Sample Date : 10/28/03 10:22:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/05/03 | | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20 0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | 2 72 | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 40.5 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 79.8 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | 4.81 | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 64.0 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 0.675J | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 865

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-20
Field ID : MW-130-3

Matrix : AQUEOUS
Sample Date : 10/28/03 10:25:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/05/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211051** | | | | | | | |
| **Dilution Factor** | **1** | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | 2.67 | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 38.4 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 80.3 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | 4.39 | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 60.4 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 90 | 84 | 115 |
| S2 - Toluene-d8 | 95 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 90 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 866

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-21
Field ID : MW-130-4

Matrix : AQUEOUS
Sample Date : 10/28/03 10:30:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/05/03 | | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]bromomethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | 2.45 | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 38.0 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 76.6 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | 4.61 | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 62.3 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 0.596J | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 93 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 102 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 89 | 58 | 131 |

[redacted]

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 867

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-22
Field ID : MW-129-1

Matrix : AQUEOUS
Sample Date : 10/28/03 10:35:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/05/03 | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | 4.87 | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | 42.0 | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | 12.8 | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | 3.02 | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | 12.0 | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

000058

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 868

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-23
Field ID : MW-129-100

Matrix : AQUEOUS
Sample Date : 10/28/03 10:35:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/05/03 | | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | 4.26 | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 35.4 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 12.8 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | 3.05 | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 11.8 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1 00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 89 | 58 | 131 |

000060

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 869

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-24
Field ID : MW-129-2

Matrix : AQUEOUS
Sample Date : 10/28/03 10:40:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/06/03 | LS | 8260B 5030B |
| QC Batch | V211051 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | 4.71 | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | 41.0 | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | 24.9 | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | 3.43 | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | 12.4 | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 99 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

000062

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 870

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-25
Field ID : MW-129-3

Matrix : AQUEOUS
Sample Date : 10/28/03 10:45:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]bromomethane | 4.58 | ug/L | | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | 40.2 | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5 00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 26 1 | ug/L | | 1 00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | 3.50 | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 13.4 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 96 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 104 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000064

** - Method Detection Limit

768 871

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-26
Field ID : MW-128-1

Matrix : AQUEOUS
Sample Date : 10/28/03 10:55:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 2.98 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1 00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 1.14 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 103 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000066

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 872

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-27
Field ID : MW-128-2

Matrix : AQUEOUS
Sample Date : 10/28/03 10:58:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/06/03 | | LS | 8260B 5030B |
| **QC Batch** | V211061 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 3.41 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | | 5 00 | | | | |
| Styrene | ND | ug/L | | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 1.04 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 99 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 873

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-28
Field ID : MW-128-3

Matrix : AQUEOUS
Sample Date : 10/28/03 11:00:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/06/03 | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | 2.64 | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1 00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 91 | 84 | 115 |
| S2 - Toluene-d8 | 96 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 874

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-29
Field ID : MW-128-4

Matrix : AQUEOUS
Sample Date : 10/28/03 11:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/06/03 | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| [illegible]oroform | ND | ug/L | 1.00 | | | |
| [illegible]oromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 2.88 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 101 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

000072

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 875

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-30
Field ID : MW-51-1

Matrix : AQUEOUS
Sample Date : 10/28/03 11:15:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 17.6 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 0.922J | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 5.54 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 94 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 876

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-31
Field ID : MW-78-1

Matrix : AQUEOUS
Sample Date : 10/28/03 12:30:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]bromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1 00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 97 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

JD

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

000076

768 877

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-32
Field ID : MW-68-1

Matrix : AQUEOUS
Sample Date : 10/28/03 12:40:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/06/03 | | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000078

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 878

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-33
Field ID : MW-68-2

Matrix : AQUEOUS
Sample Date : 10/28/03 12:42:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/06/03 | LS | 8260B 5030B |
| QC Batch | V211061 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 88 | 84 | 115 |
| S2 - Toluene-d8 | 90 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 88 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 879

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-34
Field ID : ERB-2

Matrix : AQUEOUS
Sample Date : 10/28/03 12:45:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1 00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 107 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 880

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID: 0310738-35
Field ID : MW-76-1

Matrix : AQUEOUS
Sample Date : 10/28/03 12:55:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | uJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | uJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1 00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 0.831J | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | uJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 6.76 | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 2.29 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 17.6 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 1.74 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 110 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 84 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

768 881

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-36
Field ID : MW-76-2

Matrix : AQUEOUS
Sample Date : 10/28/03 13:00:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 1.93 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5 00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 8.08 | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 1.87 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1 00 | | | | |
| Trichloroethene | 33.8 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 4.16 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 112 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 89 | 58 | 131 |

000086

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 882

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-37
Field ID : MW-70-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:05:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 0.644J | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 2.50 | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 18 8 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~3.540E~~ | ug/L | | 1.00 | Do Not use - see Dilution Analysis | | | |
| Tetrachloroethene | 17.3 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 6.92 | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~2.280E~~ | ug/L | | 1.00 | Do Not use - see Dilution Analysis | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 112 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 114 | 80 | 120 |
| 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

000088

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 883

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-72
Field ID : MW-70-1-DIL

Matrix : AQUEOUS
Sample Date : 10/28/03 13:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | |
| Dilution Factor | 200 | | | | | | |
| 1,1,2,2-Tetrachloroethane | 8,270 | ug/L | 200 | | | | |
| Trichloroethene | 2,530 | ug/L | 200 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 113 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 884

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-38
Field ID : MW-70-2

Matrix : AQUEOUS
Sample Date : 10/28/03 13:10:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 3.91 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~2.850E~~ | ug/L | | 1.00 | Do Not use - see Dilution Analysis | | | |
| Tetrachloroethene | 3 85 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 4.39 | ug/L | | 1 00 | | | | |
| Trichloroethene | ~~1.410E~~ | ug/L | | 1.00 | Do Not use - see Dilution Analysis | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | 10.3 | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 50.0 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 111 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 90 | 58 | 131 |

CB

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 885

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-73
Field ID : MW-70-2-DIL

Matrix : AQUEOUS
Sample Date : 10/28/03 13:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | |
| Dilution Factor | 200 | | | | | | |
| 1,1,2,2-Tetrachloroethane | 4,170 | ug/L | 200 | | | | |
| Trichloroethene | 1,280 | ug/L | 200 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 103 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 115 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 886

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #:

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-39
Field ID : MW-32-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | | |
| Benzene | ND | ug/L UJ | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | | |
| Chloroform | 50.9 | ug/L J | 1.00 | | | | |
| [redacted]loromethane | ND | ug/L | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L UJ | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 7.82 | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L UJ | 1.00 | | | | |
| Trichloroethene | 13.4 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 7.97 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 113 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 86 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 887

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-40
Field ID : MW-37-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:25:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1 00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1 00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 101 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

000096

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 888

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-41
Field ID : MW-37-2

Matrix : AQUEOUS
Sample Date : 10/28/03 13:28:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | **V311071** | | | | | | |
| **Dilution Factor** | **1** | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1 00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 103 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 117 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 889

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-42
Field ID : MW-37-200

Matrix : AQUEOUS
Sample Date : 10/28/03 13:28:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 890

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-43
Field ID : MW-37-3

Matrix : AQUEOUS
Sample Date : 10/28/03 13:30:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1 00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1 00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 117 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 101 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 891

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-44
Field ID : ERB-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:35:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 120 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 892

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-45
Field ID : MW-71-1

Matrix : AQUEOUS
Sample Date : 10/28/03 13:50:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 6.87 | ug/L | J | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | UJ | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 88.8 | ug/L | J | 1.00 | | | | |
| [redacted]promethane | ND | ug/L | UJ | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5 00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 27.0 | ug/L | J | 1 00 | | | | |
| Tetrachloroethene | ND | ug/L | UJ | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 17.4 | ug/L | J | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | UJ | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1 00 | | | | |
| cis-1,2-Dichloroethene | 1.59 | ug/L | J | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 104 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 123 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 104 | 58 | 131 |

[redacted]

000106

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 893

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-46
Field ID : MW-71-2

Matrix : AQUEOUS
Sample Date : 10/28/03 13:55:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | UJ 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 15 3 | ug/L | J 1.00 | | | |
| Chlorobenzene | ND | ug/L | UJ 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 31.1 | ug/L | J 1.00 | | | |
| Chloromethane | ND | ug/L | UJ 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 10.4 | ug/L | J 1.00 | | | |
| Vinyl Acetate | ND | ug/L | UJ 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 117 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 894

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-47
Field ID : MW-33-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1 00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1 00 | | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 101 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

[redacted]

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 895

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-48
Field ID . MW-30-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V311071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 111 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 896

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-49
Field ID : MW-31-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:15:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V311071 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | | 1 00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 8.38 | ug/L | J | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | UJ | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 1.46 | ug/L | J | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | UJ | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1 00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 112 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 897

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-50
Field ID : MW-31-2

Matrix : AQUEOUS
Sample Date : 10/28/03 14:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211071** | | | | | | |
| **Dilution Factor** | **1** | | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 7.61 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 2.32 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 898

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-51
Field ID : MW-31-200

Matrix : AQUEOUS
Sample Date : 10/28/03 14:20:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 8.21 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 1.08 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 1.97 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 92 | 84 | 115 |
| S2 - Toluene-d8 | 91 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 90 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 899

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-52
Field ID : MW-79-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:30:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1 00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 21.6 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 1.34 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1 00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1 00 | | | | |
| Tetrachloroethene | 2.10 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 11.2 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 1.41 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CP
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits



** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 900

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-53
Field ID : MW-79-100

Matrix : AQUEOUS
Sample Date : 10/28/03 14:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]romethane | ND | ug/L | 1.00 | | | |
| [redacted]Dichloroethane | ND | ug/L | 1 00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 23.4 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 1.36 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 1.81 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 11.2 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 1.46 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 901

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-54
Field ID : MW-79-2

Matrix : AQUEOUS
Sample Date : 10/28/03 14:35:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 23.9 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 1.61 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 1.95 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 12.4 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 2.07 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 94 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

000124

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 902

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-55
Field ID : ERB-3

Matrix : AQUEOUS
Sample Date : 10/28/03 14:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1 00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1 00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 95 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 903

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-56
Field ID : MW-95-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:50:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 87 | 84 | 115 |
| S2 - Toluene-d8 | 84 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 85 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 904

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310738

ETC Lab ID : 0310738-57
Field ID : MW-126-1

Matrix : AQUEOUS
Sample Date : 10/28/03 14:55:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1 00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1 00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 95 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 104 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 905

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-58
Field ID : MW-80-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:00:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1 00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 92 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 107 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 93 | 58 | 131 |

CB

Data Validator

000132

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 906

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-59
Field ID : MW-127-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1 00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

[redacted]

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 907

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-60
Field ID : MW-44-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:15:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20 0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 1.96 | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 1.15 | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 0.821J | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20 0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 91 | 84 | 115 |
| S2 - Toluene-d8 | 94 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 92 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 908

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-61
Field ID : MW-42-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:25:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/07/03 | LS | 8260B 5030B |
| QC Batch | V211071 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L | 1 00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1 00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]oromethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1 00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 93 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 102 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 909

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-62
Field ID : MW-40-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:30:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/07/03 | LS | 8260B 5030B |
| **QC Batch** | V211071 | | | | | | |
| **Dilution Factor** | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | 1.11 | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 93 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 910

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-63
Field ID : MW-43-1

Matrix : AQUEOUS
Sample Date : 10/28/03 15:45:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | V311081 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L UJ | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| [redacted]romethane | ND | ug/L | 1.00 | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L UJ | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L UJ | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 105 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 114 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 911

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-64
Field ID : MW-43-2

Matrix : AQUEOUS
Sample Date : 10/28/03 15:50:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | V311081 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L UJ | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1 00 | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1 00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L UJ | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L UJ | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 106 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 119 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 912

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-65
Field ID : MW-67-1

Matrix : AQUEOUS
Sample Date : 10/28/03 16:00:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | | |
| Benzene | ND | ug/L UJ | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1 00 | | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| [redacted]bromethane | ND | ug/L | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L UJ | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L UJ | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 121 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 98 | 58 | 131 |

CB

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 913

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-66
Field ID : MW-67-2

Matrix : AQUEOUS
Sample Date : 10/28/03 16:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | |
| Dilution Factor | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L UJ | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L UJ | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L UJ | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

000148

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 914

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-67
Field ID : MW-67-3

Matrix : AQUEOUS
Sample Date : 10/28/03 16:10:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | UJ | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5 00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | UJ | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2 00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 107 | 84 | 115 |
| S2 - Toluene-d8 | 105 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 116 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 915

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-68
Field ID : MW-69-1

Matrix : AQUEOUS
Sample Date : 10/28/03 16:20:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | UJ | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | UJ | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 122 Q | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 916

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-69
Field ID : MW-69-100

Matrix : AQUEOUS
Sample Date : 10/28/03 16:20:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | V311081 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | UJ | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| [redacted]promethane | ND | ug/L | | 1.00 | | | | |
| [redacted]-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | UJ | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 106 | 84 | 115 |
| S2 - Toluene-d8 | 107 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 118 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 917

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-70
Field ID : MW-69-2

Matrix : AQUEOUS
Sample Date : 10/28/03 16:25:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | V311081 | | | | | |
| **Dilution Factor** | 1 | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | |
| Benzene | ND | ug/L UJ | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1 00 | | | |
| Carbon Tetrachloride | ND | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | |
| Chloroform | ND | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L UJ | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L UJ | 1.00 | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 109 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 116 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 103 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 918

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/29/03
ETC Order Number: 0310739

ETC Lab ID : 0310739-71
Field ID : Trip Blank

Matrix : AQUEOUS
Sample Date : 10/28/03

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | LS | 8260B 5030B |
| QC Batch | V311081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | |
| Benzene | ND | ug/L | UJ | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | UJ | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | |
| Chloroform | ND | ug/L | | 1.00 | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | UJ | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | UJ | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | UJ | 1.00 | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 108 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 83 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 919

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **10/30/03**
ETC Order Number **0310781**

ETC Lab ID : **0310781-01**
Field ID : **RW-9**

Matrix : **AQUEOUS**
Sample Date : **10/29/03 15:45:00**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | **V211081** | | | | | |
| **Dilution Factor** | **1** | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | 1.32 | ug/L U | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 6.55 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | |
| Chloroform | 69.7 | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1 00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | 7.46 | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 9.51 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1 00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | 90.3 | ug/L | 1 00 | | | |
| Tetrachloroethene | 26.5 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | 1.70 | ug/L | 1.00 | | | |
| Trichloroethene | 120 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 47.0 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 920

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-02
Field ID : RW-900

Matrix : AQUEOUS
Sample Date : 10/29/03 15:45:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 5.72 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | | |
| Chloroform | 62.2 | ug/L | 1 00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | 9.20 | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 8.33 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 79.5 | ug/L | 1.00 | | | | |
| Tetrachloroethene | 24.6 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 1.41 | ug/L | 1.00 | | | | |
| Trichloroethene | 97.3 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 45.2 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 91 | 84 | 115 |
| S2 - Toluene-d8 | 93 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 88 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 921

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-03
Field ID : ERB-5

Matrix : AQUEOUS
Sample Date : 10/29/03 15:50:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | V211081 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | 1.36 | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ND | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 102 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 922

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-04
Field ID : RW-8

Matrix : AQUEOUS
Sample Date : 10/29/03 16:10:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 1.79 | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | 18.7 | ug/L | | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | 14.2 | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 26.1 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1 00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~192E~~ | ug/L | | 1.00 | See Dilution Result | | | |
| Tetrachloroethene | 11.0 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 3.12 | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~201E~~ | ug/L | | 1.00 | See Dilution Result | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 116 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 101 | 58 | 131 |

000014

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 923

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-04
Field ID : RW-8-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 16:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211091** | | | | | | |
| **Dilution Factor** | **10** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 223 | ug/L | 10 0 | | | | |
| Trichloroethene | 232 | ug/L | 10.0 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 924

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-05
Field ID : RW-7

Matrix : AQUEOUS
Sample Date : 10/29/03 16:15:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211081** | | | | | | | |
| **Dilution Factor** | **1** | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | 3.87 | ug/L | | 1.00 | | | | |
| [redacted]oromethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 12.0 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~214E~~ | ug/L | | 1.00 | See Dilution Result | | | |
| Tetrachloroethene | 5.35 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 2 21 | ug/L | | 1.00 | | | | |
| Trichloroethene | 102 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 56.8 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 99 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 103 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 100 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 925

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-05
Field ID : RW-7-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 16:15:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | LS | 8260B<br>5030B |
| QC Batch | V211091 | | | | | |
| Dilution Factor | 10 | | | | | |
| 1,1,2,2-Tetrachloroethane | 208 | ug/L | 10.0 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 90 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 926

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-06
Field ID : RW-6

Matrix : AQUEOUS
Sample Date : 10/29/03 16:20:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211081** | | | | | | | |
| **Dilution Factor** | **1** | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1 00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | 2.15 | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 4.01 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 37.1 | ug/L | | 1 00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1 00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | 40.7 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 11.2 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 96 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 111 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 927

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-07
Field ID : RW-5

Matrix : AQUEOUS
Sample Date : 10/29/03 16:30:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211081** | | | | | | | |
| **Dilution Factor** | **1** | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | 1.26 | ug/L | U | 1 00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1 00 | | | | |
| Carbon Tetrachloride | ND | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | 1.04 | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 2.23 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 14.9 | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 7.47 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~186E~~ | ug/L | | 1.00 | Do Not Use - See Dilution Result | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 7.08 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 96 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 928

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-07
Field ID : RW-5-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 16:30:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | LS | 8260B 5030B |
| **QC Batch** | V211091 | | | | | |
| **Dilution Factor** | 10 | | | | | |
| Trichloroethene | 193 | ug/L | 10.0 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 102 | 84 | 115 |
| S2 - Toluene-d8 | 103 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 102 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 929

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-08
Field ID : RW-3

Matrix : AQUEOUS
Sample Date : 10/29/03 16:40:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 11/08/03 | LS | 8260B 5030B |
| **QC Batch** | **V211081** | | | | | |
| **Dilution Factor** | **1** | | | | | |
| Acetone | ND | ug/L | 20.0 | | | |
| Benzene | ND | ug/L | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | |
| Bromoform | ND | ug/L | 1.00 | | | |
| Bromomethane | ND | ug/L | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | |
| Carbon Tetrachloride | 10.9 | ug/L | 1.00 | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | |
| Chloroethane | ND | ug/L | 1.00 | | | |
| Chloroform | 2.08 | ug/L | 1.00 | | | |
| Chloromethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | |
| trans-1,2-Dichloroethene | 1.73 | ug/L | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | |
| Ethylbenzene | ND | ug/L | 1 00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | |
| Styrene | ND | ug/L | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | |
| Tetrachloroethene | 1.10 | ug/L | 1.00 | | | |
| Toluene | ND | ug/L | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | |
| Trichloroethene | 66.4 | ug/L | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | |
| cis-1,2-Dichloroethene | 9.04 | ug/L | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 94 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 930

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-09
Field ID : RW-2

Matrix : AQUEOUS
Sample Date : 10/29/03 17:00:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | | |
| Dilution Factor | 1 | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 14.0 | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | 11.4 | ug/L | | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 4.57 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 95.9 | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 1.56 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 3.02 | ug/L | | 1.00 | | | | |
| Trichloroethene | 83.4 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 78.6 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 97 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

768 931

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-10
Field ID : RW-200

Matrix : AQUEOUS
Sample Date : 10/29/03 17:00:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/08/03 | | LS | 8260B 5030B |
| **QC Batch** | **V211081** | | | | | | | |
| **Dilution Factor** | **1** | | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 14.1 | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | | |
| Chloroform | 11.3 | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 4.70 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 87.1 | ug/L | | 1.00 | | | | |
| Tetrachloroethene | 1.52 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 2.95 | ug/L | | 1.00 | | | | |
| Trichloroethene | 86.5 | ug/L | | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1 00 | | | | |
| cis-1,2-Dichloroethene | 79.5 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 95 | 84 | 115 |
| S2 - Toluene-d8 | 100 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 114 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 91 | 58 | 131 |

VS

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 932

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-11
Field ID : RW-1B

Matrix : AQUEOUS
Sample Date : 10/29/03 17:05:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 19.5 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | | |
| Chloroform | 40.8 | ug/L | 1.00 | | | | |
| [redacted]romethane | ND | ug/L | 1.00 | | | | |
| [redacted]Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 1.69 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 3.75 | ug/L | 1.00 | | | | |
| Tetrachloroethene | 2.93 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | 42.4 | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 14.5 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 97 | 84 | 115 |
| S2 - Toluene-d8 | 110 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 933

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-12
Field ID : RW-1A

Matrix : AQUEOUS
Sample Date : 10/29/03 17:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/08/03 | | LS | 8260B 5030B |
| QC Batch | V211081 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | 1.26 | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L | 1.00 | | | | |
| 2-Butanone (MEK) | 38.8 | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | 33.6 | ug/L | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L UJ | 1.00 | | | | |
| Chloroform | ~~276E~~ | ug/L | 1.00 | Do Not Use - See Dilution Result | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | 1.14 | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | 3 64 | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | 169 | ug/L | 1.00 | | | | |
| Tetrachloroethene | 11.3 | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | 4.22 | ug/L | 1.00 | | | | |
| Trichloroethene | ~~278E~~ | ug/L | 1.00 | Do Not Use - See Dilution Result | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | 11 1 | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 109 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 934

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-12
Field ID : RW-1A-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 17:10:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | LS | 8260B<br>5030B |
| QC Batch | V211091 | | | | | |
| Dilution Factor | 50 | | | | | |
| Chloroform | 754 | ug/L | 50.0 | | | |
| Trichloroethene | 285 | ug/L | 50.0 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 98 | 84 | 115 |
| S2 - Toluene-d8 | 108 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 103 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 106 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 935

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-13
Field ID : RW-1

Matrix : AQUEOUS
Sample Date : 10/29/03 17:20:00

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | | 11/09/03 | LS | 8260B 5030B |
| QC Batch | V211091 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L | | 20.0 | | | |
| Benzene | ND | ug/L | | 1.00 | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | |
| Bromoform | ND | ug/L | | 1.00 | | | |
| Bromomethane | ND | ug/L | | 1.00 | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | |
| Carbon Tetrachloride | 49.1 | ug/L | | 1.00 | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | |
| Chloroethane | ND | ug/L | UJ | 1.00 | | | |
| Chloroform | ~~220E~~ | ug/L | | 1.00 | Do Not use - See Dilution Results | | |
| Chloromethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | |
| trans-1,2-Dichloroethene | 2.86 | ug/L | | 1.00 | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | |
| Styrene | ND | ug/L | | 1.00 | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | | 1.00 | | | |
| Tetrachloroethene | 9.36 | ug/L | | 1.00 | | | |
| Toluene | ND | ug/L | | 2.00 | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | |
| 1,1,2-Trichloroethane | ND | ug/L | | 1.00 | | | |
| Trichloroethene | 154 | ug/L | | 1.00 | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | |
| cis-1,2-Dichloroethene | 4.30 | ug/L | | 1.00 | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 87 | 84 | 115 |
| S2 - Toluene-d8 | 94 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 87 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 83 | 58 | 131 |

CB
Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 936

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 10/30/03
ETC Order Number: 0310781

ETC Lab ID : 0310781-13
Field ID : RW-1-DIL

Matrix : AQUEOUS
Sample Date : 10/29/03 17:20:00

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 11/09/03 | | LS | 8260B<br>5030B |
| QC Batch | V211091 | | | | | | |
| Dilution Factor | 10 | | | | | | |
| Chloroform | 286 | ug/L | 10.0 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 100 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 98 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 99 | 58 | 131 |

CB
Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

768 937

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311458

ETC Lab ID : 0311458-01
Field ID : MW-54-1

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | V311261 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L | UJ | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | ND | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 4.16 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~253E~~ | ug/L | | 1.00 | Do Not use - see Dilution Result | | | |
| Tetrachloroethene | ND | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 2.05 | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~200E~~ | ug/L | | 1.00 | Do Not use - see Dilution Result | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 26.3 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 90 | 84 | 115 |
| S2 - Toluene-d8 | 99 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 99 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 75 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 938

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID **0311458-01**
Field ID : **MW-54-1-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B<br>5030B |
| **QC Batch** | **V212021** | | | | | | |
| **Dilution Factor** | **10** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 301 | ug/L | 10.0 | | | | |
| Trichloroethene | 216 | ug/L | 10.0 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 96 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 112 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

768 939

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311458

ETC Lab ID : 0311458-02
Field ID : MW-54-2

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | V311261 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 3.35 | ug/L | J | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 3.18 | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 15.3 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~1,200E~~ | ug/L | | 1.00 | Do Not use - see Dilution Result | | | |
| Tetrachloroethene | 7.37 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 7.86 | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~1,440E~~ | ug/L | | 1.00 | Do Not use - see Dilution Result | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 75.5 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 92 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 101 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000010

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 940

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-02**
Field ID : **MW-54-2-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B 5030B |
| **QC Batch** | **V212021** | | | | | | |
| **Dilution Factor** | **100** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 1,680 | ug/L | 100 | | | | |
| Trichloroethene | 1,530 | ug/L | 100 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 94 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 109 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 92 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 941

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **11/18/03**
ETC Order Number: **0311458**

ETC Lab ID : **0311458-03**
Field ID : **MW-54-3**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | V311261 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 2.58 | ug/L | J | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 3.68 | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 16.0 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~1,400E~~ | ug/L | | 1.00 | Do Not Use - see Dilution Analysis | | | |
| Tetrachloroethene | 10.1 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 10.4 | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~1,630E~~ | ug/L | | 1.00 | Do Not Use - see Dilution Analysis | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 85.3 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 85 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 942

Client Name **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID **Memphis Defense Depot**

FID #

Date Arrived **11/18/03**
ETC Order Number **0311458**

ETC Lab ID : **0311458-03**
Field ID : **MW-54-3-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B<br>5030B |
| **QC Batch** | **V212021** | | | | | | |
| **Dilution Factor** | **100** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 1,760 | ug/L | 100 | | | | |
| Trichloroethene | 1,900 | ug/L | 100 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 90 | 84 | 115 |
| S2 - Toluene-d8 | 102 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 109 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 95 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 943

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311458

ETC Lab ID: 0311458-04
Field ID : MW-54-300

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | V311261 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 2.73 | ug/L | J | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 3.82 | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 16.9 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~1320~~ | ug/L | | 1.00 | Do Not Use - See Dilution Analysis | | | |
| Tetrachloroethene | 10.4 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 9.80 | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~1720~~ | ug/L | | 1.00 | Do Not Use - See Dilution Analysis | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 87.7 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 104 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 104 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 84 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 944

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311458

ETC Lab ID : 0311458-04
Field ID : MW-54-300-DIL

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B<br>5030B |
| **QC Batch** | V212021 | | | | | | |
| **Dilution Factor** | 100 | | | | | | |
| 1,1,2,2-Tetrachloroethane | 1,610 | ug/L | 100 | | | | |
| Trichloroethene | 1,760 | ug/L | 100 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 84 | 84 | 115 |
| S2 - Toluene-d8 | 90 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 100 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 79 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 945

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311458

ETC Lab ID : 0311458-05
Field ID : MW-77-1

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | | 11/26/03 | | LS | 8260B 5030B |
| **QC Batch** | V311261 | | | | | | | |
| **Dilution Factor** | 1 | | | | | | | |
| Acetone | ND | ug/L | UJ | 20.0 | | | | |
| Benzene | ND | ug/L | | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | | 1.00 | | | | |
| Bromoform | ND | ug/L | | 1.00 | | | | |
| Bromomethane | ND | ug/L | UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | | 1.00 | | | | |
| Carbon Tetrachloride | 0.864J | ug/L | | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | | 1.00 | | | | |
| Chloroethane | ND | ug/L | | 1.00 | | | | |
| Chloroform | 4.96 | ug/L | | 1.00 | | | | |
| Chloromethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | | 1.00 | | | | |
| trans-1,2-Dichloroethene | 37.8 | ug/L | | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | | 5.00 | | | | |
| Styrene | ND | ug/L | | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ~~3,770E~~ | ug/L | | 1.00 | Do Not Use - See Dilution Analysis | | | |
| Tetrachloroethene | 14.8 | ug/L | | 1.00 | | | | |
| Toluene | ND | ug/L | | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | | 1.00 | | | | |
| 1,1,2-Trichloroethane | 8.53 | ug/L | | 1.00 | | | | |
| Trichloroethene | ~~2,410E~~ | ug/L | | 1.00 | Do Not Use - See Dilution Analysis | | | |
| Vinyl Acetate | ND | ug/L | | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | | 1.00 | | | | |
| Xylenes-o | ND | ug/L | | 1.00 | | | | |
| cis-1,2-Dichloroethene | 189 | ug/L | | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 98 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 106 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 87 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 946

Client Name: **Jacobs**
**Memphis Defense Depot**
**600 William Northern Blvd.**
**Tullahoma, TN 37388**

Site ID: **Memphis Defense Depot**

FID #

Date Arrived: **11/18/03**
ETC Order Number: **0311458**

ETC Lab ID : **0311458-05**
Field ID : **MW-77-1-DIL**

Matrix : **AQUEOUS**
Sample Date : **11/18/03**

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatile Organics** | | | | 12/02/03 | | LS | 8260B<br>5030B |
| **QC Batch** | **V212021** | | | | | | |
| **Dilution Factor** | **100** | | | | | | |
| 1,1,2,2-Tetrachloroethane | 12,800 | ug/L | 100 | | | | |
| Trichloroethene | 4,550 | ug/L | 100 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 93 | 84 | 115 |
| S2 - Toluene-d8 | 101 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 107 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 88 | 58 | 131 |

Data Validator

ND - Not Detected  Q - Recovery Outside QC Limits  ** - Method Detection Limit

768 947

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name: Jacobs
Memphis Defense Depot
600 William Northern Blvd.
Tullahoma, TN 37388

Site ID: Memphis Defense Depot

FID #

Date Arrived: 11/18/03
ETC Order Number: 0311458

ETC Lab ID : 0311458-06
Field ID : ERB-1

Matrix : AQUEOUS
Sample Date : 11/18/03

| TEST | RESULT | UNITS | DETECTION LIMIT | DATE ANALYZED | DATE EXTRACTED | BY | METHOD |
|---|---|---|---|---|---|---|---|
| GC/MS Volatile Organics | | | | 12/02/03 | | LS | 8260B 5030B |
| QC Batch | V212021 | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Acetone | ND | ug/L UJ | 20.0 | | | | |
| Benzene | ND | ug/L | 1.00 | | | | |
| Bromodichloromethane | ND | ug/L | 1.00 | | | | |
| Bromoform | ND | ug/L | 1.00 | | | | |
| Bromomethane | ND | ug/L UJ | 1.00 | | | | |
| 2-Butanone (MEK) | ND | ug/L | 20.0 | | | | |
| Carbon Disulfide | ND | ug/L | 1.00 | | | | |
| Carbon Tetrachloride | ND | ug/L UJ | 1.00 | | | | |
| Chlorobenzene | ND | ug/L | 1.00 | | | | |
| Chlorodibromomethane | ND | ug/L | 1.00 | | | | |
| Chloroethane | ND | ug/L | 1.00 | | | | |
| Chloroform | ND | ug/L | 1.00 | | | | |
| Chloromethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1-Dichloroethene | ND | ug/L | 1.00 | | | | |
| trans-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |
| 1,2-Dichloropropane | ND | ug/L | 1.00 | | | | |
| cis-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| trans-1,3-Dichloropropene | ND | ug/L | 1.00 | | | | |
| Ethylbenzene | ND | ug/L | 1.00 | | | | |
| 2-Hexanone (MBK) | ND | ug/L | 5.00 | | | | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5.00 | | | | |
| Methylene Chloride | ND | ug/L | 5.00 | | | | |
| Styrene | ND | ug/L | 1.00 | | | | |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1.00 | | | | |
| Tetrachloroethene | ND | ug/L | 1.00 | | | | |
| Toluene | ND | ug/L | 2.00 | | | | |
| 1,1,1-Trichloroethane | ND | ug/L | 1.00 | | | | |
| 1,1,2-Trichloroethane | ND | ug/L | 1.00 | | | | |
| Trichloroethene | ND | ug/L | 1.00 | | | | |
| Vinyl Acetate | ND | ug/L | 20.0 | | | | |
| Vinyl Chloride | ND | ug/L | 1.00 | | | | |
| Xylenes-m,p | ND | ug/L | 1.00 | | | | |
| Xylenes-o | ND | ug/L | 1.00 | | | | |
| cis-1,2-Dichloroethene | ND | ug/L | 1.00 | | | | |

| Surrogate Standard | % Recovery | QC Limits | |
|---|---|---|---|
| S1 - Dibromofluoromethane | 89 | 84 | 115 |
| S2 - Toluene-d8 | 95 | 69 | 133 |
| S3 - 4-Bromofluorobenzene | 105 | 80 | 120 |
| S4 - 1,2-Dichloroethane-d4 | 80 | 58 | 131 |

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

** - Method Detection Limit

# ATTACHMENT 2
# ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

768 919

Client Name Jacobs
e ID · Memphis Defense Depot

ETC Order #0310738
C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073801 | MW-57-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073802 | MW-57-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073803 | MW-58-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073804 | MW-56-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073805 | MW-34-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073806 | MW-34-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073807 | MW-34-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073808 | MW-07-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073809 | MW-07-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073810 | MW-09-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073811 | MW-08-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 3812 | MW-29-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073813 | MW-29-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073814 | MW-29-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073815 | MW-36-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073816 | MW-36-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073817 | MW-36-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073818 | MW-130-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073819 | MW-130-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073820 | MW-130-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073821 | MW-130-4 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073822 | MW-129-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073823 | MW-129-100 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073824 | MW-129-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073825 | MW-129-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| [redacted]3826 | MW-128-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073827 | MW-128-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

768 950

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Jacobs ETC Order #0310738

Site ID Memphis Defense Depot C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073828 | MW-128-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073829 | MW-128-4 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073830 | MW-51-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073831 | MW-78-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073832 | MW-68-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073833 | MW-68-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073834 | ERB-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073835 | MW-76-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073836 | MW-76-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073837 | MW-70-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073838 | MW-70-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073839 | MW-32-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073840 | MW-37-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073841 | MW-37-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073842 | MW-37-200 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073843 | MW-37-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073844 | ERB-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073845 | MW-71-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073846 | MW-71-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073847 | MW-33-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073848 | MW-30-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073849 | MW-31-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073850 | MW-31-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073851 | MW-31-200 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073852 | MW-79-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073853 | MW-79-100 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073854 | MW-79-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Jacobs
[redacted]e ID Memphis Defense Depot

ETC Order #0310738
C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073855 | ERB-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073856 | MW-95-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073857 | MW-126-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

768 952

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name **Jacobs** ETC Order #**0310739**

Site ID **Memphis Defense Depot** **C5X51115**

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031073958 | MW-80-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073959 | MW-127-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073960 | MW-44-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073961 | MW-42-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073962 | MW-40-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073963 | MW-43-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073964 | MW-43-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073965 | MW-67-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073966 | MW-67-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073967 | MW-67-3 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073968 | MW-69-1 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073969 | MW-69-100 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073970 | MW-69-2 | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031073971 | Trip Blank | 10/28/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

CB

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

768 953

Client Name Jacobs ETC Order #0310781

Site ID Memphis Defense Depot C5X51115

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031078101 | RW-9 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078102 | RW-900 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078103 | ERB-5 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078104 | RW-8 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078105 | RW-7 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078106 | RW-6 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078107 | RW-5 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078108 | RW-3 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078109 | RW-2 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078110 | RW-200 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078111 | RW-1B | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078112 | RW-1A | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031078113 | RW-1 | 10/29/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

11/4/03 DS

768 954

# ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

## ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name **Jacobs** ETC Order #**0311458**

Site ID **Memphis Defense Depot** **C5X51115**

| ETC Sample ID | Field ID | Sample Date | Matrix | Method | Method Description |
|---|---|---|---|---|---|
| 031145801 | MW-54-1 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145802 | MW-54-2 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145803 | MW-54-3 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145804 | MW-54-300 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145805 | MW-77-1 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |
| 031145806 | ERB-1 | 11/18/03 | AQUEOUS | 8260B | GC/MS Volatile Organics |

12/5/03 CT

# APPENDIX E

## GROUNDWATER INTERPOLATION EXPLANATION

# Groundwater Interpolation of October 29, 2003 Data — Memphis DDMT

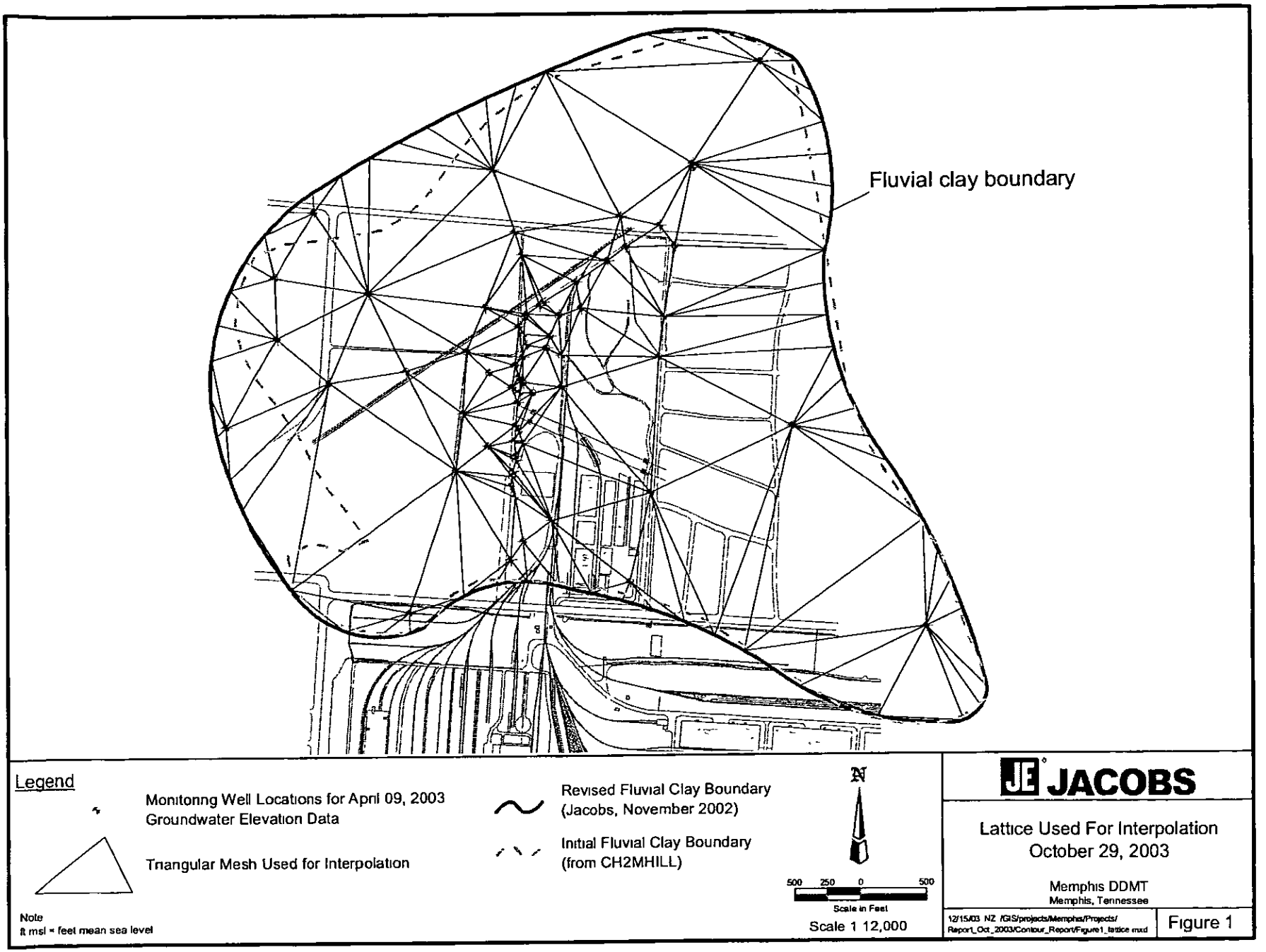
Synoptic groundwater elevation data for October 29, 2003 are used to create groundwater elevation maps for perched groundwater in shallow sands above a fluvial clay in the Dunn Field area of the Memphis DDMT. The data are shown on Table 1. Groundwater elevations are mapped using ArcInfo TIN and geostatistically interpolated. An initial interpolation lattice was constrained to the boundary of the fluvial clay, following previous work performed by Earl V. Edris, Jr. as reported in the 2001 Monitoring Report. The initial fluvial clay boundary was defined by cross-sections developed by CH2MHILL is shown as orange-dashed line in Figure 1 The fluvial clay boundary was revised in November 2002 by Jacobs to include monitoring well locations MW-41, MW-126, and MW-127 in the western site area. The new fluvial clay boundary is shown as solid red line on Figure 1.

In the analysis for this report, one interpolation is performed for the October 29 data set. The interpolation of the data set is performed using ordinary kriging Spatial correlation includes all sample points within a minimum radius of 150 ft. A minimum of 12 correlated data points are specified If 12 correlated points are not found within the search radius, the search radius is increased until the 12 points have been correlated. A spherical function is used to model semi-variance. The October 29 data set requires a 350 feet search radius to satisfy the 12-point requirement Three new wells, MW-128, MW-129, and MW-130, have been added since the April 9, 2003 report. They are located approximately 1200 feet NE of extraction well RW-09. As in the 2002 Monitoring Report, no control points were used in the interpolation of the data set. The following kriging parameters, derived from analysis of the semi-variogram, are used in the interpolation.

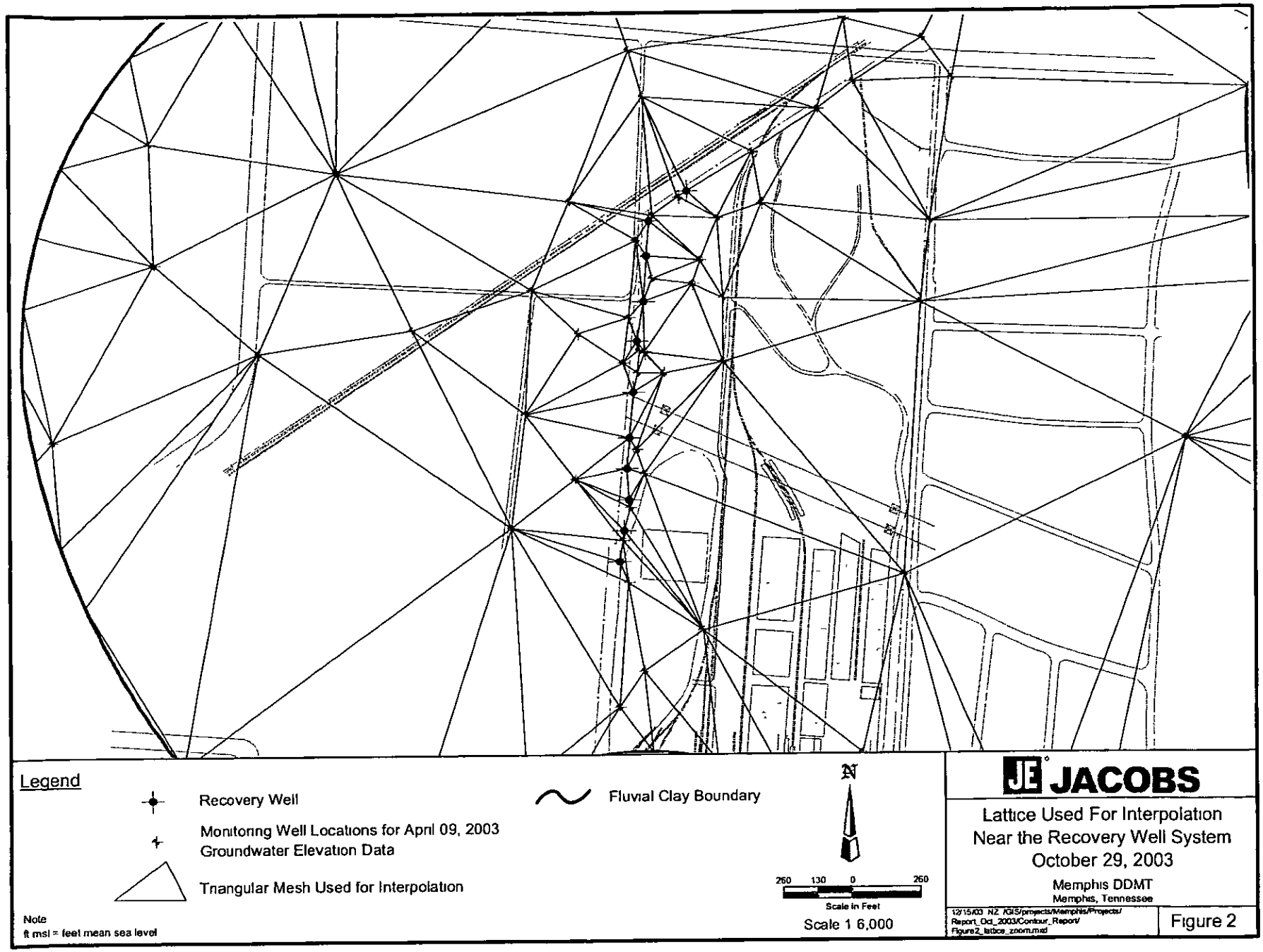
| | |
|---|---|
| Lag size | 100 |
| Range | 4400 |
| Partial Size | 150 |
| Nugget | 0 2 |

The lattice resulting from this interpolation is shown in Figures 1 and 2. Groundwater elevations for October 29 in the Dunn Field area and near the recovery well system are shown on Figures 3 and 4, respectively

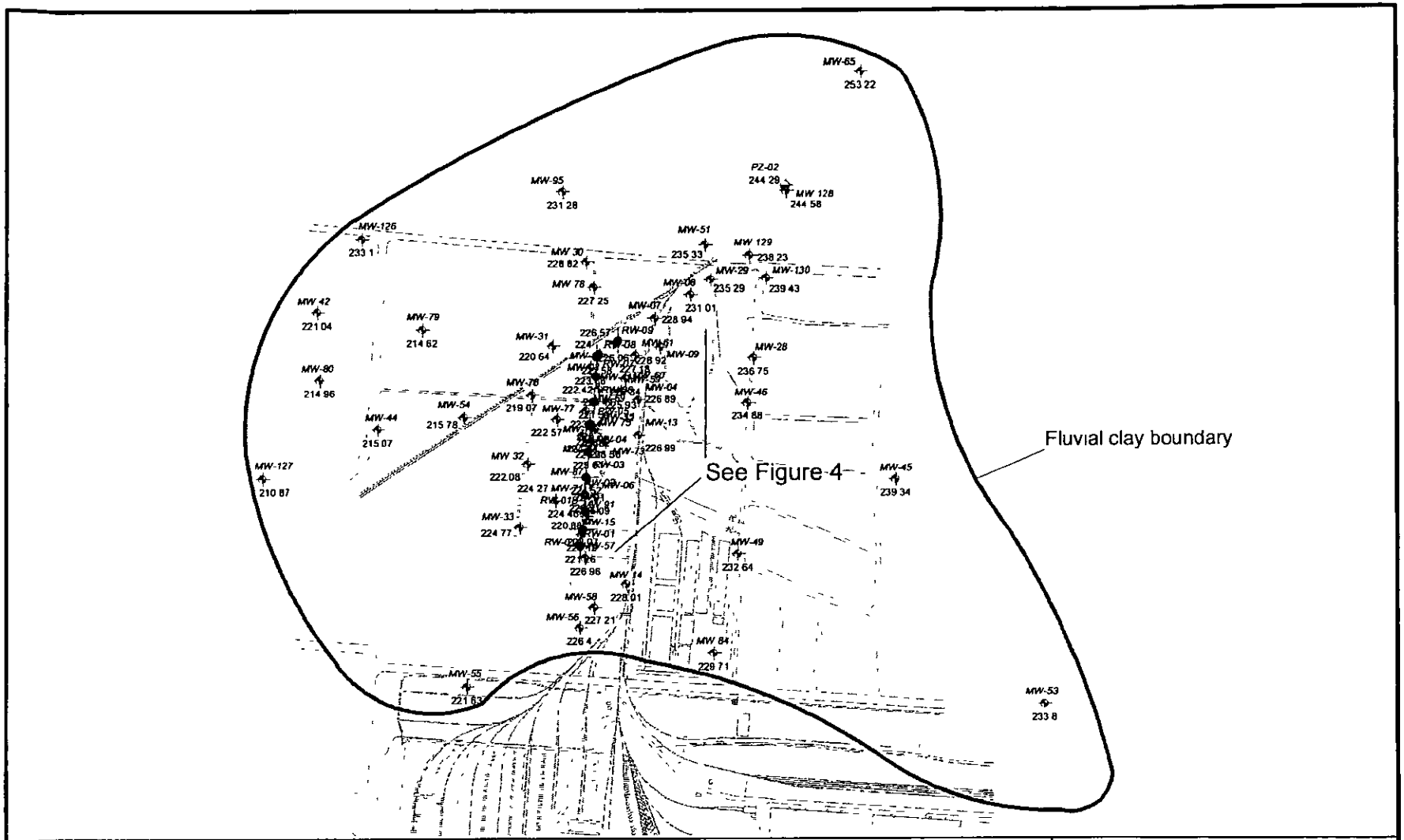
Figures 5 and 6 present groundwater elevation contours for October 29 in shallow fluvial sands in the Dunn Field area and near the recovery well system, respectively. Generally groundwater flows from the northeast to the southwest in the perched water system. In the western portion of the map, there is a potentiometric depression with groundwater elevations as low as 214.62 ft MSL. This potentiometric depression could result from vertical drainage of groundwater through a window in the fluvial clay or possible completion of the monitoring well screens in geologic materials beneath the fluvial clay The maps also show the potential influence of the recovery wells on the potentiometric surface. It should be pointed out that interpolation in the area of recovery wells was based on ordinary kriging and that actual groundwater elevations in the vicinity of pumping wells propagate according to the Theis well function Actual areas of potentiometric influence are best simulated with a numerical model that accounts for hydraulic anisotropy.


Fluvial clay boundary
Legend
Monitonng Well Locations for Apnl 09, 2003
Groundwater Elevation Data
Tnangular Mesh Used for Interpolation
Revised Fluvial Clay Boundary
(Jacobs, November 2002)
Initial Fluvial Clay Boundary
(from CH2MHILL)
N
500 250 0 500
Scale in Feet
Scale 1 12,000
Note
ft msl = feet mean sea level
JACOBS
Lattice Used For Interpolation
October 29, 2003
Memphis DDMT
Memphis, Tennessee
12/15/03 NZ /GIS/projects/Memphis/Projects/
Report_Oct_2003/Contour_Report/Figure1_lattice.mxd
Figure 1

768 957


Legend
Recovery Well
Monitoring Well Locations for April 09, 2003 Groundwater Elevation Data
Triangular Mesh Used for Interpolation
Fluvial Clay Boundary
Note
ft msl = feet mean sea level
N
260 130 0 260
Scale in Feet
Scale 1 6,000
JACOBS
Lattice Used For Interpolation
Near the Recovery Well System
October 29, 2003
Memphis DDMT
Memphis, Tennessee
12/15/03 NZ /GIS/projects/Memphis/Projects/Report_Oct_2003/Contour_Report/Figure2_lattice_zoom.mxd
Figure 2

768 958




Legend

MW-41 217 960 — Monitoring Well with Groundwater Elevation (ft msl)

RW-03 224 60 — Recovery Well with Groundwater Elevation (ft msl)

Fluvial Clay Boundary

Note
ft msl = feet mean sea level

N

500 250 0 500
Scale in Feet

Scale 1 12,000

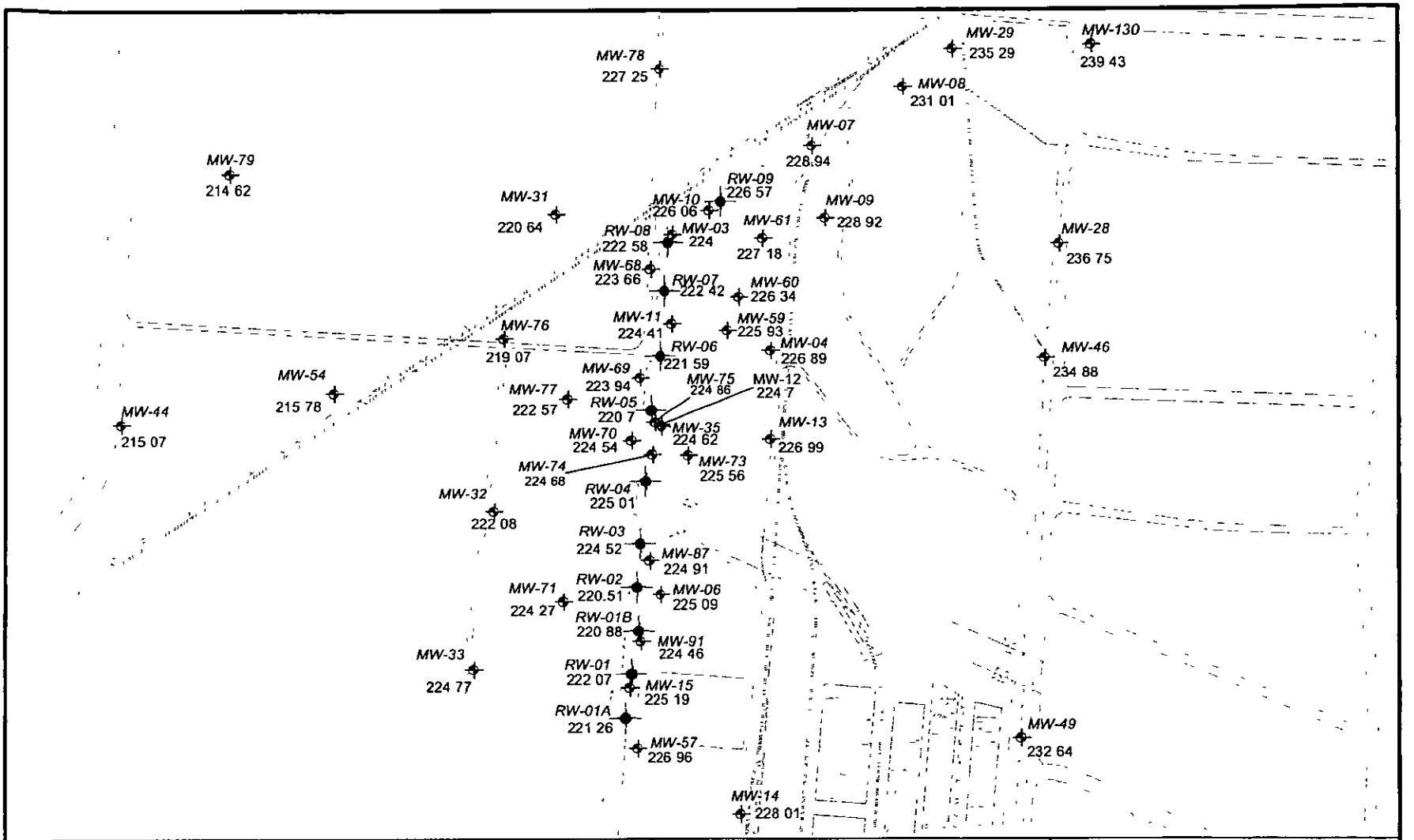
JACOBS

Groundwater Elevations in the Dunn Field Area
October 29, 2003
Memphis DDMT
Memphis Tennessee

12/15/03 NZ /Memphis/Projects/Report_Oct_2003/Contour_Report /Figure3_gw_post mxd

Figure 3

768 959




Legend

MW-41
217 960
Monitoring Well with Groundwater Elevation (ft msl)

RW-03
224 60
Recovery Well with Groundwater Elevation (ft msl)

Fluvial Clay Boundary

Note
ft msl = feet mean sea level

N

200 100 0 200
Scale in Feet

Scale 1 4800

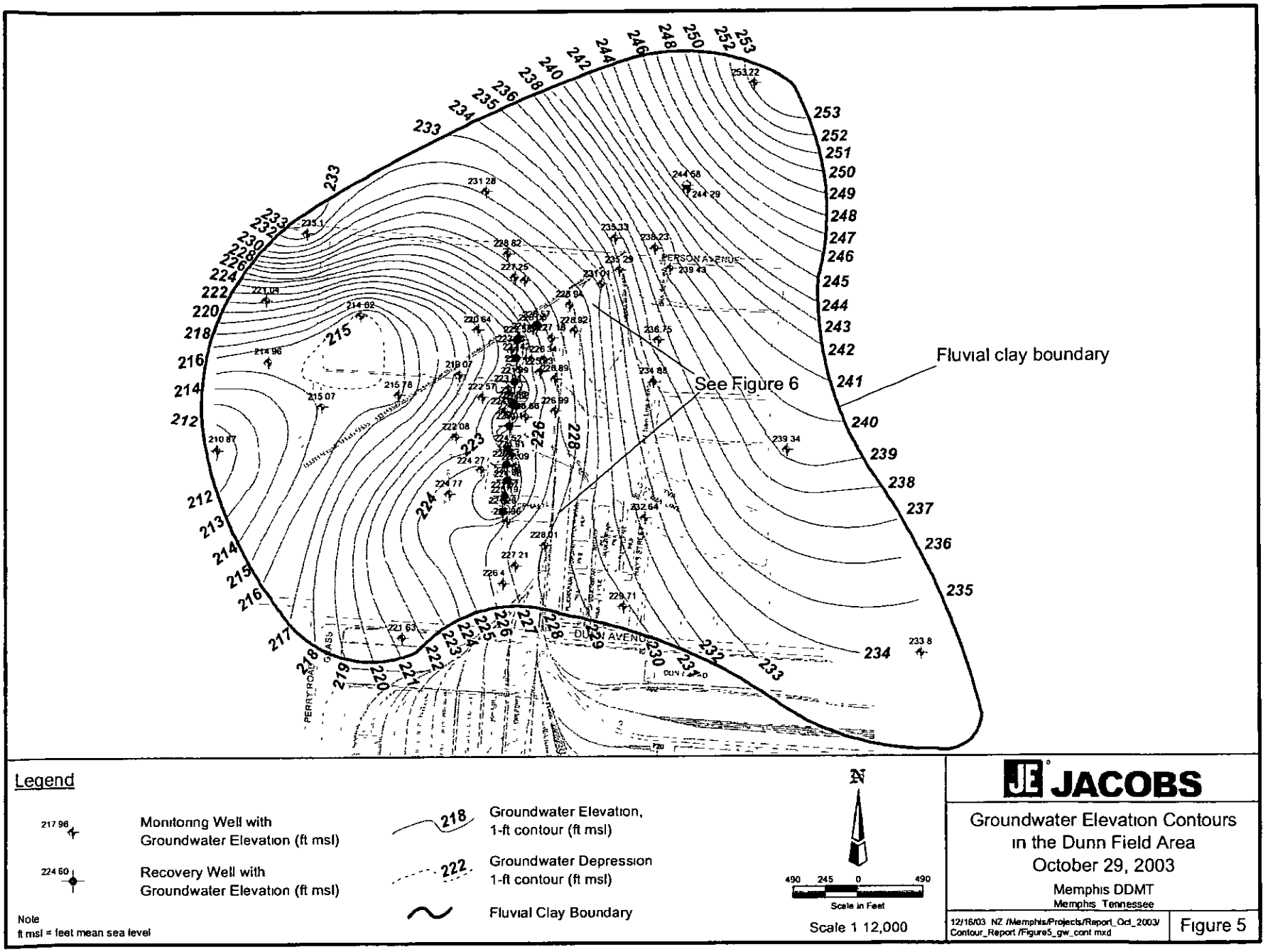
JACOBS

Groundwater Elevations near the Recovery Well System
October 29, 2003
Memphis DDMT
Memphis Tennessee

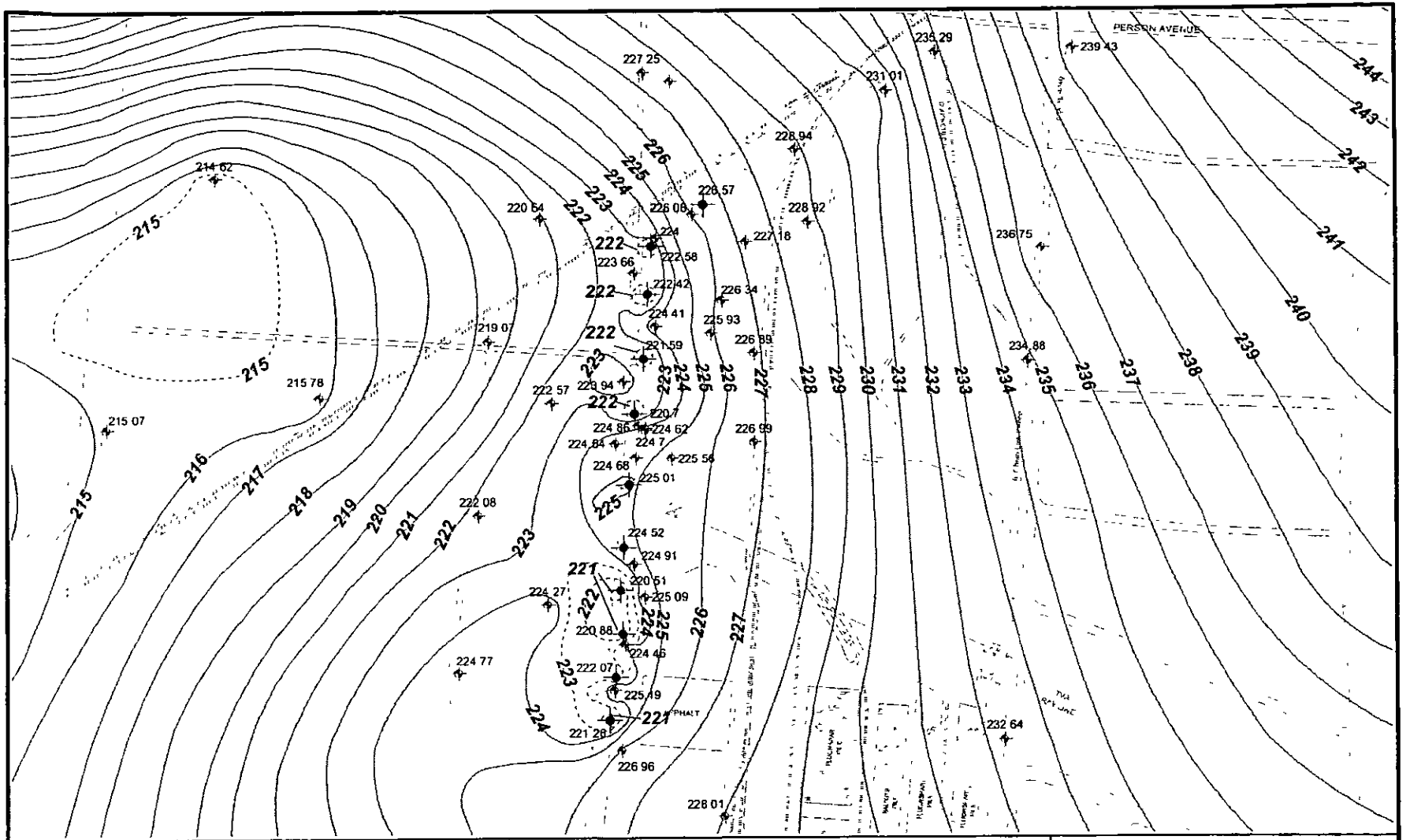
12/15/03 NZ /Memphis/Projects/Report_Oct_2003/Contour_Report /Figure4_gw_post_zoom mxd

Figure 4

768 960


Fluvial clay boundary
See Figure 6
PERSON AVENUE
DUNN AVENUE
PERRY ROAD
GRASS
Legend
Monitoring Well with Groundwater Elevation (ft msl)
Recovery Well with Groundwater Elevation (ft msl)
Groundwater Elevation, 1-ft contour (ft msl)
Groundwater Depression 1-ft contour (ft msl)
Fluvial Clay Boundary
Note
ft msl = feet mean sea level
N
490 245 0 490
Scale in Feet
Scale 1 12,000
JACOBS
Groundwater Elevation Contours in the Dunn Field Area
October 29, 2003
Memphis DDMT
Memphis Tennessee
12/16/03 NZ /Memphis/Projects/Report_Oct_2003/Contour_Report /Figure5_gw_cont mxd
Figure 5

768 961




Note
ft msl = feet mean sea level

768 962

# FINAL PAGE

## ADMINISTRATIVE RECORD

# FINAL PAGE