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Groundwater Monitoring Results
First Semi-Annual 2007 Monitoring Period
Cargill Salt - Alameda Facility
Alameda, California



CRAWFORD
CONSULTING
INC.

**Groundwater Monitoring Results
First Semi-Annual 2007 Monitoring Period
Cargill Salt – Alameda Facility
Alameda, California**

**Prepared for:
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**Project No. CS1605
September 28, 2007**

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Electronic File

Entire report presented in electronic file format (pdf) on CD-ROM inside back cover.

1 Introduction

Crawford Consulting, Inc. (Crawford) has prepared this report on behalf of Cargill Salt for the Cargill Salt Dispensing Systems Division facility (hereafter, the Site) in Alameda, California.

Results of groundwater transect sampling and the initial sampling of three groundwater monitoring wells installed in November 1999 were presented in the January 31, 2000 report, *Groundwater Characterization and Monitoring Well Installation, Cargill Salt – Alameda Facility, Alameda, California* (Crawford Consulting, Inc. and Conor Pacific/EFW). The purpose of the groundwater transect sampling and the monitoring well installation and sampling was to help characterize and monitor the occurrence of volatile organic compounds (VOCs), primarily tetrachloroethene (PCE) and its breakdown product, trichloroethene (TCE), previously detected in groundwater at the Site.

One of the recommendations in the report was to confirm the groundwater analytical results of the newly installed monitoring wells (wells MW-1, MW-2, and MW-3) and the groundwater flow direction and gradient via quarterly monitoring. Cargill Salt began groundwater monitoring on a quarterly basis after the initial groundwater monitoring well sampling event in November 1999. For 2000 through 2005, reporting was performed on an annual basis. Reporting is now being performed on a semi-annual basis.

Cargill Salt conducted additional characterization activities in November and December 2001 to evaluate the off-site extent of VOCs in the soil and groundwater. Soil and groundwater samples were collected and analyzed from a neighboring residential property and along Clement Avenue, slug tests were performed in the three existing monitoring wells, and a groundwater monitoring well (MW-4) was installed in Clement Avenue.

1.1 Reporting Period Activities

This report presents the results of groundwater monitoring data collected during the first and second quarters of 2007. For each quarterly period, groundwater levels in the Site monitoring wells were measured, groundwater samples were collected and analyzed, and the groundwater flow direction and gradient were determined. The quarterly monitoring schedule for the first semi-annual 2007 monitoring period is shown below.

Quarter of 2007	Field Dates
First	March 6, 2007
Second	June 15, 2007

Supervision of the quarterly monitoring events was conducted for Cargill Salt by Crawford. Groundwater level measurements and collection of groundwater samples were conducted by Field Solutions, Inc. The groundwater samples for the first through second quarters of 2007 were analyzed by STL San Francisco, a state-certified laboratory in Pleasanton, California.

1.2 Background Information

A description of the Site and a summary of the development of characterization and monitoring programs for the Site are presented in this section.

1.2.1 Site Description

Alameda is an island on the east side of San Francisco Bay, separated from Oakland by a tidal canal (Figure 1). The Cargill Salt Dispensing Systems Division facility is located on a rectangular lot in an industrial and residential neighborhood. The facility building occupies approximately one-third of the Site and is separated from the vacant, unpaved side of the lot by an asphalt driveway (Figure 2). The Site is bordered by a sheet-metal shop and a residential lot to the northwest, an apartment complex to the southwest, and a residential lot to the southeast.

From 1951 to 1978, the Alameda facility produced salt-dispensing units, which required casting and milling aluminum parts.

Constituents of concern associated with site operations have included casting sands with elevated concentrations of metals, and solvents, machine oils, and grease used in casting and milling operations. As discussed below, previous investigations and remedial activities have investigated and remediated metals and solvents (VOCs) in vadose-zone soil.

1.2.2 Summary of Investigative and Remedial Activities

Cargill Salt initiated site investigative activities in 1993 to determine if facility operations had impacted site soils. Cargill Salt submitted the results of the soil sampling investigation to the Alameda County Environmental Health Services (ACEHS) in October 1993 along with a workplan for excavation and disposal of impacted soils and assessment of potential impact to groundwater (Groundworks Environmental, Inc. [Groundworks], 1993).

After approval of the workplan by ACEHS, Cargill Salt conducted several phases of soil remediation and groundwater characterization. Surficial soils impacted by metals were excavated for disposal off site. Vadose-zone soils with the highest degree of impact by VOCs were also excavated for off-site disposal (see "Soil excavation area" on Figure 2).

The results of these activities were submitted to the ACEHS in a report, *Soil and Groundwater Investigations and Remedial Activities, July 1993 – September 1994, Cargill Salt – Alameda Facility, Alameda, California* (Groundworks, 1995). Recommendations for additional work to further delineate the lateral and vertical extent of VOCs in groundwater beneath the Site were presented in the report.

A workplan for the additional delineation of VOCs in groundwater, *Workplan for Groundwater Characterization and Monitoring Well Installation, 2016 Clement Avenue, Alameda, California* (CCI), was submitted to the ACEHS in July 1999.

After approval of the workplan by the ACEHS, Cargill Salt conducted groundwater sampling and well installation activities during August and November of 1999. The results of these activities were submitted to the ACEHS in a report, *Groundwater Characterization and Monitoring Well Installation, Cargill Salt – Alameda Facility, Alameda, California* (Crawford Consulting, Inc. and Conor Pacific/EFW, dated January 31, 2000). After the initial groundwater monitoring well sampling event in November 1999, Cargill Salt began groundwater monitoring on a quarterly basis.

A work plan for remedial investigation activities, *Workplan for Off-Site Characterization, Cargill Salt – Alameda Facility, Alameda, California* (Conor Pacific/EFW), was submitted to the ACEHS in June 2001. After approval of the workplan by the ACEHS, Cargill Salt conducted characterization activities in November and December 2001 to evaluate off-site extent of VOCs in the soil and groundwater. Soil and groundwater samples were collected and analyzed from a neighboring residential property and along Clement Avenue, slug tests were performed in the three existing monitoring wells, and a groundwater monitoring well (MW-4) was installed in Clement Avenue. The results of these activities were submitted to the ACEHS in the August 21, 2002 submittal *Off-Site Groundwater Characterization, Cargill Salt – Alameda Facility, Alameda, California*, prepared by Conor Pacific/EFW.

A phytoremediation project was implemented at the Site in June 2005. The project involved planting 96 bare-root hybrid poplar trees in a grid of 24 rows. The rows are generally 6 feet apart with trees on 7-foot centers on each row. Selection of the phytoremediation approach and implementation of the project were described in the October 20, 2006 report, *Groundwater Monitoring Results, First through Fourth Quarter 2005, Cargill Salt – Alameda Facility, Alameda, California* prepared by Crawford Consulting, Inc.

1.2.3 Source of VOC Impact

As discussed in the 1995 report, the occurrence of VOCs in soils and groundwater at the Site appears to be the result of a discharge or spill to surficial soils at a location near the rear property line at the southwestern corner of the property. The area with the highest degree of chemical impact was delineated prior to excavation and was then excavated using a backhoe and transported off-site for appropriate disposal. It is possible that the VOCs detected in soils and groundwater at this location were associated with waste products from facility operations. The VOCs may be associated with solvents previously used for degreasing operations at the facility, although there are no records indicating use of PCE. Site records indicate that the solvents used for degreasing operations were not PCE-based solvents.

It is also possible that the VOCs and oil and grease are associated with waste products discarded from neighboring properties. There is an apartment complex next to the rear property line of the facility, and the laundry room for this complex is in the utility shed immediately adjacent to the rear property line. This laundry room is only 4 feet away from the area of highest impact to soil. If PCE associated with laundry cleaning products were spilled in this laundry room, it is possible that it could have drained onto the Cargill Salt property.

2 Groundwater Flow Analysis

Groundwater levels were measured quarterly and groundwater contour maps were prepared for the first and second quarter 2007 monitoring events.

2.1 Water-Level Measurement

Water levels in groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-4) were measured each quarter, before any of the groundwater monitoring wells were purged for sampling for the quarterly monitoring event. The groundwater monitoring well locations are shown on Figure 2. The water levels were measured with an electric sounder. The depth to water at each well was recorded on a *Water Level Field Data* sheet (see Appendix A).

The water-level data through the second quarter of 2007 are shown on Table 1. The data in Table 1 include the date and time of measurement, the well casing elevation, the measured depth to groundwater, the groundwater elevation, and the change in elevation from the previous measurement. A plot of historical groundwater elevations is shown in Figure 3.

The Site groundwater monitoring wells were re-surveyed in September 2006 by CSS Environmental Services in order to provide Geotracker-compliant survey data. Results of the casing elevation survey indicate that each well is approximately 6.4 feet higher than the previous survey conducted in 1999. This difference is due to the use of different datum for the 2006 and 1999 surveys. The casing elevations from the September 2006 survey are shown on Table 1.

Groundwater levels in the on-site monitoring wells (MW-1, MW-2, and MW-3) showed a similar seasonal pattern in the first semi-annual period of 2007 as in the previous seven years (see Figure 3). Groundwater levels rose across the Site between the fourth quarter 2006 and first quarter 2007 measurements, reflecting winter-season recharge. Groundwater levels fell between the first and second quarter 2007 measurements, reflecting dissipation of winter-season discharge. The groundwater level in off-site monitoring well MW-4 showed a similar seasonal pattern as the on-site wells during the first two quarters of 2007.

2.2 Groundwater Flow Direction and Gradient

Groundwater contour maps for the first and second quarters of 2007 based on the March and June 2007 water-level data are shown on Figures 4 and 5.

The groundwater flow direction determined for the first and second quarters of 2007 was to the northeast, consistent with the groundwater flow direction determined previously for the Site. The horizontal hydraulic gradients measured for the first and second quarters of 2007 were 0.023 and 0.014, respectively.

2.3 Groundwater Velocity

Average linear groundwater flow velocities (V) were calculated using a form of Darcy's Law,

$$V = Ki/n,$$

where “K” is the hydraulic conductivity, “i” is the horizontal hydraulic gradient, and “n” is the effective porosity. The groundwater velocity calculations for the first and second quarters of 2007 groundwater data are presented in Appendix B.

Using hydraulic conductivity and porosity values determined for saturated native materials at the Site [based on slug tests and laboratory soil testing, respectively (Conor Pacific/EFW, 2002)], and the horizontal hydraulic gradients determined from the first and second quarters 2007 groundwater contour maps, groundwater flow velocities beneath the Site are calculated to be approximately 1 foot per year.

3 Groundwater Sampling and Analysis

This section summarizes the sample collection and analytical methods, presents an evaluation of quality control data, and summarizes the results of the sampling events.

3.1 Sample Collection and Analysis

Groundwater samples were collected March 6, 2007 and June 15, 2007 from groundwater monitoring wells MW-1, MW-2, MW-3, and MW-4. Dedicated tubing was installed in wells MW-1, MW-2, and MW-3 prior to the first quarter 2000 sampling event and on December 17, 2001 in well MW-4 to facilitate sampling with a peristaltic pump. Dedicated fluorinated ethylene propylene resin (FEP)-lined polyethylene tubing was installed in each monitoring well. The tubing intake was placed about one foot above the well bottom in each of the wells. Viton[®] dedicated check valves were installed on the tubing intakes to prevent back-flow of water into the well. A short length of dedicated Viton[®] tubing was installed at the well head for use in a peristaltic pump head. Prior to sample collection for each quarterly monitoring event, the wells were purged using a peristaltic pump. Field parameters (pH, electrical conductivity, temperature, and turbidity) were measured in purged groundwater from each well prior to sampling; these data are recorded on the Sample Collection Field Data sheets presented in Appendix A. After purging, groundwater samples were collected using the peristaltic pump and the dedicated Viton[®] pump head discharge tubing.

The groundwater samples were analyzed for VOCs using U.S. Environmental Protection Agency (USEPA) Method 8021B. Results for all Method 8010 analytes were reported. The groundwater samples for first through second quarter 2007 were delivered with appropriate chain-of-custody documentation to STL San Francisco, a state-certified laboratory in Pleasanton, California, for chemical analysis.

3.2 Analytical Results

The results of field and laboratory quality control measures and the results of the groundwater monitoring well samples are reviewed in this section. The certified analytical reports and chain-of-custody documentation are presented in Appendix C.

3.2.1 Quality Control

Quality control (QC) samples were analyzed as part of the sampling and analysis program to evaluate the precision and accuracy of the reported groundwater chemistry data. QC samples included both field and laboratory samples. Descriptions of the purpose of specific field and laboratory QC samples used during the sampling and analysis program and an evaluation of field and laboratory QC results are presented below.

Field Quality Control Samples

A field duplicate was used during the first through second quarter 2007 sampling program for the Site. A field duplicate is used to assess sampling and analytical precision. The duplicate is collected at a selected well (MW-2 [first and second quarters 2007]) and then submitted "blind" to the laboratory for analysis with the same batch as the regular sample for the selected well. An estimate of precision is obtained by calculating the relative percent difference (RPD) between the regular sample and the duplicate sample using the following formula:

$$\text{RPD} = \frac{[x - y] 100}{0.5 (x + y)}$$

where: [x - y] = the absolute value of the difference in concentration between the regular sample (x) and the duplicate sample (y).

Laboratory Quality Control Samples

The following types of laboratory QC samples were used during the first through second quarter 2007 analytical program for the Site:

- surrogate spikes
- matrix spikes/duplicate matrix spikes

A surrogate spike is a check standard added to a sample in a known amount prior to analysis. Surrogate spikes consist of analytes not normally found in environmental samples and not targeted by the analytical procedure. Surrogate spikes provide information on recovery efficiency by comparing the percent recovery of specific surrogate analyses to statistically derived acceptance limits developed by the USEPA or the laboratory (provided such laboratory-specific limits are stricter than those developed by the USEPA). If the recoveries fall within the acceptance limits for the analytes, the analysis exhibits an acceptable recovery efficiency. Recoveries that fall outside the acceptance limits indicate a potential problem with the recovery efficiency of analytes, which in turn indicates a potential bias with respect to the reported concentration of the environmental samples analyzed in the same batch.

Matrix spikes and duplicate matrix spikes are analyzed by the laboratory for the purpose of providing a quantitative measure of accuracy and precision, and to document the effect that the sample matrix has on the analysis. A selected sample is spiked in duplicate with known concentrations of analytes. The recoveries of the spiked analytes are compared to statistically derived acceptance limits developed by the USEPA or the laboratory (provided such laboratory-specific limits are stricter than those developed by the USEPA). If the recoveries fall within the acceptance limits for the analytes, the analysis has no statistically significant bias (i.e., the analysis is accurate). Recoveries that fall outside of the acceptance limits have a positive or negative bias, depending on whether the recovery is greater or less than the upper or lower acceptance limit, respectively. Analyses where analyte recoveries fall outside the acceptance limits should be regarded as estimates only.

Precision for matrix spikes is measured by calculating the relative percent differences (RPDs) between the measured concentration of analytes in the matrix and the duplicate matrix spike. The following equation is used for matrix spikes:

$$\text{RPD} = \frac{[\text{MS} - \text{MSD}] 100}{0.5 (\text{MS} + \text{MSD})}$$

where: [MS - MSD] = the absolute value of the difference in concentration between the matrix spike (MS) and the matrix spike duplicate (MSD)

First Quarter 2007 Field QC Results

One field duplicate (DUP-1) was analyzed as part of the first quarter 2007 sampling event at the Site. The duplicate sample was collected at groundwater monitoring well MW-2 and was analyzed for halogenated VOCs using USEPA Method 8260B (8010 list). Table 2 summarizes the calculated RPDs for MW-2 and MW-2 duplicate (DUP-1). The one parameter (PCE) for which RPDs could be calculated (see Table 2) exhibits a low RPD value (i.e., less than 10%) indicative of good precision.

Second Quarter 2007 Field QC Results

One field duplicate (DUP-1) was analyzed as part of the second quarter 2007 sampling event at the Site. The duplicate sample was collected at groundwater monitoring well MW-2 and was analyzed for halogenated VOCs using USEPA Method 8260B (8010 list). Table 2 summarizes the calculated RPDs for MW-2 and MW-2 duplicate (DUP-1). The one parameter (PCE) for which RPDs could be calculated (see Table 2) exhibits a low RPD value (i.e., less than 10%) indicative of good precision.

First through Second Quarter 2007 Laboratory QC Results

A review of the first through second quarter 2007 field data sheets and laboratory reports (presented in Appendices A and C, respectively) indicates that all analyses were performed within USEPA or California Department of Health Services (DHS) recommended maximum sample holding times.

QC data on surrogate spike recoveries and matrix spike recoveries are presented in the laboratory reports. These data indicate: (1) no surrogate spike recoveries were outside of the laboratory's acceptance limits; (2) RPD values for the matrix spikes and duplicate matrix spikes indicate a high overall degree of analytical precision.

No matrix spike or duplicate matrix spike recoveries were outside of the laboratory's control limits, with the exception in the Second Quarter 2007 laboratory report the MS or MSD exceeded the control limits for trichloroethene and 1,1-dichloroethene.

The laboratory QC data indicate that the results reported herein are of adequate quality for evaluation of site groundwater conditions.

3.2.2 Groundwater Results

The results of VOC analyses for each quarter for 2000 through second quarter 2007 are summarized in Table 3, which also shows the VOC results for the initial sampling event for monitoring wells MW-1, MW-2, and MW-3 in November 1999. The results for the first and second quarter 2007 monitoring events are also shown on Figures 6 and 7.

Consistent with previous monitoring events, PCE and its breakdown products TCE and 1,1-dichloroethene (DCE) were detected in Site groundwater samples from the first and second quarter 2007 monitoring events.

For the first and second quarters of 2007, the concentrations of PCE detected were 170 and 310 µg/L in monitoring well MW-1, 1,600 and 2,400 µg/L in MW-2, not detected in MW-3, and 0.70 and 0.75 µg/L in MW-4.

The concentrations of TCE detected were 17 and 38 µg/L in monitoring well MW-1 and not detected and 22 µg/L in MW-2. TCE was not detected in MW-3 or MW-4.

DCE was detected in monitoring well MW-1 at 3.0 µg/L for the second quarter 2007 event but was not detected in the first quarter 2007. DCE was detected in MW-3 at 1.5 and 2.4 µg/L during the first and second quarters 2007, respectively. DCE was not detected in MW-2 or MW-4.

3.3 Discussion

The results for the first through second quarter 2007 quarterly monitoring events are generally similar to the results reported for the years 2000 through fourth quarter 2006 quarterly monitoring programs (see Figure 7). Variations in VOC concentrations at monitoring well MW-2, the well with the highest reported PCE concentrations at the site, generally correlate with variations in groundwater elevations at the Site. An increase in VOC concentrations generally follows a rise in groundwater elevations, and a decrease in VOC concentration generally follows a fall in groundwater levels (see Figure 8). The variations in VOC concentrations sometimes lag one quarter behind the variations in groundwater elevation.

The concentrations of PCE reported for groundwater monitoring well MW-2 for the June 2006, September 2006, December 2006, and March 2007 sampling events were the lowest PCE concentrations reported for the well since the initial sampling event in November 1999. The PCE concentration reported for MW-2 for June 2007 was the lowest “seasonal high” reported since the initial sampling event in 1999. The PCE concentrations reported for MW-2 for the last five quarters appear to be an indication that the phytoremediation project is beginning to be effective at reducing VOC concentrations in groundwater at the site. However, it may be premature to correlate these PCE concentrations to the effectiveness of the phytoremediation project as the trees have only been growing for two years (see Section 4). Continued monitoring will be required before a definitive correlation can be made.

4 Phytoremediation Project Status Update

A phytoremediation project was implemented at the Site in June 2005. The project involved planting 96 bare-root hybrid poplar trees in a grid on the unpaved portion of the site. Selection of the phytoremediation approach and implementation of the project were described in the report, *Groundwater Monitoring Results, First through Fourth Quarter 2005, Cargill Salt – Alameda Facility, Alameda, California* (Crawford Consulting, Inc., October 20, 2006).

A tree monitoring and maintenance program is being conducted by a landscaping contractor. This program involves monthly inspection of the trees during the growing season, inspection and maintenance of the drip irrigation system, and weed control.

The end of the first semi-annual monitoring period of 2007 marks the first 24 months of the phytoremediation project. The trees were 4-ft-tall, bare-root poles with no foliage when planted in June 2005. During the first two years of growth, the trees developed foliage and most grew 3 to 10 additional feet in height. Photos comparing the appearance of the trees just after planting in 2005 and in June 2007 are show below and on the next page.

As discussed in Section 3.3, the PCE concentrations reported for MW-2 for the last five quarters appear to be an indication that the phytoremediation project is beginning to be effective at reducing VOC concentration in groundwater at the site. Tree growth and VOC concentrations will be monitored and evaluated to determine the effectiveness of the phytoremediation project.



Bare-root trees planted in June 2005 - View towards rear of property



June 2007 - View from gate towards rear of property



June 2007 - View of front planting strip at Clement Avenue



September 28, 2007

Alameda County Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577
Attn: Jerry Wickham

**RE: Groundwater Monitoring Results, First Semi-Annual 2007 Monitoring Period,
Cargill Salt – Alameda Facility, Alameda, California,
SLIC Case No. RO0002480**

Dear Mr. Wickham,

The attached report presents the groundwater monitoring results for the First Semi-Annual 2007 Monitoring Period for the Cargill Salt Alameda facility. This report presents the results of groundwater monitoring data collected during the first and second quarters of 2007. For each quarterly period, groundwater levels in the site monitoring wells were measured, groundwater samples were collected and analyzed, and the groundwater flow direction and gradient were determined.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report are true and correct to the best of my knowledge.

Should you have any questions concerning the report, please don't hesitate to call me at (510) 790-8158.

Sincerely,

Gene Chauffe
Site Manager

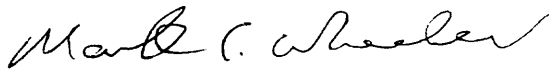
Professional Certification

**Groundwater Monitoring Results
First Semi-Annual 2007 Monitoring Period
Cargill Salt – Alameda Facility
Alameda, California**

This report has been prepared by CRAWFORD CONSULTING, INC. with the professional certification of the California professional geologist whose signature appears below.



Dana C. Johnston
Project Manager



Mark C. Wheeler
Principal Geologist
P.G. 4563



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Limitations

This report and the evaluations presented herein have been prepared in accordance with generally accepted professional standards and is based solely on the scope of work and services described herein. This report has been prepared solely for the use of Cargill Salt for the purposes noted herein. Any use of this report, in whole or in part, by a third party for other than the purposes noted herein is at such party's sole risk.

Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-1	11/16/1999	09:56	13.16	3.75	9.41	NA
MW-1	3/30/2000	10:09	13.16	2.81	10.35	0.94
MW-1	5/16/2000	09:43	13.16	3.32	9.84	-0.51
MW-1	7/28/2000	09:11	13.16	3.58	9.58	-0.26
MW-1	11/30/2000	08:36	13.16	3.52	9.64	0.06
MW-1	3/26/2001	08:47	13.16	3.15	10.01	0.37
MW-1	6/25/2001	10:19	13.16	3.53	9.63	-0.38
MW-1	9/28/2001	09:32	13.16	3.96	9.20	-0.43
MW-1	12/17/2001	10:47	13.16	3.23	9.93	0.73
MW-1	3/21/2002	07:28	13.16	2.89	10.27	0.34
MW-1	6/6/2002	08:03	13.16	3.50	9.66	-0.61
MW-1	9/20/2002	08:30	13.16	3.86	9.30	-0.36
MW-1	12/19/2002	08:38	13.16	3.13	10.03	0.73
MW-1	3/4/2003	10:31	13.16	3.08	10.08	0.05
MW-1	6/9/2003	08:32	13.16	3.29	9.87	-0.21
MW-1	9/8/2003	10:02	13.16	3.79	9.37	-0.50
MW-1	12/1/2003	10:16	13.16	3.78	9.38	0.01
MW-1	3/4/2004	09:31	13.16	2.88	10.28	0.90
MW-1	6/2/2004	08:42	13.16	3.45	9.71	-0.57
MW-1	9/14/2004	08:01	13.16	3.87	9.29	-0.42
MW-1	12/8/2004	07:44	13.16	3.23	9.93	0.64
MW-1	3/3/2005	08:07	13.16	2.01	11.15	1.22
MW-1	6/10/2005	07:05	13.16	2.90	10.26	-0.89
MW-1	9/16/2005	08:00	13.16	3.62	9.54	-0.72
MW-1	12/6/2005	08:00	13.16	3.28	9.88	0.34
MW-1	3/10/2006	07:40	13.16	2.28	10.88	1.00
MW-1	6/9/2006	09:45	13.16	3.09	10.07	-0.81
MW-1	9/11/2006	10:24	13.16	3.70	9.46	-0.61
MW-1	12/15/2006	07:34	13.16	2.94	10.22	0.76
MW-1	3/6/2007	09:18	13.16	2.87	10.29	0.07
MW-1	6/15/2007	07:29	13.16	3.30	9.86	-0.43
MW-2	11/16/1999	11:15	16.22	5.22	11.00	NA
MW-2	3/30/2000	10:05	16.22	2.80	13.42	2.42
MW-2	5/16/2000	09:35	16.22	4.13	12.09	-1.33
MW-2	7/28/2000	09:17	16.22	4.85	11.37	-0.72
MW-2	11/30/2000	08:32	16.22	4.75	11.47	0.10
MW-2	3/26/2001	08:40	16.22	3.28	12.94	1.47
MW-2	6/25/2001	12:12	16.22	4.75	11.47	-1.47
MW-2	9/28/2001	12:20	16.22	5.41	10.81	-0.66
MW-2	12/17/2001	10:44	16.22	4.07	12.15	1.34
MW-2	3/28/2002	09:37	16.22	3.40	12.82	0.67
MW-2	6/6/2002	08:11	16.22	4.70	11.52	-1.30
MW-2	9/20/2002	08:34	16.22	5.28	10.94	-0.58
MW-2	12/19/2002	08:45	16.22	3.37	12.85	1.91
MW-2	3/4/2003	10:26	16.22	3.11	13.11	0.26
MW-2	6/9/2003	08:31	16.22	4.16	12.06	-1.05
MW-2	9/8/2003	10:08	16.22	5.26	10.96	-1.10
MW-2	12/1/2003	10:20	16.22	5.05	11.17	0.21
MW-2	3/4/2004	09:34	16.22	2.86	13.36	2.19

Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-2	6/2/2004	08:53	16.22	4.47	11.75	-1.61
MW-2	9/14/2004	07:59	16.22	5.26	10.96	-0.79
MW-2	12/8/2004	08:00	16.22	4.20	12.02	1.06
MW-2	3/3/2005	08:04	16.22	1.90	14.32	2.30
MW-2	6/10/2005	07:09	16.22	3.74	12.48	-1.84
MW-2	9/16/2005	08:08	16.22	4.92	11.30	-1.18
MW-2	12/6/2005	10:58	16.22	4.39	11.83	0.53
MW-2	3/10/2006	07:47	16.22	2.13	14.09	2.26
MW-2	6/9/2006	10:03	16.22	3.75	12.47	-1.62
MW-2	9/11/2006	10:22	16.22	4.94	11.28	-1.19
MW-2	12/15/2006	07:32	16.22	4.08	12.14	0.86
MW-2	3/6/2007	09:13	16.22	3.27	12.95	0.81
MW-2	6/15/2007	07:31	16.22	4.57	11.65	-1.30
MW-3	11/16/1999	15:43	13.34	4.34	9.00	NA
MW-3	3/30/2000	10:01	13.34	2.77	10.57	1.57
MW-3	5/16/2000	09:46	13.34	3.44	9.90	-0.67
MW-3	7/28/2000	09:05	13.34	3.72	9.62	-0.28
MW-3	11/30/2000	08:34	13.34	3.73	9.61	-0.01
MW-3	3/26/2001	08:54	13.34	3.51	9.83	0.22
MW-3	6/25/2001	10:21	13.34	3.65	9.69	-0.14
MW-3	9/28/2001	09:30	13.34	3.96	9.38	-0.31
MW-3	12/17/2001	10:38	13.34	3.28	10.06	0.68
MW-3	3/21/2002	07:28	13.34	3.10	10.24	0.18
MW-3	6/6/2002	08:07	13.34	3.63	9.71	-0.53
MW-3	9/20/2002	08:25	13.34	3.82	9.52	-0.19
MW-3	12/19/2002	08:42	13.34	3.10	10.24	0.72
MW-3	3/4/2003	10:36	13.34	3.29	10.05	-0.19
MW-3	6/9/2003	08:28	13.34	3.41	9.93	-0.12
MW-3	9/8/2003	10:00	13.34	3.85	9.49	-0.44
MW-3	12/1/2003	10:30	13.34	3.90	9.44	-0.05
MW-3	3/4/2004	09:22	13.34	3.11	10.23	0.79
MW-3	6/2/2004	08:46	13.34	3.53	9.81	-0.42
MW-3	9/14/2004	08:05	13.34	4.07	9.27	-0.54
MW-3	12/8/2004	07:40	13.34	3.73	9.61	0.34
MW-3	3/3/2005	07:53	13.34	2.36	10.98	1.37
MW-3	6/10/2005	07:14	13.34	3.15	10.19	-0.79
MW-3	9/16/2005	08:04	13.34	3.90	9.44	-0.75
MW-3	12/6/2005	08:04	13.34	3.35	9.99	0.55
MW-3	3/10/2006	07:43	13.34	2.89	10.45	0.46
MW-3	6/9/2006	09:33	13.34	3.26	10.08	-0.37
MW-3	9/11/2006	10:19	13.34	3.70	9.64	-0.44
MW-3	12/15/2006	07:37	13.34	3.10	10.24	0.60
MW-3	3/6/2007	09:16	13.34	3.04	10.30	0.06
MW-3	6/15/2007	07:27	13.34	3.60	9.74	-0.56
MW-4	12/17/2001	10:40	12.43	2.55	9.88	NA
MW-4	3/28/2002	08:05	12.43	3.06	9.37	-0.51
MW-4	6/6/2002	07:57	12.43	2.85	9.58	0.21
MW-4	9/20/2002	08:28	12.43	3.21	9.22	-0.36

Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-4	12/19/2002	08:53	12.43	3.70	8.73	-0.49
MW-4	3/4/2003	10:34	12.43	3.14	9.29	0.56
MW-4	6/9/2003	08:29	12.43	2.82	9.61	0.32
MW-4	9/8/2003	10:04	12.43	3.43	9.00	-0.61
MW-4	12/1/2003	10:14	12.43	3.12	9.31	0.31
MW-4	3/4/2004	09:27	12.43	2.81	9.62	0.31
MW-4	6/2/2004	08:44	12.43	3.34	9.09	-0.53
MW-4	9/14/2004	08:03	12.43	3.51	8.92	-0.17
MW-4	12/8/2004	07:36	12.43	3.10	9.33	0.41
MW-4	3/3/2005	07:44	12.43	2.48	9.95	0.62
MW-4	6/10/2005	07:02	12.43	2.47	9.96	0.01
MW-4	9/16/2005	08:12	12.43	3.23	9.20	-0.76
MW-4	12/6/2005	07:50	12.43	3.17	9.26	0.06
MW-4	3/10/2006	07:37	12.43	3.77	8.66	-0.60
MW-4	6/9/2006	07:30	12.43	2.49	9.94	1.28
MW-4	9/11/2006	10:17	12.43	3.19	9.24	-0.70
MW-4	12/21/2006	NR	12.43	2.90	9.53	0.29
MW-4	3/6/2007	09:20	12.43	2.54	9.89	0.36
MW-4	6/15/2007	07:33	12.43	3.03	9.40	-0.49

Key:

NA = Not available

feet, MSL = feet, relative to Mean Sea Level

Casing elevations for all wells were resurveyed on September 6, 2006 by CSS Environmental Services for Geotracker compliance.

Table 2.
Relative Percent Difference Based on Duplicate Samples

Analysis	First Quarter 2007			Second Quarter 2007		
	Well MW-2 Results	Duplicate (DUP-1) Results	RPD ¹ (%)	Well MW-2 Results	Duplicate (DUP-1) Results	RPD ¹ (%)
Volatile Organic Compounds (µg/L)						
1,1-Dichloroethene (DCE)	<20	<20	NM ²	<20	<20	NM
1,1,1-Trichloroethane (TCA)	<20	<20	NM	<20	<20	NM
Trichloroethene (TCE)	<20	20	NM	22	<20	NM
Tetrachloroethene (PCE)	1,600	1,700	6.1	2,400	2,400	0
<p>¹ RPD = relative percent difference</p> <p>² NM = not meaningful; RPD cannot be accurately calculated where one or both values are below the method reporting limit.</p> <p>All other 8010 list analytes not detected (by 8260).</p>						

Table 3. Summary of Groundwater Monitoring Well Data

Results measured in micrograms per liter (µg/L)

Well No.	MW-1																													MCL ¹		
	Field Date	11/16/99	3/30/00	5/16/00	7/28/00	11/30/00	3/26/01	6/25/01	9/28/01	12/17/01	3/21/02	6/6/02	9/20/02	12/19/02	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05	6/10/05	9/16/05	12/6/05	3/10/06	6/9/06	9/11/06		12/15/06	3/6/07
DCE ²	<50.0	13	<10	15	14	<13	14	15	<13	<13	<13	<13	<13	<10	12	5.2	8.4	<5.0	5.8	6.6	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	3.3	<2.0	<2.0	3.0	6
CFC 113 ³	na ⁴	1.4	<10	<10	<8.3	<50	<50	<50	<50	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	ne ⁵
DCA ⁶	<50.0	0.8	<10	<10	<4.2	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	5	
Chloroform	<50.0	0.6*	<10	<10	<8.3	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10	<4.0	1.4	<4.0	<4.0	<4.0	<4.0	ne	
TCA ⁷	<50.0	1.6	<10	<10	<4.2	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	200	
TCE ⁸	178	150	190	170	130	180	250	210	190	160	140	190	68	97	90	110	130	53	72	81	39	15	23	34	16	3.4	22	47	20	17	38	5
PCE ⁹	906	1,400	1,900	1,200	880	1,000	1,400	1,000	1,400	1,100	980	1,100	600	730	770	780	850	370	490	620	380	160	180	240	140	39	140	400	210	170	310	5
Other analytes ¹⁰	nd ¹¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Well No.	MW-2																													MCL ¹		
	Field Date	11/16/99	3/30/00	5/16/00	7/28/00	11/30/00	3/26/01	6/25/01	9/28/01	12/17/01	3/28/02	6/6/02	9/20/02	12/30/02	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05	6/10/05	9/16/05	12/6/05	3/10/06	6/9/06	9/11/06		12/15/06	3/6/07
DCE ²	<50.0	<0.5	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	<20	<20	<20	<20	6
CFC 113 ³	na	<0.5	<25	<25	<17	<100	<100	<100	<100	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	<20	<20	<20	<20	ne ⁵
DCA ⁶	<50.0	<0.5	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	<20	<20	<20	<20	5
Chloroform	<50.0	<0.5	<25	<25	<17	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<40	<50	<50	<40	<20	<40	<40	<40	ne
TCA ⁷	<50.0	5.0	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	<20	<20	<20	<20	200
TCE ⁸	<50	29	53	<25	20	40	78	<25	<25	49	52	32	<25	58	41	28	25	39	49	37	30	78	43	29	45	59	<20	<20	<20	<20	22	5
PCE ⁹	840	3,600	3,200	3,300	1,700	2,200	4,400	1,700	1,700	3,500	3,800	2,100	1,800	3,900	3,800	2,500	2,500	3,000	4,100	3,800	2,800	7,300	3,600	2,500	3,300	5,200	1,600	990	1,000	1,600	2,400	5
Other analytes ¹⁰	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Notes:

¹ MCL = California Primary Drinking Water Standard - Maximum Contaminant Level (in micrograms per liter [µg/L])

² DCE = 1,1-Dichloroethene

³ CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane)

⁴ na = not analyzed

⁵ ne = not established or none applicable

⁶ DCA = 1,1-Dichloroethane

⁷ TCA = 1,1,1-Trichloroethane

⁸ TCE = Trichloroethene

⁹ PCE = Tetrachloroethene

¹⁰ All other 8010 list analytes

¹¹ nd = not detected above laboratory reporting limit

* Chloroform detected in equipment blank at 1.6 µg/L for 3/30/00 event.

Table 3. Summary of Groundwater Monitoring Well Data

Results measured in micrograms per liter (µg/L)																																
Well No.	MW-3																													MCL ¹		
Field Date	#####	3/30/00	5/16/00	7/28/00	#####	3/26/01	6/25/01	9/28/01	#####	3/21/02	6/6/02	9/20/02	#####	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05	6/10/05	9/16/05	12/6/05	3/10/06	6/9/06	9/11/06	#####	3/6/07	6/15/07	MCL ¹
DCE ²	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.51	<0.5	0.81	<0.5	<0.5	0.68	2.4	1.5	1.1	0.86	4.3	2.8	1.6	1.5	2.4	6
CFC 113 ³	na	<0.5	<0.5	<0.5	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ne ⁵
DCA ⁶	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.50	<0.5	<0.5	<0.5	5	
Chloroform	<0.500	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ne	
TCA ⁷	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200	
TCE ⁸	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	
PCE ⁹	<0.500	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	0.81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.56	<0.5	<0.5	5
Other analytes ¹⁰	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--	

Well No.	MW-4																							MCL ¹
Field Date	#####	3/28/02	6/6/02	9/20/02	#####	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05	6/10/05	9/16/05	12/6/05	3/10/06	6/9/06	9/11/06	#####	3/6/07	6/15/07	MCL ¹
DCE ²	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6
CFC 113 ³	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ne ⁵
DCA ⁶	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
Chloroform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ne
TCA ⁷	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200
TCE ⁸	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
PCE ⁹	2.6	2.8	2.0	2.5	1.1	2.1	2.1	1.6	1.6	1.7	1.4	1.3	1.2	0.93	0.98	0.8	1.1	0.79	0.64	0.70	0.63	0.70	0.75	5
Other analytes ¹⁰	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Notes:

¹ MCL = California Primary Drinking Water Standard - Maximum Contaminant Level (in micrograms per liter [µg/L])

² DCE = 1,1-Dichloroethene

³ CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane)

⁴ na = not analyzed

⁵ ne = not established or none applicable

⁶ DCA = 1,1-Dichloroethane

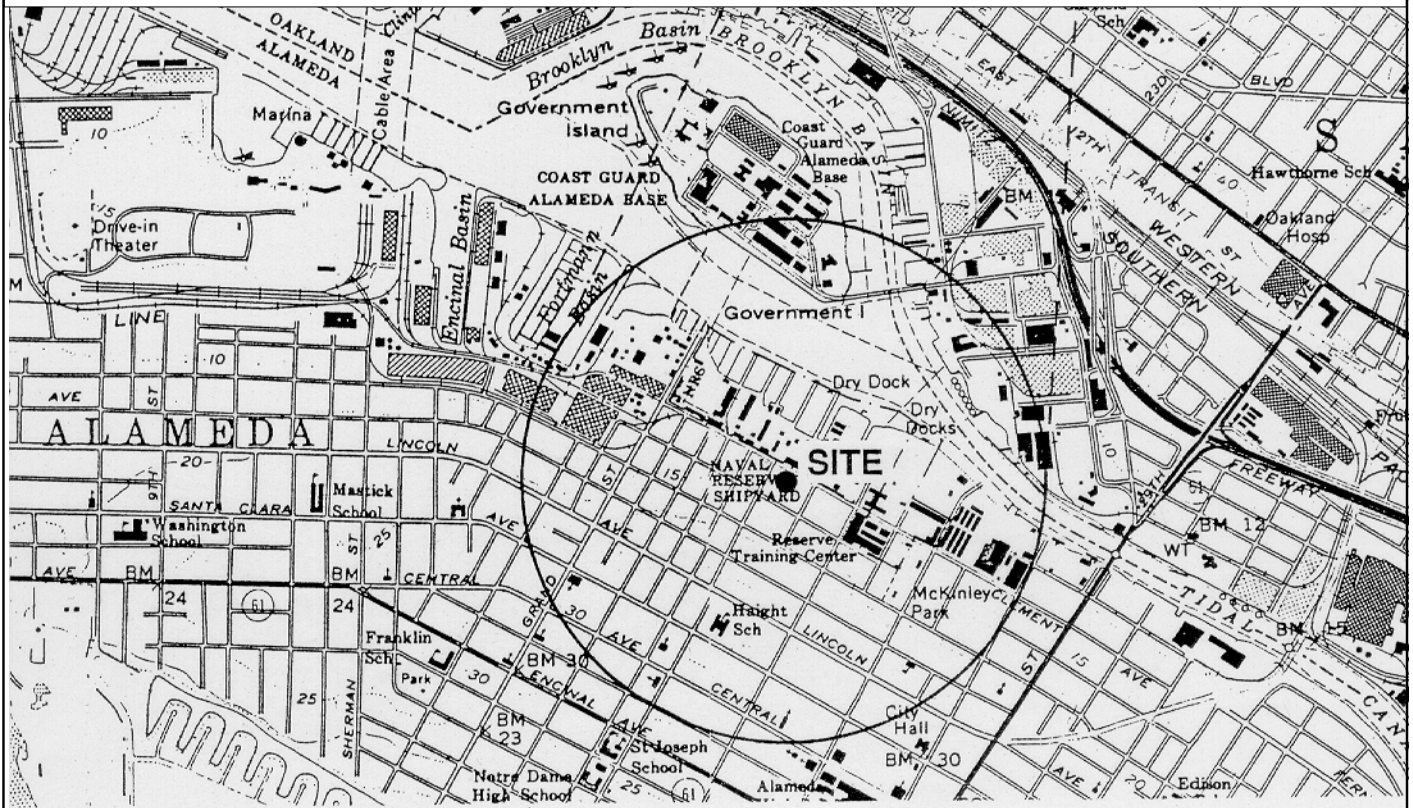
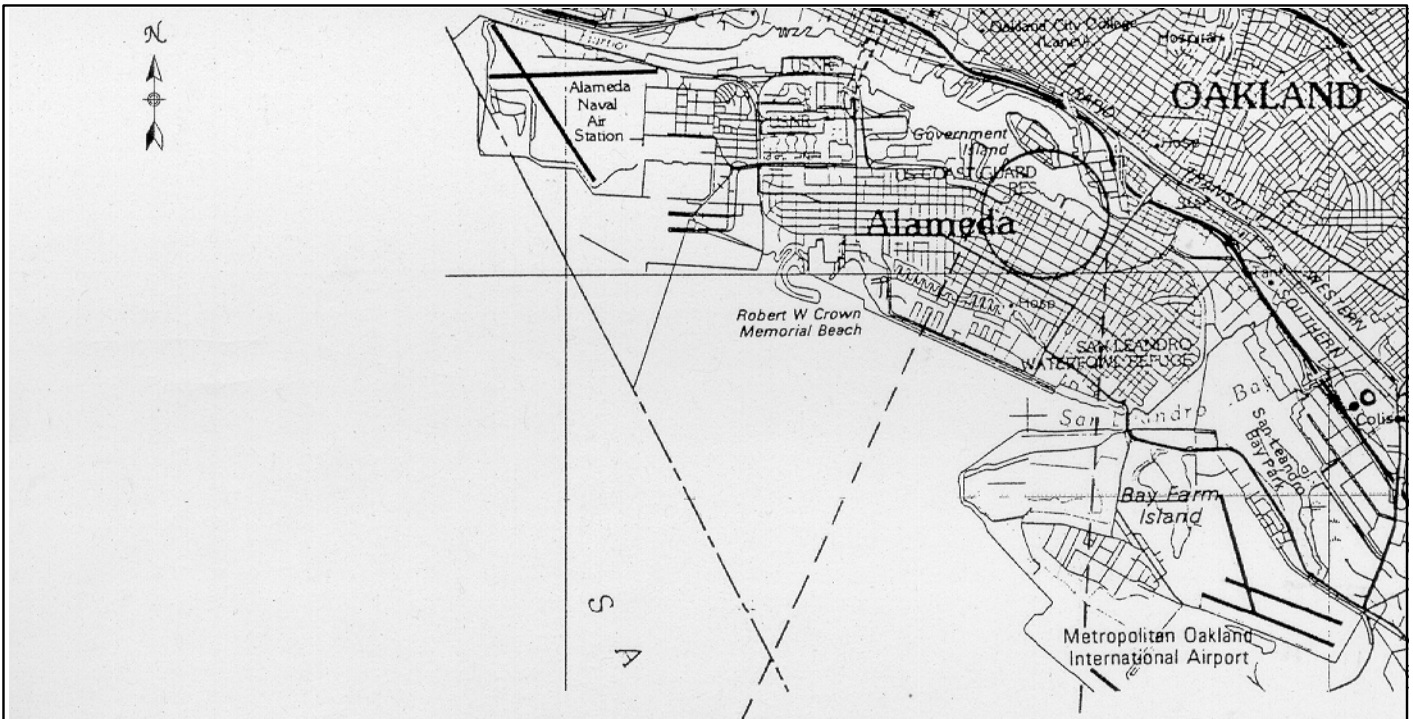
⁷ TCA = 1,1,1-Trichloroethane

⁸ TCE = Trichloroethene

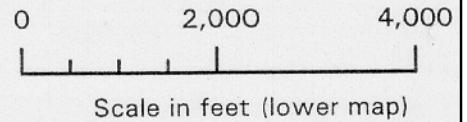
⁹ PCE = Tetrachloroethene

¹⁰ All other 8010 list analytes

¹¹ nd = not detected above laboratory reporting limit



Base map (upper): U.S.G.S. 1:1,000,000-scale series (Topographic)
 San Francisco Quadrangle, California, 1978.
 Base map (lower): U.S.G.S. 7.5 minute series (Topographic)
 Oakland East and Oakland West Quadrangles, California,
 1959, Photorevised 1980.



Project No. CS1605
 Cargill Salt Dispensing Systems Division
 2016 Clement Avenue, Alameda, California
Figure 1. Site Location

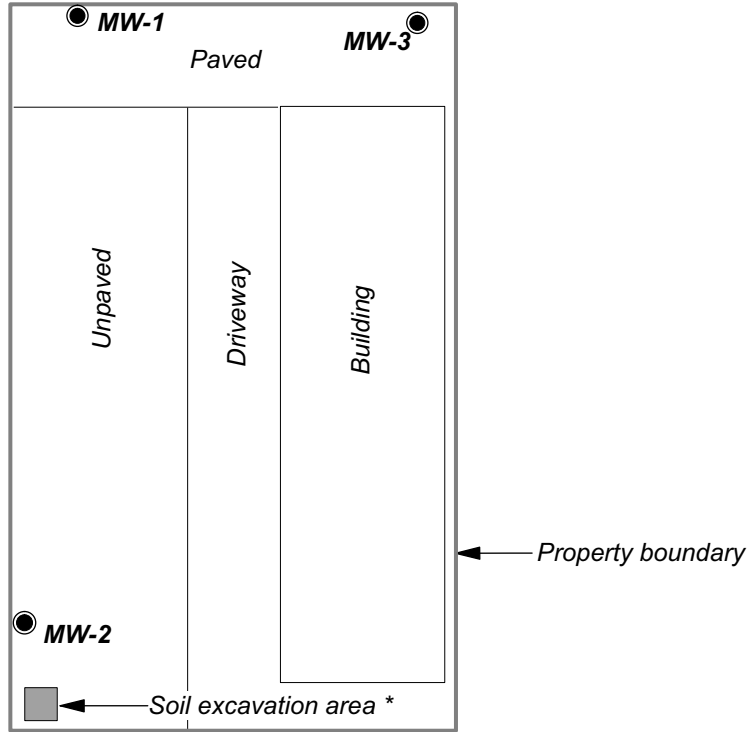


MW-4

Curb line (Typ.)

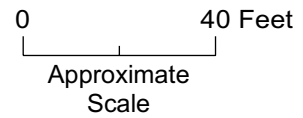


Clement Avenue



EXPLANATION

- Groundwater monitoring well
- * Excavated in February 1994



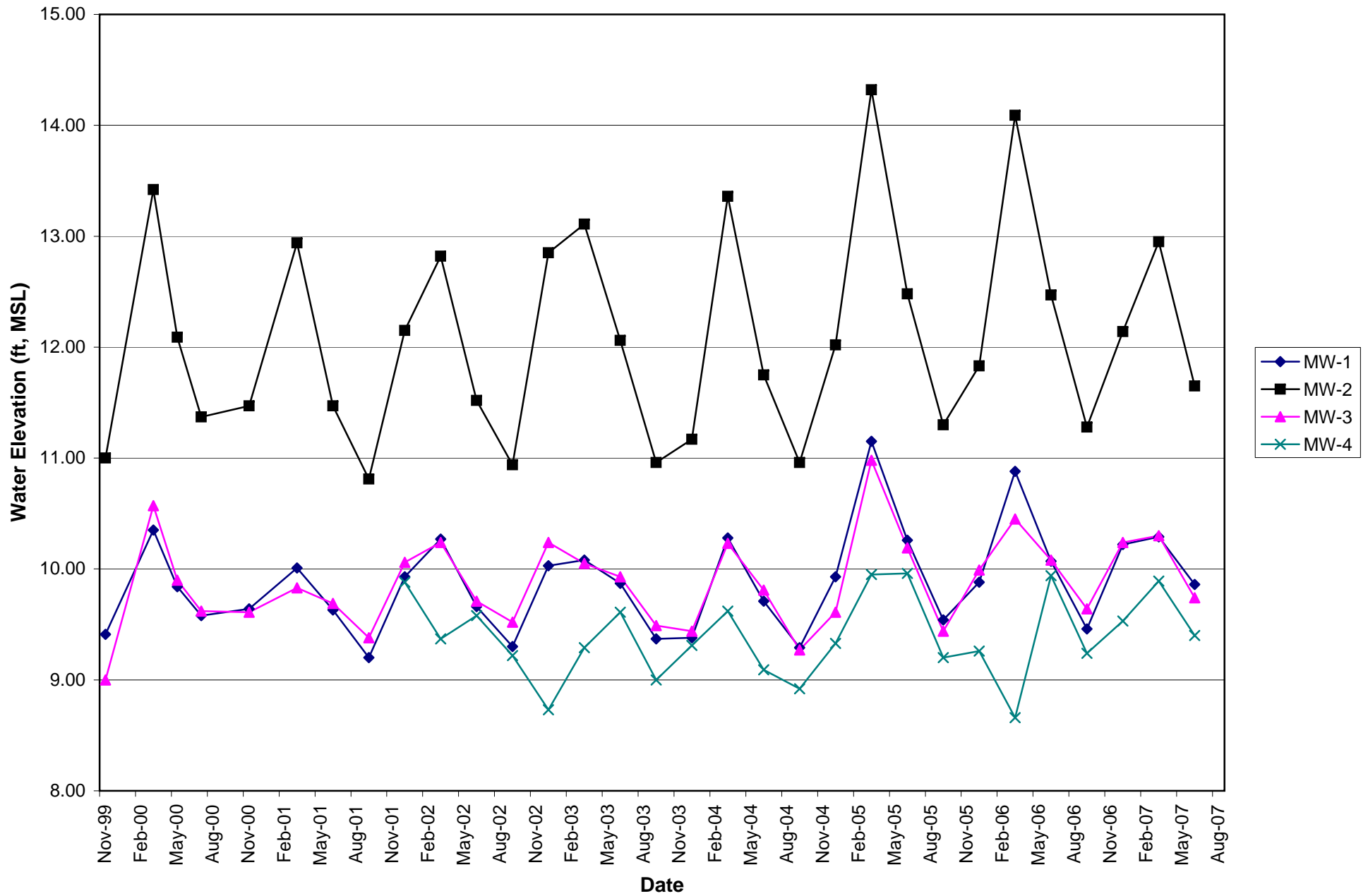
1605fig207Q2.dsf 9/19/07

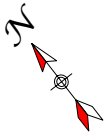
Base map from Connor Pacific/EFW, Off-Site Groundwater Characterization, August 21, 2002.



Project No. CS1605
 Cargill Salt Dispensing Systems Division
 2016 Clement Avenue, Alameda, California
Figure 2. Groundwater Monitoring Well Locations

Figure 3. Graphical Summary of Groundwater Elevations



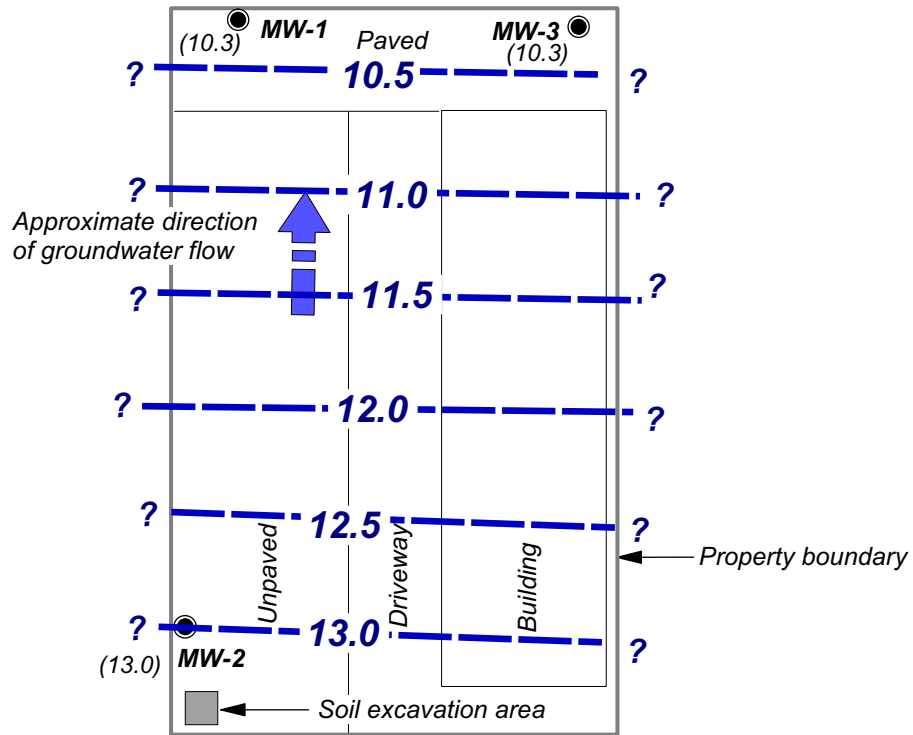


Curb line (Typ.)

● (9.9)
MW-4

? ——— 10.0 ——— ?

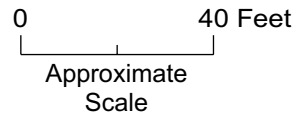
Clement Avenue



EXPLANATION

● Monitoring well

(10.3) Groundwater elevation (Ft.-MSL);
measured 3/6/07



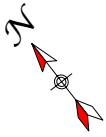
? ——— 11 ——— Groundwater elevation contour
(Ft.-MSL)

1605fig407Q2.dsf 9/21/07

Base map from Connor Pacific/EFW, Off-Site
Groundwater Characterization, August 21, 2002.

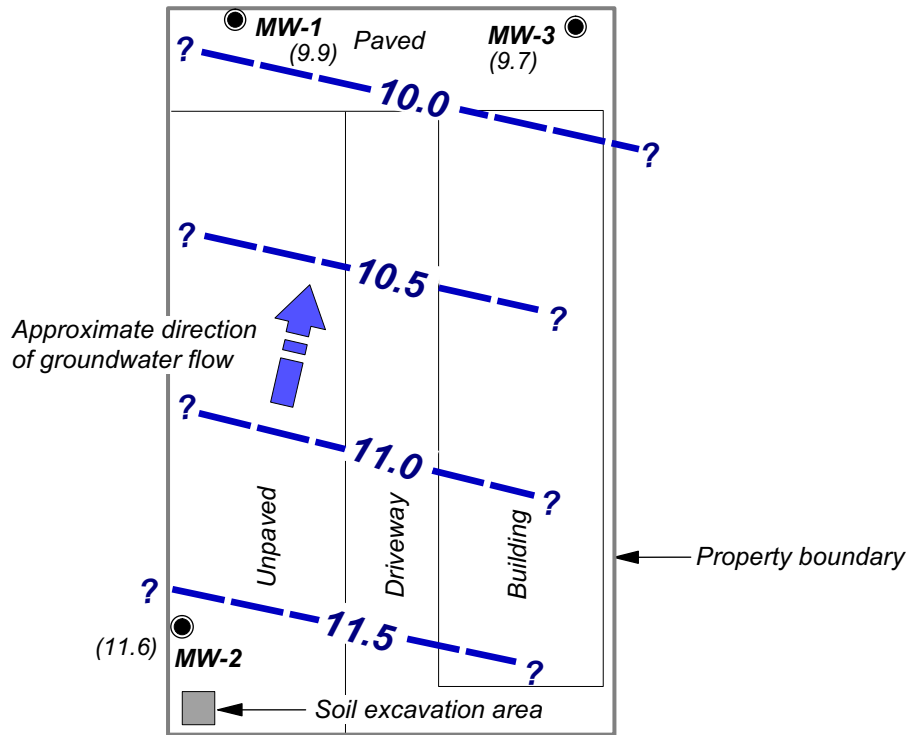
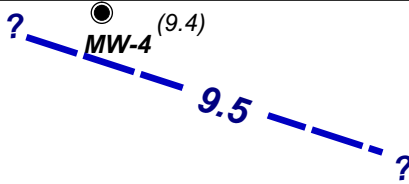


Project No. CS1605
Cargill Salt Dispensing Systems Division
2016 Clement Avenue, Alameda, California
Figure 4. Groundwater Elevation Contours - March 2007



Curb line (Typ.)

Clement Avenue

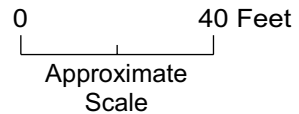


EXPLANATION

● Monitoring well

(9.9) Groundwater elevation (Ft.-MSL);
measured 6/15/07

--- 11 --- Groundwater elevation contour
(Ft.-MSL)

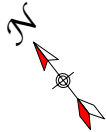


Base map from Conor Pacific/EPW, Office
Groundwater Characterization, August 21, 2002.

1605fig507Q2.dsf 9/21/07



Project No. CS1605
Cargill Salt Dispensing Systems Division
2016 Clement Avenue, Alameda, California
Figure 5. Groundwater Elevation Contours - June 2007



Curb line (Typ.)

Clement Avenue

MW-4

Parameter	3/07	6/07
DCE	<0.5	<0.5
TCE	<0.5	<0.5
PCE	0.70	0.75

MW-1

Paved

MW-3

Parameter	3/07	6/07
DCE	<2.0	3.0
TCE	17	38
PCE	170	310

Parameter	3/07	6/07
DCE	1.5	2.4
TCE	<0.5	<0.5
PCE	<0.5	<0.5

Unpaved

Driveway

Building

Parameter	3/07	6/07
DCE	<20	<20
TCE	<20	22
PCE	1,600	2,400

Property boundary

MW-2

Soil excavation area

EXPLANATION



Groundwater monitoring well location

All concentrations reported in micrograms per liter ($\mu\text{g/L}$), in groundwater. All other 8010 list analytes were below detection limits.

Analyte concentration

DCE	3.0
TCE	38
PCE	310

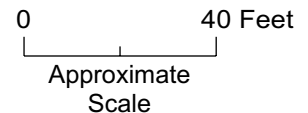
Analytical parameter

DCE = 1,1-Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene

VOCs = Volatile organic compounds



1605fig607Q2.dsf 9/21/07

Base map from Conor Pacific/EPW, OES site Groundwater Characterization, August 21, 2002.



Project No. CS1605
Cargill Salt Dispensing Systems Division
2016 Clement Avenue, Alameda, California
**Figure 6. VOC Concentrations in Groundwater –
March and June 2007**

Figure 7. Graphical Summary of PCE Concentrations

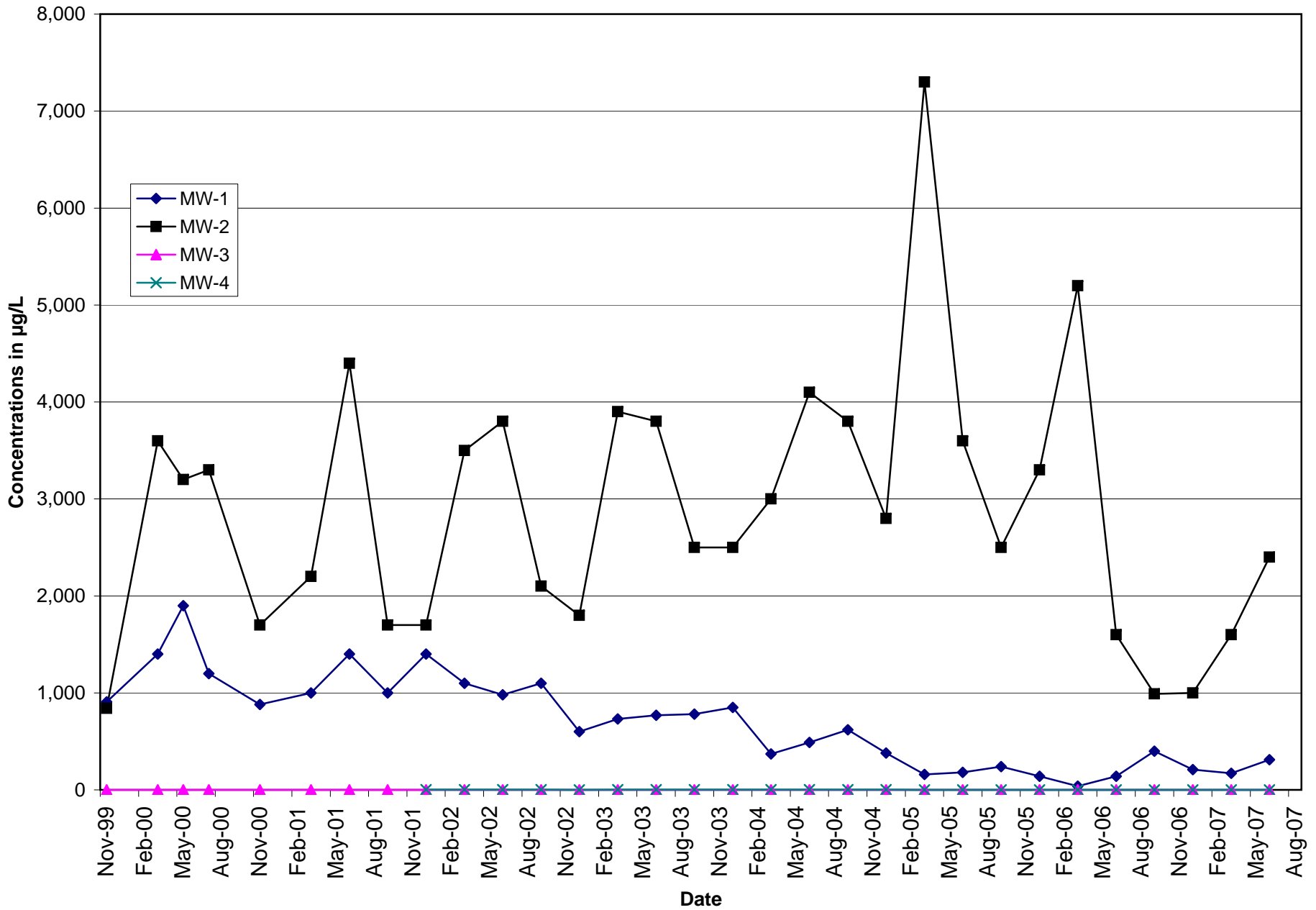
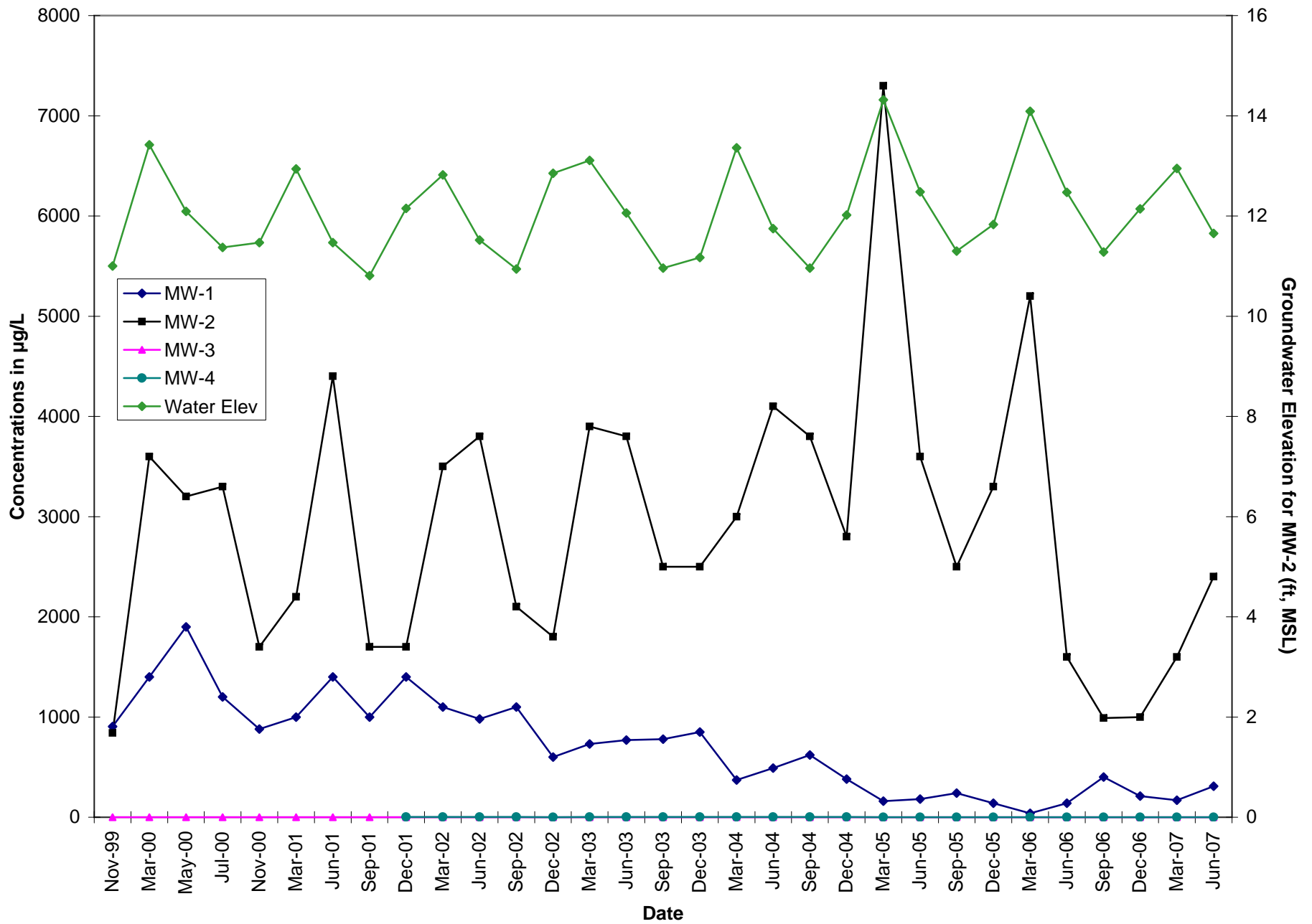


Figure 8. PCE Concentrations vs. Groundwater Elevation



Appendix A
Field Data Sheets

First Quarter 2007

WATER LEVEL FIELD DATA

Cargill Salt
 Alameda Facility
 Alameda, California
 Project No. CS1605

Well ID	Date	Time	Depth to Water (1st Msmt.) (feet)	Depth to Water (2nd Msmt.) (feet)	Comments
MW-1	3-6-07	0918	2.87	2.87	water in box
MW-2	3-6-07	0913	3.27	3.27	water in box
MW-3	3-6-07	0914	3.04	3.04	water in box
MW-4	3-6-07	0920	2.54	2.54	water in box

Data Collection

Field measurements by:

Print: Manuel L Gallegos

Signature: 

Date: 3/6/07

Reviewed by:

Print: Serena Fuentes

Signature: 

Date: 3/6/07

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-1
 Sample ID: MW-1
 Start Date: 3-6-07
 Finish Date: 3-6-07

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 2.87 Well depth (ft): 18.3
 One casing volume (gal.): 0.63 Calculated purge volume (gal.) (3 x casing volume): 1.89
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): ND Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 3-6-07 Start time: 1000 End time: 1028
 Purging equipment: Submersible pump _____ Bladder pump _____ Peristaltic pump
 PVC bailer _____ Teflon bailer _____ Other _____
 Purge rate: 0.24 ipm Well yield (H/L): High
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal.)	pH (units)	EC (μ S/cm)	T (°C)	Color (Visual)	Turbidity (Visual or NTU)
<u>1010</u>	<u>2.3</u>	<u>6.82</u>	<u>437</u>	<u>15.3</u>	<u>Clear</u>	<u>4.2</u>
<u>1019</u>	<u>4.6</u>	<u>6.45</u>	<u>364</u>	<u>15.4</u>	<u>Clear</u>	<u>5.85</u>
<u>1028</u>	<u>6.9</u>	<u>6.52</u>	<u>352</u>	<u>15.2</u>	<u>Clear</u>	<u>1.1</u>
Total Purged (gal.): <u>6.9 liters</u>						

WELL SAMPLING

Date sampled: 3-6-07 Start time: 1028 End time: 1030
 Depth to water (ft) before sampling: 5.37
 Sampling equipment: Peristaltic pump Bladder pump _____ Teflon bailer _____
 PVC bailer _____ Other _____

Weather conditions: Sunny/clear Ambient temperature (° F): 65
 Well condition/Remarks: All samples taken

Meter calibration: EC _____ pH _____
 Temperature See MW-4 Turbidity _____

Purged and sampled by (print): Manuel L. Gallegos
 Signature: [Signature] Reviewed by: [Signature]

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-2
 Sample ID: MW-2
 Start Date: 3-6-07
 Finish Date: 3-6-07

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 3.27 Well depth (ft): 17.5
 One casing volume (gal.): 0.58 Calculated purge volume (gal.) (3 x casing volume): 1.75
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4." = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): NO Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 3-6-07 Start time: 1124 End time: 1145
 Purging equipment: Submersible pump _____ Bladder pump _____ Peristaltic pump
 PVC bailer _____ Teflon bailer _____ Other _____
 Purge rate: 0.3 Lpm Well yield (H/L): High
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal./liters)	pH (units)	EC (μS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
<u>1132</u>	<u>2.1</u>	<u>6.51</u>	<u>378</u>	<u>17.2</u>	<u>Clear</u>	<u>16</u>
<u>1138</u>	<u>4.2</u>	<u>6.71</u>	<u>390</u>	<u>16.2</u>	<u>Clear</u>	<u>1.8</u>
<u>1145</u>	<u>6.3</u>	<u>6.68</u>	<u>399</u>	<u>16.2</u>	<u>Clear</u>	<u>0.30</u>

Total Purged (gal.): 6.3
 1.75

WELL SAMPLING

Date sampled: 3-6-07 Start time: 1145 End time: 1147
 Depth to water (ft) before sampling: 4.44
 Sampling equipment: Peristaltic pump Bladder pump _____ Teflon bailer _____
 PVC bailer _____ Other _____

Weather conditions: Sunny / clear Ambient temperature (° F): 67
 Well condition/Remarks: All samples taken

* Dup-1 @ this well.

Meter calibration: EC _____ pH _____
 Temperature EC MW-4 Turbidity _____

Purged and sampled by (print): Manuel L. Gallegos
 Signature: [Signature] Reviewed by: [Signature]

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-3
 Sample ID: MW-3
 Start Date: 3-6-07
 Finish Date: 3-6-07

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 3.04 Well depth (ft): 17.4
 One casing volume (gal.): 0.59 Calculated purge volume (gal.) (3 x casing volume): 1.79
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): ND Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 3-6-07 Start time: 1038 End time: 1117
 Purging equipment: Submersible pump _____ Bladder pump _____ Peristaltic pump
 PVC bailer _____ Teflon bailer _____ Other _____
 Purge rate: 0.17 lpm Well yield (H/L): Low
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal.)	pH (units)	EC (μ S/cm)	T ($^{\circ}$ C)	Color (Visual)	Turbidity (Visual or NTU)
<u>1051</u>	<u>2.2</u>	<u>7.19</u>	<u>511</u>	<u>17.9</u>	<u>Clear</u>	<u>29</u>
<u>1104</u>	<u>4.4</u>	<u>7.20</u>	<u>517</u>	<u>17.3</u>	<u>Clear</u>	<u>37</u>
<u>1117</u>	<u>6.6</u>	<u>7.21</u>	<u>519</u>	<u>17.2</u>	<u>Clear</u>	<u>17</u>
Total Purged (gal.): <u>6.6</u>						

WELL SAMPLING

Date sampled: 3-6-07 Start time: 1117 End time: 1118
 Depth to water (ft) before sampling: 15.62
 Sampling equipment: Peristaltic pump Bladder pump _____ Teflon bailer _____
 PVC bailer _____ Other _____

Weather conditions: Sunny / clear Ambient temperature ($^{\circ}$ F): 65
 Well condition/Remarks: All samples collected

Meter calibration: EC Set mm-4 pH _____
 Temperature _____ Turbidity _____

Purged and sampled by (print): Manuel L. Gallegos
 Signature: [Signature] Reviewed by: [Signature]

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-4
 Sample ID: MW-4
 Start Date: 3-6-07
 Finish Date: 3-6-07

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 2.54 Well depth (ft): 18.5
 One casing volume (gal.): 0.45 Calculated purge volume (gal.) (3 x casing volume): 1.94
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): NA Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 3-6-07 Start time: 0922 End time: 0949
 Purging equipment: Submersible pump _____ Bladder pump _____ Peristaltic pump
 PVC bailer _____ Teflon bailer _____ Other _____
 Purge rate: 0.26 mpm Well yield (H/L): High
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal.)	pH (units)	EC ($\mu S/cm$)	T ($^{\circ}C$)	Color (Visual)	Turbidity (Visual or NTU)
<u>0931</u>	<u>2.4</u>	<u>6.54</u>	<u>635</u>	<u>17.8</u>	<u>Clear</u>	<u>1.2</u>
<u>0940</u>	<u>4.8</u>	<u>6.47</u>	<u>637</u>	<u>17.9</u>	<u>Clear</u>	<u>0.35</u>
<u>0949</u>	<u>7.2</u>	<u>6.48</u>	<u>641</u>	<u>18.0</u>	<u>Clear</u>	<u>1.8</u>
Total Purged (gal.): <u>Liter 7.2</u>						

WELL SAMPLING

Date sampled: 3-6-07 Start time: 0950 End time: 0952
 Depth to water (ft) before sampling: 11.36
 Sampling equipment: Peristaltic pump Bladder pump _____ Teflon bailer _____
 PVC bailer _____ Other _____

Weather conditions: Sunny / clear Ambient temperature ($^{\circ}F$): 65
 Well condition/Remarks: All samples collected

Meter calibration: EC 14790/15,000 pH 7.42.70/9.81-10.00/9.50.40
 Temperature 17.8 Turbidity 1.0 8-1.0

Purged and sampled by (print): Mark L. Crawford
 Signature: [Signature] Reviewed by: [Signature]

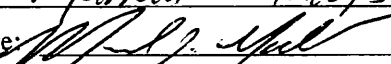
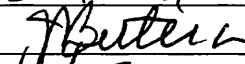
Second Quarter 2007

WATER LEVEL FIELD DATA

Cargill Salt
 Alameda Facility
 Alameda, California
 Project No. CS1605

Well ID	Date	Time	Depth to Water (1st Msmt.) (feet)	Depth to Water (2nd Msmt.) (feet)	Comments
MW-3 MW-1	6/15/07	0727	3.60	3.60	water in box
MW-2	6/15/07	0731	4.57	4.57	water in box
MW-1 MW-3	6/15/07	0729	3.30	3.30	water in box
MW-4	6/15/07	0733	3.03	3.03	

Data Collection

Field measurements by: Print: <u>Manuel L. Callegos</u> Signature: <u></u> Date: <u>6-15-07</u>	Reviewed by: Print: <u>J. Butera</u> Signature: <u></u> Date: <u>6/21/07</u>
---	--

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-1
 Sample ID: MW-1
 Start Date: 6-15-07
 Finish Date: 6-15-07

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 3.49 Well depth (ft): 18.3
 One casing volume (gal.): 0.60 Calculated purge volume (gal.) (3 x casing volume): 1.82
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): ND Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 6-15-07 Start time: 0824 End time: 0850
 Purging equipment: Submersible pump _____ Bladder pump _____ Peristaltic pump
 PVC bailer _____ Teflon bailer _____ Other _____
 Purge rate: (Lpm) 0.28 Well yield (H/L): High
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal./ft ³)	pH (units)	EC (μ S/cm)	T ($^{\circ}$ C)	Color (Visual)	Turbidity (Visual or NTU)
<u>0834</u>	<u>2.2</u>	<u>7.26</u>	<u>422</u>	<u>18.9</u>	<u>Clear</u>	<u>Clear</u>
<u>0842</u>	<u>4.4</u>	<u>6.84</u>	<u>383</u>	<u>19.0</u>	<u>Clear</u>	<u>Clear</u>
<u>0850</u>	<u>6.8</u>	<u>6.80</u>	<u>378</u>	<u>19.0</u>	<u>Clear</u>	<u>Clear</u>

Total Purged (gal.): 6.8
 i. ft³

WELL SAMPLING

Date sampled: 6-15-07 Start time: 0851 End time: 0852
 Depth to water (ft) before sampling: 6.73
 Sampling equipment: Peristaltic pump Bladder pump _____ Teflon bailer _____
 PVC bailer _____ Other _____

Weather conditions: Sunny / clear Ambient temperature ($^{\circ}$ F): 70
 Well condition/Remarks: All samples taken

Meter calibration: EC _____ pH _____
 Temperature _____ Turbidity _____

Purged and sampled by (print): Manuel L. Gallegos
 Signature: [Signature] Reviewed by: [Signature]

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-2
 Sample ID: MW-2
 Start Date: 6-15-07
 Finish Date: 6-15-07

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 443 Well depth (ft): 17.5
 One casing volume (gal.): 0.52 Calculated purge volume (gal.) (3 x casing volume): 1.58
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): NO Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 6-15-07 Start time: 0957 End time: 1023
 Purging equipment: Submersible pump _____ Bladder pump _____ Peristaltic pump
 PVC bailer _____ Teflon bailer _____ Other _____
 Purge rate: (Lpm) 0.22 Well yield (H/L): High
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal.)	pH (units)	EC ($\mu S/cm$)	T ($^{\circ}C$)	Color (Visual)	Turbidity (Visual or NTU)
<u>1009</u>	<u>1.9</u>	<u>7.17</u>	<u>434</u>	<u>18.6</u>	<u>Clear</u>	<u>Clear</u>
<u>1014</u>	<u>3.8</u>	<u>6.82</u>	<u>437</u>	<u>18.4</u>	<u>Clear</u>	<u>Clear</u>
<u>1023</u>	<u>5.7</u>	<u>6.83</u>	<u>440</u>	<u>18.4</u>	<u>Clear</u>	<u>Clear</u>

Total Purged (gal.): 5.9

WELL SAMPLING

Date sampled: 6-15-07 Start time: 1024 End time: 1025
 Depth to water (ft) before sampling: 5.72
 Sampling equipment: Peristaltic pump Bladder pump _____ Teflon bailer _____
 PVC bailer _____ Other _____

Weather conditions: Sunny / clear Ambient temperature ($^{\circ}F$): 78
 Well condition/Remarks: All samples taken

Meter calibration: EC _____ pH _____
 Temperature _____ Turbidity _____

Purged and sampled by (print): Manuel L. Callegos
 Signature: [Signature] Reviewed by: [Signature]

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-3
 Sample ID: MW-3
 Start Date: 6-15-07
 Finish Date: 6-15-07

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 3.55 Well depth (ft): 17.6
 One casing volume (gal.): 0.57 Calculated purge volume (gal.) (3 x casing volume): 1.72
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): NO Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 6-15-07 Start time: 0858 End time: 0943
 Purging equipment: Submersible pump Bladder pump Peristaltic pump
 PVC bailer Teflon bailer Other
 Purge rate: (2pm) 0.14 Well yield (H/L): Low
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal.)	pH (units)	EC (µS/cm)	T (°C)	Color (Visual)	Turbidity (Visual or NTU)
<u>0913</u>	<u>2.1</u>	<u>7.12</u>	<u>540</u>	<u>19.0</u>	<u>Clear</u>	<u>light</u>
<u>0928</u>	<u>4.2</u>	<u>7.34</u>	<u>591</u>	<u>18.2</u>	<u>Clear</u>	<u>Clear</u>
<u>0943</u>	<u>6.3</u>	<u>7.40</u>	<u>594</u>	<u>18.5</u>	<u>Clear</u>	<u>Clear</u>

Total Purged (gal.): 6.3

WELL SAMPLING

Date sampled: 6-15-07 Start time: 0943 End time: 0945
 Depth to water (ft) before sampling: 14.83
 Sampling equipment: Peristaltic pump Bladder pump Teflon bailer
 PVC bailer Other

Weather conditions: Sunny / Clear Ambient temperature (° F): 75
 Well condition/Remarks: All samples taken

Meter calibration: EC _____ pH _____
 Temperature _____ Turbidity _____

Purged and sampled by (print): Manuel L. Galicia
 Signature: _____ Reviewed by: JB

SAMPLE COLLECTION FIELD DATA

Project No.: CS1605
 Project Name: Alameda Facility
 Location: Alameda, CA
 Client: Cargill Salt

Well ID: MW-4
 Sample ID: MW-4
 Start Date: 6-15-07
 Finish Date: 6-15-07

WELL INFORMATION

Casing diameter (in.): 3.5 Depth to water (ft): 3.03 Well depth (ft): 19.9
 One casing volume (gal.): 0.65 Calculated purge volume (gal.) (3 x casing volume): 1.94
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6
 Floating product thickness (ft): ND Method for checking: Interface probe Clear bailer

WELL PURGING

Date purged: 6-15-07 Start time: 0738 End time: 0815
 Purging equipment: Submersible pump Bladder pump Peristaltic pump
 PVC bailer Teflon bailer Other
 Purge rate: (Lpm) 20-19 Well yield (H/L): High
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (gal.)	pH (units)	EC (µS/cm)	T (°C)	Color (Visual)	Turbidity (Visual or NTU)
<u>0745</u>	<u>2.4</u>	<u>6.95</u>	<u>631</u>	<u>20.0</u>	<u>Clear</u>	<u>light</u>
<u>0801</u>	<u>4.8</u>	<u>7.28</u>	<u>635</u>	<u>19.7</u>	<u>Clear</u>	<u>clear</u>
<u>0815</u>	<u>7.4</u>	<u>7.36</u>	<u>633</u>	<u>19.5</u>	<u>Clear</u>	<u>clear</u>

Total Purged (gal.): 7.4 liters

WELL SAMPLING

Date sampled: 6-15-07 Start time: 0816 End time: 0817
 Depth to water (ft) before sampling: 10.47
 Sampling equipment: Peristaltic pump Bladder pump Teflon bailer
 PVC bailer Other

Weather conditions: Sunny clear Ambient temperature (° F): 70
 Well condition/Remarks: All samples taken

Meter calibration: EC 14,980 - 151,000 pH 704.700/1002/1000/392400
 Temperature 25.0 Turbidity NA
 Purged and sampled by (print): Manuel L Galles
 Signature: [Signature] Reviewed by: [Signature]

Appendix B

Groundwater Velocity Calculations

APPENDIX B
GROUNDWATER VELOCITY CALCULATIONS

FOR CARGILL ALAMEDA SITE

GROUNDWATER VELOCITY FORMULA

$V = Ki/n$ where:

V = average linear groundwater velocity i = hydraulic gradient
 K = hydraulic conductivity n = effective porosity

PARAMETERS

Range of hydraulic conductivity values (K) from slug tests:

Material	Well	K (cm/sec)
Silty sand (SM) and Clayey sand (SC)	MW-1	0.00002
Silty sand (SM) and Clayey sand (SC)	MW-2	0.00002
Silty sand (SM) and Clayey sand (SC)	MW-3	0.000003

Highest measured K = 0.00002

Porosity (n) = 33% (from laboratory analysis of boring B21 soil sample)

Hydraulic gradient (i) calculated from groundwater contours:

March 2007 0.023
 June 2007 0.014

UNIT CONVERSIONS

1 day = 86,400 sec 1 cm/sec = 2,834.65 ft/day
 1 foot = 30.48 cm 1 cm/sec = 1,034,645.67 ft/yr

CALCULATED VELOCITIES

Measurement Event	Flow Direction	K (cm/sec)	i (ft/ft)	n	V (ft/yr)
March 2007	NE	0.00002	0.023	0.33	1
June 2007	NE	0.00002	0.014	0.33	1

Calculations and assumptions prepared by:

Handwritten signature: Mark C. Wheeler

Date: 9/22/2007

Appendix C

Certified Analytical Reports and Chain-of-Custody Documentation

First Quarter 2007



ANALYTICAL REPORT

Job Number: 720-8095-1

Job Description: Alameda Facility CS 1605

For:
Crawford Consulting Inc
2 North First Street 4th Floor
San Jose, CA 95113-1212

Attention: Mark Wheeler

A handwritten signature in black ink that reads "D Sharma".

Dimple Sharma
Project Manager I
dsharma@stl-inc.com
03/13/2007

cc: Dana Johnston

Project Manager: Dimple Sharma

Severn Trent Laboratories, Inc.

STL San Francisco 1220 Quarry Lane, Pleasanton, CA 94566
Tel (925) 484-1919 Fax (925) 484-1096 www.stl-inc.com

EXECUTIVE SUMMARY - Detections

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-8095-1	MW-1				
Trichloroethene		17	2.0	ug/L	8260B
Tetrachloroethene		170	2.0	ug/L	8260B
720-8095-2	MW-2				
Tetrachloroethene		1600	20	ug/L	8260B
720-8095-3	MW-3				
1,1-Dichloroethene		1.5	0.50	ug/L	8260B
720-8095-4	MW-4				
Tetrachloroethene		0.70	0.50	ug/L	8260B
720-8095-5FD	DUP-1				
Trichloroethene		20	20	ug/L	8260B
Tetrachloroethene		1700	20	ug/L	8260B

METHOD SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS (Low Level)	STL SF	SW846 8260B	
Purge-and-Trap	STL SF		SW846 5030B

LAB REFERENCES:

STL SF = STL San Francisco

METHOD REFERENCES:

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986
And Its Updates.

SAMPLE SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-8095-1	MW-1	Water	03/06/2007 1028	03/07/2007 1445
720-8095-2	MW-2	Water	03/06/2007 1145	03/07/2007 1445
720-8095-3	MW-3	Water	03/06/2007 1117	03/07/2007 1445
720-8095-4	MW-4	Water	03/06/2007 0950	03/07/2007 1445
720-8095-5FD	DUP-1	Water	03/06/2007 0000	03/07/2007 1445
720-8095-6TB	TB-1	Water	03/06/2007 0000	03/07/2007 1445

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Client Sample ID: MW-1

Lab Sample ID: 720-8095-1
Client Matrix: Water

Date Sampled: 03/06/2007 1028
Date Received: 03/07/2007 1445

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-19176	Instrument ID: Saturn 2K3
Preparation: 5030B		Lab File ID: d:\data\200703\031107\SA-
Dilution: 4.0		Initial Weight/Volume: 40 mL
Date Analyzed: 03/11/2007 1508		Final Weight/Volume: 40 mL
Date Prepared: 03/11/2007 1508		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		2.0
1,1-Dichloroethane	ND		2.0
Dichlorodifluoromethane	ND		2.0
Vinyl chloride	ND		2.0
Chloroethane	ND		4.0
Trichlorofluoromethane	ND		4.0
Methylene Chloride	ND		20
trans-1,2-Dichloroethene	ND		2.0
cis-1,2-Dichloroethene	ND		2.0
Chloroform	ND		4.0
1,1,1-Trichloroethane	ND		2.0
Carbon tetrachloride	ND		2.0
1,2-Dichloroethane	ND		2.0
Trichloroethene	17		2.0
1,2-Dichloropropane	ND		2.0
Dichlorobromomethane	ND		2.0
trans-1,3-Dichloropropene	ND		2.0
cis-1,3-Dichloropropene	ND		2.0
1,1,2-Trichloroethane	ND		2.0
Tetrachloroethene	170		2.0
Chlorodibromomethane	ND		2.0
Chlorobenzene	ND		2.0
Bromoform	ND		4.0
1,1,2,2-Tetrachloroethane	ND		2.0
1,3-Dichlorobenzene	ND		2.0
1,4-Dichlorobenzene	ND		2.0
1,2-Dichlorobenzene	ND		2.0
Chloromethane	ND		4.0
Bromomethane	ND		4.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0
EDB	ND		2.0
1,2,4-Trichlorobenzene	ND		4.0
Surrogate	%Rec	Acceptance Limits	
Toluene-d8 (Surr)	96	77 - 121	
4-Bromofluorobenzene	104	79 - 118	
1,2-Dichloroethane-d4 (Surr)	102	78 - 117	

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Client Sample ID: MW-2

Lab Sample ID: 720-8095-2
 Client Matrix: Water

Date Sampled: 03/06/2007 1145
 Date Received: 03/07/2007 1445

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-19176	Instrument ID: Saturn 2K3
Preparation: 5030B		Lab File ID: d:\data\200703\031107\SA-
Dilution: 40		Initial Weight/Volume: 40 mL
Date Analyzed: 03/11/2007 1722		Final Weight/Volume: 40 mL
Date Prepared: 03/11/2007 1722		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		20
1,1-Dichloroethane	ND		20
Dichlorodifluoromethane	ND		20
Vinyl chloride	ND		20
Chloroethane	ND		40
Trichlorofluoromethane	ND		40
Methylene Chloride	ND		200
trans-1,2-Dichloroethene	ND		20
cis-1,2-Dichloroethene	ND		20
Chloroform	ND		40
1,1,1-Trichloroethane	ND		20
Carbon tetrachloride	ND		20
1,2-Dichloroethane	ND		20
Trichloroethene	ND		20
1,2-Dichloropropane	ND		20
Dichlorobromomethane	ND		20
trans-1,3-Dichloropropene	ND		20
cis-1,3-Dichloropropene	ND		20
1,1,2-Trichloroethane	ND		20
Tetrachloroethene	1600		20
Chlorodibromomethane	ND		20
Chlorobenzene	ND		20
Bromoform	ND		40
1,1,2,2-Tetrachloroethane	ND		20
1,3-Dichlorobenzene	ND		20
1,4-Dichlorobenzene	ND		20
1,2-Dichlorobenzene	ND		20
Chloromethane	ND		40
Bromomethane	ND		40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20
EDB	ND		20
1,2,4-Trichlorobenzene	ND		40
Surrogate	%Rec	Acceptance Limits	
Toluene-d8 (Surr)	94	77 - 121	
4-Bromofluorobenzene	104	79 - 118	
1,2-Dichloroethane-d4 (Surr)	107	78 - 117	

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Client Sample ID: MW-3

Lab Sample ID: 720-8095-3
Client Matrix: Water

Date Sampled: 03/06/2007 1117
Date Received: 03/07/2007 1445

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-19176	Instrument ID: Saturn 2K3
Preparation: 5030B		Lab File ID: d:\data\200703\031107\SA-
Dilution: 1.0		Initial Weight/Volume: 40 mL
Date Analyzed: 03/11/2007 1756		Final Weight/Volume: 40 mL
Date Prepared: 03/11/2007 1756		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	1.5		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0
Surrogate	%Rec	Acceptance Limits	
Toluene-d8 (Surr)	93	77 - 121	
4-Bromofluorobenzene	101	79 - 118	
1,2-Dichloroethane-d4 (Surr)	104	78 - 117	

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Client Sample ID: MW-4

Lab Sample ID: 720-8095-4
Client Matrix: Water

Date Sampled: 03/06/2007 0950
Date Received: 03/07/2007 1445

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-19176	Instrument ID: Saturn 2K3
Preparation: 5030B		Lab File ID: d:\data\200703\031107\SA-
Dilution: 1.0		Initial Weight/Volume: 40 mL
Date Analyzed: 03/11/2007 1830		Final Weight/Volume: 40 mL
Date Prepared: 03/11/2007 1830		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	0.70		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0
Surrogate	%Rec		Acceptance Limits
Toluene-d8 (Surr)	95		77 - 121
4-Bromofluorobenzene	101		79 - 118
1,2-Dichloroethane-d4 (Surr)	103		78 - 117

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Client Sample ID: DUP-1

Lab Sample ID: 720-8095-5FD
 Client Matrix: Water

Date Sampled: 03/06/2007 0000
 Date Received: 03/07/2007 1445

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-19213	Instrument ID: Varian 3900D
Preparation:	5030B		Lab File ID: c:\saturday\data\200703\03
Dilution:	40		Initial Weight/Volume: 40 mL
Date Analyzed:	03/12/2007 1159		Final Weight/Volume: 40 mL
Date Prepared:	03/12/2007 1159		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		20
1,1-Dichloroethane	ND		20
Dichlorodifluoromethane	ND		20
Vinyl chloride	ND		20
Chloroethane	ND		40
Trichlorofluoromethane	ND		40
Methylene Chloride	ND		200
trans-1,2-Dichloroethene	ND		20
cis-1,2-Dichloroethene	ND		20
Chloroform	ND		40
1,1,1-Trichloroethane	ND		20
Carbon tetrachloride	ND		20
1,2-Dichloroethane	ND		20
Trichloroethene	20		20
1,2-Dichloropropane	ND		20
Dichlorobromomethane	ND		20
trans-1,3-Dichloropropene	ND		20
cis-1,3-Dichloropropene	ND		20
1,1,2-Trichloroethane	ND		20
Tetrachloroethene	1700		20
Chlorodibromomethane	ND		20
Chlorobenzene	ND		20
Bromoform	ND		40
1,1,2,2-Tetrachloroethane	ND		20
1,3-Dichlorobenzene	ND		20
1,4-Dichlorobenzene	ND		20
1,2-Dichlorobenzene	ND		20
Chloromethane	ND		40
Bromomethane	ND		40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20
EDB	ND		20
1,2,4-Trichlorobenzene	ND		40
Surrogate	%Rec		Acceptance Limits
Toluene-d8 (Surr)	97		77 - 121
4-Bromofluorobenzene	100		79 - 118
1,2-Dichloroethane-d4 (Surr)	113		78 - 117

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Client Sample ID: TB-1

Lab Sample ID: 720-8095-6TB
 Client Matrix: Water

Date Sampled: 03/06/2007 0000
 Date Received: 03/07/2007 1445

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-19176	Instrument ID: Saturn 2K3
Preparation: 5030B		Lab File ID: d:\data\200703\031107\SA-
Dilution: 1.0		Initial Weight/Volume: 40 mL
Date Analyzed: 03/11/2007 1435		Final Weight/Volume: 40 mL
Date Prepared: 03/11/2007 1435		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0
Surrogate	%Rec	Acceptance Limits	
Toluene-d8 (Surr)	99	77 - 121	
4-Bromofluorobenzene	104	79 - 118	
1,2-Dichloroethane-d4 (Surr)	107	78 - 117	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description
--------------------	------------------	--------------------

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-8095-1

QC Association Summary

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Report Basis</u>	<u>Client Matrix</u>	<u>Method</u>	<u>Prep Batch</u>
GC/MS VOA					
Analysis Batch:720-19176					
LCS 720-19176/1	Lab Control Spike	T	Water	8260B	
MB 720-19176/2	Method Blank	T	Water	8260B	
720-8095-1	MW-1	T	Water	8260B	
720-8095-1MS	Matrix Spike	T	Water	8260B	
720-8095-1MSD	Matrix Spike Duplicate	T	Water	8260B	
720-8095-2	MW-2	T	Water	8260B	
720-8095-3	MW-3	T	Water	8260B	
720-8095-4	MW-4	T	Water	8260B	
720-8095-6TB	TB-1	T	Water	8260B	
Analysis Batch:720-19213					
LCS 720-19213/1	Lab Control Spike	T	Water	8260B	
MB 720-19213/2	Method Blank	T	Water	8260B	
720-8095-5FD	DUP-1	T	Water	8260B	

Report Basis

T = Total

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Method Blank - Batch: 720-19176

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-19176/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/11/2007 1401
Date Prepared: 03/11/2007 1401

Analysis Batch: 720-19176
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200703\031107\MB
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	95	77 - 121
4-Bromofluorobenzene	98	79 - 118
1,2-Dichloroethane-d4 (Surr)	96	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Lab Control Spike - Batch: 720-19176

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-19176/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/11/2007 1328
Date Prepared: 03/11/2007 1328

Analysis Batch: 720-19176
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200703\031107\LS-
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	21.2	106	65 - 125	
Trichloroethene	20.0	17.9	89	74 - 134	
Chlorobenzene	20.0	20.7	103	61 - 121	
<hr/>					
Surrogate			% Rec	Acceptance Limits	
Toluene-d8 (Surr)			93	77 - 121	
4-Bromofluorobenzene			101	79 - 118	
1,2-Dichloroethane-d4 (Surr)			94	78 - 117	

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-19176**

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-8095-1
Client Matrix: Water
Dilution: 4.0
Date Analyzed: 03/11/2007 1542
Date Prepared: 03/11/2007 1542

Analysis Batch: 720-19176
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200703\031107\LS-
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-8095-1
Client Matrix: Water
Dilution: 4.0
Date Analyzed: 03/11/2007 1615
Date Prepared: 03/11/2007 1615

Analysis Batch: 720-19176
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200703\031107\sa-
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1-Dichloroethene	106	106	65 - 125	0	20		
Trichloroethene	92	87	74 - 134	4	20		
Chlorobenzene	105	103	61 - 121	2	20		
<hr/>							
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Toluene-d8 (Surr)	95		94	77 - 121			
4-Bromofluorobenzene	101		100	79 - 118			
1,2-Dichloroethane-d4 (Surr)	98		83	78 - 117			

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Method Blank - Batch: 720-19213

Method: 8260B

Preparation: 5030B

Lab Sample ID: MB 720-19213/2
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 03/12/2007 1018
 Date Prepared: 03/12/2007 1018

Analysis Batch: 720-19213
 Prep Batch: N/A
 Units: ug/L

Instrument ID: Varian 3900D
 Lab File ID: c:\saturmws\data\200703\03
 Initial Weight/Volume: 40 mL
 Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	104	77 - 121
4-Bromofluorobenzene	104	79 - 118
1,2-Dichloroethane-d4 (Surr)	106	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Lab Control Spike - Batch: 720-19213

Method: 8260B

Preparation: 5030B

Lab Sample ID: LCS 720-19213/1

Client Matrix: Water

Dilution: 1.0

Date Analyzed: 03/12/2007 0944

Date Prepared: 03/12/2007 0944

Analysis Batch: 720-19213

Prep Batch: N/A

Units: ug/L

Instrument ID: Varian 3900D

Lab File ID: c:\saturnws\data\200703\03

Initial Weight/Volume: 40 mL

Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	23.0	115	65 - 125	
Trichloroethene	20.0	19.7	98	74 - 134	
Chlorobenzene	20.0	20.1	100	61 - 121	
Surrogate			% Rec	Acceptance Limits	
Toluene-d8 (Surr)			90	77 - 121	
4-Bromofluorobenzene			108	79 - 118	
1,2-Dichloroethane-d4 (Surr)			102	78 - 117	

Calculations are performed before rounding to avoid round-off errors in calculated results.

STL ChromaLab

1220 Quarry Lane, Pleasanton, CA 94566
(925) 484-1919 FAX (925) 484-1096

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

720-8095

Service Request:

14407

Date: 3-6-07

Project Name: Alameda Facility
Project Number: CS1605
Project Manager: Dana Johnston
Company/Address: Crawford Consulting, Inc.
2 North First St, 4th Floor
San Jose, CA 95113
Phone: (408) 287-9934
Fax: (408) 287-9937

Sampler's Signature: *M. Gallegos*

Analysis Requested

Number of Containers	Volatile Organics (VOCs) (EPA 8021B)	Pb (7421); As (7060)	Same as Metals	COD, TKN	500 ml plastic H ₂ SO ₄	Chloride, Nitrate	500 ml plastic NP	pH, Conductivity	500 ml plastic NP	Total Phenols	2 x 500 ml glass H ₂ SO ₄	Volatile Organics (8010) 3 x 40 ml vial	TPH/gBTEX	2 x 40 ml vial HCl	REMARKS	

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix
MW-1	3/6/07	1028		Water
MW-2	3/6/07	1145		Water
MW-3	3/6/07	1117		Water
MW-4	3/6/07	0950		Water
DUP-1	3/6/07	—		Water
TB-1	3/6/07	—		Water

Page 17 of 18

Relinquished By: *Manuel L. Gallegos*
Signature: *Manuel L. Gallegos*
Printed Name: Manuel L. Gallegos
Firm: FSI
Date/Time: 3-6-07 12:00

Received By: *Serenafuente*
Signature: *Serenafuente*
Printed Name: Serenafuente
Firm: FSI
Date/Time: 3/6/07 12:00

TURNAROUND REQUIREMENTS
24 hr 48 hr 5 day
 Standard (5 working days)
Provide Verbal Preliminary Results
 Provide pdf Results
Use Date: _____

REPORT REQUIREMENTS
I. Routine Report
 II. Report (includes DUP, MS MSD, as required, may be charged as samples)
III. Data Validation Report (includes All Raw Data)
RWQCB
(MDLs/PCLs/TRACER)

INVOICE INFORMATION
P.O. # _____
Bill to: _____

SAMPLE RECEIPT
Shipping VLA: _____
Shipping #: _____
Condition: _____

Relinquished By: *Serenafuente*
Signature: *Serenafuente*
Printed Name: Serenafuente
Firm: FSI
Date/Time: 3/7/07 12:15

Received By: *Bryan Thomas*
Signature: *Bryan Thomas*
Printed Name: Bryan Thomas
Firm: STL-SF
Date/Time: 3/7/07 12:15

Special Instructions/Comments:
Please report MRLs only
Please pdf results to: Dana Johnston at dana@crawfordconsulting.com
Please provide EDF for Geotracker. Global ID is SL0600177511
Temp. 2°C

Reling - *Manuel L. Gallegos*
3/7/07 1445

Rec. *John Bull* 3/7/07 14:45

LOGIN SAMPLE RECEIPT CHECK LIST

Client: Crawford Consulting Inc

Job Number: 720-8095-1

Login Number: 8095

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	NO TIME for DUP-1 or TB-1
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

Second Quarter 2007



ANALYTICAL REPORT

Job Number: 720-9549-1

Job Description: Alameda Facility CS 1605

For:
Crawford Consulting Inc
2 North First Street 4th Floor
San Jose, CA 95113-1212

Attention: Mark Wheeler



Dimple Sharma
Project Manager I
dsharma@stl-inc.com
06/22/2007

cc: Dana Johnston

Project Manager: Dimple Sharma

Severn Trent Laboratories, Inc.

STL San Francisco 1220 Quarry Lane, Pleasanton, CA 94566
Tel (925) 484-1919 Fax (925) 484-1096 www.stl-inc.com

EXECUTIVE SUMMARY - Detections

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-9549-1	MW-1				
1,1-Dichloroethene		3.0	2.0	ug/L	8260B
Trichloroethene		38	2.0	ug/L	8260B
Tetrachloroethene		310	2.0	ug/L	8260B
720-9549-2	MW-2				
Trichloroethene		22	20	ug/L	8260B
Tetrachloroethene		2400	20	ug/L	8260B
720-9549-3	MW-3				
1,1-Dichloroethene		2.4	0.50	ug/L	8260B
720-9549-4	MW-4				
Tetrachloroethene		0.75	0.50	ug/L	8260B
720-9549-5	DUP-1				
Tetrachloroethene		2400	20	ug/L	8260B

METHOD SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS (Low Level)	STL SF	SW846 8260B	
Purge-and-Trap	STL SF		SW846 5030B

LAB REFERENCES:

STL SF = STL San Francisco

METHOD REFERENCES:

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986
And Its Updates.

SAMPLE SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-9549-1	MW-1	Water	06/15/2007 0851	06/15/2007 1130
720-9549-2	MW-2	Water	06/15/2007 1024	06/15/2007 1130
720-9549-3	MW-3	Water	06/15/2007 0943	06/15/2007 1130
720-9549-4	MW-4	Water	06/15/2007 0816	06/15/2007 1130
720-9549-5	DUP-1	Water	06/15/2007 0000	06/15/2007 1130
720-9549-6TB	TB-1	Water	06/15/2007 0000	06/15/2007 1130

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Client Sample ID: MW-1

Lab Sample ID: 720-9549-1
 Client Matrix: Water

Date Sampled: 06/15/2007 0851
 Date Received: 06/15/2007 1130

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-22889	Instrument ID: Varian 3900G
Preparation: 5030B		Lab File ID: c:\satumws\data\200706\06
Dilution: 4.0		Initial Weight/Volume: 40 mL
Date Analyzed: 06/20/2007 1842		Final Weight/Volume: 40 mL
Date Prepared: 06/20/2007 1842		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	3.0		2.0
1,1-Dichloroethane	ND		2.0
Dichlorodifluoromethane	ND		2.0
Vinyl chloride	ND		2.0
Chloroethane	ND		4.0
Trichlorofluoromethane	ND		4.0
Methylene Chloride	ND		20
trans-1,2-Dichloroethene	ND		2.0
cis-1,2-Dichloroethene	ND		2.0
Chloroform	ND		4.0
1,1,1-Trichloroethane	ND		2.0
Carbon tetrachloride	ND		2.0
1,2-Dichloroethane	ND		2.0
Trichloroethene	38		2.0
1,2-Dichloropropane	ND		2.0
Dichlorobromomethane	ND		2.0
trans-1,3-Dichloropropene	ND		2.0
cis-1,3-Dichloropropene	ND		2.0
1,1,2-Trichloroethane	ND		2.0
Tetrachloroethene	310		2.0
Chlorodibromomethane	ND		2.0
Chlorobenzene	ND		2.0
Bromoform	ND		4.0
1,1,2,2-Tetrachloroethane	ND		2.0
1,3-Dichlorobenzene	ND		2.0
1,4-Dichlorobenzene	ND		2.0
1,2-Dichlorobenzene	ND		2.0
Chloromethane	ND		4.0
Bromomethane	ND		4.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0
EDB	ND		2.0
1,2,4-Trichlorobenzene	ND		4.0
Surrogate	%Rec		Acceptance Limits
Toluene-d8 (Surr)	104		82 - 126
4-Bromofluorobenzene	116		83 - 127
1,2-Dichloroethane-d4 (Surr)	115		86 - 129

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Client Sample ID: MW-2

Lab Sample ID: 720-9549-2
Client Matrix: Water

Date Sampled: 06/15/2007 1024
Date Received: 06/15/2007 1130

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-22889	Instrument ID: Varian 3900G
Preparation: 5030B		Lab File ID: c:\satumws\data\200706\06
Dilution: 40		Initial Weight/Volume: 40 mL
Date Analyzed: 06/20/2007 1915		Final Weight/Volume: 40 mL
Date Prepared: 06/20/2007 1915		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		20
1,1-Dichloroethane	ND		20
Dichlorodifluoromethane	ND		20
Vinyl chloride	ND		20
Chloroethane	ND		40
Trichlorofluoromethane	ND		40
Methylene Chloride	ND		200
trans-1,2-Dichloroethene	ND		20
cis-1,2-Dichloroethene	ND		20
Chloroform	ND		40
1,1,1-Trichloroethane	ND		20
Carbon tetrachloride	ND		20
1,2-Dichloroethane	ND		20
Trichloroethene	22		20
1,2-Dichloropropane	ND		20
Dichlorobromomethane	ND		20
trans-1,3-Dichloropropene	ND		20
cis-1,3-Dichloropropene	ND		20
1,1,2-Trichloroethane	ND		20
Tetrachloroethene	2400		20
Chlorodibromomethane	ND		20
Chlorobenzene	ND		20
Bromoform	ND		40
1,1,2,2-Tetrachloroethane	ND		20
1,3-Dichlorobenzene	ND		20
1,4-Dichlorobenzene	ND		20
1,2-Dichlorobenzene	ND		20
Chloromethane	ND		40
Bromomethane	ND		40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20
EDB	ND		20
1,2,4-Trichlorobenzene	ND		40
Surrogate	%Rec	Acceptance Limits	
Toluene-d8 (Surr)	103	82 - 126	
4-Bromofluorobenzene	113	83 - 127	
1,2-Dichloroethane-d4 (Surr)	117	86 - 129	

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Client Sample ID: MW-3

Lab Sample ID: 720-9549-3
Client Matrix: Water

Date Sampled: 06/15/2007 0943
Date Received: 06/15/2007 1130

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-22889	Instrument ID: Varian 3900G
Preparation: 5030B		Lab File ID: c:\satumws\data\200706\06
Dilution: 1.0		Initial Weight/Volume: 40 mL
Date Analyzed: 06/20/2007 1949		Final Weight/Volume: 40 mL
Date Prepared: 06/20/2007 1949		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	2.4		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0
Surrogate	%Rec	Acceptance Limits	
Toluene-d8 (Surr)	106	82 - 126	
4-Bromofluorobenzene	116	83 - 127	
1,2-Dichloroethane-d4 (Surr)	120	86 - 129	

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Client Sample ID: MW-4

Lab Sample ID: 720-9549-4
Client Matrix: Water

Date Sampled: 06/15/2007 0816
Date Received: 06/15/2007 1130

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-22925	Instrument ID: Varian 3900G
Preparation: 5030B		Lab File ID: c:\satumws\data\200706\06
Dilution: 1.0		Initial Weight/Volume: 40 mL
Date Analyzed: 06/21/2007 1314		Final Weight/Volume: 40 mL
Date Prepared: 06/21/2007 1314		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	0.75		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0
Surrogate	%Rec		Acceptance Limits
Toluene-d8 (Surr)	108		82 - 126
4-Bromofluorobenzene	111		83 - 127
1,2-Dichloroethane-d4 (Surr)	119		86 - 129

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Client Sample ID: DUP-1

Lab Sample ID: 720-9549-5
Client Matrix: Water

Date Sampled: 06/15/2007 0000
Date Received: 06/15/2007 1130

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-22925	Instrument ID: Varian 3900G
Preparation:	5030B		Lab File ID: c:\satumws\data\200706\06
Dilution:	40		Initial Weight/Volume: 40 mL
Date Analyzed:	06/21/2007 1347		Final Weight/Volume: 40 mL
Date Prepared:	06/21/2007 1347		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		20
1,1-Dichloroethane	ND		20
Dichlorodifluoromethane	ND		20
Vinyl chloride	ND		20
Chloroethane	ND		40
Trichlorofluoromethane	ND		40
Methylene Chloride	ND		200
trans-1,2-Dichloroethene	ND		20
cis-1,2-Dichloroethene	ND		20
Chloroform	ND		40
1,1,1-Trichloroethane	ND		20
Carbon tetrachloride	ND		20
1,2-Dichloroethane	ND		20
Trichloroethene	ND		20
1,2-Dichloropropane	ND		20
Dichlorobromomethane	ND		20
trans-1,3-Dichloropropene	ND		20
cis-1,3-Dichloropropene	ND		20
1,1,2-Trichloroethane	ND		20
Tetrachloroethene	2400		20
Chlorodibromomethane	ND		20
Chlorobenzene	ND		20
Bromoform	ND		40
1,1,2,2-Tetrachloroethane	ND		20
1,3-Dichlorobenzene	ND		20
1,4-Dichlorobenzene	ND		20
1,2-Dichlorobenzene	ND		20
Chloromethane	ND		40
Bromomethane	ND		40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20
EDB	ND		20
1,2,4-Trichlorobenzene	ND		40
Surrogate	%Rec		Acceptance Limits
Toluene-d8 (Surr)	103		82 - 126
4-Bromofluorobenzene	108		83 - 127
1,2-Dichloroethane-d4 (Surr)	114		86 - 129

Analytical Data

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Client Sample ID: TB-1

Lab Sample ID: 720-9549-6TB
 Client Matrix: Water

Date Sampled: 06/15/2007 0000
 Date Received: 06/15/2007 1130

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B	Analysis Batch: 720-22910	Instrument ID: Varian 3900F
Preparation: 5030B		Lab File ID: c:\satumws\data\200706\06
Dilution: 1.0		Initial Weight/Volume: 40 mL
Date Analyzed: 06/20/2007 1626		Final Weight/Volume: 40 mL
Date Prepared: 06/20/2007 1626		

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0
Surrogate	%Rec		Acceptance Limits
Toluene-d8 (Surr)	117		82 - 126
4-Bromofluorobenzene	118		83 - 127
1,2-Dichloroethane-d4 (Surr)	108		86 - 129

DATA REPORTING QUALIFIERS

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Lab Section	Qualifier	Description
GC/MS VOA	F	MS or MSD exceeds the control limits

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-9549-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:720-22889					
LCS 720-22889/1	Lab Control Spike	T	Water	8260B	
MB 720-22889/2	Method Blank	T	Water	8260B	
720-9537-C-2 MS	Matrix Spike	T	Water	8260B	
720-9537-C-2 MSD	Matrix Spike Duplicate	T	Water	8260B	
720-9549-1	MW-1	T	Water	8260B	
720-9549-2	MW-2	T	Water	8260B	
720-9549-3	MW-3	T	Water	8260B	
Analysis Batch:720-22910					
LCS 720-22910/1	Lab Control Spike	T	Water	8260B	
MB 720-22910/2	Method Blank	T	Water	8260B	
720-9538-C-2 MS	Matrix Spike	T	Water	8260B	
720-9538-C-2 MSD	Matrix Spike Duplicate	T	Water	8260B	
720-9549-6TB	TB-1	T	Water	8260B	
Analysis Batch:720-22925					
LCS 720-22925/1	Lab Control Spike	T	Water	8260B	
MB 720-22925/2	Method Blank	T	Water	8260B	
720-9541-B-1 MS	Matrix Spike	T	Water	8260B	
720-9541-C-1 MSD	Matrix Spike Duplicate	T	Water	8260B	
720-9549-4	MW-4	T	Water	8260B	
720-9549-5	DUP-1	T	Water	8260B	

Report Basis

T = Total

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Method Blank - Batch: 720-22889

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-22889/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/20/2007 0945
Date Prepared: 06/20/2007 0945

Analysis Batch: 720-22889
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900G
Lab File ID: c:\saturnws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	110	82 - 126
4-Bromofluorobenzene	117	83 - 127
1,2-Dichloroethane-d4 (Surr)	115	86 - 129

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Lab Control Spike - Batch: 720-22889

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-22889/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/20/2007 0911
Date Prepared: 06/20/2007 0911

Analysis Batch: 720-22889
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900G
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	20.4	102	65 - 125	
Trichloroethene	20.0	17.1	86	74 - 134	
Chlorobenzene	20.0	21.9	109	61 - 121	
<hr/>					
Surrogate			% Rec	Acceptance Limits	
Toluene-d8 (Surr)			106	82 - 126	
4-Bromofluorobenzene			114	83 - 127	
1,2-Dichloroethane-d4 (Surr)			116	86 - 129	

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-22889**

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-9537-C-2 MS
Client Matrix: Water
Dilution: 10
Date Analyzed: 06/20/2007 1447
Date Prepared: 06/20/2007 1447

Analysis Batch: 720-22889
Prep Batch: N/A

Instrument ID: Varian 3900G
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-9537-C-2 MSD
Client Matrix: Water
Dilution: 10
Date Analyzed: 06/20/2007 1520
Date Prepared: 06/20/2007 1520

Analysis Batch: 720-22889
Prep Batch: N/A

Instrument ID: Varian 3900G
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1-Dichloroethene	100	104	65 - 125	3	20		
Trichloroethene	97	92	74 - 134	3	20		
Chlorobenzene	116	116	61 - 121	1	20		
<hr/>							
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
Toluene-d8 (Surr)	116		110		82 - 126		
4-Bromofluorobenzene	116		119		83 - 127		
1,2-Dichloroethane-d4 (Surr)	125		123		86 - 129		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Method Blank - Batch: 720-22910

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-22910/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/20/2007 1019
Date Prepared: 06/20/2007 1019

Analysis Batch: 720-22910
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0
Surrogate	% Rec	Acceptance Limits	
Toluene-d8 (Surr)	114	82 - 126	
4-Bromofluorobenzene	113	83 - 127	
1,2-Dichloroethane-d4 (Surr)	99	86 - 129	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Lab Control Spike - Batch: 720-22910

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-22910/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/20/2007 0945
Date Prepared: 06/20/2007 0945

Analysis Batch: 720-22910
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900F
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	18.3	92	65 - 125	
Trichloroethene	20.0	16.7	83	74 - 134	
Chlorobenzene	20.0	21.5	108	61 - 121	
<hr/>					
Surrogate			% Rec	Acceptance Limits	
Toluene-d8 (Surr)			107	82 - 126	
4-Bromofluorobenzene			105	83 - 127	
1,2-Dichloroethane-d4 (Surr)			103	86 - 129	

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-22910**

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-9538-C-2 MS
Client Matrix: Water
Dilution: 200
Date Analyzed: 06/20/2007 1520
Date Prepared: 06/20/2007 1520

Analysis Batch: 720-22910
Prep Batch: N/A

Instrument ID: Varian 3900F
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-9538-C-2 MSD
Client Matrix: Water
Dilution: 200
Date Analyzed: 06/20/2007 1553
Date Prepared: 06/20/2007 1553

Analysis Batch: 720-22910
Prep Batch: N/A

Instrument ID: Varian 3900F
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1-Dichloroethene	72	82	65 - 125	12	20		
Trichloroethene	57	77	74 - 134	7	20	F	
Chlorobenzene	94	106	61 - 121	12	20		
<hr/>							
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
Toluene-d8 (Surr)	112		109		82 - 126		
4-Bromofluorobenzene	112		113		83 - 127		
1,2-Dichloroethane-d4 (Surr)	103		103		86 - 129		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Method Blank - Batch: 720-22925

Method: 8260B

Preparation: 5030B

Lab Sample ID: MB 720-22925/2
 Client Matrix: Water
 Dilution: 1.0
 Date Analyzed: 06/21/2007 1026
 Date Prepared: 06/21/2007 1026

Analysis Batch: 720-22925
 Prep Batch: N/A
 Units: ug/L

Instrument ID: Varian 3900G
 Lab File ID: c:\saturnws\data\200706\06
 Initial Weight/Volume: 40 mL
 Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	100	82 - 126
4-Bromofluorobenzene	107	83 - 127
1,2-Dichloroethane-d4 (Surr)	111	86 - 129

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Lab Control Spike - Batch: 720-22925

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-22925/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2007 0953
Date Prepared: 06/21/2007 0953

Analysis Batch: 720-22925
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900G
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	25.0	125	65 - 125	
Trichloroethene	20.0	18.3	92	74 - 134	
Chlorobenzene	20.0	20.8	104	61 - 121	
<hr/>					
Surrogate			% Rec	Acceptance Limits	
Toluene-d8 (Surr)			96	82 - 126	
4-Bromofluorobenzene			105	83 - 127	
1,2-Dichloroethane-d4 (Surr)			105	86 - 129	

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-22925**

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-9541-B-1 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2007 1133
Date Prepared: 06/21/2007 1133

Analysis Batch: 720-22925
Prep Batch: N/A

Instrument ID: Varian 3900G
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-9541-C-1 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/21/2007 1207
Date Prepared: 06/21/2007 1207

Analysis Batch: 720-22925
Prep Batch: N/A

Instrument ID: Varian 3900G
Lab File ID: c:\satumws\data\200706\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
1,1-Dichloroethene	138	138	65 - 125	0	20	F	F
Trichloroethene	98	95	74 - 134	1	20		
Chlorobenzene	111	109	61 - 121	2	20		
<hr/>							
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
Toluene-d8 (Surr)	104		106		82 - 126		
4-Bromofluorobenzene	113		112		83 - 127		
1,2-Dichloroethane-d4 (Surr)	117		120		86 - 129		

Calculations are performed before rounding to avoid round-off errors in calculated results.

STL San Francisco

1220 Quarry Lane, Pleasanton, CA 94566
 (925) 484-1919 FAX (925) 484-1096

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Service Request:

Date: 6-15-07

Project Name: Alameda Facility
Project Number: CS1605
Project Manager: Dana Johnston
Company/Address: Crawford Consulting, Inc.
 2 North First St, 4th Floor
 San Jose, CA 95113
Phone: (408) 287-9934
Fax: (408) 287-9937
Sampler's Signature: *M. L. Gallegos*

720-9549

105921

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix
MW-1	6/15/07	0851		Water
MW-2	6/15/07	1024		Water
MW-3	6/15/07	0943		Water
MW-4	6/15/07	0816		Water
DUP-1	6/15/07	—		Water
TB-1	6/15/07	—		Water

Number of Containers	Analysis Requested										REMARKS				
	Volatile Organics (VOCs) (EPA 8021B)	Pb (7421), As (7060)	Same as Metals	COD, TKN	500 ml plastic H ₂ SO ₄	Chloride, Nitrate	500 ml plastic NP	pH, Conductivity	500 ml plastic NP	Total Phenols		2 x 500 ml glass H ₂ SO ₄	Volatile Organics (8010)	3 x 40 ml vial	TPH/BTEX
3												X			
3												X			
3												X			
3												X			
3												X			
3												X			

Relinquished By	Received By
Signature: <i>M. L. Gallegos</i> Printed Name: FSI Firm: 6-15-07 Date/Time: 11:30	Signature: <i>John Muller</i> Printed Name: John Muller Firm: SIC SF Date/Time: 6-15-07 11:30
Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____	Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____

TURNAROUND: *over to 1-05/807 1-3-07 (see)*

TURNAROUND	INVOICE INFORMATION	SAMPLE RECEIPT
<p>ORT REQUIREMENTS Outline Report report (includes DUP, MS SD, as required, may be used as samples) to Validation Report (includes All Raw Data) 9</p>	<p>P.O. # _____ Bill to: _____</p>	<p>Shipping VIA: _____ Shipping #: _____ Condition: _____</p>

Results to: Dana Johnston at dana@cmwfordconsulting.com

Please provide EDF for Geotracker. Global ID is SL0600177511

6.80

LOGIN SAMPLE RECEIPT CHECK LIST

Client: Crawford Consulting Inc

Job Number: 720-9549-1

Login Number: 9549

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	REC'D 2-TB-1 not 3
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	NO times for DUP-1 or TB-1
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	False	1of2 TB-1
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	