Cargill

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By Alameda County Environmental Health at 9:57 am, Nov 14, 2014

November 12, 2014

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

RE: Groundwater Monitoring Results, Second Semi-Annual 2014 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 second semi-annual 2014 monitoring period for the Cargill Salt Alameda facility. The report presents the results of groundwater monitoring data collected during the third quarter of 2014. Groundwater levels in the site monitoring wells were measured, groundwater samples were collected and analyzed, and the groundwater flow direction and gradient were determined. A water-level measurement could not be obtained in one of the wells due to an obstruction by tree roots in the well casing. We are looking at options for repair of the well.

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) 790-8625.

Sincerely,

Sean Riley
Environmental Health and Safety Manager

Groundwater Monitoring Results
Second Semi-Annual 2014 Monitoring Period
Cargill Salt – Alameda Facility
Alameda, California

CRAWFORD
CONSULTING
INC.

Groundwater Monitoring Results
Second Semi-Annual 2014 Monitoring Period
Cargill Salt – Alameda Facility
Alameda, California

Prepared for:

Cargill Salt
7220 Central Avenue
Newark, California 94560

Prepared by:

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Project No. CS1605
November 12, 2014

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(presented in electronic format only)

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. Cargill Salt began reporting on a semi-annual basis in 2006.

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.

A phytoremediation project was implemented at the Site in June 2005. Based on reductions in PCE concentrations in groundwater since 2006, Alameda County Environmental Health suggested in a September 30, 2009 letter that Cargill Salt reduce the groundwater monitoring frequency from quarterly to semi-annually. The second half of 2009 was the first semi-annual monitoring period under the reduced monitoring frequency. Groundwater sampling and analysis is now performed during the first and third quarters.

1.1 Reporting Period Activities

This report presents the results of groundwater monitoring data collected during the third quarter of 2014. Groundwater levels in the site monitoring wells were measured, groundwater samples were collected and analyzed, and the groundwater flow direction and gradient were determined. A water-level measurement could not be obtained in one of the wells (MW-3) due to an obstruction by tree roots in the well casing. It was still possible to collect a groundwater sample using the dedicated peristaltic tubing previously installed in the well. Cargill Salt is considering options for repair of the well.

The monitoring event for the second semi-annual 2014 monitoring period was conducted on September 26, 2014. Supervision of the monitoring event was conducted for Cargill Salt by Crawford. Groundwater level measurements and collection of groundwater samples were conducted by

Field Solutions, Inc. The groundwater samples were analyzed by TestAmerica Laboratories, Inc., 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. In April 2008, seven additional saplings were planted in the rear of the property near monitoring well MW-2.

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.

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 and a groundwater contour map was prepared for the second semi-annual 2014 monitoring event.

2.1 Water-Level Measurement

Water levels in three of the groundwater monitoring wells (MW-1, MW-2, and MW-4) were measured on September 26, 2014, before any of the groundwater monitoring wells were purged for sampling for the semi-annual monitoring event. A noted in Section 1.1., a water-level measurement could not be obtained in well MW-3 due to an obstruction by tree roots in the well casing. 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 third quarter of 2014 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.

As reviewed in the last semi-annual monitoring report, groundwater levels in the on-site monitoring wells (MW-1, MW-2, and MW-3) and off-site well (MW-4) showed a different pattern in the first and third quarters of 2011 than the general seasonal pattern for the previous nine years (see Figure 3). Groundwater levels in all four wells generally exhibit similar seasonal fluctuations, and the first quarter groundwater elevations have typically exhibited effects of winter-season recharge. However, the groundwater elevations recorded in March 2011 for the three most downgradient wells showed a decline rather than the typical seasonal rise. The levels measured for those three wells in March 2011 were the lowest recorded to date. That trend continued in 2011, with the September 2011 groundwater elevations recorded for all four wells being the lowest recorded to date for each of the wells.

An overall downward trend has been noted since 2011. Seasonal recharge is still apparent but the average groundwater elevation has been declining.

The water levels recorded for the third quarter 2014 (September 2014) measurement event indicate a continuing overall downward trend. The levels measured for wells Mw-1 and MW-2 were the lowest recorded to date for the wells.

The change in the groundwater elevations noted since March 2011 may be related to nearby East Bay Municipal Utility District (EBMUD) sewer pipeline repair and replacement operations as well as to dewatering operations that were conducted at a nearby facility demolition project.

2.2 Groundwater Flow Direction and Gradient

A groundwater contour map based on the available September 2014 water-level data is shown on Figure 4.

The groundwater flow direction shown on the contour map, to the northeast, is estimated to be representative of the on-site groundwater gradient based on historical groundwater flow direction determinations. Without a groundwater elevation measurement for well MW-3, a three-point solution to the contours could not be determined.

The horizontal hydraulic gradient measured between well MW-2 and MW-1 for the third quarter of 2014 was 0.023 and is similar to the gradients previously determined.

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 third quarter of 2014 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 third quarter 2014 groundwater contour map, the groundwater flow velocity beneath the Site is calculated to be approximately 1.5 feet per year (ft/yr) for the third quarter 2014 measurements. The groundwater velocities measured for the Site have historically been in the range of 0.1 to 2 ft/yr.

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 September 26, 2014 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 8260. Results for all Method 8010 analytes were reported. The groundwater samples for the second semi-annual 2014 event were delivered with appropriate chain-of-custody documentation to TestAmerica Laboratories, Inc., 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 second semi-annual 2014 sampling event for the Site. A field duplicate is used to assess sampling and analytical precision. The duplicate is collected at a selected well (MW-2) 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:

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

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 second semi-annual 2014 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 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:

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

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

Third Quarter 2014 Field QC Results

One field duplicate (DUP-1) was analyzed as part of the third quarter 2014 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 two parameters [cis-1,2-dichloroethene (cis-1,2-DCE) and PCE] for which the RPDs could be calculated (see Table 2), exhibited a low RPD value (i.e., less than 5%) indicative of good precision for (cis-1,2-DCE) and a medium RPD value (more than 5% but less than 10%) indicative of fair precision for PCE .

Second Semi-Annual 2014 Laboratory QC Results

A review of the second semi-annual 2014 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.

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 for the second semi-annual 2014 monitoring event are shown on Table 3a and Figure 5. The results of historical VOC analyses for each quarter for 2000 through third quarter 2014 are summarized in Table 3b, which also shows the VOC results for the initial sampling event for monitoring wells MW-1, MW-2, and MW-3 in November 1999. Historical VOC results for all the wells are plotted on Figure 6.

Consistent with previous monitoring events, PCE and its breakdown product TCE were detected in Site groundwater samples from the third quarter 2014 monitoring event.

For the second semi-annual 2014 event, the concentrations of PCE detected were:

- 78 micrograms per liter (µg/L) in monitoring well MW-1
- 11 µg/L in MW-2
- not detected in MW-3 and MW-4

Other VOCs detected included the following:

- TCE was detected at 8.6 µg/L in monitoring well MW-1, but was not detected in MW-2, MW-3 or MW-4.
- 1,1-Dichloroethene (DCE) was detected at 53 µg/L in monitoring well MW-3, but was not detected in monitoring wells MW-1, MW-2, or MW-4.
- Cis-1,2-DCE was detected at 0.72 µg/L in monitoring well MW-2, but was not detected in monitoring wells MW-1, MW-3 or MW-4.
- 1,1-Dichloroethane (DCA) was detected at 1.8 µg/L in monitoring well MW-3, but was not detected in monitoring wells MW-1, MW-2, or MW-4.
- 1,1-Trichloroethane (TCA) was detected at 0.87 µg/L in monitoring well MW-3, but was not detected in monitoring wells MW-1, MW-2, or MW-4.

3.3 Discussion

Variations in VOC concentrations at monitoring well MW-2, the well with historically 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 7). The variations in VOC concentrations sometimes lag one quarter behind the variations in groundwater elevation.

As described in previous monitoring reports, the average seasonal concentration of PCE reported for groundwater monitoring well MW-2 has been lower since the second quarter of 2006 (June 2006 event) compared to results reported since monitoring began in 1999 (see Figure 6). The PCE concentrations reported for MW-2 since June 2006 are an indication that the phytoremediation project implemented in June 2005 has reduced the average seasonal concentration of PCE at the site.

The results for VOC concentrations reported for the second semi-annual 2014 quarterly monitoring event are generally similar to the results reported since the second quarter of 2006 (see Figure 6), with the following exceptions:

- As of the September 2014 sampling event, the concentrations of PCE reported over the last five years (ten semi-annual events since June 2009) for well MW-2 have remained lower than previously reported for MW-2.
- The PCE concentration (78 µg/L) reported for well MW-1 is the lowest reported for the well to date.
- The concentrations of DCE reported for well MW-3 for the last eight semi-annual events have been notably higher than the concentrations previously reported. The concentration of DCE reported for September 2013 was 53 µg/L.

The higher DCE concentrations noted for well MW-3 may be related to the downward trend in groundwater elevations noted for the site. As discussed in Section 2.1, the downward groundwater elevation trend measured since March 2011 may be related to nearby EBMUD sewer pipeline repair and replacement operations as well as to dewatering operations that were conducted at a nearby facility demolition project.

4 Phytoremediation Project Status

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).

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 with photos taken in June 2007, September 2009, November 2010, and May 2011 are show below and on the following pages. After three years, most of the trees had grown to heights of 10 to 25 feet. After five years, most of the trees have grown to heights of 25 to 35 feet. In April 2008, seven additional saplings were planted in the rear of the property near monitoring well MW-2. There are currently 101 hydrid poplars at the site (two trees were removed to alleviate overcrowding).

As discussed in Section 3.3, the PCE concentrations reported for monitoring well MW-2 since June 2006 are an indication that the phytoremediation project has been effective at reducing the average seasonal VOC concentration in groundwater at the site.

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

June 2007 - View from driveway towards rear of property

September 2009 - View from street towards driveway and rear of property

November 2010 – View from street towards driveway and rear of property
(compare tree height to photo on previous page)

May 2011 – Same view as above

May 9, 2013 – Same view as previous picture.

June 2007 - View of front planting strip at Clement Avenue

September 2009 - View of front planting strip at Clement Avenue.
(Note relative height of gate vs. trees in the pictures above and on next page)

November 2010 – Trees dropping foliage. Also, branches on bottom 6 feet of trunks have been cleared for site visibility.

May 11, 2011 – Same view as above

May 9, 2013 – Same view as previous picture.

May 9, 2013 – View from back of property towards the street.

Professional Certification

Groundwater Monitoring Results
Second Semi-Annual 2014 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 are 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-1	9/11/2007	08:05	13.16	3.85	9.31	-0.55
MW-1	12/4/2007	08:53	13.16	3.58	9.58	0.27
MW-1	3/20/2008	08:13	13.16	3.00	10.16	0.58
MW-1	6/18/2008	08:22	13.16	3.73	9.43	-0.73
MW-1	9/3/2008	08:06	13.16	3.93	9.23	-0.20
MW-1	12/4/2008	08:12	13.16	3.71	9.45	0.22
MW-1	3/5/2009	09:18	13.16	1.83	11.33	1.88
MW-1	6/11/2009	08:40	13.16	3.52	9.64	-1.69
MW-1	9/3/2009	07:57	13.16	3.98	9.18	-0.46
MW-1	3/2/2010	08:10	13.16	2.37	10.79	1.61
MW-1	9/3/2010	07:01	13.16	3.80	9.36	-1.43
MW-1	3/17/2011	08:04	13.16	4.44	8.72	-0.64
MW-1	9/23/2011	07:25	13.16	6.43	6.73	-1.99
MW-1	3/22/2012	07:47	13.16	4.47	8.69	1.96
MW-1	9/17/2012	08:14	13.16	6.66	6.50	-2.19
MW-1	3/6/2013	07:21	13.16	4.98	8.18	1.68
MW-1	9/4/2013	07:46	13.16	6.89	6.27	-1.91
MW-1	3/12/2014	07:45	13.16	5.18	7.98	1.71
MW-1	9/26/2014	08:00	13.16	7.35	5.81	-2.17

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	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
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-2	9/11/2007	08:07	16.22	5.60	10.62	-1.03
MW-2	12/4/2007	08:47	16.22	4.99	11.23	0.61
MW-2	3/20/2008	08:17	16.22	3.48	12.74	1.51
MW-2	6/18/2008	08:27	16.22	4.93	11.29	-1.45
MW-2	9/3/2008	08:08	16.22	5.58	10.64	-0.65
MW-2	12/4/2008	08:14	16.22	5.07	11.15	0.51
MW-2	3/5/2009	11:10	16.22	2.30	13.92	2.77
MW-2	6/11/2009	08:41	16.22	4.44	11.78	-2.14
MW-2	9/3/2009	08:01	16.22	5.55	10.67	-1.11
MW-2	3/2/2010	08:12	16.22	2.88	13.34	2.67
MW-2	9/3/2010	07:04	16.22	5.18	11.04	-2.30
MW-2	3/17/2011	08:08	16.22	3.14	13.08	2.04
MW-2	9/23/2011	07:27	16.22	6.13	10.09	-2.99
MW-2	3/22/2012	07:42	16.22	4.24	11.98	1.89
MW-2	9/17/2012	08:18	16.22	6.77	9.45	-2.53
MW-2	3/6/2013	07:24	16.22	4.15	12.07	2.62
MW-2	9/4/2013	07:40	16.22	NA	NA	NA
MW-2	3/12/2014	07:47	16.22	5.12	11.10	NA
MW-2	9/26/2014	08:08	16.22	7.65	8.57	-2.53

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-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-3	9/11/2007	08:03	13.34	3.87	9.47	-0.27
MW-3	12/4/2007	08:50	13.34	3.62	9.72	0.25
MW-3	3/20/2008	08:15	13.34	3.13	10.21	0.49
MW-3	6/18/2008	08:24	13.34	3.90	9.44	-0.77
MW-3	9/3/2008	08:02	13.34	3.92	9.42	-0.02
MW-3	12/4/2008	08:10	13.34	3.59	9.75	0.33
MW-3	3/5/2009	09:23	13.34	2.79	10.55	0.80
MW-3	6/11/2009	08:38	13.34	3.14	10.20	-0.35
MW-3	9/3/2009	07:55	13.34	4.31	9.03	-1.17
MW-3	3/2/2010	08:09	13.34	2.94	10.40	1.37
MW-3	9/3/2010	07:07	13.34	3.75	9.59	-0.81
MW-3	3/17/2011	07:59	13.34	4.88	8.46	-1.13
MW-3	9/23/2011	07:23	13.34	6.33	7.01	-1.45
MW-3	3/22/2012	07:45	13.34	5.05	8.29	1.28
MW-3	9/17/2012	08:10	13.34	6.54	6.80	-1.49
MW-3	3/6/2013	07:12	13.34	5.22	8.12	1.32
MW-3	9/4/2013	07:48	13.34	6.58	6.76	-1.36
MW-3	3/12/2014	07:49	13.34	5.33	8.01	1.25
MW-3	9/26/2014	07:50	13.34	NA	NA	NA

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	12/17/2001	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
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
MW-4	9/11/2007	08:11	12.43	3.27	9.16	-0.24
MW-4	12/4/2007	08:55	12.43	3.25	9.18	0.02
MW-4	3/20/2008	08:20	12.43	2.65	9.78	0.60
MW-4	6/18/2008	08:31	12.43	3.35	9.08	-0.70
MW-4	9/3/2008	07:58	12.43	3.28	9.15	0.07
MW-4	12/4/2008	08:17	12.43	3.12	9.31	0.16
MW-4	3/5/2009	09:27	12.43	2.16	10.27	0.96
MW-4	6/11/2009	08:43	12.43	2.84	9.59	-0.68
MW-4	9/3/2009	08:04	12.43	3.49	8.94	-0.65
MW-4	3/2/2010	08:14	12.43	2.32	10.11	1.17
MW-4	9/3/2010	07:10	12.43	3.10	9.33	-0.78
MW-4	3/17/2011	07:55	12.43	4.52	7.91	-1.42
MW-4	9/23/2011	07:21	12.43	5.38	7.05	-0.86
MW-4	3/22/2012	07:50	12.43	4.58	7.85	0.80
MW-4	9/17/2012	08:21	12.43	5.45	6.98	-0.87
MW-4	3/6/2013	07:27	12.43	4.65	7.78	0.80
MW-4	9/4/2013	07:58	12.43	5.47	6.96	-0.82
MW-4	3/12/2014	07:52	12.43	9.25	3.18	-3.78
MW-4	9/26/2014	08:14	12.43	5.57	6.86	3.68

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

Third Quarter 2014

Analysis	Well MW-2 Results	Duplicate (DUP-1) Results	RPD[1] (%)
Volatile Organic Compounds (µg/L)			
Cis-1,2-Dichloroethene	0.72	0.70	2.8
Tetrachloroethene (PCE)	11	12	8.7

[1] RPD = relative percent difference
Results measured in micrograms per liter (µg/L)

All other 8010 list analytes not detected (by 8260).

Table 3a. Summary of Groundwater Monitoring Well Data - Third Quarter 2014

Well No.	**MW-1**	**MW-2**	**MW-3**	**MW-4**	
Field Date	9/26/2014	9/26/2014	9/26/2014	9/26/2014	MCL[1]
DCE[2]	<0.5	<0.5	**53**	<0.5	6
DCA[3]	<0.5	<0.5	**1.8**	<0.5	5
cis-1,2-DCE[4]	<0.5	**0.72**	<0.5	<0.5	6
TCA[5]	<0.5	<0.5	**0.87**	<0.5	200
TCE[6]	**8.6**	<0.5	<0.5	<0.5	5
PCE[7]	**78**	**11**	<0.5	<0.5	5
Other analytes[8]	nd[9]	nd	nd	nd	nd

Notes:

Results measured in micrograms per liter (µg/L)

[1] MCL = California Primary Drinking Water Standard - Maximum Contaminant Level

[2] DCE = 1,1-Dichloroethene

[3] DCA = 1,1-Dichloroethane

[4] cis-1,2-DCE = cis-1,2-Dichloroethene

[5] TCA = 1,1,1-Trichloroethane

[6] TCE = Trichloroethene

[7] PCE = Tetrachloroethene

[8] All other 8010 list analytes

[9] nd = not detected above laboratory reporting limit

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Results measured in micrograms per liter (µg/L)

Well No.	MW-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	MCL[1]
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	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	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	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	ne
cis-1,2-DCE[7]	<10	<10	<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	6
TCA[8]	<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	200
TCE[9]	**178**	**150**	**190**	**170**	**130**	**180**	**250**	**210**	**190**	**160**	**140**	**190**	**68**	**97**	**90**	**110**	**130**	**53**	**72**	**81**	**39**	**15**	**23**	**34**	5
PCE[10]	**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**	5
Other analytes[11]	nd[12]	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																							
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	MCL[1]
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	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	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	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	ne
cis-1,2-DCE[7]	<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	6
TCA[8]	<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	200
TCE[9]	<50	**29**	**53**	<25	**20**	**40**	**78**	<25	<25	**49**	**52**	**32**	<25	**58**	**41**	**28**	**25**	**39**	**49**	**37**	**30**	**78**	**43**	**29**	5
PCE[10]	**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**	5
Other analytes[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	--

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] cis-1,2-DCE = cis-1,2-Dichloroethene

[8] TCA = 1,1,1-Trichloroethane

[9] TCE = Trichloroethene

[10] PCE = Tetrachloroethene

[11] All other 8010 list analytes

[12] nd = not detected above laboratory reporting limit

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

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Well No.	MW-1																									
Field Date	12/6/05	3/10/06	6/9/06	9/11/06	12/15/06	3/6/07	6/15/07	9/11/07	12/4/07	3/20/08	6/18/08	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	MCL[1]
DCE[2]	<2.0	<0.5	<2.0	**3.3**	<2.0	<2.0	**3.0**	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	**6.1**	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	6
CFC 113[3]	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	ne[5]
DCA[6]	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	5
Chloroform	<4.0	**1.4**	<4.0	<4.0	<4.0	<4.0	<4.0	<10	<10	<4.0	<10	<10	<10	**1.9**	<5.0	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.5	ne
cis-1,2-DCE[7]	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	**0.62**	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	6
TCA[8]	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	200
TCE[9]	**16**	**3.4**	**22**	**47**	**20**	**17**	**38**	**51**	**29**	**18**	**42**	**65**	**42**	**6.5**	**40**	**68**	**27**	**57**	**36**	**89**	**40**	**37**	**60**	**19**	**100**	**8.6**	5
PCE[10]	**140**	**39**	**140**	**400**	**210**	**170**	**310**	**430**	**330**	**170**	**390**	**620**	**320**	**68**	**300**	**640**	**170**	**420**	**330**	**850**	**350**	**380**	**390**	**190**	**180**	**78**	5
Other analytes[11]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[9]	nd	nd	nd	nd	--

Well No.	MW-2																									
Field Date	12/6/05	3/10/06	6/9/06	9/11/06	12/15/06	3/6/07	6/15/07	9/11/07	12/4/07	3/20/08	6/18/08	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	MCL[1]
DCE[2]	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<0.5	6
CFC 113[3]	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<2.0	ne[5]
DCA[6]	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<0.5	5
Chloroform	<50	<50	<40	<20	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<50	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	na	<1.0	<0.5	ne
cis-1,2-DCE[7]	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	**8.0**	**6.2**	**13**	**1.3**	**3.8**	<0.5	**32**	na	**3.2**	**0.72**	6
TCA[8]	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<0.5	200
TCE[9]	**45**	**59**	<20	<20	<20	<20	**22**	**31**	<20	<20	**21**	<20	<20	<20	<25	<5.0	**9.5**	<5.0	**6.3**	**0.93**	**2.3**	<0.5	**3.3**	na	<0.5	<0.5	5
PCE[10]	**3,300**	**5,200**	**1,600**	**990**	**1,000**	**1,600**	**2,400**	**1,700**	**1,100**	**2,900**	**1,700**	**1,600**	**2,000**	**2,300**	**1,500**	**410**	**860**	**180**	**530**	**40**	**120**	**18**	**220**	na	**5.4**	**11**	5
Other analytes[11]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	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] cis-1,2-DCE = cis-1,2-Dichloroethene

[8] TCA = 1,1,1-Trichloroethane

[9] TCE = Trichloroethene

[10] PCE = Tetrachloroethene

[11] All other 8010 list analytes

[12] nd = not detected above laboratory reporting limit

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Results measured in micrograms per liter (µg/L)

Well No.	MW-3																										
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	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**	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	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**	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	ne
cis-1,2-DCE[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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6
TCA[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	**1.0**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200
TCE[9]	<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	5
PCE[10]	<0.500	<0.5	<0.5	**0.8**	<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	**0.90**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
Other analytes[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	--

Well No.	MW-4																										
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	9/11/07	12/4/07	3/20/08	6/18/08	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	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	ne
cis-1,2-DCE[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	<0.5	<0.5	<0.5	<0.5	6
TCA[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	<0.5	<0.5	<0.5	<0.5	200
TCE[9]	<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[10]	**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**	**0.86**	**0.92**	**0.91**	**0.86**	5
Other analytes[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	--

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] cis-1,2-DCE = cis-1,2-Dichloroethene

[8] TCA = 1,1,1-Trichloroethane

[9] TCE = Trichloroethene

[10] PCE = Tetrachloroethene

[11] All other 8010 list analytes

[12] nd = not detected above laboratory reporting limit

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Well No.	MW-3																						
Field Date	9/11/06	12/15/06	3/6/07	6/15/07	9/11/07	12/4/07	3/20/08	6/18/08	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	MCL[1]
DCE[2]	**2.8**	**1.6**	**1.5**	**2.4**	**1.4**	**1.1**	**1.0**	**1.4**	**0.79**	**0.59**	<0.5	**0.95**	**0.51**	<0.5	**0.64**	**13**	**34**	**45**	**53**	**50**	**43**	**61**	**53**	6
CFC 113[3]	<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	<2.5	<2.0	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	**0.90**	**1.4**	**1.4**	**1.7**	**2.2**	**1.5**	<2.5	**1.8**	5
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<0.5	ne
cis-1,2-DCE[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	<2.5	<0.5	6
TCA[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	**1.3**	**1.5**	**1.5**	**1.2**	**1.1**	<2.5	**0.87**	200
TCE[9]	<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	<2.5	<0.5	5
PCE[10]	<0.5	**0.56**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.79**	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	5
Other analytes[11]	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															
Field Date	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	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	6
CFC 113[3]	<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	5
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ne
cis-1,2-DCE[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	6
TCA[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	200
TCE[9]	<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[10]	**0.84**	**0.65**	**0.62**	**0.70**	**0.79**	**0.78**	**0.64**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
Other analytes[11]	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] cis-1,2-DCE = cis-1,2-Dichloroethene

[8] TCA = 1,1,1-Trichloroethane

[9] TCE = Trichloroethene

[10] PCE = Tetrachloroethene

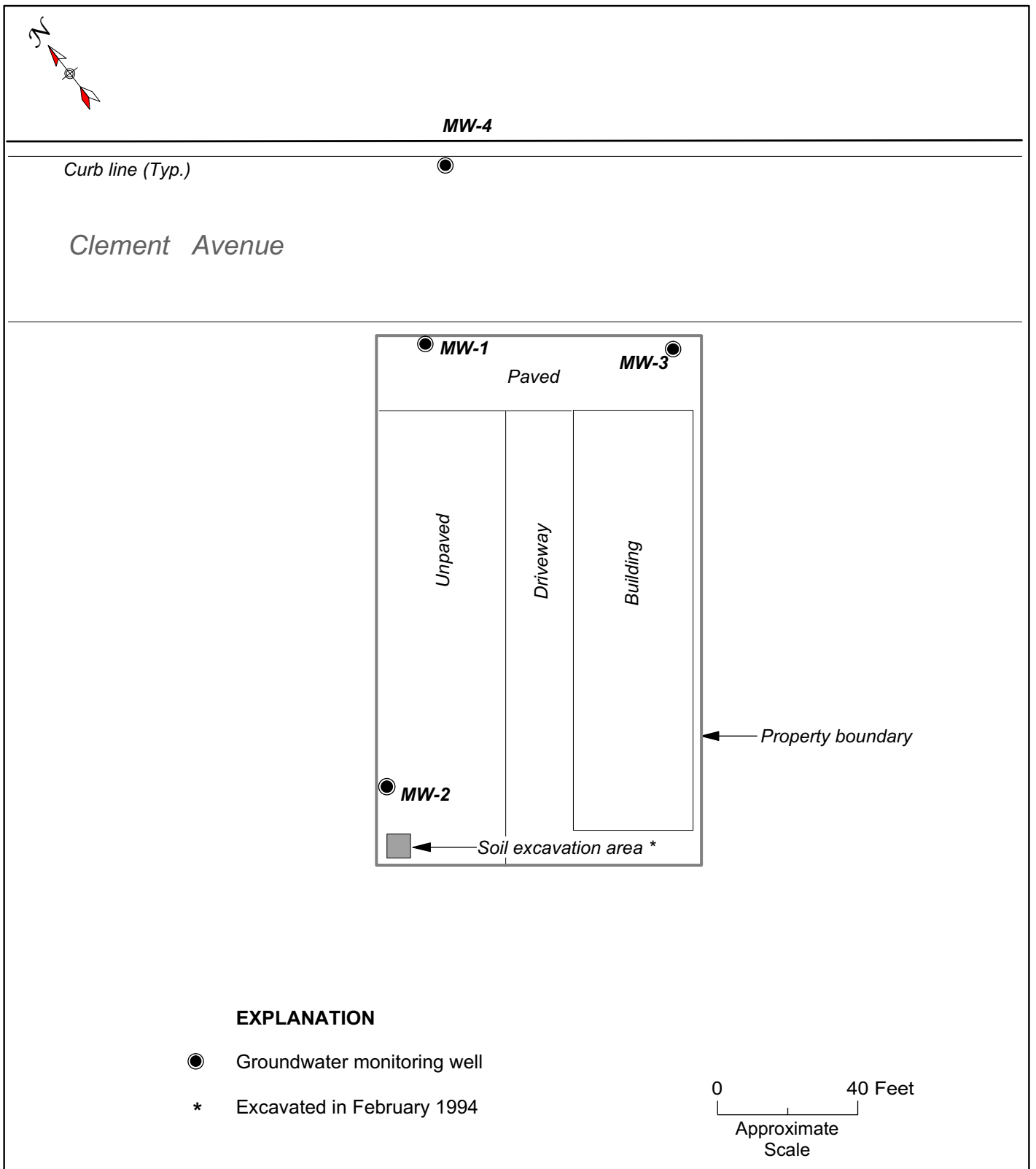
[11] All other 8010 list analytes

[12] nd = not detected above laboratory reporting limit

CRAWFORD CONSULTING INC.

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

1605fig104.dsf 12/8/04



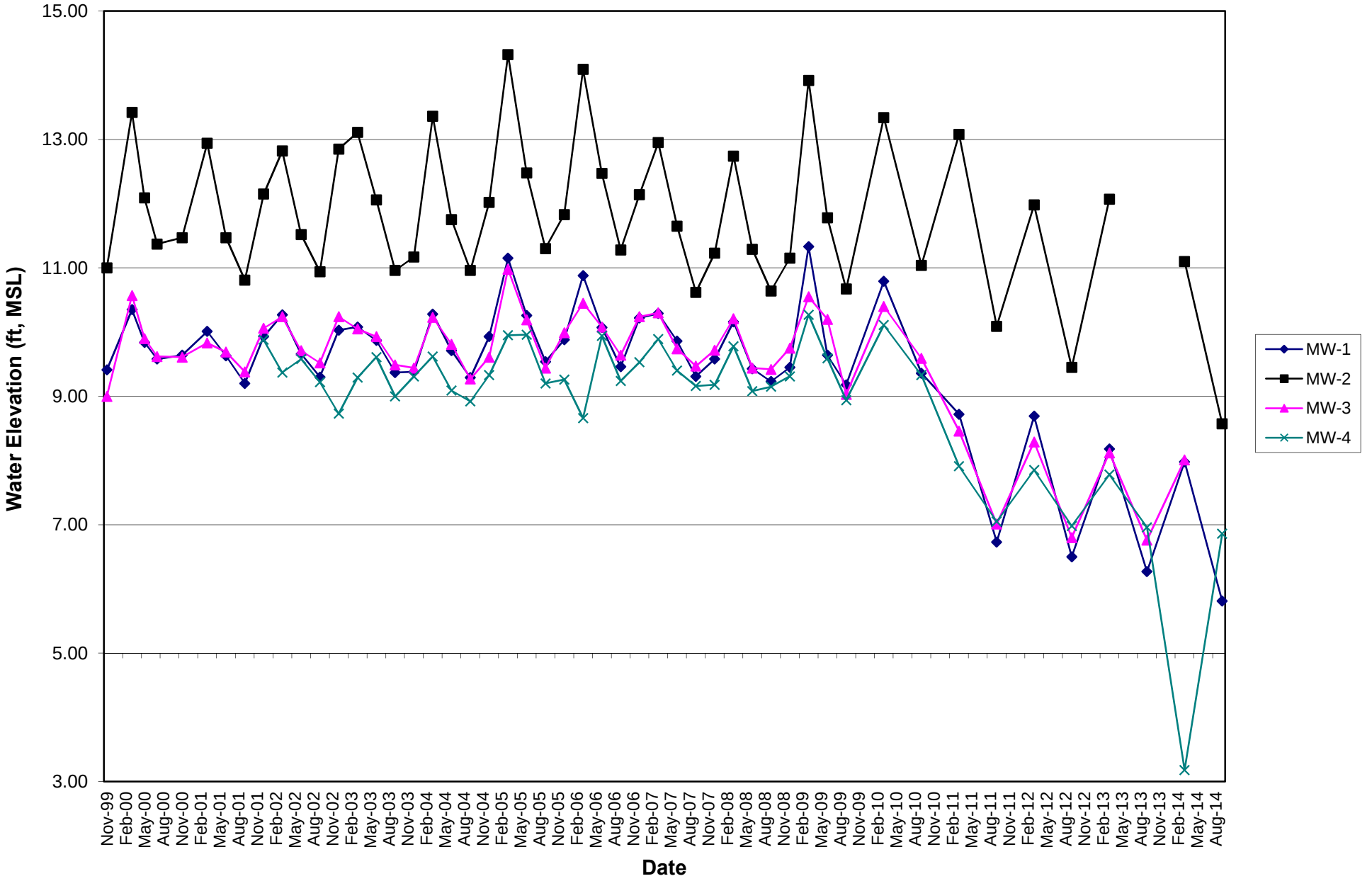
1605fig212Q3.dsf 11/5/12

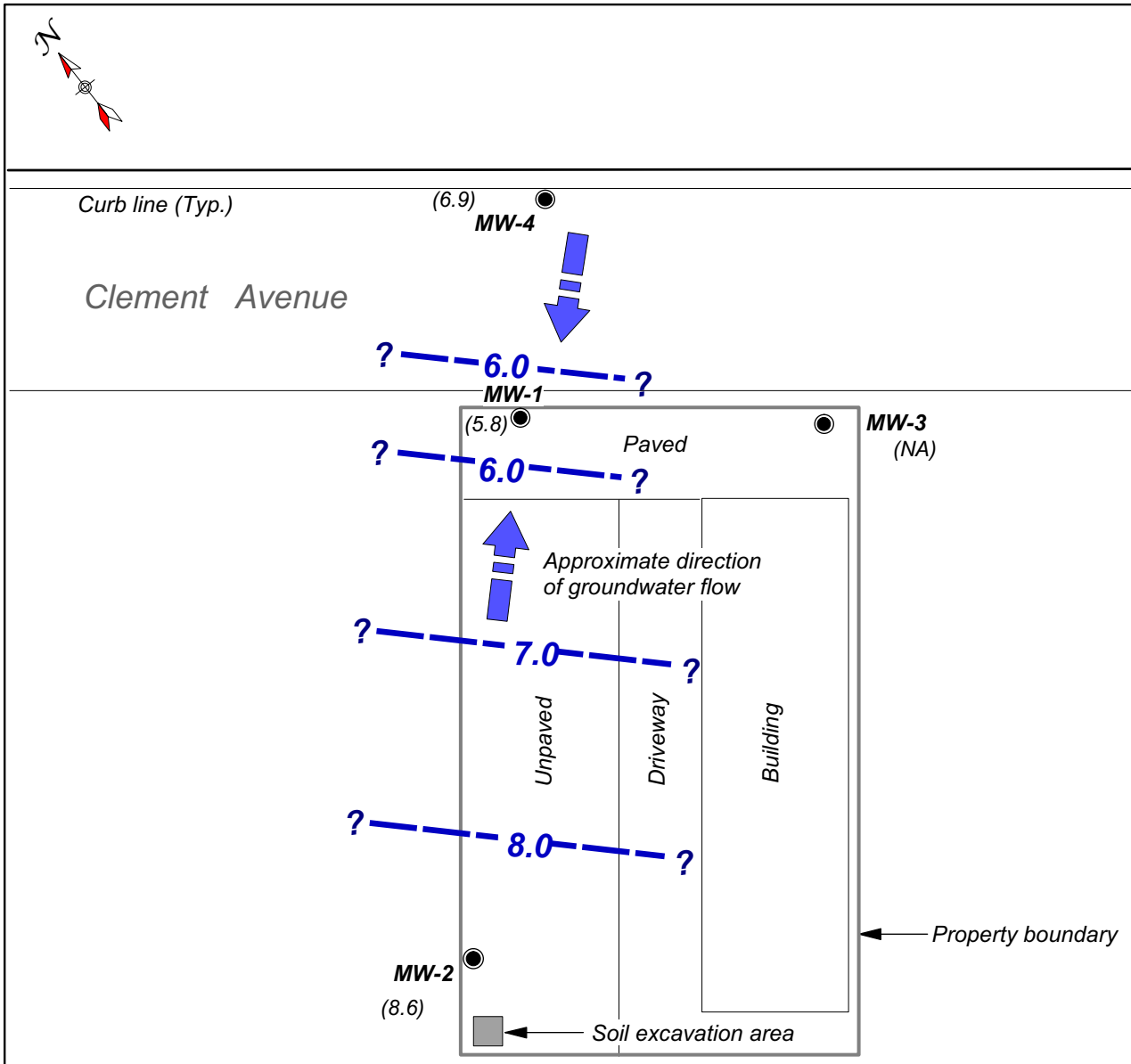
Base map from ConocoPhillips/EFW, Off-Site Groundwater Characterization, August 21, 2002.

CRAWFORD CONSULTING INC.

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





EXPLANATION

◉ Monitoring well

(8.0) Groundwater elevation (Ft.-MSL); measured 9/26/14

? 8.0 Groundwater elevation contour (Ft.-MSL)

0 40 Feet

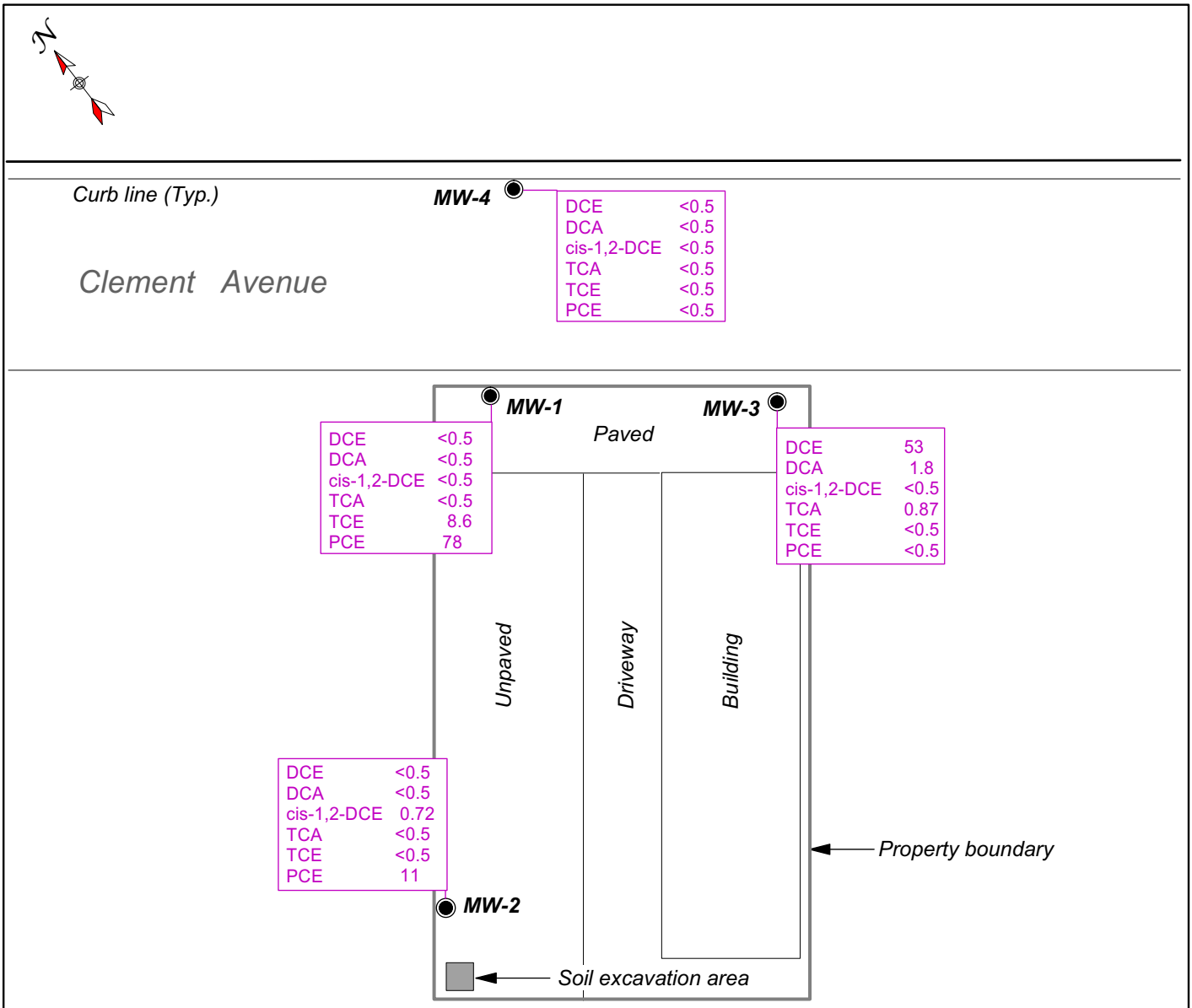
Approximate Scale

1605fig414Q3.dsf 11/914

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

CRAWFORD CONSULTING INC.

Project No. CS1605
Cargill Salt Dispensing Systems Division
2016 Clement Avenue, Alameda, California
Figure 4. Groundwater Elevation Contours - September 2014



EXPLANATION

Groundwater monitoring well location

Analyte concentration

DCE <0.5
DCA <0.5
cis-1,2-DCE 0.72
TCA <0.5
TCE <0.5
PCE 11

Analytical parameter

All concentrations reported in micrograms per liter (µg/L), in groundwater.
All other 8010 list analytes were below detection limits.

DCE = 1,1-Dichloroethene
DCA = 1,1-Dichloroethane
PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
VOCs = Volatile organic compounds
cis-1,2-DCE = cis-1,2-Dichloroethene

0 40 Feet
Approximate Scale

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

1605fig514Q3.dsf 10/27/14

CRAWFORD CONSULTING INC.

Project No. CS1605
Cargill Salt Dispensing Systems Division
2016 Clement Avenue, Alameda, California
Figure 5. VOC Concentrations in Groundwater – September 2014

Figure 6. Graphical Summary of PCE Concentrations

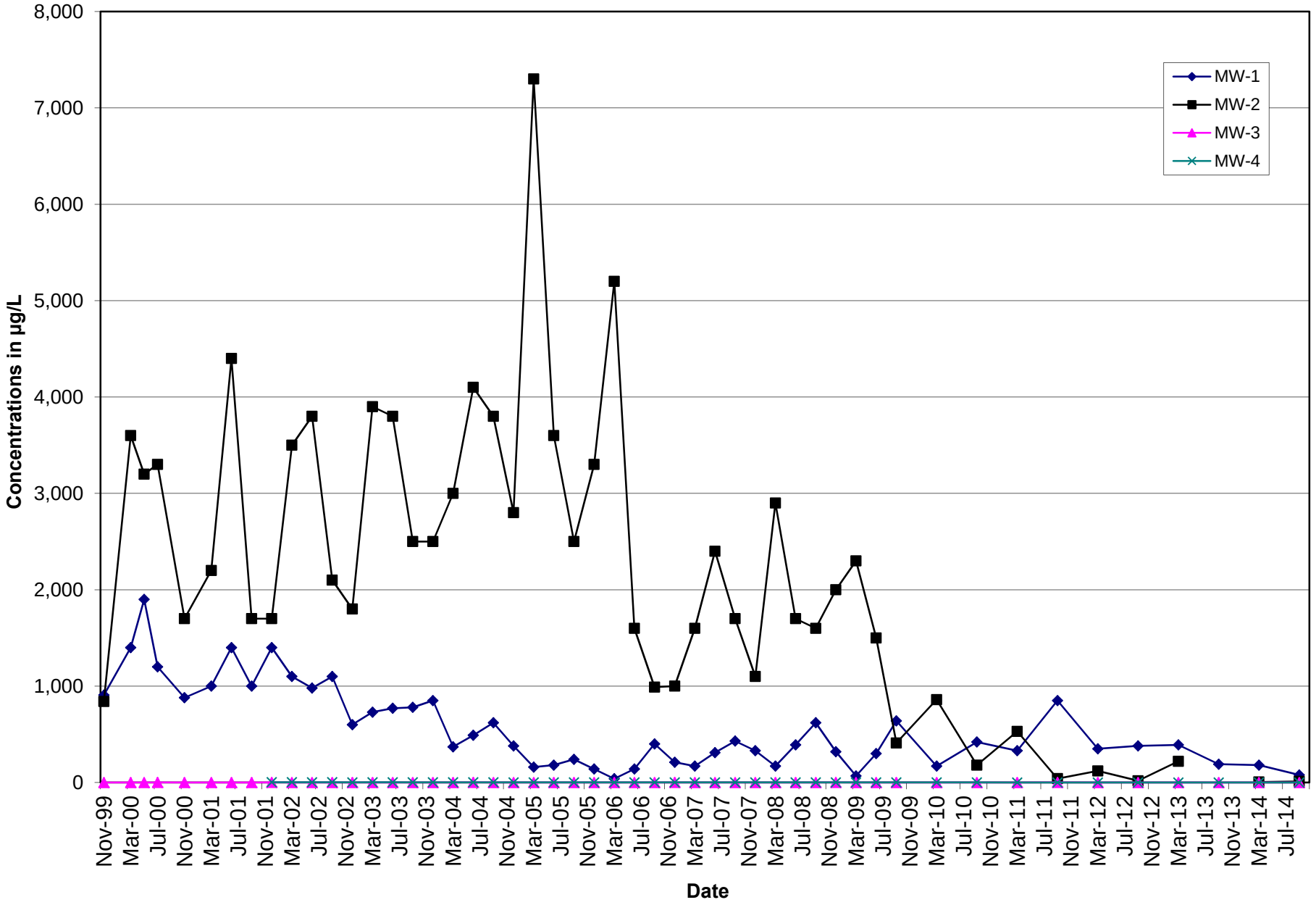
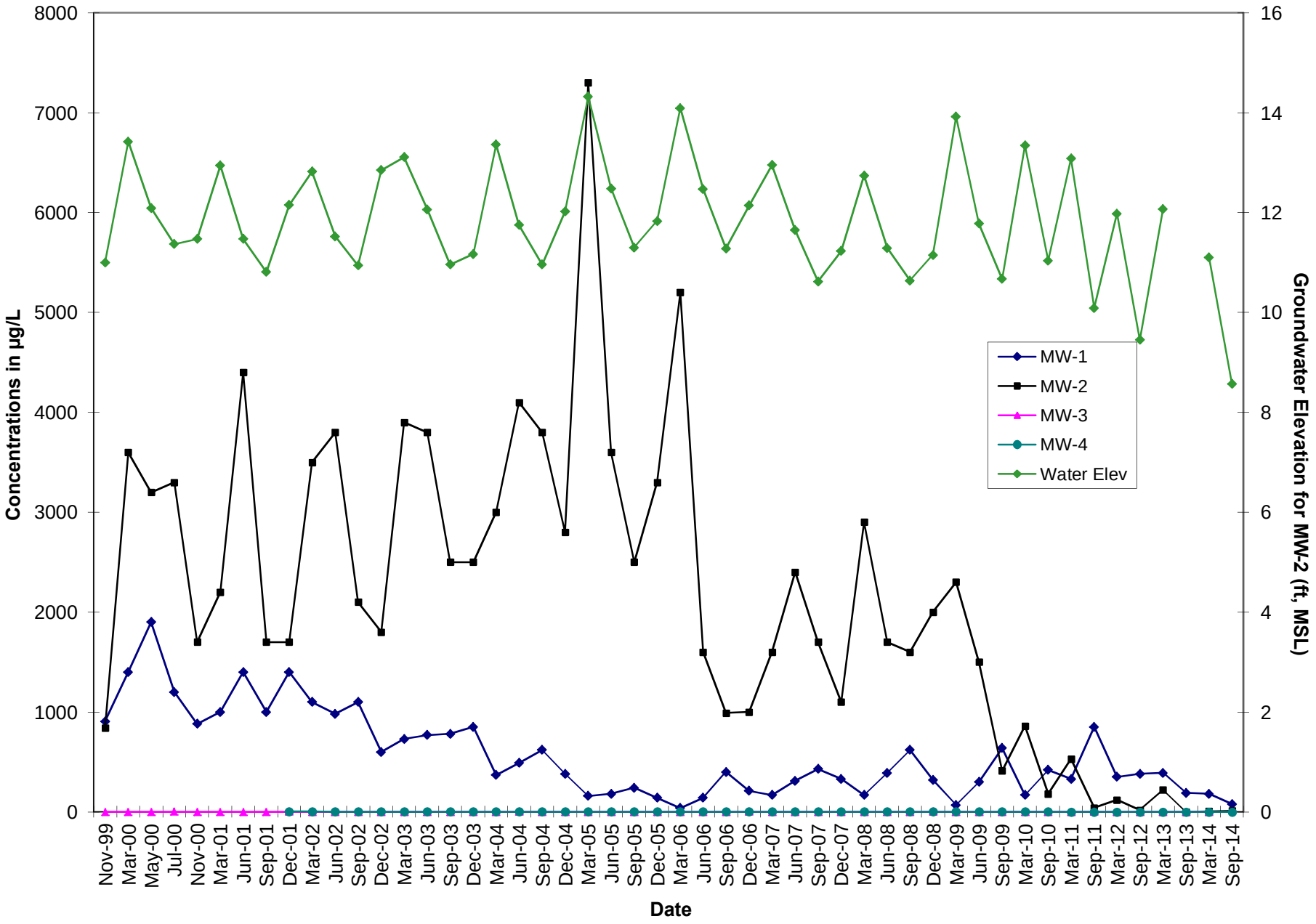


Figure 7. PCE Concentrations vs. Groundwater Elevation



Appendix A

Field Data Sheets

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	9/26/14	~~0950~~ 1135	7.35	7.35	Weeds roots in well
MW-2	9/26/14	0808	7.05	7.05	Weeds Roots in Well
MW-3	9/26/14	0750	NR	NR	Cannot pass 6'4" roots in well. Could not break through.
MW-4	9/26/14	0814	5.57	557	

Data Collection

Field measurements by:	Reviewed by:
Print: RGuerra	Print: J. Bateva
Signature:	Signature:
Date: 9/26/14	Date: 10/2/14

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: 9/26/14
Finish Date: 9/26/14

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 7.35 Well depth (ft): 18.3

One casing volume (gal.): 0.44 Calculated purge volume (gal.) *(3 x casing volume)*: 1.34

One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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 (3.785 liters per 1 gallon)

Date purged: 9/26/14 Start time: 1006 End time: 1045

Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump +

PVC bailer ____ Teflon bailer ____ Other ____

Purge rate (lpm): 0.13 Well yield (H/L): High

Purge water disposal: Drummed on site

Time (2400 hr)	Cumulative Vol. Purged (Liters)	pH (units)	EC (mS/cm)	T (° C)	Color (Visual)	Turbidity (NTU)
1018	1.7	7.15	471	19.0	clear	40.5
1031	3.4	7.14	467	18.8	clear	12.7
1045	5.1	7.12	467	18.9	clear	8.8

Total Purged (Liters): 5.1

WELL SAMPLING

Date sampled: 9/26/14 Start time: 1046 End time: 1050

Depth to water (ft) before sampling: 9.81

Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____

PVC bailer ____ Other ____

Weather conditions: partly cloudy Ambient temperature (° F): 65

Well condition/Remarks: OK, bolts need to be replaced

All Samples collected

Meter calibration: EC ____ pH ____

Temperature SEE MW-4 Turbidity ____

Purged and sampled by (print): RGuevara

Signature: ____ Reviewed by: ____

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: 9/26/14
Finish Date: 9/26/14

WELL INFORMATION

Casing diameter (in.): 10 Depth to water (ft): 7.65 Well depth (ft): 17.5
One casing volume (gal.): 0.40 Calculated purge volume (gal.) *(3 x casing volume)*: 1.21
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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 ~~X~~ Clear bailer

WELL PURGING (3.785 liters per 1 gallon)

Date purged: 9/26/14 Start time: 1101 End time: 1124
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other ____
Purge rate (lpm): 0.2 Well yield (H/L): High
Purge water disposal: Drummed onsite

Time (2400 hr)	Cumulative Vol. Purged (Liters)	pH (units)	EC (mS/cm)	T (° C)	Color (Visual)	Turbidity (NTU)
1110	1.5	6.66	516	18.6	Tan	521
1116	3.0	6.70	507	18.5	Brown	523
1124	4.6	6.75	495	18.6	Brown	126

Total Purged (Liters): 4.6

WELL SAMPLING

Date sampled: 9/26/14 Start time: 1125 End time: 1133
Depth to water (ft) before sampling: 10.18
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: partly cloudy Ambient temperature (° F): 65
Well condition/Remarks: OK, missing bolts, roots in well pushed through with post pusher
All Samples collected
Dup-1 Collected

Meter calibration: EC SEE MW-4 pH ____
Temperature ____ Turbidity ____

Purged and sampled by (print): R. Guerra
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: 9/26/14
Finish Date: 9/26/14

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): (*) 8.00 ← estimated to calculate purge Well depth (ft): 17.0

One casing volume (gal.): 0.39 Calculated purge volume (gal.) *(3 x casing volume)*: 1.18

One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): NR Method for checking: Interface probe ____ Clear bailer ____

WELL PURGING (3.785 liters per 1 gallon)

Date purged: 9/26/14 Start time: 0918 End time: 0952

Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other ____

Purge rate (lpm): 0.13 Well yield (H/L): Low

Purge water disposal: Drummed on site

Time (2400 hr)	Cumulative Vol. Purged (Liters)	pH (units)	EC (mS/cm)	T (° C)	Color (Visual)	Turbidity (NTU)
0927	1.5	7.23	584	19.5	clear	21.6
0940	3.0	7.38	576	19.4	clear	10.9
0952	4.5	7.31	578	20.3	clear	4.3

Total Purged (Liters): 4.5

WELL SAMPLING

Date sampled: 9/26/14 Start time: 0953 End time: 0956

Depth to water (ft) before sampling: NR

Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: (*) Partly cloudy Ambient temperature (° F): 65

Well condition/Remarks: Could not pass 6.4 Estimated purge volume
OK Bolts need to be replaced

All Samples collected

Meter calibration: EC ____ pH ____
Temperature SEE MW-4 Turbidity ____

Purged and sampled by (print): R. Guerra

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: 9/26/14
Finish Date: 9/26/14

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 5.57 Well depth (ft): 19.0

One casing volume (gal.): 0.55 Calculated purge volume (gal.) *(3 x casing volume)*: 1.65

One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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 X Clear bailer

WELL PURGING (3.785 liters per 1 gallon)

Date purged: 9/26/14 Start time: 0821 End time: 0858

Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other ____

Purge rate (lpm): 0.17 Well yield (H/L): High

Purge water disposal: Drummed waste

Time (2400 hr)	Cumulative Vol. Purged (Liters)	pH (units)	EC (mS/cm)	T (° C)	Color (Visual)	Turbidity (NTU)
0834	2.1	6.86	622	20.9	Clear	18.9
0845	4.2	7.36	622	20.8	Clear	18.8
0858	6.3	7.42	632	20.7	clear	7.2

Total Purged (Liters): 6.3

WELL SAMPLING

Date sampled: 9/26/14 Start time: 0855 End time: 0902

Depth to water (ft) before sampling: 13.81

Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: partly cloudy Ambient temperature (° F): 65

Well condition/Remarks: OK, needs bolts to be replaced

All Samples collected

Meter calibration: EC 15.08, 15.00 pH 7.00 7.00 / 10.00 10.00 / 4.02, 4.01
Temperature 17.5 Turbidity 1000 - 0.02

Purged and sampled by (print): R. Guerra

Signature: ____ Reviewed by: ____

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:

September 2014 0.023

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)
September 2014	NE	0.00002	0.023	0.33	1.5

Calculations and assumptions prepared by: Mark C. Wheeler

Date: 11/10/2014

Appendix C

Certified Analytical Reports and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-60174-1
Client Project/Site: Alameda Facility CS 1605

For:
Crawford Consulting Inc
4 North First Street Suite 650
San Jose, California 95113-1326

Attn: Mr. Mark Wheeler

Authorized for release by:
10/6/2014 3:00:23 PM

Afsaneh Salimpour, Senior Project Manager
(925)484-1919
afsaneh.salimpour@testamericainc.com

Table of Contents

Glossary

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

Job ID: 720-60174-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-60174-1

Comments
No additional comments.

Receipt
The samples were received on 9/26/2014 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.6° C.

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

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

Detection Summary

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: MW-1 — Lab Sample ID: 720-60174-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	78		0.50		ug/L	1		8260B	Total/NA
Trichloroethene	8.6		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: MW-2 — Lab Sample ID: 720-60174-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.72		0.50		ug/L	1		8260B	Total/NA
Tetrachloroethene	11		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 720-60174-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.8		0.50		ug/L	1		8260B	Total/NA
1,1-Dichloroethene	53		0.50		ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	0.87		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 720-60174-4

No Detections.

Client Sample ID: DUP-1 — Lab Sample ID: 720-60174-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.70		0.50		ug/L	1		8260B	Total/NA
Tetrachloroethene	12		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: TB-1 — Lab Sample ID: 720-60174-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: MW-1
Date Collected: 09/26/14 10:46
Date Received: 09/26/14 12:20

Lab Sample ID: 720-60174-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/04/14 09:52	1
Bromoform	ND		1.0		ug/L			10/04/14 09:52	1
Bromomethane	ND		0.50		ug/L			10/04/14 09:52	1
Carbon tetrachloride	ND		0.50		ug/L			10/04/14 09:52	1
Chlorobenzene	ND		0.50		ug/L			10/04/14 09:52	1
Chloroethane	ND		0.50		ug/L			10/04/14 09:52	1
Chloroform	ND		0.50		ug/L			10/04/14 09:52	1
Chloromethane	ND		0.50		ug/L			10/04/14 09:52	1
Chlorodibromomethane	ND		0.50		ug/L			10/04/14 09:52	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/04/14 09:52	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/04/14 09:52	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/04/14 09:52	1
EDB	ND		0.50		ug/L			10/04/14 09:52	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/04/14 09:52	1
1,1-Dichloroethane	ND		0.50		ug/L			10/04/14 09:52	1
1,2-Dichloroethane	ND		0.50		ug/L			10/04/14 09:52	1
1,1-Dichloroethene	ND		0.50		ug/L			10/04/14 09:52	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			10/04/14 09:52	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/04/14 09:52	1
1,2-Dichloropropane	ND		0.50		ug/L			10/04/14 09:52	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/04/14 09:52	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/04/14 09:52	1
Methylene Chloride	ND		2.0		ug/L			10/04/14 09:52	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/04/14 09:52	1
Tetrachloroethene	**78**		0.50		ug/L			10/04/14 09:52	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/04/14 09:52	1
1,1,1-Trichloroethane	ND		0.50		ug/L			10/04/14 09:52	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/04/14 09:52	1
Trichloroethene	**8.6**		0.50		ug/L			10/04/14 09:52	1
Trichlorofluoromethane	ND		0.50		ug/L			10/04/14 09:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/04/14 09:52	1
Vinyl chloride	ND		0.50		ug/L			10/04/14 09:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*108*		*80 - 128*		*10/04/14 09:52*	*1*
Dibromofluoromethane (Surr)	*103*		*76 - 132*		*10/04/14 09:52*	*1*

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: MW-2
Date Collected: 09/26/14 11:25
Date Received: 09/26/14 12:20

Lab Sample ID: 720-60174-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/03/14 20:59	1
Bromoform	ND		1.0		ug/L			10/03/14 20:59	1
Bromomethane	ND		0.50		ug/L			10/03/14 20:59	1
Carbon tetrachloride	ND		0.50		ug/L			10/03/14 20:59	1
Chlorobenzene	ND		0.50		ug/L			10/03/14 20:59	1
Chloroethane	ND		0.50		ug/L			10/03/14 20:59	1
Chloroform	ND		0.50		ug/L			10/03/14 20:59	1
Chloromethane	ND		0.50		ug/L			10/03/14 20:59	1
Chlorodibromomethane	ND		0.50		ug/L			10/03/14 20:59	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/14 20:59	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/03/14 20:59	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/03/14 20:59	1
EDB	ND		0.50		ug/L			10/03/14 20:59	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/03/14 20:59	1
1,1-Dichloroethane	ND		0.50		ug/L			10/03/14 20:59	1
1,2-Dichloroethane	ND		0.50		ug/L			10/03/14 20:59	1
1,1-Dichloroethene	ND		0.50		ug/L			10/03/14 20:59	1
cis-1,2-Dichloroethene	**0.72**		0.50		ug/L			10/03/14 20:59	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 20:59	1
1,2-Dichloropropane	ND		0.50		ug/L			10/03/14 20:59	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 20:59	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 20:59	1
Methylene Chloride	ND		2.0		ug/L			10/03/14 20:59	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/03/14 20:59	1
Tetrachloroethene	**11**		0.50		ug/L			10/03/14 20:59	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/14 20:59	1
1,1,1-Trichloroethane	ND		0.50		ug/L			10/03/14 20:59	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/03/14 20:59	1
Trichloroethene	ND		0.50		ug/L			10/03/14 20:59	1
Trichlorofluoromethane	ND		0.50		ug/L			10/03/14 20:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/03/14 20:59	1
Vinyl chloride	ND		0.50		ug/L			10/03/14 20:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*80 - 128*		*10/03/14 20:59*	*1*
Dibromofluoromethane (Surr)	*105*		*76 - 132*		*10/03/14 20:59*	*1*

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: MW-3
Date Collected: 09/26/14 09:53
Date Received: 09/26/14 12:20

Lab Sample ID: 720-60174-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/03/14 22:24	1
Bromoform	ND		1.0		ug/L			10/03/14 22:24	1
Bromomethane	ND		0.50		ug/L			10/03/14 22:24	1
Carbon tetrachloride	ND		0.50		ug/L			10/03/14 22:24	1
Chlorobenzene	ND		0.50		ug/L			10/03/14 22:24	1
Chloroethane	ND		0.50		ug/L			10/03/14 22:24	1
Chloroform	ND		0.50		ug/L			10/03/14 22:24	1
Chloromethane	ND		0.50		ug/L			10/03/14 22:24	1
Chlorodibromomethane	ND		0.50		ug/L			10/03/14 22:24	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/14 22:24	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/03/14 22:24	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/03/14 22:24	1
EDB	ND		0.50		ug/L			10/03/14 22:24	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/03/14 22:24	1
1,1-Dichloroethane	**1.8**		0.50		ug/L			10/03/14 22:24	1
1,2-Dichloroethane	ND		0.50		ug/L			10/03/14 22:24	1
1,1-Dichloroethene	**53**		0.50		ug/L			10/03/14 22:24	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 22:24	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 22:24	1
1,2-Dichloropropane	ND		0.50		ug/L			10/03/14 22:24	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 22:24	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 22:24	1
Methylene Chloride	ND		2.0		ug/L			10/03/14 22:24	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/03/14 22:24	1
Tetrachloroethene	ND		0.50		ug/L			10/03/14 22:24	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/14 22:24	1
1,1,1-Trichloroethane	**0.87**		0.50		ug/L			10/03/14 22:24	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/03/14 22:24	1
Trichloroethene	ND		0.50		ug/L			10/03/14 22:24	1
Trichlorofluoromethane	ND		0.50		ug/L			10/03/14 22:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/03/14 22:24	1
Vinyl chloride	ND		0.50		ug/L			10/03/14 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*80 - 128*		*10/03/14 22:24*	*1*
Dibromofluoromethane (Surr)	*102*		*76 - 132*		*10/03/14 22:24*	*1*

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: MW-4
Date Collected: 09/26/14 08:59
Date Received: 09/26/14 12:20

Lab Sample ID: 720-60174-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/03/14 22:53	1
Bromoform	ND		1.0		ug/L			10/03/14 22:53	1
Bromomethane	ND		0.50		ug/L			10/03/14 22:53	1
Carbon tetrachloride	ND		0.50		ug/L			10/03/14 22:53	1
Chlorobenzene	ND		0.50		ug/L			10/03/14 22:53	1
Chloroethane	ND		0.50		ug/L			10/03/14 22:53	1
Chloroform	ND		0.50		ug/L			10/03/14 22:53	1
Chloromethane	ND		0.50		ug/L			10/03/14 22:53	1
Chlorodibromomethane	ND		0.50		ug/L			10/03/14 22:53	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/14 22:53	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/03/14 22:53	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/03/14 22:53	1
EDB	ND		0.50		ug/L			10/03/14 22:53	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/03/14 22:53	1
1,1-Dichloroethane	ND		0.50		ug/L			10/03/14 22:53	1
1,2-Dichloroethane	ND		0.50		ug/L			10/03/14 22:53	1
1,1-Dichloroethene	ND		0.50		ug/L			10/03/14 22:53	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 22:53	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 22:53	1
1,2-Dichloropropane	ND		0.50		ug/L			10/03/14 22:53	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 22:53	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 22:53	1
Methylene Chloride	ND		2.0		ug/L			10/03/14 22:53	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/03/14 22:53	1
Tetrachloroethene	ND		0.50		ug/L			10/03/14 22:53	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/14 22:53	1
1,1,1-Trichloroethane	ND		0.50		ug/L			10/03/14 22:53	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/03/14 22:53	1
Trichloroethene	ND		0.50		ug/L			10/03/14 22:53	1
Trichlorofluoromethane	ND		0.50		ug/L			10/03/14 22:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/03/14 22:53	1
Vinyl chloride	ND		0.50		ug/L			10/03/14 22:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*80 - 128*		*10/03/14 22:53*	*1*
Dibromofluoromethane (Surr)	*101*		*76 - 132*		*10/03/14 22:53*	*1*

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: DUP-1
Date Collected: 09/26/14 00:00
Date Received: 09/26/14 12:20

Lab Sample ID: 720-60174-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/04/14 00:19	1
Bromoform	ND		1.0		ug/L			10/04/14 00:19	1
Bromomethane	ND		0.50		ug/L			10/04/14 00:19	1
Carbon tetrachloride	ND		0.50		ug/L			10/04/14 00:19	1
Chlorobenzene	ND		0.50		ug/L			10/04/14 00:19	1
Chloroethane	ND		0.50		ug/L			10/04/14 00:19	1
Chloroform	ND		0.50		ug/L			10/04/14 00:19	1
Chloromethane	ND		0.50		ug/L			10/04/14 00:19	1
Chlorodibromomethane	ND		0.50		ug/L			10/04/14 00:19	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/04/14 00:19	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/04/14 00:19	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/04/14 00:19	1
EDB	ND		0.50		ug/L			10/04/14 00:19	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/04/14 00:19	1
1,1-Dichloroethane	ND		0.50		ug/L			10/04/14 00:19	1
1,2-Dichloroethane	ND		0.50		ug/L			10/04/14 00:19	1
1,1-Dichloroethene	ND		0.50		ug/L			10/04/14 00:19	1
cis-1,2-Dichloroethene	**0.70**		0.50		ug/L			10/04/14 00:19	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/04/14 00:19	1
1,2-Dichloropropane	ND		0.50		ug/L			10/04/14 00:19	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/04/14 00:19	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/04/14 00:19	1
Methylene Chloride	ND		2.0		ug/L			10/04/14 00:19	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/04/14 00:19	1
Tetrachloroethene	**12**		0.50		ug/L			10/04/14 00:19	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/04/14 00:19	1
1,1,1-Trichloroethane	ND		0.50		ug/L			10/04/14 00:19	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/04/14 00:19	1
Trichloroethene	ND		0.50		ug/L			10/04/14 00:19	1
Trichlorofluoromethane	ND		0.50		ug/L			10/04/14 00:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/04/14 00:19	1
Vinyl chloride	ND		0.50		ug/L			10/04/14 00:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*80 - 128*		*10/04/14 00:19*	*1*
Dibromofluoromethane (Surr)	*109*		*76 - 132*		*10/04/14 00:19*	*1*

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: TB-1
Date Collected: 09/26/14 00:00
Date Received: 09/26/14 12:20

Lab Sample ID: 720-60174-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/03/14 23:21	1
Bromoform	ND		1.0		ug/L			10/03/14 23:21	1
Bromomethane	ND		0.50		ug/L			10/03/14 23:21	1
Carbon tetrachloride	ND		0.50		ug/L			10/03/14 23:21	1
Chlorobenzene	ND		0.50		ug/L			10/03/14 23:21	1
Chloroethane	ND		0.50		ug/L			10/03/14 23:21	1
Chloroform	ND		0.50		ug/L			10/03/14 23:21	1
Chloromethane	ND		0.50		ug/L			10/03/14 23:21	1
Chlorodibromomethane	ND		0.50		ug/L			10/03/14 23:21	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/14 23:21	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/03/14 23:21	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/03/14 23:21	1
EDB	ND		0.50		ug/L			10/03/14 23:21	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/03/14 23:21	1
1,1-Dichloroethane	ND		0.50		ug/L			10/03/14 23:21	1
1,2-Dichloroethane	ND		0.50		ug/L			10/03/14 23:21	1
1,1-Dichloroethene	ND		0.50		ug/L			10/03/14 23:21	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 23:21	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 23:21	1
1,2-Dichloropropane	ND		0.50		ug/L			10/03/14 23:21	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 23:21	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 23:21	1
Methylene Chloride	ND		2.0		ug/L			10/03/14 23:21	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/03/14 23:21	1
Tetrachloroethene	ND		0.50		ug/L			10/03/14 23:21	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/14 23:21	1
1,1,1-Trichloroethane	ND		0.50		ug/L			10/03/14 23:21	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/03/14 23:21	1
Trichloroethene	ND		0.50		ug/L			10/03/14 23:21	1
Trichlorofluoromethane	ND		0.50		ug/L			10/03/14 23:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/03/14 23:21	1
Vinyl chloride	ND		0.50		ug/L			10/03/14 23:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*80 - 128*		*10/03/14 23:21*	*1*
Dibromofluoromethane (Surr)	*104*		*76 - 132*		*10/03/14 23:21*	*1*

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

Lab Sample ID: MB 440-209835/3
Matrix: Water
Analysis Batch: 209835

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/03/14 20:02	1
Bromoform	ND		1.0		ug/L			10/03/14 20:02	1
Bromomethane	ND		0.50		ug/L			10/03/14 20:02	1
Carbon tetrachloride	ND		0.50		ug/L			10/03/14 20:02	1
Chlorobenzene	ND		0.50		ug/L			10/03/14 20:02	1
Chloroethane	ND		0.50		ug/L			10/03/14 20:02	1
Chloroform	ND		0.50		ug/L			10/03/14 20:02	1
Chloromethane	ND		0.50		ug/L			10/03/14 20:02	1
Chlorodibromomethane	ND		0.50		ug/L			10/03/14 20:02	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/14 20:02	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/03/14 20:02	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/03/14 20:02	1
EDB	ND		0.50		ug/L			10/03/14 20:02	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/03/14 20:02	1
1,1-Dichloroethane	ND		0.50		ug/L			10/03/14 20:02	1
1,2-Dichloroethane	ND		0.50		ug/L			10/03/14 20:02	1
1,1-Dichloroethene	ND		0.50		ug/L			10/03/14 20:02	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 20:02	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/03/14 20:02	1
1,2-Dichloropropane	ND		0.50		ug/L			10/03/14 20:02	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 20:02	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/03/14 20:02	1
Methylene Chloride	ND		2.0		ug/L			10/03/14 20:02	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/03/14 20:02	1
Tetrachloroethene	ND		0.50		ug/L			10/03/14 20:02	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/14 20:02	1
1,1,1-Trichloroethane	ND		0.50		ug/L			10/03/14 20:02	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/03/14 20:02	1
Trichloroethene	ND		0.50		ug/L			10/03/14 20:02	1
Trichlorofluoromethane	ND		0.50		ug/L			10/03/14 20:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/03/14 20:02	1
Vinyl chloride	ND		0.50		ug/L			10/03/14 20:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*80 - 128*		*10/03/14 20:02*	*1*
Dibromofluoromethane (Surr)	*101*		*76 - 132*		*10/03/14 20:02*	*1*

Lab Sample ID: LCS 440-209835/4
Matrix: Water
Analysis Batch: 209835

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	25.0	27.8		ug/L		111	70 - 132
Bromoform	25.0	26.5		ug/L		106	60 - 148
Bromomethane	25.0	25.6		ug/L		102	64 - 139
Carbon tetrachloride	25.0	28.3		ug/L		113	60 - 150
Chlorobenzene	25.0	27.0		ug/L		108	70 - 130
Chloroethane	25.0	27.6		ug/L		111	64 - 135

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

Lab Sample ID: LCS 440-209835/4
Matrix: Water
Analysis Batch: 209835

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	25.0	28.0		ug/L		112	70 - 130
Chloromethane	25.0	23.6		ug/L		95	47 - 140
Chlorodibromomethane	25.0	27.6		ug/L		110	69 - 145
1,2-Dichlorobenzene	25.0	26.7		ug/L		107	70 - 130
1,3-Dichlorobenzene	25.0	27.6		ug/L		110	70 - 130
1,4-Dichlorobenzene	25.0	27.1		ug/L		108	70 - 130
EDB	25.0	28.3		ug/L		113	70 - 130
Dichlorodifluoromethane	25.0	21.0		ug/L		84	29 - 150
1,1-Dichloroethane	25.0	28.6		ug/L		114	64 - 130
1,2-Dichloroethane	25.0	28.2		ug/L		113	57 - 138
1,1-Dichloroethene	25.0	25.9		ug/L		104	70 - 130
cis-1,2-Dichloroethene	25.0	28.5		ug/L		114	70 - 133
trans-1,2-Dichloroethene	25.0	26.4		ug/L		106	70 - 130
1,2-Dichloropropane	25.0	29.8		ug/L		119	67 - 130
cis-1,3-Dichloropropene	25.0	30.9		ug/L		124	70 - 133
trans-1,3-Dichloropropene	25.0	30.0		ug/L		120	70 - 132
Methylene Chloride	25.0	25.5		ug/L		102	52 - 130
1,1,2,2-Tetrachloroethane	25.0	30.1		ug/L		120	63 - 130
Tetrachloroethene	25.0	28.0		ug/L		112	70 - 130
1,2,4-Trichlorobenzene	25.0	29.5		ug/L		118	60 - 140
1,1,1-Trichloroethane	25.0	27.3		ug/L		109	70 - 130
1,1,2-Trichloroethane	25.0	29.6		ug/L		119	70 - 130
Trichloroethene	25.0	27.5		ug/L		110	70 - 130
Trichlorofluoromethane	25.0	25.6		ug/L		102	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	25.4		ug/L		102	60 - 140
Vinyl chloride	25.0	23.8		ug/L		95	59 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*80 - 128*
Dibromofluoromethane (Surr)	*101*		*76 - 132*

Lab Sample ID: 720-60174-2 MS
Matrix: Water
Analysis Batch: 209835

Client Sample ID: MW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	ND		25.0	27.9		ug/L		111	70 - 138
Bromoform	ND		25.0	28.3		ug/L		113	59 - 150
Bromomethane	ND		25.0	25.7		ug/L		103	62 - 131
Carbon tetrachloride	ND		25.0	27.2		ug/L		109	60 - 150
Chlorobenzene	ND		25.0	27.4		ug/L		110	70 - 130
Chloroethane	ND		25.0	27.0		ug/L		108	68 - 130
Chloroform	ND		25.0	27.3		ug/L		109	70 - 130
Chloromethane	ND		25.0	24.3		ug/L		97	39 - 144
Chlorodibromomethane	ND		25.0	28.4		ug/L		114	70 - 148
1,2-Dichlorobenzene	ND		25.0	26.8		ug/L		107	70 - 130
1,3-Dichlorobenzene	ND		25.0	26.8		ug/L		107	70 - 130

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

Lab Sample ID: 720-60174-2 MS
Matrix: Water
Analysis Batch: 209835

Client Sample ID: MW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	ND		25.0	27.0		ug/L		108	70 - 130
EDB	ND		25.0	29.3		ug/L		117	70 - 131
Dichlorodifluoromethane	ND		25.0	20.4		ug/L		82	25 - 142
1,1-Dichloroethane	ND		25.0	28.4		ug/L		114	65 - 130
1,2-Dichloroethane	ND		25.0	28.8		ug/L		115	56 - 146
1,1-Dichloroethene	ND		25.0	25.6		ug/L		103	70 - 130
cis-1,2-Dichloroethene	0.72		25.0	29.7		ug/L		116	70 - 130
trans-1,2-Dichloroethene	ND		25.0	26.4		ug/L		106	70 - 130
1,2-Dichloropropane	ND		25.0	29.5		ug/L		118	69 - 130
cis-1,3-Dichloropropene	ND		25.0	31.7		ug/L		127	70 - 133
trans-1,3-Dichloropropene	ND		25.0	31.3		ug/L		125	70 - 138
Methylene Chloride	ND		25.0	26.1		ug/L		104	52 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	31.2		ug/L		125	63 - 130
Tetrachloroethene	11		25.0	38.4		ug/L		111	70 - 137
1,2,4-Trichlorobenzene	ND		25.0	29.1		ug/L		117	60 - 140
1,1,1-Trichloroethane	ND		25.0	26.7		ug/L		107	70 - 130
1,1,2-Trichloroethane	ND		25.0	31.2		ug/L		125	70 - 130
Trichloroethene	ND		25.0	27.5		ug/L		108	70 - 130
Trichlorofluoromethane	ND		25.0	24.8		ug/L		99	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	25.3		ug/L		101	60 - 140
Vinyl chloride	ND		25.0	24.1		ug/L		97	50 - 137

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*106*		*80 - 128*
Dibromofluoromethane (Surr)	*102*		*76 - 132*

Lab Sample ID: 720-60174-2 MSD
Matrix: Water
Analysis Batch: 209835

Client Sample ID: MW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorobromomethane	ND		25.0	27.7		ug/L		111	70 - 138	1	20
Bromoform	ND		25.0	26.8		ug/L		107	59 - 150	6	25
Bromomethane	ND		25.0	25.5		ug/L		102	62 - 131	1	25
Carbon tetrachloride	ND		25.0	26.5		ug/L		106	60 - 150	3	25
Chlorobenzene	ND		25.0	27.3		ug/L		109	70 - 130	0	20
Chloroethane	ND		25.0	26.0		ug/L		104	68 - 130	4	25
Chloroform	ND		25.0	26.8		ug/L		107	70 - 130	2	20
Chloromethane	ND		25.0	24.1		ug/L		96	39 - 144	1	25
Chlorodibromomethane	ND		25.0	27.9		ug/L		111	70 - 148	2	25
1,2-Dichlorobenzene	ND		25.0	26.6		ug/L		106	70 - 130	1	20
1,3-Dichlorobenzene	ND		25.0	27.0		ug/L		108	70 - 130	1	20
1,4-Dichlorobenzene	ND		25.0	26.7		ug/L		107	70 - 130	1	20
EDB	ND		25.0	29.2		ug/L		117	70 - 131	0	25
Dichlorodifluoromethane	ND		25.0	20.4		ug/L		82	25 - 142	0	30
1,1-Dichloroethane	ND		25.0	28.4		ug/L		114	65 - 130	0	20
1,2-Dichloroethane	ND		25.0	27.6		ug/L		110	56 - 146	4	20

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

Lab Sample ID: 720-60174-2 MSD
Matrix: Water
Analysis Batch: 209835

Client Sample ID: MW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	ND		25.0	25.2		ug/L		101	70 - 130	2	20
cis-1,2-Dichloroethene	0.72		25.0	29.2		ug/L		114	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	25.8		ug/L		103	70 - 130	2	20
1,2-Dichloropropane	ND		25.0	29.4		ug/L		118	69 - 130	0	20
cis-1,3-Dichloropropene	ND		25.0	31.4		ug/L		126	70 - 133	1	20
trans-1,3-Dichloropropene	ND		25.0	30.6		ug/L		122	70 - 138	2	25
Methylene Chloride	ND		25.0	24.5		ug/L		98	52 - 130	6	20
1,1,2,2-Tetrachloroethane	ND		25.0	29.3		ug/L		117	63 - 130	6	30
Tetrachloroethene	11		25.0	37.9		ug/L		109	70 - 137	1	20
1,2,4-Trichlorobenzene	ND		25.0	29.0		ug/L		116	60 - 140	0	20
1,1,1-Trichloroethane	ND		25.0	26.0		ug/L		104	70 - 130	3	20
1,1,2-Trichloroethane	ND		25.0	30.3		ug/L		121	70 - 130	3	25
Trichloroethene	ND		25.0	26.7		ug/L		105	70 - 130	3	20
Trichlorofluoromethane	ND		25.0	24.1		ug/L		96	60 - 150	3	25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	24.5		ug/L		98	60 - 140	3	20
Vinyl chloride	ND		25.0	23.8		ug/L		95	50 - 137	2	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*106*		*80 - 128*
Dibromofluoromethane (Surr)	*101*		*76 - 132*

Lab Sample ID: MB 440-209904/3
Matrix: Water
Analysis Batch: 209904

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			10/04/14 08:55	1
Bromoform	ND		1.0		ug/L			10/04/14 08:55	1
Bromomethane	ND		0.50		ug/L			10/04/14 08:55	1
Carbon tetrachloride	ND		0.50		ug/L			10/04/14 08:55	1
Chlorobenzene	ND		0.50		ug/L			10/04/14 08:55	1
Chloroethane	ND		0.50		ug/L			10/04/14 08:55	1
Chloroform	ND		0.50		ug/L			10/04/14 08:55	1
Chloromethane	ND		0.50		ug/L			10/04/14 08:55	1
Chlorodibromomethane	ND		0.50		ug/L			10/04/14 08:55	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/04/14 08:55	1
1,3-Dichlorobenzene	ND		0.50		ug/L			10/04/14 08:55	1
1,4-Dichlorobenzene	ND		0.50		ug/L			10/04/14 08:55	1
EDB	ND		0.50		ug/L			10/04/14 08:55	1
Dichlorodifluoromethane	ND		0.50		ug/L			10/04/14 08:55	1
1,1-Dichloroethane	ND		0.50		ug/L			10/04/14 08:55	1
1,2-Dichloroethane	ND		0.50		ug/L			10/04/14 08:55	1
1,1-Dichloroethene	ND		0.50		ug/L			10/04/14 08:55	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			10/04/14 08:55	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			10/04/14 08:55	1
1,2-Dichloropropane	ND		0.50		ug/L			10/04/14 08:55	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			10/04/14 08:55	1

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

Lab Sample ID: MB 440-209904/3
Matrix: Water
Analysis Batch: 209904

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		0.50		ug/L			10/04/14 08:55	1
Methylene Chloride	ND		2.0		ug/L			10/04/14 08:55	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/04/14 08:55	1
Tetrachloroethene	ND		0.50		ug/L			10/04/14 08:55	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/04/14 08:55	1
1,1,1-Trichloroethane	ND		0.50		ug/L			10/04/14 08:55	1
1,1,2-Trichloroethane	ND		0.50		ug/L			10/04/14 08:55	1
Trichloroethene	ND		0.50		ug/L			10/04/14 08:55	1
Trichlorofluoromethane	ND		0.50		ug/L			10/04/14 08:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			10/04/14 08:55	1
Vinyl chloride	ND		0.50		ug/L			10/04/14 08:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*110*		*80 - 128*		*10/04/14 08:55*	*1*
Dibromofluoromethane (Surr)	*102*		*76 - 132*		*10/04/14 08:55*	*1*

Lab Sample ID: LCS 440-209904/4
Matrix: Water
Analysis Batch: 209904

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	25.0	27.9		ug/L		112	70 - 132
Bromoform	25.0	28.2		ug/L		113	60 - 148
Bromomethane	25.0	25.8		ug/L		103	64 - 139
Carbon tetrachloride	25.0	28.7		ug/L		115	60 - 150
Chlorobenzene	25.0	27.0		ug/L		108	70 - 130
Chloroethane	25.0	28.3		ug/L		113	64 - 135
Chloroform	25.0	27.1		ug/L		108	70 - 130
Chloromethane	25.0	24.7		ug/L		99	47 - 140
Chlorodibromomethane	25.0	27.8		ug/L		111	69 - 145
1,2-Dichlorobenzene	25.0	26.2		ug/L		105	70 - 130
1,3-Dichlorobenzene	25.0	27.1		ug/L		109	70 - 130
1,4-Dichlorobenzene	25.0	26.2		ug/L		105	70 - 130
EDB	25.0	28.7		ug/L		115	70 - 130
Dichlorodifluoromethane	25.0	23.3		ug/L		93	29 - 150
1,1-Dichloroethane	25.0	28.5		ug/L		114	64 - 130
1,2-Dichloroethane	25.0	27.5		ug/L		110	57 - 138
1,1-Dichloroethene	25.0	26.3		ug/L		105	70 - 130
cis-1,2-Dichloroethene	25.0	27.1		ug/L		109	70 - 133
trans-1,2-Dichloroethene	25.0	25.4		ug/L		102	70 - 130
1,2-Dichloropropane	25.0	29.2		ug/L		117	67 - 130
cis-1,3-Dichloropropene	25.0	30.5		ug/L		122	70 - 133
trans-1,3-Dichloropropene	25.0	29.7		ug/L		119	70 - 132
Methylene Chloride	25.0	24.7		ug/L		99	52 - 130
1,1,2,2-Tetrachloroethane	25.0	30.7		ug/L		123	63 - 130
Tetrachloroethene	25.0	28.7		ug/L		115	70 - 130
1,2,4-Trichlorobenzene	25.0	28.7		ug/L		115	60 - 140
1,1,1-Trichloroethane	25.0	27.6		ug/L		110	70 - 130

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

Lab Sample ID: LCS 440-209904/4
Matrix: Water
Analysis Batch: 209904

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	25.0	29.4		ug/L		118	70 - 130
Trichloroethene	25.0	26.8		ug/L		107	70 - 130
Trichlorofluoromethane	25.0	26.6		ug/L		106	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	27.6		ug/L		110	60 - 140
Vinyl chloride	25.0	24.9		ug/L		100	59 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*107*		*80 - 128*
Dibromofluoromethane (Surr)	*99*		*76 - 132*

Lab Sample ID: 720-60174-1 MS
Matrix: Water
Analysis Batch: 209904

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	ND		25.0	26.6		ug/L		106	70 - 138
Bromoform	ND		25.0	26.2		ug/L		105	59 - 150
Bromomethane	ND		25.0	25.1		ug/L		100	62 - 131
Carbon tetrachloride	ND		25.0	27.4		ug/L		110	60 - 150
Chlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130
Chloroethane	ND		25.0	27.2		ug/L		109	68 - 130
Chloroform	ND		25.0	26.0		ug/L		104	70 - 130
Chloromethane	ND		25.0	24.0		ug/L		96	39 - 144
Chlorodibromomethane	ND		25.0	27.1		ug/L		109	70 - 148
1,2-Dichlorobenzene	ND		25.0	25.4		ug/L		102	70 - 130
1,3-Dichlorobenzene	ND		25.0	26.3		ug/L		105	70 - 130
1,4-Dichlorobenzene	ND		25.0	26.4		ug/L		105	70 - 130
EDB	ND		25.0	27.1		ug/L		108	70 - 131
Dichlorodifluoromethane	ND		25.0	21.7		ug/L		87	25 - 142
1,1-Dichloroethane	ND		25.0	27.1		ug/L		109	65 - 130
1,2-Dichloroethane	ND		25.0	26.7		ug/L		107	56 - 146
1,1-Dichloroethene	ND		25.0	26.1		ug/L		105	70 - 130
cis-1,2-Dichloroethene	ND		25.0	26.9		ug/L		107	70 - 130
trans-1,2-Dichloroethene	ND		25.0	25.0		ug/L		100	70 - 130
1,2-Dichloropropane	ND		25.0	28.7		ug/L		115	69 - 130
cis-1,3-Dichloropropene	ND		25.0	30.0		ug/L		120	70 - 133
trans-1,3-Dichloropropene	ND		25.0	29.4		ug/L		118	70 - 138
Methylene Chloride	ND		25.0	22.7		ug/L		91	52 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	28.8		ug/L		115	63 - 130
Tetrachloroethene	78		25.0	101		ug/L		91	70 - 137
1,2,4-Trichlorobenzene	ND		25.0	27.9		ug/L		112	60 - 140
1,1,1-Trichloroethane	ND		25.0	27.2		ug/L		109	70 - 130
1,1,2-Trichloroethane	ND		25.0	29.3		ug/L		117	70 - 130
Trichloroethene	8.6		25.0	34.3		ug/L		103	70 - 130
Trichlorofluoromethane	ND		25.0	25.5		ug/L		102	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	25.8		ug/L		103	60 - 140

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

Lab Sample ID: 720-60174-1 MS
Matrix: Water
Analysis Batch: 209904

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	ND		25.0	24.7		ug/L		99	50 - 137

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*108*		*80 - 128*
Dibromofluoromethane (Surr)	*101*		*76 - 132*

Lab Sample ID: 720-60174-1 MSD
Matrix: Water
Analysis Batch: 209904

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorobromomethane	ND		25.0	28.1		ug/L		112	70 - 138	5	20
Bromoform	ND		25.0	25.6		ug/L		102	59 - 150	2	25
Bromomethane	ND		25.0	25.8		ug/L		103	62 - 131	3	25
Carbon tetrachloride	ND		25.0	29.3		ug/L		117	60 - 150	7	25
Chlorobenzene	ND		25.0	26.9		ug/L		108	70 - 130	1	20
Chloroethane	ND		25.0	27.9		ug/L		112	68 - 130	2	25
Chloroform	ND		25.0	27.4		ug/L		110	70 - 130	5	20
Chloromethane	ND		25.0	25.7		ug/L		103	39 - 144	7	25
Chlorodibromomethane	ND		25.0	27.2		ug/L		109	70 - 148	0	25
1,2-Dichlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	27.0		ug/L		108	70 - 130	3	20
1,4-Dichlorobenzene	ND		25.0	26.7		ug/L		107	70 - 130	1	20
EDB	ND		25.0	27.0		ug/L		108	70 - 131	0	25
Dichlorodifluoromethane	ND		25.0	22.8		ug/L		91	25 - 142	5	30
1,1-Dichloroethane	ND		25.0	28.7		ug/L		115	65 - 130	6	20
1,2-Dichloroethane	ND		25.0	26.5		ug/L		106	56 - 146	1	20
1,1-Dichloroethene	ND		25.0	27.0		ug/L		108	70 - 130	3	20
cis-1,2-Dichloroethene	ND		25.0	28.7		ug/L		114	70 - 130	6	20
trans-1,2-Dichloroethene	ND		25.0	26.8		ug/L		107	70 - 130	7	20
1,2-Dichloropropane	ND		25.0	29.2		ug/L		117	69 - 130	2	20
cis-1,3-Dichloropropene	ND		25.0	30.7		ug/L		123	70 - 133	2	20
trans-1,3-Dichloropropene	ND		25.0	29.6		ug/L		118	70 - 138	1	25
Methylene Chloride	ND		25.0	23.7		ug/L		95	52 - 130	5	20
1,1,2,2-Tetrachloroethane	ND		25.0	28.4		ug/L		114	63 - 130	1	30
Tetrachloroethene	78		25.0	98.5		ug/L		82	70 - 137	2	20
1,2,4-Trichlorobenzene	ND		25.0	28.6		ug/L		114	60 - 140	2	20
1,1,1-Trichloroethane	ND		25.0	28.0		ug/L		112	70 - 130	3	20
1,1,2-Trichloroethane	ND		25.0	28.4		ug/L		114	70 - 130	3	25
Trichloroethene	8.6		25.0	35.4		ug/L		107	70 - 130	3	20
Trichlorofluoromethane	ND		25.0	26.5		ug/L		106	60 - 150	4	25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	27.4		ug/L		110	60 - 140	6	20
Vinyl chloride	ND		25.0	26.1		ug/L		105	50 - 137	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*108*		*80 - 128*
Dibromofluoromethane (Surr)	*102*		*76 - 132*

QC Association Summary

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

GC/MS VOA

Analysis Batch: 209835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60174-2	MW-2	Total/NA	Water	8260B	
720-60174-2 MS	MW-2	Total/NA	Water	8260B	
720-60174-2 MSD	MW-2	Total/NA	Water	8260B	
720-60174-3	MW-3	Total/NA	Water	8260B	
720-60174-4	MW-4	Total/NA	Water	8260B	
720-60174-5	DUP-1	Total/NA	Water	8260B	
720-60174-6	TB-1	Total/NA	Water	8260B	
LCS 440-209835/4	Lab Control Sample	Total/NA	Water	8260B	
MB 440-209835/3	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 209904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-60174-1	MW-1	Total/NA	Water	8260B	
720-60174-1 MS	MW-1	Total/NA	Water	8260B	
720-60174-1 MSD	MW-1	Total/NA	Water	8260B	
LCS 440-209904/4	Lab Control Sample	Total/NA	Water	8260B	
MB 440-209904/3	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Client Sample ID: MW-1
Lab Sample ID: 720-60174-1
Date Collected: 09/26/14 10:46
Matrix: Water
Date Received: 09/26/14 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	209904	10/04/14 09:52	AT	TAL IRV

Client Sample ID: MW-2
Lab Sample ID: 720-60174-2
Date Collected: 09/26/14 11:25
Matrix: Water
Date Received: 09/26/14 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	209835	10/03/14 20:59	MP	TAL IRV

Client Sample ID: MW-3
Lab Sample ID: 720-60174-3
Date Collected: 09/26/14 09:53
Matrix: Water
Date Received: 09/26/14 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	209835	10/03/14 22:24	MP	TAL IRV

Client Sample ID: MW-4
Lab Sample ID: 720-60174-4
Date Collected: 09/26/14 08:59
Matrix: Water
Date Received: 09/26/14 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	209835	10/03/14 22:53	MP	TAL IRV

Client Sample ID: DUP-1
Lab Sample ID: 720-60174-5
Date Collected: 09/26/14 00:00
Matrix: Water
Date Received: 09/26/14 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	209835	10/04/14 00:19	MP	TAL IRV

Client Sample ID: TB-1
Lab Sample ID: 720-60174-6
Date Collected: 09/26/14 00:00
Matrix: Water
Date Received: 09/26/14 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	209835	10/03/14 23:21	MP	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Certification Summary

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Laboratory: TestAmerica Pleasanton

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-14 *
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-29-15
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.

Method Summary

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV

Protocol References:

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

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Sample Summary

Client: Crawford Consulting Inc
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-60174-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-60174-1	MW-1	Water	09/26/14 10:46	09/26/14 12:20
720-60174-2	MW-2	Water	09/26/14 11:25	09/26/14 12:20
720-60174-3	MW-3	Water	09/26/14 09:53	09/26/14 12:20
720-60174-4	MW-4	Water	09/26/14 08:59	09/26/14 12:20
720-60174-5	DUP-1	Water	09/26/14 00:00	09/26/14 12:20
720-60174-6	TB-1	Water	09/26/14 00:00	09/26/14 12:20

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

720-60174

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Service Request: 156525 Date: 9/26/14

Project Name: Alameda Facility
Project Number: CS1605
Project Manager: Dana Johnston
Company/Address: Crawford Consulting, Inc.
4 North Second St, Suite 650
San Jose, CA 95113
Phone: (408) 287-9934

Sampler's Signature:

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Volatile Organics (VOCs) (EPA 8021B)	Pb (7421); As (7060) Same as Metals	COD, TKN 500 ml plastic H_2SO_4	Chloride, Nitrate 500 ml plastic NP	pH, Conductivity 500 ml plastic NP	Total Phenols 2 x 500 ml glass H_2SO_4	**Volatile Organics (8010) 3 x 40 ml vial**	TPHgBTEX 2 x 40 ml vial HCl			REMARKS
MW-1	9/26/14	1046		water	3							X				
MW-2	9/26/14	1125		water	3							X				
MW-3	9/26/14	0953		water	3							X				
MW-4	9/26/14	0859		water	3							X				
DUP-1	9/26/14	—		water	3							X				
TB-1	9/26/14	—		water	2							X				

Analysis Requested

Relinquished By	Received By
Signature	Signature
Printed Name Ruben Guerra	Printed Name T. Bullock
Firm FSI	Firm TAL
Date/Time 9/26/14, 1220	Date/Time 9/26/14 12:20
Relinquished By	Received By
Signature	Signature
Printed Name	Printed Name
Firm	
Date/Time	

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
x Standard (5 working days)
___ Provide Verbal Preliminary Results
x Provide pdf Results
Due Date ___

REPORT REQUIREMENTS
___ I Routine Report
x II Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III Data Validation Report (includes All Raw Data)
___ RWQCB
(MDLs/PQLs/TRACE#)

INVOICE INFORMATION
P O # ___
Bill to ___

SAMPLE RECEIPT
Shipping VIA ___
Shipping # ___
Condition ___

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

4.6°C

720-60174 Chain of Custody

Login Sample Receipt Checklist

Client: Crawford Consulting Inc

Job Number: 720-60174-1

Login Number: 60174

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Gonzales, Justinn

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Crawford Consulting Inc

Job Number: 720-60174-1

Login Number: 60174
List Number: 2
Creator: Ornelas, Olga

List Source: TestAmerica Irvine
List Creation: 10/03/14 01:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A