

By Alameda County Environmental Health at 2:36 pm, Oct 14, 2013



October 9, 2013

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Mr. Jerry Wickham Alameda County Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

RE: Multi-Phase Extraction and Air Sparge/ Soil Vapor Extraction Pilot Test Summary Report 800, 726, and 706 Harrison Street, Oakland, California 94607 Fuel Leak Case No.: RO0000231, RO0000321, and RO0000484 Comingled Plume Claim No. 6678

Dear Mr. Wickham,

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

If you have any questions or need additional information, please contact me at (925) 790-6463.

Sincerely,

Timothy Bishop

Union Oil of California - Project Manager

Attachment

Multi-Phase Extraction and Air Sparge/ Soil Vapor Extraction Pilot Test Summary Report



Chevron Environmental Management Company

Multi-Phase Extraction and Air Sparge/ Soil Vapor Extraction Pilot Test Summary Report

706/726/800 Harrison Street Oakland, California ACEH Case #RO0000231/321/484

October 9, 2013



Tyllis file

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Multi-Phase Extraction and Air Sparge/Soil Vapor Extraction Pilot Test Summary Report

706/726/800 Harrison Street Oakland, California ACEH Case #R00000231/321/484

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October 9, 2013

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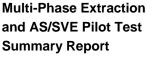
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1. Introduction

On behalf of Chevron Environmental Management Company, for itself and as Attorney-in-Fact for Union Oil Company of California, ARCADIS U.S., Inc. (ARCADIS) has prepared this Multi-Phase Extraction and Air Sparge/Soil Vapor Extraction Pilot Test Summary Report (report) for the co-mingled plume located at 706, 726, and 800 Harrison Street in Oakland, California (site). This report documents pilot test well installations at 726 Harrison Street and multi-phase extraction (MPE) and air sparge (AS)/soil vapor extraction (SVE) pilot tests conducted to address hydrocarbon impacts in groundwater and soil at the site. The site location is shown on Figure 1 and a site layout is presented on Figure 2.

The activities described in this report were proposed in the *Multi-Phase Extraction and Air Sparge/Soil Vapor Extraction Pilot Test Work Plan*, dated February 12, 2013 (ARCADIS 2013a), and *Multi-Phase Extraction and Air Sparge/Soil Vapor Extraction Pilot Test Work Plan Addendum*, dated April 19, 2013 (ARCADIS 2013b). The Addendum was prepared in response to a request presented in the Alameda County Department of Environmental Health (ACEH) *Pilot Test Work Plan Approval for Commingled Plume Assessment for Fuel Leak Case No. R00000231*, dated March 11, 2013 (Appendix A).

This report presents relevant background information, well installation activities, pilot test procedures and results, and site-specific implementation considerations. A Commingled Plume Application was submitted for this site on August 12, 2011. The three Responsible Parties are working together during the application review period pending receipt of the Letter of Commitment, which is anticipated in 2013.

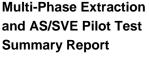
1.1 Purpose/Remedial Action Objectives

The purpose of this report is to discuss the implementation of the well installation activities proposed in the work plan (ARCADIS 2013a) and work plan addendum (ARCADIS 2013b), and to outline the MPE and AS/SVE pilot test procedures and results.

1.2 Report Organization

The remaining sections of this work plan are presented as follows:

- Section 2 summarizes the site background and history.
- Section 3 discusses the well installation activities.
- Section 4 discusses the MPE pilot test results.





- Section 5 discusses the AS/SVE pilot test results.
- Section 6 discusses conclusions and recommendations.

2. Site Background

This section describes the site's physical setting, regulatory history, site geology and hydrogeology, as well as the nature and extent of remaining petroleum hydrocarbons, and a summary of previous pilot test activities.

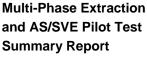
2.1 Site Description

The site consists of three properties located in a mixed commercial and residential area at 706, 726, and 800 Harrison Street, Oakland, California (Figure 1). Property locations and boundaries are shown on Figure 2.

The 706 Harrison Street Property is a former ARCO service station owned by Mr. Bo Gin. This property currently contains an asphalt parking lot. Former facilities at the 706 Harrison Street Property included four 1,000-gallon and two 6,000-gallon fuel underground storage tanks (USTs), one steel waste oil UST, product line piping and pump islands, and a station building. The USTs and associated piping were removed in January 1991 (Cambria Environmental Technology, Inc. [Cambria] 1995).

The property located at 726 Harrison Street is a former Shell service station owned by Mr. Peter Yee. This property currently contains an asphalt parking lot and building. Former facilities at the 726 Harrison Street Property included three 4,000-gallon and one 8,000-gallon fuel USTs, one steel 1,000-gallon waste oil UST, product line piping and pump islands, and a station building. The USTs and associated piping were removed in October 1995 (Aqua Science Engineers, Inc. [ASE] 2001).

The property located at 800 Harrison Street is an active 76 Station (Unocal) owned by Mr. Muhammad Usman. Current station facilities include a single-story convenience store, three product dispenser islands under two canopies, and two 12,000-gallon double-wall poly-steel gasoline USTs.





2.2 Site Geology and Hydrogeology

2.2.1 Geology

Property-specific well boring logs and cone penetrometer test (CPT) investigation results indicate that the site lithology is consistent with regional lithology; the general site lithology comprises primarily silty sands and fine-grained sands extending to approximately 30 feet below ground surface (bgs). Deeper CPTs were conducted in the area of 800 Harrison Street and indicate the presence of silt and clay between approximately 30 and 42 feet bgs. Below the clay, fine-grained sand and silty sand are present (Stantec 2009). Merritt Sand lies underneath the site, based on visual inspections of soil during the investigations (Stantec 2009).

2.2.2 Hydrogeology

The nearest surface waters to the site are the Oakland Inner Harbor to the south and west and Lake Merritt to the east and northeast. Each body of water is approximately ½ mile from the site (Stantec 2009).

Depth to water beneath the three properties has historically ranged from 10.93 to 20.01 feet below top of well casing (BTOC). During the second semi-annual groundwater monitoring and sampling event in August 2013, average depth-to-water measurements were approximately 16.30 (706 Harrison Street), 19.80 (726 Harrison Street), and 17.92 (800 Harrison Street) feet BTOC. A deeper water-bearing zone was encountered at depths of 42 to 50 feet bgs during advancement of the cone penetrometers. Prior to the June 2011 site assessment, no wells were installed in the deeper water-bearing zone. In June 2011, ASE oversaw the installation of monitoring well MW-6 on the 726 Harrison Street Property within the deeper water-bearing zone. MW-6 is screened from 44 to 49 feet bgs. Well construction details are included in Table 1.

The predominant groundwater gradient observed across all three properties is south-southwest with a horizontal hydraulic gradient of 0.009 foot per foot (ARCADIS 2013c; Table 2). This gradient direction indicates that groundwater flows from 800 Harrison Street toward 726 Harrison Street and from 726 Harrison Street toward 706 Harrison Street.

A groundwater potentiometric surface map from the first semi-annual 2013 monitoring event conducted on February 27, 2013 is presented on Figure 3. All wells located at 726 Harrison Street were surveyed following pilot test well installations on this property, as discussed in Section 3.4.7 of this report. An updated groundwater contour map reflecting new site survey







information will be provided with the second semi-annual 2013 groundwater monitoring report to be submitted to the ACEH.

2.3 Extent of Contamination

The current distribution of dissolved-phase petroleum hydrocarbons, as observed during the second semi-annual 2013 groundwater monitoring event conducted on August 15, 2013, is discussed below for each property.

2.3.1 706 Harrison Street

The maximum dissolved concentration of gasoline range organics (GRO) was detected in the sample collected from MW-1 at a concentration of 5,800 micrograms per liter (μ g/L). The maximum dissolved concentrations of benzene (1,200 μ g/L), toluene (5,600 μ g/L), ethylbenzene (820 μ g/L), total xylenes (4,400 μ g/L; called BTEX collectively), and methyl tertiary butyl ether (MTBE; 1,700 μ g/L) were detected in the samples collected from MW-2. Constituents 1,2-Dibromoethane (EDB), 1,2-dichloroethane (EDC), and ethanol were not detected above the laboratory reporting limits for all wells sampled.

2.3.2 726 Harrison Street

The maximum dissolved concentrations of GRO (8,000 μ g/L), BTEX (1,900 μ g/L, 590 μ g/L, 390 μ g/L, and 1,100 μ g/L, respectively), and MTBE (20,000 μ g/L) were detected in the samples collected from MW-5. EDB and ethanol were not detected above the laboratory reporting limits for all wells sampled. EDC was only detected in MW-6 at a concentration of 0.79 μ g/L.

2.3.3 800 Harrison Street

The maximum dissolved concentrations of GRO (410 μ g/L) and MTBE (340 μ g/L) were detected in the samples collected from MW-3. The maximum dissolved concentrations of BTEX (24 μ g/L, 6.1 μ g/L, 2.0 μ g/L, and 9.2 μ g/L, respectively) were detected in the samples collected from MW-5. EDB, EDC, and ethanol were not detected above the laboratory reporting limits for all wells sampled. No additional volatile organic compounds (VOCs) or dissolved metals were detected during this sampling event. Groundwater elevations at the site vary by approximately 3 feet, creating a hydraulic gradient of 0.009 foot per foot in the southwest direction (ARCADIS 2013c).

Groundwater analytical data is included as Table 2. Isoconcentration contour maps for TPH-g, benzene, and MTBE are presented on Figures 4, 5, and 6, respectively.





2.4 Previous Pilot Testing

Prior to the investigation activities documented in this report, MPE pilot testing had not been conducted at any of the three properties. Available information regarding historical SVE pilot testing and pump testing was considered when developing anticipated operational parameters for the MPE pilot test. Previous pilot testing performed at each property is discussed below. Soil boring details are presented in Table 3 and historical soil analytical data are presented in Table 4. Table 4 includes potentially applicable California Environmental Screening Levels.

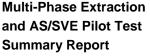
2.4.1 706 Harrison Street

In April 1994, Remediation Testing and Design installed two SVE wells (VW-1 and VW-2) and conducted an SVE pilot test on each well. The maximum vacuum applied to each extraction well was approximately 18 inches of mercury (inHg). Flow measurements recorded under maximum vacuum application ranged from 2 to 10 actual cubic feet per minute (acfm). A combined pilot test was performed on VW-1 and VW-2, operating the extraction wells simultaneously. An applied vacuum of approximately 15 inHg yielded combined flow rates ranging from 12 to 15 acfm.

In May 1998, Cambria installed three dual-nest AS/SVE wells (VW-3/SP-3, VW-4/SP-4, and VW-5/SP-5) and major AS/SVE remediation system components. The AS/SVE system startup was performed on May 6, 1998; in February 2001, the SVE component was shut down due to low influent concentrations. While operating all five SVE wells (VW-1 through VW-5), the combined system vacuum ranged from 45 to 110 inches of water (inH $_2$ O). The combined flow rate from all five SVE wells ranged from approximately 30 to 100 acfm. The SVE system removed approximately 1,871 pounds of hydrocarbons during operation. The AS system continued to operate following SVE system shutdown. The AS system operated from startup in May 1998 until the first quarter 2003, with an individual air injection well flow rate of approximately 2 acfm at an injection pressure of 8 pounds per square inch (psi) (Stantec 2009).

2.4.2 726 Harrison Street

In August 2001, ASE installed one extraction well (EW-1), one AS well (AS-1), and two SVE wells (VE-1 and VE-2). A step drawdown test was performed at a pumping rate of 0.5 gallon per minute (gpm). A 640-minute constant rate pumping test was performed on EW-1 at an average flow rate of 0.65 gpm. Major and minor hydraulic conductivities of 20.2 and 5.02 feet per day, respectively, were determined from the constant rate pumping test.





In September 2001, ASE performed an AS/SVE pilot test on VE-1. The vacuum applied to VE-1 ranged from 26 to 54 in H_2O . Approximately 1 to 2 acfm were observed during pilot testing at these operational conditions. The AS pilot test was performed on AS-1 where applied injection pressure ranged from 1 to 5 psi. No flow was observed during the 90 minute pilot test activities (ASE 2001).

2.4.3 800 Harrison Street

In August 1995, Kapraelian Engineering, Inc. (KEI) conducted an SVE pilot test. Pilot testing activities were conducted at MW-1 and MW-3, with a maximum applied wellhead vacuum of approximately 50 inH $_2$ O for both tests. No measureable flow was observed after sustained operation at the maximum vacuum. Additional pilot testing was performed at onsite monitoring wells MW-5 and MW-6. No measureable flow was observed after sustained operation at the maximum vacuum (Stantec 2009).

3. Pre-Field Activities

Multiple field activities were performed in preparation for the MPE and AS/SVE pilot tests. The following sections describe the pre-field tasks completed prior to pilot test activities.

3.1 Health and Safety Plan

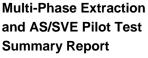
Prior to implementing field activities, the site-specific HASP was modified and updated May 2013, for use by on-site personnel. The site-specific HASP addresses potential health and safety concerns and hazards that field personnel may encounter during the proposed field events. All personnel, including on-site subcontractors, were required to familiarize themselves with and sign the HASP.

3.2 Permitting

Prior to commencing field work, all applicable well permits were obtained from the Alameda County Public Works Agency (ACPWA). Copies of the approved well permits are included in Appendix B.

3.3 Subsurface Utility Location

A detailed utility search was performed prior to initiating drilling to verify that proposed boring locations are not within a utility line or corridor. Three lines of evidence were gathered: Underground Service Alert DigAlert Hotline, private utility locator, and a review of utility as-built maps. In addition, each borehole was pre-cleared with a vacuum truck to 8 feet 1 inch bgs.





3.4 Pilot Test Well Installation

ARCADIS installed one MPE pilot test well (MPE-1), one monitoring point (MP-1), one piezometer (PZ-1), and one SVE well (VE-3) on June 19 through 21, 2013. All of the wells proposed in the work plan and work plan addendum were installed at 726 Harrison Street. MPE-1 and PZ-1 were installed in the same borehole, approximately 10 feet north of the southern 726 Harrison Street property boundary. Pilot test monitoring point MP-1 was installed approximately 17 feet north-northwest of MPE-1. Vapor extraction well VE-3 was installed approximately 12 feet west of the existing onsite building at 726 Harrison Street. Newly installed pilot test well locations are depicted on Figure 2.

3.4.1 Well Construction Details

The borehole for MPE pilot test well MPE-1 and piezometer PZ-1 extended to a total depth of 40 feet bgs to confirm vertical delineation of the smear zone and depth of the subsurface clay layer beneath the site. MPE-1 and PZ-1 were installed to a total depth of approximately 33 feet bgs. MPE-1 was completed with a 4-inch-diameter Schedule 40 polyvinyl chloride (PVC) with a 0.020-inch slot screen extending from approximately 15 to 30 feet bgs. A 3-foot section of 4-inch-diameter blank well casing was installed approximately 30 to 33 feet bgs as a well sump. The associated piezometer PZ-1 was installed within the same borehole and completed with a 1-inch diameter Schedule 40 PVC with a 0.020-inch slot screen also extending from approximately 15 to 30 feet bgs. The borehole was completed with a locking, flush-mount, 12-inch-diameter traffic-rated well box.

MP-1 was installed to a total boring depth of approximately 30 feet bgs and was completed with a 1-inch-diameter Schedule 40 PVC with a 0.020-inch slot screen extending from approximately 15 to 30 feet bgs. The borehole for VE-3 extended to a total depth of 16 feet bgs. VE-3 was installed to a total depth of approximately 15 feet bgs and was completed with a 2-inch-diameter Schedule 40 PVC with a 0.020-inch slot screen extending from approximately 5 to 15 feet bgs.

Well construction details are presented in Table 1. Boring logs for the newly installed wells are included in Appendix D.

3.4.2 PID Screening and Soil Logging

During well installation, the soil from the borehole was continuously logged by an ARCADIS geologist in accordance with the Unified Soils Classification System. Soils were screened with a photo ionization detector (PID) and a flame ionization detector (FID) to ensure that the selected pilot test well location was installed in an area of the site with elevated VOC







concentrations in the smear zone. The PID results, in parts per million, from the field screening were recorded on the field boring logs.

Lithology data was collected during pilot test well installation activities to verify site lithology and the extent and distribution of contamination within the smear zone. Utilizing this collected data in conjunction with data from previous subsurface investigations, the base of the smear zone in the dissolved-phase source area was confirmed between 25 and 30 feet bgs.

3.4.3 Soil Sampling

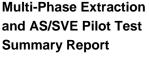
Soil samples were collected for laboratory analysis biased toward the highest probable degree of petroleum hydrocarbon concentration, based on the highest PID readings during soil screening. Soil samples were collected for laboratory analysis approximately every five feet, and when elevated PID readings or other indicators of potential hydrocarbon impacts (e.g., notable odor or soil staining) were observed during well installation.

A total of 20 soil samples were collected and analyzed for the presence of the following constituents:

- Total purgeable petroleum hydrocarbons (TPPH) by United States Environmental Protection Agency (USEPA) Method 8260B
- BTEX, MTBE, EDB, and EDC by USEPA Method 8260B

Soil analytical results were compared the San Francisco Regional Water Quality Control Board's (SFRWQCB's) Environmental Screening Levels (ESLs) and are presented in Table 4. Soil analytical results from pilot test well installations are summarized below:

- TPPH was detected above its respective ESL in the MPE-1 soil boring at 22 feet bgs (670 milligrams per kilogram [mg/kg]) and in the VE-3 boring at 9, 10, 15, and 16 feet bgs (1,300 mg/kg, 350 mg/kg, 4,700 mg/kg, and 2,900 mg/kg, respectively). TPPH was not detected in the MP-1 boring.
- Benzene was detected above its respective ESL of 0.044 mg/kg in the MPE-1 borehole at 22 feet bgs (0.73 mg/kg) and 25 feet bgs (0.087 mg/kg) and at VE-3 at 15 feet bgs (0.72 mg/kg) and 16 feet bgs (0.54 mg/kg). Benzene was not detected in the MP-1 boring.





- Toluene was not detected above its respective ESL of 2.9 mg/kg in any of the pilot test well soil borings. The sample collected from 22 feet bgs in the MPE-1 boring exhibited a toluene concentration of 1.4 mg/kg.
- Ethylbenzene was detected above its respective ESL of 3.3 mg/kg in the VE-3 boring at 9 feet bgs (3.9 mg/kg), 15 feet bgs (7.4 mg/kg), and 16 feet bgs (7.6 mg/kg).
 Ethylbenzene was detected at concentrations less than its respective ESL in MPE-1, and it was not detected throughout the MP-1 boring.
- Total xylenes were detected above the respective ESL of 2.3 mg/kg at MPE-1 at 22 feet bgs (10 mg/kg) and at VE-3 at 15 feet bgs (13 mg/kg) and 16 feet bgs (13 mg/kg). Total xylenes were not detected at MP-1.
- EDB and EDC were not detected in soil samples collected during pilot test well installation.

Soil analytical results are included in Table 4. Laboratory analytical reports are included in Appendix E.

3.4.4 Well Development

Well development was conducted prior to sampling and in accordance with the ARCADIS' Well Development SOP. Well development included the surging of the screen interval and purging fine-grained material out of the well.

3.4.5 Groundwater Sampling

Groundwater samples were collected from MPE-1 and other site monitoring wells during the second semi-annual groundwater monitoring event on August 15, 2013.

The groundwater samples were analyzed for the presence of the following constituents:

- TPPH by United States Environmental Protection Agency (USEPA) Method 8260B
- BTEX, MTBE, EDB, and EDC by USEPA Method 8260B

Groundwater analytical results are provided in Table 2. Laboratory analytical reports are included in Appendix E.



Multi-Phase Extraction and AS/SVE Pilot Test Summary Report

706/726/800 Harrison Street, Oakland, California

3.4.6 Decontamination and Waste Disposal

Drilling augers and sampling tools were decontaminated after drilling in accordance with ARCADIS Field Equipment Decontamination SOP (Appendix C). Soil cuttings and decontamination water were collected in labeled drums and temporarily stored on site, pending receipt of laboratory analytical results. Waste profile forms were prepared based on laboratory analytical results and waste was transported for offsite disposal in accordance with applicable regulations.

3.4.7 Survey

On August 21, 2013, all wells located at 726 Harrison Street, including the newly installed pilot test wells (MP-1, MPE-1, and VE-3), were surveyed by Muir Consulting, Inc., a licensed surveyor, The top of casing (TOC) elevation data is included in the well construction details presented in Table 1.





4. Multi-Phase Extraction Pilot Test

On September 10 and 11, 2013, ARCADIS conducted an MPE pilot test to evaluate the effectiveness of this technology to remediate hydrocarbon-impacted groundwater and vadose zone soils at the site.

Objectives of the pilot test included:

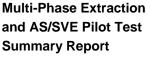
- Measure relevant drawdown information from the designated MPE well to determine the radius of influence.
- Determine air/water yields necessary to achieve sufficient drawdown.
- Determine an average mass removal rate for each operating condition by collecting VOC measurements, and flow, vacuum, and temperature data. Collect flow measurements in actual cubic feet per minute and converted to standard cubic feet per minute for mass calculations with air emissions samples.
- Determine the degree of dewatering possible in the dissolved-phase source area.

4.1 Multi-Phase Extraction Pilot Test Procedures

The MPE pilot test was conducted on September 10 and 11, 2013 and consisted of two operational phases on pilot test well MPE-1. Phase 1 consisted of a pump test to determine the ability to dewater the screen interval of MPE to expose soils in the smear zone for remediation through vacuum application. A three hour pump test was performed on MPE-1 prior to initiating vacuum application and MPE operation. Once sufficient dewatering was observed in MPE-1, Phase 2 was initiated and vacuum was applied to the wellhead to determine optimal vacuum and flow rate operational parameters. The MPE pilot test operated under a 5-day pilot test exemption from air permitting with the Bay Area Air Quality Management District (BAAQMD).

4.2 Field and System Measurements

Baseline static water levels were recorded for the pilot test well piezometer (PZ-1) and three pilot test observation wells (MW-5 (726 Harrison), MW-4 (706 Harrison), and MP-1) using an interface probe prior to initiating the pilot test. Down-hole pressure transducers with data logging capabilities were installed in extraction well MPE-1 and the observation wells. The transducers were set to record the groundwater elevation at a 1-minute interval throughout the duration of the pilot test to document changes in groundwater elevation. Water level





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measurements and drawdown observed during the pilot test in MPE-1 and the monitoring network are provided in Appendix F.

Pilot test well vacuum measurements and induced monitoring network wellhead vacuum measurements were recorded throughout pilot testing. Cumulative extracted groundwater volume was recorded from an in-line flow totalizer prior to flowing into the on-site storage tank. Storage tank water level measurements were used as secondary measurement of groundwater accumulation.

Air flow was measured using an anemometer inserted in a sample port on the MPE-1 air distribution line at the MPE treatment system manifold prior to the knockout tank and vacuum pump inlet as a secondary measurement to automated flow recordings in the mobile remediation trailer (MRT) unit utilized for pilot test activities. Organic vapor concentration measurements were collected periodically throughout the test using an FID and a PID.

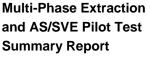
MPE pilot test field data and pilot test monitoring network data are included in Table 5 and 6, respectively.

4.3 Phase 1: Pump Test Results

On September 10, 2013, the pump test portion of the MPE pilot test was initiated on MPE-1. The initial groundwater extraction rate was 1 gallon per minute (gpm). Groundwater was extracted at a rate of 1 gpm for approximately 30 minutes, until a pump malfunction occurred and the pump test was suspended for submersible pump troubleshooting and repair. The pump test was restarted at approximately 3 gpm after minimal drawdown (approximately 0.5 feet) was observed during the initial 30 minute interval at 1 gpm. Groundwater was extracted for 60 minutes at approximately 3 gpm and a drawdown of approximately 5.3 feet in PZ-1 was observed during this timeframe. The extraction rate was then increased to 3.5 gpm (maximum capacity of submersible pump) in an attempt to dewater MPE-1 to completely expose the screen interval. Groundwater was extracted at 3.5 gpm for approximately 2 hours and a maximum depth to water of 25.60 feet BTOC was observed from PZ-1 pressure transducer data. This depth to water measurement correlates to a maximum water level drawdown of 6.23 feet in PZ-1 and a total exposed screen interval in MPE-1 of 10.60 feet. A water level plot depicting drawdown in PZ-1 during the pump test is provided in Appendix F, Figure 1. Pressure transducer data recorded during Phase 1 of the MPE pilot test are provided in Appendix F. Table 1.

Water level drawdown data from pressure transducers installed in the MPE pilot test monitoring network indicated maximum drawdown levels in MW-5, MW-4, and MP-1 of

MPE And AS-SVE Pilot Test Summary Report 2013.10.09.Docx







2.87, 1.70, and 1.25 feet BTOC. A water level plot depicting drawdown in MPE pilot test monitoring network during the pump test is provided in Appendix F, Figure 1. Pressure transducer data recorded during Phase 1 of the MPE pilot test are provided in Appendix F, Table 1.

4.4 Phase 2: MPE Pilot Test Results

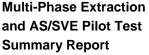
Phase 2 was initiated on September 10, 2013, immediately following the completion of Phase 1. The initial wellhead vacuum at MPE-1 was 10 inH2O and subsequent vacuum steps of approximately 25, 40, and 60 inH2O were applied to MPE-1 during Phase 2 startup. Wellhead vacuum was sustained at approximately 60 inH2O throughout Phase 2. A maximum vacuum of 61.2 inH2O was observed with a flow rate of 11.2 scfm during Phase 2. The FID used to measure organic vapor concentration in the vapor stream flamed out after the first four readings from the influent vapor stream. A PID was used to collect subsequent influent vapor stream VOC concentration measurements. The maximum observed PID during the pilot test was 382 parts per million (ppm). Vapor extraction data measurements collected during Phase 2 are provided in Table 5.

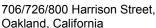
Induced vacuum measurements were collected from the pilot test monitoring network wellheads during Phase 2. Maximum induced wellhead vacuums at MW-5, MW-4, and MP-1 during Phase 2 were 9.83, 1.84, and 0.23 inH2O, respectively. Induced wellhead vacuum data from Phase 2 are provided in Table 6.

The average groundwater extraction flow rate from MPE-1 during Phase 2 was 3.5 gpm. The minimum and maximum depth to water measurements in PZ-1 during Phase 2 were 22.64 and 27.28 feet BTOC, respectively. The average depth to water in PZ-1 was 24.88 feet BTOC. When compared to the depth to water observed in PZ-1 during Phase I, 0.72 fewer feet of screen were exposed in MPE-1 when vacuum was applied to the casing while extracting groundwater. The total amount of groundwater extracted from MPE-1 during both phases of the pilot test was 5,065.5 gallons.

4.5 Sampling Activities

To assess dissolved-phase mass removal, influent water to the on-site storage tank was sampled at the following intervals: 1 hour into the pilot test, 24 hours into the pilot test, and at the completion of the pilot test. Samples were collected in analytical laboratory supplied bottles and submitted to a California Department of Health Services- (CDHS-) approved analytical laboratory for the following analyses:







 BTEX, MTBE, tertiary butyl alcohol, di-isopropyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether and ethanol by USEPA Method 8260B

To characterize the vapor-phase stream, analytical samples were collected in SUMMA[®] canisters from the influent vapor stream before treatment by the oxidizer and submitted to a CDHS-approved analytical laboratory for the following analyses:

- Total Petroleum Hydrocarbon as gasoline (TPH-g) by USEPA USEPA TO-15
- BTEX and MTBE by USEPA TO-15
- Methane by ASTM International D1946

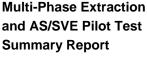
Vapor samples were collected from an influent sample port to characterize the vapor stream. One vapor sample was collected from the effluent of the treatment system to confirm destruction efficiency of the catalytic oxidizer. The analytical data will be used to confirm FID/PID measurements during the test and to estimate CatOx mass removal and destruction rates.

4.5.1 Analytical Results

Three groundwater samples were collected from the influent water to the on-site storage tank during MPE operations. Benzene concentrations ranged from 13 μ g/L to 97 μ g/L. MTBE concentrations ranged from 360 μ g/L to 450 μ g/L. The highest concentration of benzene was detected in the water sample collected 1 hour after MPE pilot test Phase 2 startup, while the highest detection of MTBE was observed in the sample collected after 24 hours of Phase 2 operation. Pilot test influent water analytical results are summarized in Table 7. Laboratory analytical reports are included as Appendix E.

Three vapor samples were collected from the system influent during MPE operations at MPE-1.

- Benzene vapor concentrations ranged from 0.35 parts per million by volume (ppmv) to 5.7 ppmv.
- TPH-g vapor concentrations ranged from 210 ppmv to 1,100 ppmv.
- MTBE vapor concentrations ranged from 0.6 ppmv to 3.7 ppmv.
- Total BTEX vapor concentrations ranged from 1.91 ppmv to 14.80 ppmv.





Methane vapor concentrations ranged from 0.18 to 0.27% by volume.

The lowest concentrations of each COC were detected in the influent sample collected 1 hour after MPE pilot test Phase 2 startup, while the highest detections were observed in the sample collected after 24 hours of Phase 2 operation. Pilot test soil vapor analytical results are summarized in Table 8. Laboratory analytical reports are included as Appendix F

4.5.2 Mass Removal Estimates

Mass removal rates for benzene and MTBE during MPE operation ranged from approximately 2.98 to 3.50 pounds per day (lbs/day) and 13.34 to 18.39 lbs/day, respectively. Groundwater analytical results for MPE-1 from the August 15, 2013 semi-annual sampling event were used to estimate the dissolved phase TPH-g mass removal rates during the MPE pilot test. Mass removal rates for TPH-g during MPE operation ranged from approximately 29.57 to 32.04 lbs/day. The estimated cumulative mass removed for benzene, MTBE, and TPH-g during 26 hours of MPE operation was 3.31, 19.35, and 36.02 pounds. Estimated dissolved phase mass removal calculations are included as Table 9.

Mass removal rates for TPH-g and BTEX during MPE operation ranged from approximately 0.71 to 5.0 lbs/day and 0.006 to 0.063 lbs/day, respectively. The estimated cumulative mass removed for TPH-g and total BTEX during 23 hours of MPE Phase 2 operation was 3.31, 19.35, and 36.02 pounds. Estimated mass removal calculations are included as Table 10.

4.6 Investigation-Derived Waste and Disposal

Groundwater extracted during pilot testing activities was stored in a baker tank, staged on 706 Harrison Street. An investigation-derived waste (IDW) sample was collected from extracted groundwater and submitted to a CDHS-approved analytical laboratory. Groundwater IDW will be removed from the site by a certified subcontractor and the onsite storage tank will be decontaminated. Groundwater IDW laboratory analytical results are provided in Appendix E.



5. Air Sparge/Soil Vapor Extraction Pilot Test

A combined AS/SVE pilot test was conducted on September 12, 2013 to determine is sufficient air delivery into the groundwater table can be achieved through air sparging.

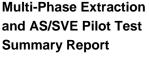
5.1 AS/SVE Pilot Test Equipment

An air compressor capable of at least approximately 20 acfm at a pressure of 40 psi was used for AS pilot testing. One of the 20-horsepower rotary claw vacuum pumps included with the MRT was used for soil vapor extraction pilot testing.

5.2 AS/SVE Pilot Test Procedures

SVE data collected during MPE pilot testing will be used to evaluate the effectiveness of SVE application in the subsurface. The vacuum, flow, and monitoring network wellhead measurements collected during MPE pilot test activities provide sufficient data to determine the potential success of implementing SVE at 706 and 726 Harrison Street. Vapor extraction operated during AS pilot test activities to capture vapors from the vadose zone. A one day AS/SVE pilot test operated under the 5-day pilot test exemption from the BAAQMD. Vacuum was applied to existing extraction well EW-1 (approximately 8 feet away from AS-1) and newly installed VE-3 (6.5 feet away from AS-1) to capture vapors from the vadose zone during AS pilot testing. The initial applied wellhead vacuum at EW-1 and VE-3 was 40 inH₂O. Vapor extraction operated for approximately 15 minutes at the initial vacuum conditions. Vacuum application at each extraction well subsequently increased at approximately 20 inH₂0 intervals until sustained flow was observed. Soil vapor was extracted from EW-1 and VE-3 at approximately 75 inH₂O and 12.5 scfm. Extraction air flows from EW-1 and VE-3 were measured using components and methods similar to MPE pilot testing. Organic vapor concentration measurements from EW-1 and VE-3 were collected periodically throughout the test using an FID or PID to optimize applied vacuums.

The AS pilot test consisted of injecting air into one AS well (AS-1), located at 726 Harrison Street. A step test was performed to determine formation breakthrough pressure. The step test injection pressure began operation at 1 psi and was gradually increased until sustained, measureable flow was observed. Injection air flow for AS-1 was measured with an in-line rotameter with a flow range of 1 to 20 acfm. The injection pressure during the pilot test ranged from 1 to 6 psi, with a flow rate of approximately 1 to 7.1 scfm. AS-1 injection air flow and pressure measurements during the pilot test are provided in Table 11. SVE operational data from extraction wells EW-1 and VE-3 is also presented in Table 11.





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PID measurements were used to evaluate increases in vapor-phase VOC concentrations due to air sparging during the pilot test. The PID concentrations in EW-1 and VE-1 during initial SVE only pilot test operation were 675 and 380 ppm, respectively. Influent VOC vapor concentrations in EW-1 and VE-3 after approximately 4 hours of AS/SVE operation increased to 1,300 and 750 ppm, respectively.

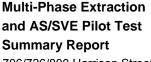
6. Conclusions

Based on data collected during the 2013 MPE and AS/SVE pilot test activities, as well as data collected during previous investigations, ARCADIS concludes the following:

- Data collected during the installation of pilot test well MPE-1 confirms the base of the smear zone in the dissolved-phase source area extends between 25 and 30 feet bgs. This closes a data gap identified in the Multi-Phase Extraction and Air Sparge/Soil Vapor Extraction Pilot Test Work Plan.
- Residual dissolved phase hydrocarbon mass in groundwater and vadose zone soils remains on the 706 and 726 Harrison Street properties.
- Pilot test well MPE-1 fully dewatered at a flow rate of 3.5 gpm during the pump test portion of the MPE pilot test. Water production continued at a constant rate once maximum drawdown level was achieved.
- Maximum drawdown water level in MPE-1 was not sustained when vacuum was applied to the well casing during the MPE pilot test. A water level increase of 0.72 feet in MPE-1 was observed when vacuum was applied during groundwater extraction.
- The AS pilot test demonstrated that air can be delivered into the groundwater table at pressures less than the formation fracture pressure of 20.4 psi. During AS pilot testing a flow rate of 7.1 scfm was observed at a pressure of 6 psi.

MPE and AS/SVE will be further evaluated as potential remedial alternatives and a Remedial Action Plan (RAP) will be prepared to document the remedy selection process for the site. The RAP, which will include a remedial alternatives evaluation and selection and preliminary system design, construction, and monitoring activities, will be submitted to ACEH by the end of the First Quarter 2014.

MPE And AS-SVE Pilot Test Summary Report 2013.10.09.Docx





7. References

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ARCADIS U.S., Inc. 2013a. Multi-Phase Extraction and Air Sparge/ Soil Vapor Extraction Pilot Test Work Plan. February 12.

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ARCADIS U.S., Inc. 2013c. Second Semi-Annual 2013 Groundwater Monitoring Report. October 15.

Cambria Environmental Technology, Inc. 1995. Subsurface Investigation Report for 706 Harrison Street, Oakland, California. March 10.

Stantec. 2009. Site Conceptual Model 800, 726, and 706 Harrison Street Commingled Plume Oakland, California. September 30.

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Tables

Table 1 Well Constuction Details Chevron Site ID 351646 800, 726, and 706 Harrison Street, Oakland, California

Sample Name	Installation Date	TOC (ft MSL)	Boring Depth (ft bgs)	Well Depth (ft bgs)	Boring Diameter (inches)	Well Diameter (inches)	Screen Interval (ft bgs)	Screen Size (inches)	Sand Filter Pack	Screen Zone Within Soil Type	Filter Pack Interval (ft bgs)	Seal Interval (ft bgs)	First Water (ft bgs)	Historical High GWE (ft MSL)	Historical Low GWE (ft MSL)	Location
706 Harriso		00.45	00.0	00.0	NIA	NIA	40.0.00.0	NIA I	NIA.	10.0.00.0	10.5.00.0	445405	00.0	40.00	7.05	0 14
MW-1 MW-2	07/23/93	29.15	28.0	28.0	NA	NA	18.0-28.0	NA NA	NA NA	18.0-28.0	16.5-28.0	14.5-16.5	22.0	18.22	7.95	Onsite
MW-3	07/23/93	30.51	28.0	28.0	NA	NA NA	18.0-28.0	NA NA	NA NA	18.0-28.0	16.5-28.0	14.5-16.5	19.0	18.56	8.97	Onsite
MW-4	07/23/93 11/28/94	29.77 31.18	28.0 31.5	28.0	NA NA	NA 2.0	18.0-28.0	NA 0.010	NA #2/12	18.0-28.0	16.5-28.0	14.5-16.5	21.0	17.97	8.90 9.13	Onsite Onsite
MW-5				29.5 29.0	NA NA	2.0	9.5-29.5			9.5-29.5	8.5-31.5	6.5-8.5	17.5	19.07	9.13 8.13	
MW-6	11/30/94 12/01/94	28.04	30.0 NA	29.0 NA	NA NA	NA	14.5-29.0 NA	0.010 NA	#1/20 NA	14.5-29.0	13.0-30.0	11.0-13.0	17.5	17.11		Offsite
MW-7	12/01/94	29.10			NA NA	2.0				NA	NA	NA 40.0.40.0	NA NA	17.89	8.24 8.79	Offsite
		29.67	29.0	28.0			13.0-28.0	0.010	#1/20	15.0-29.0	12.0-29.0	10.0-12.0		17.91		Offsite
VW-1 VW-2	07/22/93	NA	20.0	20.0	NA	NA NA	15.0-20.0	NA NA	NA NA	15.0-20.0	13.0-20.0	12.0-13.0	NA NA	NA NA	NA NA	Onsite
VW-2	07/22/93	NA NA	20.0	20.0	NA NA	NA 2.0	15.0-20.0	NA 0.010	NA #1/20	15.0-20.0	13.0-20.0	12.0-13.0	NA 18.0	NA NA	NA NA	Onsite
VW-3 VW-4	11/28/94 11/29/94	NA NA	29.5 29.5	18.0 18.0	NA NA	2.0	8.0-18.0 8.0-18.0	0.010 0.010	#1/20 #1/20	15.0-18.0 8.0-18.0	6.0-18.0	5.0-6.0 5.0-7.0	18.0 18.0	NA NA	NA NA	Onsite Onsite
VW-5		NA NA									7.0-18.0				NA NA	
726 Harriso	11/30/94	NA	30.0	17.0	NA	2.0	7.0-17.0	0.010	#1/20	7.0-17.0	6.0-17.0	5.0-6.0	NA	NA	INA	Onsite
AS-1	08/16/01	NA	30.0	30.0	8.0	2.0	28.0-30.0	0.020	#2/12	28.0-30.0	26.0-30.0	22.5-26.0	19.0	NA	NA	Onsite
EW-1	08/17/01	NA NA	30.0	30.0	12.0	6.0	9.0-30.0	0.020	#2/12	9.0-30.0	8.0-30.0	7.0-8.0	17.0	NA NA	NA NA	Onsite
MP-1	08/21/13	34.16	30.0	30.0	6.0	1.0	15.0-30.0	0.020	#2/12	15.0-30.0	14.0-30.0	11.0-14.0	25.0	NA NA	NA NA	Onsite
MPE-1	08/21/13	34.36	40.0	33.0	12.0	4.0	15.0-30.0	0.020	#2/12	15.0-30.0	14.0-30.0	11.0-14.0	26.0	NA NA	NA NA	Onsite
MW-1	07/03/97	28.98	28.0	28.0	8.0	2.0	18.0-28.0	0.020 NA	#2/12 NA	18.0-28.0	16.0-28.0	15.0-16.0	20.0	19.24	13.24	Onsite
MW-2	NA	32.44	NA	NA	NA	NA	NA	NA NA	NA NA	NA	NA	NA	NA	20.01	NA	Onsite
MW-3	NA NA	31.64	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	19.61	13.22	Onsite
MW-4	12/07/98	32.56	31.5	30.0	8.0	2.0	10.0-30.0	0.020	No. 2	10.0-30.0	8.0-30.0	7.0-8.0	20.0	19.53	NA	Onsite
MW-5	08/16/01	32.06	30.0	30.0	8.0	2.0	10.0-30.0	0.020	#2/12	10.0-30.0	8.0-30.0	7.0-8.0	19.5	19.62	13.66	Onsite
MW-6	06/20/11	NA	49.0	49.0	12.0	2.0	44.0-49.0	0.020	No. 3	44.0-49.0	42.5-49.0	40.5-42.5	25.0	28.35	NA	Onsite
PZ-1	06/20/11	34.36	40.0	30.0	12.0	1.0	15.0-30.0	0.020	#2/12	15.0-30.0	14.0-33.0	11.0-14.0	26.0	20.55 NA	NA NA	Onsite
VE-1	08/16/01	NA	15.0	15.0	8.0	2.0	5.0-15.0	0.020	#2/12	5.0-15.0	3.5-15.0	2.5-3.5	NA	NA NA	NA NA	Onsite
VE-2	08/16/01	NA	15.0	15.0	8.0	2.0	5.0-15.0	0.020	#2/12	5.0-15.0	3.5-15.0	2.5-3.5	NA	NA NA	NA NA	Onsite
VE-3	08/21/13	34.42	16.0	15.0	8.0	2.0	5.0-15.0	0.020	#2/12	5.0-15.0	4.0-16.0	2.0-4.0	NA	NA	NA	Onsite
800 Harriso		51.7L	10.0	13.0	0.0		0.0 10.0	0.020		0.0 10.0	1.0 10.0	2.0 7.0		14/3	14/1	Choice
MW-1	05/30/91	34.69	35.0	35.0	9.0	2.0	15.0-35.0	0.020	No. 3	15.0-35.0	11.5-35.0	9.5-11.5	24.0	20.74	15.03	Onsite
MW-2	05/30/91	34.72	33.0	33.0	9.0	2.0	15.0-33.0	0.020	No. 3	15.0-33.0	13.0-33.0	11.0-13.0	22.5	20.50	14.91	Onsite
MW-3	05/30/91	33.14	33.0	33.0	9.0	2.0	15.0-33.0	0.020	No. 3	15.0-33.0	13.0-33.0	11.0-13.0	23.0	19.54	13.66	Onsite
MW-4	09/30/92	32.71	33.0	33.0	9.0	2.0	15.0-33.0	0.020	No. 3	15.0-33.0	13.0-33.0	11.0-13.0	23.0	18.80	13.94	Onsite
MW-5	09/30/92	32.95	32.0	32.0	9.0	2.0	17.0-32.0	0.020	No. 3	17.0-32.0	13.0-32.0	11.0-13.0	22.0	19.25	13.90	Onsite
MW-6	09/30/92	32.16	32.0	32.0	9.0	2.0	17.0-32.0	0.020	No. 3	17.0-32.0	13.0-32.0	11.0-13.0	21.5	18.50	13.02	Offsite
MW-7	04/14/93	32.20	33.0	33.0	8.0	2.0	13.0-33.0	0.020	No. 3	13.0-33.0	11.0-33.0	9.0-11.0	21.5	18.90	13.40	Offsite
MW-8	04/14/93	32.00	31.0	31.0	8.0	2.0	13.0-31.0	0.020	No. 3	13.0-31.0	9.0-31.0	7.0-9.0	21.0	18.65	13.13	Offsite
											•					•

Abbreviations:

ft MSL Feet relative to mean sea level

ft bgs Feet below ground surface

TOC Top of casing

GWE Groundwater elevation

NA Not available

	1		D # 1			T					0004B
Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B Ethylbenzene	Xylenes	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	ινη-g (μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
706 Harrison	Street		()	(1.1102)	(µg/L)	(P9/L)	(µg/L)	(Pg/L)	(µg/L)	(49/1)	(19/12)
MW-1	08/13/93	29.15	17.40	11.75	20000	8500	640	280	440		
MW-1	12/14/93	29.15	17.27	11.88	17000	9200	1200	4400	540		
MW-1	04/15/94	29.15	17.00	12.15	9500	3600	530	160	280		
MW-1	12/29/94	29.15	16.40	12.75							
MW-1	07/19/96	29.15	15.83	13.32	17000	5200	1100	330	530		
MW-1	01/27/97	29.15	13.58	15.57	30000	9800	1300	790	880		400
MW-1	06/18/97	29.15	16.11	13.04	19000	5600	1400	510	770	800	1200
MW-1	09/18/97	29.15	16.62	12.53	48000	18000	4400	1000	1700		<640
MW-1	10/12/97	29.15	15.93	13.22	22000	4900	1300	580	650	260	460
MW-1 MW-1	02/18/98 12/05/98	29.15 29.15	11.56 13.53	17.59 15.62	16000 19000	5000 4600	750 810	400 450	780 770		1800 5500
MW-1	08/18/98	29.15	15.55	13.96	12000	3600	1300	300	570	3700	5100
MW-1	11/24/98	29.15	15.19	13.48	13000	3600	890	330	380		6100
MW-1	04/02/99	29.15	15.31	13.84	20000	5900	830	450	500		4900
MW-1	05/18/99	29.15	14.95	14.20	23000	7000	1600	520	830		6100
MW-1	08/27/99	29.15	15.84	13.31	19000	5800	1700	410	710	2100	1800
MW-1	11/18/99	29.15	16.39	12.76	20000	4900	630	410	580	3600	4900
MW-1	02/29/00	29.15	13.43	15.72	12000	2800	24	290	170	3400	3100
MW-1	05/25/00	29.15	15.08	14.07	12000	2200	120	330	260	12000	9100
MW-1	09/08/00	29.15	16.09	13.06	13000	2500	44	310	140		16000
MW-1	09/11/00	29.15	15.90	13.25	11000	2500	140	380	150	12000	11000
MW-1	01/29/01	29.15	16.05	13.10	9600	3100	100	77	200	2400	2600
MW-1	04/16/01	29.15	16.90	12.25	3300	1200	4.4	2.7	28	940	900
MW-1 MW-1	08/14/01 10/22/01	29.15	17.13	12.02	2000 220	500	3.4	24 2.8	7.8	53	68 <10
MW-1	01/02/01	29.15 29.15	16.11 16.93	13.04 12.22	640	83 220	0.63 1.7	4.7	<0.5 0.57	5.7	<10
MW-1	10/05/02	29.15	15.09	14.06	230	26	0.97	<0.5	<0.5		<5.0
MW-1	08/07/02	29.15	15.20	13.95	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-1	02/10/02	29.15	15.70	13.45	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-1	01/23/03	29.15	15.09	14.06	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-1	04/29/03	29.15	13.02	16.13	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-1	07/18/03	26.17	14.50	11.67	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-1	09/10/03	26.17	13.81	12.36	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-1	01/28/04	26.17	13.09	13.08	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-1	07/04/04	26.17	14.97	11.20	180	60	0.56	1.9	<0.5		<5.0
MW-1	07/23/04	26.17	14.15	12.02	130	36	<0.5	0.65	<0.5		<5.0
MW-1	12/10/04	26.17	16.30	9.87	<50	2.5	1.5	<0.5	0.86		<5.0
MW-1	02/14/05	26.17	13.85	12.32	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-1	04/27/05	26.17	13.35	12.82	<50	< 0.5	<0.5	<0.5	<0.5		<5.0
MW-1 MW-1	07/19/05	26.17	14.68	11.49	4500	1400	6.5	160	58	7200	630
MW-1	10/18/05 01/23/06	26.17 26.17	15.15	11.02	1700 3100	340 790	<5.0 6.5	28 79	<5.0 32	7200 5100	8000 4200
MW-1	12/04/06	26.17	13.27 12.33	12.90 13.84	7200	2600	110	350	320	4000	5600
MW-1	10/07/06	26.17	14.93	11.24	2700	550	4.2	77	47	8300	5500
MW-1	10/16/06	26.17	16.51	9.66	2000	470	6.4	38	13	6400	6300
MW-1	01/26/07	26.17	16.87	9.30	3300	600	36	34	27	5900	6200
MW-1	04/18/07	26.17	16.77	9.40	5400	1400	170	210	350	4700	3600
MW-1	02/08/07	26.17	17.21	8.96	6100	1200	130	140	240	5400	5300
MW-1	10/23/07	26.17	17.67	8.50	2600	740	53	60	110	6900	5800
MW-1	01/30/08	26.17	16.66	9.51	1900	380	2.6	15	20	2800	2400
MW-1	04/18/08	26.17	17.14	9.03	1500	320	4.5	13	25	2900	2900
MW-1	07/28/08	26.17	17.70	8.47	1100	240	3.6	6.9	15	1800	1600
MW-1	12/05/08	26.17	18.22	7.95	1000	150	2.1	4.1	15	140	150
MW-1	01/26/09	26.17	17.84	8.33	540	120	1.4	1.6	3.0	79	82
MW-1	03/08/09	29.17	17.45	11.72	290	94	2.8	3.4	6.7	20	25
MW-1	01/25/10	29.17	16.72	12.45	<50	< 0.5	< 0.5	<0.5	<0.5	<0.5	<5.0
MW-1 MW-1	03/08/10 02/17/11	29.17 29.17	16.90 16.81	12.27 12.36	6200 <50	1200 1.6	340 <0.5	110 <0.5	500 <0.5	350 60	580 65
MW-1	08/23/11	29.17	17.02	12.36	4800	720	140	84	230	810	
MW-1	02/07/12	29.17	17.02	11.84	8900	1000	260	230	610	420	
MW-1	08/09/12	29.17	16.58	12.59	2200	850	110	42	120	84	
MW-1	02/27/13	29.17	17.03	12.14							
MW-1	08/15/13	29.17	17.89	11.28	5800	840	100	93	160	790	
706 Harrisoı	Street										
MW-2	08/13/93	30.51	17.05	13.46	34000	6800	10000	740	3900		
MW-2	12/14/93	18.80	18.28	12:23	16000	3200	4200	500	1700		

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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TDU a	Ponzono	Toluono	EPA 8260B	Vulonos	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes		
NAVA CO	04/45/04	00.54			(µg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-2 MW-2	04/15/94	30.51	18.10	12.41	23000	2500	4200	470	1800		
MW-2	12/29/94	30.51	17.40	13.11		7200		4000	7300		
MW-2	07/19/96	30.51	16.72	13.79 15.62	90000	7300 7100	14000	1600	7100		 F00
MW-2	01/27/97 06/18/97	30.51	14.89	13.39	63000		13000	1600			500
MW-2	09/18/97	30.51	17.12 17.63	12.88	52000	5100 9400	10000 23000	1400 2600	6000 13000		<200 <890
		30.51			110000						
MW-2 MW-2	10/12/97	30.51	16.98	13.53	39000	2600	5300	940	3900	320	780
MW-2	02/18/98	30.51	12.61	17.90 16.06	85000	9000 9500	19000	2300 2500	11000		2400
MW-2	12/05/98	30.51	14.45		110000 64000	6000	21000 13000		12000	4200	<1200
MW-2	08/18/98	30.51	16.14	14.37				1700	7800	1300	2000
MW-2	11/24/98 04/02/99	30.51 30.51	16.70 18.39	13.81 12.12	78000 66000	5300 5800	14000 16000	2300 2600	11000 12000		<2000 3000
MW-2	05/18/99	30.51	15.90	14.61	78000	6700	17000	2400	10000		4300
MW-2	08/27/99	30.51	16.79	13.72	91000	7400	17000	2300	11000	1000	1200
MW-2	11/18/99	30.51	17.32	13.12	180000	7000	20000	3300	16000	1700	<6000
MW-2	02/29/00	30.51	14.37	16.14	86000	5500	13000	2000	9500	4700	3500
MW-2	05/25/00	30.51	16.01	14.50	110000	6300	14000	2400	10000	6500	7500
MW-2	09/08/00		17.02		77000	5000					
MW-2	09/08/00	30.51		13.49		4800	13000	2000	8600	9200	5900
MW-2		30.51	17.00 18.31	13.51	70000		12000	1900	8000	8300	9400
MW-2	01/29/01	30.51	18.31	12.20 11.92	110000	8200 7400	21000 15000	2800 2500	13000	1900	2500
	04/16/01	30.51			97000				12000	<50	<3000
MW-2 MW-2	08/14/01	30.51	18.74	11.77	97000	6200	14000	2400	13000	<50	<250
	10/22/01	30.51	18.27	12.24	71000	5900	15000	2400	12000	150	<1400
MW-2	01/02/02	30.51	18.05	12.46	1400	11	88	44	210		<5.0
MW-2	10/05/02	30.51	17.15	13.36	97000	4500	15000	2500	12000		<3000
MW-2 MW-2	08/07/02	30.51	15.30	15.21	42000	2100	6500	2200	8800	65	<1000
MW-2	02/10/02	30.51 30.51	15.89 17.51	14.62 13.00	70000	1700 1900	5700 7800	1900	8300 5600		<1700 <1000
	01/23/03				40000			1200			
MW-2 MW-2	04/29/03	30.51	15.31	15.20	82000	2500	11000	2200	9400		<2000
MW-2	07/18/03	27.53	16.84	10.69	57000	2100	8700	2200	10000	<50	
	09/10/03	27.53	16.05	11.48	49000	1800	7000	1700	7600	26	<1500
MW-2	01/28/04	27.53	15.39	12.14	550	21	33	3.0	61		<100
MW-2	07/04/04	27.53	16.01	11.52	41000	2500	11000	1900	8000		<2000
MW-2	07/23/04	27.53	15.30	12.23	81000	2000	12000	2500	12000		<2000
MW-2	12/10/04	27.53	17.87	9.66	75000	2600	13000	2300	11000		<1300
MW-2	02/14/05	27.53	14.80	12.73	75000	2600	12000	2400	10000		<1800
MW-2	04/27/05	27.53	14.63	12.90	61000	2800	11000	1600	7000		<2700
MW-2 MW-2	07/19/05	27.53	15.60	11.93	90000	3700 3300	14000	2600	10000		<7000 7900
	10/18/05	27.53	16.08	11.45	77000		14000	2400	11000	6400	
MW-2	01/23/06	27.53	14.20	13.33	54000	1600	8000	1600	6700	7000	6600
MW-2 MW-2	12/04/06	27.53	12.51	15.02	43000	1800	7800	1300	5200	4900	6400
MW-2	10/07/06	27.53	14.76	12.77	86000	2800	11000 16000	2100	9600	400	<6500
	10/16/06	27.53	16.74	10.79	110000	3600		2400	12000	2700	<6000
MW-2 MW-2	01/26/07	27.53	17.10	10.43	120000	3900	16000	2300	10000	3000	<5000
	04/18/07	27.53	17.02	10.51	100000	3500	18000	2500	12000	3400	5200
MW-2	02/08/07	27.53	17.47	10.06	61000	2700	11000	1800	7600	4600	6400
MW-2	10/23/07	27.53	17.94	9.59	56000	3100	13000	1800	8100		4500 F200
MW-2	01/30/08	27.53	16.99	10.54	52000	2700	11000	1700	7300		5300
MW-2	04/18/08	27.53	17.41	10.12	64000	3400	13000	1800	8100	4500	<4000
MW-2	07/28/08	27.53	17.99	9.54	51000	2000	6200	1300	2700	1500	<2600
MW-2	05/12/08	27.53	18.56	8.97	74000	2200	12000	1700	7500	1900	2500
MW-2	01/26/09	27.53	18.20	9.33	90000	2800	14000	NA 4800	9500	1600	<3500
MW-2	03/08/09	30.53	17.74	12.79	67000	2900	12000	1800	8200	1900	<3500
MW-2	01/25/10	30.53	17.10	13.43	46000	1400	6200	1100	5800	1500	<3500
MW-2	03/08/10	30.53	17.24	13.29	79000	3300	14000	2000	10000	2300	<6000
MW-2	01/17/11	30.53	17.35	13.18	76000	3400	15000	2300	11000	1400	<3500
MW-2	08/23/11	30.53	17.23	13.30	17000	940	1900	740	3600	1500	
MW-2	02/07/12	30.53	17.90	12.63	36000	1100	3600	990	4200	1600	
MW-2	08/09/12	30.53	16.90	13.63	5100	810	1800	440	1900	4100	
MW-2	02/27/13	30.53	17.36	13.17	45000	1700	2500	1200	4900	2700	
MW-2	08/15/13	30.53	18.20	12.33	1500	1200	5600	820	4400	1700	
700 11	. 01										<u> </u>
706 Harrison		20.77	47.05	40.70	-50	-0.F0	-0 F0	-0.F0	24 F	ı	
MW-3	08/13/93	29.77	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5		
MW-3	12/14/93	29.77	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5		
MW-3	04/15/94	29.77	17.40	12.37	<50	<0.5	<0.5	<0.5	<0.5		
MW-3	12/29/94	29.77	16.80	12.97		 <0.5	 <0.5	 <0.5	<0.5		
MW-3	07/19/96	29.77	16.28	13.49	<50						

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Sample	Sample	TOC	Depth to	Groundwater	TDU -	D	T-1	EPA 8260B	V. danaa	MEDE	8021B
Name	Date	(ft MSL)	(ft BTOC)	Elevation	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	MTBE
MM 2	04/07/07	00.77	` '	(ft MSL)	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(μg/L)
MW-3	01/27/97	29.77	13.83	15.94	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3 MW-3	06/18/97	29.77	16.53	13.24	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	09/18/97	29.77	17.07	12.70	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	10/12/97	29.77	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	02/18/98 12/05/98	29.77 29.77	11.80 13.85	17.97 15.92	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5		<5.0 <5.0
MW-3								+			
MW-3	08/18/98	29.77	15.57	14.20	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	11/24/98 04/02/99	29.77 29.77	16.04 17.80	13.73 11.97	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5		<5.0 <5.0
MW-3	05/18/99	29.77	15.29	14.48	<50 <50	<0.5	<0.5	<0.5	<0.5		<5.0 <5.0
MW-3	08/27/99	29.77	16.15	13.62	<50 <50	<0.5	<0.5	<0.5	<0.5		<5.0 <5.0
MW-3	11/18/99	29.77	16.13	13.02							
MW-3	02/29/00	29.77	13.71	16.06	<50	2	<0.5	<0.5	<0.5		<5.0
MW-3	05/25/00	29.77	15.46	14.31							
MW-3	09/08/00	29.77	16.46	13.31	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	09/11/00	29.77	16.25	13.52							
MW-3	01/29/01	29.77	16.52	13.25	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	04/16/01	29.77	16.95	12.82							
MW-3	08/14/01	29.77	17.11	12.66	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	10/22/01	29.77	16.50	13.27							
MW-3	01/02/02	29.77	16.90	12.87	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	10/05/02	29.77	15.03	14.74							
MW-3	08/07/02	29.77	14.45	15.32	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	02/10/02	29.77	15.03	14.74							
MW-3	01/23/03	29.77	15.48	14.29	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	04/29/03	29.77	12.49	17.28							
MW-3	07/18/03	26.79	14.80	11.99	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	09/10/03	26.79	14.13	12.66							
MW-3	01/28/04	26.79	13.47	13.32	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	07/04/04	26.79	15.41	11.38							
MW-3	07/23/04	26.79	14.54	12.25	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	12/10/04	26.79	16.58	10.21							
MW-3	02/14/05	26.79	14.19	12.60	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	04/27/05	26.79	13.68	13.11							
MW-3	07/19/05	26.79	15.15	11.64	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-3	10/18/05	26.79	15.60	11.19							
MW-3	01/23/06	26.79	13.65	13.14	<50	<0.5	<0.5	<0.5	<0.5	260	270
MW-3	12/04/06	26.79	11.94	14.85							
MW-3	10/07/06	26.79	14.48	12.31	<50	<0.5	<0.5	<0.5	<0.5	1600	1100
MW-3	10/16/06	26.79	16.19	10.60							
MW-3	01/26/07	26.79	16.56	10.23	<50	<0.5	<0.5	<0.5	<0.5	3400	2500
MW-3	04/18/07	26.79	16.45	10.34							
MW-3	02/08/07	26.79	16.92	9.87	<100	<1.0	<1.0	<1.0	<1.0	3500	3300
MW-3	10/23/07	26.79	17.42	9.37	 -2F0	 -0.5	 -0.5	 -2 F	 -0.5		
MW-3 MW-3	01/30/08	26.79	16.45	10.34	<250	<2.5 	<2.5	<2.5	<2.5	10000	8400
MW-3	04/18/08	26.79	16.87	9.92	 <250						
MW-3	07/28/08 05/12/08	26.79 26.79	17.41 17.89	9.38 8.90	<250 	<2.5 	<2.5 	<2.5 	<25 	6900	6400
MW-3	05/12/08	26.79	17.89	9.29	<50	<0.5	<0.5	<0.5	<0.5	3800	3400
MW-3	03/08/09	29.79	17.30	12.61	<50	<0.5	<0.5	<0.5	<0.5	3100	2900
MW-3	03/06/09	29.79	16.39	13.40	300	<1.7	2.5	<1.7	<1.7	4500	4600
MW-3	03/08/10	29.79	16.61	13.40	<50	<0.5	<0.5	<0.5	<0.5	1500	1200
MW-3	02/17/11	29.79	16.60	13.19	<50 <50	<0.5	<0.5	<0.5	<0.5	79	55
MW-3	08/23/11	29.79	16.65	13.14	310	0.53	2.4	2.6	10	200	
MW-3	02/07/12	29.79	17.23	12.56	<50	<0.50	<0.50	<0.50	<1.0	110	
MW-3	08/09/12	29.79	16.32	13.47	<50	<0.50	<0.50	<0.50	<1.0	0.8	
MW-3	02/27/13	29.79	16.75	13.04	<50	<0.50	<0.50	<0.50	<1.0	1.2	
MW-3	08/15/13	29.79	17.60	12.19	86	<0.50	<0.50	<0.50	<1.0	<0.50	

706 Harrison	n Street										
MW-4	12/16/94	31.18	18.10	13.08	2500	32	6.5	4.5	17		
MW-4	12/29/94	31.18	17.95	13.23							
MW-4	07/19/96	31.18	17.38	13.80	3300	520	39	67	60		
MW-4	01/27/97	31.18	15.25	15.93	4500	860	55	100	91		1100
MW-4	06/18/97	31.18	17.61	13.57	2700	700	52	81	76	2300	2200
MW-4	09/18/97	31.18	18.01	13.17	3900	760	38	56	64		<170
MW-4	10/12/97	31.18	17.45	13.73	12000	1800	120	210	210	2600	2900
MW-4	02/18/98	31.18	13.09	18.09	1700	210	8.0	6.7	16		200

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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TDU	Danmana	Taluana	EPA 8260B	Vidence	MTBE	8021B
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (μg/L)	MTBE (μg/L)	MTBE (µg/L)
MW-4	12/05/98	31.18	14.78	16.40	2100	300	15	(μg/L) 36	34	(µg/L)	920
MW-4	08/18/98	31.18	16.59	14.59	4700	1000	130	110	150	4900	5200
MW-4	11/24/98	31.18	17.18	14.00	3000	810	44	76	94		4800
MW-4	04/02/99	31.18	18.90	12.28	2800	770	50	69	69		3100
MW-4	05/18/99	31.18	16.30	14.88	4000	780	57	7.7	79		4800
MW-4	08/27/99	31.18	17.21	13.97	4100	870	51	74	99	4100	3300
MW-4	11/18/99	31.18	17.77	13.41	3000	760	43	67	65	5400	5100
MW-4	02/29/00	31.18	14.85	16.33	4600	1000	64	94	170	4600	4100
MW-4	05/25/00	31.18	16.45	14.73	2600	540	39	59	41	5300	3500
MW-4	09/08/00	31.18	17.47	13.71	4400	930	66	98	79		9400
MW-4	09/11/00	31.18	17.45	13.73	4200	630	34	54	44	9400	7800
MW-4	01/29/01	31.18	18.90	12.28	3100	710	34	66	51	8000	9400
MW-4	04/16/01	31.18	19.17	12.01	160	1.2	1.3	<0.5	12	20	22
MW-4 MW-4	08/14/01 10/22/01	31.18 31.18	19.20 18.95	11.98 12.23	1700 1100	190 120	11 3.7	35 29	7.9	250 16	300 <25
MW-4	01/02/02	31.18	19.05	12.23	2600	25	43	29	280		<5.0
MW-4	10/05/02	31.18	17.69	13.49	490	3.5	2.0	2.1	2.2		<5.0
MW-4	08/07/02	31.18	15.75	15.43	170	0.51	0.62	1.6	1.2	2.0	<5.0
MW-4	02/10/02	31.18	16.30	14.88	240	1.7	2.0	2.2	0.88		<5.0
MW-4	01/23/03	31.18	17.74	13.44	<50	0.52	4.1	<0.5	1.9		<5.0
MW-4	04/29/03	31.18	15.47	15.71	1,300	75	4.8	21	7.3	120	130
MW-4	07/18/03	28.20	17.08	11.12	<50	<0.5	<0.5	<0.5	<0.5	0.74	
MW-4	09/10/03	28.20	16.25	11.95	210	4.7	0.57	1.6	1.1	10	<10
MW-4	01/28/04	28.20	15.65	12.55	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-4	07/04/04	28.20	16.49	11.71							
MW-4	12/04/04				770	56	3.2	7.0	6.5	160	120
MW-4	07/23/04	28.20	15.86	12.34	1100	130	11	17	17	800	790
MW-4	12/10/04	28.20	18.05	10.15	150	0.86	<0.5	<0.5	0.97		<10
MW-4 MW-4	02/14/05	28.20	15.30	12.90	1500	200	16	30	31	550	420
MW-4	04/27/05 07/19/05	28.20 28.20	14.20 16.08	14.00 12.12	3000 1800	520 310	100 16	27 36	86 25	480 1100	600 1000
MW-4	10/18/05	28.20	16.55	11.65	2500	450	28	47	51	4500	3800
MW-4	01/23/06	28.20	14.66	13.54	1300	170	13	14	14	3300	2500
MW-4	12/04/06	28.20	12.92	15.28	940	150	12	7.6	12	3300	3400
MW-4	10/07/06	28.20	15.38	12.82	1700	260	14	26	20	5900	4300
MW-4	10/16/06	28.20	17.21	10.99	3200	440	26	34	63	7500	7800
MW-4	01/26/07	28.20	17.58	10.62	2000	290	20	28	42	8300	8300
MW-4	04/18/07	28.20	17.46	10.74	2300	350	28	38	42	7800	5900
MW-4	02/08/07	28.20	17.95	10.25	3600	480	33	47	72	9000	7500
MW-4	10/23/07	28.20	18.41	9.79	1700	280	13	27	25	8800	7000
MW-4	01/30/08	28.20	17.49	10.71	1300	130	5	13	12	8200	6500
MW-4	04/18/08	28.20	17.90	10.30	2300	240	14	25	27	6400	6900
MW-4	07/28/08	28.20	18.49	9.71	3400	390	100	33	100	5000	4600
MW-4	05/12/08	28.20	19.07	9.13	2400	310	30	41	67	1700	2100
MW-4 MW-4	01/26/09 03/08/09	28.20	18.71	9.49	1600 2300	180	14 39	21 37	33 89	1200	1300 1700
MW-4	03/08/09	31.20 31.20	18.23 17.64	12.97 13.56	690	370 77	7.4	8.6	20	1600 280	240
MW-4	03/08/10	31.20	17.04	13.48	1600	190	17.4	23	44	990	770
MW-4	07/17/11	31.20	17.72	13.40	3400	620	25	52	100	1300	1900
MW-4	08/23/11	31.20	17.71	13.49	1800	98	11	14	26	260	
MW-4	02/07/12	31.20	18.43	12.77	1800	140	15	21	32	430	
MW-4	08/09/12	31.20									
MW-4	02/27/13	31.20									
MW-4	08/15/13	31.20	18.70	12.50	1100	620	38	62	67	1200	
706 Harrison						1	1				1
MW-5	12/16/94	28.04	16.07	11.97	<50	1.1	<0.5	<0.5	2.4		
MW-5	12/29/94	28.04	16.10	11.94							
MW-5	07/19/96	28.04	15.49	12.55	<50	<0.5	<0.5	<0.5	<0.5		
MW-5	01/27/97	28.04	13.60	14.44	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5 MW-5	06/18/97	28.04	15.55	12.49	<50 <50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	09/18/97	28.04	16.16	11.88	<50 <50	<0.5	<0.5	<0.5 <0.5	<0.5		<5.0
MW-5	10/12/97 02/18/98	28.04 28.04	15.41 10.93	12.63 17.11	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5	<0.5 <0.5		<5.0 <5.0
MW-5	12/05/98	28.04	13.25	14.79	<50 <50	<0.5	<0.5	<0.5	<0.5		<5.0 <5.0
MW-5	08/18/98	28.04	14.75	13.29	<50 <50	<0.5	<0.5	<0.5	<0.5		<5.0 <5.0
MW-5	11/24/98	28.04	15.15	12.89	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	04/02/99	28.04	14.61	13.43	<50	<0.5	<0.5	<0.5	<0.5		<5.0
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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B Ethylbenzene	Xylenes	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-5	05/18/99	28.04	14.15	13.89	<50	<0.5	<0.5	<0.5	<0.5	(P9, L)	<5.0
MW-5	08/27/99	28.04	15.43	12.61	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	11/18/99	28.04	15.97	12.07							
MW-5	02/29/00	28.04	13.16	14.88	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	05/25/00	28.04	14.72	13.32							
MW-5	09/08/00	28.04	15.68	12.36	<50	<0.5	<0.5	<0.5	<0.5	-	<5.0
MW-5	09/11/00	28.04	15.39	12.65							
MW-5	01/29/01	28.04	15.97	12.07	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	04/16/01	28.04	16.24	11.80							
MW-5	08/14/01	28.04	17.39	10.65	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	10/22/01	28.04	15.90	12.14							
MW-5	01/02/02	28.04	16.55	11.49	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5 MW-5	10/05/02	28.04	15.12	12.92	 4F0	 -0.5		 -0.5	 -0.5		 -E O
MW-5	08/07/02 02/10/02	28.04 28.04	15.92 16.42	12.12 11.62	<50 	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	01/23/03	28.04	14.90	13.14	<50	20	<0.5	<0.5	<0.5		<5.0
MW-5	04/29/03	28.04	12.05	15.14							
MW-5	07/18/03	25.07	14.28	10.79	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	09/10/03	25.07	13.36	11.71							
MW-5	01/28/04	25.07	12.68	12.39	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	07/04/04	25.07	14.71	10.36							
MW-5	07/23/04	25.07	13.49	11.58	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	12/10/04	25.07	15.88	9.19							
MW-5	02/14/05	25.07	13.22	11.85	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	04/27/05	25.07	13.40	11.67					-		
MW-5	07/19/05	25.07	14.21	10.86	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5	10/18/05	25.07	14.79	10.28							
MW-5	01/23/06	25.07	13.12	11.95	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-5 MW-5	12/04/06	25.07	11.39	13.68							
MW-5	10/07/06 10/16/06	25.07 25.07	14.40 15.44	10.67 9.63	<50 	<0.5	<0.5	<0.5 	<0.5		25
MW-5	01/26/07	25.07	15.44	9.03	<50	<0.5	<0.5	<0.5	<0.5		490
MW-5	04/18/07	25.07	15.70	9.46							
MW-5	02/08/07	25.07	16.04	9.03	<50	<0.5	<0.5	<0.5	<0.5	760	660
MW-5	10/23/07	25.07	16.89	8.18							
MW-5	01/30/08	25.07	15.61	9.46	<50	<0.5	<0.5	<0.5	<0.5	280	250
MW-5	04/18/08	25.07	15.99	9.08							
MW-5	07/28/08	25.07	16.45	8.62	<50	<0.5	<0.5	<0.5	<0.5	670	640
MW-5	05/12/08	25.07	16.94	8.13							
MW-5	01/26/09	25.07	16.54	8.53	<50	<0.5	<0.5	<0.5	<0.5	3700	3500
MW-5	03/08/09	28.07	16.23	11.84	<50	<0.5	<0.5	<0.5	<0.5	1400	1300
MW-5	01/25/10	28.07	15.58	12.49	<50	<0.5	<0.5	<0.5	<0.5	1400	1300
MW-5	03/08/10	28.07	15.55	12.52	<50	<0.5	<0.5	<0.5	<0.5	450	400
MW-5	02/17/11	28.07	15.56	12.51	<50	<0.5	<0.5	<0.5	<0.5	7.7	6.4
MW-5 MW-5	08/23/11 02/07/12	28.07	15.80	12.27	280 <50	<0.50	<0.50	<0.50	<0.50 1.6	360 190	
MW-5	08/09/12	28.07 28.07	16.45 15.22	11.62 12.85	<50 <50	<0.50 <0.50	<0.50 <0.50	<0.50 <0.50	<1.0	190	
MW-5	02/27/13	28.07	15.22	12.85	<50 <50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-5	08/15/13	28.07	16.55	11.52	<50 <50	<0.50	<0.50	<0.50	<1.0	0.72	
	00/10/10	_0.07	.0.00	.1.02	.00	.0.00	.0.00	0.00	11.0	J., 2	
706 Harrison	n Street		1								
MW-6	12/16/94	29.10	17.74	11.36							
MW-6	12/29/94	29.10	17.40	11.70						-	
MW-6	07/19/96	29.10	16.60	12.50	<50	<0.5	<0.5	<0.5	<0.5	-	
MW-6	01/27/97	29.10	14.88	14.22	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	06/18/97	29.10	16.73	12.37	51	22	<0.5	<0.5	<0.5		<5.0
MW-6	09/18/97	29.10	17.24	11.86	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	10/12/97	29.10	16.56	12.54	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	02/18/98	29.10	12.93	16.17	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	12/05/98	29.10	14.35	14.75	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	08/18/98	29.10	15.94	13.16	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	11/24/98	29.10	16.46	12.64	<50 <50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	04/02/99 05/18/99	29.10 29.10	18.25 15.73	10.85 13.37	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5		<5.0 <5.0
MW-6	08/27/99	29.10	15.73	13.46	<50 <50	<0.5	<0.5	<0.5	<0.5		<5.0 <5.0
MW-6	11/18/99	29.10	17.04	12.06							
MW-6	02/29/00	29.10	14.55	14.55	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	05/25/00	29.10	15.86	13.24							
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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TDI I ~	Danmana	Talvana	EPA 8260B	Vidence	MTDE	8021B
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	MTBE
MW-6	00/00/00	00.40	,	_ `	(μg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-6	09/08/00	29.10	16.80	12.30	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	09/11/00 01/29/01	29.10 29.10	16.60 17.00	12.50 12.10	 <50	 <0.5	<0.5	<0.5	<0.5		 <5.0
MW-6	04/16/01	29.10	17.00	11.95				\0.5			₹5.0
MW-6	08/14/01	29.10	17.13	11.80	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	10/22/01	29.10	17.30	11.97							₹5.0
MW-6	01/02/02	29.10	16.57	12.53	70	37	<0.5	<0.5	<0.5		<5.0
MW-6	10/05/02	29.10	15.25	13.85							
MW-6	08/07/02	29.10	15.79	13.31	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	02/10/02	29.10	16.38	12.72							
MW-6	01/23/03	29.10	16.03	13.07	<50	21	<0.5	<0.5	<0.5		<5.0
MW-6	04/29/03	29.10	14.19	14.91							
MW-6	07/18/03	26.13	15.47	10.66	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	09/10/03	26.13	14.73	11.40							
MW-6	01/28/04	26.13	14.05	12.08	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-6	07/04/04	26.13	14.41	11.72							
MW-6	07/23/04	26.13	15.15	10.98	3300	1300	<5.0	52	9.7		<50
MW-6	12/10/04	26.13	17.29	8.84							
MW-6	02/14/05	26.13	14.60	11.53	350	160	<0.5	<0.5	<0.5	2	<25
MW-6	04/27/05	26.13	14.10	12.03	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	07/19/05	26.13	15.18	10.95	110	15	<0.5	0.62	<0.5	1.7	<5.0
MW-6	10/18/05	26.13	15.65	10.48	<50	<0.5	<0.5	<0.5	<0.5	0.87	<5.0
MW-6	01/23/06	26.13	14.02	12.11	<50	<0.5	<0.5	<0.5	<0.5	0.5	<5.0
MW-6	12/04/06	26.13	12.66	13.47	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	10/07/06	26.13	14.64	11.49	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	10/16/06	26.13	16.50	9.63							
MW-6	01/26/07	26.13	16.83	9.30	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	04/18/07	26.13	16.72	9.41							
MW-6	02/08/07	26.13	17.13	9.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	10/23/07	26.13	17.71	8.42							
MW-6	01/30/08	26.13	16.54	9.59	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	04/18/08	26.13	17.02	9.11							
MW-6	07/28/08	26.13	17.50	8.63	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	05/12/08	26.13	17.89	8.24							
MW-6 MW-6	01/26/09	26.13	17.61	8.52	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	03/08/09 01/25/10	29.13 29.13	17.24 16.72	11.89 12.41	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<5.0 <5.0
MW-6	03/08/10	29.13	16.72	12.41	<50 <50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0 <5.0
MW-6	02/17/11	29.13	16.73	12.40	<50 <50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	08/23/11	29.13	16.73	12.40	<50	<0.50	<0.50	<0.50	<1.0	89	
MW-6	02/07/12	29.13	17.51	11.62	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-6	08/09/12	29.13	16.41	12.72	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-6	02/27/13	29.13	16.93	12.20	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-6	08/15/13	29.13	17.78	11.35	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
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706 Harriso	n Street										
MW-7	12/16/94	29.67	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-7	12/29/94	29.67	17.65	12.02							
MW-7	07/19/96	29.67	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	01/27/97	29.67	15.09	14.58	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	06/18/97	29.67	16.59	13.08	73	<0.5	1	<0.5	<0.5		<5.0
MW-7	09/18/97	29.67	17.06	12.61	94	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	10/12/97	29.67	16.58	13.09	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	02/18/98	29.67	12.60	17.07	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	12/05/98	29.67	14.81	14.86	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	08/18/98	29.67	15.67	14.00	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	11/24/98	29.67	16.30	13.37	200	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	04/02/99	29.67	15.99	13.68	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	05/18/99	29.67	15.42	14.25	200	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	08/27/99	29.67	16.35	13.32	140	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	11/18/99	29.67	16.81	12.86							
MW-7	02/29/00	29.67	14.16	15.51	100	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	05/25/00	29.67	15.54	14.13	 -E0	 -0.F	 -0.5	 -0.5			 -E 0
MW-7	09/08/00	29.67	16.56	13.11	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	09/11/00	29.67	16.45	13.22	 -F0		 -0.5	 -0.5			 -E 0
MW-7	01/29/01	29.67	16.92	12.75	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7 MW-7	04/16/01	29.67	17.03	12.64	 -E0	 -0 F	 -0 F		 -0.5		 -E 0
IVIVV-/	08/14/01	29.67	17.27	12.40	<50	<0.5	<0.5	<0.5	<0.5		<5.0

Г			Depth to	Groundwater		I		EPA 8260B			8021B
Sample	Sample	TOC	Water	Elevation	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-7	10/22/01	29.67	16.95	12.72	(P9, L)	(Pg/L)	(P9/L)	(P9/L)	(Pg/L)	(µg/L)	(Pg/L)
MW-7	01/02/02	29.67	16.14	13.53	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	10/05/02	29.67	15.30	14.37							
MW-7	08/07/02	29.67	15.73	13.94	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	02/10/02	29.67	16.24	13.43							
MW-7	01/23/03	29.67	15.70	13.97	<50	23	<0.5	<0.5	<0.5		<5.0
MW-7	04/29/03	29.67	12.68	16.99							
MW-7	07/18/03	26.70	15.19	11.51	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	09/10/03	26.70	14.45	12.25							
MW-7	01/28/04	26.70	13.88	12.82	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-7	07/04/04	26.70	15.71	10.99							
MW-7	07/23/04	26.70	14.85	11.85	<50	<0.5	<0.5	<0.5	<0.5	120	130
MW-7	12/10/04	26.70	16.90	9.80							
MW-7	02/14/05	26.70	14.42	12.28	<50	<0.5	<0.5	<0.5	<0.5	200	190
MW-7	04/27/05	26.70	13.75	12.95	<50	<0.5	<0.5	<0.5	<0.5	1	<5.0
MW-7	07/19/05	26.70	14.91	11.79	<50	<0.5	<0.5	<0.5	<0.5	66	65
MW-7	10/18/05	26.70	15.40	11.30	<50	<0.5	<0.5	<0.5	<0.5	15	12
MW-7	01/23/06	26.70	13.99	12.71	<50	<0.5	<0.5	<0.5	<0.5	2.2	<5.0
MW-7	12/04/06	26.70	12.32	14.38	<50	<0.5	<0.5	<0.5	<0.5	2	<5.0
MW-7	10/07/06	26.70	14.31	12.39	<50	<0.5	<0.5	<0.5	<0.5	1.5	<5.0
MW-7	10/16/06	26.70	16.23	10.47							
MW-7	01/26/07	26.70	16.61	10.09	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-7	04/18/07	26.70	16.54	10.16							
MW-7	02/08/07	26.70	16.93	9.77	<50	<0.5	<0.5	<0.5	<0.5	2	<5.0
MW-7	10/23/07	26.70	17.36	9.34							
MW-7	01/30/08	26.70	16.36	10.34	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-7	04/18/08	26.70	16.85	9.85							
MW-7	07/28/08	26.70	17.43	9.27	<50	<0.5	<0.5	<0.5	<0.5	1.1	<5.0
MW-7	05/12/08	26.70	17.91	8.79							
MW-7	01/26/09	26.70	17.65	9.05	<50	<0.5	<0.5	<0.5	<0.5	0.96	<5.0
MW-7	03/08/09	29.70	17.17	12.53	<50	<0.5	<0.5	<0.5	<0.5	0.87	<5.0
MW-7	01/25/10	29.70	16.65	13.05	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-7	03/08/10	29.70	16.74	12.96	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-7	02/17/11	29.70	16.69	13.01	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-7	08/23/11	29.70	16.79	12.91	<50	<0.50	<0.50	<0.50	<1.0	89	
MW-7	02/07/12	29.70	17.40	12.30	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-7	08/09/12	29.70	16.38	13.32	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-7	02/27/13	29.70	16.83	12.87	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-7	08/15/13	29.70	17.67	12.03	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
			-								
706 Harrison	Street		l								
VW-3	06/03/03	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5		<5.0
VW-3	03/25/03	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5		<5.0
						_					
706 Harrison	Street										•
VW-4	06/03/03	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5		<5.0
VW-4	03/25/03	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5		<5.0
						-			-		
726 Harrison	Street										•
AS-1	08/15/13	34.50	18.17	16.33							
				-							
726 Harrison	Street										
EW-1	02/27/13	*	18.17	*	960	180	6.0	3.6	12	170	
EW-1	08/15/13	34.37	18.98	15.39	290	67	1.7	1.3	3.3	57	
726 Harrison	Street										
MP-1	08/15/13	34.16	19.03	15.13	<50	<0.50	<0.50	<0.50	<1.0	2.4	
726 Harrison	n Street										
		34.36	19.24	15.12	820	110	23	17	45	610	
MPE-1	08/15/13										
MPE-1	08/15/13									•	
MPE-1 726 Harrison											
		NA	NA	NA	18000	2700	350	450	900		7400
726 Harrison	Street		NA 17.32	NA 14.63	18000 18000	2700 1500	350 270	450 260	900 560		7400 14000
726 Harrison MW-1	07/03/97	NA								1	
726 Harrison MW-1 MW-1	07/03/97 12/15/98	NA 31.95	17.32	14.63	18000	1500	270	260	560		14000
726 Harrison MW-1 MW-1 MW-1	07/03/97 12/15/98 04/03/99	NA 31.95 31.95	17.32 15.52	14.63 16.43	18000 44000	1500 2800	270 400	260 440	560 960		14000 43000

			Donath to	Casuaduustaa		I		EDA 0260D			1 0004D
Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B Ethylbenzene	Xylenes	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	07/03/00	31.95	15.11	16.84	9300	1500	210	66	530	(P9: -)	12000
MW-1	07/06/00	31.95	16.66	15.29	26000	1700	<250	360	580		30000
MW-1	11/10/00	31.95	18.08	13.87	13000	1600	<100	140	160		19000
MW-1	01/18/01	31.95	17.96	13.99	14000	450	<100	110	230		9600
MW-1	05/04/01	31.95	16.35	15.60	38000	2200	180	290	590		35000
MW-1	07/17/01	31.95	16.94	15.01	35000	1800	<100	300	170		35000
MW-1	05/01/10	28.98	17.35	11.63	17000	1500	210	420	790		27000
MW-1	01/18/02	28.98	15.40	13.58	18000	1500	120	160	220		22000
MW-1	11/04/02	28.98	15.76	13.22	41000	2700	210	340	380		30000
MW-1	08/07/02	28.98	16.17	12.81	36000	2800	140	360	300		31000
MW-1	09/02/10	28.98	16.72	12.26	30000	1700	310	<100	<100		19000
MW-1 MW-1	01/29/03	28.98	16.26	12.72	26000	2400	<100	310	520		20000
MW-1	11/04/03 07/18/03	28.98 28.98	16.56 16.42	12.42 12.56	22000 40000	1700 3200	<100 290	270 480	580 830		16000 39000
MW-1	09/03/10	28.98	16.42	12.30	54000	3300	<130	350	310		49000
MW-1	01/28/04	28.98	16.10	12.10	26000	3000	310	420	800		31000
MW-1	07/04/04	28.98	15.43	13.55	33000	2800	130	310	310		39000
MW-1	07/23/04	28.98	16.41	12.57	56000	4500	<250	390	<500		53000
MW-1	12/04/10	28.98	17.73	11.25	25000	1400	<250	<250	<500		25000
MW-1	01/29/05	28.98	15.02	13.96	24000	1600	<100	160	<200		19000
MW-1	04/28/05	28.98	14.99	13.99	10000	2000	<100	160	100		34000
MW-1	07/19/05	28.98	16.36	12.62	37000	2100	83	210	230		28000
MW-1	10/18/05	28.98	17.82	11.16	37000	1300	<250	<250	<250		23000
MW-1	01/23/06	28.98	15.80	13.18	23000	780	<100	160	260		11000
MW-1	12/04/06	28.98	13.24	15.74	11000	1500	87	360	670		17000
MW-1	10/07/06	28.98	15.64	13.34	72000	4700	<250	350	<500		66000
MW-1	10/16/06	28.98	17.51	11.47	26000	1600	<250	330	<500		22000
MW-1	01/26/07	28.98	18.36	10.62	7200	1500	<70	140	96		34000
MW-1	04/18/07	28.98	17.79	11.19	5400	1100	<50	200	120		21000
MW-1	02/08/07	28.98	18.20	10.78	6600	1500	64	240	190		32000
MW-1 MW-1	10/23/07	28.98	18.75	10.23	5900	1300 300	52 21	200	180 90		28000
MW-1	01/30/08 04/18/08	28.98 28.98	17.90 18.21	11.08 10.77	2700 3800	930	41	64 110	130		5200 15000
MW-1	07/28/08	28.98	18.85	10.77	6000	900	52	140	160		10000
MW-1	10/29/08	28.98	19.24	9.74	7300	1700	74	140	220		17000
MW-1	01/26/09	28.98	19.17	9.81	4900	720	48	140	180		6300
MW-1	03/08/09	31.98	18.62	13.36	4000	870	44	110	120		13000
MW-1	01/25/10	31.98	18.26	13.72	3200	360	26	82	86		3000
MW-1	03/08/10	31.98	18.13	13.85	3800	560	27	97	92		8600
MW-1	02/17/11	31.98	18.15	13.83	6000	1100	51	110	110		11000
MW-1	08/23/11	31.98	18.60	13.38	8200	290	36	66	79	4700	
MW-1	02/07/12	31.98	18.77	13.21	370	46	1.7	4.2	4.5	3800	
MW-1	08/09/12	31.98	17.82	14.16	6600	760	27	58	60	6700	
MW-1	02/27/13	31.98	18.21	13.77	3000	480	26	52	56	2600	
MW-1	08/15/13	34.45	19.03	15.42	7200	820	50	65	99	7300	
700								ļļ			ļ
726 Harrison MW-2	12/15/98	32.40	18.03	14.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0
MW-2	03/04/99	32.40	16.03	16.29						~5.0 	
MW-2	06/17/99	32.40	17.72	14.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0
MW-2	08/27/99	NA	NA	NA						~5.0 	
MW-2	12/09/99	NA	NA	NA NA							
MW-2	03/07/00	NA	NA	NA	-						
MW-2	06/07/00	32.40	17.67	14.73	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-2	10/11/00	32.40	18.91	13.49	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-2	01/18/01	32.40	18.66	13.74	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-2	04/05/01	32.40	16.97	15.43	<50	<0.5	<0.5	<0.5	<0.5		<5.0
MW-2	07/17/01	32.40	17.54	14.86	NA	NA	NA	NA	NA	NA	NA
MW-2	10/05/01	29.44	17.98	11.46	NA	NA	NA	NA	NA	NA	NA
MW-2	01/18/02	29.44	15.87	13.57	NA	NA	NA	NA	NA	NA	NA
MW-2	04/11/02	29.44	16.36	13.08	NA	NA	NA	NA	NA NA	NA	NA
MW-2	07/18/02	29.44	16.72	12.72	NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
			1 7 7 2 2	12.11	NA	NA	NA	NA	NA	NA	NA
MW-2	10/09/02	29.44	17.33			NIA.	NI A	NIA	NIA	NIA.	NIA.
MW-2 MW-2	01/29/03	29.44	16.82	12.62	NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
MW-2 MW-2 MW-2	01/29/03 04/11/03	29.44 29.44	16.82 17.15	12.62 12.29	NA NA	NA	NA	NA	NA	NA	NA
MW-2 MW-2 MW-2 MW-2	01/29/03 04/11/03 07/18/03	29.44 29.44 29.44	16.82 17.15 17.05	12.62 12.29 12.39	NA NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
MW-2 MW-2 MW-2	01/29/03 04/11/03	29.44 29.44	16.82 17.15	12.62 12.29	NA NA	NA	NA	NA	NA	NA	NA

Sample			Depth to	Groundwater				EPA 8260B			8021B
	Sample	TOC	Water	Elevation	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	(μg/L)	(µg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)
MW-2	04/07/04	29.44	16.02	13.42	NA	NA	NA	NA		NA	NA
MW-2	07/23/04	29.44	10.02	13.42				INA 	NA 		
MW-2			47.04		NA			NA			 NA
	10/12/04	29.44	17.31	12.13		NA NA	NA		NA NA	NA NA	
MW-2	01/29/05	29.44	15.46	13.98	NA	NA	NA	NA	NA NA	NA	NA
MW-2	04/28/05	29.44	15.79	13.65	NA	NA	NA	NA	NA	NA	NA
MW-2	07/19/05	29.44	17.25	12.19	NA	NA	NA	NA	NA	NA	NA
MW-2	10/18/05	29.44	17.72	11.72	NA	NA	NA	NA	NA	NA	NA
MW-2	01/23/06	29.44	15.65	13.79	NA	NA	NA	NA	NA	NA	NA
MW-2	04/12/06	29.44	12.33	17.11	NA	NA	NA	NA	NA	NA	NA
MW-2	07/10/06	29.44	16.58	12.86	<50	<0.50	<0.50	<0.50	<1.0		4.5
MW-2	10/16/06	29.44	18.33	11.11	<50	<0.50	<0.50	<0.50	<1.0		<0.5
MW-2	01/26/07	29.44	19.21	10.23	<50	0.55	1	<0.50	1.4		0.97
MW-2	04/18/07	29.44	18.58	10.86	<50	1.5	2.6	0.93	3.2		0.64
MW-2	08/02/07	29.44	19.02	10.42	<50	<0.50	<0.50	<0.50	<0.50		2.2
MW-2	10/23/07										
MW-2	01/30/08	29.44	18.63	10.81	<50	<0.50	< 0.50	<0.50	<0.50		300
MW-2	04/18/08	29.44	19.04	10.40	<50	<0.50	<0.50	<0.50	<0.50		40
MW-2	07/28/08						-				
MW-2	10/29/08	29.44	20.01	9.43	<50	<0.50	<0.50	<0.50	<0.50		300
MW-2	01/26/09	29.44	19.84	9.60	<50	<0.50	<0.50	<0.50	<0.50		120
MW-2	08/03/09	32.44	19.39	13.05	<50	<0.50	<0.50	<0.50	<0.50		1
MW-2	01/25/10	32.44	18.67	13.77	<50	<0.50	<0.50	<0.50	<0.50		12
MW-2	03/08/10	32.44	18.84	13.60	<50	<0.50	<0.50	<0.50	<0.50		<0.50
MW-2	02/17/11	32.44	18.82	13.62	<50	<0.50	<0.50	<0.50	<0.50		5.2
MW-2	08/23/11	32.44	19.38	13.06	<50	<0.50	<0.50	<0.50	<1.0	0.37	
MW-2	02/07/12	32.44	19.52	12.92	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	08/09/12	32.44	18.55	13.89	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	02/27/13	32.44	18.95	13.49	<50	<0.50	<0.50	<0.50	<1.0	1.7	
MW-2	08/15/13	34.91	19.77	15.14	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
726 Harrison	n Street							· !			
MW-3	12/15/98	31.61	17.26	14.35	6500	<50	50	60	502		3900
MW-3	03/04/99	31.61	15.47	16.14	2800	<25	<25	<25	<25		1600
MW-3	06/17/99	31.61	16.92	14.69	1000	<10	<10	<10	<10		1400
MW-3	08/27/99	31.61	17.40	14.21	230	<0.5	0.51	0.50	1	1600	1500
MW-3	12/09/99	31.61	18.01	13.60	870	<0.5	<0.5	<0.5	<0.5		2100
MW-3	03/07/00	31.61	16.15	15.46	150	4	<0.5	<0.5	<0.5		830
MW-3	06/07/00	31.61	16.85	14.76	140	<0.5	<0.5	<0.5	<0.5		1100
MW-3	10/11/00	31.61	18.07	13.54	620	<5.0	<5.0	<5.0	<5.0		1500
MW-3	01/18/01	31.61	17.89	13.72	1200	<5.0 <5.0	<5.0	<5.0	<5.0		1000
MW-3	04/05/01	31.61	16.21	15.72	1700	<5.0 <5.0	<5.0	<5.0	<5.0		1900
MW-3	07/17/01	31.61	16.21	14.71	1400	<10	<10	<10	<10		1700
MW-3	10/05/01	28.64	17.32	11.32	<1000	<10	<10	<10	<10		1700
MW-3	01/18/02	28.64	15.35	13.29	1600	26	20	16	5 4		2100
MW-3	04/11/02	28.64	15.82	12.82	2600	20	16	<10	21		2300
MW-3	07/18/02	28.64	16.15	12.82				- 1U	41		2300
	10/09/02	Z0.0 4	10.10			<10	<10				3800
		20 64	16.67		2800	<10 <50	<10 <50	<10	<10		3800
MW-3		28.64	16.67 16.19	11.97	6000	<50	<50	<10 <50	<10 <50		4900
MW-3	01/29/03	28.64	16.19	11.97 12.45	6000 1800	<50 <10	<50 <10	<10 <50 <10	<10 <50 <10		4900 2300
MW-3 MW-3	01/29/03 04/11/03	28.64 28.64	16.19 16.49	11.97 12.45 12.15	6000 1800 2900	<50 <10 <25	<50 <10 <25	<10 <50 <10 <25	<10 <50 <10 <25	 	4900 2300 3100
MW-3 MW-3 MW-3	01/29/03 04/11/03 07/18/03	28.64 28.64 28.64	16.19 16.49 16.42	11.97 12.45 12.15 12.22	6000 1800 2900 3400	<50 <10 <25 <10	<50 <10 <25 <10	<10 <50 <10 <25 <10	<10 <50 <10 <25 <10	 	4900 2300 3100 3200
MW-3 MW-3 MW-3 MW-3	01/29/03 04/11/03 07/18/03 10/09/03	28.64 28.64 28.64 28.64	16.19 16.49 16.42 16.80	11.97 12.45 12.15 12.22 11.84	6000 1800 2900 3400 2300	<50 <10 <25 <10 <10	<50 <10 <25 <10 <10	<10 <50 <10 <25 <10 <10	<10 <50 <10 <25 <10 <10	 	4900 2300 3100 3200 2700
MW-3 MW-3 MW-3 MW-3	01/29/03 04/11/03 07/18/03 10/09/03 01/28/04	28.64 28.64 28.64 28.64 28.64	16.19 16.49 16.42 16.80 15.94	11.97 12.45 12.15 12.22 11.84 12.70	6000 1800 2900 3400 2300 1700	<50 <10 <25 <10 <10 <10 <10 <10	<50 <10 <25 <10 <10	<10 <50 <10 <25 <10 <10 <10	<10 <50 <10 <25 <10 <10 <10 <10 <10	 	4900 2300 3100 3200 2700 2900
MW-3 MW-3 MW-3 MW-3 MW-3	01/29/03 04/11/03 07/18/03 10/09/03 01/28/04 04/07/04	28.64 28.64 28.64 28.64 28.64 28.64	16.19 16.49 16.42 16.80 15.94 15.28	11.97 12.45 12.15 12.22 11.84 12.70 13.36	6000 1800 2900 3400 2300 1700 2700	<50 <10 <25 <10 <10 <10 <10 <10 <10 <10	<50 <10 <25 <10 <10 <10 <10 <10 <10	<10 <50 <10 <25 <10 <10 <10 <10	<10 <50 <10 <25 <10 <10 <25 <10 <10 <20	 	4900 2300 3100 3200 2700 2900 3600
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MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/29/03 04/11/03 07/18/03 10/09/03 01/28/04 04/07/04 07/23/04	28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64	16.19 16.49 16.42 16.80 15.94 15.28 16.15 16.63	11.97 12.45 12.15 12.22 11.84 12.70 13.36 12.49 12.01	6000 1800 2900 3400 2300 1700 2700 4200 5000	<50 <10 <25 <10 <10 <10 <10 <10 <10 <50 <50 <50	<50 <10 <25 <10 <10 <10 <10 <10 <10 <50 <50 <50	<10 <50 <10 <25 <10 <10 <10 <10 <10 <10 <10 <50 <50	<10 <50 <10 <25 <10 <10 <10 <10 <20 <50 <100	 	4900 2300 3100 3200 2700 2900 3600 4900 5900
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/29/03 04/11/03 07/18/03 10/09/03 01/28/04 04/07/04 07/23/04 10/12/04 01/29/05	28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64	16.19 16.49 16.42 16.80 15.94 15.28 16.15 16.63 16.15	11.97 12.45 12.15 12.22 11.84 12.70 13.36 12.49 12.01 12.49	6000 1800 2900 3400 2300 1700 2700 4200 5000 <1000	<50 <10 <25 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	<50 <10 <25 <10 <10 <10 <10 <10 <10 <25 <50 <10 <10 <10 <25 <50 <10	<10 <50 <10 <25 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	<10 <50 <10 <25 <10 <10 <10 <10 <10 <10 <10 <20 <50 <100 <20	 	4900 2300 3100 3200 2700 2900 3600 4900 5900 3100
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2900 3600 4900 5900 3100 1300 6800 7000 7800 12000 17000 4000 11000
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/29/03 04/11/03 07/18/03 10/09/03 01/28/04 04/07/04 07/23/04 10/12/04 01/29/05 04/28/05 07/19/05 10/18/05 04/12/06 07/10/06 10/16/06 01/26/07 04/18/07	28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64 28.64	16.19 16.49 16.42 16.80 15.94 15.28 16.15 16.63 16.15 14.94 16.25 16.76 15.81 13.22 15.49 17.46 18.02 17.75	11.97 12.45 12.15 12.22 11.84 12.70 13.36 12.49 12.01 12.49 13.70 12.39 11.88 12.83 15.42 13.15 11.18 10.62 10.89	6000 1800 2900 3400 2300 1700 2700 4200 5000 <1000 <200 4400 18000 17000 <200 11000 <200 <10000 <900	<50 <10 <25 <10 <10 <10 <10 <10 <10 <25 <50 <10 <20 <20 <50 <100 <2.0 <100 <2.0 <100 <9.0	<50 <10 <25 <10 <10 <10 <10 <110 <25 <50 <10 <20 <50 <100 <20 <50 <100 <2.0 <50 <100 <2.0 <9.0	<10 <50 <10 <50 <10 <25 <10 <10 <10 <10 <10 <25 <50 <10 <2.0 <2.0 <50 <100 <2.0 <100 <2.0 <100 <9.0	<10 <50 <10 <50 <10 <25 <10 <10 <10 <10 <20 <50 <400 <20 <20 <20 <40 <50 <200 <200 <200 <200 <200 <200 <200		4900 2300 3100 3200 2700 2900 3600 4900 5900 3100 1300 6800 7000 7800 12000 17000 4000

			Depth to	Groundwater		I		EPA 8260B			8021B	
Sample	Sample	TOC	Water	Elevation	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	MTBE	
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
MW-3	04/18/08	28.64	18.08	10.56	<50	<0.50	<0.50	<0.50	<0.50	(F9-2)	350	
MW-3	07/28/08	28.64	18.77	9.87	61	<0.50	<0.50	<0.50	<0.50		140	
MW-3	10/29/08	28.64	19.14	9.50	120	<0.50	<0.50	<0.50	<0.50		640	
MW-3	01/26/09	28.64	19.06	9.58	210	1.9	<1.5	<1.5	<1.5		1300	
MW-3	08/03/09	31.64	18.51	13.13	<250	<2.5	<2.5	<2.5	<2.5		1600	
MW-3	01/25/10	31.64	18.02	13.62	87	< 0.50	<0.50	<0.50	<0.50		300	
MW-3	03/08/10	31.64	18.06	13.58	92	<0.50	<0.50	<0.50	<0.50		32	
MW-3	02/17/11	31.64	18.03	13.61	<50	<0.50	<0.50	<0.50	<0.50		25	
MW-3	08/23/11	31.64	18.56	13.08	60	<0.50	<0.50	<0.50	<0.50	9.1		
MW-3	02/07/12	31.64	18.71	12.93	25	<0.50	<0.50	<0.50	<1.0	2.1		
MW-3	08/09/12	31.64	17.74	13.90	39	<0.50	<0.50	<0.50	<1.0	9.2		
MW-3 MW-3	02/27/13	31.64	18.12	13.52	<50	<0.50	<0.50	<0.50	<1.0	2.8		
IVIVV-3	08/15/13	34.12	18.95	15.17	<50	<0.50	<0.50	<0.50	<1.0	1.1		
726 Harrison Street												
MW-4	12/15/98	32.53	17.59	14.94	880	3	<0.5	<0.5	<0.5		950	
MW-4	03/04/99	32.53	15.88	16.65	3800	<25	<25	<25	<25		3700	
MW-4	06/17/99	32.53	17.14	15.39	2700	<25	<25	<25	<25		2700	
MW-4	08/27/99	32.53	17.65	14.88	440	4.7	1.1	0.58	1.3	1700	1600	
MW-4	12/09/99	32.53	18.28	14.25	1100	<2.5	<2.5	<2.5	<2.5		1700	
MW-4	03/07/00	32.53	15.41	17.12	<250	<2.5	<2.5	<2.5	<2.5		1700	
MW-4	06/07/00	32.53	17.09	15.44	530	8.8	<2.5	<2.5	<2.5		440	
MW-4	10/11/00	32.53	18.33	14.20	700	3.9	<2.5	<2.5	<2.5		680	
MW-4	01/18/01	32.53	18.23	14.30	2000	<2.5	<2.5	<2.5	<2.5		780	
MW-4	04/05/01	32.53	16.69	15.84	810	<2.5	<2.5	<2.5	<2.5		620	
MW-4	07/17/01	32.53	17.32	15.21	880	<2.5	<2.5	<2.5	<2.5		570	
MW-4 MW-4	10/05/01	29.58	17.71	11.87	550	<2.5	<2.5	<2.5	<2.5		710	
MW-4	01/18/02	29.58	15.85	13.73	960	<5.0	<5.0	<5.0	<5.0 <5.0		1300	
MW-4	04/11/02 07/18/02	29.58 29.58	16.14 16.56	13.44 13.02	1100 1200	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0		550 890	
MW-4	10/09/02	29.58	17.09	12.49	1300	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0		880	
MW-4	01/29/03	29.58	16.65	12.43	530	<1.0	<1.0	<1.0	<1.0		190	
MW-4	04/11/03	29.58	16.93	12.65	690	<2.5	<2.5	<2.5	<2.5		310	
MW-4	07/18/03	29.58	16.78	12.80	1600	<10	<10	<10	<10		1300	
MW-4	10/09/03	29.58	17.26	12.32	1500	<10	<10	<10	<10		1400	
MW-4	01/28/04	29.58	16.38	13.20	1200	<10	<10	<10	<10		1900	
MW-4	04/07/04	29.58	15.64	13.94	1900	<10	<10	<10	<20		2200	
MW-4	07/23/04	29.58	16.58	13.00	1800	<10	<10	<10	<20		1600	
MW-4	10/12/04								-			
MW-4	01/29/05	29.58	14.90	14.68	<1300	<13	<13	<13	<25		3900	
MW-4	04/28/05	29.58	15.18	14.40	510	<1.5	<1.5	<1.5	<1.5		510	
MW-4	07/19/05	29.58	16.48	13.10	5400	<50	<50	<50	<100		2700	
MW-4	10/18/05	29.58	16.99	12.59	10000	<50	<50	<50	<50		9000	
MW-4	01/23/06	29.58	15.09	14.49	10000	<100	<100	<100	<200		8300	
MW-4	04/12/06	29.58	13.49	16.09	1900	<10	<10	<10	<20		2200	
MW-4	07/10/06	29.58	14.99	14.59	750	5.4	<5.0	<5.0	<10		790	
MW-4 MW-4	10/16/06 01/26/07	29.58 29.58	17.29 18.17	12.29 11.41	2400 250	<10 <1.5	<10 <1.5	<10 <1.5	<10 <1.5		7000	
MW-4	04/18/07	29.58	18.17	11.41	<400	<4.0	<4.0	<4.0	<4.0		2300	
MW-4	02/08/07	29.58	18.45	11.13	400	<4.0	<4.0	<4.0	<4.0		4500	
MW-4	10/23/07	29.58	18.99	10.59	<500	<5.0	<5.0	<5.0	<5.0		3400	
MW-4	01/30/08	29.58	18.14	11.44	580	89	1.5	< 0.90	2.5		500	
MW-4	04/18/08	29.58	18.49	11.09	660	13	0.58	0.51	0.94		180	
MW-4	07/28/08	29.58	19.15	10.43	520	19	0.97	1.4	2.6		71	
MW-4	10/29/08	29.58	19.53	10.05	480	38	1.8	4.5	4.3		420	
MW-4	01/26/09	29.58	19.52	10.06	470	51	2.2	4.2	5.2		180	
MW-4	08/03/09	32.56	18.91	13.65	320	62	<0.5	0.59	<0.5		120	
MW-4	01/25/10	32.56	18.51	14.05	820	110	1.9	1.3	5.5		8.8	
MW-4	03/08/10	32.56	18.45	14.11	500	8.6	0.84	<0.50	1.4		43	
MW-4	02/17/11	32.56	18.46	14.10	440	4.9	<0.50	<0.50	0.87		40	
MW-4	08/23/11	32.56	18.88	13.68	630	36	1.3	0.69	3.6	32		
MW-4	02/07/12	32.56	19.09	13.47	210	<0.50	<0.50	<0.50	<1.0	17		
MW-4 MW-4	08/09/12	32.56	18.16	14.40	280 170	1.8	<0.50	<0.50	<1.0	21		
MW-4	02/27/13 08/15/13	32.56 35.05	18.50 19.34	14.06 15.71	170 98	1.8 <0.50	<0.50 <0.50	<0.50 <0.50	<1.0 <1.0	22 25		
10100	00/10/10	00.00	10.04	10.71	30	-0.00	-0.00	-0.00	-1.0	23		
726 Harrison	726 Harrison Street											
MW-5	08/29/01	29.06	17.42	11.64	14000	1300	470	230	800		14000	
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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B	Vylonoo	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	ινη-g (μg/L)	(µg/L)	(µg/L)	Ethylbenzene (µg/L)	Xylenes (μg/L)	WTBE (μg/L)	(μg/L)
MW-5	01/18/02	29.06	15.68	13.38	(μg/L) 24000	3200	(μg/L) 1300	(μg/L) 390	1500	(μg/L) 	(μg/L) 5700
MW-5	04/11/02	29.06	16.17	12.89	23000	2700	980	38	950		4300
MW-5	07/08/02	29.06	16.17	12.55	19000	3300	25	360	1100		2100
MW-5	10/09/02	29.06	17.10	11.96	24000	2800	990	360	820		2400
MW-5	01/29/03	29.06	16.58	12.48	17000	2100	1400	380	1400		<250
MW-5	04/11/03	29.06	16.87	12.19	26000	2900	2200	590	2200		630
MW-5	07/18/03	29.06	16.77	12.29	26000	3500	1700	480	1300		1300
MW-5	10/09/03	29.06	17.21	11.85	27000	3800	1900	510	1700		1200
MW-5	01/28/04	29.06	16.34	12.72	29000	4800	2900	770	2300		3300
MW-5	04/07/04	29.06	15.38	13.68	23000	4400	2700	720	2200		1700
MW-5	07/23/04	29.06	16.55	12.51	29000	5200	2200	810	1400		2200
MW-5	10/12/04	29.06	17.02	12.04	26000	4300	2000	670	1300		2200
MW-5	01/29/05	29.06	15.23	13.83	NA	NA	NA	NA	NA		NA
MW-5	04/28/05	29.06	15.41	13.65	NA	NA	NA	NA	NA		NA
MW-5	07/19/05	29.06	16.79	12.27	NA	NA	NA	NA	NA		NA
MW-5	10/18/05	29.06	17.28	11.78	NA	NA	NA	NA	NA		NA
MW-5	01/23/06	29.06	15.28	13.78	21000	1800	1200	270	820		13000
MW-5	04/12/06	29.06	13.66	15.40	NA	NA	NA	NA	NA		NA
MW-5	07/10/06	29.06	16.14	12.92	45000	3700	2600	650	1800		23000
MW-5	10/16/06	29.06	19.33	9.73	66000	4200	3300	800	2100		35000
MW-5	01/26/07	29.06	18.94	10.12	30000	3200	2600	610	2400		38000
MW-5	04/18/07	29.06	18.21	10.85	30000	4300	3300	800	2600		27000
MW-5	08/02/07	29.06	19.00	10.06	26000	3700	2800	690	1900		32000
MW-5	10/23/07	29.06	19.15	9.91	34000	4400	3700	860	3200		34000
MW-5	01/30/08	29.06	18.21	10.85	28000	3900	2800	750	2300		26000
MW-5	04/18/08	29.06	18.61	10.45	30000	4300	3200	810	2000		32000
MW-5	07/28/08	29.06	19.23	9.83	34000	3700	3000	740	2900		28000
MW-5	10/29/08	29.06	19.62	9.44	29000	3300	2900	680	2800		27000
MW-5	01/26/09	29.06	19.51	9.55	19000	2100	1500	410	1500		18000
MW-5	03/08/09	32.06	19.00	13.06	28000	3500	2800	630	2600		28000
MW-5	01/25/10	32.06	18.43	13.63	12000	1400	750	270	900		7500
MW-5	03/08/10	32.06	18.50	13.56	24000	3300	2200	620	1700		26000
MW-5	02/17/11	32.06	18.47	13.59	27000	3500	1900	630	2200		24000
MW-5	08/23/11	32.06 32.06	18.47 19.02	13.04	27000 19000	3500 1100	1900 400	630 190	2200 390	14000	24000
MW-5 MW-5	08/23/11 02/07/12	32.06 32.06 32.06	18.47 19.02 19.16	13.04 12.90	27000 19000 19000	3500 1100 890	1900 400 410	630 190 360	2200 390 990	14000 17000	24000
MW-5 MW-5 MW-5	08/23/11 02/07/12 08/09/12	32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24	13.04 12.90 13.82	27000 19000 19000 16000	3500 1100 890 1400	1900 400 410 580	630 190 360 470	2200 390 990 960	14000 17000 16000	24000
MW-5 MW-5 MW-5 MW-5	08/23/11 02/07/12 08/09/12 02/27/13	32.06 32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24	13.04 12.90 13.82	27000 19000 19000 16000	3500 1100 890 1400	1900 400 410 580	630 190 360 470	2200 390 990 960	14000 17000 16000	24000
MW-5 MW-5 MW-5	08/23/11 02/07/12 08/09/12	32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24	13.04 12.90 13.82	27000 19000 19000 16000	3500 1100 890 1400	1900 400 410 580	630 190 360 470	2200 390 990 960	14000 17000 16000	24000
MW-5 MW-5 MW-5 MW-5 MW-5	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13	32.06 32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24	13.04 12.90 13.82	27000 19000 19000 16000	3500 1100 890 1400	1900 400 410 580	630 190 360 470	2200 390 990 960	14000 17000 16000	24000
MW-5 MW-5 MW-5 MW-5 MW-5	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13	32.06 32.06 32.06 32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24 19.40	13.04 12.90 13.82 12.66	27000 19000 19000 16000 8000	3500 1100 890 1400 1900	1900 400 410 580 590	630 190 360 470 390	2200 390 990 960 1100	14000 17000 16000 20000	24000
MW-5 MW-5 MW-5 MW-5 MW-5	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11	32.06 32.06 32.06 32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24 19.40	13.04 12.90 13.82 12.66	27000 19000 19000 16000 8000	3500 1100 890 1400 1900	1900 400 410 580 590	630 190 360 470 390	2200 390 990 960 1100	14000 17000 16000 20000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24 19.40	13.04 12.90 13.82 12.66	27000 19000 19000 16000 8000	3500 1100 890 1400 1900	1900 400 410 580 590	630 190 360 470 390	2200 390 990 960 1100	14000 17000 16000 20000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 n Street 08/23/11 02/07/12	32.06 32.06 32.06 32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24 19.40 28.35 26.53	13.04 12.90 13.82 12.66 3.69 5.51	27000 19000 19000 16000 8000	3500 1100 890 1400 1900 <0.50 <0.50	1900 400 410 580 590 <0.50	630 190 360 470 390 <0.50 <0.50	2200 390 990 960 1100 <1.0 <1.0	14000 17000 16000 20000 740 970	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.06	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27	13.04 12.90 13.82 12.66 3.69 5.51 3.77	27000 19000 19000 16000 8000 500 410 830	3500 1100 890 1400 1900 <0.50 <0.50 <0.50	1900 400 410 580 590 <0.50 <0.50 <0.50	630 190 360 470 390 <0.50 <0.50 <0.50	2200 390 990 960 1100 <1.0 <1.0 <1.0	14000 17000 16000 20000 740 970 970	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56	27000 19000 19000 16000 8000 500 410 830 <50	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50	630 190 360 470 390 <0.50 <0.50 <0.50 <0.50	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0	14000 17000 16000 20000 740 970 970 970	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56	27000 19000 19000 16000 8000 500 410 830 <50	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50	630 190 360 470 390 <0.50 <0.50 <0.50 <0.50	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0	14000 17000 16000 20000 740 970 970 970	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56	27000 19000 19000 16000 8000 500 410 830 <50	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50	630 190 360 470 390 <0.50 <0.50 <0.50 <0.50	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0	14000 17000 16000 20000 740 970 970 970	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 32.04	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 16000 8000 500 410 830 <50 58	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50	630 190 360 470 390 390 0.50 0.50 	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 <1.0	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 16000 8000 500 410 830 <50 58	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 ND ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND ND	630 190 360 470 390 <0.50 <0.50 <0.50 <0.50 <0.50	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92	32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 16000 8000 500 410 830 <50 58	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND ND ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND ND ND ND ND	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 08/05/91 09/30/91 12/30/91 04/02/92 06/30/92	32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND ND ND ND ND ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND ND ND ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND ND ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND ND ND ND ND ND ND ND	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92 06/30/92 09/15/92	32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND ND ND ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92	32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND ND ND ND ND ND ND ND ND 95	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND ND 1 0.69	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND 1	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND ND ND ND ND ND ND ND 95 920	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND ND ND ND 1 0.69 3.1	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND ND ND ND ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND ND ND ND ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND 1 0.69 3.1 0.5 1.5	1900 400 410 580 590 < < < < < < < < < <	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND ND 1 0.69 3.1 0.5 ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 1 Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 ND ND ND ND ND ND 1 0.69 3.1 0.5 ND	1900 400 410 580 590	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13	32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.69 34.69 34.69	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 ND	1900 400 410 580 590	190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 09/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94 04/02/94 07/05/94	32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53 34.94 34.69 36.69 36 36 36 36 36 36 36 36 36 36 36 36 36	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27 20.87	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42 13.82	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 08/15/13 09/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94 04/02/94 07/05/94 10/06/94 01/02/95	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.69 36.69 36 36 36 36 36 36 36 36 36 36 36 36 36	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27 20.87 19.67	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42 13.82 15.02	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND	1900 400 410 580 590 <0.50 <0.50 <0.50 <0.50 ND	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94 04/02/94 07/05/94 10/06/94 01/02/95 04/03/95	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.69 36.69 36 36 36 36 36 36 36 36 36 36 36 36 36	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27 20.87 19.67 17.61	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42 13.82 15.02 17.08	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND S00 ND S00 ND S00 ND S00 ND S00 ND	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND	1900 400 410 580 590	630 190 360 470 390	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND 1 9.7 ND 0.72 ND	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 04/02/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94 04/02/94 07/05/94 10/06/94 01/02/95 04/03/95	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.69 34.69 34.69 34.69 34.69 34.69	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27 20.87 19.67 17.61 18.58	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42 13.82 15.02 17.08 16.11	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND S00 92 ND 92 ND 92 ND 92 ND 95 540 140 580 260	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND	1900 400 410 580 590	630 190 360 470	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94 04/02/94 07/05/94 10/06/94 01/02/95 04/03/95 07/14/95 10/10/95	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.69 34.69 34.69 34.69 34.69 34.69 34.69	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27 20.87 19.67 17.61 18.58 19.60	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42 13.82 15.02 17.08 16.11 15.09	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND S00 410 92 ND ND ND ND ND ND ND S00 410 410 410 410 410 410 410 410 410 4	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND	1900 400 410 580 590 590	630 190 360 190 360 470	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 12/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94 04/02/94 07/05/94 10/06/94 01/02/95 04/03/95 07/14/95 10/10/95	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.69 34.69 34.69 34.69 34.69 34.69 34.69 34.69 34.69	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27 20.87 19.60 19.69	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42 13.82 15.02 17.08 16.11 15.09 15.00	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND S00 92 ND 92 ND ND 92 ND 140 580 250 540 140 580 260 220	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <1.50 <0.50 <0.69 3.1 <0.69 3.1 <0.5 <0	1900 400 410 580 590 590	630 190 360 190 360 470	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 970 1000	24000
MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-6 MW-6 MW-6 MW-6 MW-6 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1 MW-1	08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 08/23/11 02/07/12 08/09/12 02/27/13 08/15/13 n Street 06/05/91 09/30/91 12/30/91 12/30/91 04/02/92 06/30/92 09/15/92 12/21/92 04/28/93 07/23/93 10/05/93 01/03/94 04/02/94 07/05/94 10/06/94 01/02/95 04/03/95 07/14/95 10/10/95	32.06 32.06 32.06 32.06 32.06 32.06 32.06 32.04 32.04 32.04 32.04 34.53 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.94 34.69 34.69 34.69 34.69 34.69 34.69 34.69	18.47 19.02 19.16 18.24 19.40 28.35 26.53 28.27 26.48 28.85 21.17 20.13 20.30 20.52 20.16 19.27 20.87 19.67 17.61 18.58 19.60	13.04 12.90 13.82 12.66 3.69 5.51 3.77 5.56 5.68 13.77 14.81 14.39 14.17 14.53 15.42 13.82 15.02 17.08 16.11 15.09	27000 19000 19000 19000 16000 8000 500 410 830 <50 58 ND S00 410 92 ND ND ND ND ND ND ND S00 410 410 410 410 410 410 410 410 410 4	3500 1100 890 1400 1900 <0.50 <0.50 <0.50 <0.50 <0.50 ND	1900 400 410 580 590 590	630 190 360 190 360 470	2200 390 990 960 1100 <1.0 <1.0 <1.0 <1.0 ND	14000 17000 16000 20000 740 970 970 1000	24000

			Depth to	Groundwater				EPA 8260B			8021B
Sample	Sample	TOC	Water	Elevation	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	01/24/97	34.69	17.72	16.97	760	27	0.89	5.2	10	(29.2)	510
MW-1	07/23/97	34.69	19.42	15.27	ND	ND	ND	ND	ND		550
MW-1	01/26/98	34.69	17.46	17.23	1800	ND	ND	ND	ND		4800
MW-1	07/03/98	34.69	18.61	16.08	ND	ND	ND	ND	ND		1800
MW-1	01/14/99	34.69	18.92	15.77	83	ND	ND	ND	ND		230
MW-1	07/15/99	34.69	17.84	16.85	110	ND	ND	ND	1		290
MW-1	01/07/00	34.69	19.13	15.56	ND	ND	ND	ND	ND		260
MW-1	07/19/00	34.69	20.27	14.42	ND	ND	ND	ND	ND		648
MW-1	01/02/01	34.69	20.04	14.65	ND	ND	ND	ND	ND		119
MW-1	05/23/01	34.69	18.27	16.42	84	ND	ND	ND	ND		760
MW-1	07/30/01	34.69	18.56	16.13	<50	<0.50	<0.50	<0.50	<0.50		350
MW-1	10/15/01	34.69	18.72	15.97	96	<0.50	<0.50	<0.50	<0.50		160
MW-1	01/14/02	34.69	16.78	17.91	450	<2.5	<2.5	<2.5	3.3		4100
MW-1	04/15/02	34.69	17.35	17.34	<1000	<10	<10	<10	<10		10000
MW-1	07/15/02	34.69	17.63	17.06	2100	<10	<10	<10	<20	2100	
MW-1	01/18/03	34.69	17.03	17.65	<25000	<250	<250	<250	<500	29000	
MW-1	07/11/03	34.69	17.04		4000	<25	<25	<25	<500 <50	6300	
				16.78							
MW-1 MW-1	02/04/04	34.69	17.98	16.71	8000	<50	<50	<50	<100	8500	
MW-1	08/11/04	34.69	17.84	16.85	1100	<10	<10	<10	<20	1500	
	03/31/05	34.69	15.71	18.98	<2000	<0.50	<0.50	0.54	2.2	4900	
MW-1	09/30/05	34.69	17.65	17.04	190	<0.50	<0.50	<0.50	<1.0	160	
MW-1	03/27/06	34.69	15.03	19.66	760	<0.50	<0.50	<0.50	<1.0	1000	
MW-1	09/27/06	34.69	18.45	16.24	170	<0.50	<0.50	<0.50	0.61	73	
MW-1	03/27/07	34.69	18.84	15.85	120	<0.50	<0.50	<0.50	<0.50	99	
MW-1	09/28/07	34.69	19.73	14.96	68	<0.50	<0.50	<0.50	<0.50	15	
MW-1	03/26/08	34.69	19.32	15.37	200	<0.50	<0.50	<0.50	1	47	
MW-1	07/28/08	34.69	20.15	14.54	<50	<0.50	<0.50	<0.50	<1.0	8.7	
MW-1	01/26/09	34.69	20.74	13.95	<50	<0.50	<0.50	<0.50	<1.0	5.2	
MW-1	08/03/09	34.72	20.10	14.62	76	<0.50	<0.50	<0.50	<1.0	12	
MW-1	01/25/10	34.72	19.78	14.94	<50	<0.50	<0.50	<0.50	<1.0	14	
MW-1	08/03/10	34.72	19.47	15.25	210	<0.50	<0.50	<0.50	<1.0	37	
MW-1	02/17/11	34.72	19.50	15.22	150	<0.50	<0.50	<0.50	<1.0	17	
MW-1	08/03/11	34.72	18.96	15.76	230	<0.50	<0.50	<0.50	<1.0	44	
MW-1	02/07/12	34.72	20.00	14.72	97	<0.50	< 0.50	<0.50	<1.0	8.6	
MW-1	08/09/12	34.72	19.14	15.58	140	< 0.50	< 0.50	< 0.50	<1.0	18	
MW-1	02/27/13	34.72	19.41	15.31	50	<0.50	< 0.50	<0.50	<1.0	6.7	
MW-1	08/15/13	34.72	20.20	14.52	<50	<0.50	< 0.50	<0.50	<1.0	<0.50	
800 Harrison	Street										
MW-2	06/05/91	34.97			49	ND	ND	ND	ND		
MW-2	09/30/91	34.97			130	18	0.53	14	9.6		
MW-2	12/30/91	34.97			91	16	0.89	11	1.9		
MW-2	04/02/92	34.97			88	12	0.32	6.3	7.2		
MW-2	06/30/92	34.97			76	9.3	0.76	4.8	6.9		
MW-2	09/15/92	34.97			1300	91	5.7	80	110		
MW-2	12/21/92	34.97	20.85	14.12	960	97	3.2	74	96		
MW-2	04/28/93	34.97			1300	76	1.9	130	87		
MW-2	07/23/93	34.97	19.81	15.16	66	1.8	ND	2.5	2		
MW-2	10/05/93	34.72	19.95	14.77	120	12	ND	2.1	12		
MW-2	01/03/94	34.72	20.21	14.51	260	25	ND	5.5	26		
MW-2	04/02/94	34.72	19.88	14.84	ND	0.65	ND	ND	0.99		
MW-2	07/05/94	34.72	19.07	15.65	160	16	ND	0.73	10		
MW-2	10/06/94	34.72	20.55	14.17	170	15	ND	1.4	11		
MW-2	01/02/95	34.72	19.25	15.47	190	27	ND	0.95	11		
MW-2	04/03/95	34.72	17.49	17.23	2400	65	6.6	19	63		
MW-2	07/14/95	34.72	18.30	16.42	750	270	ND	ND	13		
MW-2	10/10/95	34.72	19.25	15.47	50	1.6	ND	ND	ND		200
MW-2	01/03/96	34.72	19.40	15.32	ND	ND	ND	ND	ND		
MW-2	04/10/96	34.72	17.35	17.37	300	42	ND	2.4	9		620
MW-2	07/09/96	34.72	18.22	16.50	760	230	ND	1.3	2.4		1500
MW-2	01/24/97	34.72	17.59	17.13	2900	400	350	190	720		1300
MW-2	07/23/97	34.72	19.13	15.59	ND	ND	ND	ND	ND		65
MW-2	01/26/98	34.72	17.12	17.60	ND	ND	ND	ND	0.58		13
MW-2	07/03/98	34.72	18.20	16.52	140	26	ND	0.95	5		330
MW-2	01/14/99	34.72	18.56	16.16	ND	0.54	ND	ND	ND		350
MW-2	07/15/99	34.72	17.39	17.33	ND	0.88	ND	ND	ND		39
MW-2	01/07/00	34.72	18.78	17.33	ND	ND	ND ND	ND	ND		24
MW-2	07/19/00	34.72	19.68	15.94	ND	1.45	ND	ND	ND		117
VIVV~Z	01/13/00	J4.1Z	13.00	10.04	טאו	1.43	טאו	שויו	שוו		117

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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B Ethylbenzene	Xylenes	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	12π-y (μg/L)	(µg/L)	rolderie (μg/L)	(µg/L)	(µg/L)	WTBE (μg/L)	(µg/L)
MW-2	01/02/01	34.72	19.73	14.99	ND	ND	(μg/L) ND	ND	ND	(μg/L) 	(μg/L)
MW-2	05/23/01	34.72	18.16	16.56	ND ND	ND	ND	ND ND	ND		33
MW-2	07/30/01	34.72	18.34	16.38	<50	<0.50	<0.50	<0.50	<0.50		67
MW-2	10/15/01	34.72	18.52	16.20	<50 <50	<0.50	<0.50	<0.50	<0.50		31
MW-2	01/14/02				<50 <50		<0.50	<0.50	0.56		11
MW-2	04/15/02	34.72 34.72	16.72 17.26	18.00	<50 <50	<0.50	<0.50	<0.50	< 0.50		110
MW-2				17.46		<0.50					
1	07/15/02	34.72	17.46	17.26	270	21	<0.50	3.8	4	73	
MW-2 MW-2	01/18/03	34.72 34.72	16.93	17.79 17.04	<50 130	<0.50 3	<0.50 <0.50	<0.50 <0.50	<1.0 <1.0	22 89	
	07/11/03		17.68								
MW-2	02/04/04	34.72	17.36	17.36	61	2.9	<0.50	<0.50	<1.0	22	
MW-2 MW-2	08/11/04	34.72	17.61	17.11	140 <50	<0.50	0.6	<0.50	<1.0	94	
	03/31/05	34.72	15.56	19.16		<0.50	<0.50	<0.50	<1.0	14	
MW-2	09/30/05	34.72	17.31	17.41	<50	<0.50	<0.50	<0.50	<1.0	9.1	
MW-2	03/27/06	34.72	14.91	19.81	<50	<0.50	<0.50	<0.50	<1.0	2.7	
MW-2	09/27/06	34.72	18.15	16.57	<50	<0.50	<0.50	<0.50	<0.50	7.7	
MW-2	03/27/07	34.72	18.57	16.15	<50	<0.50	<0.50	<0.50	<0.50	1.4	
MW-2	09/28/07	34.72	18.38	16.34	<50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2	03/26/08	34.72	19.06	15.66	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	07/28/08	34.72	19.90	14.82	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	01/26/09	34.72	20.50	14.22	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	08/03/09	34.74	19.92	14.82	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	01/25/10	34.74	19.70	15.04	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	08/03/10	34.74	19.26	15.48	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	02/17/11	34.74	19.32	15.42	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	08/03/11	34.74	18.74	16.00	77	6.7	<0.50	<0.50	<1.0	14	
MW-2	02/07/12	34.74	19.77	14.97	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-2	08/09/12	34.74	18.89	15.85	<50	<0.50	< 0.50	<0.50	<1.0	4.7	
MW-2	02/27/13	34.74	19.16	15.58	<50	<0.50	< 0.50	<0.50	<1.0	9.6	
MW-2	08/15/13	34.74	19.99	14.75	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
800 Harrison	n Street			•							
MW-3	06/05/91	33.39			5800	1200	40	140	97		
MW-3	09/30/91	33.39			6800	1400	130	290	240		
MW-3	12/30/91	33.39			7200	2100	690	410	550		
MW-3	04/02/92	33.39			8000	1400	200	300	310		
MW-3	06/30/92	33.39		-	8900	1900	210	430	550		-
MW-3	09/15/92	33.39			10000	1900	330	400	580		
MW-3	12/21/92	33.39	20.02	13.37	8500	1500	150	310	330		
MW-3	04/28/93	33.39			2600	220	7.6	41	27		
MW-3	07/23/93	33.39	19.00	14.39	4400	660	26	160	82		
MW-3	10/05/93	33.14	19.20	13.94	9200	720	88	140	140		1
MW-3	01/03/94	33.14	19.40	13.74	4900				170		
MW-3	04/02/94	33.14	19.01			830	100	170	150		
MW-3	07/05/94			14.13	6000	830 800	100 30				1
MW-3		33.14	18.14	14.13 15.00				170	150		
	10/06/94	33.14 33.14			6000	800	30	170 140	150 110		
MW-3	10/06/94 01/02/95		18.14	15.00	6000 25000	800 ND	30 ND	170 140 ND	150 110 ND		
MW-3 MW-3		33.14	18.14 19.73	15.00 13.41	6000 25000 49000	800 ND 1300	30 ND 200	170 140 ND 280	150 110 ND 300		
	01/02/95	33.14 33.14	18.14 19.73 18.36	15.00 13.41 14.78	6000 25000 49000 480	800 ND 1300 1.6	30 ND 200 ND	170 140 ND 280 1.4	150 110 ND 300 ND	 	
MW-3	01/02/95 04/03/95	33.14 33.14 33.14	18.14 19.73 18.36 16.38	15.00 13.41 14.78 16.76	6000 25000 49000 480 8100	800 ND 1300 1.6 65	30 ND 200 ND ND	170 140 ND 280 1.4 ND	150 110 ND 300 ND ND		
MW-3 MW-3	01/02/95 04/03/95 07/14/95	33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49	15.00 13.41 14.78 16.76 15.65	6000 25000 49000 480 8100 ND	800 ND 1300 1.6 65	30 ND 200 ND ND ND	170 140 ND 280 1.4 ND ND	150 110 ND 300 ND ND ND		
MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95	33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50	15.00 13.41 14.78 16.76 15.65 14.64	5000 25000 49000 480 8100 ND 3100	800 ND 1300 1.6 65 1300	30 ND 200 ND ND ND ND	170 140 ND 280 1.4 ND ND ND	150 110 ND 300 ND ND ND ND		
MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96	33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54	15.00 13.41 14.78 16.76 15.65 14.64 14.60	6000 25000 49000 480 8100 ND 3100	800 ND 1300 1.6 65 1300 1400 2300	30 ND 200 ND ND ND ND 110	170 140 ND 280 1.4 ND ND ND 50	150 110 ND 300 ND ND ND ND ND 140		 190000
MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96	33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43	15.00 13.41 14.78 16.76 15.65 14.64 14.60	6000 25000 49000 480 8100 ND 3100 ND	800 ND 1300 1.6 65 1300 1400 2300 2000	30 ND 200 ND ND ND ND ND ND 36 110	170 140 ND 280 1.4 ND ND ND 50 150	150 110 ND 300 ND ND ND ND S3 140		 190000 140000
MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57	6000 25000 49000 480 8100 ND 3100 ND ND ND	800 ND 1300 1.6 65 1300 1400 2300 2000 8	30 ND 200 ND ND ND ND ND ND ND ND ND ND	170 140 ND 280 1.4 ND ND 50 150 150 11 140	150 110 ND 300 ND ND ND ND S3 140 160 9.9		 190000 140000 45
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97 01/26/98	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76	6000 25000 49000 480 8100 ND 3100 ND ND ND ND 7400 250	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900 2.2	30 ND 200 ND ND ND ND 36 110 ND ND ND	170 140 ND 280 1.4 ND ND 50 150 111 140 0.87	150 110 ND 300 ND ND ND ND 140 160 9.9 340 1.9		 190000 45 45000
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97 01/26/98 07/03/98	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68	6000 25000 49000 480 8100 ND 3100 ND ND ND ND ND	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900	30 ND 200 ND ND ND 36 110 ND ND 19 2.5	170 140 ND 280 1.4 ND ND 50 150 150 11 140	150 110 ND 300 ND ND ND ND 140 160 9.9 340		 190000 140000 45 45000
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 01/26/98 07/03/98 01/14/99	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41	6000 25000 49000 480 8100 ND 3100 ND ND ND T400 250 230 400	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900 2.2 1.8 8.2	30 ND 200 ND ND ND 36 110 ND ND 180 1.9 2.5 2.7	170 140 ND 280 1.4 ND ND 50 150 111 140 0.87 1.5 0.9	150 110 ND 300 ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9		 190000 140000 45 45000 4 6.3 140
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 01/26/98 07/03/98 01/14/99 07/15/99	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41	6000 25000 49000 480 8100 ND 3100 ND ND ND 540 7400 250 230 400	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900 2.2 1.8 8.2 3.3	30 ND 200 ND ND ND 36 110 ND ND ND 180 1.9 2.5 2.7 3.6	170 140 ND 280 1.4 ND ND 50 150 111 140 0.87 1.5 0.9 1.7	150 110 ND 300 ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9 2.5		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97 01/26/98 07/03/98 01/14/99 07/15/99 01/07/00	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30	6000 25000 49000 480 8100 ND 3100 ND ND 540 7400 250 230 400 ND	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900 2.2 1.8 8.2 3.3 890	30 ND 200 ND ND ND ND ND ND ND ND 180 1.9 2.5 2.7 3.6 91	170 140 ND 280 1.4 ND ND 50 150 111 140 0.87 1.5 0.9 1.7	150 110 ND 300 ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9 2.5		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97 01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22	6000 25000 49000 480 8100 ND 3100 ND ND 250 230 400 290 ND 354	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900 2.2 1.8 8.2 3.3 890 3.87	30 ND 200 ND ND ND 36 110 ND ND 180 1.9 2.5 2.7 3.6 91 2.61	170 140 ND 280 1.4 ND ND 50 150 150 11 140 0.87 1.5 0.9 1.7 100 0.646	150 110 ND 300 ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97 01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07	6000 25000 49000 480 8100 ND 3100 ND ND 250 240 250 230 400 290 ND 354 464	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND	30 ND 200 ND ND ND 36 110 ND ND 180 1.9 2.5 2.7 3.6 91 2.61 3.69	170 140 ND 280 1.4 ND ND 50 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91	150 110 ND 300 ND ND ND S3 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 01/23/97 01/26/98 07/03/98 01/14/99 01/07/00 07/19/00 01/02/01 05/23/01	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07 17.12	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07 16.02	6000 25000 49000 480 8100 ND 3100 ND ND 540 7400 250 230 400 290 ND 354 464 420	800 ND 1300 1.6 65 1300 1400 2300 2000 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND 7.6	30 ND 200 ND ND ND ND ND ND 110 ND 180 1.9 2.5 2.7 3.6 91 2.61 3.69 3.1	170 140 ND 280 1.4 ND ND 50 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91 3	150 110 ND 300 ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 01/23/97 01/26/98 07/03/98 01/14/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07 17.12 17.38	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07 16.02 15.76	6000 25000 49000 480 8100 ND 3100 ND ND 540 7400 250 230 400 290 ND 354 464 420	800 ND 1300 1.6 65 1300 2400 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND 7.6 4.6	30 ND 200 ND ND ND ND 110 ND 180 1.9 2.5 2.7 3.6 91 2.61 3.69 3.1 4.1	170 140 ND 280 1.4 ND ND 50 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91 3 <0.50	150 110 ND 300 ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97 01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07 17.12 17.38 17.61	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07 16.02 15.76 15.53	6000 25000 49000 480 8100 ND 3100 ND 540 7400 250 230 400 290 ND 354 464 420 290 400	800 ND 1300 1.6 65 1300 2300 2000 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND 7.6 4.6 <0.50	30 ND 200 ND ND ND ND 36 110 ND 180 1.9 2.5 2.7 3.6 91 2.61 3.69 3.1 4.1 <0.50	170 140 ND 280 1.4 ND ND 50 150 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91 3 <0.50 <0.50	150 110 ND 300 ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND ND ND S3 140 150 100 100 100 100 100 100 10		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 07/23/97 01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01 01/14/02	33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07 17.12 17.38 17.61	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07 16.02 15.76 15.53 17.61	6000 25000 49000 480 8100 ND 3100 ND 540 7400 250 230 400 290 ND 354 464 420 290 400 130	800 ND 1300 1.6 65 1300 2300 2000 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND 7.6 4.6 <0.50 0.5	30 ND	170 140 ND 280 1.4 ND ND 50 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91 3 <0.50 <0.50 1.1	150 110 ND 300 ND ND ND ND 53 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND ND ND Solve ND ND ND Solve ND Solve ND So		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 01/26/98 07/03/98 01/14/99 01/07/00 07/19/00 01/02/01 05/23/01 07/33/01 10/15/01 01/14/02 04/15/02	33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07 17.12 17.38 17.61 15.53 16.12	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07 16.02 15.76 15.53 17.61 17.02	6000 25000 49000 480 8100 ND 3100 ND 540 7400 250 230 400 290 ND 354 464 420 290 400 130 280	800 ND 1300 1.6 65 1300 1400 2300 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND 7.6 4.6 <0.50 0.5 9.9	30 ND	170 140 ND 280 1.4 ND ND 50 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91 3 <0.50 <0.50 1.1 3.3	150 110 ND 300 ND ND ND ND 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND ND 53 140 1.9 3.4 5.9 2.5 480 ND ND ND ND ND ND ND ND ND ND		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/03/96 01/24/97 01/26/98 07/03/98 01/14/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01 01/14/02 04/15/02 07/15/02	33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07 17.12 17.38 17.61 15.53 16.12 16.48	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07 16.02 15.76 15.53 17.61 17.02 16.66	6000 25000 49000 480 8100 ND 3100 ND ND 540 7400 250 230 400 290 ND 354 464 420 290 400 130 280 64	800 ND 1300 1.6 65 1300 1400 2300 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND 7.6 4.6 <0.50 0.5 9.9 <0.50	30 ND	170 140 ND 280 1.4 ND ND 50 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91 3 <0.50 <0.50 1.1 3.3 <0.50	150 110 ND 300 ND ND ND 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND ND ND ND 5.1 3.4 <0.50 <0.50 6.8 <1.0		
MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3 MW-3	01/02/95 04/03/95 07/14/95 10/10/95 01/03/96 07/09/96 01/24/97 01/26/98 07/03/98 01/14/99 01/07/00 07/19/00 01/02/01 05/23/01 07/33/01 10/15/01 01/14/02 04/15/02	33.14 33.14	18.14 19.73 18.36 16.38 17.49 18.50 18.54 17.43 16.57 18.38 16.22 17.46 17.73 16.58 17.84 18.92 19.07 17.12 17.38 17.61 15.53 16.12	15.00 13.41 14.78 16.76 15.65 14.64 14.60 15.71 16.57 14.76 16.92 15.68 15.41 16.56 15.30 14.22 14.07 16.02 15.76 15.53 17.61 17.02	6000 25000 49000 480 8100 ND 3100 ND 540 7400 250 230 400 290 ND 354 464 420 290 400 130 280	800 ND 1300 1.6 65 1300 1400 2300 8 1900 2.2 1.8 8.2 3.3 890 3.87 ND 7.6 4.6 <0.50 0.5 9.9	30 ND	170 140 ND 280 1.4 ND ND 50 150 11 140 0.87 1.5 0.9 1.7 100 0.646 3.91 3 <0.50 <0.50 1.1 3.3	150 110 ND 300 ND ND ND ND 140 160 9.9 340 1.9 3.4 5.9 2.5 480 ND ND 53 140 1.9 3.4 5.9 2.5 480 ND ND ND ND ND ND ND ND ND ND		

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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B Ethylbenzene	Xylenes	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	12Π-y (μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-3	02/04/04	33.14	16.15	16.99	130	7.9	(μg/L) <0.50	(μg/L) <0.50	(μg/L) <1.0	(μg/L) 63	(µg/L)
MW-3	08/11/04	33.14	16.13	16.50	<20000	<200	<200	<200	<400	20000	
MW-3	03/31/05	33.14	14.53	18.61	<20000	330	<200	<200	<400	78000	
MW-3	09/30/05	33.14	16.55	16.59	12000	360	40	<25	50	20000	
MW-3	03/27/06	33.14	13.66	19.48	10000	150	<25	53	99	15000	
MW-3	09/27/06	33.14	17.40	15.74	<12000	<120	<120	<120	<120	12000	
MW-3	03/27/07	33.14	17.55	15.59	8700	180	<12	60	57	8900	
MW-3	09/28/07	33.14	18.59	14.55	9000	55	<50	<50	<50	11000	
MW-3	03/26/08	33.14	18.19	14.95	450	13	1.3	0.84	1.4	7200	
MW-3	07/28/08	33.14	19.00	14.14	8300	<50	<50	<50	<100	13000	
MW-3	01/26/09	33.14	19.54	13.60	8800	27	<12	<12	<25	13000	
MW-3	08/03/09	33.18	18.90	14.28	9300	56	<50	<50	<100	8000	
MW-3	01/25/10	33.18	18.54	14.64	4900	79	7.3	5.4	13	8100	
MW-3	08/03/10	33.18	18.35	14.83	2500	30	<12	<12	<25	4600	
MW-3	02/17/11	33.18	18.30	14.88	3800	11	<5.0	<5.0	<10	4700	
MW-3	08/03/11	33.18	17.87	15.31	2600	9.7	0.8	3.1	1.4	2000	
MW-3	02/07/12	33.18	18.88	14.30	1800	6.7	<1.0	1.9	<2.0	1600	
MW-3	08/09/12	33.18	18.02	15.16	1400	1.8	<0.50	1.5	<1.0	370	
MW-3	02/27/13	33.18	18.36	14.82	1600	4.4	0.69	2.8	<1.0	820	
MW-3	08/15/13	33.18	19.17	14.01	410	4.0	<0.50	1.4	<1.0	340	-
800 Harrison											
MW-4	10/19/92	-			480	0.51	2.1	2.8	6.8		-
MW-4	12/21/92	33.12	19.73	13.39	220	ND	ND	0.97	0.74		-
MW-4	04/28/93	33.12			ND	ND	ND	ND	ND		
MW-4	07/23/93	33.12	18.72	14.40	85	ND	ND	ND	ND		
MW-4	10/05/93	32.71	18.74	13.97	130	ND	ND	ND	ND		
MW-4	01/03/94	32.71	18.93	13.78	210	ND	ND	0.76	1.6		
MW-4	04/02/94	32.71	18.53	14.18	89	ND	ND	ND	ND		-
MW-4	07/05/94	32.71	17.67	15.04	190	ND	ND	ND	ND		
MW-4	10/06/94	32.71	19.25	13.46	170	0.85	ND	ND	0.74		
MW-4	01/02/95	32.71	17.75	14.96	ND	ND	ND	ND	ND		
MW-4	04/03/95	32.71	15.87	16.84	98	ND	ND	ND	ND		
MW-4	07/14/95	32.71	17.01	15.70	ND	ND	ND	ND	ND		
MW-4	10/10/95	32.71	18.03	14.68	ND	ND	ND	ND	ND		120
MW-4	01/03/96	32.71	18.05	14.66	ND	ND	ND	ND	ND		
MW-4	04/10/96	32.71	16.00	16.71	ND	ND	ND	ND	ND		240
MW-4	07/09/96	32.71	16.96	15.75	ND	ND	ND	ND ND	ND		480
MW-4 MW-4	01/24/97	32.71	16.04	16.67	ND	ND	ND	ND ND	ND		270
MW-4	07/23/97 01/26/98	32.71 32.71	17.87 16.05	14.84 16.66	ND ND	ND ND	ND ND	ND ND	ND ND		460 17
MW-4	07/03/98	32.71	16.05	15.76	ND ND	ND	ND ND	ND ND	ND ND		3.8
MW-4	01/14/99	32.71	17.34	15.70	ND ND	ND	ND ND	ND ND	ND ND		4600
MW-4	07/15/99	32.71	16.36	16.35	ND ND	ND ND	ND ND	ND ND	ND ND		ND
MW-4	01/07/00	32.71	17.81	16.35	ND ND	ND ND	ND ND	ND ND	ND ND		450
MW-4	07/19/00	32.71	18.94	13.77	ND ND	ND	ND	ND ND	ND ND		ND
MW-4	01/02/01	32.71	18.85	13.77	ND	ND	ND	ND ND	ND ND		ND
MW-4	05/23/01	32.71	16.82	15.89	ND	ND	ND	ND ND	ND ND		ND ND
MW-4	07/30/01	32.71	16.88	15.83	<50	<0.50	<0.50	<0.50	<0.50		4.9
MW-4	10/15/01	32.71	17.08	15.63	<50 <50	<0.50	<0.50	<0.50	<0.50		<5.0
MW-4	01/14/02	32.71	14.97	17.74	<50 <50	<0.50	<0.50	<0.50	<0.50		30
MW-4	04/15/02	32.71	15.48	17.74	<50 <50	<0.50	<0.50	<0.50	<0.50		180
MW-4	07/15/02	32.71	15.40	16.81	<50	<0.50	<0.50	<0.50	<1.0		50
MW-4	01/18/03	32.71	15.39	17.32	<50	<0.50	<0.50	<0.50	<1.0		<2.0
MW-4	07/11/03	32.71	16.17	16.54	200	<0.50	<0.50	<0.50	<1.0	52	
MW-4	02/04/04	32.71	16.12	16.59	1300	<10	<10	<10	<20	1700	
MW-4	08/11/04	32.71	16.16	16.55	<5000	<50	<50	<50	<100	6400	
MW-4	03/31/05	32.71	14.15	18.56	<1300	<0.50	<0.50	<0.50	<1.0	1600	
MW-4	09/30/05	32.71	16.91	15.80	900	<0.50	<0.50	<0.50	<1.0	3800	-
MW-4	03/27/06	32.71	13.94	18.77	870	<0.50	<0.50	<0.50	<1.0	2000	
MW-4	09/27/06	32.71	16.91	15.80	<1000	<10	<10	<10	<10	1600	
MW-4	03/27/07	32.71	17.15	15.56	1500	<2.5	<2.5	<2.5	<2.5	1700	
MW-4	09/28/07	32.71	18.13	14.58	590	<5.0	<5.0	<5.0	<5.0	1400	
MW-4	03/26/08	32.71	17.66	15.05	390	<0.50	<0.50	<0.50	<1.0	1400	1
MW-4	07/28/08	32.71	18.34	14.37	480	<1.0	<1.0	<1.0	<2.0	950	
MW-4	01/26/09	32.71	18.80	13.91	500	<0.50	<0.50	<0.50	<1.0	830	-
MW-4	08/03/09	32.72	18.43	14.29	640	<5.0	6.6	<5.0	<10	570	-
MW-4	01/25/10	32.72	18.02	14.70	190	<0.50	<0.50	<0.50	<1.0	400	-

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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B Ethylbenzene	Xylenes	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	ινη-g (μg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-4	08/03/10	32.72	17.83	14.89	58	<0.50	(μg/L) <0.50	(µg/L) <0.50	<1.0	110	(µg/L)
MW-4	02/17/11	32.72	17.85	14.87	<50	<0.50	<0.50	<0.50	<1.0	12	
MW-4	08/03/11	32.72	17.36	40725.28	<50	<0.50	<0.50	<0.50	<1.0	12	
MW-4	02/07/12	32.72	18.38	14.34	<50	<0.50	<0.50	<0.50	<1.0	1.5	
MW-4	08/09/12	32.72	17.55	15.17	<50	<0.50	<0.50	<0.50	<1.0	1.3	
MW-4	02/27/13	32.72	17.83	14.89	<50	<0.50	<0.50	<0.50	<1.0	1.1	
MW-4	08/15/13	32.72	18.70	14.02	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
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MW-5	10/19/92	-			2700	61	5	100	61		
MW-5	12/21/92	33.25	19.75	13.50	1700	51	4.7	83	34		
MW-5	04/28/93	33.25			6700	200	190	250	430		
MW-5 MW-5	07/23/93	33.25	18.74	14.51	2000	122	8	68	47		
MW-5	10/05/93 01/03/94	32.95 32.95	18.83 19.05	14.12 13.90	1700 1500	70 44	6.2 ND	54 42	40 46		
MW-5	04/02/94	32.95	18.68	14.27	1800	46	5.1	38	35		
MW-5	07/05/94	32.95	17.90	15.05	2200	97	8.4	37	36		
MW-5	10/06/94	32.95	19.37	13.58	1600	79	5.7	28	22		
MW-5	01/02/95	32.95	17.92	15.03	1700	50	8.6	30	28		
MW-5	04/03/95	32.95	16.15	16.80	5400	190	240	170	420		
MW-5	07/14/95	32.95	17.18	15.77	3800	210	100	130	190		
MW-5	10/10/95	32.95	18.15	14.80	1300	92	14	15	39		1100
MW-5	01/03/96	32.95	18.20	14.75	630	53	4.4	8.3	13		
MW-5	04/10/96	32.95	16.05	16.90	500	25	18	7	20		640
MW-5	07/09/96	32.95	17.11	15.84	1000	44	20	10	34		150
MW-5	01/24/97	32.95	16.36	16.59	4000	190	400	160	430		600
MW-5	07/23/97	32.95	18.08	14.87	1700	200	23	18	45		2500
MW-5	01/26/98	32.95	16.27	16.68	ND	ND	ND	ND	ND		ND
MW-5 MW-5	07/03/98	32.95	17.27	15.68	ND	ND	ND	ND	ND 0.0		ND 500
MW-5	01/14/99 07/15/99	32.95 32.95	17.55 16.41	15.40 16.54	330 1100	61 170	4.1 ND	2.2 ND	2.9 27		560 660
MW-5	01/07/00	32.95	17.85	15.10	1000	180	6.3	ND ND	14		430
MW-5	07/19/00	32.95	18.87	14.08	2980	289	57.3	65.3	43.4		976
MW-5	01/02/01	32.95	18.47	14.48	1150	87.2	17.8	7.97	9.32		368
MW-5	05/23/01	32.95	17.38	15.57	840	42	10	13	7.1		130
MW-5	07/30/01	32.95	17.12	15.83	1900	82	24	6.9	13		370
MW-5	10/15/01	32.95	17.33	15.62	26000	390	230	58	1300		<500
MW-5	01/14/02	32.95	15.33	17.62	<50	<0.50	<0.50	<0.50	<0.50		<2.5
MW-5	04/15/02	32.95	15.89	17.06	310	20	6.7	11	7.7		77
MW-5	07/15/02	32.95	16.21	16.74	1500	40	22	60	28		170
MW-5	01/18/03	32.95	15.68	17.27	<50	0.75	<0.50	<0.50	<1.0		81
MW-5	07/11/03	32.95	16.29	16.66	<50	<0.50	<0.50	<0.50	<1.0	3.6	
MW-5	02/04/04	32.95	16.08	16.87	82	16	1.6	0.65	<1.0	16	
MW-5	08/11/04	32.95	16.38	16.57	900	81	14	2.8	11	120	
MW-5	03/31/05	32.95	14.30	18.65	5000	160	84	65	72	140	
MW-5 MW-5	09/30/05	32.95	16.19	16.76	1200	26	5.8	2.4	9.2	38	
MW-5	03/27/06 09/27/06	32.95 32.95	13.90 17.06	19.05 15.89	1100 1300	13 20	12 11	4.7 2.3	16 15	8.8 21	
MW-5	03/27/06	32.95	17.06	15.59	960	15	7.8	2.3	11	14	
MW-5	09/28/07	32.95	18.25	14.70	1300	13	6	2.3	15	8.4	
MW-5	03/26/08	32.95	17.82	15.13	1200	7.6	3.3	1.8	11	2.7	
MW-5	07/28/08	32.95	18.70	14.25	2000	12	4.9	3.2	17	<0.50	
MW-5	01/26/09	32.95	19.25	13.70	1400	7.4	3.3	2.5	11	3.3	
MW-5	08/03/09	32.98	18.62	14.36	1500	17	9	3.5	22	7.3	
MW-5	01/25/10	32.98	18.34	14.64	1600	7.6	3.6	2.4	15	1.7	
MW-5	08/03/10	32.98	18.07	14.91	2200	32	32	10	48	10	
MW-5	02/17/11	32.98	18.05	14.93	1800	33	7.4	<0.50	11	15	
MW-5	08/03/11	32.98	17.57	15.41	2500	58	23	12	34	40	
MW-5	02/07/12	32.98	18.59	14.39	1600	58	11	3.0	25	10	
MW-5	08/09/12	32.98	17.73	15.25	1900	81	18	10	22	19	
MW-5	02/27/13	32.98	17.98	15.00	1300	58	11	2.4	13	8.0	
MW-5	08/15/13	32.98	18.88	14.10	50	24	6.1	2.0	9.2	6.7	
800 Harrison	Street					<u> </u>		1			
MW-6	10/19/92				3900	420	12	60	28		
MW-6	12/21/92	32.42	19.17	13.25	2300	370	11	39	15		
MW-6	04/28/93	32.42			1200	54	1.5	11	5.3		
MW-6	07/23/93	32.42	18.17	14.25	580	19	0.99	3.4	2.7		
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Sample	Sample	TOC	Depth to	Groundwater Elevation	TDU a	Donzono	Toluono	EPA 8260B	Vylonos	MTDE	8021B
Name	Date	(ft MSL)	Water (ft BTOC)	(ft MSL)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (μg/L)	MTBE (µg/L)	MTBE (µg/L)
MW-6	10/05/93	32.16	18.35	13.81	1400	(μg/L) 34	ND	5.3	7.3	(µg/L)	(μg/L)
MW-6	01/03/94	32.16	18.54	13.62	1400	57	ND	8.5	11		
MW-6	04/02/94	32.16	18.15	14.01	5300	ND	ND	ND	ND		
MW-6	07/05/94	32.16	17.25	14.91	ND	ND	ND	ND	ND		
MW-6	10/06/94	32.16	18.85	13.31	11000	ND	ND	ND	ND		
MW-6	01/02/95	32.16	17.51	14.65	550	18	0.92	2	1.8		
MW-6	04/03/95	32.16	15.48	16.68	6600	ND	ND	ND	ND		
MW-6	07/14/95	32.16	16.63	15.53	ND	ND	ND	ND	ND		
MW-6	10/10/95	32.16	17.68	14.48	ND	81	ND	ND	ND		75000
MW-6	01/03/96	32.16	17.66	14.50	70	9.9	0.58	ND	0.81		
MW-6	04/10/96	32.16	15.56	16.60	300	258	4.7	0.94	2.7		53000
MW-6	07/09/96	32.16	16.59	15.57	1800	410	ND	12	ND		76000
MW-6	01/24/97	32.16	15.69	16.47	ND	8.0	ND	ND	ND		390
MW-6	07/23/97	32.16	17.53	14.63	5700	1100	240	240	700		16000
MW-6	01/26/98	32.16	15.44	16.72	ND	ND	ND	ND	ND		ND
MW-6	07/03/98	32.16	16.58	15.58	ND	ND	ND	ND	ND		ND
MW-6	01/14/99	32.16	17.02	15.14	ND	ND	ND	ND	ND		14
MW-6	07/15/99	32.16	15.95	16.21	ND	ND	ND ND	ND 0.66	ND 17		2.8
MW-6 MW-6	01/07/00 07/19/00	32.16 32.16	16.96 18.04	15.20 14.12	78 ND	24 ND	ND 1.32	0.66 ND	17 0.974		280 ND
MW-6	07/19/00	32.16	18.04	14.12	ND ND	ND ND	1.32 ND	ND ND	0.974 ND		ND ND
MW-6	05/23/01	32.16	16.42	15.74	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND
MW-6	05/25/01	32.16	16.42	15.74	<50	<0.50	<0.50	<0.50	<0.50		<2.5
MW-6	10/15/01	32.16	16.67	15.49	<50 <50	<0.50	0.62	<0.50	<0.50		<5.0
MW-6	01/14/02	32.16	14.60	17.56	<50 <50	<0.50	<0.50	<0.50	<0.50		<2.5
MW-6	04/15/02	32.16	15.07	17.09	<50	<0.50	<0.50	<0.50	0.73		<5.0
MW-6	07/15/02	32.16	15.56	16.60	<50	<0.50	<0.50	<0.50	<1.0		<0.50
MW-6	01/18/03	32.16	15.80	16.36	<50	<0.50	<0.50	<0.50	<1.0		<2.0
MW-6	07/11/03	32.16	15.74	16.42	<50	<0.50	<0.50	<0.50	<1.0	<2.0	
MW-6	02/04/04	32.16	15.49	16.67	<50	2.6	<0.50	<0.50	<1.0	2.4	
MW-6	08/11/04	32.16	15.81	16.35	7900	95	<50	<50	<100	9100	
MW-6	03/31/05	32.16	13.70	18.46	<5000	2.5	<0.50	<0.50	<1.0	7600	
MW-6	09/30/05	32.16	15.48	16.68	4300	140	37	28	41	5800	
MW-6	03/27/06	32.16	13.02	19.14	7200	34	0.66	0.96	18	9900	
MW-6	09/27/06	32.16	16.56	15.60	1800	<12	<12	<12	<12	3300	
MW-6	03/27/07	32.16	16.73	15.43	1600	2.8	<2.5	<2.5	<2.5	1800	
MW-6	09/28/07	32.16	17.75	14.41	830	<5.0	<5.0	<5.0	<5.0	1600	
MW-6	03/26/08	32.16	17.31	14.85	940	45	5.9	2	5.3	1300	
MW-6	07/28/08 01/26/09	32.16 32.16	18.50 18.46	13.66 13.70	500 570	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<2.0 <1.0	750 500	
MW-6	08/03/09	32.19	18.01	14.18	800	<5.0	<5.0	<5.0	<10	690	
MW-6	01/25/10	32.19	17.64	14.15	410	4.8	0.63	<0.50	1.4	390	
MW-6	08/03/10	32.19	17.48	14.71	480	2	<0.50	<0.50	<1.0	520	
MW-6	02/17/11	32.19	17.48	14.71	290	<0.50	<0.50	<0.50	<1.0	130	
MW-6	08/03/11	32.19	17.02	15.17	330	<0.50	<0.50	<0.50	<1.0	89	
MW-6	02/07/12	32.19	18.02	14.17	450	<0.50	<0.50	<0.50	<1.0	29	
MW-6	08/09/12	32.19	17.17	15.02	180	<0.50	<0.50	<0.50	<1.0	10	
MW-6	02/27/13	32.19	17.48	14.71	77	<0.50	<0.50	<0.50	<1.0	2.4	
MW-6	08/15/13	32.19	18.35	13.84	<50	<0.50	<0.50	<0.50	<1.0	0.82	
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MW-7	10/19/92										
MW-7	04/28/93	32.49			110	2.8	1.3	1.4	1.7		
MW-7	07/23/93	32.49	18.60	13.89	790	23	3.3	28	5.4		
MW-7	10/05/93	32.20	18.76	13.44	360	10	1.2	0.91	0.99		
MW-7 MW-7	01/03/94	32.20	18.91	13.29	ND 360	0.93	ND ND	0.75	1.9		
MW-7	04/02/94 07/05/94	32.20 32.20	18.50 17.52	13.70 14.68	360 ND	2 ND	ND ND	ND ND	0.8 ND		
MW-7	10/06/94	32.20	17.52	12.95	340	5.6	0.85	ND ND	1.2		
MW-7	01/02/95	32.20	17.67	14.53	ND	ND	ND	ND	ND		
MW-7	04/03/95	32.20	15.81	16.39	570	24	ND	3.4	5.8		
MW-7	07/14/95	32.20	17.05	15.15	ND	14	ND	ND	ND		
MW-7	10/10/95	32.20	18.08	14.12	740	170	ND	ND	ND		13000
MW-7	01/03/96	32.20	18.02	14.18	360	16	1.3	2.7	1.4		
MW-7	04/10/96	32.20	15.81	16.39	120	4.1	1.5	ND	0.88		3200
MW-7	07/09/96	32.20	16.99	15.21	ND	ND	ND	ND	ND		3400
MW-7	01/24/97	32.20	16.08	16.12	ND	16	ND	ND	ND		6600
MW-7	07/23/97	32.20	17.99	14.21	ND	16	ND	ND	0.62		10000

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Sample	Sample	TOC	Depth to Water	Groundwater Elevation	TPH-g	Benzene	Toluene	EPA 8260B Ethylbenzene	Xylenes	MTBE	8021B MTBE
Name	Date	(ft MSL)	(ft BTOC)	(ft MSL)	ινη-g (μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)
MW-7	01/26/98	32.20	15.56	16.64	ND	ND	ND	ND	0.56	(μg/L) 	ND
MW-7	07/03/98	32.20	17.04	15.16	ND ND	ND	ND ND	ND ND	ND		ND
MW-7	01/14/99	32.20		15.16				ND 			
MW-7	07/15/99	32.20	15.72	16.48	ND	ND	ND	ND	ND		290
MW-7	01/07/00	32.20	16.80	15.40	ND	7.7	ND	ND ND	4.4		98
MW-7	07/19/00	32.20	17.88	14.32	ND ND	ND	1.27	ND	0.979		ND
MW-7	01/02/01	32.20	17.97	14.23	ND	ND	ND	ND	ND		ND
MW-7	05/23/01	32.20	16.81	15.39	ND	ND	ND	ND	ND		ND
MW-7	07/30/01	32.20	16.79	15.41	<50	<0.50	<0.50	<0.50	<0.50		<2.5
MW-7	10/15/01	32.20	16.98	15.22	<50	<0.50	0.58	<0.50	<0.50		<5.0
MW-7	01/14/02	32.20	14.85	17.35	<50	<0.50	<0.50	<0.50	<0.50		<2.5
MW-7	04/15/02	32.20	15.29	16.91	<50	<0.50	<0.50	<0.50	0.7		<5.0
MW-7	07/15/02	32.20	15.92	16.28	<50	<0.50	<0.50	<0.50	<1.0		<0.50
MW-7	01/18/03	32.20	15.11	17.09	<50	<0.50	<0.50	<0.50	<1.0		<2.0
MW-7	07/11/03	32.20	15.89	16.31	<50	<0.50	<0.50	<0.50	<1.0	19	
MW-7	02/04/04	32.20	15.90	16.30	<50	3.6	<0.50	<0.50	<1.0	3.2	
MW-7	08/11/04	32.20	16.12	16.08	<5000	120	<50	<50	<100	5100	
MW-7	03/31/05	32.20	13.99	18.21	<5000	190	<50	<50	<100	8400	
MW-7	09/30/05	32.20	15.93	16.27	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-7	03/27/06	32.20	13.40	18.80	2500	160	10	11	26	5600	
MW-7	09/27/06	32.20	16.96	15.24	2800	180	<12	15	44	4200	
MW-7	03/27/07	32.20	17.30	14.90	920	66	2.9	3.4	4.5	970	
MW-7	09/28/07	32.20	18.10	14.10	4000	440	15	17	59	3300	
MW-7	03/26/08	32.20	17.64	14.56	390	39	3.3	0.85	7.5	96	
MW-7	07/28/08	32.20	18.50	13.70	64	3.3	<0.50	<0.50	<1.0	8.7	
MW-7	01/26/09	32.20	18.90	13.30	80	7.9	0.58	<0.50	<1.0	10	
MW-7	08/03/09	32.22	18.29	13.93	2100	220	14	10	31	750	
MW-7	01/25/10	32.22	17.49	14.73	490	25	3.5	0.54	6.9	16	
MW-7	08/03/10	32.22	17.84	14.38	240	45	1.8	1.2	1.7	290	
MW-7	02/17/11	32.22	17.83	14.39	370	53	2	<0.50	2.1	12	
MW-7	08/03/11	32.22	17.42	14.80	390	20	1.8	<0.50	1.6	27	
MW-7	02/07/12	32.22	18.40	13.82	310	25	2	<0.50	3.2	9.0	
MW-7	08/09/12	32.22	17.53	14.69	280	11	1.2	<0.50	<1.0	24	
MW-7	02/27/13	32.22	17.85	14.37	<50	<0.50	<0.50	<0.50	<1.0	3.8	
MW-7	08/15/13	32.22	18.70	13.52	95	11	1.3	<0.50	<1.0	5.0	
800 Harrison											
MW-8	04/28/93	32.33			450	18	1.8	1.8	1.4		
MW-8	07/23/93	32.33	18.45	13.88	260	5.1	ND	0.6	ND		
MW-8	10/05/93	32.00	18.57	13.43	120	1.7	ND	ND	ND		
MW-8	01/03/94	32.00	18.73	13.27	ND	ND	ND	ND	ND		51
MW-8	04/02/94	32.00	18.30	13.70	150	1.2	ND	ND	ND		
MW-8	07/05/94	32.00	17.41	14.59	730	17	ND	1.6	ND		
MW-8	10/06/94	32.00	18.98	13.02	140	ND 40	ND 0.70	ND	ND 4.0		
MW-8	01/02/95	32.00	17.58	14.42	440	18	0.72	2	1.8		
MW-8	04/03/95	32.00	15.54	16.46	960	11	ND 0.0	ND	ND 0.0		
MW-8	07/14/95	32.00	16.81	15.19	280	4.2	2.6	1.1	3.3		470
MW-8	10/10/95	32.00	17.85	14.15	110	1.3	0.62	0.67	ND 1.0		170
MW-8	01/03/96	32.00	17.82	14.18	63 ND	ND 4.4	0.51	ND ND	1.8		
MW-8	04/10/96	32.00	15.70	16.30	ND 72	1.1	0.61	ND ND	ND		60
MW-8	07/09/96	32.00	16.78	15.22	72 ND	1 ND	ND	ND ND	ND		140
MW-8 MW-8	01/24/97	32.00	15.79	16.21	ND	ND ND	ND ND	ND	ND ND		76 270
	07/22/07	32.00									. 2/0
	07/23/97	32.00	17.69 15.50	14.31	ND		ND ND	ND ND			
MW-8	01/26/98	32.00	15.50	16.50	ND	ND	ND	ND	0.76		2.9
MW-8 MW-8	01/26/98 07/03/98	32.00 32.00	15.50 16.80	16.50 15.20	ND ND	ND ND	ND ND	ND ND	0.76 ND		2.9 ND
MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99	32.00 32.00 32.00	15.50 16.80 17.13	16.50 15.20 14.87	ND ND ND	ND ND ND	ND ND ND	ND ND ND	0.76 ND ND		2.9 ND 11
MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99	32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85	16.50 15.20 14.87 16.15	ND ND ND ND	ND ND ND ND	ND ND ND ND	ND ND ND ND	0.76 ND ND ND		2.9 ND 11 ND
MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00	32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94	16.50 15.20 14.87 16.15 15.06	ND ND ND ND	ND ND ND ND	ND ND ND ND	ND ND ND ND ND	0.76 ND ND ND ND		2.9 ND 11 ND
MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00	32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06	16.50 15.20 14.87 16.15 15.06 13.94	ND ND ND ND ND	ND ND ND ND ND	ND ND ND ND ND ND 2.99	ND ND ND ND ND ND	0.76 ND ND ND ND ND		2.9 ND 11 ND 11
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01	32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12	16.50 15.20 14.87 16.15 15.06 13.94 13.88	ND	ND	ND ND ND ND ND ND ND 2.99 ND	ND N	0.76 ND ND ND ND ND ND ND ND ND		2.9 ND 11 ND 11 ND ND
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01	32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12 16.96	16.50 15.20 14.87 16.15 15.06 13.94 13.88 15.04	ND N	ND	ND N	ND N	0.76 ND		2.9 ND 11 ND 11 ND ND ND
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01	32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12 16.96 16.52	16.50 15.20 14.87 16.15 15.06 13.94 13.88 15.04 15.48	ND N	ND N	ND ND ND ND ND 2.99 ND ND <0.50	ND ND ND ND ND O.521 ND ND ND	0.76 ND ND ND ND ND ND ND ND ND N		2.9 ND 11 ND 11 ND ND ND ND ND
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01	32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12 16.96 16.52 16.72	16.50 15.20 14.87 16.15 15.06 13.94 13.88 15.04 15.48 15.28	ND SSS SSS	ND ND ND ND ND ND ND ND ND ND ND <0.50 <0.50	ND ND ND ND ND 2.99 ND ND <0.50	ND ND ND ND ND O.521 ND ND VD <0.50	0.76 ND		2.9 ND 11 ND 11 ND ND ND ND ND 2.7 <5.0
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01 01/14/02	32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12 16.96 16.52 16.72 14.53	16.50 15.20 14.87 16.15 15.06 13.94 13.88 15.04 15.48 15.28 17.47	ND ND ND ND ND ND ND ND ND ND ND S50 <50 <50	ND ND ND ND ND ND ND ND ND <0.50 <0.50	ND ND ND ND ND 2.99 ND ND 0.65 <0.50	ND ND ND ND 0.521 ND ND VD 0.521 ND ND <0.50 <0.50	0.76 ND ND ND ND ND ND ND ND ND CO.50 CO.50		2.9 ND 11 ND 11 ND ND ND ND ND 2.7 <5.0 <2.5
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01 01/14/02 04/15/02	32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12 16.96 16.52 16.72 14.53 14.96	16.50 15.20 14.87 16.15 15.06 13.94 13.88 15.04 15.48 15.28 17.47	ND ND ND ND ND ND ND ND ND S50 <50 <50 <50	ND ND ND ND ND ND ND ND ND	ND ND ND ND ND 2.99 ND ND <0.50 0.65 <0.50	ND ND ND ND 0.521 ND ND <0.50 <0.50 <0.50	0.76 ND		2.9 ND 11 ND 11 ND ND ND ND 2.7 <5.0 <2.5 <5.0
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 01/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01 01/14/02 04/15/02 07/15/02	32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12 16.96 16.52 16.72 14.53 14.96 15.60	16.50 15.20 14.87 16.15 15.06 13.94 13.88 15.04 15.48 15.28 17.47 17.04 16.40	ND ND ND ND ND ND ND ND ND S50 S50 S50 S50	ND ND ND ND ND ND ND ND	ND ND ND ND ND 2.99 ND ND <0.50 0.65 <0.50 <0.50	ND ND ND ND 0.521 ND ND <0.50 <0.50 <0.50 <0.50 <0.50 <0.50	0.76 ND ND ND ND ND ND ND ND ND		2.9 ND 11 ND 11 ND ND ND 2.7 <5.0 <2.5 <5.0 11
MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8 MW-8	01/26/98 07/03/98 01/14/99 07/15/99 01/07/00 07/19/00 01/02/01 05/23/01 07/30/01 10/15/01 01/14/02 04/15/02	32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00	15.50 16.80 17.13 15.85 16.94 18.06 18.12 16.96 16.52 16.72 14.53 14.96	16.50 15.20 14.87 16.15 15.06 13.94 13.88 15.04 15.48 15.28 17.47	ND ND ND ND ND ND ND ND ND S50 <50 <50 <50	ND ND ND ND ND ND ND ND ND	ND ND ND ND ND 2.99 ND ND <0.50 0.65 <0.50	ND ND ND ND 0.521 ND ND <0.50 <0.50 <0.50	0.76 ND		2.9 ND 11 ND 11 ND ND ND ND 2.7 <5.0 <2.5 <5.0

Table 2 Historical Groundwater Analytical Data Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

Sample	Sample	TOC	Depth to	Groundwater				EPA 8260B			8021B
Name	Date	(ft MSL)	Water	Elevation	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	MTBE
Ivallie	Date	(It WISE)	(ft BTOC)	(ft MSL)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-8	08/11/04	32.00	15.86	16.14	350	<2.5	<2.5	<2.5	<5.0	310	
MW-8	03/31/05	32.00	13.73	18.27	<2000	<0.50	<0.50	<0.50	<1.0	2100	
MW-8	09/30/05	32.00	15.94	16.06	1200	<0.50	0.5	<0.50	<1.0	6900	
MW-8	03/27/06	32.00	13.13	18.87	460	<0.50	<0.50	<0.50	<1.0	820	
MW-8	09/27/06	32.00	16.75	15.25	520	<5.0	<5.0	<5.0	8.2	870	
MW-8	03/27/07	32.00	16.87	15.13	1400	<0.50	<0.50	<0.50	<0.50	3600	
MW-8	09/28/07	32.00	17.91	14.09	280	<2.5	<2.5	<2.5	<2.5	670	
MW-8	03/26/08	32.00	17.45	14.55	110	<0.50	<0.50	< 0.50	<1.0	210	
MW-8	07/28/08	32.00	18.50	13.50	<50	<0.50	<0.50	<0.50	<1.0	11	
MW-8	01/26/09	32.00	18.65	13.35	<50	<0.50	<0.50	<0.50	<1.0	22	
MW-8	08/03/09	32.03	18.11	13.92	67	<0.50	< 0.50	<0.50	<1.0	64	
MW-8	01/25/10	32.03	17.67	14.36	<50	<0.50	<0.50	<0.50	<1.0	10	
MW-8	08/03/10	32.03	17.58	14.45	<50	<0.50	<0.50	<0.50	<1.0	10	
MW-8	02/17/11	32.03	17.53	14.50	<50	<0.50	<0.50	<0.50	<1.0	2.5	
MW-8	08/03/11	32.03	17.18	14.85	<50	<0.50	<0.50	<0.50	<1.0	1.6	
MW-8	02/07/12	32.03	18.15	13.88	<50	<0.50	<0.50	<0.50	<1.0	0.75	
MW-8	08/09/12	32.03	17.29	14.74	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-8	02/27/13	32.03	17.58	14.45	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
MW-8	08/15/13	32.03	18.46	13.57	<50	<0.50	<0.50	<0.50	<1.0	<0.50	
					·				·		
Tier 1 ESLs	for Groundw	ater (Reside	ntial)		100	1	40	30	20	5	5
Tier 1 ESLs	for Groundw	ater (Comm	ercial/Indust	rial)	500	46	130	43	100	1,800	1,800

Abbreviations:

TOC Top of casing

ft MSL Feet relative to mean sea level ft BTOC Feet below top of casing

TPH-g Total petroleum hydrocarbons as gasoline

MTBE Methyl tertiary butyl ether

NA Not available ND Non-detect -- Not analyzed

<0.0005 Not detected at concentration threshold as shown

J Estimated value

ESL Table C. Environmental Screening Levels (ESLs), Groundwater (>3meters below ground surface),
Groundwater is a Nondrinking Water Resource, CRWQCB-SFBR, Table C, November 2007

BOLD Indicates analytical result is above ESL for residential groundwater

Table 3 Soil Boring Details Chevron Site ID 351646 800, 726, and 706 Harrison Street, Oakland, California

Sample Name	Installation Date	Surface Elevation (ft MSL)	Boring Depth (ft bgs)	Boring Diameter (inches)	First Water (ft bgs)	Location
706 Harriso	n Street					
GP-5	06/24/11	31.16	20.0	2.5	NA	Onsite
GP-6	06/24/11	31.19	20.0	2.5	NA	Onsite
GP-7	06/24/11	30.29	20.0	2.5	NA	Onsite
SB-B	11/28/94	NA	30.0	NA	NA	Onsite
SB-I	12/02/94	NA	27.0	NA	NA	Onsite
726 Harriso	n Street					
BH-A	08/17/01	NA	25.0	4.0	19.0	Onsite
BH-B	08/17/01	NA	25.0	4.0	19.0	Onsite
BH-C	08/17/01	NA	25.0	4.0	19.0	Onsite
BH-D	07/17/02	NA	24.0	2.0	20.0	Onsite
BH-E	07/17/02	NA	24.0	2.0	20.0	Onsite
BH-F	07/17/02	NA	24.0	2.0	20.0	Onsite
BH-G	07/17/02	NA	24.0	2.0	20.0	Onsite
BH-H	07/17/02	NA	20.0	2.0	18.0	Offsite
GP-3	06/20/11	NA	24.0	2.5	20.0	Onsite
800 Harriso	n Street					
CPT-1	02/07/07	NA	50.0	NA	NA	Onsite
CPT-2	02/07/07	NA	50.0	NA	NA	Onsite
CPT-3	02/06/07	NA	50.0	NA	NA	Offsite
CPT-4	02/05/07	NA	50.0	NA	NA	Offsite
CPT-5	02/05/07	NA	50.0	NA	NA	Offsite
CPT-6	02/06/07	NA	50.0	NA	NA	Offsite
EB-1	05/29/91	NA	23.0	8.0	22.5	Onsite
EB-2	05/29/91	NA	23.0	8.0	23.0	Onsite
EB-3	03/18/94	NA	20.5	8.5	20.5	Onsite
EB-4	03/18/94	NA	20.5	8.5	20.5	Onsite
EB-5	03/17/94	NA	20.5	8.5	20.5	Onsite
EB-6	03/18/94	NA	20.5	8.5	20.5	Onsite
EB-7	03/17/94	NA	19.5	8.5	19.5	Onsite
EB-8	03/17/94	NA	19.5	8.5	19.5	Onsite
EB-9	03/17/94	NA	20.5	8.5	20.5	Onsite
EB-10	03/17/94	NA	20.5	8.5	20.5	Onsite
EB-11	03/18/94	NA	10.5	3.0	NA	Onsite
EB-12	03/18/94	NA	11.0	3.0	NA	Onsite
GP-1	03/28/12	NA	20.0	2.5	NA	Onsite
GP-2	06/24/11	35.03	20.0	2.5	NA	Onsite

Abbreviations:

ft MSL Feet relative to mean sea level ft bgs Feet below ground surface NA Not available

Table 4 Historical Soil Analytical Data Chevron Site ID 351646 800, 726, and 706 Harrison Street, Oakland, California

Cample		Sample			LUFT GC/MS	3					EPA 8260B				
Sample Name	Sample Date	Depth	TPPH	TPH-d	TPH-g	TPH-mo	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	EDB	1,2-DCA	Lead
Ivanie		(ft bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
706 Harrison	Street														
GP-5	06/24/11	5.0	<0.30	NA	NA	NA	NA	< 0.0074	<0.0074	<0.0074	<0.015	<0.0074	<0.0074	<0.0074	NA
	06/24/11	10.0	<0.18	NA	NA	NA	NA	<0.0044	<0.0044	<0.0044	<0.0089	<0.0044	<0.0044	<0.0044	NA
	06/24/11	15.0	<0.16	NA	NA	NA	NA	<0.0040	<0.0040	<0.0040	<0.0081	<0.0040	<0.0040	<0.0040	NA
	06/24/11	20.0	2.1	NA	NA	NA	NA	<0.0043	<0.0043	0.0057	<0.0085	0.0099	<0.0043	<0.0043	NA
GP-6	06/24/11	5.0	<0.19	NA	NA	NA	NA	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0047	<0.0047	NA
	06/24/11	10.0	<0.17	NA	NA	NA	NA	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.0043	<0.0043	NA
	06/24/11	15.0	<0.18	NA	NA	NA	NA	<0.0045	<0.0045	<0.0045	<0.0089	<0.0045	<0.0045	<0.0045	NA
GP-7	06/24/11	5.0	<0.23	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	NA
	06/24/11	10.0	<0.19	NA	NA	NA	NA	<0.0048	<0.0048	<0.0048	<0.0096	<0.0048	<0.0048	<0.0048	NA
	06/24/11	15.0	<0.17	NA	NA	NA	NA	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.0043	<0.0043	NA
MW-1	07/23/93	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	07/23/93	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	07/23/93	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	07/23/93	20.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
MW-2	07/23/93	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	07/23/93	10.0	NA	NA	ND	NA	NA	0.059	0.036	0.0061	0.031	NA	NA	NA	ND
	07/23/93	15.0	NA	NA	48	NA	NA	0.56	2.8	1.5	8.8	NA	NA	NA	ND
MW-3	07/23/93	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	07/23/93	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	07/23/93	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	07/23/93	20.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
MW-4	11/28/94	16.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	11/28/94	17.5	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	11/28/94	26.0	NA	NA	ND/0.021	NA	NA	ND/ND	ND/ND	ND/ND	ND/ND	NA	NA	NA	ND
MW-5	11/30/94	18.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
MW-6	12/01/94	16.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
MW-7	12/02/94	16.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	12/02/94	18.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
00.0	12/02/94	26.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
SB-B	11/28/94	11.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	11/28/94	16.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
OD I	11/28/94	26.0	NA	NA	1.1	NA	NA	0.18	0.054	0.024	0.071	NA	NA	NA	ND
SB-I	12/02/94	11.0	NA NA	NA	ND 200	NA	NA NA	ND 40	ND 40	ND	ND CO	NA	NA NA	NA NA	ND
VW-1 VW-2	07/23/93	17.0 17.0	NA NA	NA	360	NA	NA NA	18	40	13 210	68	NA NA	NA NA	NA NA	ND ND
VW-2 VW-3	07/23/93		NA NA	NA	6,000	NA	NA NA	210	890		1,200		NA NA	NA NA	
V VV-3	11/28/94	11.0	NA	NA	410	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	11/28/94	18.0	NA NA	NA	14,000	NA	NA NA	120	620	220	1,100	NA	NA	NA	ND
100/ 4	11/28/94	26.0	NA NA	NA	ND 45,000	NA	NA NA	0.059	0.041	0.0028	0.050	NA NA	NA NA	NA NA	ND
VW-4	11/29/94	17.5	NA NA	NA	15,000	NA	NA NA	160	700	240	1,200	NA NA	NA NA	NA NA	ND
VW-5	11/30/94	11.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	ND
	11/30/94	17.0	NA	NA	ND	NA	NA	ND	ND 0.040	ND	ND	NA	NA	NA	ND
<u> </u>	11/30/94	26.0	NA	NA	ND	NA	NA	ND	0.012	ND	ND	NA	NA	NA	ND

Table 4 Historical Soil Analytical Data Chevron Site ID 351646 800, 726, and 706 Harrison Street, Oakland, California

Commis		Sample		I	_UFT GC/M	S					EPA 8260B				
Sample Name	Sample Date	Depth	TPPH	TPH-d	TPH-g	TPH-mo	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	EDB	1,2-DCA	Lead
Name		(ft bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
726 Harrison	Street														
AS-1	NA	6.0	NA	NA	740	NA	NA	<0.25	<0.25	3.5	5.1	<0.25	NA	NA	NA
BH-A	NA	11.5	NA	NA	<1.0	NA	NA	< 0.005	< 0.005	<0.005	<0.005	<0.005	NA	NA	NA
BH-B	NA	15.0	NA	NA	360	NA	NA	0.55	5.0	3.4	23	0.064	NA	NA	NA
BH-C	NA	10.0	NA	NA	<1.0	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
EW-1	NA	10.0	NA	NA	2,300	NA	NA	0.33	0.27	16	26	<0.25	NA	NA	NA
GP-3	06/20/11	7.0	<0.20	NA	NA	NA	NA	< 0.0050	<0.0050	<0.0050	<0.010	0.00087 J	<0.0050	<0.0050	NA
	06/20/11	10.0	<0.20	NA	NA	NA	NA	< 0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	NA
	06/20/11	15.0	<0.20	NA	NA	NA	NA	< 0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	NA
MP-1	06/20/13	5.0	<0.16	NA	NA	NA	NA	<0.0040	<0.0040	<0.0040	<0.0080	<0.0040	<0.0040	<0.0040	NA
	06/20/13	10.0	<0.14	NA	NA	NA	NA	<0.0036	<0.0036	<0.0036	< 0.0072	<0.0036	<0.0036	<0.0036	NA
	06/20/13	15.0	<0.14	NA	NA	NA	NA	<0.0036	<0.0036	<0.0036	<0.0072	<0.0036	<0.0036	<0.0036	NA
	06/20/13	20.0	<0.15	NA	NA	NA	NA	<0.0038	<0.0038	<0.0038	<0.0076	<0.0038	<0.0038	<0.0038	NA
	06/20/13	22.0	<0.18	NA	NA	NA	NA	<0.0045	<0.0045	<0.0045	<0.0090	<0.0045	<0.0045	<0.0045	NA
	06/20/13	25.0	<0.14	NA	NA	NA	NA	< 0.0035	<0.0035	<0.0035	<0.0070	<0.0035	<0.0035	<0.0035	NA
	06/20/13	30.0	<0.14	NA	NA	NA	NA	< 0.0034	<0.0034	<0.0034	<0.0068	<0.0034	<0.0034	<0.0034	NA
MPE-1	06/20/13	5.0	<0.16	NA	NA	NA	NA	<0.0040	<0.0040	<0.0040	<0.0080	<0.0040	<0.0040	<0.0040	NA
	06/20/13	15.0	<0.14	NA	NA	NA	NA	< 0.0036	<0.0036	<0.0036	< 0.0071	<0.0036	<0.0036	<0.0036	NA
	06/20/13	20.0	0.40	NA	NA	NA	NA	<0.0038	<0.0038	<0.0038	<0.0076	0.0072	<0.0038	<0.0038	NA
	06/20/13	22.0	670	NA	NA	NA	NA	0.73	1.4	3.0	10	1.3	<0.17	<0.17	NA
	06/20/13	25.0	3.9	NA	NA	NA	NA	0.087	0.029	0.029	0.048	0.28	<0.0038	<0.0038	NA
	06/20/13	28.0	1.1	NA	NA	NA	NA	0.041	0.0044	< 0.0037	0.012	0.013	<0.0037	<0.0037	NA
	06/20/13	30.0	<0.16	NA	NA	NA	NA	<0.0040	<0.0040	<0.0040	<0.0081	<0.0040	<0.0040	<0.0040	NA
	06/20/13	35.0	<4.0	NA	NA	NA	NA	<0.099	<0.099	<0.099	<0.20	<0.099	<0.099	<0.099	NA
MW-1	NA	14.5	NA	NA	<1.0	NA	NA	0.011	<0.005	<0.005	<0.005	<0.05	NA	NA	NA
	NA	19.5	NA	NA	650	NA	NA	1.2	<0.05	2.2	2.8	<0.05	NA	NA	NA
MW-2	NA	16.0	NA	NA	<1.0	NA	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA
MW-3	NA	16.0	NA	NA	<1.0	NA	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA
MW-4	NA	16.0	NA	NA	<1.0	NA	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA
MW-5	NA	14.0	NA	NA	<1.0	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
MW-6	06/20/11	6.5	<0.20	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	NA
	06/20/11	11.0	<0.20	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	NA
	06/20/11	16.0	0.12 J	NA	NA	NA	NA	<0.0050	<0.0050	<0.0050	<0.010	0.0092	<0.0050	<0.0050	NA
VE-1	NA	9.0	NA	NA	<1.0	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
VE-2	NA	14.0	NA	NA	<1.0	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
VE-3	06/21/13	5.0	<0.18	NA	NA	NA	NA	<0.0044	<0.0044	<0.0044	<0.088	<0.0044	<0.0044	<0.0044	NA
	06/21/13	9.0	1,300	NA	NA	NA	NA	<0.094	<0.094	3.9	1.5	<0.094	<0.094	<0.094	NA
	06/21/13	10.0	350	NA	NA	NA	NA	<0.12	<0.12	1.8	1.9	<0.12	<0.12	<0.12	NA
	06/21/13	15.0	4,700	NA	NA	NA	NA	0.72	<0.093	7.4	13	<0.093	<0.093	<0.093	NA
	06/21/13	16.0	2,900	NA	NA	NA	NA	0.54	<0.098	7.6	13	<0.098	<0.098	<0.098	NA

Table 4 Historical Soil Analytical Data Chevron Site ID 351646 800, 726, and 706 Harrison Street, Oakland, California

		Sample			LUFT GC/MS	3					EPA 8260B				
Sample Name	Sample Date	Depth	TPPH	TPH-d	TPH-g	TPH-mo	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	EDB	1,2-DCA	Lead
Name		(ft bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
800 Harrison	Street														
EB-1	05/29/91	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/29/91	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/29/91	15.0	NA	NA	ND	NA	NA	0.0087	ND	ND	ND	NA	NA	NA	NA
	05/29/91	20.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/29/91	22.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EB-2	05/29/91	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/29/91	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/29/91	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/29/91	20.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
ED 0	05/29/91	22.5	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EB-3	03/18/94	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	9.5	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	14.5	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EB-4	03/18/94	19.5 5.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
ED-4	03/18/94 03/18/94	5.0 9.5	NA NA	NA NA	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND ND	NA NA	NA NA	NA NA	NA NA
	03/18/94		NA NA	NA NA	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND ND	NA NA	NA NA	NA NA	NA NA
	03/18/94	14.5 19.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND ND	NA NA	NA NA	NA NA	NA NA
EB-5	03/18/94	5.0	NA NA	NA NA	ND	NA NA	NA NA	ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
LD-3	03/18/94	10.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
	03/18/94	15.0	NA.	NA	ND	NA.	NA	ND	ND	ND	ND	NA	NA	NA NA	NA NA
	03/18/94	19.0	NA	NA	310	NA.	NA	0.71	2.4	1.3	2.2	NA	NA	NA	NA
EB-6	03/18/94	4.5	NA NA	NA	ND	NA NA	NA NA	ND	ND	ND	ND	NA	NA	NA.	NA NA
	03/18/94	9.5	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	14.5	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	19.5	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EB-7	03/18/94	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	19.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EB-8	03/18/94	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	18.5	NA	NA	21,000	NA	NA	7.0	78	26	140	NA	NA	NA	NA
EB-9	03/18/94	5.5	NA	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	10.0	NA	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	15.0	NA	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	20.0	NA	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EB-10	03/18/94	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	03/18/94	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
EB-11	03/18/94	20.0	NA NA	NA	ND 1.0	NA NA	NA NA	ND	ND	ND	ND 0.0000	NA NA	NA NA	NA NA	NA NA
_ ED-11	03/18/94	5.0	NA NA	ND 10	1.8 3.6	NA NA	NA NA	ND	0.0091	ND ND	0.0088	NA NA	NA NA	NA NA	NA NA
	03/18/94 03/18/94	6.0 10.0	NA NA	19 ND	3.6 ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND ND	NA NA	NA NA	NA NA	NA NA
EB-12	03/18/94	5.0	NA NA	ND	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
LD-12	03/18/94	5.0 10.5	NA NA	ND ND	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND ND	NA NA	NA NA	NA NA	NA NA
	US/ 18/94	10.5	INA	טא	טאו	NA	INA	טא	ND	חאר	טא	INA	INA	NA	INA

Table 4
Historical Soil Analytical Data
Chevron Site ID 351646
800, 726, and 706 Harrison Street, Oakland, California

		Sample		ı	UFT GC/MS	3					EPA 8260B				
Sample Name	Sample Date	Depth	TPPH	TPH-d	TPH-g	TPH-mo	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	EDB	1,2-DCA	Lead
Name		(ft bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
GP-1	03/28/12	6.0	<0.16	NA	NA	NA	NA	<0.0040	<0.0040	<0.0040	<0.0079	<0.0040	<0.0040	<0.0040	NA
	03/28/12	10.0	<0.18	NA	NA	NA	NA	< 0.0045	< 0.0045	<0.0045	< 0.0090	<0.0045	<0.0045	<0.0045	NA
	03/28/12	14.0	<0.16	NA	NA	<4.0	<50	< 0.0040	< 0.0040	<0.0040	< 0.0079	<0.0040	<0.0040	<0.0040	NA
GP-2	06/24/11	5.0	< 0.63	NA	NA	NA	NA	<0.016	<0.016	<0.016	<0.031	<0.016	<0.016	<0.016	NA
	06/24/11	10.0	21	NA	NA	NA	NA	< 0.0044	< 0.0044	<0.0044	<0.0088	0.013	<0.0044	<0.0044	NA
	06/24/11	14.0	3,200	NA	NA	NA	NA	<0.0044	<0.0044	0.013	0.11	0.028	<0.0044	<0.0044	NA
	06/24/11	17.0	1,000	NA	NA	NA	NA	<0.0044	0.024	0.015	0.098	0.060	<0.0044	<0.0044	NA
MW-1	05/30/91	5.0	NA	2.2	1.1	NA	NA	ND	ND	ND	0.010	NA	NA	NA	NA
	05/30/91	10.0	NA	43	43	NA	NA	ND	0.0059	0.0074	0.43	NA	NA	NA	NA
	05/30/91	15.0	NA	120	250	NA	NA	0.80	0.73	0.91	2.9	NA	NA	NA	NA
	05/30/91	20.0	NA	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/30/91	24.0	NA	ND	ND	NA	NA	ND	ND	ND	0.0073	NA	NA	NA	NA
MW-2	05/30/91	5.0	NA	NA	ND	NA	NA	ND	ND	ND	0.0054	NA	NA	NA	NA
	05/30/91	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/30/91	15.0	NA	NA	ND	NA	NA	0.015	ND	0.0064	0.025	NA	NA	NA	NA
	05/30/91	20.0	NA	NA	ND	NA	NA	0.0086	ND	ND	ND	NA	NA	NA	NA
	05/30/91	22.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
MW-3	05/30/91	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/30/91	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/30/91	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/30/91	20.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	05/30/91	23.0	NA	NA	2.9	NA	NA	0.0079	ND	0.012	0.031	NA	NA	NA	NA
MW-4	10/01/92	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	10/01/92	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	10/01/92	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	10/01/92	20.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	10/01/92	22.5	NA	NA	27	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
MW-5	10/01/92	5.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	10/01/92	10.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	10/01/92	15.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
	10/01/92	20.0	NA	NA	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA
MW-6	10/01/92	22.0	NA NA	NA NA	27 ND	NA	NA	ND	0.0060	ND	0.014	NA	NA NA	NA NA	NA NA
IVIVV-O	10/01/92 10/01/92	5.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
	10/01/92	10.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
	10/01/92	15.0 20.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND ND	ND ND	ND ND	ND ND	NA NA	NA NA	NA NA	NA NA
	10/01/92	20.0	NA NA	NA NA	170	NA NA	NA NA	ND	0.38	1.8	4.5	NA NA	NA NA	NA NA	NA NA
MW-7	04/14/93	5.0	NA NA	NA NA	ND	NA NA	NA NA	ND ND	ND	ND	ND	NA NA	NA NA	NA NA	NA NA
1919 7	04/14/93	10.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
	04/14/93	15.0	NA NA	NA NA	ND	NA NA	NA	ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
	04/14/93	21.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
MW-8	04/14/93	5.0	NA NA	NA NA	ND	NA NA	NA	ND ND	ND	ND ND	ND ND	NA NA	NA	NA NA	NA NA
	04/14/93	10.0	NA NA	NA NA	ND ND	NA NA	NA NA	ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
	04/14/93	15.0	NA NA	NA NA	ND	NA NA	NA	ND	ND	ND ND	ND	NA NA	NA NA	NA NA	NA NA
	04/14/93	20.5	NA NA	NA NA	ND	NA	NA	ND	ND	ND ND	ND	NA	NA NA	NA NA	NA NA
ESLs for Re	sidential Soils	20.0	83	-	-	-	-	0.044	2.9	3.3	2.3	0.023	-	-	-
	mmerical/Indus	trial Soils	500	-	-	-	-	1.2	9.3	4.7	11	8.4	-	-	-

Table 4

Historical Soil Analytical Data Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

Cample		Sample		l	_UFT GC/M	3					EPA 8260B				
Sample Name	Sample Date	Depth	TPPH	TPH-d	TPH-g	TPH-mo	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	EDB	1,2-DCA	Lead
Name		(ft bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)

Abbreviations:

ft bgs Feet below ground surface

mg/kg Milligrams per kilogram

TPPH Total purgeable petroleum hydrocarbons

TPH-g Total petroleum hydrocarbons as gasoline

TPH-mo Total petroleum hydrocarbons as motor oil

TOG Total oil and grease

MTBE Methyl tertiary butyl ether

EDB 1,2-Dibromoethane

1,2-DCA 1,2-Dichloroethane

NA Not analyzed

ND Non-detect

< 0.0005 Not detected at concentration threshold as shown

J Estimated value

ESL Table C. Environmental Screening Levels (ESLs), Deep Soils (>3meters below ground surface),

Groundwater is a Current or Potential Source of Drinking Water, CRWQCB-SFBR, Table C, November 2007

BOLD Indicates analytical result is above ESL for residential soils

Table 5 **Summary of MPE Pilot Test Data** Chevron Site ID 351646 800, 726, and 706 Harrison Street, Oakland, California

Date: 9/10/13 & 9/11/13

MPE Well ID: MPE-1

Initial DTW: 19.37 ft BTOC MPE Well TD: 32.99 ft BTOC

Depth to Top of Screen: 15 ft BTOC

Pump Intake Depth: 32 ft BTOC

Pump Type (make & model): QED AP4+ Long

Pump Capacity (gpm): 14 GPM

Time (hh:mm)	Elapsed Time (hh:mm)	Casing Vacuum ("H ₂ O)	Casing Flow Rate (acfm)	Temperature (°F)	Casing Flow Rate (scfm)	VOC Concentration - FID (ppmv)	VOC Concentration - PID (ppmv)	DTW* (ft BTOC)	Cumulative Gallons (totalizer, gal)
		•		9/10	/2013	-			•
12:50	0:00	10.0	27.0	77.1	26.4			25.55	617
12:55	0:05	10.0	27.0	77.0	26.4	100.2	5.5	25.63	
13:00	0:10	10.0	28.0	77.5	30.5			25.11	
13:05	0:15	25.0	50.1	78.9	47.0	100	8.6	25.30	
13:10	0:20	25.0	50.1	79.0	47.0			25.26	685
13:15	0:25	25.0	50.1	79.5	46.9			24.93	
13:30	0:40	40.0	10.9	80.0	9.8	1500	55.0	25.20	757
14:00	1:10	40.2	10.1	81.3	9.1	1500	55.5	24.94	
14:18	1:28							25.35	905
14:37	1:47	40.0	10.0	81.1	9.0			25.01	
14:40	1:50	40.0	10.0	80.8	9.0			25.16	
14:55	2:05	61.0	12.5	79.6	10.6			25.93	
15:35	2:45	61.2	12.6	78.9	10.7		90.4	25.37	
15:55	3:05	61.2	12.8	78.6	10.8			24.97	
16:11	3:21							24.95	1278
16:35	3:45							24.61	1354
17:00	4:10	61.2	13.2	78.5	11.2		93.7	24.86	
17:05	4:15	61.2	13.2	78.5	11.2			24.81	1451
				9/11/	/2013				
7:05	18:15	61.0	12.8	69.4	11.1		381.0	24.83	4114
8:16	19:16	61.8	12.9	70.1	11.1		380.0	24.67	4337
9:05	20:05	61.5	13.5	71.1	11.6		300.0	24.80	
9:19	20:19			-				25.03	4534
10:05	21:05	61.0	14.0	71.2	12.1		289.0	25.10	
10:31	21:31							25.52	4762
11:15	22:15	61.4	14.5	73.5	12.4			25.20	
11:50	22:50	61.0	14.4	74.8	12.3		382.0	24.64	
12:00	23:00	61.0	14.4	75.0	12.3			25.14	5048
12:05	23:05								5066
				Conclusion of	MPE Pilot Test				

Abbreviations:

MPE - Multi-phase extraction

DTW - Depth to water

ft BTOC - Feet below top of casing

TD - Total depth

"H₂0 - Inches of water

acfm - Actual cubic feet per minute

°F - Degrees Fahrenheit

scfm - Standard cubic feet per minute

ppmv - Parts per million, by volume

gal - Gallons

-- Not collected

*Depth to water measurements displayed are recorded measurements from pressure transducer installed in PZ-1

Table 6 Summary of MPE Pilot Test Monitoring Network Data Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

MPE Pilot Test Well ID: MPE-1 MPE Well Screen Interval 15 - 30 ft BTOC Date: 9/10/13 & 9/11/13

Monitoring Network Well ID = MP-1 Distance from MPE pilot test well = 17 feet Monitoring Network Well ID = MW-5 (726 Harrison) Distance from MPE pilot test well = 6 feet									Well ID = MW-4 (7	06 Harrison)	
Distance from MPE	pilot test well = 17 f	eet		Distance from MPE	pilot test well = 6 fe	et		Distance from MPE	pilot test well = 14	feet	
Static DTW (ft BTO	C) = 19.18			Static DTW (ft BTO	C) = 19.58			Static DTW (ft BTO	C) = 18.83		
Well Diameter (in.)	= 1			Well Diameter (in.)	= 2			Well Diameter (in.)	= 2		
Well TD (ft BTOC) =				Well TD (ft BTOC)				Well TD (ft BTOC)			
Screen top (ft BTOC				Screen top (ft BTO)				Screen top (ft BTO			
Corcon top (it B100	, 10			corcon top (it bi o	3) 10			Corcon top (it B r c	3, 0.0		T
Time (hh:mm)	DTW* (ft BTOC)	Drawdown (ft)	Induced Vacuum ("H ₂ O)	Time (hh:mm)	DTW* (ft BTOC)	Drawdown (ft BTOC)	Induced Vacuum ("H ₂ O)	Time (hh:mm)	DTW* (ft BTOC)	Drawdown (ft BTOC)	Induced Vacuum ("H ₂ O)
			I.	I.	9/10/2	013	1			I.	
7:55	19.22	0.04		8:07	19.61	0.03		8:18	18.81	-0.02	
12:10	20.41	1.23		12:08	22.51	2.93		12:16	20.61	1.78	
13:06	20.39	1.21	0.0	13:07	22.37	2.79	0.10	13:05	20.40	1.57	0.03
14:15	20.48	1.30	0.0	14:17	22.49	2.91	0.78	14:13	20.47	1.64	0.27
15:05	20.52	1.34	0.0	15:06	22.56	2.98	1.45	15:03	20.51	1.68	0.44
15:29	20.54	1.36	0.0	15:28	22.55	2.97	1.68	15:30	20.53	1.70	0.50
16:09	20.57	1.39	0.01	16:08	22.56	2.98	2.08	16:11	20.55	1.72	0.54
16:51	20.53	1.35	0.03	16:53	22.43	2.85	2.50	16:50	20.48	1.65	0.62
					9/11/2					_	
7:23	20.69	1.51	0.17	7:25	22.51	2.93	9.23	7:21	20.61	1.78	1.10
8:13	20.70	1.52	0.18	8:15	22.53	2.95	9.54	8:12 9:12	20.62	1.79	1.15
9:13	20.71	1.53	0.21	21 9:14 22.96 3.38 9.68					20.67	1.84	1.15
10:28	20.72	1.54	0.22	10:29	22.54	2.96	9.72	10:27	20.64	1.81	1.21
11:54	20.72	1.54	0.23	11:56	22.50	2.92	9.83	11:53	20.62	1.79	1.24

Abbreviations:

ft BTOC - Feet below top of casing

in. - inches
DTW - depth to water
TD - total depth

"H₂O - inches of water

Notes:

*Depth to water measurements displayed are recorded measurements from pressure transducer installed in PZ-1

Table 7 MPE Pilot Test Extracted Groundwater Analytical Data Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

Sample Name	Sample Date	Sample Time (hh:mm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (μg/L)	MTBE (µg/L)
726 Harrison Stre	et						
MPE-1	09/10/13	11:05	97	13	11	25	370
MPE-1	MPE-1 09/11/13 1		73	64	48	110	450
MPE-1	09/11/13	11:55	94	27	22	53	360
ESLs for Residen	tial Groundwater		1	40	30	20	5

Abbreviations:

μg/L Unit of measure, micrograms per liter

MTBE Methyl tertiary butyl ether

ESL Table C. Environmental Screening Levels (ESLs), Deep Soils (>3meters below ground surface),
Groundwater is a Current or Potential Source of Drinking Water, CRWQCB-SFBR, Table C, November 2007

Notes:

BOLD Indicates analytical result exceeded ESL for dissolved phase hydrocarbon consituent

Table 8
MPE Pilot Test Soil Vapor Analytical Data
Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

Sample Name	Sample Date	Sample Time (hh:mm)	GRO (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	MTBE (ppmv)	Methane (% by volume)
726 Harrison Stre	et								
Influent-1	09/10/13	14:40	210	0.35	0.81	<0.25	<0.50	0.64	0.27
Influent-1	09/11/13	10:05	1100	5.7	3.5	1.4	3.6	3.7	0.18
Influent-1	09/11/13	11:50	970	5.1	3.7	1.7	4.3	3.3	0.20
Effluent	09/11/13	11:50	0.63	<0.0025	0.003	<0.0025	<0.005	<0.0025	0.012

Abbreviations:

GRO Gasoline range organics (C₄ - C₁₂)

MTBE Methyl tertiary butyl ether

ppmv Parts per million, by volume

Influent-1 Pre-dilution soil vapor sample port

Effluent Effluent vapor sample port, aka 'exhaust' and 'outlet of oxidizer'

< 0.0025 Not detected at concentration threshold as shown

Table 9

MPE Pilot Test Dissolved Phase Mass Removal Calculations

Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

		System Operational	Data		Groundwater Analytical Concentrations Extraction Flow Rate Total								Instantaneo	ous Mass Re	moval Rate	Cumulative Mass Removed During Pilot Test ^[1]			
Date	Time (hh:mm)	Test Description	Operational Hours	Sample Location	Flow Rate (gpm)	Total Flow (gal)	GRO (μg/L)	B (µg/L)	Τ (μg/L)	E (μg/L)	Χ (μg/L)	Total BTEX (µg/L)	MTBE (µg/L)	GRO (lbs/day)	Benzene (lbs/day)	MTBE (lbs/day)	GRO (lbs)	Benzene (lbs)	MTBE (lbs)
9/10/2013	11:05	MPE Operation (MPE-1)	1.0	MPE-1 Sample Port	3.0	180.0	820	97	13	11	25	146	370	0.0296	0.0035	0.013	0.00	0.00	0.00
9/11/2013	10:05	MPE Operation (MPE-1)	24.0	MPE-1 Sample Port	3.4	4896.0	820	73	64	48	110	295	450	0.0296	0.0035	0.018	0.03	0.00	0.02
9/11/2013	11:50	MPE Operation (MPE-1)	26.0	MPE-1 Sample Port	3.25	5070.0	820	94	27	22	53	196	360	0.0296	0.0035	0.014	0.03	0.00	0.02

Abbreviations:

MPE Multi-phase extraction

Vac Vacuum

Temp Temperature

GRO Gasoline Range Organics

B Benzene

T Toluene

E Ethylbenzene

X Total Xylenes

F Degrees Fahrenheit

gpm Gallons per minute

gal Gallons

μg/L Micrograms per liter

lbs/day Pounds per day

lbs Pounds

Mass Removal Rate Equation Variables and Constants:

E_{lb/day} Mass Removal Rate

Conc_{mg/L} Constituent concentration, in miligrams per liter

Wt_{air} Weight of Air (0.075 lb/ft3)

FlowRate_{gal/min} Groundwater extraction flow rate, in gallons per minute

Mass Removal Rate Calculation:

$$E_{lb/day} = Conc_{mg/L} \times FlowRate_{gal/min} \times \left(\frac{3.79L}{gal}\right) \times \left(\frac{1.440_{min}}{day}\right) \times \left(\frac{1l_b}{454,000_{mg}}\right)$$

Notes:

[1] Cumulative mass removed totals are based on overall operation time of the MPE system. Values are approximate.

Table 10

MPE Pilot Test Soil Vapor Mass Removal Calculations

Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

		System Ope			tric Flow ate	Analytical Concentrations						Instantaneous Mass Removal Rate		Cumulative Mass Removed During Pilot Test ^[1]				
Date	Data Time Test Description ' '					Temp (F)	Flow Rate (acfm)	Flow Rate (scfm)	GRO (ppmv)	B (ppmv)	T (ppmv)	E (ppmv)	X (ppmv)	Total BTEX (ppmv)	GRO (lbs/day)	BTEX ^[2] (lbs/day)	GRO (lbs)	BTEX (lbs)
9/10/2013	14:40	MPE Operation (MPE-1)	1.0	SVE Influent-1	40	81.1	10.0	9.0	210	0.35	0.81	0.25	0.5	1.91	0.71	0.0061	0.03	0.000
9/11/2013	10:05	MPE Operation (MPE-1)	24.0	SVE Influent-1	61	71.2	14.0	12.1	1100	5.70	3.50	1.40	3.6	14.2	5.0	0.0583	4.78	0.058
9/11/2013	11:50	MPE Operation (MPE-1)	26.0	SVE Influent-1	61	74.8	14.4	12.3	970	5.1	3.7	1.70	4.3	14.8	4.5	0.0631	4.87	0.068

Abbreviations:

MPE Multi-phase extraction

Vac Vacuum

Temp Temperature

GRO Gasoline Range Organics

B Benzene

T Toluene

E Ethylbenzene

X Total Xylenes

in H2O Inches of water

F Degrees Fahrenheit

acfm Actual cubic feet per minute

scfm Standard cubic feet per minute

ppmv Parts per million by volume

lbs/day Pounds per day

lbs Pounds

Notes:

- Cumulative mass removed totals are based on overall operation time of the MPE system. Values are approximate.
- [2] BTEX mass removal rates are calculated using a weighted average of individual BTEX constituents to determine the sample spectific molecular weight of BTEX.

Equation Variables and Constants:

E_{lb/min} Mass Removal Rate MW_{air} Molecular Weight of Air (29 g/mol) Wt_{oir} Weight of Air (0.075 lb/ft3)

MW_{Benzene} Molecular Weight of Benzene (78.11 g/mol)

MW Toluene Molecular Weight of Toluene (92.14 g/mol) MW EBenzene Molecular Weight of Ethylbenzene (106.17 g/mol) MW _{Xylenes} Molecular Weight of Total Xylenes (106.10 g/mol)

MW GRO Molecular Weight of GRO(101.0 g/mol)

Mass Removal Rate Calculation:

Flow Rate Correction for Standard Conditions:

Assumptions:

P_{atm} = Atmospheric pressure at sea level is approximately 406.8 "w.c.

Pelevation = Atmospheric pressure in Oakland, CA, located at 43 ft above mean sea level, is approximately 407.7 in H2O.

P_{name} = Pressure/Vacuum of shed process flow

T_{std} = Standard Temperature of 77 degrees Fahrenheit

T_{gauge} = Temperature of process flow in degrees Fahrenheit

459.67 = Conversion factor from degress Fahrenheit to degrees Rankine

Table 11 Summary of AS/SVE Pilot Test Data Chevron Site ID 351646 800, 726, and 706 Harrison Street, Oakland, California

		AS-	-1 (Air Sparge V	Vell)			EW-1	(Vapor Extractio	n Well)			VE-3 (Vapor Extractio	n Well	
Time	Manifold Pressure (psi)	Wellhead Pressure (psi)	Flow Rate (acfm)	Temperature (°F)	Flow Rate (scfm)	Vacuum (in H₂O)	Flow Rate (acfm)	Temperature (°F)	Flow Rate (scfm)	PID Reading (ppm)	Vacuum (in H₂O)	Flow Rate (acfm)	Temperature (°F)	Flow Rate (scfm)	PID Reading (ppm)
9:15						77.6	15.0	74.1	12.2	675	77.3	15.0	74.1	12.2	380
9:25						74.2	16.4	74.3	13.5		74	16.9	74.3	13.9	
9:30						70.0	15.0	74.2	12.5		69.8	15.0	74.0	12.5	
9:37	1.0	1.0	0.0	75	0.0										
9:40	3.0	2.8	1.9	75	1.5	-			-		-	-	-		
9:43 9:44	2.5 2.0	2.4	1.5 1.4	75 75	1.3 1.2										
9:44	1.8	1.7	1.4	75	1.1				-						
9:48	1.5	1.5	1.0	75	0.9										
9:50	1.1	1.0	<1	76	0.0						-				
9:52	1.0	1.0	0.0	76	0.0										
9:54	1.0	1.0	0.0	76	0.0										
9:58	2.0	1.9	1.4	76	1.2										
10:00	1.5	1.4	1.3	76	1.2				-						
10:03	1.1	1.0	1.2	78	1.1										
10:05	1.0	1.0	1.0	78	0.9										
10:07	1.0	1.0	0.0	78	0.0	68.9	14.8	75.0	12.4	860	68.0	14.5	74.8	12.2	911
10:09	1.0	1.0	0.0	78	0.0										
10:11	2.5	2.3	2.3	78	1.9										
10:13	2.5	2.4	2.0	78	1.7										
10:15	2.0	1.9	1.8	78	1.6										
10:17 10:19	2.0	1.9 1.9	1.7 1.7	78 78	1.5 1.5										
10:19	1.9	1.8	1.6	78	1.4										
10:23	1.9	1.8	1.6	78	1.4		-								
10:25	1.9	1.8	1.6	78	1.4				-						
10:27	3.0	2.9	3.2	78	2.5										
10:29	3.1	3.0	2.9	78	2.3	68.5	15.1	76.2	12.6		68.0	14.9	76.0	12.5	
10:31	3.0	3.0	2.8	79	2.2										
10:34	3.0	3.0	2.7	79	2.1										
10:36	2.9	2.8	2.7	79	2.2										
10:38	2.9	2.8	2.6	80	2.1						-				
10:42	2.8	2.7	2.6	80	2.1				-						
10:44	5.0	5.0	6.3	80	4.1										
10:46	5.0	4.9	5.8	80	3.8										
10:48	5.0	4.9	5.5	80	3.6										
10:50	4.9	4.9	5.4	80	3.6				-						
10:55 11:00	4.2 4.0	4.0 3.9	5.2 5.0	80 80	3.7 3.6	-	-		-		-		-	-	
11:00	6.0	5.8	9.2	80	5.4									-	
11:06	6.0	6.0	8.5	80	5.0										
11:11	6.0	6.0	8.2	80	4.8	65.6	15	76.4	12.6	1106	65.0	14.8	76.4	12.5	560
11:21	5.1	5.1	8.0	80	5.2										
11:40	4.9	4.9	7.8	80	5.2										
11:42	6.0	6.0	12.0	80	7.1										
11:45	6.0	6.0	12.0	80	7.1	58.8	14.2	76.4	12.2		59	14	76.2	12.0	
11:50	6.0	6.0	11.5	80	6.8	-					-				
11:54	5.5	5.5	11.0	80	6.9										
12:09	5.1	5.1	10.5	80	6.8										
12:20	5.0	5.0	10.5	80	6.9						-				
12:45	4.8	4.8	10.5	82	7.0										
12:50	5.0	4.9	10.5	82	6.9										
12:56	5.0	4.9	10.5	82	6.9	58.6	13.7	77.1	11.8	1340	58.9	13.1	77.0	11.2	818
13:10	5.0	4.9	10.5	82	6.9	 52.2	12.4	80.4			 52.2	12.4	80.0		 750
13:30	5.0	4.9	10.5	82	6.9	52.2	12.4	80.4	10.8	1300	52.2	12.4	80.0	10.8	/50

Table 11 Summary of AS/SVE Pilot Test Data

Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

		AS-	-1 (Air Sparge V	Vell)			EW-1 (Vapor Extraction	n Well)		VE-3 (Vapor Extraction Well					
Time	Manifold Pressure (psi)	Wellhead Pressure (psi)	Flow Rate (acfm)	Temperature (°F)	Flow Rate (scfm)	Vacuum (in H₂O)	Flow Rate (acfm)	Temperature (°F)	Flow Rate (scfm)	PID Reading (ppm)	Vacuum (in H₂O)	Flow Rate (acfm)	Temperature (°F)	Flow Rate (scfm)	PID Reading (ppm)	

Abbreviations:

in H2O Inches of water

psi Pounds per square inch

acfm Actual cubic feet per minute

scfm Standard cubic feet per minute

°F Degrees Fahrenheit

ppm Parts per million

mg/L Milligrams per liter

hr Hour(s)

- Not available; Not recorded

Assumptions:

Pam = Atmospheric pressure at sea level is approximately 14.68 psi.

Pelevation = Atmospheric pressure in Oakland, CA, located at 43 ft above mean sea level, is approximately 14.71 psi.

Pamoe = Pressure/Vacuum of shed process flow

T_{ad} = Standard Temperature of 77 degrees Fahrenheit

T_{gauge} = Temperature of process flow in degrees Fahrenheit

459.67 = Conversion factor from degrees Fahrenheit to degrees Rankine

SVE Flow Rate Correction for Standard Conditions:

Assumptions:

P_{atm} = Atmospheric pressure at sea level is approximately 406.8 in. H2O

P_{elevation} = Atmospheric pressure in Oakland, CA, located at 43 ft above mean sea level, is approximately 407.7 in H2O.

P_{gauge} = Pressure/Vacuum of shed process flow

T_{std} = Standard Temperature of 77 degrees Fahrenheit

= ((- _ + _ +459.67)/(_ +459.67)))/ _)((_

T_{gauge} = Temperature of process flow in degrees Fahrenheit +459.67)/(_

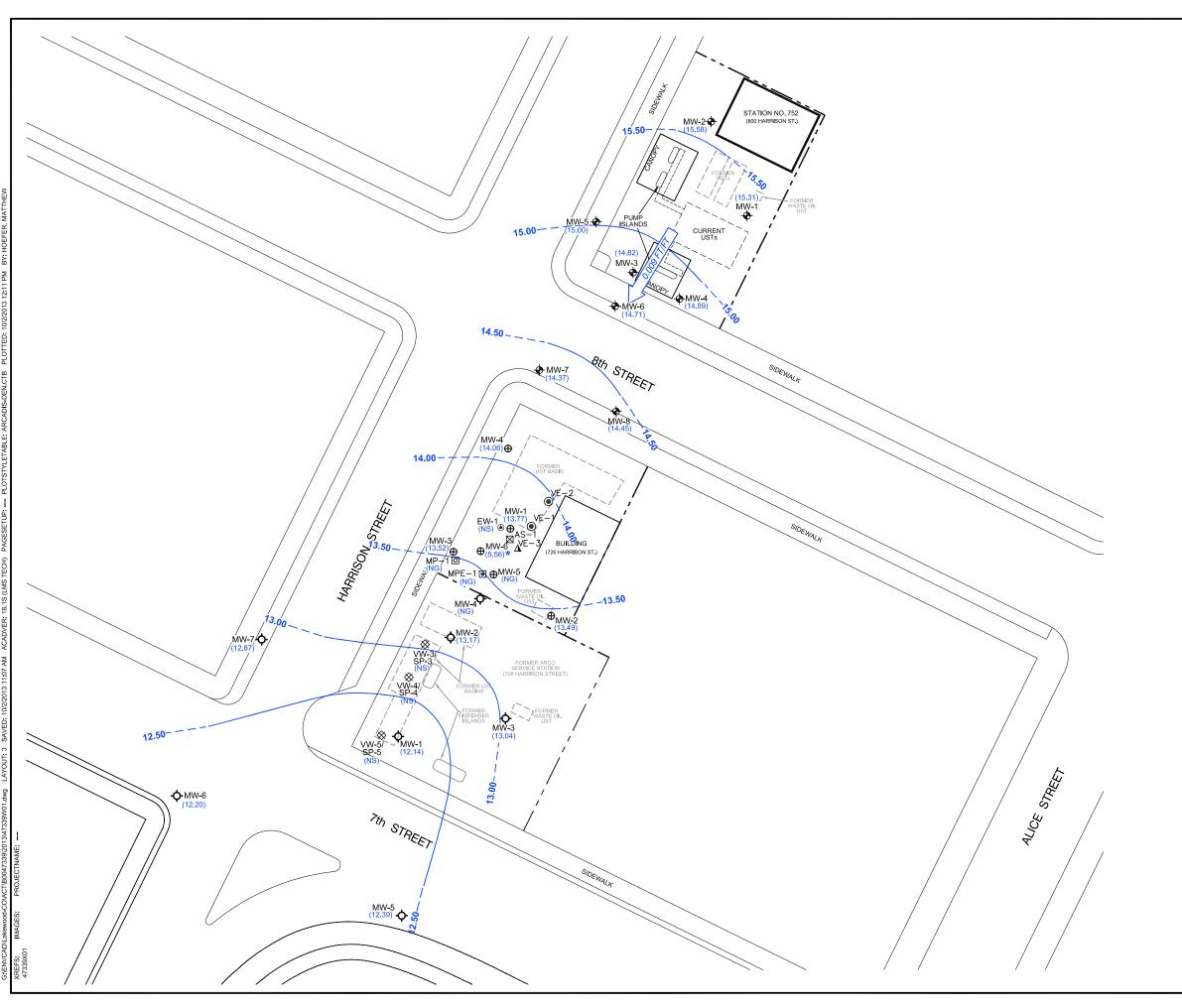
459.67 = Conversion factor from degress Fahrenheit to degrees Rankine

ARCADIS

Figures



FIGURE 2



LEGEND

--- PROPERTY BOUNDARY

----- PRODUCT PIPING

MW-1 GROUNDWATER MONITORING WELL (UNOCAL SITE)

EW-1 **③** EXTRACTION WELL (YEE SITE)

MW-1 GROUNDWATER MONITORING WELL (GIN SITE)

VW-3/SP-3

SOIL VAPOR/SPARGE WELL (UNABLE TO LOCATE) (GIN SITE)

MPE-1 MULTI-PHASE EXTRACTION PILOT TEST WELL (PZ-1 IS LOCATED IN THE SAME BOREHOLE)

MP-1 ☑ PILOT TEST MONITORING POINT

VE-1

VAPOR EXTRACTION WELL

VE−3 ▲ PILOT TEST VAPOR EXTRACTION WELL

AS−1

AIR SPARGE WELL

(15.31) GROUNDWATER ELEVATION CONTOUR IN FEET RELATIVE TO MEAN SEA LEVEL (FT MSL)

15.00 GROUNDWATER ELEVATION CONTOUR (FT MSL; DASHED WHERE INFERRED)

APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT (FOOT PER FOOT)

(NG) NOT GAUGED

(NS) NO SURVEY DATA AVAILABLE

* NOT USED IN GROUNDWATER CONTOURING AND GRADIENT CALCULATION

NOTES:

- BASE MAP PROVIDED BY MID COAST ENGINEERS, DATED 06/29/11, AT A SCALE OF 1"=50'. ADDITIONAL SITE FEATURES PROVIDED BY STANTEC, INC., DATED 03/05/10, AT A SCALE OF 1"=50'.
 - 2. COORDINATES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE III, NAD 83.
- MW-6 AT 726 HARRISON STREET IS NOT USED IN THE GROUNDWATER CONTOURS BECAUSE IT IS LOCATED IN A LOWER WATER BEARING ZONE.



UNION OIL OF CALIFORNIA STATION NO. 0752/YEE/GIN COMMINGLED 706/726/800 HARRISON STREET OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP FEBRUARY 27, 2013



FIGURE

3

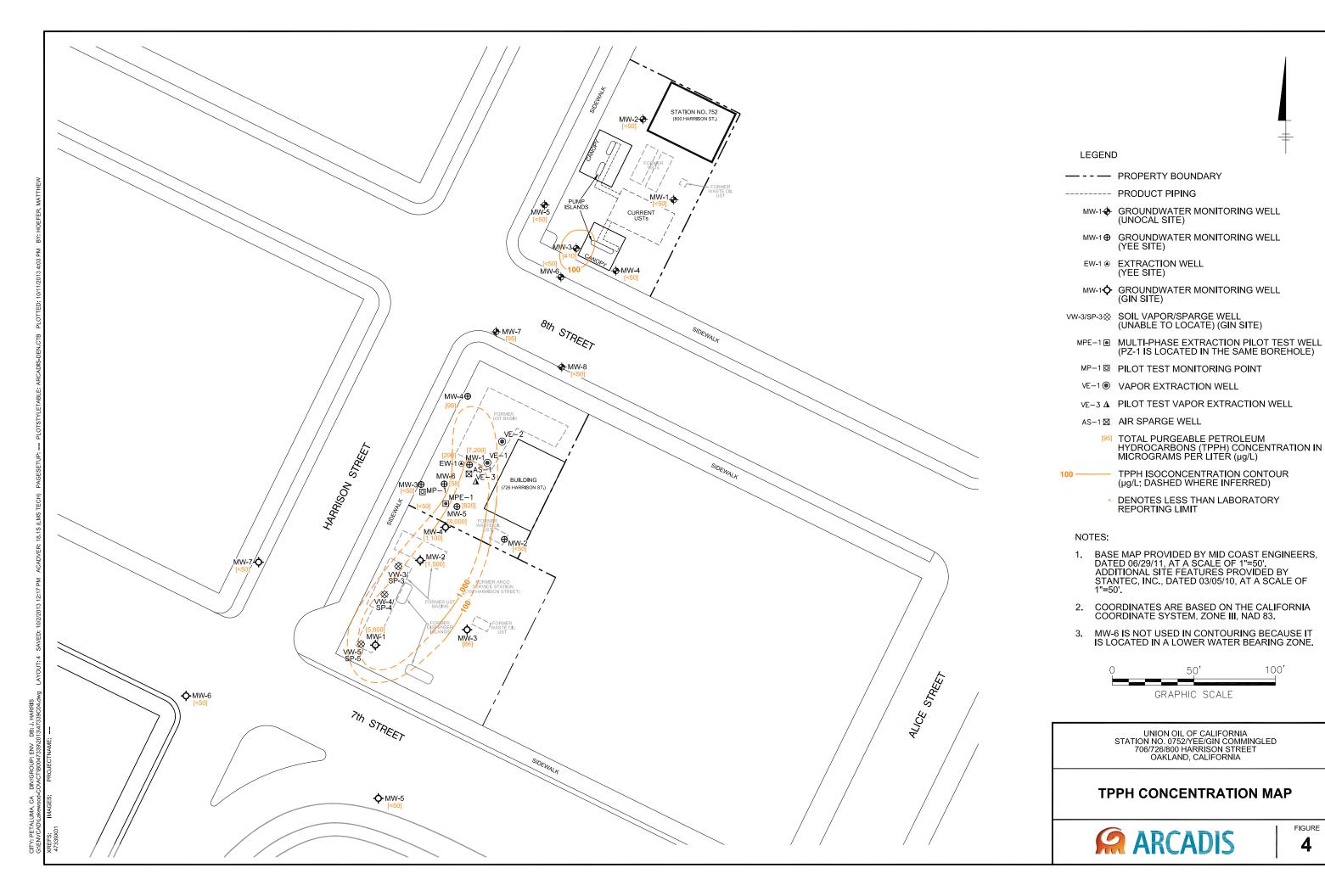
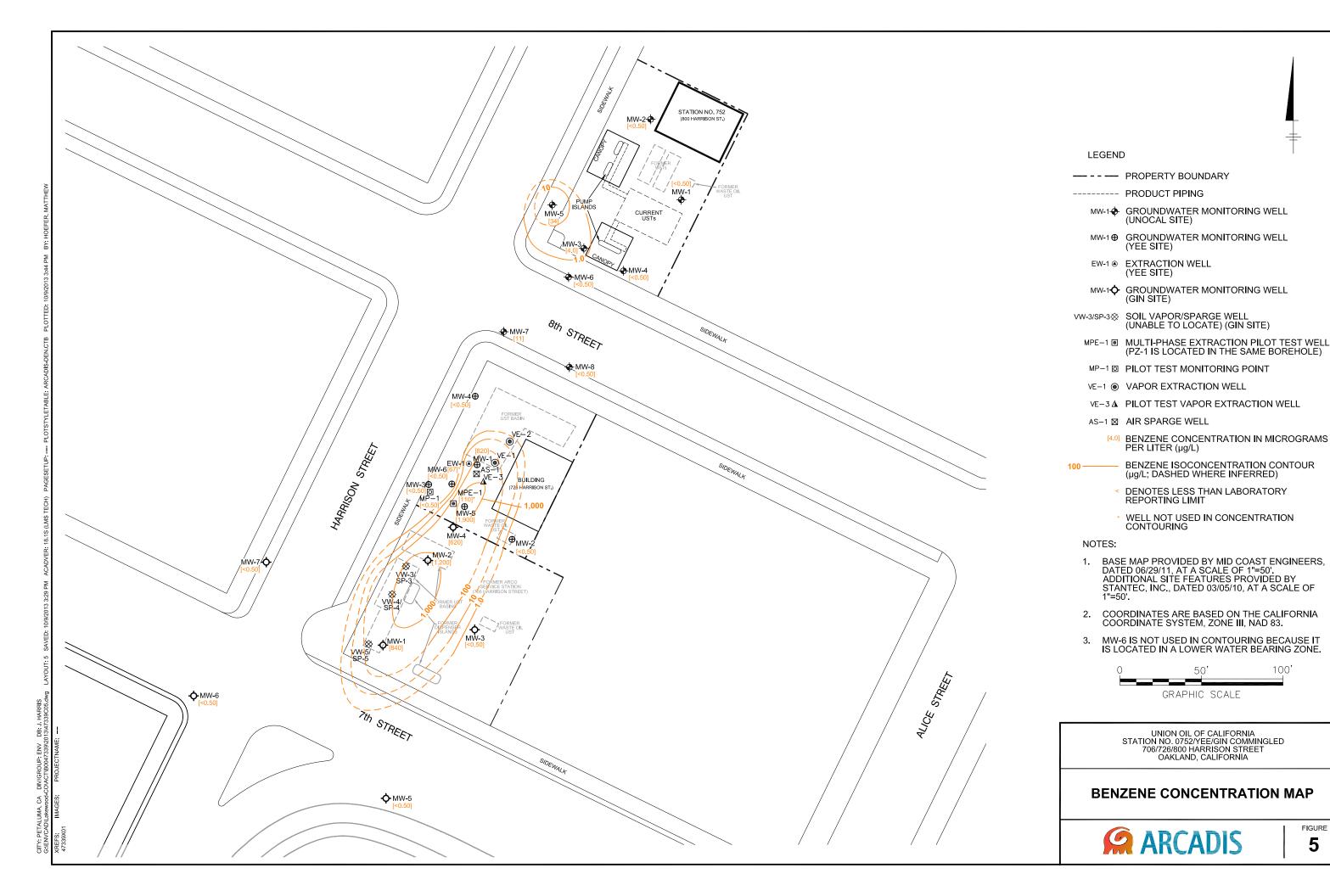


FIGURE 4







Appendix A

Correspondence

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY



ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH SERVICES ENVIRONMENTAL PROTECTION 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6700 FAX (510) 337-9335

March 11, 2013

RO0000231 Responsible Parties:

Roya Kambin Chevron Environmental Management Company 6101 Bollinger Canyon Road, 5th Floor San Ramon, CA 94583-5186 (Sent via E-mail to: RKLG@chevron.com)

Eric Hetrick
ConocoPhillips Company
76 Broadway
Sacramento, CA 95818
(Sent via E-mail to: eric.g.hetrick@conocophillips.com)

Muhammad UsmanMahmood M Ali800 Harrison StreetArmsco, Inc.Oakland, CA 94607P.O. Box 5427

Novato, CA 94948-5427

RO0000321 Responsible Parties:

Peter Yee Kin Chan

1000 San Antonio Avenue 4328 Edgewood Avenue Alameda, CA 94501 Oakland, CA 94602-1316

RO0000484 Responsible Parties:

Bo Gin 342 Lester Avenue Oakland, CA 94606-1317

Subject: Pilot Test Work Plan Approval for Commingled Plume Assessment for Fuel Leak Case No. RO0000231 (GeoTracker Global ID T0600101486), Unocal #0752, 800 Harrison Street, Oakland, CA 94607; Fuel Leak Case No. RO0000321 (GeoTracker Global ID T0600102122), Chan's Service Station/Shell, 726 Harrison Street, Oakland, CA 94607; and Fuel Leak Case No. RO0000484 (GeoTracker Global ID T0600100985), Oakland Auto Parts, 706 Harrison Street, Oakland, CA 94607

Dear Responsible Parties:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case files for the above referenced sites including the document entitled, "Multi-Phase Extraction and Air Sparge/Soil Vapor Extraction Pilot Test Work Plan, 706, 726 and 800 Harrison Street, Oakland, California," dated February 12, 2013 (Work Plan). The Work Plan, which was prepared on your behalf by ARCADIS, presents plans to conduct pilot tests for multi-phase extraction and air sparging/soil vapor extraction.

The proposed scope of work for the pilot test is generally acceptable. However, we have one technical comment regarding monitoring during the air sparging/soil vapor extraction that will require preparation of a Work Plan Addendum. Therefore, we request that you prepare a Pilot Test Work Plan Addendum to address technical comment 1 below.

Responsible Parties RO0000231, RO0000321, and RO0000484 March 11, 2013 Page 2

TECHNICAL COMMENTS

1. Vapor Monitoring or Extraction during Air Sparging/Soil Vapor Extraction Pilot Test. The Work Plan proposes air sparging at 726 Harrison Street using existing well AS-1, which is approximately 15 feet west of the on-site building. Vacuum will be applied to existing well EW-1, which is 8 feet west of AS-1, to capture vapors from the vadose zone during testing. Existing monitoring wells MW-1 and MW-5, which are north and south southwest of AS-1, respectively, will be used as observation wells during the pilot test. No monitoring points or extraction wells are located east of AS-1 or between AS-1 and the on-site building. We request that you prepare a Work Plan Addendum that includes plans to monitor vapors or extract vapors between AS-1 and the on-site building.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Jerry Wickham), and to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- April 24, 2013 Pilot Test Work Plan Addendum
 File to be named: WP_R_yyyy-mm-dd RO231, RO321, RO484
- April 29, 2013 Semi-Annual Groundwater Monitoring Report First Quarter 2013
 File to be named: GWM_R_yyyy-mm-dd RO231, RO321, RO484
- October 17, 2013 Semi-Annual Groundwater Monitoring Report Third Quarter 2013
 File to be named: GWM_R_yyyy-mm-dd RO231, RO321, RO484

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org. Case files can be reviewed online at the following website: http://www.acgov.org/aceh/index.htm. As your email address does not appear on the cover page of this notification ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297 Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

Responsible Parties RO0000231, RO0000321, and RO0000484 March 11, 2013 Page 3

cc: Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (Sent via E-mail to: lgriffin @oaklandnet.com)

Katherine Brandt, ARCADIS, 1900 Powell Street, 11th Floor, Emeryville, CA 94608 (Sent via E-mail to: Katherine.Brandt@arcadis-us.com)

Robert Foss, Conestoga-Rovers & Associates, 5900 Hollis Street, Suite A, Emeryville, CA 94608 2032 (Sent via E-mail to: <u>bfoss@craworld.com</u>)

Robert Kitay, Aqua Science Engineers, Inc., 55 Oak Ct., Suite 220, Danville, CA 94526 (Sent via E-mail to: rkitay@aquascienceengineers.com)

Donna Drogos, ACEH (Sent via E-mail to: <u>donna.drogos@acgov.org</u>)
Jerry Wickham, ACEH (Sent via E-mail to: <u>jerry.wickham@acgov.org</u>)

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements/Obligations

REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements. (https://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)

REVISION DATE: July 25, 2012

ISSUE DATE: July 5, 2005

PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010

SECTION: Miscellaneous Administrative Topics & Procedures

SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- Please do not submit reports as attachments to electronic mail.
- Entire report including cover letter must be submitted to the ftp site as a single Portable Document Format (PDF) with no password protection.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements must be included and have either original or electronic signature.
- <u>Do not</u> password protect the document. Once indexed and inserted into the correct electronic case file, the
 document will be secured in compliance with the County's current security standards and a password.
 <u>Documents with password protection will not be accepted.</u>
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO# Report Name Year-Month-Date (e.g., RO#5555 WorkPlan 2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to .loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include "ftp PASSWORD REQUEST" and in the body of your request, include the Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to ://alcoftp1.acgov.org
 - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to .loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.



Appendix **B**

Pilot Test Well Installation Permits

Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street Hayward, CA 94544-1395 Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 06/04/2013 By jamesy Permit Numbers: W2013-0408 to W2013-0410 Permits Valid from 06/13/2013 to 06/20/2013

Application Id: 1369933890144 City of Project Site:Oakland

Site Location: 726 Harrison St, Oakland, CA

Project Start Date: 06/13/2013 Completion Date:06/20/2013

Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: Arcadis - Katherine Brandt Phone: 510-596-9675

2000 Powell St, Suite 700, Emeryville, CA 94608

Property Owner: Peter Yee Kin Chan Phone: --

1000 San Antonio Ave, Alameda, CA 94501

Client: Phone: 925-790-6270

6101 Bollinger Canyon Rd, San Ramon, CA 94583

Total Due: \$1191.00

Receipt Number: WR2013-0194 Total Amount Paid: \$1191.00

Payer Name : Arcadis Paid By: CHECK PAID IN FULL

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 3 Wells

Driller: Gregg Drilling - Lic #: 485165 - Method: hstem Work Total: \$1191.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2013- 0408	06/04/2013	09/11/2013	MP1	8.25 in.	1.00 in.	0.00 ft	30.00 ft
W2013- 0409	06/04/2013	09/11/2013	MPE-1	10.00 in.	4.00 in.	0.00 ft	30.00 ft
W2013- 0410	06/04/2013	09/11/2013	VE-3	8.25 in.	2.00 in.	0.00 ft	30.00 ft

Specific Work Permit Conditions

- 1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
- 2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
- 3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

Alameda County Public Works Agency - Water Resources Well Permit

- 4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include permit number and site map.
- 5. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.
- 6. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
- 7. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.
- 8. Minimum surface seal thickness is two inches of cement grout placed by tremie.
- 9. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.
- 10. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.



Appendix C

ARCADIS Standard Operating Procedures



Soil Drilling and Sample Collection

Rev. #: 2

Rev Date: March 8, 2011

SOP: Soil Drilling and Sample Collection Rev. #: 2 | Rev Date: March 8, 2011

Approval Signatures

Prepared by:

Date: <u>03/08/2011</u>

Reviewed by:

(Technical Expert)

Date: 03/08/2011

SOP: Soil Drilling and Sample Collection

Rev. #: 2 | Rev Date: March 8, 2011

I. Scope and Application

Overburden drilling is commonly performed using the hollow-stem auger drilling method. Other drilling methods suitable for overburden drilling, which are sometimes necessary due to site-specific geologic conditions, include: drive-and-wash, spun casing, Rotasonic, dual-rotary (Barber Rig), and fluid/mud rotary. Direct-push techniques (e.g., Geoprobe or cone penetrometer) may also be used. The drilling method to be used at a given site will be selected based on site-specific consideration of anticipated drilling depths, site or regional geologic knowledge, types of sampling to be conducted, required sample quality and volume, and cost.

No oils or grease will be used on equipment introduced into the boring (e.g., drill rod, casing, or sampling tools).

II. Personnel Qualifications

The Project Manager (a qualified geologist, environmental scientist, or engineer) will identify the appropriate soil boring locations, depth and soil sample intervals in a written plan.

Personnel responsible for overseeing drilling operations must have at least 16 hours of prior training overseeing drilling activities with an experienced geologist, environmental scientist, or engineer with at least 2 years of prior experience.

III. Equipment List

The following materials will be available during soil boring and sampling activities, as required:

- Site Plan with proposed soil boring/well locations;
- Work Plan or Field Sampling Plan (FSP), and site Health and Safety Plan (HASP);
- personal protective equipment (PPE), as required by the HASP;
- drilling equipment required by the American Society for Testing and Materials (ASTM) D 1586, when performing split-spoon sampling;
- · disposable plastic liners, when drilling with direct-push equipment;
- appropriate soil sampling equipment (e.g., stainless steel spatulas, knife);

- equipment cleaning materials;
- appropriate sample containers and labels;
- chain-of-custody forms;
- insulated coolers with ice, when collecting samples requiring preservation by chilling;
- photoionization detector (PID) or flame ionization detector (FID); and
- field notebook and/or personal digital assistant (PDA).

IV. Cautions

ARCADIS

Prior to beginning field work, underground utilities in the vicinity of the drilling areas will be identified by one of the following three actions (lines of evidence):

- Contact the State One Call
- Obtain a detailed site utility plan drawn to scale, preferably an "as-built" plan
- Conduct a detailed visual site inspection

In the event that one or more of the above lines of evidence cannot be conducted, or if the accuracy of utility location is questionable, a minimum of one additional line of evidence will be utilized as appropriate or suitable to the conditions. Examples of additional lines of evidence include but are not limited to:

- Private utility locating service
- Research of state, county or municipal utility records and maps including computer drawn maps or geographical information systems (GIS)
- Contact with the utility provider to obtain their utility location records
- Hand augering or digging
- Hydro-knife
- Air-knife
- Radio Frequency Detector (RFD)

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- Ground Penetrating Radar (GPR)
- Any other method that may give ample evidence of the presence or location of subgrade utilities.

Overhead power lines also present risks and the following safe clearance must be maintained from them.

Power Line Voltage Phase to Phase (kV)	Minimum Safe Clearance (feet)
50 or below	10
Above 50 to 200	15
Above 200 to 350	20
Above 350 to 500	25
Above 500 to 750	35
Above 750 to 1,000	35

ANSI Standard B30.5-1994, 5-3.4.5

Avoid using drilling fluids or materials that could impact groundwater or soil quality, or could be incompatible with the subsurface conditions.

Water used for drilling and sampling of soil or bedrock, decontamination of drilling/sampling equipment, or grouting boreholes upon completion will be of a quality acceptable for project objectives. Testing of water supply should be considered.

Specifications of materials used for backfilling borehole will be obtained, reviewed and approved to meet project quality objectives.

V. Health and Safety Considerations

Field activities associated with overburden drilling and soil sampling will be performed in accordance with a site-specific HASP, a copy of which will be present on site during such activities.

VI. Procedure

Drilling Procedures

The drilling contractor will be responsible for obtaining accurate and representative samples; informing the supervising geologist of changes in drilling pressure; and

Rev. #: 2 | Rev Date: March 8, 2011

keeping a separate general log of soils encountered, including blow counts (i.e., the number of blows from a soil sampling drive weight [140 pounds] required to drive the split-barrel sampler in 6-inch increments). The term "samples" means soil materials from particular depth intervals, whether or not portions of these materials are submitted for laboratory analysis. Records will also be kept of occurrences of premature refusal due to boulders or construction materials that may have been used as fill. Where a boring cannot be advanced to the desired depth, the boring will be abandoned and an additional boring will be advanced at an adjacent location to obtain the required sample. Where it is desirable to avoid leaving vertical connections between depth intervals, the borehole will be sealed using cement and/or bentonite. Multiple refusals may lead to a decision by the supervising geologist to abandon that sampling location.

Soil Characterization Procedures

Soils encountered while drilling soil borings will be collected using one of the following methods:

- 2-inch split-barrel (split-spoon) sampler, if using the ASTM D 1586 Standard
 Test Method for Penetration Test and Split-Barrel Sampling of Soils
- Plastic internal soil sample sleeves if using direct-push drilling.

Soils are typically field screened with an FID or PID at sites where volatile organic compounds are present in the subsurface. Field screening is performed using one of the following methods:

- Upon opening the sampler, the soil is split open and the PID or FID probe is
 placed in the opening and covered with a gloved hand. Such readings should be
 obtained at several locations along the length of the sample
- A portion of the collected soil is placed in a jar, which is covered with aluminum foil, sealed, and allowed to warm to room temperature. After warming, the cover is removed, the foil is pieced with the FID or PID probe, and a reading is obtained.

Samples selected for laboratory analysis will be handled, packed, and shipped in accordance with the procedures outlined in the Work Plan, FSP, or Chain-of-Custody, Handling, Packing, and Shipping SOP.

A geologist will be onsite during drilling and sampling operations to describe each soil interval on the soil boring log, including:

ARCADIS

Rev. #: 2 | Rev Date: March 8, 2011

- percent recovery;
- structure and degree of sample disturbance;
- soil type;
- color;
- moisture condition;
- density;
- grain-size;
- consistency; and
- other observations, particularly relating to the presence of waste materials

Further details regarding geologic description of soils are presented in the Soil Description SOP.

Particular care will be taken to fully describe any sheens observed, oil saturation, staining, discoloration, evidence of chemical impacts, or unnatural materials.

VII. Waste Management

Water generated during cleaning procedures will be collected and contained onsite in appropriate containers for future analysis and appropriate disposal.

PPE (such as gloves, disposable clothing, and other disposable equipment) resulting from personnel cleaning procedures and soil sampling/handling activities will be placed in plastic bags. These bags will be transferred into appropriately labeled 55-gallon drums or a covered roll-off box for appropriate disposal.

Soil materials will be placed in sealed 55-gallon steel drums or covered roll-off boxes and stored in a secured area. Once full, the material will be analyzed to determine the appropriate disposal method.

VIII. Data Recording and Management

The supervising geologist or scientist will be responsible for documenting drilling events using a bound field notebook and/or PDA to record all relevant information in a clear and concise format. The record of drilling events will include:

Rev. #: 2 | Rev Date: March 8, 2011

- start and finish dates of drilling;
- name and location of project;
- project number, client, and site location;
- sample number and depths;
- blow counts and recovery;
- depth to water;
- type of drilling method;
- drilling equipment specifications, including the diameter of drilling tools;
- documentation of any elevated organic vapor readings;
- names of drillers, inspectors, or other people onsite; and
- weather conditions.

IX. Quality Assurance

Equipment will be cleaned prior to use onsite, between each drilling location, and prior to leaving the site. Drilling equipment and associated tools, including augers, drill rods, sampling equipment, wrenches, and other equipment or tools that may have come in contact with soils and/or waste materials will be cleaned with high-pressure steam-cleaning equipment using a potable water source. The drilling equipment will be cleaned in an area designated by the supervising engineer or geologist that is located outside of the work zone. More elaborate cleaning procedures may be required for reusable soil samplers (split-spoons) when soil samples are obtained for laboratory analysis of chemical constituents.

X. References

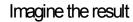
American Society of Testing and Materials (ASTM) D 1586 - Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils.

Utilities and Structures Checklist

	ject: ject Number: e:					- -		
	Work locations applicable to this clearance checklist:							
One		8-72 hours in advance of woring the One Call process	rk?			Yes [] ache	No d ticket
					_			
List	any other utilities requiri	ng notification:	_			None		
Clie	ent provided utility maps of	or "as built" drawings showing	g util	ities?		Yes		No
Mai	Id Work rkings present: psurface Utility Lines of E One Call/"811" Client Provided Maps/D Client Clearance	Paint vidence Used (3 Minimum): rawings		Pin flags/stakes		Other		None
	Interviews:	Name(s)/Affiliation(s)						
		Did persons interviewed inc ☐ Yes, depths provided:	licate	e depths of any utiliti	es in 1	the subs	urface	e?
		☐ Did not know or refused	l to a	nswer				
		Comments:						
	Site Inspection GPR							
	Air-Knife Hydro-Knife Public Records/Maps Radiofrequency Metal Detector Handauger Potholing Probing	 No excessive turning or dov No hammering- no pickaxes Select alternate/backup loca Utilities may run directly und 						
	Private Locator: Marine Locator:	Name and Company: Name and Company:						
	Other:	-		TR	А	ск	T.	

Site Inspection During inspections look for the following ("YES" requires follow up investigation): Utility color codes Natural gas line present (evidence of a gas meter)? Yellow ☐ Yes No b) Evidence of subsurface electric lines: Red Yes No Conduits to ground from electric meter? Yes ii) Overhead electric lines absent Nο Yes iii) Light poles, electric devices with no overhead lines? No Evidence of water lines: Blue Yes No Water meter on site? Yes Nο ii) Fire hydrants in vicinity of work? iii) Irrigation systems? Yes No Evidence of sewers or storm drains: Green Restrooms or kitchen on site? Yes No ii) Gutter down spouts going into ground Yes Nο iii) Grates in ground in work area Yes No Evidence of telecommunication lines: Orange Yes No Fiber optic warning signs in areas? ii) Lines from cable boxes running into ground? Yes Nο Yes No iii) Conduits from power poles running into ground? iv) Aboveground boxes or housings in work area? Yes No Underground storage tanks: Yes No Tank pit present? ii) Product lines running to dispensers/buildings? Yes Nο iii) Vent present away from tank pit? Yes Nο Proposed excavation markings in work area? White Yes No h) Other: Yes Nο i) Evidence of linear asphalt or concrete repair Yes ii) Evidence of linear ground subsidence or change in vegetation? No Yes No iii) Manholes or valve covers in work area? iv) Warning signs ("Call Before you Dig", etc) on or adjacent to site? Yes Nο v) Utility color markings not illustrated in this checklist? Yes No Aboveground lines in or near the work area: < 50 kV within 10 ft of work area? Yes No ii) >50 - 200 kV within 15 ft of work area? Yes No Yes No iii) >200-350 kV within 20 ft of work area? iv) >350-500 kV within 25 ft of work area? Yes No v) >500-750 kV within 35 ft or work area? Yes No Yes vi) >750-1000 kV within 45 ft of work area? No Comments: Do not initiate intrusive work if utilities are suspected to be present in area and are not located, markings are over 14 days old, or if clearance methods provide incomplete or conflicting information. Do not perform intrusive work within 30 inches of a utility marking without hand clearing. Name and signature of person completing the checklist:

Name: Signature: Date:





Investigation-Derived Waste Handling and Storage

Rev. #: 2

Rev Date: March 6, 2009

Rev. #: 2 | Rev Date: March 6, 2009

Approval Signatures

Prepared by: Andrew Kamik	Date:	3/6/09
Reviewed by: As Marsh	Date:	3/6/09
(Temnical Expert)		

SOP: Investigation-Derived Waste Handling and Storage

Rev. #: 2 | Rev Date: March 6, 2009

I. Scope and Application

The objective of this Standard Operating Procedure (SOP) is to describe the procedures to manage investigation-derived wastes (IDW), both hazardous and nonhazardous, generated during site activities, which may include, but are not limited to drilling, trenching/excavation, construction, demolition, monitoring well sampling, soil sampling, decontamination and remediation. Please note that this SOP is intended for materials that have been deemed a solid waste as defined by 40 CFR § 261.2 (which may includes liquids, solids, and sludges). In some cases, field determinations will be made based on field screening or previous data that materials are not considered a solid waste. IDW may include soil, groundwater, drilling fluids, decontamination liquids, personal protective equipment (PPE), sorbent materials, construction and demolition debris, and disposable sampling materials that may have come in contact with potentially impacted materials. IDW will be collected and staged at the point of generation. Quantities small enough to be containerized in 55-gallon drums will be taken to a designated temporary storage area (discussed in further detail under Drum Storage) onsite pending characterization and disposal. Waste materials will be analyzed for constituents of concern to evaluate proper disposal methods. PPE and disposable sampling equipment will be placed in DOT-approved drums prior to disposal and typically does not require laboratory analysis. This SOP describes the necessary equipment, field procedures, materials, regulatory references, and documentation procedures necessary for proper handling and storage of IDW up to the time it is properly disposed. The procedures for handling IDW are based on the United States Environmental Protection Agency's Guide to Management of Investigation Derived Wastes (USEPA, 1992). IDW is assumed to be contaminated with the site constituents of concern (COCs) until analytical evidence indicates otherwise. IDW will be managed to ensure the protection of human health and the environment and will comply with all applicable or relevant and appropriate requirements (ARAR). The following Laws and Regulations on Hazardous Waste

State Laws and Regulations

Management are potential ARAR for this site.

To Be Determined Based on Location of Site and Location of Treatment,
 Storage, and/or Disposal Facility (TSDF) to be utilized

Federal Laws and Regulations

- Resource Conservation and Recovery Act (RCRA) 42 USC § 6901-6987
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 USC § 9601-9675

SOP: Investigation-Derived Waste Handling and Storage Rev. #: 2 | Rev Date: March 6, 2009

- Superfund Amendments and Reauthorization Act (SARA)
- Department of Transportation (DOT) Hazardous Materials Transportation

Pending characterization, IDW will be stored appropriately within each area of contamination (AOC). Under RCRA, "storage" is defined as the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere" (40 CFR § 260.10). The onsite waste staging area will be in a secure and controlled area. Waste characterization can either be based on generator knowledge, such as using materials safety data sheets (MSDS'), or can be based upon analytical results. The laboratory used for waste characterization analysis must have the appropriate state and federal certifications and be approved by ARCADIS and Client. IDW will be classified as RCRA hazardous or non-regulated under RCRA based on the waste characterization.

If IDW is characterized as RCRA hazardous waste, RCRA and DOT requirements must be followed for packaging, labeling, transporting, storing, and record keeping as described in 40 CFR § 262 and 49 CFR § 171-178. Wastes judged to potentially meet the criteria for hazardous wastes shall be stored in DOT approved packaging. Waste material classified as RCRA non-hazardous may be handled and disposed of as an industrial waste.

Liquid wastes judged to potentially meet the criteria for hazardous wastes shall be stored in DOT approved 55 gallon drums or other approved containers that are compatible with the type of material stored therein. Solid materials deemed to potentially meet hazardous criteria will be drummed where practicable. Large quantities of potentially hazardous solid materials must be containerized (such as in a roll-off box) for up to a maximum of 90 or 180 days as described in the Excavated Solids Section. Waste material classified as non-hazardous may be handled and disposed of as an industrial waste and is not subject to the 90-day or 180-day on-site storage limitation.

This is a standard (i.e., typically applicable) operating procedure which may be varied or changed as required, dependent upon site conditions, equipment limitations, or limitations imposed by the procedure. The ultimate procedure employed will be documented in the project work plans or reports. If changes to the sampling procedures are required due to unanticipated field conditions, the changes will be discussed with the Project Manager and Client as soon as practicable and documented in the report.

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II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. ARCADIS personnel may sign manifests on a case-to-case basis for clients, provided the appropriate agreement is in place between ARCADIS and the client documenting that ARCADIS is not the generator, but is acting as authorized representative for the generator. ARCADIS personnel who sign hazardous waste manifests will have the current DOT hazardous materials transportation training according to 49 CFR § 172.704. ARCADIS field personnel will also comply with client-specific training such as LPS. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and posses the required skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following materials, as required, shall be available for IDW handling and storage:

Appropriate personal protective equipment as specified in the Site Health and Safety Plan

- 55-gallon steel drums, DOT 1A2 or equivalent
- ¾ -inch socket wrench
- Hammer
- Leather gloves
- Drum dolly
- Appropriate drum labels (outdoor waterproof self adhesive)
- Polyethylene storage tank
- Appropriate labeling, packing, chain-of-custody forms, and shipping materials as specified in the Chain-of-Custody SOP and Field Sampling Handling, Packing, and Shipping SOP.
- Indelible ink and/or permanent marking pens
- Plastic sheeting

- Appropriate sample containers, labels, and forms
- Stainless-steel bucket auger
- Stainless steel spatula or knife
- Stainless steel hand spade
- Stainless steel scoop
- Digital camera
- Field logbook.

IV. Cautions

- Filled drums can be very heavy, always use appropriate moving techniques and equipment.
- Similar media will be stored in the same drums to aid in sample analysis and disposal.
- Drum lids must be secured to prevent rainwater from entering the drums.
- Drums containing solid material may not contain any free liquids.
- Waste containers stored for extended periods of time may be subject to deterioration. Drum over packs may be used as secondary containment.
- All drums must be in good condition to prevent potential leakage and facilitate subsequent disposal. Inspect the drums for dents and rust, and verify the drum has a secure lid prior to use.

V. Health and Safety Considerations

- Appropriate personal protective equipment must be worn by all field personnel within the designated work area.
- Air monitoring may be required during certain field activities as required in the Site Health and Safety Plan.

- If excavating in potentially hazardous areas is possible, contingency plans should be developed to address the potential for encountering gross contamination or non-aqueous phase liquids.
- ARCADIS field personnel will be familiar and compliant with Client-specific health and safety requirements such as Chevron's hand safety policy including the prohibition of fixed and/or folding blade knives.

VI. Procedure

Waste storage and handling procedures to be used depend upon the type of generated waste. For this reason, IDW should be stored in a secure location onsite in separate 55-gallon storage drums, solids can be stockpiled onsite (if non-hazardous), and purge water may be stored in polyethylene tanks. Waste materials such as broken sample bottles or equipment containers and wrappings will be stored in 55-gallon drums unless they were not in contact with sample media.

Management of IDW

Minimization of IDW should be considered by the Project Manager during all phases of the project. Site managers may want to consider techniques such as replacing solvent-based cleaners with aqueous-based cleaners for decontamination of equipment, reuse of equipment (where it can be decontaminated), limitation of traffic between exclusion and support zones, and drilling methods and sampling techniques that generate little waste. Alternative drilling and subsurface sampling methods may include the use of small diameter boreholes, as well as borehole testing methods such as a core penetrometer or direct push technique instead of coring (EPA, 1993).

Drum Storage

Drums containing hazardous waste shall be stored in accordance with the requirements of 40 CFR 265 Subpart I (for containers) and 265 Subpart DD (for containment buildings). All 55-gallon drums will be stored at a secure, centralized onsite location that is readily accessible for vehicular pick-up. Drums confirmed as, or believed to contain hazardous waste will be stored over an impervious surface provided with secondary containment. The storage location will, for drums containing liquid, have a containment system that can contain at least the larger of 10% of the aggregate volume of staged materials or 100% of the volume of the largest container. Drums will be closed during storage and be in good condition in accordance with the Guide to Management of Investigation-Derived Wastes (USEPA, 1992).

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Hazardous Waste Determination

Waste material must be characterized to determine if it meets any of the federal definitions of hazardous waste as required by 40 CFR § 262.11. If the waste does not meet any of the federal definitions, it must then be established if any state-specific hazardous waste criteria exist/apply.

Generator Status

Once hazardous waste determination has been made, the generator status will be determined. Large quantity generators (LQG) are generators who generate more than 1,000 kilograms of hazardous waste in a calendar month. Small quantity generators (SQG) of hazardous waste are generators who generate greater than 100 kilograms but less than 1,000 kilograms of hazardous waste in a calendar month. Conditionally exempt small quantity generators (CESQG) are generators who generate less than 100 kilograms of hazardous waste per month. Please note that a generator status may change from month to month and that a notice of this change is usually required by the generator's state agency.

Accumulation Time for Hazardous Waste

A LQG may accumulate hazardous waste on site for 90 days or less without a permit and without having interim status provided that such accumulation is in compliance with specifications in 40 CFR § 262.34. A SQG may accumulate hazardous waste on site for 180 days or less without a permit or without having interim status subject to the requirements of 40 CFR § 262.34(d). CESQG requirements are found in 40 CFR § 261.5. NOTE: The CESQG and SQG provisions of 40 CFR § 261.5, 262.20(e), 262.42(b) and 262.44 may not be recognized by some states (e.g. Rhode Island). State-specific regulations must be reviewed and understood prior to the generation of hazardous waste.

Satellite Accumulation of Hazardous Waste

Satellite accumulation (SAA) shall mean the accumulation of as much as fifty-five (55) gallons of hazardous waste, or the accumulation of as much as one quart of acutely hazardous waste, in containers at or near any point of generation where the waste initially accumulates, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with the requirements of 40 CFR § 262.34(a) and without any storage time limit, provided that the generator complies with 40 CFR § 262.34(c)(1)(i).

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Once more than 55 gallons of hazardous waste accumulates in SAA, the generator has three days to move this waste into storage.

Storage recommendations for hazardous waste include:

- Ignitable Hazardous wastes must be >50 feet from the property line per 40 CFR § 265.176 (LQG generators only).
- Hazardous waste must be stored on a concrete slab (asphalt is acceptable if there are no free liquids in the waste) per 40 CFR § 265.176.
- Drainage must be directed away from the accumulation area.
- Area must be properly vented.
- Area must be secure.

Drum/Container Labeling

Drums will be labeled on both the side and lid of the drum using a permanent marking pen. Old drum labels must be removed to the extent possible, descriptions crossed out should any information remain, and new labels affixed on top of the old labels. Other containers used to store various types of waste (polyethylene tanks, roll-off boxes, end-dump trailers, etc.) will be labeled with an appropriate "Waste Container" or "Testing in Progress" label pending characterization. Drums and containers will be labeled as follows:

- Appropriate waste characterization label (Testing In Progress, Hazardous, or Non-Hazardous)
- Waste generator's name (e.g., client name)
- Project name
- Name and telephone number of ARCADIS project manager
- Composition of contents (e.g., used oil, acetone 40%, toluene 60%)
- Media (e.g., solid, liquid)
- Accumulation start date

 Drum number of total drums as reconciled with the Drum Inventory maintained in the field log book.

IDW containers will remain closed except when adding or removing waste. Immediately upon beginning to place waste into the drum/container, a "Waste Container" or "Testing in Progress" label will be filled out to include the information specified above, and affixed to the container. Once the contents of the container are identified as either non-hazardous or hazardous, the following additional labels will be applied. Containers with waste determined to be non-hazardous will be labeled with a green and white "Non-Hazardous Waste" label over the "Waste Container" label. Containers with waste determined to be hazardous will be stored in an onsite storage area and will be labeled with the "Hazardous Waste" label and affixed over the "Waste Container" label. The ACCUMULATION DATE for the hazardous waste is the date the waste is first placed in the container and is the same date as the date on the "Waste Container" label. DOT hazardous class labels must be applied to all hazardous waste containers for shipment offsite to an approved disposal or recycling facility. In addition a DOT proper shipping name shall be included on the hazardous waste label. The transporter should be equipped with the appropriate DOT placards. However, placarding or offering placards to the initial transporter is the responsibility of the generator per 40 CFR § 262.33.

Inspections and Documentation

All IDW will be documented as generated on a Drum Inventory Log maintained in the field log book. The Drum Inventory will record the generation date, type, quantity, matrix and origin (e.g. Boring-1, Test Pit 3, etc) of materials in every drum, as well as a unique identification number for each drum. The drum inventory will be used during drum pickup to assist with labeling of drums. The drum storage area and any other areas of temporarily staged waste, such as soil/debris piles, will be inspected weekly. The weekly inspections will be recorded in the field notebook or on a Weekly Inspection Log. Digital photographs will be taken upon the initial generation and drumming/staging of waste, and final labeling after characterization to document compliance with labeling and storage protocols, and condition of the container. Evidence of damage, tampering or other discrepancy should be documented photographically.

Emergency Response and Notifications

Specific procedures for responding to site emergencies will be detailed in the HASP. If the generator is designated as a LQG, a Contingency Plan will need to be prepared to include emergency response and notification procedures per 40 CFR § 265 Subpart D. In the event of a fire, explosion, or other release which could threaten human health

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outside of the site or when Client or ARCADIS has knowledge of a spill that has reached surface water, Client or ARCADIS must immediately notify the National Response Center (800-424-8802) in accordance with 40 CFR § 262.34. Other notifications to state agencies may also be necessary.

Drilling Soil Cuttings and Muds

Soil cuttings are solid to semi-solid soils generated during trenching activities, subsurface soil sampling, or installation of monitoring wells. Depending on the drilling method, drilling fluids known as "muds" may be used to remove soil cuttings. Drilling fluids flushed from the borehole must be directed into a settling section of a mud pit. This allows reuse of the decanted fluids after removal of the settled sediments. Soil cuttings will be labeled and stored in 55-gallon drums with bolt-sealed lids.

Excavated Solids

Excavated solids may include, but are not limited to soil, fill and construction and demolition debris. Excavated solids may be temporarily stockpiled onsite as long as the material is a RCRA non-hazardous waste and the solids will be treated onsite pursuant to a certified, authorized, or permitted treatment method, or properly disposed off-site. Stockpiled materials characterized as hazardous must be immediately containerized and removed from the site within 90 days of generation (except for soils using satellite accumulation). Excavated solids should be stockpiled and maintained in a secure area onsite. At a minimum, the floor of the stockpile area will be covered with a 20-mil high density polyethylene liner that is supported by a foundation or at least a 60-mil high density polyethylene liner that is not supported by a foundation. The excavated material will not contain free liquids. The owner/operator will provide controls for windblown dispersion, run-on control, and precipitation runoff. The run-on control system will prevent flow onto the active portion of the pile during peak discharge from at least a 25-year storm and the run-off management system will collect and control at least the water volume resulting from a 24-hour, 25-year storm (EPA, 1992). Additionally, the stockpile area will be inspected on a weekly basis and after storm events. Individual states may require that the stockpile be inspected/certified by a licensed professional engineer. Stockpiled material will be covered with a 6-mil polyvinyl chloride (PVC) liner. The stockpile cover will be secured in place with appropriate material (concrete blocks, weights, etc.) to prevent the movement of the cover. Excavated solids may also be placed in roll off containers and covered with a 6-mil PVC liner pending results for waste characterization.

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Decontamination Solutions

Decontamination solutions are generated during the decontamination of personal protective equipment and sampling equipment. Decontamination solutions may range from detergents, organic solvents and acids used to decontaminate small field sampling equipment to steam cleaning rinsate used to wash heavy field equipment. These solutions are to be labeled and stored in 55-gallon drums with bolt-sealed lids.

Disposable Equipment

Disposable equipment includes personal protective equipment (tyvek coveralls, gloves, booties and APR cartridges) and disposable sampling equipment such as trowels or disposable bailers. If the media sampled exhibits hazardous characteristics per results of waste characterization sampling, disposable equipment will also be disposed of as a hazardous waste. These materials will be stored onsite in labeled 55-gallon drums pending analytical results for waste characterization.

Purge Water

Purge water includes groundwater generated during well development, groundwater sampling, or aquifer testing. The volume of groundwater generated will dictate the appropriate storage procedure. Monitoring well development and groundwater sampling may generate three well volumes of groundwater or more. This volume will be stored in labeled 55-gallon drums. Aquifer tests may generate significantly greater volumes of groundwater depending on the well yield and the duration of the test. Therefore, large-volume portable polyethylene tanks will be considered for temporary storage pending groundwater-waste characterization.

Purged Water Storage Tank Decontamination and Removal

The following procedures will be used for inspection, cleaning, and offsite removal of storage tanks used for temporary storage of purge water. These procedures are intended to be used for rented portable tanks such as Baker Tanks or Rain for Rent containers. Storage tanks will be made of inert polyethylene materials.

The major steps for preparing a rented tank for return to a vendor include characterizing the purge water, disposing of the purge water, decontaminating the tank, final tank inspection, and mobilization. Decontamination and inspection procedures are describe in further detail below.

 Tank Cleaning: Most vendors require that tanks be free of any sediment and water before returning, a professional cleaning service may be required. Each

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specific vendor should be consulted concerning specific requirements for returning tanks.

 Tank Inspection: After emptying the tank, purged water storage tanks should be inspected for debris, chemical staining, and physical damage. The vendors require that tanks be returned in the original condition (i.e., free of sediment, staining and no physical damage).

VII. Waste Characterization Sampling and Shipping

Soil/Solids Characterization

Waste characterization will be conducted in accordance with waste hauler, waste handling facility, and state/federal requirements. In general, RCRA hazardous wastes are those solid wastes determined by a Toxicity Characteristic Leaching Procedure (TCLP) test or to contain levels of certain toxic metals, pesticides, or other organic chemicals above specific federally regulated thresholds. If the one or more of 40 toxic compounds listed in Table I of 40 CFR § 261.24 are detected in the sample at levels above the maximum unregulated concentrations, the waste must be characterized as a toxic hazardous waste. Wastes can also be considered "listed" hazardous waste depending on site-specific processes.

Composite soil samples will be collected at a frequency of one sample per 10 cubic yard basis for stockpiled soil or one per 55-gallon drum for containerized. A four point composite sample will be collected per 10 cubic yards of stockpiled material and for each drum. Sample and composite frequencies may be adjusted in accordance with the waste handling facility's requirements. Waste characterization samples may be analyzed for the TCLP volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP RCRA metals, and polychlorinated biphenyls, as well as corrosivity (pH), reactivity and flammability (flashpoint). Additional samples may be collected and analyzed by the laboratory on a contingency basis.

Wastewater Characterization

Waste characterization will be conducted in accordance with the requirements of the waste hauler, waste handling facility, and state/federal governments. In general, purge water should be analyzed by methods appropriate for the known contaminants, if any, that have been historically detected in the monitoring wells. Samples will be collected and analyzed in accordance with the requirements of the waste disposal facility.

Wastewater characterization samples may be analyzed for TCLP volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP RCRA

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metals, and polychlorinated biphenyls, as well as corrosivity (pH), reactivity and flammability (flashpoint). Additional samples may be collected and analyzed by the laboratory on a contingency basis.

Sample Handling and Shipping

All samples will be appropriately labeled, packed, and shipped, and the chain-of-custody will be filled out in accordance with the Chain-of-Custody SOP and Field Sampling Handling, Packing, and Shipping SOP and Hazardous Materials Packaging and Shipping SOP.

It should be noted that additional training is required for packaging and shipping of hazardous and/or dangerous materials. Please reference the following ARCADIS intranet team page for more information: http://team/sites/hazmat/default.aspx.

Preparing Waste Shipment Documentation (Hazardous and Non-Hazardous)

Waste profiles will be prepared by the ARCADIS PM and forwarded, along with laboratory analytical data to the Client PM for approval/signature. The Client PM will then return the profile to ARCADIS who will then forward to the waste removal contractor for preparation of a manifest. The manifest will be reviewed by ARCADIS prior to forwarding to the Client PM for approval. Upon approval of the manifest, the Client PM will return the original signed manifest directly to the waste contractor or to the ARCADIS PM for forwarding to the waste contractor.

Final drum labeling and pickup will be supervised by an ARCADIS representative who is experienced with waste labeling procedures. The ARCADIS representative will have a copy of the drum inventory maintained in the field book and will reconcile the drum inventory with the profile numbers on the labels and on the manifest. Different profile numbers will be generated for different matrices or materials in the drums. For example, the profile number for drill cuttings will be different than the profile number for purge water. When there are multiple profiles it is critical that the proper label, with the profile number appropriate to a specific material be affixed to the proper drums. A copy of the ARCADIS drum inventory will be provided to the waste transporter during drum pickup and to the facility receiving the waste.

VIII. Data Recording and Management

Waste characterization sample handling, packing, and shipping procedures will be documented in accordance with the *Quality Assurance Project Plan*, if one exists. Copies of the chains-of-custody forms will be maintained in the project file.

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Following waste characterization, IDW containers will be re-labeled with the appropriate waste hazardous or non-hazardous waste labels and the client will initiate disposal at the appropriate waste disposal facility.

IX. Quality Assurance

The chain-of-custody and sample labels for waste characterization samples will be filled out in accordance with the *Quality Assurance Project Plan*.

X. References

United States Environmental Protection Agency (USEPA). 1992. Guide to Management of Investigation-Derived Wastes. Office of Remedial and Emergency Response. Hazardous Site Control Division. January 1992.

USEPA. 1991. *Guide to Discharging CERCLA Aqueous Wastes to Publicly Owned Treatment Works (POTWs)*. Office of Remedial and Emergency Response. Hazardous Site Control Division 0S-220W. March 1991.



Field Equipment Decontamination

Rev. #: 3

Rev Date: April 26, 2010

Approval Signatures

Prepared by:	Keith Shepherd	Date: _	4/26/2010
Reviewed by:	Jaces	Date:	4/26/2010
	Richard Murphy (Technical Expert)		

SOP: Field Equipment Decontamination Rev. #: 3 | Rev Date: April 26, 2010

I. Scope and Application

Equipment decontamination is performed to ensure that sampling equipment that contacts a sample, or monitoring equipment that is brought into contact with environmental media to be sampled, is free from analytes of interest and/or constituents that would interfere with laboratory analysis for analytes of interest. Equipment must be cleaned prior to use for sampling or contact with environmental media to be sampled, and prior to shipment or storage. The effectiveness of the decontamination procedure should be verified by collecting and analyzing equipment blank samples.

The equipment cleaning procedures described herein includes pre-field, in the field, and post-field cleaning of sampling tools which will be conducted at an established equipment decontamination area (EDA) on site (as appropriate). Equipment that may require decontamination at a given site includes: soil sampling tools; groundwater, sediment, and surface-water sampling devices; water testing instruments; down-hole instruments; and other activity-specific sampling equipment. Non-disposable equipment will be cleaned before collecting each sample, between sampling events, and prior to leaving the site. Cleaning procedures for sampling equipment will be monitored by collecting equipment blank samples as specified in the applicable work plan or field sampling plan. Dedicated and/or disposable (not to be re-used) sampling equipment will not require decontamination.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training, including 40-hour HAZWOPER training, site supervisor training, and site-specific training, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the skills and experience necessary to successfully complete the desired fieldwork. The project HASP and other documents will identify any other training requirements such as site specific safety training or access control requirements.

III. Equipment List

- health and safety equipment, as required in the site Health and Safety Plan (HASP)
- distilled water

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- Non-phosphate detergent such as Alconox or, if sampling for phosphorus phosphorus-containing compounds, Luminox (or equivalent).
- tap water
- rinsate collection plastic containers
- DOT-approved waste shipping container(s), as specified in the work plan or field sampling plan (if decontamination waste is to be shipped for disposal)
- brushes
- large heavy-duty garbage bags
- spray bottles
- (Optional) Isoprophyl alcohol (free of ketones) or methanol
- Ziploc-type bags
- plastic sheeting

IV. Cautions

Rinse equipment thoroughly and allow the equipment to dry before re-use or storage to prevent introducing solvent into sample medium. If manual drying of equipment is required, use clean lint-free material to wipe the equipment dry.

Store decontaminated equipment in a clean, dry environment. Do not store near combustion engine exhausts.

If equipment is damaged to the extent that decontamination is uncertain due to cracks or dents, the equipment should not be used and should be discarded or submitted for repair prior to use for sample collection.

A proper shipping determination will be performed by a DOT-trained individual for cleaning materials shipped by ARCADIS.

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Health and Safety Considerations

Review the material safety data sheets (MSDS) for the cleaning materials used in decontamination. If solvent is used during decontamination, work in a well-ventilated area and stand upwind while applying solvent to equipment. Apply solvent in a manner that minimizes potential for exposure to workers. Follow health and safety procedures outlined in the HASP.

VI. Procedure

V.

A designated area will be established to clean sampling equipment in the field prior to sample collection. Equipment cleaning areas will be set up within or adjacent to the specific work area, but not at a location exposed to combustion engine exhaust. Detergent solutions will be prepared in clean containers for use in equipment decontamination.

Cleaning Sampling Equipment

- 1. Wash the equipment/pump with potable water.
- 2. Wash with detergent solution (Alconox, Liquinox or equivalent) to remove all visible particulate matter and any residual oils or grease.
- 3. If equipment is very dirty, precleaning with a brush and tap water may be necessary.
- 4. (Optional) Flush with isopropyl alcohol (free of ketones) or with methanol. This step is optional but should be considered when sampling in highly impacted media such as non-aqueous phase liquids or if equipment blanks from previous sampling events showed the potential for cross contamination of organics.
- 5. Rinse with distilled/deionized water.

Decontaminating Submersible Pumps

Submersible pumps may be used during well development, groundwater sampling, or other investigative activities. The pumps will be cleaned and flushed before and between uses. This cleaning process will consist of an external detergent solution wash and tap water rinse, a flush of detergent solution through the pump, followed

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by a flush of potable water through the pump. Flushing will be accomplished by using an appropriate container filled with detergent solution and another contained filled with potable water. The pump will run long enough to effectively flush the pump housing and hose (unless new, disposable hose is used). Caution should be exercised to avoid contact with the pump casing and water in the container while the pump is running (do not use metal drums or garbage cans) to avoid electric shock. Disconnect the pump from the power source before handling. The pump and hose should be placed on or in clean polyethylene sheeting to avoid contact with the ground surface.

VII. Waste Management

Equipment decontamination rinsate will be managed in conjunction with all other waste produced during the field sampling effort. Waste management procedures are outlined in the work plan or Waste Management Plan (WMP).

VIII. Data Recording and Management

Equipment cleaning and decontamination will be noted in the field notebook. Information will include the type of equipment cleaned, the decontamination location and any deviations from this SOP. Specific factors that should be noted include solvent used (if any), and source of water.

Any unusual field conditions should be noted if there is potential to impact the efficiency of the decontamination or subsequent sample collection.

An inventory of the solvents brought on site and used and removed from the site will be maintained in the files. Records will be maintained for any solvents used in decontamination, including lot number and expiration date.

Containers with decontamination fluids will be labeled.

IX. Quality Assurance

Equipment blanks should be collected to verify that the decontamination procedures are effective in minimizing potential for cross contamination. The equipment blank is prepared by pouring deionized water over the clean and dry tools and collecting the deionized water into appropriate sample containers. Equipment blanks should be analyzed for the same set of parameters that are performed on the field samples collected with the equipment that was cleaned. Equipment blanks are collected per equipment set, which represents all of the tools needed to collect a specific sample.

X. References

USEPA Region 9, Field Sampling Guidance #1230, Sampling Equipment Decontamination.

USEPA Region 1, Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells.



Monitoring Well Development

Rev. #: 2.2

Rev. Date: March 22, 2010

SOP: Monitoring Well Development Rev. #: 2.2 – Rev Date: March 22, 2010

Approval Signatures

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I. Scope and Application

ARCADIS

Monitoring wells (or piezometers, well points, or micro-wells) will be developed to clear them of fine-grained sediment to enhance the hydraulic connection between the well and the surrounding geologic formation. Development will be accomplished by evacuating well water by either pumping or bailing. Prior to pumping or bailing, the screened interval will be gently surged using a surge block, bailer, or inertia pump with optional surgeblock fitting as appropriate. Accumulated sediment in the bottom of the well (if present) will be removed by bailing with a bottom-loading bailer or via pumping using a submersible or inertia pump with optional surge-block fitting. Wells will also be gently brushed with a weighted brush to assist in removing loose debris, silt or flock attached to the inside of the well riser and/or screen prior to development. Pumping methods will be selected based on site-specific geologic conditions, anticipated well yield, water table depth, and groundwater monitoring objectives, and may include one or more of the following:

- submersible pump
- inertial pump (Waterra[™] pump or equivalent)
- bladder pump
- peristaltic pump
- centrifugal pump

When developing a well using the pumping method, the pump (or, with inertial pumps, the tubing) is lowered to the screened portion of the well. During purging, the pump or tubing is moved up and down the screened interval until the well yields relatively clear water.

Submersible pumps have a motor-driven impeller that pushes the groundwater through discharge tubing to the ground surface. Inertial pumps have a check valve at the bottom of stiff tubing which, when operated up and down, lifts water to the ground surface. Bladder pumps have a bottom check valve and a flexible internal bladder that fills from below and is then compressed using pressurized air to force water out the top of the bladder through the discharge tubing to the ground surface. These three types of pumps have a wide range of applicability in terms of well depth and water depth.

Centrifugal and peristaltic pumps use atmospheric pressure to lift water from the well, and therefore can only be practically used where the depth to water is less than 25 feet.

II. Personnel Qualifications

ARCADIS

Monitoring well development activities will be performed by persons who have been trained in proper well development procedures under the guidance of an experienced field geologist, engineer, or technician.

III. Equipment List

Materials for monitoring well development using a pump include the following:

- health and safety equipment, as required by the site Health and Safety Plan (HASP):
- cleaning equipment
- photoionization detector (PID) to measure headspace vapors
- pump
- polyethylene pump discharge tubing
- · plastic sheeting
- power source (generator or battery)
- field notebook and/or personal digital assistant (PDA)
- graduated pails
- appropriate containers

monitoring well keys

ARCADIS

• water level indicator

Materials for monitoring well development using a bailer include the following:

- personal protective equipment (PPE) as required by the HASP
- cleaning equipment
- PID to measure headspace vapors
- bottom-loading bailer, sand bailer
- polypropylene or nylon rope
- plastic sheeting
- · graduated pails
- appropriate containers
- keys to wells
- field notebook and/or PDA
- water level indicator
- · weighted brush for well brushing

IV. Cautions

ARCADIS

Where surging is performed to assist in removing fine-grained material from the sand pack, surging must be performed in a gentle manner. Excessive suction could promote fine-grained sediment entry into the outside of the sand pack from the formation.

Avoid using development fluids or materials that could impact groundwater or soil quality, or could be incompatible with the subsurface conditions.

In some cases it may be necessary to add potable water to a well to allow surging and development, especially for new monitoring wells installed in low permeability formations. Before adding potable water to a well, the Project Manager (PM) must be notified and the PM shall make the decision regarding the appropriateness and applicability of adding potable water to a well during well development procedures. If potable water is to be added to a well as part of development, the potable water source should be sampled and analyzed for constituents of concern, and the results evaluated by the PM prior to adding the potable water to the well. If potable water is added to a well for development purposes, at the end of development the well will be purged dry to remove the potable water, or if the well no longer goes dry then the well will be purged to remove at least three times the volume of potable water that was added.

V. Health and Safety Considerations

Field activities associated with monitoring well development will be performed in accordance with a site-specific HASP, a copy of which will be present on site during such activities.

VI. Procedure

The procedures for monitoring well development are described below. (Note: Steps 7, 8, and 10 can be performed at the same time using an inertial pump with a surge-block fitting.)

- 1. Don appropriate PPE (as required by the HASP).
- 2. Place plastic sheeting around the well.
- Clean all equipment entering each monitoring well, except for new, disposable materials that have not been previously used.

4. Open the well cover while standing upwind of the well, remove well cap. Insert PID probe approximately 4 to 6 inches into the casing or the well headspace and cover with gloved hand. Record the PID reading in the field notebook. If the well headspace reading is less than 5 PID units, proceed; if the headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the PID reading in the breathing zone is below 5 PID units, proceed. If the PID reading is above 5 PID units, move upwind from well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don the appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings.

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- Obtain an initial measurement of the depth to water and the total well depth from the
 reference point at the top of the well casing. Record these measurements in the field log
 book.
- 6. Prior to redeveloping older wells that may contain solid particulate debris along the inside of the well casing and screen, gently lower and raise a weighted brush along the entire length of the well screen and riser to free and assist in removing loose debris, silt or flock. Perform a minimum of 4 "passes" along the screened and cased intervals of the well below the static water level in the well. Allow the resulting suspended material to settle for a minimum of one day prior to continuing with redevelopment activities.
- Lower a surge block or bailer into the screened portion of the well. Gently raise and lower
 the surge block or bailer within the screened interval of the well to force water in and out
 of the screen slots and sand pack. Continue surging for 15 to 30 minutes.
- 8. Lower a bottom-loading bailer, submersible pump, or inertia pump tubing with check valve to the bottom of the well and gently bounce the bailer, pump, pump tubing on the bottom of the well to collect/remove accumulated sediment, if any. Remove and empty the bailer, if used. Repeat until the bailed/pumped water is free of excessive sediment and the bottom of the well feels solid. Alternatively, measurement of the well depth with a water level indicator can be used to verify that sediment and/or silt has been removed to the extent practicable, based on a comparison with the well installation log or previous measurement of total well depth.
- 9. After surging the well and removing excess accumulated sediment from the bottom of the well, re-measure the depth-to-water and the total well depth from the reference point at the top of the well casing. Record these measurements in the field log book.
- 10. Remove formation water by pumping or bailing. Where pumping is used, measure and record the pre-pumping water level. Operate the pump at a relatively constant rate. Measure the pumping rate using a calibrated container and stop watch, and record the pumping rate in the field log book. Measure and record the water level in the well at least

once every 5 minutes during pumping. Note any relevant observations in terms of water color, visual level of turbidity, sheen, odors, etc. Pump or bail until termination criteria specified in the Field Sampling Plan (FSP) are reached. Record the total volume of water purged from the well.

- 11. If the well goes dry, stop pumping or bailing. Note the time that the well went dry. After allowing the well to recover, note the time and depth to water. Resume pumping or bailing when sufficient water has recharged the well.
- 12. Contain all water in appropriate containers.
- 13. When complete, secure the lid back on the well.
- 14. Place disposable materials in plastic bags for appropriate disposal and decontaminate reusable, downhole pump components and/or bailer.

VII. Waste Management

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Materials generated during monitoring well installation and development will be placed in appropriate labeled containers and disposed of as described in the Work Plan or Field Sampling Plan.

VIII. Data Recording and Management

Well development activities will be documented in a proper field notebook and/or PDA. Pertinent information will include personnel present on site; times of arrival and departure; significant weather conditions; timing of well development activities; development method(s); observations of purge water color, turbidity, odor, sheen, etc.; purge rate; and water levels before and during pumping.

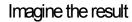
IX. Quality Assurance

All reused, non-disposable, downhole well development equipment will be cleaned in accordance with the procedures outlined in the Field Equipment Cleaning-Decontamination SOP.



X. References

Not applicable.





Standard Groundwater Sampling for Monitoring Wells

Rev. #: 1

Rev Date: July 16, 2008

SOP: Standard Groundwater Sampling for Monitoring Wells

Rev. #: 1 | Rev Date: July 16, 2008

Approval Signatures

Prepared by: Songe a Cadle	Date: <u>7/16/08</u>
Reviewed by: (Technical Expert)	Date: 7/16/08

I. Scope and Application

This Standard Operating Procedure (SOP) describes the procedures to be used to collect groundwater samples using traditional purging and sampling techniques. For low-flow purging techniques, please refer to the Low Flow Purging SOP. Monitoring wells must be developed after installation at least 1 week prior to groundwater sample collection. Monitoring wells will not be sampled until the well has been developed. During precipitation events, groundwater sampling will be discontinued until precipitation ceases or a cover has been erected over the sampling area and monitoring well.

Both filtered and unfiltered groundwater samples may be collected using this SOP. Filtered samples may be obtained using a 1.0-, 0.45-, or 0.1-micron disposable filter.

II. Personnel Qualifications

ARCADIS personnel directing, supervising, or leading groundwater sample collection activities should have a minimum of 2 years of previous groundwater sampling experience. Field employees with less than 6 months of experience should be accompanied by a supervisor (as described above) to ensure that proper sample collection techniques are employed.

III. Equipment List

The following materials shall be available, as required, during groundwater sampling:

- site plan of monitoring well locations and site Field Sampling Plan (FSP);
- appropriate health and safety equipment, as specified in the site Health and Safety Plan (HASP);
- photoionization detector (PID) or flame ionization detector (FID), as needed, in accordance with the HASP;
- monitoring well construction logs or tables and historical water level information, if available;
- dedicated plastic sheeting or other clean surface to prevent sample contact with the ground;
- if bailers are to be used in sampling:

- Rev. #: 1 | Rev Date: July 16, 2008
- appropriate dedicated bottom-loading, bottom-emptying bailers (i.e., polyvinyl chloride [PVC], Teflon, or stainless steel);
- o polypropylene rope;
- if submersible pumps are to be used in sampling:
 - o dedicated tubing and other equipment necessary for purging;
 - generator or battery for operation of pumps, if required;
 - a pump selected in accordance with the FSP or Work Plan (parameter-specific [e.g., submersible, bladder, peristaltic]);
- graduated buckets to measure purge water;
- water-level or oil/water interface probe, in accordance with the FSP or Work Plan;
- conductivity/temperature/pH meter;
- down-hole dissolved oxygen meter, oxidation reduction potential meter, and/or turbidity meter, if specified in the FSP;
- water sample containers appropriate for the analytical method(s) with preservative, as needed (parameter-specific);
- filter, as needed, in accordance with the analytical method and parameter;
- appropriate blanks (trip blank supplied by the laboratory), as specified in the FSP;
- Ziploc-type freezer bags for use as ice containers;
- appropriate transport containers (coolers) with ice and appropriate labeling, packing, and shipping materials;
- appropriate groundwater sampling log (example attached);
- chain-of-custody forms;
- site map with well locations and groundwater contour maps;

- keys to wells and contingent bolt cutters for rusted locks and replacement keyedalike locks; and
- drums or other containers for purge water, as specified by the site investigation derived waste (IDW) management plan.

IV. Cautions

If heavy precipitation occurs and no cover over the sampling area and monitoring well can be erected, sampling must be discontinued until adequate cover is provided. Rain water could contaminate groundwater samples.

Remember that field logs and some forms are considered to be legal documents. All field logs and forms should therefore be filled out in indelible ink.

It may be necessary to field filter some parameters (e.g., metals) prior to collection, depending on preservation, analytical method, and project quality objectives.

Check monitoring well logs for use of bentonite pellets. Make note of potential use of bentonite pellets on the groundwater sampling log. Coated bentonite pellets have been found to contaminate monitoring wells with elevated levels of acetone.

Store and/or stage empty and full sample containers and coolers out of direct sunlight.

To mitigate potential cross-contamination, groundwater samples are to be collected in a pre-determined order from least impacted to more impacted based on previous analytical data. If no analytical data are available, samples are to be collected in the following order:

- 1. First sample the upgradient well(s).
- Next, sample the well located furthest downgradient of the interpreted or known source.
- The remaining wells should be progressively sampled in order from downgradient to upgradient, such that the wells closest to the interpreted or known source are sampled last.

Be careful not to over-tighten lids with Teflon liners or septa (e.g., 40 mL vials). Over-tightening can impair the integrity of the seal.

V. Health and Safety Considerations

If thunder or lighting is present, discontinue sampling until 30 minutes have passed after the last occurrence of thunder or lighting.

VI. Procedure

The procedures to sample monitoring wells will be as follows:

- Don safety equipment, as required in the HASP. Depending on site-specific security and safety considerations, this often must be done prior to entering the work area.
- 2. Review equipment list (Section III above) to confirm that the appropriate equipment has been acquired.
- 3. Record site and monitoring well identification on the groundwater sampling log, along with date, arrival time, and weather conditions. Also identify the personnel present, equipment utilized, and other relevant data requested on the log.
- 4. Label all sample containers with indelible ink.
- 5. Place plastic sheeting adjacent to the well for use as a clean work area, if conditions allow. Otherwise, prevent sampling equipment from contacting the ground or other surface that could compromise sample integrity.
- Remove lock from well and if rusted or broken, replace with a new brass keyedalike lock.
- 7. Unlock and open the well cover while standing upwind of the well. Remove well cap and place on the plastic sheeting.
- 8. Set the sampling device, meters, and other sampling equipment on the plastic sheeting. If a dedicated sampling device stored in the well is to be used, this may also be set temporarily on the plastic sheeting, for convenience. However, if a dedicated sampling device is stored below the water table, removing it may compromise water-level data, so water level measurements should be taken prior to removing the device.
- Obtain a water-level depth and bottom-of-well depth using an electric well probe and record on the groundwater sampling log using indelible ink. Clean the probe(s) after each use in accord with the FSP or the equipment

SOP: Standard Groundwater Sampling for Monitoring Wells Rev. #: 1 | Rev Date: July 16, 2008

decontamination SOP.

Note: Water levels may be measured at all wells prior to initiating any sampling activities, depending on FSP requirements.

- Calculate the number of gallons of water in the well using the length of water column (in feet). Record the well volume on the groundwater sampling log using indelible ink.
- 11. Remove the required purge volume of water from the well (measure purge water volume in measuring buckets). The required purge volume will be three to five well volumes (the water column in the well screen and casing) unless the well runs dry, in which case, the water that comes into the well will be sampled (USEPA, 1996). In any case, the pumping rate will be decreased during sampling to limit the potential for volatilization of organics potentially present in the groundwater.
- 12. Field parameter measurements will be periodically collected in accord with FSP specifications. The typical time intervals of field parameter measurement are (1) after each well volume removed, and (2) before sampling. If the field parameters are being measured above-ground (rather than with a downhole probe), then the final pre-sampling parameter measurement should be collected at the reduced flow rate to be used during sampling. The physical appearance of the purged water should be noted on the groundwater sampling log. In addition, water level measurements should be collected and recorded to verify that the well purging is in accord with the guidelines set forth in the previous step.
- 13. Unless otherwise specified by the applicable regulatory agencies, all purge water will be contained. Contained purge water will be managed in accordance with the FSP or Work Plan. If historical concentrations in the well are less than federal or state regulated concentrations appropriate for current land use, and permission has been granted by the oversight regulatory agency to dispose of clean purge water on the ground next to the well(s), then purge water will be allowed to infiltrate into the ground surface downgradient from the monitoring well after the well is sampled.
- 14. After the appropriate purge volume of groundwater in the well has been removed, or if the well has been bailed dry and allowed to recover, obtain the groundwater sample needed for analysis with the dedicated bailer or from the dedicated sampling tubing, pour the groundwater directly from the sampling device into the appropriate container in the order of volatilization sensitivity of

the parameters sampled, and tightly screw on the cap (snug, but not too tight).

The suggested order for sample parameter collection, based on volatilization

a. volatile organic compounds (VOCs);

sensitivity, is presented below:

- b. semi-volatile organic compounds (SVOCs);
- c. polychlorinated biphenyls (PCBs)/pesticides;
- d. metals; and
- e. wet chemistry.
- 15. When sampling for volatiles, water samples will be collected directly from the bailer or dedicated tubing into 40 mL vials with Teflon-lined septa.
- 16. For other analytical samples, sample containers for each analyte type should be filled in the order specified by the FSP. If a bailer is used, then the sample for dissolved metals and/or filtered PCBs should either be placed directly from the bailer into a pressure filter apparatus or pumped directly from the bailer with a peristaltic pump, through an in-line filter, into the pre-preserved sample bottle. If dedicated sample tubing is used, then the filter should be installed in-line just prior to filtered sample collection.
- 17. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Sample filtration for the filtered sample will be performed in the field utilizing a pump prior to preservation. Attach (clamp) a new 1.0-, 0.45-, or 0.1-micron filter to the discharge tubing of the pump (note the filter flow direction). Turn the pump on and allow 100 mL (or manufacturer recommended amount) of fluid through the filter before sample collection. Dispense the filtered liquid directly into the laboratory sample bottles. If bailers are used for purging and sampling, a proper volume of purge water will be placed in a disposable or decontaminated polyethylene container and pumped through the filter and into the sample container using a peristaltic pump.
- 18. Place the custody seal around the cap and the sampler container, if required. Note the time on the sample label. Secure with packing material and maintain at approximately 4°C on wet ice contained in double Ziploc-type freezer bags during storage in an insulated, durable transport container.
- 19. Replace the well cap and lock well, or install a new lock if needed.

- 20. Record the time sampling procedures were completed on the appropriate field logs (using indelible ink).
- 21. Complete the procedures for chain-of-custody, handling, packing, and shipping. Chain-of-custody forms should be filled out and checked against the labels on the sample containers progressively after each sample is collected.
- 22. Place all disposable sampling materials (such as plastic sheeting, disposable tubing or bailers, and health and safety equipment) in appropriate containers.
- 23. If new locks were installed, forward copies of the keys to the client Project Manager (PM) and ARCADIS PM at the end of the sampling activities.

VII. Waste Management

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Purge water will be managed as specified in the FSP or Work Plan, and according to state and/or federal requirements. Personal protective equipment (PPE) and decontaminated fluids will be contained separately and staged at the sampling location. Containers must be labeled at the time of collection. Labels will include date, location(s), site name, city, state, and description of matrix contained (e.g., soil, groundwater, PPE). General guidelines for IDW management are set forth in a separate IDW management SOP.

VIII. Data Recording and Management

Initial field logs and chain-of-custody records will be transmitted to the ARCADIS PM at the end of each day unless otherwise directed by the PM. The groundwater team leader retains copies of the groundwater sampling logs. All field data should be recorded in indelible ink.

IX. Quality Assurance

Field-derived quality assurance blanks will be collected as specified in the FSP, depending on the project quality objectives. Typically, field rinse blanks will be collected when non-dedicated equipment is used during groundwater sampling. Field rinse blanks will be used to confirm that decontamination procedures are sufficient and samples are representative of site conditions. Trip blanks for VOCs, which aid in the detection of contaminates from other media, sources, or the container itself, will be kept with the coolers and the sample containers throughout the sampling activities.



X. References

USEPA. 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September 1986).

USEPA. 1991. Handbook Groundwater, Volume ii Methodology, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July, 1991).

U.S. Geological Survey (USGS). 1977. National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination. Reston, Virginia.



Appendix ${\bf D}$

Boring Logs for MP-1, MPE-1/PZ-1, and VE-3 $\,$

Drilling Method: Hollow Stem Auger (HSA)

Auger Size: 6-inches OD Rig Type: MARL M-10 Sampling Method: Core Barrel OVA Equipment: Micro FID Latitude: Longitude:

Casing Elevation: N/A

Borehole Depth: 30 ft bgs

Surface Elevation:

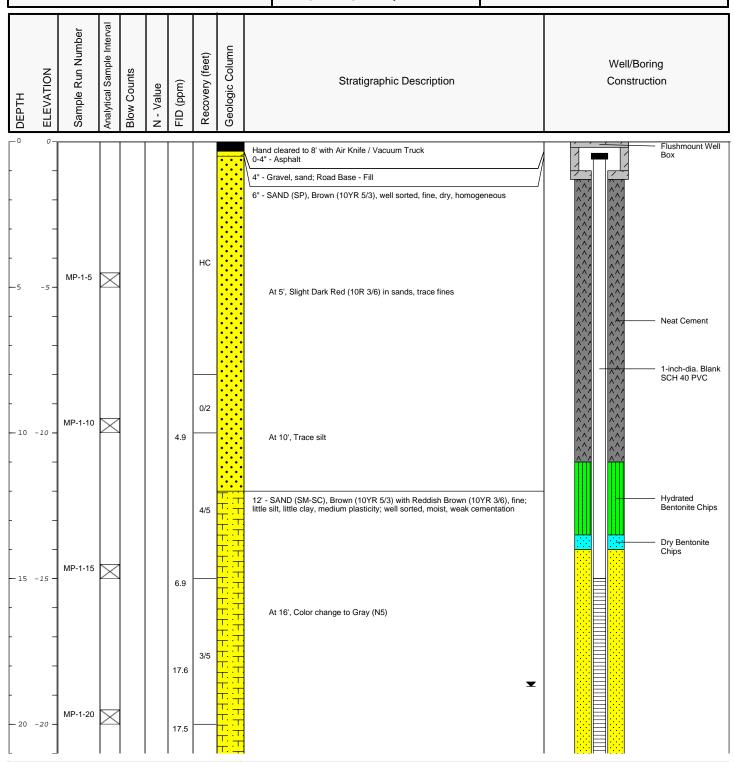
Descriptions By: Jamey Peterson

Well/Boring ID: MP-1

Client: Chevron Faciliity #351646

Location: 800 Harrison St.

Oakland, CA





Remarks: Abbreviations: ft bgs = feet below ground surface, PID = photoionization detectora; ppm = parts per million

Drilling Method: Hollow Stem Auger (HSA)

Auger Size: 6-inches OD Rig Type: MARL M-10 Sampling Method: Core Barrel **OVA Equipment: Micro FID**

Latitude: Longitude:

Casing Elevation: N/A

Borehole Depth: 30 ft bgs **Surface Elevation:**

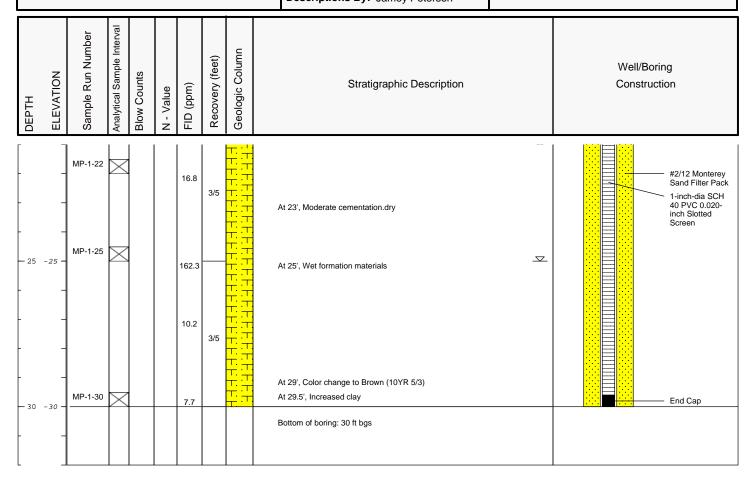
Descriptions By: Jamey Peterson

Well/Boring ID: MP-1

Client: Chevron Faciliity #351646

Location: 800 Harrison St.

Oakland, CA





Remarks: Abbreviations: ft bgs = feet below ground surface, PID = photoionization detectora; ppm = parts per million

Drilling Method: Hollow Stem Auger (HSA)

Auger Size: 12-inches OD Rig Type: MARL M-10 Sampling Method: Core Barrel OVA Equipment: Micro FID Latitude: Longitude:

Casing Elevation: N/A

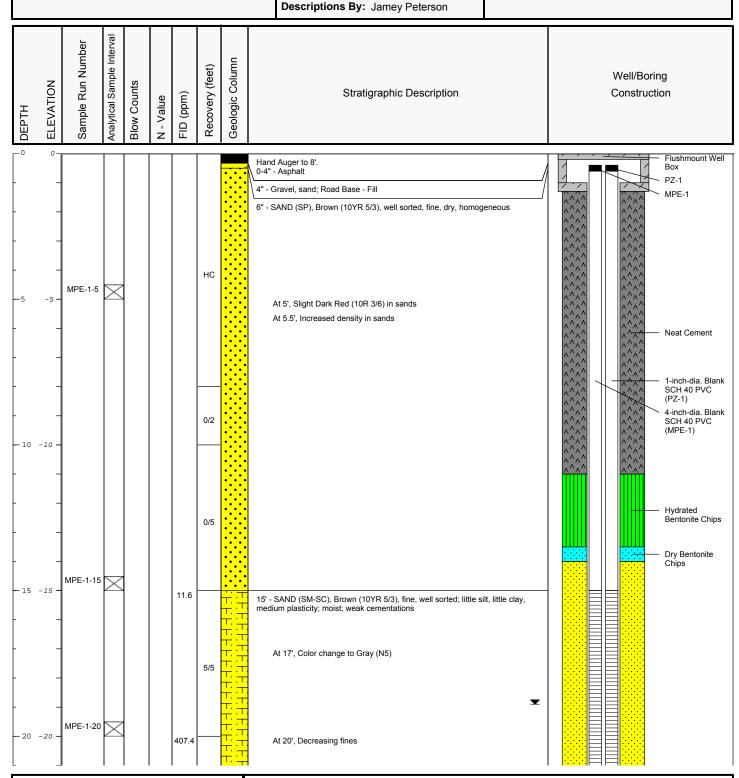
Borehole Depth: 40 ft bgs **Surface Elevation:**

Well/Boring ID: MPE-1 / PZ-1

Client: Chevron Faciliity #351646

Location: 800 Harrison St.

Oakland, CA





Remarks: Abbreviations: ft bgs = feet below ground surface, PID = photoionization detectora; ppm = parts per million

Drilling Method: Hollow Stem Auger (HSA)

Auger Size: 12-inches OD Rig Type: MARL M-10 Sampling Method: Core Barrel **OVA Equipment: Micro FID**

Latitude: Longitude:

Casing Elevation: N/A

Borehole Depth: 40 ft bgs **Surface Elevation:**

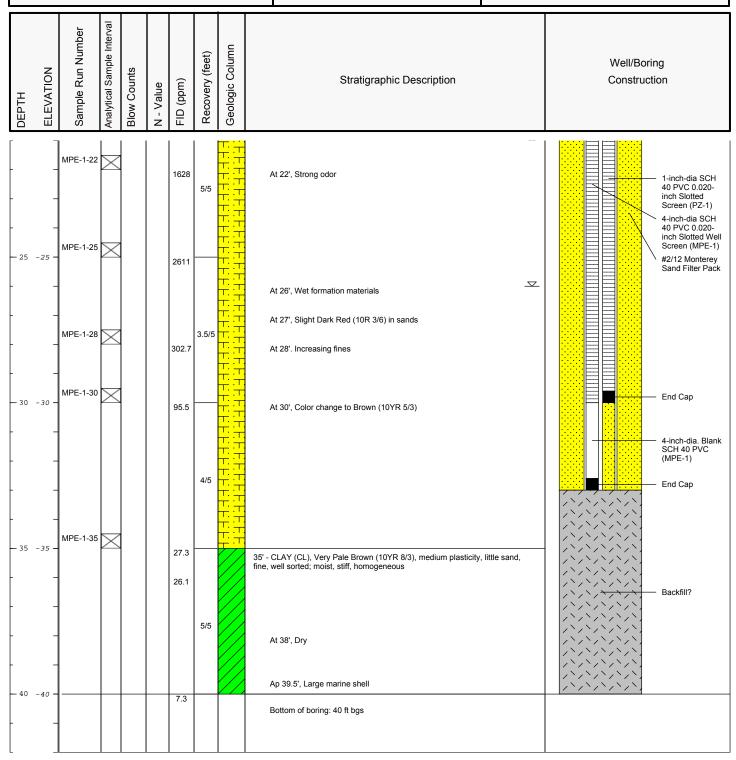
Descriptions By: Jamey Peterson

Well/Boring ID: MPE-1 / PZ-1

Client: Chevron Faciliity #351646

Location: 800 Harrison St.

Oakland, CA





Remarks: Abbreviations: ft bgs = feet below ground surface, PID = photoionization detectora; ppm = parts per million

Date Start/Finish: 6/19/2013 **Drilling Company:** Greg Drilling Driller's Name: Eric Santellan Drilling Method: HSA/Direct Push Auger Size: 8-inches OD

Rig Type: MARL M-10 Sampling Method: Acetate Liner **OVA Equipment: Micro FID**

Latitude: Longitude:

Casing Elevation: N/A

Borehole Depth: 16 ft bgs

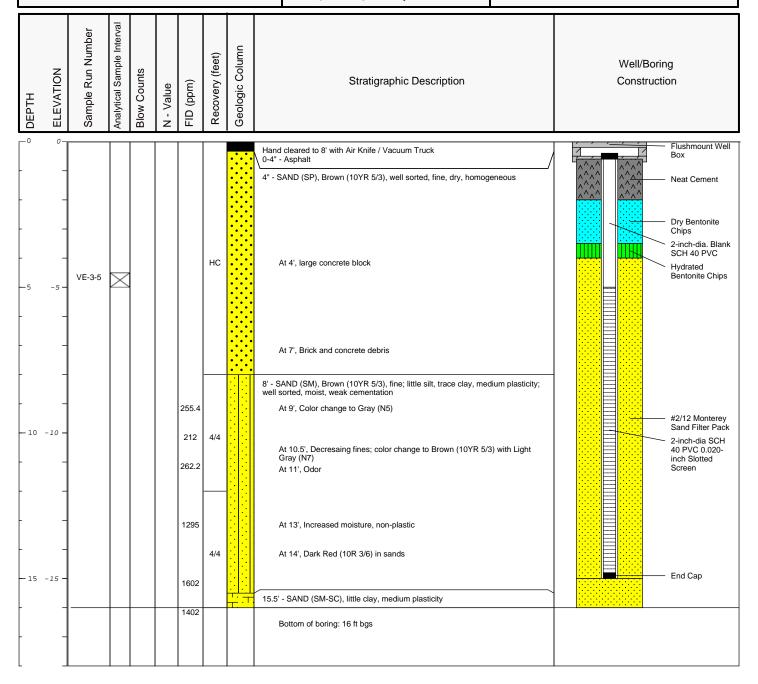
Surface Elevation:

Descriptions By: Jamey Peterson

Well/Boring ID: VE-3

Client: Chevron Faciliity #351646

Location: 800 Harrison St. Oakland, CA





Remarks: Abbreviations: HSA = Hollow Stem Auger; ft bgs = feet below ground surface, PID = photoionization detectora; ppm = parts per million



Appendix **E**

Analytical Laboratory Reports



Date of Report: 07/05/2013

Kathy Brandt

Arcadis 1900 Powell Street 12th Floor Emeryville, CA 94608

0752 Project: 1313099 BC Work Order: B149776 Invoice ID:

Enclosed are the results of analyses for samples received by the laboratory on 6/21/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers

molly muyers

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



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Laboratories, Inc.

Chain of Custody and Cooler Receipt Form for 1313099 Environmental Testing Laboratory Since 1949

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Received for Lal	by: (Signature and Printed)	Name)		Date	Time	Payment	Received at Delivery:	Clieck/C	ash/Corr] d PJ,	N#		lnit,	
Shipping Me		WALK-IN S	IVC FED EX OTHE		Cooling Me		ET BLUE NONE	Pacl	ing M	aterial:				

Page 3 of 32

Page 4 of 32	

Client/	d Fields Company !	Vame *;			Report Attention :	-1		Phone * #:510	TEMP:	(h.	· ·	of Cu	LULU.	~y
Che	vron c/	o ARC	ADIS U	.S., Inc.	Katherine	Brandt			יים אים אים אים אים אים אים אים אים אים		A	NALVS	SIS REQUI	ECTED	minute par
Addres				City *	State *		Zip *	E-man;	Carbon Copies:	+	Τ.		T T		
	2000 Powell Street #700 Emeryville, CA 94608 CDHS Fresno Co EPA Project Information:										(B)				
	Chevron Facility No. 351646_Oakland BCL Quote #								Merced Co Tulore Co Other:	•	326(EDC (8260B)			
How w	How would you like your completed results sent? E-Mail Fax EDD Mail Only							Regulatory Compliance	- 윤	(B)	826				
Sampler Name Printed / Signature				QC Request	Result Rec	pest ** Sur	charge	Electronic Data Transfer: Y N N System No. *	126(18	ပွဲ				
					STD 1 Level [t ✓std 📑	Day** □ 2	Day** 🔲 l Day*	•	18	≥				
Matrix	Types:	RSW = Rr RGW = R	aw Surface '		Clorinated Finished Water nished Water WW =	er CWW = Chr	rinnted Wn	ste Water BW	= Bottled Water Drinking Water SO = Solid	TPPH (8260B)	BTEX, MTBE (8260B)	EDB,			
Sample #	# Bottles	Snn	npled		ption / Location *	waste water 3	w – storm	Matrix A	Comments / Station Code		<u> </u>	Ш		Minus Statistics	alesinsas:
<u> 12</u>	Dollar	Date 4/20/13	Time	40	<u> Albijdaerjūr</u> -										
-13			13:10	MP-1-19				50	1. Please send log-ins and results to ema		X				
14			13.20					50	above and katte.wynne@arcadis-us.com and Tyler.Sale@arcadis-us.com.						-
-15				MP-(-3)				50	i yier.saia@arcadis-us.com.	A	ベ	4	- -	<u> </u>	4
16		6/20/19	19000	May -1	W/4 22 LE			50	.,	火火	X	× -	+		1 -
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r.			١	. 0	Company	CANIS	Date 1	Time 17:00	Received by (Signature and Print Name)			Company	1/	6	121/
Relingaist	ed by: (Si	enature and	ノ <u>り</u> ME Printed Na	1.000	Company	<u> </u>	Date	Time	11/a/c			BL	1905	<u> </u>	104
-	• • •				Campany		Date	111111111111111111111111111111111111111	Received by (Manature and Print Name)			Company			•
Received t	or Lab by:	(Signature	and Printed	Name)			Date	Time	Payment Received at Delivery:	sede farle		- ALLEYus	disansii si si	Saras	esepunit vila
									Date: Amounit	al 175					
Shipping	Method	l:	the second					Cooling Me	The state of the s	Check/Cr Pack	ing Ma	Anna Chara		In	it,



Chain of Custody and Cooler Receipt Form for 1313099 Page 3 of 4

BC LABORATORIES INC.		COOLE	R RECEI	PT FORM	F	lev. No. 13	08/17/	12 Pag	e Of	——
Submission #: 13-13099								·		
SHIPPING INFOR Federal Express V UPS 🗆 BC Lab Field Service 🗆 Other D	Hand Delivery □ Ice Chest None □							e 🗆	cify)	
Refrigerant: Ice Blue Ice [] None	□ 0	ther 🗆	Comme	nts:					
Custody Seals Ice Chest C	Containe		None [Comm	ents:		4.			
All samples received? Yes 🗗 No 🗆	All samples	containers	intact? Ye	s No C	I	Description	on(s) matcl	COC? Ye	sot No E]
COC Received Er	nissivity:0	95	ontainer: \	JOPA	Thermome	ter ID: 20	57 	Date/Time	, , ,	3
MYES □ NO	Temperature	(A)_	2-Q	_°C / [c <u>1</u> 2.	5_	°C	Analyst in		1045
DANIEL E CONTAINERS					SAMPLE N	UMBERS				
SAMPLE CONTAINERS	1 1	2	3	4	5	6	7	8	9	10
OT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS	1 -									
T INORGANIC CHEMICAL METALS	 									
PT CYANIDE	1					: <u>-</u>				
PT NITROGEN FORMS	1						-			
T TOTAL SULFIDE	1									
loz. NITRATE / NITRITE	1									
T TOTAL ORGANIC CARBON	 -									-
PT TOX	-									
PT CHEMICAL OXYGEN DEMAND	+ -									
PLA PHENOLICS	1									
40ml VOA VIAL TRAVEL BLANK	1		t 1	1	ι 1		()	1 1		1
40ml VOA VIAL	1 '					······				
OT EPA 413.1, 413.2, 418.1	-									
PT ODOR	+ -					·			•	
RADIOLOGICAL										
BACTERIOLOGICAL			_				-			
40 ml VOA VIAL-504	+	_								
QT EPA 508/608/8080	 						<u> </u>			
QT EPA 515.1/8150	 									
OT EDA 222 TRANEL DI ANT	1									
OT EPA 525 TRAVEL BLANK	-			 					ĺ	
100ml EPA 547	1									_
100mi EPA 531.1	 	·				-			,	
OT EPA 548										
OT EPA 549	+ -							T		
OT EDA 9015M	1									
QT EPA 8015M QT AMBER	1									
8 OZ. JAR	1.									
32 OZ. JAR	1 -			1 -	-		_			
SOIL SLEEVE				-						
PCB VIAL										
PLASTIC BAG										
FERROUS IRON				1 <u>-</u>]			
ENCORE				<u> </u>		<u> </u>				1
SMART KIT	ALY)	AL4)	ALY)	A(4)	A(4)	f)(4)	A(4)	BL4)	m(4)	BL4)
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Chain of Custody and Cooler Receipt Form for 1313099 Page 4 of 4 Of **COOLER RECEIPT FORM** 08/17/12 Page BC LABORATORIES INC. Rev. No. 13 Submission #: 13-13099 SHIPPING CONTAINER SHIPPING INFORMATION Federal Express 😿 UPS 🗆 Hand Delivery □ Ice Chest None 🗆 BC Lab Field Service Other (Specify) Other [] (Specify)_ Blue Ice □ None 🗆 Other 🗆 Ice E Comments: Refrigerant: Custody Seals | Ice Chest 🗘 Containers 🗆 None
Comments: Intact? Yes 🗆 No 🗖 Intact? Yes N No 🗆 All samples containers intact? Yes A No 🗆 Description(s) match COC? Yes ♥ No □ All samples received? Yes & No 🗆 Container: VOA Thermometer ID: 207 **COC** Received 2-6 0 11012.5 YES SAMPLE NUMBERS SAMPLE CONTAINERS OT GENERAL MINERAL! GENERAL PHYSICAL PT PE UNPRESERVED OT INORGANIC CHEMICAL METALS PT INORGANIC CHEMICAL METALS PT CYANIDE PT NITROGEN FORMS PT TOTAL SULFIDE 20z. NITRATE / NITRITE PT TOTAL ORGANIC CARBON PT TOX PT CHEMICAL OXYGEN DEMAND PLA PHENOLICS 40ml VOA VIAL TRAVEL BLANK 40ml VOA VIAL QT EPA 413.1, 413.2, 418.1 PT ODOR RADIOLOGICAL BACTERIOLOGICAL 40 ml VOA VIAL- 504 OT EPA 508/608/8080 QT EPA 515.1/8150 QT EPA 525 QT EPA 525 TRAVEL BLANK 100ml EPA 547 100ml EPA 531.1 QT EPA 548 QT EPA 549 **QT** ÈPA 632 **QT EPA 8015M** QT AMBER B OZ. JAR 32 OZ. JAR SOIL SLEEVE PCB VIAL PLASTIC BAG FERROUS IRON ENCORE AL4) AL4) ALY) SMART KIT Comments: Sample Numbering-Completed By: A = Actual / C = Corrected Date/Time: (0/24/13 @1640 KIO IS-IMUDDICS/WardParlact\(AB DOCS\FORMS\SAMRECR13\)

1900 Powell Street 12th Floor Emeryville, CA 94608

Reported: 07/05/2013 15:10

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1313099-01 COC Number:

> **Project Number:** 0752 Sampling Location:

Sampling Point: VE-3-5-S-130619

Sampled By:

AREC

06/21/2013 10:45 Receive Date: Sampling Date: 06/19/2013 10:00

Sample Depth: Lab Matrix: Solids Soil Sample Type:

Delivery Work Order:

Global ID:

Location ID (FieldPoint): VE-3

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-02 **COC Number:**

> **Project Number:** 0752 Sampling Location:

MPE-1-5-S-130619 Sampling Point:

AREC Sampled By:

06/21/2013 10:45 Receive Date: 06/19/2013 12:40 Sampling Date:

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-03 COC Number:

> 0752 **Project Number:** Sampling Location:

MP-1-5-S-130619 Sampling Point:

AREC Sampled By:

Receive Date: 06/21/2013 10:45

06/19/2013 14:20 Sampling Date: Sample Depth:

Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MP-1

Matrix: SO

Sample QC Type (SACode): CS

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1313099-04 COC Number:

Project Number: 0752 Sampling Location: ---

Sampling Point: MPE-1-15-S-130620

Sampled By: AREC

Receive Date: 06/21/2013 10:45 **Sampling Date:** 06/20/2013 08:15

Sample Depth: --Lab Matrix: Solids
Sample Type: Soil

Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-05 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: MPE-1-20-S-130620

Sampled By: AREC

Receive Date: 06/21/2013 10:45 **Sampling Date:** 06/20/2013 08:20

Sample Depth: --Lab Matrix: Solids
Sample Type: Soil
Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-06 COC Number: --

Project Number: 0752 Sampling Location: ---

Sampling Point: MPE-1-25-S-130620

Sampled By: AREC

Receive Date: 06/21/2013 10:45

Sampling Date: 06/20/2013 08:25

Sample Depth: --Lab Matrix: Solids
Sample Type: Soil
Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

1900 Powell Street 12th Floor Emeryville, CA 94608

Reported: 07/05/2013 15:10

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1313099-07 **COC Number:**

> **Project Number:** 0752 Sampling Location:

Sampling Point: MPE-1-22-S-130620

Sampled By:

AREC

AREC

06/21/2013 10:45 Receive Date: Sampling Date: 06/20/2013 08:30

Sample Depth: Lab Matrix: Solids Soil Sample Type:

Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-08 **COC Number:**

> **Project Number:** 0752

Sampling Location: MPE-1-30-S-130620 Sampling Point:

Sampled By:

Receive Date:

06/21/2013 10:45

Sampling Date:

06/20/2013 08:40

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-09 COC Number:

> 0752 **Project Number:** Sampling Location:

MPE-1-35-S-130620 Sampling Point:

AREC Sampled By:

Receive Date:

06/21/2013 10:45

Sampling Date:

06/20/2013 08:50

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

1900 Powell Street 12th Floor Emeryville, CA 94608

Reported: 07/05/2013 15:10

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1313099-10 **COC Number:**

> **Project Number:** 0752 Sampling Location:

Sampling Point: MPE-1-28-S-130620

Sampled By:

AREC

06/21/2013 10:45 Receive Date: Sampling Date: 06/20/2013 09:05

Sample Depth: Lab Matrix: Solids Soil Sample Type:

Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-11 **COC Number:**

> **Project Number:** 0752 Sampling Location:

MP-1-10-S-130620 Sampling Point:

Sampled By:

AREC

06/21/2013 10:45 Receive Date: 06/20/2013 12:55 Sampling Date:

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MP-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

Sampling Date:

1313099-12 COC Number:

0752 **Project Number:** Sampling Location:

MP-1-15-S-130620 Sampling Point:

AREC Sampled By:

Receive Date: 06/21/2013 10:45 06/20/2013 13:00

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MP-1

Matrix: SO

Sample QC Type (SACode): CS

Arcadis Reported: 07/05/2013 15:10

1900 Powell Street 12th Floor Project: 0752 Emeryville, CA 94608 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1313099-13 **COC Number:**

> **Project Number:** 0752 Sampling Location:

Sampling Point: MP-1-20-S-130620

Sampled By:

AREC

06/21/2013 10:45 Receive Date: Sampling Date: 06/20/2013 13:10

Sample Depth: Lab Matrix: Solids Soil Sample Type:

Delivery Work Order:

Global ID:

Location ID (FieldPoint): MP-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-14 **COC Number:**

> **Project Number:** 0752

Sampling Location: Sampling Point:

Sampled By:

MP-1-25-S-130620

AREC

06/21/2013 10:45 Receive Date: 06/20/2013 13:20 Sampling Date:

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MP-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313099-15 COC Number:

> 0752 **Project Number:** Sampling Location:

MP-1-30-S-130620 Sampling Point:

AREC Sampled By:

Receive Date:

06/21/2013 10:45

Sampling Date:

06/20/2013 13:35

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MP-1

Matrix: SO

Sample QC Type (SACode): CS

Arcadis Reported: 07/05/2013 15:10

1900 Powell Street 12th FloorProject: 0752Emeryville, CA 94608Project Number: 351646Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1313099-16 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: MP-1-22-S-130620

Sampled By: AREC

Receive Date: 06/21/2013 10:45 **Sampling Date:** 06/20/2013 14:00

Sample Depth: --Lab Matrix: Solids
Sample Type: Soil

Delivery Work Order: Global ID:

Location ID (FieldPoint): MP-1

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

Arcadis Reported: 07/05/2013 15:10

1900 Powell Street 12th FloorProject: 0752Emeryville, CA 94608Project Number: 351646Project Manager: Kathy Brandt

BCL Sample ID : 1313099-01	Client Sampl	e Name:	0752, VE-3-5-S-130	0619, 6/19/2013 1	0:00:00AM	:00:00AM				
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #			
Benzene	ND	mg/kg	0.0044	EPA-8260B	ND		1			
1,2-Dibromoethane	ND	mg/kg	0.0044	EPA-8260B	ND		1			
1,2-Dichloroethane	ND	mg/kg	0.0044	EPA-8260B	ND		1			
Ethylbenzene	ND	mg/kg	0.0044	EPA-8260B	ND		1			
Methyl t-butyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1			
Toluene	ND	mg/kg	0.0044	EPA-8260B	ND		1			
Total Xylenes	ND	mg/kg	0.0088	EPA-8260B	ND		1			
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.18	Luft-GC/MS	ND		1			
1,2-Dichloroethane-d4 (Surrogate)	108	%	70 - 121 (LCL - UCL)	EPA-8260B			1			
Toluene-d8 (Surrogate)	98.4	%	81 - 117 (LCL - UCL)	EPA-8260B			1			
4-Bromofluorobenzene (Surrogate)	98.3	%	74 - 121 (LCL - UCL)	EPA-8260B			1			

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 12:25	ADC	MS-V2	0.880	BWF1413	

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 131309	99-02	Client Samp	le Name:	0752, MPE-1-5-S-1	30619, 6/19/2013	12:40:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene		ND	mg/kg	0.0040	EPA-8260B	ND		1
1,2-Dibromoethane		ND	mg/kg	0.0040	EPA-8260B	ND		1
1,2-Dichloroethane		ND	mg/kg	0.0040	EPA-8260B	ND		1
Ethylbenzene		ND	mg/kg	0.0040	EPA-8260B	ND		1
Methyl t-butyl ether		ND	mg/kg	0.0040	EPA-8260B	ND		1
Toluene		ND	mg/kg	0.0040	EPA-8260B	ND		1
Total Xylenes		ND	mg/kg	0.0080	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons		ND	mg/kg	0.16	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)		101	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		97.5	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	102	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run			QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 12:51	ADC	MS-V2	0.800	BWF1413	

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-03	Client Sample	e Name:	0752, MP-1-5-S-130	0619, 6/19/2013	2:20:00PM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene	ND	mg/kg	0.0040	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0040	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0040	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0040	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0040	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0080	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.16	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	102	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	90.0	%	74 - 121 (LCL - UCL)	EPA-8260B			1

				Run				QC	
Ru	ın #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
	1	EPA-8260B	06/25/13	06/25/13 13:17	ADC	MS-V2	0.800	BWF1413	

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-04	Client Sample	e Name:	0752, MPE-1-15-S-	130620, 6/20/201	3 8:15:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0036	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0036	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0036	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0036	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0036	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0036	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0071	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.14	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	109	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	99.9	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	104	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run			QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8260B	06/25/13	06/25/13 13:43	ADC	MS-V2	0.710	BWF1413			

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313	099-05	Client Sample	e Name:	0752, MPE-1-20-S-	130620, 6/20/2013	3 8:20:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	mg/kg	0.0038	EPA-8260B	ND		1
1,2-Dibromoethane		ND	mg/kg	0.0038	EPA-8260B	ND		1
1,2-Dichloroethane		ND	mg/kg	0.0038	EPA-8260B	ND		1
Ethylbenzene		ND	mg/kg	0.0038	EPA-8260B	ND		1
Methyl t-butyl ether		0.0072	mg/kg	0.0038	EPA-8260B	ND		1
Toluene		ND	mg/kg	0.0038	EPA-8260B	ND		1
Total Xylenes		ND	mg/kg	0.0076	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons		0.40	mg/kg	0.15	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogat	e)	107	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		102	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surroga	te)	106	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 14:09	ADC	MS-V2	0.760	BWF1413	

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Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 13	13099-06	Client Sampl	e Name:	0752, MPE-1-25-S-	130620, 6/20/201	3 8:25:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		0.087	mg/kg	0.0038	EPA-8260B	ND		1
1,2-Dibromoethane		ND	mg/kg	0.0038	EPA-8260B	ND		1
1,2-Dichloroethane		ND	mg/kg	0.0038	EPA-8260B	ND		1
Ethylbenzene		0.029	mg/kg	0.0038	EPA-8260B	ND		1
Methyl t-butyl ether		0.28	mg/kg	0.066	EPA-8260B	ND	A01	2
Toluene		0.029	mg/kg	0.0038	EPA-8260B	ND		1
Total Xylenes		0.048	mg/kg	0.0077	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons		3.9	mg/kg	0.15	Luft-GC/MS	ND	S01	1
1,2-Dichloroethane-d4 (Surro	gate)	105	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surro	gate)	106	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		108	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		105	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surro	ogate)	128	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	1
4-Bromofluorobenzene (Surro	ogate)	119	%	74 - 121 (LCL - UCL)	EPA-8260B			2

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 14:35	ADC	MS-V2	0.770	BWF1413	
2	EPA-8260B	06/25/13	06/26/13 22:13	ADC	MS-V2	13.200	BWF1413	

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Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-07	Client Sample	Name:	0752, MPE-1-22-S-	130620, 6/20/201	3 8:30:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	0.73	mg/kg	0.17	EPA-8260B	ND	A01	1
1,2-Dibromoethane	ND	mg/kg	0.17	EPA-8260B	ND	A01	1
1,2-Dichloroethane	ND	mg/kg	0.17	EPA-8260B	ND	A01	1
Ethylbenzene	3.0	mg/kg	0.17	EPA-8260B	ND	A01	1
Methyl t-butyl ether	1.3	mg/kg	0.17	EPA-8260B	ND	A01	1
Toluene	1.4	mg/kg	0.17	EPA-8260B	ND	A01	1
Total Xylenes	10	mg/kg	0.35	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	670	mg/kg	69	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	94.5	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	91.7	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	118	%	81 - 117 (LCL - UCL)	EPA-8260B		A19,S09	1
Toluene-d8 (Surrogate)	108	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	145	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	1
4-Bromofluorobenzene (Surrogate)	127	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	2

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/26/13 23:05	ADC	MS-V2	34.700	BWF1413	
2	EPA-8260B	06/25/13	06/26/13 22:39	ADC	MS-V2	347	BWF1413	

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Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-08	Client Sample	Name:	0752, MPE-1-30-S-	130620, 6/20/201	3 8:40:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0040	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0040	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0040	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0040	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0040	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0081	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.16	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	106	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	104	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
 1	EPA-8260B	06/25/13	06/26/13 21:46	ADC	MS-V2	0.810	BWF1413	

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Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID : 1313099	-09 Client Sample	e Name:	0752, MPE-1-35-S-	130620, 6/20/201	3 8:50:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene	ND	mg/kg	0.099	EPA-8260B	ND	A10,Z1	1
1,2-Dibromoethane	ND	mg/kg	0.099	EPA-8260B	ND	A10,Z1	1
1,2-Dichloroethane	ND	mg/kg	0.099	EPA-8260B	ND	A10,Z1	1
Ethylbenzene	ND	mg/kg	0.099	EPA-8260B	ND	A10,Z1	1
Methyl t-butyl ether	ND	mg/kg	0.099	EPA-8260B	ND	A10,Z1	1
Toluene	ND	mg/kg	0.099	EPA-8260B	ND	A10,Z1	1
Total Xylenes	ND	mg/kg	0.20	EPA-8260B	ND	A10,Z1	1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	4.0	Luft-GC/MS	ND	A10,Z1	1
1,2-Dichloroethane-d4 (Surrogate)	95.4	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	107	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/26/13 23:31	ADC	MS-V2	19.800	BWF1413	

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Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-10	Client Sample	e Name:	0752, MPE-1-28-S-	130620, 6/20/201	3 9:05:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	0.041	mg/kg	0.0037	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0037	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0037	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0037	EPA-8260B	ND		1
Methyl t-butyl ether	0.013	mg/kg	0.0037	EPA-8260B	ND		1
Toluene	0.0044	mg/kg	0.0037	EPA-8260B	ND		1
Total Xylenes	0.012	mg/kg	0.0074	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	1.1	mg/kg	0.15	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	90.9	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	105	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 16:19	ADC	MS-V2	0.740	BWF1413	

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Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-11	Client Sample	e Name:	0752, MP-1-10-S-13	30620, 6/20/2013	12:55:00PM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0036	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0036	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0036	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0036	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0036	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0036	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0072	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.14	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	101	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	106	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 16:46	ADC	MS-V2	0.720	BWF1413	

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Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-12	Client Sample	Name:	0752, MP-1-15-S-13	30620, 6/20/2013	1:00:00PM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene	ND	mg/kg	0.0036	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0036	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0036	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0036	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0036	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0036	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0072	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.14	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	106	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	108	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	_
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 17:12	ADC	MS-V2	0.720	BWF1716	

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1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-13	3 Client Sample	Name:	0752, MP-1-20-S-1	30620, 6/20/2013	1:10:00PM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0038	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0038	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0038	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0038	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0038	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0038	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0076	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.15	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	106	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.0	%	74 - 121 (LCL - UCL)	EPA-8260B			1

				Run				QC	
Ru	ın #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
	1	EPA-8260B	06/25/13	06/25/13 17:39	ADC	MS-V2	0.760	BWF1716	

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 13130	99-14	Client Sampl	e Name:	0752, MP-1-25-S-1	30620, 6/20/2013	1:20:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene		ND	mg/kg	0.0035	EPA-8260B	ND		1
1,2-Dibromoethane		ND	mg/kg	0.0035	EPA-8260B	ND		1
1,2-Dichloroethane		ND	mg/kg	0.0035	EPA-8260B	ND		1
Ethylbenzene		ND	mg/kg	0.0035	EPA-8260B	ND		1
Methyl t-butyl ether		ND	mg/kg	0.0035	EPA-8260B	ND		1
Toluene		ND	mg/kg	0.0035	EPA-8260B	ND		1
Total Xylenes		ND	mg/kg	0.0070	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons		ND	mg/kg	0.14	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	112	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		101	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate	e)	108	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 18:06	ADC	MS-V2	0.700	BWF1716	

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Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-15	Client Sample	Name:	0752, MP-1-30-S-13	30620, 6/20/2013	1:35:00PM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0034	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0034	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0034	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0034	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0034	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0034	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0068	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.14	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	102	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	104	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/25/13 18:32	ADC	MS-V2	0.680	BWF1716	

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Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313099-16	Client Sample	Name:	0752, MP-1-22-S-1	30620, 6/20/2013	2:00:00PM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0045	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0045	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0045	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0045	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0045	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0045	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0090	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.18	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	112	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	106	%	74 - 121 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/25/13	06/26/13 15:39	ADC	MS-V2	0.900	BWF1716	

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWF1413						
Benzene	BWF1413-BLK1	ND	mg/kg	0.0050		
1,2-Dibromoethane	BWF1413-BLK1	ND	mg/kg	0.0050		
1,2-Dichloroethane	BWF1413-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BWF1413-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BWF1413-BLK1	ND	mg/kg	0.0050		
Toluene	BWF1413-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BWF1413-BLK1	ND	mg/kg	0.010		
Total Purgeable Petroleum Hydrocarbons	BWF1413-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BWF1413-BLK1	98.2	%	70 - 121	(LCL - UCL)	
Toluene-d8 (Surrogate)	BWF1413-BLK1	98.2	%	81 - 117	(LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BWF1413-BLK1	96.8	%	74 - 121	(LCL - UCL)	
QC Batch ID: BWF1716						
Benzene	BWF1716-BLK1	ND	mg/kg	0.0050		
1,2-Dibromoethane	BWF1716-BLK1	ND	mg/kg	0.0050		
1,2-Dichloroethane	BWF1716-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BWF1716-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BWF1716-BLK1	ND	mg/kg	0.0050		
Toluene	BWF1716-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BWF1716-BLK1	ND	mg/kg	0.010		
Total Purgeable Petroleum Hydrocarbons	BWF1716-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BWF1716-BLK1	97.8	%	70 - 121	(LCL - UCL)	
Toluene-d8 (Surrogate)	BWF1716-BLK1	104	%	81 - 117	(LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BWF1716-BLK1	108	%	74 - 121	(LCL - UCL)	

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/05/2013 15:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Laboratory Control Sample

								Control I	imits	
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BWF1413										
Benzene	BWF1413-BS1	LCS	0.12662	0.12500	mg/kg	101		70 - 130		
Toluene	BWF1413-BS1	LCS	0.13018	0.12500	mg/kg	104		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWF1413-BS1	LCS	0.051400	0.050000	mg/kg	103		70 - 121		
Toluene-d8 (Surrogate)	BWF1413-BS1	LCS	0.050380	0.050000	mg/kg	101		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWF1413-BS1	LCS	0.050470	0.050000	mg/kg	101		74 - 121		
QC Batch ID: BWF1716										
Benzene	BWF1716-BS1	LCS	0.10471	0.12500	mg/kg	83.8		70 - 130		
Toluene	BWF1716-BS1	LCS	0.12700	0.12500	mg/kg	102		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWF1716-BS1	LCS	0.048230	0.050000	mg/kg	96.5		70 - 121		
Toluene-d8 (Surrogate)	BWF1716-BS1	LCS	0.051450	0.050000	mg/kg	103		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWF1716-BS1	LCS	0.054920	0.050000	mg/kg	110		74 - 121		

1900 Powell Street 12th Floor Emeryville, CA 94608 **Reported:** 07/05/2013 15:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BWF1413	Use	d client samp	ole: N								
Benzene	─ MS	1310670-50	ND	0.12154	0.12500	mg/kg		97.2		70 - 130	
	MSD	1310670-50	ND	0.12747	0.12500	mg/kg	4.8	102	20	70 - 130	
Toluene	MS	1310670-50	ND	0.12562	0.12500	mg/kg		100		70 - 130	
	MSD	1310670-50	ND	0.14408	0.12500	mg/kg	13.7	115	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1310670-50	ND	0.048090	0.050000	mg/kg		96.2		70 - 121	
	MSD	1310670-50	ND	0.046460	0.050000	mg/kg	3.4	92.9		70 - 121	
Toluene-d8 (Surrogate)	MS	1310670-50	ND	0.049900	0.050000	mg/kg		99.8		81 - 117	
	MSD	1310670-50	ND	0.050940	0.050000	mg/kg	2.1	102		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1310670-50	ND	0.055170	0.050000	mg/kg		110		74 - 121	
	MSD	1310670-50	ND	0.050520	0.050000	mg/kg	8.8	101		74 - 121	
QC Batch ID: BWF1716	Use	d client samp	ole: N								
Benzene	MS	1310670-88	ND	0.10339	0.12500	mg/kg		82.7		70 - 130	
	MSD	1310670-88	ND	0.091970	0.12500	mg/kg	11.7	73.6	20	70 - 130	
Toluene	MS	1310670-88	ND	0.11737	0.12500	mg/kg		93.9		70 - 130	
	MSD	1310670-88	ND	0.11046	0.12500	mg/kg	6.1	88.4	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1310670-88	ND	0.052750	0.050000	mg/kg		106		70 - 121	
	MSD	1310670-88	ND	0.050910	0.050000	mg/kg	3.6	102		70 - 121	
Toluene-d8 (Surrogate)	MS	1310670-88	ND	0.051330	0.050000	mg/kg		103		81 - 117	
	MSD	1310670-88	ND	0.053080	0.050000	mg/kg	3.4	106		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1310670-88	ND	0.059110	0.050000	mg/kg		118		74 - 121	
- 1	MSD	1310670-88	ND	0.056370	0.050000	mg/kg	4.7	113		74 - 121	

Reported: 07/05/2013 15:10

Project: 0752

Emeryville, CA 94608 Project Number: 351646 Project Manager: Kathy Brandt

Notes And Definitions

1900 Powell Street 12th Floor

Arcadis

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit RPD Relative Percent Difference

PQL's and MDL's are raised due to sample dilution. A01 A10 PQL's and MDL's were raised due to matrix interference.

A19 Surrogate is high due to matrix interference. Interferences verified through second extraction/analysis.

S01 Sample result is not within the quantitation range of the method.

S09 The surrogate recovery on the sample for this compound was not within the control limits.

Ζ1 Sample plugged twice when analysed straight.



Date of Report: 07/08/2013

Kathy Brandt

Arcadis 1900 Powell Street 12th Floor Emeryville, CA 94608

0752 Project: 1313476 BC Work Order: B149799 Invoice ID:

Enclosed are the results of analyses for samples received by the laboratory on 6/26/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers

molly meyers

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



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Required Fields	13-13476			TEMP:			Ch	ain	of C	Cust	ody	## THE PER PER PER PER PER PER PER PER PER PE
Client/Company Name *:	Report Attention *:		Phone * #:510		FAX * #:	─						/
Chevron c/o ARCADIS U.S., Inc.	Katherine Brandt	1			ndt@arcadis-us.co	m	A	NALY	SIS REC)UESTI	ED	
Project Information: Chevron Facility No. 351646_Oaklat How would you like your completed results sent? Sampler Name Printed / Signature AMEY Petuso Intrix Types: RSW = Rnw Surface Water CFW =	Mail Fax EDD Mail Or QC Request Result B STD Level II Jorinated Finished Water CWW = C	nty Request ** Surch S Day** 2 12 Chorinated Waste	oarge Oay**	Merced Co Other: Regulatory Electronic D System No.	Fresno Co		BTEX, MTBE (8260B)	EDB, EDC (8260B)				
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Chain of Custody and Cooler Receipt Form for 1313476 Page 2 of 2

Submission #: 13-13-476 SHIPPING INFOR Federal Express V UPS BC Lab Field Service Other	RMATION	ivery 🗆			Ice Chest Box	: Д		TAINER ne □ er □ (Spe	ecify)	
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Custody Seals Ice Chest X	Contain		None	□ Comn	nents:		,			-
All samples received? Yes ♠ No □	All sample	s container	s intact? Y	es of Not		Descript	ion(s) mate	h COC? Y	es 💋 No	
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1900 Powell Street 12th Floor Emeryville, CA 94608

Reported: 07/08/2013 10:28

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1313476-01 COC Number:

> **Project Number:** 0752 Sampling Location:

Sampling Point: VE-3-10-S-130621

Sampled By:

AREC

06/26/2013 10:20 **Receive Date:**

Sampling Date: 06/21/2013 07:30

Sample Depth: Lab Matrix: Solids Soil Sample Type:

Delivery Work Order:

Global ID:

Location ID (FieldPoint): VE-3

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313476-02 **COC Number:**

> **Project Number:** 0752 Sampling Location:

VE-3-15-S-130621 Sampling Point:

AREC Sampled By:

Receive Date: Sampling Date:

06/26/2013 10:20 06/21/2013 07:45

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): VE-3

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

1313476-03 COC Number:

0752 **Project Number:** Sampling Location:

VE-3-9-S-130621 Sampling Point:

AREC Sampled By:

Receive Date:

06/26/2013 10:20

Sampling Date:

06/21/2013 08:10

Sample Depth: Solids Lab Matrix: Soil Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): VE-3

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

Arcadis Reported: 07/08/2013 10:28

1900 Powell Street 12th FloorProject: 0752Emeryville, CA 94608Project Number: 351646Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1313476-04 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: VE-3-16-S-130621

Sampled By: AREC

Receive Date: 06/26/20 **Sampling Date:** 06/21/20

06/26/2013 10:20 06/21/2013 08:15

Sample Depth: ---

Lab Matrix: Solids
Sample Type: Soil

Delivery Work Order:

Global ID:

Location ID (FieldPoint): VE-3

Matrix: SO

Sample QC Type (SACode): CS

Cooler ID:

Reported:

1900 Powell Street 12th FloorProject0752Emeryville, CA 94608Project Number:351646Project Manager:Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

07/08/2013 10:28

BCL Sample ID: 1313476-01	Client Sample	e Name:	0752, VE-3-10-S-13	80621, 6/21/2013	7:30:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
1,2-Dibromoethane	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
1,2-Dichloroethane	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Ethylbenzene	1.8	mg/kg	0.12	EPA-8260B	ND	A01	1
Methyl t-butyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Toluene	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Total Xylenes	1.9	mg/kg	0.24	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	350	mg/kg	38	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	103	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	100	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	113	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	108	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	96.8	%	74 - 121 (LCL - UCL)	EPA-8260B			2

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/02/13	07/02/13 17:43	ML	MS-V3	23.990	BWG0149	
2	EPA-8260B	07/02/13	07/03/13 06:49	ML	MS-V3	191.93	BWG0149	

1900 Powell Street 12th Floor Emeryville, CA 94608 **Reported:** 07/08/2013 10:28

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 13134	76-02 Client Sam	ple Name:	0752, VE-3-15-S-13	30621, 6/21/2013	7:45:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	0.72	mg/kg	0.093	EPA-8260B	ND	A01	1
1,2-Dibromoethane	ND	mg/kg	0.093	EPA-8260B	ND	A01	1
1,2-Dichloroethane	ND	mg/kg	0.093	EPA-8260B	ND	A01	1
Ethylbenzene	7.4	mg/kg	0.093	EPA-8260B	ND	A01	1
Methyl t-butyl ether	ND	mg/kg	0.093	EPA-8260B	ND	A01	1
Toluene	ND	mg/kg	0.093	EPA-8260B	ND	A01	1
Total Xylenes	13	mg/kg	0.19	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	4700	mg/kg	740	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate	e) 104	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate	e) 118	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	106	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	107	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogat	e) 166	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	1
4-Bromofluorobenzene (Surrogat	e) 97.8	%	74 - 121 (LCL - UCL)	EPA-8260B			2

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/02/13	07/03/13 07:15	ML	MS-V3	18.620	BWG0149	
2	EPA-8260B	07/02/13	07/05/13 09:28	ML	MS-V3	3700	BWG0149	

1900 Powell Street 12th Floor Emeryville, CA 94608 **Reported:** 07/08/2013 10:28

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1313476-0	Client Sample	e Name:	0752, VE-3-9-S-130	621, 6/21/2013	8:10:00AM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.094	EPA-8260B	ND	A01	1
1,2-Dibromoethane	ND	mg/kg	0.094	EPA-8260B	ND	A01	1
1,2-Dichloroethane	ND	mg/kg	0.094	EPA-8260B	ND	A01	1
Ethylbenzene	3.9	mg/kg	0.094	EPA-8260B	ND	A01	1
Methyl t-butyl ether	ND	mg/kg	0.094	EPA-8260B	ND	A01	1
Toluene	ND	mg/kg	0.094	EPA-8260B	ND	A01	1
Total Xylenes	1.5	mg/kg	0.19	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	1300	mg/kg	310	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	91.5	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	101	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	107	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	97.9	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	146	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	1
4-Bromofluorobenzene (Surrogate)	96.0	%	74 - 121 (LCL - UCL)	EPA-8260B			2

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/02/13	07/03/13 07:41	ML	MS-V3	18.850	BWG0149	
2	EPA-8260B	07/02/13	07/05/13 19:46	ML	MS-V3	1562.5	BWG0149	

1900 Powell Street 12th Floor Emeryville, CA 94608 **Reported:** 07/08/2013 10:28

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1313476-04	Client Sampl	e Name:	0752, VE-3-16-S-13	80621, 6/21/2013	8:15:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		0.54	mg/kg	0.098	EPA-8260B	ND	A01	1
1,2-Dibromoethane		ND	mg/kg	0.098	EPA-8260B	ND	A01	1
1,2-Dichloroethane		ND	mg/kg	0.098	EPA-8260B	ND	A01	1
Ethylbenzene		7.6	mg/kg	0.098	EPA-8260B	ND	A01	1
Methyl t-butyl ether		ND	mg/kg	0.098	EPA-8260B	ND	A01	1
Toluene		ND	mg/kg	0.098	EPA-8260B	ND	A01	1
Total Xylenes		13	mg/kg	0.20	EPA-8260B	ND	A01	1
Total Purgeable Petrole	eum	2900	mg/kg	750	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogate)	102	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	112	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		107	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		104	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene	(Surrogate)	176	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	1
4-Bromofluorobenzene	(Surrogate)	96.2	%	74 - 121 (LCL - UCL)	EPA-8260B			2

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/02/13	07/03/13 08:07	ML	MS-V3	19.530	BWG0149	
2	EPA-8260B	07/02/13	07/05/13 10:21	ML	MS-V3	3750	BWG0149	

Reported: 07/08/2013 10:28

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

1900 Powell Street 12th Floor Emeryville, CA 94608

Arcadis

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWG0149						
Benzene	BWG0149-BLK1	ND	mg/kg	0.0050		
1,2-Dibromoethane	BWG0149-BLK1	ND	mg/kg	0.0050		
1,2-Dichloroethane	BWG0149-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BWG0149-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BWG0149-BLK1	ND	mg/kg	0.0050		
Toluene	BWG0149-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BWG0149-BLK1	ND	mg/kg	0.010		
Total Purgeable Petroleum Hydrocarbons	BWG0149-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BWG0149-BLK1	106	%	70 - 121 (I	LCL - UCL)	
Toluene-d8 (Surrogate)	BWG0149-BLK1	97.8	%	81 - 117 (I	LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BWG0149-BLK1	97.7	%	74 - 121 (I	LCL - UCL)	

Reported: 07/08/2013 10:28

1900 Powell Street 12th FloorProject: 0752Emeryville, CA 94608Project Number: 351646Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Laboratory Control Sample

							Control Limits			
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWG0149										
Benzene	BWG0149-BS1	LCS	0.12557	0.12500	mg/kg	100		70 - 130		
Toluene	BWG0149-BS1	LCS	0.12226	0.12500	mg/kg	97.8		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWG0149-BS1	LCS	0.050700	0.050000	mg/kg	101		70 - 121		
Toluene-d8 (Surrogate)	BWG0149-BS1	LCS	0.050390	0.050000	mg/kg	101		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWG0149-BS1	LCS	0.049590	0.050000	mg/kg	99.2		74 - 121		

1900 Powell Street 12th Floor Emeryville, CA 94608 Reported: 07/08/2013 10:28

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Precision & Accuracy

		•										
									Control Limits			
		Source	Source		Spike			Percent		Percent	Lab	
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals	
QC Batch ID: BWG0149	Use	Used client sample: N										
Benzene	MS	1310670-91	ND	0.11689	0.12500	mg/kg		93.5		70 - 130		
	MSD	1310670-91	ND	0.11801	0.12500	mg/kg	1.0	94.4	20	70 - 130		
Toluene	MS	1310670-91	ND	0.11429	0.12500	mg/kg		91.4		70 - 130		
	MSD	1310670-91	ND	0.11072	0.12500	mg/kg	3.2	88.6	20	70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	MS	1310670-91	ND	0.052410	0.050000	mg/kg		105		70 - 121		
	MSD	1310670-91	ND	0.053810	0.050000	mg/kg	2.6	108		70 - 121		
Toluene-d8 (Surrogate)	MS	1310670-91	ND	0.050410	0.050000	mg/kg		101		81 - 117		
	MSD	1310670-91	ND	0.049750	0.050000	mg/kg	1.3	99.5		81 - 117		
4-Bromofluorobenzene (Surrogate)	MS	1310670-91	ND	0.049540	0.050000	mg/kg		99.1		74 - 121		
	MSD	1310670-91	ND	0.049580	0.050000	mg/kg	0.1	99.2		74 - 121		

Arcadis Reported: 07/08/2013 10:28

1900 Powell Street 12th Floor Project: 0752 Emeryville, CA 94608 Project Number: 351646 Project Manager: Kathy Brandt

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit RPD Relative Percent Difference

PQL's and MDL's are raised due to sample dilution. A01

A19 Surrogate is high due to matrix interference. Interferences verified through second extraction/analysis.

S09 The surrogate recovery on the sample for this compound was not within the control limits.



Date of Report: 09/17/2013

Kathy Brandt

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

0752 Project:

1319668 BC Work Order: B155290 Invoice ID:

Enclosed are the results of analyses for samples received by the laboratory on 9/11/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers

molly meyers

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



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Chain of Custody and Cooler Receipt Form for 1319668 Environmental Testing Laboratory Since 1949

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Laboratories, Inc.

Chain of Custody Form

*Required Field	· # 13-19668													Page _	of <u>\</u>
Report To: Client:* ARCA	ADIS U.S., Inc.	Project Description:*_C	hevron 351	646			Analysi	s Req	uest	ed		Billing			
Attn:* Katheri	ine Brandt	800 Harrison	Street, Oakl	and, CA				Τ	l T	1	T	Clianta ARC	I CADIS U.S., I	nc.	
Street Address	* 2000 Powell Street, Suite 700]	3							unts Payable		
city:* Emeryv	ille State:* CA Zip:+ 9460	Project Code:*- 8 B0047339.20			1	19:46				Ī			30 Plaza Driv		
Phone#:*/510) 596 - 9675 Fax#:() -				EPA 8260	7							nds Ramstat	te:* CO ith holding time:	Zip:* 801 25
		Sampler (s):*			%	Hane				ĺ			is than or equal		or .
Email Address: Submission #:	katherine.brandt@arcadis-us.com		ryler:	-a e	1.5	立							☐ Yes 🗸	☑ No	
Sample #	Sample Description	Date	Time	Matrix*	70-15	क्र							*Standard Tur	rnaround = 10	
	Influent-1 (1 Hour)				<u>=</u>	2			-	_ _			Note		
-1		9/10/13	14:40	0	V	X						1-Liter			
-3	Influent-1 (24 Hours)	9/11/13		0	 √	X						1-Liter =	Summa (Tedlar L	nok-up)
-4	Effluent - 1 (26 Hours)	9/11/13		0_	X	X			-	_		Tedlar 1			<u> </u>
-7	HATTURN 7 (26 HOURS)	9/11/13	11,50	0_	X	X	- -	- 			-	Tedlar b	<u> </u>		
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	KIQ SUB-OU							-	_						
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Matrix Ty	pes: S = Soil SL = Sludge DW	= Drinking Water	WW = W	/astewater		GW	= Groundwa	ater	L=	Liquid		M = Miscellaneo	us Q = (Other Air	
Turnaround	d # of working days:* 🔲 24 Hr R	ush 🗌 48	Hr Rush	ौं र्रा 3	3-5 I	Dav	Rush	l N∈	rma	l (1n -	- Day	/s)		<u> </u>	
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Comments	:			Γ											
Please ru	n all Samples for [with 8260+	MBU Site		Cost Cent								Global ID:			
TPH-q	with 8260 ² □	CVX RCRA		1. Relinquis			9,	Date			rime 25	1.Received B	" Bas	Date ~ 9-11-1.	Time
7	<u> </u>	Geotracker 5 File (CA Default)		2. Relinquis	shed	Ву:		Date	<u></u>		Time	z.neceiyeb;b	17	<u>~ [~] /_/ .</u> Date	Time
		Geotracker 2 File		Ja			gan 9-	(1-1	3	<u> 181</u>	<u>5</u>			7-11-13	18:15
	<u> </u>	Other (Specify)	_	3. Relinguis	ingd 2	eà:	o.	Date \ -\	-	21	Time (3.Received By		9-11-13	Time
				- 3	~(ب	~	11-1		/ C) -	-15	7,0%		<u>-(.)(.)</u>	2150

BC Laboratories, Inc. 4100 Atlas Court – Bakersfield CA 93308 (661) 327 – 4911 Fax: (661) 327 – 1918 www.bclabs.com





Chain of Custody and Cooler Receipt Form for 1319668 Page 2 of 3

II BC LABOHA! ONES INC.	-	COO	LER RECE	EIPT FOR	:M	Rev. No. 1	5 07/01	1/13 Ps	igeO				
Submission #: 13-19668						1	07/01	713	igeL_O	<u>'</u>			
				II	·								
SHIPPING INFOR	Hand Deli			Ice Che	HIPPING	CONTAIN None 🗆	VER	, F	REE LIQI				
BC Lab Field Service Ø Other I	☐ (Specify)			:st⊔ er 🛭 (Spe	cify)	BOX	ľ	ES 🗀 N	0 11			
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Refrigerant: Ice ☐ Blue Ice () Non	ie P	Other 🗀	Comn	oente:								
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COC Received En	nissivity: _		Container:	Sunna	Thermon	neter ID:		Date/Tim	e 9-11-13	2150			
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Temperature: (A) Room °C / (C) Temp °C Analyst Init SAS													
SAMPLE NUMBERS SAMPLE CONTAINERS													
1 2 3 4 5 6 7 8 9 10													
OT GENERAL MINERAL/ GENERAL													
PT PE UNPRESERVED	-				ļ		ļ						
QT INORGANIC CHEMICAL METALS		***											
PT INORGANIC CHEMICAL METALS	<u> </u>								ļ				
PT CYANIDE			 			 							
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PT TOTAL SULFIDE							ļ						
20z_ NITRATE / NITRITE													
PT TOTAL ORGANIC CARBON			<u> </u>		<u> </u>			-					
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PT CHEMICAL OXYGEN DEMAND PtA PHENOLICS			-		 					 -			
40ml VOA VIAL TRAVEL BLANK					2								
40mi VOA VIAL			1 ()	(()	1 1	1)	()	1 1	t 1			
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QT EPA 508/608/8080													
QT EPA 515.1/8150													
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QT EPA 525 TRAVEL BLANK													
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QT EPA 549													
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QT EPA 8015M													
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ENCORE			1										
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Comments: Sample Numbering Completed By: 5/	15	Date	e/Time:	11.13	2225								
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Chain of Custody and Cooler Receipt Form for 1319668 Page 3 of 3

BC LABURATURIES INC.		coo	LER RECE	IPT FOR	M	Rev. No. 1	5 07/01	/13 Pa	ge ^{:2} 01	f 2
Submission #: 13-19668										
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SHIPPING INFOR	MATION				HIPPING			18	REE LIQU	
Federal Express □ UPS □ BC Lab Field Service Ø Other □	nano Dell 1 (Specify	ivery 1		ice Une	st,Æ er ☐ (Spec	None L.	вох 🗀	ı Y	ES 🗆 N	0 🛭
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Refrigerant: Ice Blue Ice										
	Contain		None	Ø Com	ments:				**********	
All samples received? Yes 🗹 No 🗆	All sample:	s container	s intact? Y	es & No	0	Descript	ion(s) matc	h COC? Y	es 🗗 No I	[]
COC Received Em	vissivity.		Container:	Tallo	Thermore	unter ID:		D-4-CF:	0.11.12	2150
DVVES □NO								l		
	emperatur	e: (A/	Room	_ ' '	(L 12	<u>mp</u>	- C	Allalyst	III. <u>54(3</u>	
SAMPLE CONTAINERS					SAMPLE	NUMBERS				
SAMPLE CONTAINERS	1	2	3	4	5	- 6	7	8	9	10
OT GENERAL MINERAL/ GENERAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE				7						
202. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
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40ml VOA VIAL TRAVEL BLANK				A						
40ml VOA VIAL	t 1	ı	, , ,	1		1 1	1 1	()	1)	1 1
QT EPA 413.1, 413.2, 418.1									<u> </u>	
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40 ml VOA VIAL-504					_		 			
QT EPA 508/608/8080							 	!		-
QT EPA 515.1/8150							ļ			
QT EPA 525			1			-	 -	<u> </u>	-	-
QT EPA 525 TRAVEL BLANK						 		<u> </u>		
100ml EPA 547									ļ	 -
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Summa Canister			Asp	l				i	1	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1319668-01 COC Number:

Project Number: 0752 Sampling Location: ---

Sampling Point: Influent-1 (1-Hour)

Sampled By: AREC

Receive Date: 09/11/2013 21:50 **Sampling Date:** 09/10/2013 14:40

Sample Depth: ---Lab Matrix: Air

Sample Type: Vapor or Air

Delivery Work Order:

Global ID:

Location ID (FieldPoint): Influent-1

Matrix: AX

Sample QC Type (SACode): CS

Cooler ID:

1319668-02 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: Influent-1 (24-Hours)

Sampled By: AREC

Receive Date: 09/11/2013 21:50 **Sampling Date:** 09/11/2013 10:05

Sample Depth: ---Lab Matrix: Air

Sample Type: Vapor or Air

Delivery Work Order:

Global ID:

Location ID (FieldPoint): Influent-1

Matrix: AX

Sample QC Type (SACode): CS

Cooler ID:

1319668-03 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: Influent-1 (26 Hours)

Sampled By: AREC

Receive Date: 09/11/2013 21:50

Sampling Date: 09/11/2013 11:50

Sample Depth: ---Lab Matrix: Air

Sample Type: Vapor or Air

Delivery Work Order:

Global ID:

Location ID (FieldPoint): Influent-1

Matrix: AX

Sample QC Type (SACode): CS

Cooler ID:

Arcadis Reported: 09/17/2013 9:10

2000 Powell Street 7th FloorProject:0752Emeryville, CA 94608Project Number:351646Project Manager:Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1319668-04 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: Effluent (26 Hours)

Sampled By: AREC

Receive Date: 09/11/2013 21:50 **Sampling Date:** 09/11/2013 11:50

Sample Depth: ---Lab Matrix: Air

Sample Type: Vapor or Air

Delivery Work Order:

Global ID:

Location ID (FieldPoint): Effluent

Matrix: AX

Sample QC Type (SACode): CS

Cooler ID:

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1319668-01	Client Sampl	e Name:	0752, Influent-1 (1-Hour), 9/10/2013 2:40:00PM							
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#			
Acetone		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Acetonitrile		ND	ppbv	1000	EPA-TO-15	ND	A01	1			
Acrolein		ND	ppbv	1000	EPA-TO-15	ND	A01	1			
Acrylonitrile		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Allyl chloride		ND	ppbv	250	EPA-TO-15	ND	A01	1			
t-Amyl Methyl ether		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Benzene		350	ppbv	250	EPA-TO-15	ND	A01	1			
Benzyl chloride		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Bromodichloromethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Bromoform		300	ppbv	250	EPA-TO-15	ND	A01	1			
Bromomethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,3-Butadiene		ND	ppbv	250	EPA-TO-15	ND	A01	1			
t-Butyl alcohol		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Carbon disulfide		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Carbon tetrachloride		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Chlorobenzene		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Chloroethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Chloroform		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Chloromethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Chloroprene		0	ppbv		EPA-TO-15	0	A01	1			
Cyclohexane		3500	ppbv	250	EPA-TO-15	ND	A01	1			
Dibromochloromethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,2-Dibromo-3-chloropropa	ne	ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,2-Dibromoethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
Dibromomethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,2-Dichlorobenzene		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,3-Dichlorobenzene		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,4-Dichlorobenzene		ND	ppbv	250	EPA-TO-15	ND	A01	1			
trans-1,4-Dichloro-2-butene)	ND	ppbv	500	EPA-TO-15	ND	A01	1			
Dichlorodifluoromethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,1-Dichloroethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,2-Dichloroethane		ND	ppbv	250	EPA-TO-15	ND	A01	1			
1,1-Dichloroethene		ND	ppbv	250	EPA-TO-15	ND	A01	1			

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1319668-01	Client Sample	e Name:	0752, Influen	nt-1 (1-Hour), 9/10/2013	2:40:00PM		
O and the same		11. "	DO :	NA . 41 - 1	MB	Lab	- "
Constituent cis-1,2-Dichloroethene	Result ND	Units ppbv	PQL 250	Method EPA-TO-15	Bias ND	Quals A01	Run # 1
trans-1,2-Dichloroethene	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,2-Dichloropropane	ND	ppbv	250	EPA-TO-15	ND	A01	<u>'</u> 1
1,3-Dichloropropane	ND	ppbv	500	EPA-TO-15	ND	A01	1
2,2-Dichloropropane	ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1-Dichloropropene	ND	ppbv	500	EPA-TO-15	ND	A01	1
cis-1,3-Dichloropropene	ND	ppbv	250	EPA-TO-15	ND	A01	<u>'</u> 1
trans-1,3-Dichloropropene	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ppbv	250	EPA-TO-15	ND	A01	1
Diisopropyl ether	ND	ppbv	500	EPA-TO-15	ND	A01	<u>'</u> 1
1,4-Dioxane	ND	ppbv	250	EPA-TO-15	ND	A01	<u>.</u> 1
Ethanol	1400	ppbv	500	EPA-TO-15	ND	A01	1
Ethyl acetate	ND	ppbv	250	EPA-TO-15	ND	A01	1
Ethylbenzene	ND	ppbv	250	EPA-TO-15	ND	A01	1
Ethyl methacrylate	ND	ppbv	1000	EPA-TO-15	ND	A01	1
1-Ethyl-4-methylbenzene	ND	ppbv	250	EPA-TO-15	ND	A01	1
Ethyl t-butyl ether	ND	ppbv	500	EPA-TO-15	ND	A01	1
n-Heptane	4700	ppbv	250	EPA-TO-15	ND	A01	1
Hexachlorobutadiene	ND	ppbv	250	EPA-TO-15	ND	A01	1
Hexachloroethane	ND	ppbv	500	EPA-TO-15	ND	A01	1
Hexane	9800	ppbv	500	EPA-TO-15	ND	A01	1
2-Hexanone	ND	ppbv	250	EPA-TO-15	ND	A01	1
Isobutanol	ND	ppbv	1000	EPA-TO-15	ND	A01	1
Isooctane	ND	ppbv	250	EPA-TO-15	ND	A01	1
Isopropyl alcohol	400	ppbv	250	EPA-TO-15	ND	A01	1
Methacrylonitrile	ND	ppbv	1000	EPA-TO-15	ND	A01	1
Methylene chloride	ND	ppbv	250	EPA-TO-15	ND	A01	1
Methyl ethyl ketone	ND	ppbv	250	EPA-TO-15	ND	A01	1
Methyl iodide	ND	ppbv	500	EPA-TO-15	ND	A01	1
Methyl isobutyl ketone	ND	ppbv	250	EPA-TO-15	ND	A01	1
Methyl methacrylate	ND	ppbv	1000	EPA-TO-15	ND	A01	1
Methyl t-butyl ether	640	ppbv	250	EPA-TO-15	ND	A01	1
Naphthalene	ND	ppbv	500	EPA-TO-15	ND	A01	1

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1319668-01	Client Sample	e Name:	0752, Influent-1 (1-l	Hour), 9/10/2013	2:40:00PM		
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Propionitrile	ND	ppbv	1000	EPA-TO-15	ND	A01	1
Propylene	ND	ppbv	250	EPA-TO-15	ND	A01	1
Styrene	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,1,1,2-Tetrachloroethane	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,1,2,2-Tetrachloroethane	ND	ppbv	250	EPA-TO-15	ND	A01	1
Tetrachloroethene	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,1,1,2-Tetrafluoroethane	ND	ppbv	1000	EPA-TO-15	ND	A01	1
Tetrahydrofuran	ND	ppbv	250	EPA-TO-15	ND	A01	1
Toluene	810	ppbv	250	EPA-TO-15	ND	A01	1
1,2,4-Trichlorobenzene	ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,1-Trichloroethane	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,1,2-Trichloroethane	ND	ppbv	250	EPA-TO-15	ND	A01	1
Trichloroethene	ND	ppbv	250	EPA-TO-15	ND	A01	1
Trichlorofluoromethane	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,2,3-Trichloropropane	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,2,4-Trimethylbenzene	ND	ppbv	250	EPA-TO-15	ND	A01	1
1,3,5-Trimethylbenzene	ND	ppbv	250	EPA-TO-15	ND	A01	1
Vinyl acetate	ND	ppbv	250	EPA-TO-15	ND	A01	1
Vinyl bromide	ND	ppbv	250	EPA-TO-15	ND	A01	1
Vinyl chloride	ND	ppbv	250	EPA-TO-15	ND	A01	1
p- & m-Xylenes	ND	ppbv	250	EPA-TO-15	ND	A01	1
o-Xylene	ND	ppbv	250	EPA-TO-15	ND	A01	1
Total Xylenes	ND	ppbv	500	EPA-TO-15	ND	A01	1
TPH - Gasoline	210000	ppbv	25000	EPA-TO-15	ND	A01	1
4-Bromofluorobenzene (Surrogate)	123	%	70 - 130 (LCL - UCL)	EPA-TO-15			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	09/11/13	09/12/13 14:10	LHS	MS-A1	500	BWI0689	

Reported: 09/17/2013 9:10

Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

Arcadis

Fixed Gases by GC/TCD (ASTM D1946)

BCL Sample ID:	1319668-01	Client Samp	le Name:	0752, Influer	nt-1 (1-Hour), 9/10/2013	2:40:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane (CH4)		0.27	% by Vol.	0.00020	ASTM-D1946	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	ASTM-D1946	09/11/13	09/11/13 22:57	JMC	GC-A1	1	BWI0790	



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1319668-02	Client Sample	e Name:	0752, Influent-1 (24-Hours), 9/11/2013 10:05:00AM							
Constituent		Result	Units	PQL	Method	MB	Lab	D #			
Acetone		ND	ppbv	1000	EPA-TO-15	Bias ND	Quals A01	Run #1			
Acetonitrile		ND	ppbv	2000	EPA-TO-15	ND	A01	<u>·</u> 1			
Acrolein		ND	ppbv	2000	EPA-TO-15	ND	A01	<u>·</u> 1			
Acrylonitrile		ND	ppbv	1000	EPA-TO-15	ND	A01	1			
Allyl chloride		ND	ppbv	500	EPA-TO-15	ND	A01	1			
t-Amyl Methyl ether		ND	ppbv	1000	EPA-TO-15	ND	A01	1			
Benzene		5700	ppbv	500	EPA-TO-15	ND	A01	1			
Benzyl chloride		ND	ppbv	1000	EPA-TO-15	ND	A01	1			
Bromodichloromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Bromoform		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Bromomethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,3-Butadiene		ND	ppbv	500	EPA-TO-15	ND	A01	1			
t-Butyl alcohol		ND	ppbv	1000	EPA-TO-15	ND	A01	1			
Carbon disulfide		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Carbon tetrachloride		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Chlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Chloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Chloroform		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Chloromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Chloroprene		0	ppbv		EPA-TO-15	0	A01	1			
Cyclohexane		30000	ppbv	2000	EPA-TO-15	ND	A01	2			
Dibromochloromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,2-Dibromo-3-chloropropa	ne	ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,2-Dibromoethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
Dibromomethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,2-Dichlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,3-Dichlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,4-Dichlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1			
trans-1,4-Dichloro-2-butene)	ND	ppbv	1000	EPA-TO-15	ND	A01	1			
Dichlorodifluoromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,1-Dichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,2-Dichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1			
1,1-Dichloroethene		ND	ppbv	500	EPA-TO-15	ND	A01	1			

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1319668-02	Client Sampl	e Name:	0752, Influent	-1 (24-Hours), 9/11/201	3 10:05:00AM			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#	
cis-1,2-Dichloroethene		ND	ppbv	500	EPA-TO-15	ND	A01	1	
trans-1,2-Dichloroethene)	ND	ppbv	500	EPA-TO-15	ND	A01	1	
1,2-Dichloropropane		ND	ppbv	500	EPA-TO-15	ND	A01	1	
1,3-Dichloropropane		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
2,2-Dichloropropane		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
1,1-Dichloropropene		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
cis-1,3-Dichloropropene		ND	ppbv	500	EPA-TO-15	ND	A01	1	
trans-1,3-Dichloroproper	ne	ND	ppbv	500	EPA-TO-15	ND	A01	1	
1,2-Dichloro-1,1,2,2-tetra	afluoroethane	ND	ppbv	500	EPA-TO-15	ND	A01	1	
Diisopropyl ether		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
1,4-Dioxane		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Ethanol		2200	ppbv	1000	EPA-TO-15	ND	A01	1	
Ethyl acetate		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Ethylbenzene		1400	ppbv	500	EPA-TO-15	ND	A01	1	
Ethyl methacrylate		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
1-Ethyl-4-methylbenzen	e	ND	ppbv	500	EPA-TO-15	ND	A01	1	
Ethyl t-butyl ether		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
n-Heptane		44000	ppbv	2000	EPA-TO-15	ND	A01	2	
Hexachlorobutadiene		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Hexachloroethane		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
Hexane		91000	ppbv	4000	EPA-TO-15	ND	A01	2	
2-Hexanone		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Isobutanol		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
Isooctane		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Isopropyl alcohol		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methacrylonitrile		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
Methylene chloride		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methyl ethyl ketone		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methyl iodide		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
Methyl isobutyl ketone		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methyl methacrylate		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
Methyl t-butyl ether		3700	ppbv	500	EPA-TO-15	ND	A01	1	
Naphthalene		ND	ppbv	1000	EPA-TO-15	ND	A01	1	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1319668-02 Client Sample Name: 0752, Influent-1 (24-Hours), 9/11/2013 10:05:00AM								
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Propionitrile		ND	ppbv	2000	EPA-TO-15	ND	A01	1
Propylene		ND	ppbv	500	EPA-TO-15	ND	A01	1
Styrene		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,1,2-Tetrachloroethan	е	ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,2,2-Tetrachloroethan	е	ND	ppbv	500	EPA-TO-15	ND	A01	1
Tetrachloroethene		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,1,2-Tetrafluoroethane	е	ND	ppbv	2000	EPA-TO-15	ND	A01	1
Tetrahydrofuran		ND	ppbv	500	EPA-TO-15	ND	A01	1
Toluene		3500	ppbv	500	EPA-TO-15	ND	A01	1
1,2,4-Trichlorobenzene		ND	ppbv	1000	EPA-TO-15	ND	A01	1
1,1,1-Trichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,2-Trichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1
Trichloroethene		ND	ppbv	500	EPA-TO-15	ND	A01	1
Trichlorofluoromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,2,3-Trichloropropane		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,2-Trichloro-1,2,2-triflu	uoroethane	ND	ppbv	500	EPA-TO-15	ND	A01	1
1,2,4-Trimethylbenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,3,5-Trimethylbenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1
Vinyl acetate		ND	ppbv	500	EPA-TO-15	ND	A01	1
Vinyl bromide		ND	ppbv	500	EPA-TO-15	ND	A01	1
Vinyl chloride		ND	ppbv	500	EPA-TO-15	ND	A01	1
p- & m-Xylenes		2700	ppbv	500	EPA-TO-15	ND	A01	1
o-Xylene		840	ppbv	500	EPA-TO-15	ND	A01	1
Total Xylenes		3600	ppbv	1000	EPA-TO-15	ND	A01	1
TPH - Gasoline		1100000	ppbv	200000	EPA-TO-15	ND	A01	2
4-Bromofluorobenzene (Surrogate)	124	%	70 - 130 (LCL - UCL)	EPA-TO-15			1
4-Bromofluorobenzene (Surrogate)	122	%	70 - 130 (LCL - UCL)	EPA-TO-15			2

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-TO-15	09/11/13	09/12/13 14:42	LHS	MS-A1	1000	BWI0689
2	EPA-TO-15	09/11/13	09/13/13 07:55	LHS	MS-A1	4000	BWI0689

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 09/17/2013 9:10

Project Number: 351646

Project Manager: Kathy Brandt

Fixed Gases by GC/TCD (ASTM D1946)

BCL Sample ID:	1319668-02	Client Samp	le Name:	0752, Influent-1 (24-Hours), 9/11/2013 10:05:00AM					
						MB	Lab		
Constituent		Result	Units	PQL	Method	Bias	Quals	Run #	
Methane (CH4)		0.18	% by Vol.	0.00020	ASTM-D1946	ND		1	

	Run					QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	ASTM-D1946	09/11/13	09/11/13 23:19	JMC	GC-A1	1	BWI0790		

09/17/2013 9:10 Reported:

Project: 0752 2000 Powell Street 7th Floor Emeryville, CA 94608 Project Number: 351646 Project Manager: Kathy Brandt

BCL Sample ID:	1319668-03	Client Sample	e Name:	0752, Influen	t-1 (26 Hours), 9/11/2013	9/11/2013 11:50:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #		
Acetone		ND	ppbv	1000	EPA-TO-15	ND ND	A01	1		
Acetonitrile		ND	ppbv	2000	EPA-TO-15	ND	A01	1		
Acrolein		ND	ppbv	2000	EPA-TO-15	ND	A01	1		
Acrylonitrile		ND	ppbv	1000	EPA-TO-15	ND	A01	1		
Allyl chloride		ND	ppbv	500	EPA-TO-15	ND	A01	1		
t-Amyl Methyl ether		ND	ppbv	1000	EPA-TO-15	ND	A01	1		
Benzene		5100	ppbv	500	EPA-TO-15	ND	A01	1		
Benzyl chloride		ND	ppbv	1000	EPA-TO-15	ND	A01	1		
Bromodichloromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Bromoform		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Bromomethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,3-Butadiene		ND	ppbv	500	EPA-TO-15	ND	A01	1		
t-Butyl alcohol		ND	ppbv	1000	EPA-TO-15	ND	A01	1		
Carbon disulfide		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Carbon tetrachloride		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Chlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Chloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Chloroform		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Chloromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Chloroprene		0	ppbv		EPA-TO-15	0	A01	1		
Cyclohexane		23000	ppbv	500	EPA-TO-15	ND	A01	1		
Dibromochloromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,2-Dibromo-3-chloropropa	ane	ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,2-Dibromoethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
Dibromomethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,2-Dichlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,3-Dichlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,4-Dichlorobenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1		
trans-1,4-Dichloro-2-buten	е	ND	ppbv	1000	EPA-TO-15	ND	A01	1		
Dichlorodifluoromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,1-Dichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,2-Dichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1		
1,1-Dichloroethene		ND	ppbv	500	EPA-TO-15	ND	A01	1		

Reported: 09/17/2013 9:10

2000 Powell Street 7th Floor Project: 0752
Emeryville, CA 94608 Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1319668-03	Client Sampl	e Name:	ame: 0752, Influent-1 (26 Hours), 9/11/2013 11:50:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab	Run #	
cis-1,2-Dichloroethene		ND	ppbv	500	EPA-TO-15	ND	Quals A01	1	
trans-1,2-Dichloroethene)	ND	ppbv	500	EPA-TO-15	ND	A01	1	
1,2-Dichloropropane		ND	ppbv	500	EPA-TO-15	ND	A01	1	
1,3-Dichloropropane		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
2,2-Dichloropropane		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
1,1-Dichloropropene		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
cis-1,3-Dichloropropene		ND	ppbv	500	EPA-TO-15	ND	A01	1	
trans-1,3-Dichloroproper	ne	ND	ppbv	500	EPA-TO-15	ND	A01	1	
1,2-Dichloro-1,1,2,2-tetra	afluoroethane	ND	ppbv	500	EPA-TO-15	ND	A01	1	
Diisopropyl ether		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
1,4-Dioxane		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Ethanol		1800	ppbv	1000	EPA-TO-15	ND	A01	1	
Ethyl acetate		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Ethylbenzene		1700	ppbv	500	EPA-TO-15	ND	A01	1	
Ethyl methacrylate		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
1-Ethyl-4-methylbenzer	ie	550	ppbv	500	EPA-TO-15	ND	A01	1	
Ethyl t-butyl ether		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
n-Heptane		42000	ppbv	2000	EPA-TO-15	ND	A01	2	
Hexachlorobutadiene		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Hexachloroethane		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
Hexane		72000	ppbv	4000	EPA-TO-15	ND	A01	2	
2-Hexanone		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Isobutanol		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
Isooctane		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Isopropyl alcohol		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methacrylonitrile		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
Methylene chloride		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methyl ethyl ketone		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methyl iodide		ND	ppbv	1000	EPA-TO-15	ND	A01	1	
Methyl isobutyl ketone		ND	ppbv	500	EPA-TO-15	ND	A01	1	
Methyl methacrylate		ND	ppbv	2000	EPA-TO-15	ND	A01	1	
Methyl t-butyl ether		3300	ppbv	500	EPA-TO-15	ND	A01	1	
Naphthalene		ND	ppbv	1000	EPA-TO-15	ND	A01	1	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1319668-03	Client Sampl	e Name:	0752, Influent-1 (26	Hours), 9/11/201	3 11:50:00AM	1	
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Propionitrile		ND	ppbv	2000	EPA-TO-15	ND	A01	1
Propylene		ND	ppbv	500	EPA-TO-15	ND	A01	1
Styrene		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,1,2-Tetrachloroetha	ne	ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,2,2-Tetrachloroetha	ne	ND	ppbv	500	EPA-TO-15	ND	A01	1
Tetrachloroethene		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,1,2-Tetrafluoroethar	ne	ND	ppbv	2000	EPA-TO-15	ND	A01	1
Tetrahydrofuran		ND	ppbv	500	EPA-TO-15	ND	A01	1
Toluene		3700	ppbv	500	EPA-TO-15	ND	A01	1
1,2,4-Trichlorobenzene		ND	ppbv	1000	EPA-TO-15	ND	A01	1
1,1,1-Trichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,2-Trichloroethane		ND	ppbv	500	EPA-TO-15	ND	A01	1
Trichloroethene		ND	ppbv	500	EPA-TO-15	ND	A01	1
Trichlorofluoromethane		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,2,3-Trichloropropane		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,1,2-Trichloro-1,2,2-trif	luoroethane	ND	ppbv	500	EPA-TO-15	ND	A01	1
1,2,4-Trimethylbenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1
1,3,5-Trimethylbenzene		ND	ppbv	500	EPA-TO-15	ND	A01	1
Vinyl acetate		ND	ppbv	500	EPA-TO-15	ND	A01	1
Vinyl bromide		ND	ppbv	500	EPA-TO-15	ND	A01	1
Vinyl chloride		ND	ppbv	500	EPA-TO-15	ND	A01	1
p- & m-Xylenes		3200	ppbv	500	EPA-TO-15	ND	A01	1
o-Xylene		1000	ppbv	500	EPA-TO-15	ND	A01	1
Total Xylenes		4300	ppbv	1000	EPA-TO-15	ND	A01	1
TPH - Gasoline		970000	ppbv	200000	EPA-TO-15	ND	A01	2
4-Bromofluorobenzene	(Surrogate)	127	%	70 - 130 (LCL - UCL)	EPA-TO-15			1
4-Bromofluorobenzene	(Surrogate)	114	%	70 - 130 (LCL - UCL)	EPA-TO-15			2

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	09/11/13	09/12/13 15:14	LHS	MS-A1	1000	BWI0689	
2	EPA-TO-15	09/11/13	09/13/13 08:25	LHS	MS-A1	4000	BWI0689	

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported:

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

09/17/2013 9:10

Fixed Gases by GC/TCD (ASTM D1946)

BCL Sample ID:	1319668-03	Client Sampl	le Name:	0752, Influent-1 (26 Hours), 9/11/2013 11:50:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Methane (CH4)		0.20	% by Vol.	0.00020	ASTM-D1946	ND		1	

		Run		QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	ASTM-D1946	09/11/13	09/11/13 23:40	JMC	GC-A1	1	BWI0790	

Reported: 09/17/2013 9:10

2000 Powell Street 7th FloorProject: 0752Emeryville, CA 94608Project Number: 351646Project Manager: Kathy Brandt

BCL Sample ID:	1319668-04	Client Sampl	e Name:	0752, Effluen	nt (26 Hours), 9/11/2013	11:50:00AM	11:50:00AM			
				201		MB	Lab			
Constituent Acetone		Result ND	Units ppbv	PQL 5.0	Method EPA-TO-15	Bias ND	Quals A01	Run # 1		
Acetonitrile		ND	ppbv	10	EPA-TO-15	ND	A01	<u>·</u> 1		
Acrolein		ND	ppbv	10	EPA-TO-15	ND	A01	<u>·</u> 1		
Acrylonitrile		ND	ppbv	5.0	EPA-TO-15	ND	A01	<u>·</u> 1		
Allyl chloride		ND	ppbv	2.5	EPA-TO-15	ND	A01	 1		
t-Amyl Methyl ether		ND	ppbv	5.0	EPA-TO-15	ND	A01	1		
Benzene		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Benzyl chloride		ND	ppbv	5.0	EPA-TO-15	ND	A01	1		
Bromodichloromethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Bromoform		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Bromomethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,3-Butadiene		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
t-Butyl alcohol		ND	ppbv	5.0	EPA-TO-15	ND	A01	1		
Carbon disulfide		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Carbon tetrachloride		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Chlorobenzene		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Chloroethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Chloroform		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Chloromethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Chloroprene		0	ppbv		EPA-TO-15	0	A01	1		
Cyclohexane		10	ppbv	2.5	EPA-TO-15	ND	A01	1		
Dibromochloromethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,2-Dibromo-3-chloropro	ppane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,2-Dibromoethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
Dibromomethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,2-Dichlorobenzene		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,3-Dichlorobenzene		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,4-Dichlorobenzene		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
trans-1,4-Dichloro-2-but	ene	ND	ppbv	5.0	EPA-TO-15	ND	A01	1		
Dichlorodifluoromethane)	ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,1-Dichloroethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,2-Dichloroethane		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		
1,1-Dichloroethene		ND	ppbv	2.5	EPA-TO-15	ND	A01	1		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 131	9668-04 Client Sam	ple Name:	0752, Effluen	t (26 Hours), 9/11/2013			
Constituent	Pagult	Unito	DOL	Mathad	MB	Lab	D 4
Constituent cis-1,2-Dichloroethene	Result ND	Units ppbv	PQL 2.5	Method EPA-TO-15	Bias ND	Quals A01	Run #_ 1
trans-1,2-Dichloroethene	ND	ppbv	2.5	EPA-TO-15	ND	A01	 1
1,2-Dichloropropane	ND	ppbv	2.5	EPA-TO-15	ND	A01	 1
1,3-Dichloropropane	ND	ppbv	5.0	EPA-TO-15	ND	A01	 1
2,2-Dichloropropane	ND	ppbv	5.0	EPA-TO-15	ND	A01	<u>.</u> 1
1,1-Dichloropropene	ND	ppbv	5.0	EPA-TO-15	ND	A01	<u>·</u> 1
cis-1,3-Dichloropropene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
trans-1,3-Dichloropropene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
1,2-Dichloro-1,1,2,2-tetrafluoro	ethane ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Diisopropyl ether	ND	ppbv	5.0	EPA-TO-15	ND	A01	1
1,4-Dioxane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Ethanol	ND	ppbv	5.0	EPA-TO-15	ND	A01	1
Ethyl acetate	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Ethylbenzene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Ethyl methacrylate	ND	ppbv	10	EPA-TO-15	ND	A01	1
1-Ethyl-4-methylbenzene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Ethyl t-butyl ether	ND	ppbv	5.0	EPA-TO-15	ND	A01	1
n-Heptane	14	ppbv	2.5	EPA-TO-15	ND	A01	1
Hexachlorobutadiene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Hexachloroethane	ND	ppbv	5.0	EPA-TO-15	ND	A01	1
Hexane	61	ppbv	5.0	EPA-TO-15	ND	A01	1
2-Hexanone	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Isobutanol	ND	ppbv	10	EPA-TO-15	ND	A01	1
Isooctane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Isopropyl alcohol	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Methacrylonitrile	ND	ppbv	10	EPA-TO-15	ND	A01	1
Methylene chloride	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Methyl ethyl ketone	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Methyl iodide	ND	ppbv	5.0	EPA-TO-15	ND	A01	1
Methyl isobutyl ketone	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Methyl methacrylate	ND	ppbv	10	EPA-TO-15	ND	A01	1
Methyl t-butyl ether	ND	ppbv	2.5	EPA-TO-15	ND	A01	1
Naphthalene	ND	ppbv	5.0	EPA-TO-15	ND	A01	1

Reported: 09/17/2013 9:10

2000 Powell Street 7th FloorProject0752Emeryville, CA 94608Project Number:351646Project Manager:Kathy Brandt

BCL Sample ID: 1319668-04	Client Sample	e Name:	ne: 0752, Effluent (26 Hours), 9/11/2013 11:50:00AM					
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Propionitrile	ND	ppbv	10	EPA-TO-15	ND	A01	1	
Propylene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Styrene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,1,1,2-Tetrachloroethane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,1,2,2-Tetrachloroethane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Tetrachloroethene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,1,1,2-Tetrafluoroethane	ND	ppbv	10	EPA-TO-15	ND	A01	1	
Tetrahydrofuran	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Toluene	3.1	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,2,4-Trichlorobenzene	ND	ppbv	5.0	EPA-TO-15	ND	A01	1	
1,1,1-Trichloroethane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,1,2-Trichloroethane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Trichloroethene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Trichlorofluoromethane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,2,3-Trichloropropane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,2,4-Trimethylbenzene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
1,3,5-Trimethylbenzene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Vinyl acetate	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Vinyl bromide	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Vinyl chloride	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
p- & m-Xylenes	3.2	ppbv	2.5	EPA-TO-15	ND	A01	1	
o-Xylene	ND	ppbv	2.5	EPA-TO-15	ND	A01	1	
Total Xylenes	ND	ppbv	5.0	EPA-TO-15	ND	A01	1	
TPH - Gasoline	630	ppbv	250	EPA-TO-15	ND	A01	1	
4-Bromofluorobenzene (Surrogate)	121	%	70 - 130 (LCL - UCL)	EPA-TO-15			1	

			Run		QC					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-TO-15	09/11/13	09/12/13 15:45	LHS	MS-A1	5	BWI0689			

2000 Powell Street 7th Floor Emeryville, CA 94608

09/17/2013 9:10 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Fixed Gases by GC/TCD (ASTM D1946)

BCL Sample ID:	1319668-04	Client Sampl	le Name:	0752, Effluer	nt (26 Hours), 9/11/2013 1			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane (CH4)	_	0.012	% by Vol.	0.00020	ASTM-D1946	ND	_	1

			Run			QC					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID				
1	ASTM-D1946	09/11/13	09/12/13 00:00	JMC	GC-A1	1	BWI0790				

Emeryville, CA 94608

 Arcadis
 Reported:
 09/17/2013
 9:10

 2000 Powell Street 7th Floor
 Project:
 0752

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	
QC Batch ID: BWI0689							
Acetone	BWI0689-BLK1	ND	ppbv	1.0			
Acetonitrile	BWI0689-BLK1	ND	ppbv	2.0			
Acrolein	BWI0689-BLK1	ND	ppbv	2.0			
Acrylonitrile	BWI0689-BLK1	ND	ppbv	1.0			
Allyl chloride	BWI0689-BLK1	ND	ppbv	0.50			
t-Amyl Methyl ether	BWI0689-BLK1	ND	ppbv	1.0			
Benzene	BWI0689-BLK1	ND	ppbv	0.50			
Benzyl chloride	BWI0689-BLK1	ND	ppbv	1.0			
Bromodichloromethane	BWI0689-BLK1	ND	ppbv	0.50			
Bromoform	BWI0689-BLK1	ND	ppbv	0.50			
Bromomethane	BWI0689-BLK1	ND	ppbv	0.50			
1,3-Butadiene	BWI0689-BLK1	ND	ppbv	0.50			
t-Butyl alcohol	BWI0689-BLK1	ND	ppbv	1.0			
Carbon disulfide	BWI0689-BLK1	ND	ppbv	0.50			
Carbon tetrachloride	BWI0689-BLK1	ND	ppbv	0.50			
Chlorobenzene	BWI0689-BLK1	ND	ppbv	0.50			
Chloroethane	BWI0689-BLK1	ND	ppbv	0.50			
Chloroform	BWI0689-BLK1	ND	ppbv	0.50			
Chloromethane	BWI0689-BLK1	ND	ppbv	0.50			
Chloroprene	BWI0689-BLK1	0	ppbv				
Cyclohexane	BWI0689-BLK1	ND	ppbv	0.50			
Dibromochloromethane	BWI0689-BLK1	ND	ppbv	0.50			
1,2-Dibromo-3-chloropropane	BWI0689-BLK1	ND	ppbv	0.50			
1,2-Dibromoethane	BWI0689-BLK1	ND	ppbv	0.50			
Dibromomethane	BWI0689-BLK1	ND	ppbv	0.50			
1,2-Dichlorobenzene	BWI0689-BLK1	ND	ppbv	0.50			
1,3-Dichlorobenzene	BWI0689-BLK1	ND	ppbv	0.50			
1,4-Dichlorobenzene	BWI0689-BLK1	ND	ppbv	0.50			
trans-1,4-Dichloro-2-butene	BWI0689-BLK1	ND	ppbv	1.0			
Dichlorodifluoromethane	BWI0689-BLK1	ND	ppbv	0.50			
1,1-Dichloroethane	BWI0689-BLK1	ND	ppbv	0.50			
1,2-Dichloroethane	BWI0689-BLK1	ND	ppbv	0.50			
1,1-Dichloroethene	BWI0689-BLK1	ND	ppbv	0.50			
cis-1,2-Dichloroethene	BWI0689-BLK1	ND	ppbv	0.50			

Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	
QC Batch ID: BWI0689							
trans-1,2-Dichloroethene	BWI0689-BLK1	ND	ppbv	0.50			
1,2-Dichloropropane	BWI0689-BLK1	ND	ppbv	0.50			
1,3-Dichloropropane	BWI0689-BLK1	ND	ppbv	1.0			
2,2-Dichloropropane	BWI0689-BLK1	ND	ppbv	1.0			
1,1-Dichloropropene	BWI0689-BLK1	ND	ppbv	1.0			
cis-1,3-Dichloropropene	BWI0689-BLK1	ND	ppbv	0.50			
trans-1,3-Dichloropropene	BWI0689-BLK1	ND	ppbv	0.50			
1,2-Dichloro-1,1,2,2-tetrafluoroethane	BWI0689-BLK1	ND	ppbv	0.50			
Diisopropyl ether	BWI0689-BLK1	ND	ppbv	1.0			
1,4-Dioxane	BWI0689-BLK1	ND	ppbv	0.50			
Ethanol	BWI0689-BLK1	ND	ppbv	1.0			
Ethyl acetate	BWI0689-BLK1	ND	ppbv	0.50			
Ethylbenzene	BWI0689-BLK1	ND	ppbv	0.50			
Ethyl methacrylate	BWI0689-BLK1	ND	ppbv	2.0			
1-Ethyl-4-methylbenzene	BWI0689-BLK1	ND	ppbv	0.50			
Ethyl t-butyl ether	BWI0689-BLK1	ND	ppbv	1.0			
n-Heptane	BWI0689-BLK1	ND	ppbv	0.50			
Hexachlorobutadiene	BWI0689-BLK1	ND	ppbv	0.50			
Hexachloroethane	BWI0689-BLK1	ND	ppbv	1.0			
Hexane	BWI0689-BLK1	ND	ppbv	1.0			
2-Hexanone	BWI0689-BLK1	ND	ppbv	0.50			
Isobutanol	BWI0689-BLK1	ND	ppbv	2.0			
Isooctane	BWI0689-BLK1	ND	ppbv	0.50			
Isopropyl alcohol	BWI0689-BLK1	ND	ppbv	0.50			
Methacrylonitrile	BWI0689-BLK1	ND	ppbv	2.0			
Methylene chloride	BWI0689-BLK1	ND	ppbv	0.50			
Methyl ethyl ketone	BWI0689-BLK1	ND	ppbv	0.50			
Methyl iodide	BWI0689-BLK1	ND	ppbv	1.0			
Methyl isobutyl ketone	BWI0689-BLK1	ND	ppbv	0.50			
Methyl methacrylate	BWI0689-BLK1	ND	ppbv	2.0			
Methyl t-butyl ether	BWI0689-BLK1	ND	ppbv	0.50			
Naphthalene	BWI0689-BLK1	ND	ppbv	1.0			
Propionitrile	BWI0689-BLK1	ND	ppbv	2.0			
Propylene	BWI0689-BLK1	ND	ppbv	0.50			

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWI0689						
Styrene	BWI0689-BLK1	ND	ppbv	0.50		
1,1,1,2-Tetrachloroethane	BWI0689-BLK1	ND	ppbv	0.50		
1,1,2,2-Tetrachloroethane	BWI0689-BLK1	ND	ppbv	0.50		
Tetrachloroethene	BWI0689-BLK1	ND	ppbv	0.50		
1,1,1,2-Tetrafluoroethane	BWI0689-BLK1	ND	ppbv	2.0		
Tetrahydrofuran	BWI0689-BLK1	ND	ppbv	0.50		
Toluene	BWI0689-BLK1	ND	ppbv	0.50		
1,2,4-Trichlorobenzene	BWI0689-BLK1	ND	ppbv	1.0		
1,1,1-Trichloroethane	BWI0689-BLK1	ND	ppbv	0.50		
1,1,2-Trichloroethane	BWI0689-BLK1	ND	ppbv	0.50		
Trichloroethene	BWI0689-BLK1	ND	ppbv	0.50		
Trichlorofluoromethane	BWI0689-BLK1	ND	ppbv	0.50		
1,2,3-Trichloropropane	BWI0689-BLK1	ND	ppbv	0.50		
1,1,2-Trichloro-1,2,2-trifluoroethane	BWI0689-BLK1	ND	ppbv	0.50		
1,2,4-Trimethylbenzene	BWI0689-BLK1	ND	ppbv	0.50		
1,3,5-Trimethylbenzene	BWI0689-BLK1	ND	ppbv	0.50		
Vinyl acetate	BWI0689-BLK1	ND	ppbv	0.50		
Vinyl bromide	BWI0689-BLK1	ND	ppbv	0.50		
Vinyl chloride	BWI0689-BLK1	ND	ppbv	0.50		
p- & m-Xylenes	BWI0689-BLK1	ND	ppbv	0.50		
o-Xylene	BWI0689-BLK1	ND	ppbv	0.50		
Total Xylenes	BWI0689-BLK1	ND	ppbv	1.0		
TPH - Gasoline	BWI0689-BLK1	ND	ppbv	50		
4-Bromofluorobenzene (Surrogate)	BWI0689-BLK1	128	%	70 - 130	(LCL - UCL)	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

			•							
								Control L	<u>_imits</u>	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWI0689										
Acetone	BWI0689-BS1	LCS	8.8700	10.000	ppbv	88.7		70 - 130		
	BWI0689-BSD1	LCSD	8.9460	10.000	ppbv	89.5	0.9	70 - 130	30	
Acetonitrile	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
Accomme	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
Acrolein	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
Actoletti	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
A am de a Maile				40.000		20.0				
Acrylonitrile	BWI0689-BS1 BWI0689-BSD1	LCSD	3.9800 4.1030	10.000 10.000	ppbv	39.8 41.0	3.0	70 - 130 70 - 130	30	
		LCSD			ppbv		3.0		30	
Allyl chloride	BWI0689-BS1	LCS	7.5240	10.000	ppbv	75.2	4.0	70 - 130	00	
	BWI0689-BSD1	LCSD	7.6690	10.000	ppbv	76.7	1.9	70 - 130	30	
t-Amyl Methyl ether	BWI0689-BS1	LCS	10.344	10.000	ppbv	103		70 - 130		
	BWI0689-BSD1	LCSD	9.6170	10.000	ppbv	96.2	7.3	70 - 130	30	
Benzene	BWI0689-BS1	LCS	7.7220	10.000	ppbv	77.2		70 - 130		
	BWI0689-BSD1	LCSD	7.8720	10.000	ppbv	78.7	1.9	70 - 130	30	
Benzyl chloride	BWI0689-BS1	LCS	7.0810	10.000	ppbv	70.8		70 - 130		
	BWI0689-BSD1	LCSD	7.0320	10.000	ppbv	70.3	0.7	70 - 130	30	
Bromodichloromethane	BWI0689-BS1	LCS	10.909	10.000	ppbv	109		70 - 130		
	BWI0689-BSD1	LCSD	10.338	10.000	ppbv	103	5.4	70 - 130	30	
Bromoform	BWI0689-BS1	LCS	7.5390	10.000	ppbv	75.4		70 - 130		
	BWI0689-BSD1	LCSD	7.5610	10.000	ppbv	75.6	0.3	70 - 130	30	
Bromomethane	BWI0689-BS1	LCS	10.611	10.000	ppbv	106		70 - 130		
2.5	BWI0689-BSD1	LCSD	10.813	10.000	ppbv	108	1.9	70 - 130	30	
1,3-Butadiene	BWI0689-BS1		8.3820	10.000	ppbv	83.8		70 - 130		
1,3-Butatiene	BWI0689-BSD1	LCS LCSD	8.9080	10.000	ppbv	89.1	6.1	70 - 130	30	
A Double Leadership							0.1			
t-Butyl alcohol	BWI0689-BS1 BWI0689-BSD1	LCS	16.617 17.740	20.000 20.000	ppbv	83.1 88.7	6.5	70 - 130 70 - 130	30	
		LCSD			ppbv		0.5		30	
Carbon disulfide	BWI0689-BS1	LCS	7.5790	10.000	ppbv	75.8		70 - 130		
	BWI0689-BSD1	LCSD	7.7070	10.000	ppbv	77.1	1.7	70 - 130	30	
Carbon tetrachloride	BWI0689-BS1	LCS	7.8270	10.000	ppbv	78.3		70 - 130		
	BWI0689-BSD1	LCSD	7.9290	10.000	ppbv	79.3	1.3	70 - 130	30	
Chlorobenzene	BWI0689-BS1	LCS	11.000	10.000	ppbv	110		70 - 130		
	BWI0689-BSD1	LCSD	10.367	10.000	ppbv	104	5.9	70 - 130	30	
Chloroethane	BWI0689-BS1	LCS	9.4040	10.000	ppbv	94.0		70 - 130		
	BWI0689-BSD1	LCSD	9.5040	10.000	ppbv	95.0	1.1	70 - 130	30	
Chloroform	BWI0689-BS1	LCS	8.1530	10.000	ppbv	81.5		70 - 130		
	BWI0689-BSD1	LCSD	8.3290	10.000	ppbv	83.3	2.1	70 - 130	30	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

			-							
								Control L	<u>imits</u>	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWI0689										
Chloromethane	BWI0689-BS1	LCS	7.6640	10.000	ppbv	76.6		70 - 130		
	BWI0689-BSD1	LCSD	7.7250	10.000	ppbv	77.2	0.8	70 - 130	30	
Chloroprene	BWI0689-BS1	LCS	0		ppbv			70 - 130		
Cincroprene	BWI0689-BSD1	LCSD	0		ppbv			70 - 130	30	
Cyclohexane	BWI0689-BS1	LCS	7.1380	10.000		71.4		70 - 130		
Cyclonexame	BWI0689-BSD1	LCSD	7.1360	10.000	ppbv ppbv	73.4	2.8	70 - 130	30	
							2.0			
Dibromochloromethane	BWI0689-BS1	LCS	11.507	10.000	ppbv	115	<i>-</i> 0	70 - 130	20	
	BWI0689-BSD1	LCSD	10.908	10.000	ppbv	109	5.3	70 - 130	30	
1,2-Dibromo-3-chloropropane	BWI0689-BS1	LCS	9.2540	10.000	ppbv	92.5		70 - 130		
	BWI0689-BSD1	LCSD	9.1870	10.000	ppbv	91.9	0.7	70 - 130	30	
1,2-Dibromoethane	BWI0689-BS1	LCS	10.456	10.000	ppbv	105		70 - 130		
	BWI0689-BSD1	LCSD	9.8060	10.000	ppbv	98.1	6.4	70 - 130	30	
Dibromomethane	BWI0689-BS1	LCS	9.2630	10.000	ppbv	92.6		70 - 130		
	BWI0689-BSD1	LCSD	8.8430	10.000	ppbv	88.4	4.6	70 - 130	30	
1,2-Dichlorobenzene	BWI0689-BS1	LCS	11.139	10.000	ppbv	111		70 - 130		
	BWI0689-BSD1	LCSD	11.062	10.000	ppbv	111	0.7	70 - 130	30	
1,3-Dichlorobenzene	BWI0689-BS1	LCS	11.816	10.000	ppbv	118		70 - 130		
,	BWI0689-BSD1	LCSD	11.730	10.000	ppbv	117	0.7	70 - 130	30	
1,4-Dichlorobenzene	BWI0689-BS1	LCS	11.696	10.000	ppbv	117		70 - 130		
1,1 Biomorosciizone	BWI0689-BSD1	LCSD	11.599	10.000	ppbv	116	0.8	70 - 130	30	
trans-1,4-Dichloro-2-butene	BWI0689-BS1		ND					70 - 130		
trans-1,4-Dichloro-2-buterie	BWI0689-BSD1	LCS LCSD	ND		ppbv ppbv			70 - 130	30	
District the state of the state				40.000		440				
Dichlorodifluoromethane	BWI0689-BS1	LCS	11.821	10.000	ppbv	118	0.0	70 - 130	20	
	BWI0689-BSD1	LCSD	11.819	10.000	ppbv	118	0.0	70 - 130	30	
1,1-Dichloroethane	BWI0689-BS1	LCS	7.8890	10.000	ppbv	78.9		70 - 130		
	BWI0689-BSD1	LCSD	8.0250	10.000	ppbv	80.2	1.7	70 - 130	30	
1,2-Dichloroethane	BWI0689-BS1	LCS	8.8440	10.000	ppbv	88.4		70 - 130		
	BWI0689-BSD1	LCSD	9.0180	10.000	ppbv	90.2	1.9	70 - 130	30	
1,1-Dichloroethene	BWI0689-BS1	LCS	8.7170	10.000	ppbv	87.2		70 - 130		
	BWI0689-BSD1	LCSD	8.8720	10.000	ppbv	88.7	1.8	70 - 130	30	
cis-1,2-Dichloroethene	BWI0689-BS1	LCS	8.0480	10.000	ppbv	80.5		70 - 130		
	BWI0689-BSD1	LCSD	8.2310	10.000	ppbv	82.3	2.2	70 - 130	30	
trans-1,2-Dichloroethene	BWI0689-BS1	LCS	7.9350	10.000	ppbv	79.4		70 - 130		
	BWI0689-BSD1	LCSD	8.1680	10.000	ppbv	81.7	2.9	70 - 130	30	
1,2-Dichloropropane	BWI0689-BS1	LCS	9.6310	10.000	ppbv	96.3		70 - 130		
.,2 3.6.101091094110	BWI0689-BSD1	LCSD	9.1140	10.000	ppbv	91.1	5.5	70 - 130	30	
			-							

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

							Control Limits			
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWI0689										
1,3-Dichloropropane	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
2,2-Dichloropropane	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
1,1-Dichloropropene	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
cis-1,3-Dichloropropene	BWI0689-BS1	LCS	8.9630	10.000	ppbv	89.6		70 - 130		
	BWI0689-BSD1	LCSD	8.4740	10.000	ppbv	84.7	5.6	70 - 130	30	
trans-1,3-Dichloropropene	BWI0689-BS1	LCS	9.3040	10.000	ppbv	93.0		70 - 130		
	BWI0689-BSD1	LCSD	8.7400	10.000	ppbv	87.4	6.3	70 - 130	30	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	BWI0689-BS1	LCS	10.073	10.000	ppbv	101		70 - 130		
	BWI0689-BSD1	LCSD	10.405	10.000	ppbv	104	3.2	70 - 130	30	
Diisopropyl ether	BWI0689-BS1	LCS	9.4740	10.000	ppbv	94.7		70 - 130		
	BWI0689-BSD1	LCSD	9.7190	10.000	ppbv	97.2	2.6	70 - 130	30	
1,4-Dioxane	BWI0689-BS1	LCS	10.238	10.000	ppbv	102		70 - 130		
	BWI0689-BSD1	LCSD	9.8330	10.000	ppbv	98.3	4.0	70 - 130	30	
Ethanol	BWI0689-BS1	LCS	23.421	20.000	ppbv	117		70 - 130		
	BWI0689-BSD1	LCSD	24.207	20.000	ppbv	121	3.3	70 - 130	30	
Ethyl acetate	BWI0689-BS1	LCS	9.4740	10.000	ppbv	94.7		70 - 130		
	BWI0689-BSD1	LCSD	9.7190	10.000	ppbv	97.2	2.6	70 - 130	30	
Ethylbenzene	BWI0689-BS1	LCS	7.5710	10.000	ppbv	75.7		70 - 130		 -
	BWI0689-BSD1	LCSD	7.5270	10.000	ppbv	75.3	0.6	70 - 130	30	
Ethyl methacrylate	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
1-Ethyl-4-methylbenzene	BWI0689-BS1	LCS	10.876	10.000	ppbv	109		70 - 130		
,	BWI0689-BSD1	LCSD	10.815	10.000	ppbv	108	0.6	70 - 130	30	
Ethyl t-butyl ether	BWI0689-BS1	LCS	8.7340	10.000	ppbv	87.3		70 - 130		
,	BWI0689-BSD1	LCSD	8.6170	10.000	ppbv	86.2	1.3	70 - 130	30	
n-Heptane	BWI0689-BS1	LCS	9.5570	10.000	ppbv	95.6		70 - 130		
•	BWI0689-BSD1	LCSD	8.9540	10.000	ppbv	89.5	6.5	70 - 130	30	
Hexachlorobutadiene	BWI0689-BS1	LCS	7.9800	10.000	ppbv	79.8		70 - 130		
	BWI0689-BSD1	LCSD	8.2550	10.000	ppbv	82.6	3.4	70 - 130	30	
Hexachloroethane	BWI0689-BS1	LCS	8.3490	10.000	ppbv	83.5		70 - 130		
	BWI0689-BSD1	LCSD	8.2720	10.000	ppbv	82.7	0.9	70 - 130	30	
Hexane	BWI0689-BS1	LCS	8.2110	10.000	ppbv	82.1		70 - 130		
-	BWI0689-BSD1	LCSD	8.3360	10.000	ppbv	83.4	1.5	70 - 130	30	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

			•							
								Control I	<u>_imits</u>	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWI0689										
2-Hexanone	BWI0689-BS1	LCS	12.201	10.000	ppbv	122		70 - 130		
	BWI0689-BSD1	LCSD	11.761	10.000	ppbv	118	3.7	70 - 130	30	
Isobutanol	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
Isooctane	BWI0689-BS1	LCS	9.6980	10.000	ppbv	97.0		70 - 130		
isoociane	BWI0689-BSD1	LCSD	9.1440	10.000	ppbv	91.4	5.9	70 - 130	30	
Jeograpyi alaahal	BWI0689-BS1							70 - 130		
Isopropyl alcohol	BWI0689-BSD1	LCS LCSD	9.3670 9.8470	10.000 10.000	ppbv ppbv	93.7 98.5	5.0	70 - 130 70 - 130	30	
				10.000	***	30.3	3.0			
Methacrylonitrile	BWI0689-BS1	LCS	ND		ppbv			70 - 130	20	
	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
Methylene chloride	BWI0689-BS1	LCS	7.2320	10.000	ppbv	72.3		70 - 130		
	BWI0689-BSD1	LCSD	7.4150	10.000	ppbv	74.2	2.5	70 - 130	30	
Methyl ethyl ketone	BWI0689-BS1	LCS	8.9110	10.000	ppbv	89.1		70 - 130		
	BWI0689-BSD1	LCSD	9.2440	10.000	ppbv	92.4	3.7	70 - 130	30	
Methyl iodide	BWI0689-BS1	LCS	7.0190	10.000	ppbv	70.2		70 - 130		
	BWI0689-BSD1	LCSD	7.0430	10.000	ppbv	70.4	0.3	70 - 130	30	
Methyl isobutyl ketone	BWI0689-BS1	LCS	12.072	10.000	ppbv	121		70 - 130		
	BWI0689-BSD1	LCSD	11.549	10.000	ppbv	115	4.4	70 - 130	30	
Methyl methacrylate	BWI0689-BS1	LCS	ND		ppbv			70 - 130		
	BWI0689-BSD1	LCSD	ND		ppbv			70 - 130	30	
Methyl t-butyl ether	BWI0689-BS1	LCS	7.8990	10.000	ppbv	79.0		70 - 130		
	BWI0689-BSD1	LCSD	7.9170	10.000	ppbv	79.2	0.2	70 - 130	30	
Propionitrile	BWI0689-BS1		ND		ppbv			70 - 130		
Propionitine	BWI0689-BSD1	LCS LCSD	ND		ppbv			70 - 130 70 - 130	30	
Describes				40.000		00.0				
Propylene	BWI0689-BS1 BWI0689-BSD1	LCSD	8.2800 8.4670	10.000 10.000	ppbv	82.8 84.7	2.2	70 - 130 70 - 130	30	
		LCSD			ppbv		2.2		30	
Styrene	BWI0689-BS1	LCS	8.2600	10.000	ppbv	82.6		70 - 130		
	BWI0689-BSD1	LCSD	8.1340	10.000	ppbv	81.3	1.5	70 - 130	30	
1,1,1,2-Tetrachloroethane	BWI0689-BS1	LCS	10.050	10.000	ppbv	100		70 - 130		
	BWI0689-BSD1	LCSD	9.4620	10.000	ppbv	94.6	6.0	70 - 130	30	
1,1,2,2-Tetrachloroethane	BWI0689-BS1	LCS	10.322	10.000	ppbv	103		70 - 130		
	BWI0689-BSD1	LCSD	10.309	10.000	ppbv	103	0.1	70 - 130	30	
Tetrachloroethene	BWI0689-BS1	LCS	10.253	10.000	ppbv	103		70 - 130		
	BWI0689-BSD1	LCSD	9.6370	10.000	ppbv	96.4	6.2	70 - 130	30	
1,1,1,2-Tetrafluoroethane	BWI0689-BS1	LCS	ND		ppbv			60 - 140		
	BWI0689-BSD1	LCSD	ND		ppbv			60 - 140	30	
1,1,1,2-Tetrafluoroethane									30	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Compounds by GC/MS (EPA Method TO-15)

								Control L	imits	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWI0689										
Tetrahydrofuran	BWI0689-BS1	LCS	9.6590	10.000	ppbv	96.6		70 - 130		
	BWI0689-BSD1	LCSD	9.9820	10.000	ppbv	99.8	3.3	70 - 130	30	
Toluene	BWI0689-BS1	LCS	9.8750	10.000	ppbv	98.8		70 - 130		
	BWI0689-BSD1	LCSD	9.3090	10.000	ppbv	93.1	5.9	70 - 130	30	
1,2,4-Trichlorobenzene	BWI0689-BS1	LCS	8.9740	10.000	ppbv	89.7		70 - 130		
	BWI0689-BSD1	LCSD	9.0550	10.000	ppbv	90.6	0.9	70 - 130	30	
1,1,1-Trichloroethane	BWI0689-BS1	LCS	7.8740	10.000	ppbv	78.7		70 - 130		
	BWI0689-BSD1	LCSD	7.9590	10.000	ppbv	79.6	1.1	70 - 130	30	
1,1,2-Trichloroethane	BWI0689-BS1	LCS	10.147	10.000	ppbv	101		70 - 130		
	BWI0689-BSD1	LCSD	9.5850	10.000	ppbv	95.8	5.7	70 - 130	30	
Trichloroethene	BWI0689-BS1	LCS	9.7990	10.000	ppbv	98.0		70 - 130		
	BWI0689-BSD1	LCSD	9.3290	10.000	ppbv	93.3	4.9	70 - 130	30	
Trichlorofluoromethane	BWI0689-BS1	LCS	11.529	10.000	ppbv	115		70 - 130		
	BWI0689-BSD1	LCSD	11.623	10.000	ppbv	116	8.0	70 - 130	30	
1,2,3-Trichloropropane	BWI0689-BS1	LCS	8.7490	10.000	ppbv	87.5		70 - 130		
	BWI0689-BSD1	LCSD	8.7600	10.000	ppbv	87.6	0.1	70 - 130	30	
1,1,2-Trichloro-1,2,2-trifluoroethane	BWI0689-BS1	LCS	8.5240	10.000	ppbv	85.2		70 - 130		
	BWI0689-BSD1	LCSD	8.6380	10.000	ppbv	86.4	1.3	70 - 130	30	
1,2,4-Trimethylbenzene	BWI0689-BS1	LCS	10.544	10.000	ppbv	105		70 - 130		
	BWI0689-BSD1	LCSD	10.491	10.000	ppbv	105	0.5	70 - 130	30	
1,3,5-Trimethylbenzene	BWI0689-BS1	LCS	9.7960	10.000	ppbv	98.0		70 - 130		
	BWI0689-BSD1	LCSD	11.069	10.000	ppbv	111	12.2	70 - 130	30	
Vinyl acetate	BWI0689-BS1	LCS	7.0390	10.000	ppbv	70.4		70 - 130		
	BWI0689-BSD1	LCSD	7.0860	10.000	ppbv	70.9	0.7	70 - 130	30	
Vinyl bromide	BWI0689-BS1	LCS	10.686	10.000	ppbv	107		70 - 130		
	BWI0689-BSD1	LCSD	10.901	10.000	ppbv	109	2.0	70 - 130	30	
Vinyl chloride	BWI0689-BS1	LCS	8.0370	10.000	ppbv	80.4		70 - 130		
	BWI0689-BSD1	LCSD	8.3430	10.000	ppbv	83.4	3.7	70 - 130	30	
p- & m-Xylenes	BWI0689-BS1	LCS	16.528	20.000	ppbv	82.6		70 - 130		
	BWI0689-BSD1	LCSD	16.603	20.000	ppbv	83.0	0.5	70 - 130	30	
o-Xylene	BWI0689-BS1	LCS	8.7920	10.000	ppbv	87.9		70 - 130		
	BWI0689-BSD1	LCSD	8.7950	10.000	ppbv	88.0	0.0	70 - 130	30	
Total Xylenes	BWI0689-BS1	LCS	25.320	30.000	ppbv	84.4		70 - 130		
	BWI0689-BSD1	LCSD	25.398	30.000	ppbv	84.7	0.3	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BWI0689-BS1	LCS	8.0390	10.000	ppbv	80.4		70 - 130		
	BWI0689-BSD1	LCSD	7.5540	10.000	ppbv	75.5	6.2	70 - 130		



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Fixed Gases by GC/TCD (ASTM D1946)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWI0790						
Methane (CH4)	BWI0790-BLK1	ND	% by Vol.	0.00020		



2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 09/17/2013 9:10

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Fixed Gases by GC/TCD (ASTM D1946)

							Control Limits					
				Spike		Percent		Percent		Lab		
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals		
QC Batch ID: BWI0790												
Methane (CH4)	BWI0790-BS1	LCS	1.9030	1.8000	% by Vol.	106		70 - 130				
	BWI0790-BSD1	LCSD	1.8950	1.8000	% by Vol.	105	0.4	70 - 130	30			



Arcadis Reported: 09/17/2013 9:10

2000 Powell Street 7th Floor Project: 0752 Emeryville, CA 94608 Project Number: 351646 Project Manager: Kathy Brandt

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

Practical Quantitation Limit PQL RPD Relative Percent Difference

PQL's and MDL's are raised due to sample dilution. A01



Date of Report: 09/16/2013

Kathy Brandt

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

0752 Project:

1319699 BC Work Order: B155271 Invoice ID:

Enclosed are the results of analyses for samples received by the laboratory on 9/11/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers

molly meyers

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



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CHAIN OF CUSTODY FORM

			Union Oil Co	mpany of California a 61	01 Bollinger Canyon Road	ad s San Ramon, CA 94583							COCof						
Union Oil Site ID: 3516	16			Union Oll Consultant: A		ANALYSES								QUIRED					
Site Global ID:				Consultant Contact: Kartherine Brandt												Turn	around .	ľime (TAT):	
Site Address: 726 thrsison Street			Consultant Phone No.: 510 -596-4675												Standa		24 Hours □		
Oakland, CA			Sampling Company: PRO ARCAD 15									1			48 Hou		(72 Hours 🗹		
Union Oli PM: Tim	ishop			Sampled By (PRINT): Try let Saule												Sp	ecial ins	tructions	
Union Olf PM Phone No.:								260E		ဖွာ						Email	Kef	65+ +0;	
Charge Code: NWRTB- 00- LAB			Sampler Signature;				EPA 8260B		th OXY						Kathi	erine. dis-u	Brandte s. Com		
					oratories, Inc.	EPA 8015	,,	Sby	909	st wi									
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.			Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911			by GC/MS	BTEX/MTBE/OXYS by	Ethanol by EPA 82608	EPA 82608 Full List with OXYS										
	SAMPLE	ID					G	IIW/	이 한	260									
Field Point Name	Matrix	DTW	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by	H.H.	втех	Ethan	EPA 8						No	otes / Co	mments	
MPE-1(1HOUT)	W-S-A		130910	11:05	4-40AL VOA			X	X	X								***************************************	
MPE-1(24 Hours)	W-S-A		130911	10:05	4-HULL MOA			X	X	X									
MPE-1(26 Hoves)	W-S-A		130911	11:55	4-402L VOA			X	X	乂									
	W-S-A					<u> </u>													
	W-S-A																		
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Relinquished By Com		Date / Time	J.,,,,,	Relinquished By Co	ompany Date / Time :				Relin	quished	LВy		Compa	iny	L	Date / Time	ə:		
Tyler Sale AR	CADIS	9/11/	13 14:25	Have Bogan	Bclab 9-11-13 ompany Date / Time:	18-	15			W.	<u></u>		-	NB	Q	8-11-1	3 .	21:50	
I Rebeived By Comi	nanv	Date / Time:		I Received By Y Co	ompany Date / Time :					elved By			Comp	any		Date / Time:			
Mary Bogon	- Bcl	Ab 9-1	1-13 1425	\$ 30 B	CLBB 9-11-13					Bclab 9.11.13 2150									



Chain of Custody and Cooler Receipt Form for 1319699 Page 2 of 2

J LABURATURIES INC.		COOLER RECI	EIPT FOR	M	Rev. No. 1	5 07/01/	пз Ра	ge\ 0:	<i> </i>
ubmission #: 3-19	901	7100							
SHIPPING INF			1	LIDDING	CONTAIN			REE LIQ1	
ederal Express 🖸 UPS 🗆			Ice Che	si 🗗	None 🗆	Вох □		ES IN	
C Lab Field Service D Othe	er 🗆 (Specify)	Othe	ırົ⊟ (Spe∈	cify)		_		_
efrigerant: Ice 🗐 Blue Ic	е 🗆 Поп	e Dther D	Comm	ents:					
	Contair			•					
ıstody Seals İce Chest ⊡- ınıad? Yes ⊖ No⊡			Comi	nents:					
samples received? Yes D No D		s containers intact? \					h COC? Ye	es D No	<u> </u>
COC Received	Emissivity:	.95 Container:	Ambor	Thermon	neter ID: 2	207	Date/Time	119	11113
X YES □ NO									27
[Temperatur	e: (A) 5,1	°C /	10 1 pr	<u> </u>	°C	Analyst Ir	1it	220
					NUMBERS				
SAMPLE CONTAINERS	1	2 3	4	5	6	7	8	9	10
GENERAL MINERAL/ GENERAL	T		 	İ	<u> </u>	<u> </u>			
PE UNPRESERVED ·									
INORGANIC CHEMICAL METALS									
INORGANIC CHEMICAL METALS									
CYANIDE	-								
NITROGEN FORMS									
TOTAL SULFIDE				·					
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CHEMICAL OXYGEN DEMAND		ļ							
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ai voa vial travel blank									
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EPA 413.1, 413-2, 418.1				-				<u> </u>	
ODOR					<u> </u>				
DIOLOGICAL			-	<u> </u>				ION	
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nJ VOA VIAL- 504						1 //E			
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EPA 548			 	-	 	<u> </u>			
EPA 549		l. —	-		 			†	
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EPA 8015M			 		 				
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iments:	Сп	es . 197	9/1.1.	<u> </u>					

2000 Powell Street 7th Floor Emeryville, CA 94608

Reported: 09/16/2013 15:04

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1319699-01 COC Number:

> **Project Number:** 0752 Sampling Location:

Sampling Point:

Sampled By:

MPE-1(1 Hour)-W-130910

AREC

09/11/2013 21:50 Receive Date: Sampling Date: 09/10/2013 11:05

Sample Depth: Lab Matrix: Water Water Sample Type:

Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1319699-02 **COC Number:**

> **Project Number:** 0752

Sampling Location: Sampling Point:

Sampled By:

MPE-1(24 Hours)-W-130911

AREC

09/11/2013 21:50 Receive Date: 09/11/2013 10:05

Sampling Date: Sample Depth: Water Lab Matrix:

Water Sample Type: Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1319699-03 COC Number:

> 0752 **Project Number:** Sampling Location:

MPE-1(26 Hours)-W-130911 Sampling Point:

AREC Sampled By:

Receive Date:

09/11/2013 21:50

09/11/2013 11:55 Sampling Date:

Sample Depth: Water Lab Matrix: Water Sample Type:

Delivery Work Order:

Global ID:

Location ID (FieldPoint): MPE-1

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 13	319699-01	Client Sampl	e Name:	0752, MPE-1	(1 Hour)-W-130910, 9/10	0/2013 11:05:	/2013 11:05:00AM		
O		D!!	11	DOL	NA -411	МВ	Lab	.	
Constituent Benzene		Result 97	Units ug/L	PQL 0.50	Method EPA-8260B	Bias ND	Quals	Run #1	
Bromobenzene		ND	ug/L	0.50	EPA-8260B	ND		<u>'</u> 1	
Bromochloromethane		ND	ug/L	0.50	EPA-8260B	ND		<u>'</u> 1	
Bromodichloromethane		ND	ug/L	0.50	EPA-8260B	ND		<u>'</u> 1	
Bromoform		ND	ug/L	0.50	EPA-8260B	ND		<u>'</u> 1	
Bromomethane		ND	ug/L	1.0	EPA-8260B	ND		<u>·</u> 1	
n-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1	
sec-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1	
tert-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1	
Carbon tetrachloride		ND	ug/L	0.50	EPA-8260B	ND		1	
Chlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		1	
Chloroethane		ND	ug/L	0.50	EPA-8260B	ND		1	
Chloroform		ND	ug/L	0.50	EPA-8260B	ND		1	
Chloromethane		ND	ug/L	0.50	EPA-8260B	ND		1	
2-Chlorotoluene		ND	ug/L	0.50	EPA-8260B	ND		1	
4-Chlorotoluene		ND	ug/L	0.50	EPA-8260B	ND		1	
Dibromochloromethane		ND	ug/L	0.50	EPA-8260B	ND		1	
1,2-Dibromo-3-chloropropane	е	ND	ug/L	1.0	EPA-8260B	ND	V01	1	
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1	
Dibromomethane		ND	ug/L	0.50	EPA-8260B	ND		1	
1,2-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		1	
1,3-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		1	
1,4-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		1	
Dichlorodifluoromethane		ND	ug/L	0.50	EPA-8260B	ND		1	
1,1-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1	
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1	
1,1-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		1	
cis-1,2-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		1	
rans-1,2-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		1	
Total 1,2-Dichloroethene		ND	ug/L	1.0	EPA-8260B	ND		1	
1,2-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		1	
1,3-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		1	
2,2-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		1	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 131	19699-01 Cli	ent Sample	e Name:	0752, MPE-	1(1 Hour)-W-130910, 9/10	/2013 11:05:	00AM	
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
1,1-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND	Quais	1
cis-1,3-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND		1
trans-1,3-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND		1
Total 1,3-Dichloropropene		ND	ug/L	1.0	EPA-8260B	ND		1
Ethylbenzene		11	ug/L	0.50	EPA-8260B	ND		1
Hexachlorobutadiene		ND	ug/L	0.50	EPA-8260B	ND		1
Isopropylbenzene		2.8	ug/L	0.50	EPA-8260B	ND		1
p-Isopropyltoluene		0.81	ug/L	0.50	EPA-8260B	ND		1
Methylene chloride		ND	ug/L	1.0	EPA-8260B	ND		1
Methyl t-butyl ether		370	ug/L	5.0	EPA-8260B	ND	A01	2
Naphthalene		7.4	ug/L	0.50	EPA-8260B	ND		1
n-Propylbenzene		2.7	ug/L	0.50	EPA-8260B	ND		1
Styrene		ND	ug/L	0.50	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Tetrachloroethene		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		13	ug/L	0.50	EPA-8260B	ND		1
1,2,3-Trichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2,4-Trichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,1,1-Trichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,1,2-Trichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Trichloroethene		ND	ug/L	0.50	EPA-8260B	ND		1
Trichlorofluoromethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2,3-Trichloropropane		ND	ug/L	1.0	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroet	thane	ND	ug/L	0.50	EPA-8260B	ND		1
1,2,4-Trimethylbenzene		5.4	ug/L	0.50	EPA-8260B	ND		1
1,3,5-Trimethylbenzene		2.6	ug/L	0.50	EPA-8260B	ND		1
Vinyl chloride		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		25	ug/L	1.0	EPA-8260B	ND		1
t-Amyl Methyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
t-Butyl alcohol		450	ug/L	10	EPA-8260B	ND		1
Diisopropyl ether		5.7	ug/L	0.50	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1

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2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1319699-01	Client Sampl	e Name:	0752, MPE-1(1 Hour)-W-130910, 9/10/2013 11:05:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#	
Ethyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1	
1,2-Dichloroethane-d4 (Si	urrogate)	89.6	%	75 - 125 (LCL - UCL)	EPA-8260B			1	
1,2-Dichloroethane-d4 (Si	urrogate)	120	%	75 - 125 (LCL - UCL)	EPA-8260B			2	
Toluene-d8 (Surrogate)		103	%	80 - 120 (LCL - UCL)	EPA-8260B			1	
Toluene-d8 (Surrogate)		100	%	80 - 120 (LCL - UCL)	EPA-8260B			2	
4-Bromofluorobenzene (S	urrogate)	97.2	%	80 - 120 (LCL - UCL)	EPA-8260B			1	
4-Bromofluorobenzene (S	urrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260B			2	

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	09/13/13	09/13/13 12:30	ML	HPCHEM	1	BWI1132
2	EPA-8260B	09/13/13	09/13/13 17:41	ML	HPCHEM	10	BWI1132

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 1	319699-02	Client Sampl	e Name:	0752, MPE-1	24 Hours)-W-130911, 9	Hours)-W-130911, 9/11/2013 10:05:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #		
Benzene		73	ug/L	2.5	EPA-8260B	ND	A01	1		
Bromobenzene		ND	ug/L	0.50	EPA-8260B	ND		2		
Bromochloromethane		ND	ug/L	0.50	EPA-8260B	ND		2		
Bromodichloromethane		ND	ug/L	0.50	EPA-8260B	ND		2		
Bromoform		ND	ug/L	0.50	EPA-8260B	ND		2		
Bromomethane		ND	ug/L	1.0	EPA-8260B	ND		2		
n-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		2		
sec-Butylbenzene		0.59	ug/L	0.50	EPA-8260B	ND		2		
ert-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		2		
Carbon tetrachloride		ND	ug/L	0.50	EPA-8260B	ND		2		
Chlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2		
Chloroethane		ND	ug/L	0.50	EPA-8260B	ND		2		
Chloroform		ND	ug/L	0.50	EPA-8260B	ND		2		
Chloromethane		ND	ug/L	0.50	EPA-8260B	ND		2		
2-Chlorotoluene		ND	ug/L	0.50	EPA-8260B	ND		2		
4-Chlorotoluene		ND	ug/L	0.50	EPA-8260B	ND		2		
Dibromochloromethane		ND	ug/L	0.50	EPA-8260B	ND		2		
1,2-Dibromo-3-chloropropa	ne	ND	ug/L	1.0	EPA-8260B	ND	V01	2		
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		2		
Dibromomethane		ND	ug/L	0.50	EPA-8260B	ND		2		
1,2-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2		
1,3-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2		
1,4-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2		
Dichlorodifluoromethane		ND	ug/L	0.50	EPA-8260B	ND		2		
1,1-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2		
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2		
1,1-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2		
cis-1,2-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2		
rans-1,2-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2		
Total 1,2-Dichloroethene		ND	ug/L	1.0	EPA-8260B	ND		2		
1,2-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		2		
1,3-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		2		
2,2-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		2		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 13	19699-02	Client Sampl	e Name:	0752, MPE-1	(24 Hours)-W-130911, 9/	/11/2013 10:0	05:00AM	
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
1,1-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND	400.0	2
cis-1,3-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND		2
trans-1,3-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND		2
Total 1,3-Dichloropropene		ND	ug/L	1.0	EPA-8260B	ND		2
Ethylbenzene		48	ug/L	0.50	EPA-8260B	ND		2
Hexachlorobutadiene		ND	ug/L	0.50	EPA-8260B	ND		2
Isopropylbenzene		5.8	ug/L	0.50	EPA-8260B	ND		2
p-Isopropyltoluene		1.8	ug/L	0.50	EPA-8260B	ND		2
Methylene chloride		ND	ug/L	1.0	EPA-8260B	ND		2
Methyl t-butyl ether		450	ug/L	2.5	EPA-8260B	ND	A01	1
Naphthalene		23	ug/L	0.50	EPA-8260B	ND		2
n-Propylbenzene		6.0	ug/L	0.50	EPA-8260B	ND		2
Styrene		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
Tetrachloroethene		ND	ug/L	0.50	EPA-8260B	ND		2
Toluene		64	ug/L	0.50	EPA-8260B	ND		2
1,2,3-Trichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2
1,2,4-Trichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,1-Trichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,2-Trichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
Trichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2
Trichlorofluoromethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,2,3-Trichloropropane		ND	ug/L	1.0	EPA-8260B	ND		2
1,1,2-Trichloro-1,2,2-trifluoroe	ethane	ND	ug/L	0.50	EPA-8260B	ND		2
1,2,4-Trimethylbenzene		29	ug/L	0.50	EPA-8260B	ND		2
1,3,5-Trimethylbenzene		7.4	ug/L	0.50	EPA-8260B	ND		2
Vinyl chloride		ND	ug/L	0.50	EPA-8260B	ND		2
Total Xylenes		110	ug/L	1.0	EPA-8260B	ND		2
t-Amyl Methyl ether		ND	ug/L	0.50	EPA-8260B	ND		2
t-Butyl alcohol		700	ug/L	10	EPA-8260B	ND		2
Diisopropyl ether		17	ug/L	0.50	EPA-8260B	ND		2
Ethanol		ND	ug/L	250	EPA-8260B	ND		2

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1319699-02	Client Sampl	e Name:	9752, MPE-1(24 Hours)-W-130911, 9/11/2013 10:05:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Ethyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		2	
1,2-Dichloroethane-d4	(Surrogate)	120	%	75 - 125 (LCL - UCL)	EPA-8260B			1	
1,2-Dichloroethane-d4	(Surrogate)	86.0	%	75 - 125 (LCL - UCL)	EPA-8260B			2	
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260B			1	
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			2	
4-Bromofluorobenzene	(Surrogate)	107	%	80 - 120 (LCL - UCL)	EPA-8260B			1	
4-Bromofluorobenzene	(Surrogate)	99.3	%	80 - 120 (LCL - UCL)	EPA-8260B			2	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	09/13/13	09/13/13 18:29	ML	HPCHEM	5	BWI1132	
2	EPA-8260B	09/13/13	09/13/13 12:54	ML	HPCHEM	1	BWI1132	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 13	319699-03	Client Sampl	e Name:	0752, MPE-1	(26 Hours)-W-130911, 9	/11/2013 11:	1/2013 11:55:00AM		
Constituent		Decult	l lucita	DOL	Madhad	MB	Lab	D #	
Constituent Benzene		Result 94	Units ug/L	PQL 1.0	Method EPA-8260B	Bias ND	Quals A01	Run #1	
Bromobenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
Bromochloromethane		ND	ug/L	0.50	EPA-8260B	ND		2	
Bromodichloromethane		ND	ug/L	0.50	EPA-8260B	ND		2	
Bromoform		ND	ug/L	0.50	EPA-8260B	ND		2	
Bromomethane		ND	ug/L	1.0	EPA-8260B	ND		2	
n-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
sec-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
tert-Butylbenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
Carbon tetrachloride		ND	ug/L	0.50	EPA-8260B	ND		2	
Chlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
Chloroethane		ND	ug/L	0.50	EPA-8260B	ND		2	
Chloroform		ND	ug/L	0.50	EPA-8260B	ND		2	
Chloromethane		ND	ug/L	0.50	EPA-8260B	ND		2	
2-Chlorotoluene		ND	ug/L	0.50	EPA-8260B	ND		2	
4-Chlorotoluene		ND	ug/L	0.50	EPA-8260B	ND		2	
Dibromochloromethane		ND	ug/L	0.50	EPA-8260B	ND		2	
1,2-Dibromo-3-chloropropan	е	ND	ug/L	1.0	EPA-8260B	ND	V01	2	
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		2	
Dibromomethane		ND	ug/L	0.50	EPA-8260B	ND		2	
1,2-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
1,3-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
1,4-Dichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2	
Dichlorodifluoromethane		ND	ug/L	0.50	EPA-8260B	ND		2	
1,1-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2	
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2	
1,1-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2	
cis-1,2-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2	
trans-1,2-Dichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2	
Total 1,2-Dichloroethene		ND	ug/L	1.0	EPA-8260B	ND		2	
1,2-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		2	
1,3-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		2	
2,2-Dichloropropane		ND	ug/L	0.50	EPA-8260B	ND		2	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID: 13	19699-03	Client Sample	e Name:	0752, MPE-1	(26 Hours)-W-130911, 9	/11/2013 11:5	55:00AM	
0		D 14	11	DOL	NA -411	МВ	Lab	.
Constituent 1,1-Dichloropropene		Result ND	Units ug/L	PQL 0.50	Method EPA-8260B	Bias ND	Quals	Run #
cis-1,3-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND		2
trans-1,3-Dichloropropene		ND	ug/L	0.50	EPA-8260B	ND		2
Total 1,3-Dichloropropene		ND	ug/L	1.0	EPA-8260B	ND		2
Ethylbenzene		22	ug/L	0.50	EPA-8260B	ND		2
Hexachlorobutadiene		ND	ug/L	0.50	EPA-8260B	ND		2
Isopropylbenzene		3.2	ug/L	0.50	EPA-8260B	ND		2
p-lsopropyltoluene		1.0	ug/L	0.50	EPA-8260B	ND		2
Methylene chloride		ND	ug/L	1.0	EPA-8260B	ND		2
Methyl t-butyl ether		360	ug/L	5.0	EPA-8260B	ND	A01	3
Naphthalene		11	ug/L	0.50	EPA-8260B	ND		2
n-Propylbenzene		3.3	ug/L	0.50	EPA-8260B	ND		2
Styrene		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
Tetrachloroethene		ND	ug/L	0.50	EPA-8260B	ND		2
Toluene		27	ug/L	0.50	EPA-8260B	ND		2
1,2,3-Trichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2
1,2,4-Trichlorobenzene		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,1-Trichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,1,2-Trichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
Trichloroethene		ND	ug/L	0.50	EPA-8260B	ND		2
Trichlorofluoromethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,2,3-Trichloropropane		ND	ug/L	1.0	EPA-8260B	ND		2
1,1,2-Trichloro-1,2,2-trifluoroe	thane	ND	ug/L	0.50	EPA-8260B	ND		2
1,2,4-Trimethylbenzene		13	ug/L	0.50	EPA-8260B	ND		2
1,3,5-Trimethylbenzene		3.8	ug/L	0.50	EPA-8260B	ND		2
Vinyl chloride		ND	ug/L	0.50	EPA-8260B	ND		2
Total Xylenes		53	ug/L	1.0	EPA-8260B	ND		2
t-Amyl Methyl ether		ND	ug/L	0.50	EPA-8260B	ND		2
t-Butyl alcohol		410	ug/L	10	EPA-8260B	ND		2
Diisopropyl ether		7.6	ug/L	0.50	EPA-8260B	ND		2
Ethanol		ND	ug/L	250	EPA-8260B	ND		2

Project Number: 351646
Project Manager: Kathy Brandt

Reported:

09/16/2013 15:04

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

BCL Sample ID: 1319699-03	Client Sample	e Name:	0752, MPE-1(26 Hours)-W-130911, 9/11/2013 11:55:00AM					
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run#	
Ethyl t-butyl ether	ND	ug/L	0.50	EPA-8260B	ND		2	
1,2-Dichloroethane-d4 (Surrogate)	91.4	%	75 - 125 (LCL - UCL)	EPA-8260B			1	
1,2-Dichloroethane-d4 (Surrogate)	86.5	%	75 - 125 (LCL - UCL)	EPA-8260B			2	
1,2-Dichloroethane-d4 (Surrogate)	96.7	%	75 - 125 (LCL - UCL)	EPA-8260B			3	
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260B			1	
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260B			2	
Toluene-d8 (Surrogate)	99.6	%	80 - 120 (LCL - UCL)	EPA-8260B			3	
4-Bromofluorobenzene (Surrogate)	97.5	%	80 - 120 (LCL - UCL)	EPA-8260B			1	
4-Bromofluorobenzene (Surrogate)	97.8	%	80 - 120 (LCL - UCL)	EPA-8260B			2	
4-Bromofluorobenzene (Surrogate)	98.4	%	80 - 120 (LCL - UCL)	EPA-8260B			3	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	09/13/13	09/13/13 23:35	ML	HPCHEM	2	BWI1132	
2	EPA-8260B	09/13/13	09/13/13 13:18	ML	HPCHEM	1	BWI1132	
3	EPA-8260B	09/13/13	09/13/13 23:11	ML	HPCHEM	10	BWI1132	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWI1132						
Benzene	BWI1132-BLK1	ND	ug/L	0.50		
Bromobenzene	BWI1132-BLK1	ND	ug/L	0.50		
Bromochloromethane	BWI1132-BLK1	ND	ug/L	0.50		
Bromodichloromethane	BWI1132-BLK1	ND	ug/L	0.50		
Bromoform	BWI1132-BLK1	ND	ug/L	0.50		
Bromomethane	BWI1132-BLK1	ND	ug/L	1.0		
n-Butylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
sec-Butylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
tert-Butylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
Carbon tetrachloride	BWI1132-BLK1	ND	ug/L	0.50		
Chlorobenzene	BWI1132-BLK1	ND	ug/L	0.50		
Chloroethane	BWI1132-BLK1	ND	ug/L	0.50		
Chloroform	BWI1132-BLK1	ND	ug/L	0.50		
Chloromethane	BWI1132-BLK1	ND	ug/L	0.50		
2-Chlorotoluene	BWI1132-BLK1	ND	ug/L	0.50		
4-Chlorotoluene	BWI1132-BLK1	ND	ug/L	0.50		
Dibromochloromethane	BWI1132-BLK1	ND	ug/L	0.50		
1,2-Dibromo-3-chloropropane	BWI1132-BLK1	ND	ug/L	1.0		
1,2-Dibromoethane	BWI1132-BLK1	ND	ug/L	0.50		
Dibromomethane	BWI1132-BLK1	ND	ug/L	0.50		
1,2-Dichlorobenzene	BWI1132-BLK1	ND	ug/L	0.50		
1,3-Dichlorobenzene	BWI1132-BLK1	ND	ug/L	0.50		
1,4-Dichlorobenzene	BWI1132-BLK1	ND	ug/L	0.50		
Dichlorodifluoromethane	BWI1132-BLK1	ND	ug/L	0.50		
1,1-Dichloroethane	BWI1132-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BWI1132-BLK1	ND	ug/L	0.50		
1,1-Dichloroethene	BWI1132-BLK1	ND	ug/L	0.50		
cis-1,2-Dichloroethene	BWI1132-BLK1	ND	ug/L	0.50		
trans-1,2-Dichloroethene	BWI1132-BLK1	ND	ug/L	0.50		
Total 1,2-Dichloroethene	BWI1132-BLK1	ND	ug/L	1.0		
1,2-Dichloropropane	BWI1132-BLK1	ND	ug/L	0.50		
1,3-Dichloropropane	BWI1132-BLK1	ND	ug/L	0.50		
2,2-Dichloropropane	BWI1132-BLK1	ND	ug/L	0.50		
1,1-Dichloropropene	BWI1132-BLK1	ND	ug/L	0.50		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWI1132						
cis-1,3-Dichloropropene	BWI1132-BLK1	ND	ug/L	0.50		
trans-1,3-Dichloropropene	BWI1132-BLK1	ND	ug/L	0.50		
Total 1,3-Dichloropropene	BWI1132-BLK1	ND	ug/L	1.0		
Ethylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
Hexachlorobutadiene	BWI1132-BLK1	ND	ug/L	0.50		
sopropylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
o-Isopropyltoluene	BWI1132-BLK1	ND	ug/L	0.50		
Methylene chloride	BWI1132-BLK1	ND	ug/L	1.0		
Methyl t-butyl ether	BWI1132-BLK1	ND	ug/L	0.50		
Naphthalene	BWI1132-BLK1	ND	ug/L	0.50		
n-Propylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
Styrene	BWI1132-BLK1	ND	ug/L	0.50		
1,1,1,2-Tetrachloroethane	BWI1132-BLK1	ND	ug/L	0.50		
1,1,2,2-Tetrachloroethane	BWI1132-BLK1	ND	ug/L	0.50		
Tetrachloroethene	BWI1132-BLK1	ND	ug/L	0.50		
Toluene	BWI1132-BLK1	ND	ug/L	0.50		
1,2,3-Trichlorobenzene	BWI1132-BLK1	ND	ug/L	0.50		
1,2,4-Trichlorobenzene	BWI1132-BLK1	ND	ug/L	0.50		
1,1,1-Trichloroethane	BWI1132-BLK1	ND	ug/L	0.50		
1,1,2-Trichloroethane	BWI1132-BLK1	ND	ug/L	0.50		
Trichloroethene	BWI1132-BLK1	ND	ug/L	0.50		
Trichlorofluoromethane	BWI1132-BLK1	ND	ug/L	0.50		
1,2,3-Trichloropropane	BWI1132-BLK1	ND	ug/L	1.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	BWI1132-BLK1	ND	ug/L	0.50		
1,2,4-Trimethylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
1,3,5-Trimethylbenzene	BWI1132-BLK1	ND	ug/L	0.50		
Vinyl chloride	BWI1132-BLK1	ND	ug/L	0.50		
Total Xylenes	BWI1132-BLK1	ND	ug/L	1.0		
-Amyl Methyl ether	BWI1132-BLK1	ND	ug/L	0.50		
:-Butyl alcohol	BWI1132-BLK1	ND	ug/L	10		
Diisopropyl ether	BWI1132-BLK1	ND	ug/L	0.50		
Ethanol	BWI1132-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BWI1132-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	BWI1132-BLK1	90.4	%	75 - 125	(LCL - UCL)	



Arcadis 2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWI1132						
Toluene-d8 (Surrogate)	BWI1132-BLK1	98.3	%	80 - 120	(LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BWI1132-BLK1	96.7	%	80 - 120	(LCL - UCL)	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Laboratory Control Sample

	_		-		-		-			
				Spike		Percent		Control I Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWI1132										
Benzene	BWI1132-BS1	LCS	24.660	25.000	ug/L	98.6		70 - 130		
Bromodichloromethane	BWI1132-BS1	LCS	26.340	25.000	ug/L	105		70 - 130		
Chlorobenzene	BWI1132-BS1	LCS	24.400	25.000	ug/L	97.6		70 - 130		
Chloroethane	BWI1132-BS1	LCS	24.010	25.000	ug/L	96.0		70 - 130		
1,4-Dichlorobenzene	BWI1132-BS1	LCS	22.870	25.000	ug/L	91.5		70 - 130		
1,1-Dichloroethane	BWI1132-BS1	LCS	25.220	25.000	ug/L	101		70 - 130		
1,1-Dichloroethene	BWI1132-BS1	LCS	25.440	25.000	ug/L	102		70 - 130		
Toluene	BWI1132-BS1	LCS	24.950	25.000	ug/L	99.8		70 - 130		
Trichloroethene	BWI1132-BS1	LCS	28.830	25.000	ug/L	115		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWI1132-BS1	LCS	9.8100	10.000	ug/L	98.1		75 - 125		
Toluene-d8 (Surrogate)	BWI1132-BS1	LCS	10.180	10.000	ug/L	102		80 - 120		
4-Bromofluorobenzene (Surrogate)	BWI1132-BS1	LCS	9.8400	10.000	ug/L	98.4		80 - 120		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 09/16/2013 15:04

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BWI1132	Use	d client samp	ole: N								
Benzene	MS	1316295-85	ND	26.490	25.000	ug/L		106		70 - 130	
	MSD	1316295-85	ND	25.700	25.000	ug/L	3.0	103	20	70 - 130	
Bromodichloromethane	MS	1316295-85	ND	27.190	25.000	ug/L		109		70 - 130	
	MSD	1316295-85	ND	27.060	25.000	ug/L	0.5	108	20	70 - 130	
Chlorobenzene	MS	1316295-85	ND	25.620	25.000	ug/L		102		70 - 130	
	MSD	1316295-85	ND	25.260	25.000	ug/L	1.4	101	20	70 - 130	
Chloroethane	MS	1316295-85	ND	26.820	25.000	ug/L		107		70 - 130	
	MSD	1316295-85	ND	25.530	25.000	ug/L	4.9	102	20	70 - 130	
1,4-Dichlorobenzene	MS	1316295-85	ND	24.490	25.000	ug/L		98.0		70 - 130	
	MSD	1316295-85	ND	24.250	25.000	ug/L	1.0	97.0	20	70 - 130	
1,1-Dichloroethane	MS	1316295-85	ND	27.260	25.000	ug/L		109		70 - 130	
	MSD	1316295-85	ND	26.340	25.000	ug/L	3.4	105	20	70 - 130	
1,1-Dichloroethene	MS	1316295-85	ND	28.070	25.000	ug/L		112		70 - 130	
	MSD	1316295-85	ND	27.130	25.000	ug/L	3.4	109	20	70 - 130	
Toluene	MS	1316295-85	ND	26.720	25.000	ug/L		107		70 - 130	
	MSD	1316295-85	ND	26.250	25.000	ug/L	1.8	105	20	70 - 130	
Trichloroethene	MS	1316295-85	ND	30.510	25.000	ug/L		122		70 - 130	
	MSD	1316295-85	ND	29.510	25.000	ug/L	3.3	118	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1316295-85	ND	9.3700	10.000	ug/L		93.7		75 - 125	
	MSD	1316295-85	ND	9.1600	10.000	ug/L	2.3	91.6		75 - 125	
Toluene-d8 (Surrogate)	MS	1316295-85	ND	10.250	10.000	ug/L		102		80 - 120	
	MSD	1316295-85	ND	10.130	10.000	ug/L	1.2	101		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1316295-85	ND	10.040	10.000	ug/L		100		80 - 120	
	MSD	1316295-85	ND	10.040	10.000	ug/L	0	100		80 - 120	



Arcadis Reported: 09/16/2013 15:04

2000 Powell Street 7th Floor Project: 0752
Emeryville, CA 94608 Project Number: 351646
Project Manager: Kathy Brandt

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

V01 The Initial Calibration Verification (ICV) recovery is not within established control limits.



Date of Report: 08/29/2013

Kathy Brandt

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

Project: 0752
BC Work Order: 1317587
Invoice ID: B153963

Enclosed are the results of analyses for samples received by the laboratory on 8/15/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers

molly meyers

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



Sample Information	
Chain of Custody and Cooler Receipt form	6
Laboratory / Client Sample Cross Reference	18
Sample Results	
1317587-01 - QA-W-130815	
Volatile Organic Analysis (EPA Method 8260)	27
Purgeable Aromatics and Total Petroleum Hydrocarbons	
1317587-02 - MW-1-W-130815	20
Volatile Organic Analysis (EPA Method 8260)	20
Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	
1317587-03 - MW-2-W-130815	30
Volatile Organic Analysis (EPA Method 8260)	37
Purgeable Aromatics and Total Petroleum Hydrocarbons	
·	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	41
	40
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	46
1317587-05 - MW-4-W-130815	4-
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	51
1317587-06 - MW-5-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	56
1317587-07 - MW-6-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	61
1317587-08 - MW-7-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	64
Water Analysis (General Chemistry)	65
Metals Analysis	66
1317587-09 - MW-8-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	69

Water Analysis (General Chemistry)	70
Metals Analysis	71
1317587-10 - A-MW-1-W-130815	
Volatile Organic Analysis (EPA Method 8260)	72
Purgeable Aromatics and Total Petroleum Hydrocarbons	73
Gas Testing in Water	74
Water Analysis (General Chemistry)	75
Metals Analysis	76
1317587-11 - A-MW-2-W-130815	
Volatile Organic Analysis (EPA Method 8260)	77
Purgeable Aromatics and Total Petroleum Hydrocarbons	78
Gas Testing in Water	79
Water Analysis (General Chemistry)	80
Metals Analysis	81
1317587-12 - A-MW-3-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	86
1317587-13 - A-MW-4-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	90
Metals Analysis	91
1317587-14 - A-MW-5-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	96
1317587-15 - A-MW-6-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	101
1317587-16 - A-MW-7-W-130815	
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	106
1317587-17 - S-MW-1-W-130815	40=
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	
Water Analysis (General Chemistry)	
Metals Analysis	111
1317587-18 - S-MW-2-W-130815	440
Volatile Organic Analysis (EPA Method 8260)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Gas Testing in Water	114



W	ater Analysis (General Chemistry)	115
	etals Analysis	
1317587-19	·	
Vo	platile Organic Analysis (EPA Method 8260)	117
	urgeable Aromatics and Total Petroleum Hydrocarbons	
	as Testing in Water	
	ater Analysis (General Chemistry)	
	etals Analysis	
	0 - S-MW-4-W-130815	
	platile Organic Analysis (EPA Method 8260)	122
	urgeable Aromatics and Total Petroleum Hydrocarbons	
	as Testing in Water	
	ater Analysis (General Chemistry)	
	etals Analysisetals Analysis	
	1 - S-MW-5-W-130815	120
	platile Organic Analysis (EPA Method 8260)	127
	urgeable Aromatics and Total Petroleum Hydrocarbons	
	as Testing in Water	
	ater Analysis (General Chemistry)	
	etals Analysisetals Analysis	
	etais Arialysis	131
		122
	platile Organic Analysis (EPA Method 8260)	
	urgeable Aromatics and Total Petroleum Hydrocarbons	
	as Testing in Water	
	/ater Analysis (General Chemistry)	
	etals Analysis	130
	3 - S-EW-1-W-130815	407
	platile Organic Analysis (EPA Method 8260)	
	urgeable Aromatics and Total Petroleum Hydrocarbons	
	as Testing in Water	
	/ater Analysis (General Chemistry)	
	etals Analysis	141
	4 - MPE-1-W-130815	4.40
	platile Organic Analysis (EPA Method 8260)	
	urgeable Aromatics and Total Petroleum Hydrocarbons	143
	5 - MP-1-W-130815	
	Diatile Organic Analysis (EPA Method 8260)	
	urgeable Aromatics and Total Petroleum Hydrocarbons	145
Quality Control		
Volatile Or	ganic Analysis (EPA Method 8260)	
	ethod Blank Analysis	
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Base Neut	ral and Acid Extractables Organic Analysis (EPA Method 8270C)	
M	ethod Blank Analysis	149
La	aboratory Control Sample	152
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M	ethod Blank Analysis	155
La	aboratory Control Sample	156
Pr	ecision and Accuracy	157
Gas Testin	g in Water	
M	ethod Blank Analysis	158
La	aboratory Control Sample	159



	Water Analysis (General Chemistry)	
	Method Blank Analysis	160
	Laboratory Control Sample	161
	Precision and Accuracy	
	Metals Analysis	
	Method Blank Analysis	164
	Laboratory Control Sample	
	Precision and Accuracy	166
Notes		
	Notes and Definitions	167

Chain of Custody and Cooler Receipt Form for 1317587

CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

	1	2
COC	1 0	f 5

Union Oil Site ID: 0752 Union Oil Co					CADIS	ANALYSES REQUIRED												
Site Global ID: TOLOO!	01484	<u> </u>		Consultant Contact: KAT									<u> </u>	.			Turnaround T	ime (TAT):
Site Address: 800 Hi	ARNISC	ST.	OAKLAPD,	Consultant Phone No.: (5)			<u>رم</u>						LS (6010)	·			Standard 🗹	24 Hours 🔲
CA				Sampling Company: 6-6-	TTLEW- 12 YAN	1	8012)						35	.		İ	48 Hours 🔲	72 Hours 🗌
THEORY OF TIMOTHY L. BISHOP				Sampled By (PRINT):			5									ı	Special Ins	tructions
Union Oil PM Phone No.: (925) 7	90-646	3	FRANKT., M	1KE L. & JOE L.		7(712	8260			6		7 3	الحا			•	
Charge Code: NWRTB- 0 3 5 1 4 4 6-0- LAB This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.				Sampler Signature:		Diesel by EPA 8015	2-72)	CELDY EPA	Ethanol by EPA 8260	EPA 8260B Full List with OXYS	EDC (8260)	(9270)	VED META	KALINIT	METUANE			
	CAMPLE	- ID		Prione No. 1	661-327-4911	Jiese	by 6	ИТВ	by	60B	╼┪-	S	520	F	=	ن		
	SAMPLE	: 10	Date	_			Ξ	STEX/MTBE	nano	A 82	EDB	9	7015519	1	L.	0		
Field Point Name	Matrix	Depth	(yymmdd)	Sample Time	# of Containers	표	片	ВТ	苗	ᇤ	ш	S		Ŋ	Σ	F	Notes / Co	mments
-I QA	10 -S-A		13815		2						ı							
-2 MW-1	Ŵ-S-A			1249	14		X	X	X		XI)	X	$\langle 1 \rangle$	$\langle 1 \rangle$	()	X		
-3 MW-2	W-S-A			1204	11		X	∇	X		X		را	Χħ	Ž,	X		
-4 MW-3	W-S-A			0858	11		X	X	又		X		Ď	ð	Ž,	X	*****	
-5 MW-4	W-S-A			0935	LV		X	X	\overline{X}		ZŤ		5	ŻŚ	X	$\overrightarrow{\lambda}$	10000	
-6 MW-5	W-S-A			1107	11		X	X	$\overline{\times}$,	X		5		Ž	X		
-7 MW-L	W-S-A			1014	11		X	X	X		X		5	X	才	Ż		
-8 MW-7	W-S-A			0805	11		\boxtimes	$\overline{\mathbf{X}}$	X		Z		Š	*	ŽĬ.	X	******	
-9 MW-8	W-S-A			۵725	11		X	∇	$\overline{\mathbf{X}}$		X		D	么	ŽĪ.	Ż		
-10 A-MW-1	W-S-A			1200	17		X	\times	X		X		_ >	♦		X		
-11 A-MW-2	W-S-A			1105	11		X	X	X		XI		\supset	\bigcirc		X		
-12 A-MW-3	₩-s-A		4	1005	11		\times	X	X		7	ľ		$\langle \overline{\rangle}$	<u> </u>	X		
	прапу	Date / Time:	·	Relinquished By Con	pany Date / Time :				Relin	iqyishe	Ву		Con	pany		D	ate / Time:	
Tink kind	-V	1530	<i>\$</i>	MARC	2R- 08-15-1)	18	530	8)	Lai	u F)))	3 p	B	d	A-l	8-15-13	1830
Received By Com	pany /	Date / Time:			pany Date / Time :					lved By		j		npany			ate / Time:	<u> </u>
4/1	#	P8-15+	13	May Brown	Bolah RIGIZ	1	5 7	30		X	E E) _M	1	CI	N1	7	81513	18 'SD

REL. (800) 8-15-13 22:35 Rec: SAS 8-15-13 2235

CHAIN OF CUSTODY FORM

		·	Union Oil Co	mpany of California m 610	01 Bollinger Canyon Road	n Sar	n Rar	non,	CA 9	4583			(coc_ 2	of_ <u>3</u>
Union Oil Site ID: 0757				Union Oil Consultant:	HICADIS						ANALY	SES REQ	UIRED		
Site Global ID: Tob ool	1014	86		Consultant Contact: KA	THERINE BROWDT			ļ			17.6			Turnaro	und Time (TAT):
Site Address: 800 HA	UK1 50	h 21.70	AKLAND,	Consultant Phone No.:(5			(Sols)				<u> </u>			Standard	24 Hours 🗌
CHEVROP			СД	Sampling Company: (ETTLEW RYDN	1	\ \varphi_{\overline{\chi}{\chi}}				그 그			48 Hours	☐ 72 Hours ☐
CHEVILOP TIMOTH	4 L.	BISHOP		Sampled By (PRINT):				! _			T ₂			Speci	af Instructions
United Oil PM Phone No.: (97	25) ("	10-646	. 3	1	IKEL. & JOE L.	-	2 7	8260		ε	3/5 7				
Charge Code: NWRTB- 0 3	516	<u>4 </u> -0- LAB		Sampler Signature		8015	600	by EPA 8		vith OX	DC (8260) Iron Mith ATEINTAILE				
This is a LEGAL document. A COMPLETELY.	NLL fields n	nust be filled ou	t CORRECTLY and	Project Manag 4100 Atlas Court, I	tatories, Inc. ger: Molly Meyers Bakersfield, CA 93308 661-327-4911	Diesel by EPA	ph (Ethanol by EPA 8260	EPA 8260B Full List with OXYS	EDC (METHANE T.O.C.			
	SAMPLE	ID .				ä	G D	MT.	o D	260	5 5 5 E				
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	TPH-	표	BTEX/MTBE/	Ethan	EPA 8	EDB EI DISSOLVED SULFINE A			Notes	: / Comments
-13 A-MW-4	ØS-A		13.8.15	1245	11		X	X	X		XXX				
-14 A-MW-5	W-S-A		1	0630	1\		X	X	X		XXX				
-15 A-MW-6	W-S-A			0720	[1		X	X	X		XXX				
-16 A-MW-7	W-S-A			0816	11		X	X	∇		XXX				
-17 S-MW-1	W-S-A			0850	11		X	X	∇		XXX				
-18 S-MN-2	W-S-A			1010	11		X	X	X		X X				
-19 S-MW-3	W-S-A			1050	11		\times	\boxtimes	X		XXX	\mathcal{X}			
-20 S-MW-4	W-S-A			0905			\geq	\times	\boxtimes		XXX	1X			
-21 S-MW-5	W-S-A			1245	11		X	X	X		X X	ΔX			
-225ms-MW-6	W-S-A			1130	11		\times	X	X		XX				
-293 S-EW-1	W-S-A			0812	- 11	<u></u>	X	\times	\times		X X X	\mathbb{X}			
	₩-s-A		4	0930	9		X	X			\times				
Relinquished By Comp	-	Date / Time:	3	Relinquished By Cor	npany Date / Time :				Relin	ngulsh ∧ ()	,	Company		Date / Time:	
Til (e)	***************************************	1530	5		The Date / Time:	<u> </u>	151	فود							3 1830
Received By Comp	رز	Date / Time:			npany Date / Time :				Rece	eived I	1.4	Сотрапу		Date / Time:	_
	Z (GRØ8E	<u> 1575/1530</u>	Nay Dopan	Bclab 8-15-13 1	53	<u>0</u>				Do 19	CLA	13 6	<u> 8-15-13</u>	18130
	_		,		REL.	Ó0	ج	3-15	5-13	3	2 2 ! 35	T	ku;		2235 151 B

Page 7 of 167

com	kersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com	7-1918 w	X (661) 32	11 FA	327-49	(661)	93308	d, CA	ersfie
 detachment or third party interpretation 	tion, separation	or report altera	ponsibility fo	s no res	nc. assume	tories, I	BC Labora	party.	bmitting
lyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.	al report mus	This analytic	document.	ustody	hain of c	h the c	dance wit	accor	lyzed ir

Page 8 of 167

	758	T	Union Oil Co	CHAIN mpany of California a 610	l OF CUSTODY FORM 1 Bollinger Canyon Road		n Rar	non,	CA 9	4583						COC	3	of	3
Union Oil Site ID: 675					LADIS	Γ						ANA	LYSE!	S REO	UIRED				
Site Global ID: TOLOO1	0148	<u> </u>		Consultant Contact: KA	THEMNE BRANDS				<u> </u>		-	7.74	T	1	1	Ī	Turnar	ound Tim	e (TAT).
Site Address: 800 Hp	MKN SOS	ST. O	AILLAHD, CA	Consultant Phone No.: 5	0) 596-9675		لِإِ ا							-		SI			4 Hours 🗆
HANGE TIMOT	<u> </u>	Dicited	<u> </u>	Sampling Company: (94	ETTLEN- RYAN	-	C12)(8615									48	Hours	☐ 72	2 Hours 🗆
Union Oil PM Phone No.: (9	25) 7	90-641	-3	Sampled By (PRINT):	IKE L. & JOEL		5	=									Spec	cial Instru	ctions
Charge Code: NWRTB- 0 3 This is a LEGAL document. COMPLETELY.	<u>516</u>	4 <u>6</u> 0-LAB		Sampler Signature: BC Labora Project Manage 4100 Atlas Court, B.	atories, Inc. er: Molly Meyers akersfield, CA 93308	al by EPA 8015	-95)	by EPA 82	EPA 8260B	EPA 8260B Full List with OXYS	EDC (8260)								
	SAMPLE	ID.		Phone No. 6	661-327-4911	Diese	G by	M H H H H H	l by E	60B	3								
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by	-H-H	BTEX/MTBE/	Ethanol by	EPA 82	EDB						Note	s / Comn	nante
-25 MP-1	ØS-A		13.8.15	1205	6		X	X			X					_	,,,,,,	37 001111	ilenta .
	W-S-A																		
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	W-S-A				Cr+6 (NO.)	7	~~~		ΜĒ	긔	1	9	KB	<u> </u>	u C			ION M	
	W-S-A					7		OP.	- 4	;s 	_		$/\!\!\!\!/$	11/	127	7	<u></u>	1	4
	W-S-A				<u> </u>		MR.	18.	-00		- 	#		늬=			3-0U		
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telt G.		8-15-)		Relinquished By Com	pany Date / Time : CR DS- pany Date / Time :	15-1	3 15	3.8	Relin	quishe		B		npany	B	Date /		8.1 <i>5-1</i>	3 183
Received By Com	Dany R	Date / Time:		Received By Com	pany Date / Time :				Rece	ived F	ly `	•	Ço	прапу		Date /	Time:		
KI SUK I	<u> </u>	· DEV	1-17 1530	May Jagon V	Sclab 8-15-13 REL.	5 /	53	0		(-)	<u>(S)</u>	σ 5	BC	<u> </u>	<u>B</u> ::	8-1.	5-13	181	30





Submission #: 13-17-58			OLER REC	EIPT FO	RIVI	Rev. No.	15 07/0	1/13 P	age 📗 (of <u>9</u>
SHIPPING INF ederal Express D UPS D 3C Lab Field Service Oth	Hand D.	olivany		Ice Ch	est 🗷	CONTAI None □ ecify)	Box □		FREE LIC	NO 🗆
Refrigerant: Ice Ø Blue Id	ce □ Nic	ne 🗆	Other 🗆	Comi	nents:					
ustody Seals Ice Chest 🗆			1							<u> </u>
Intact? Yes FL No FL	1 1	iners □ es □_No_□		Ø Com	ments:	_				•
Il samples received? Yes □ No □	All sampl	es containe	rs intact? \	′es □ No		Descrip	tion(s) mate	ch COC? Y	′es □ No	
COC Received ☑ YES □ NO	Emissivity:	<u>0.97</u> ire: (A)_						1	ne <u>8.15.1</u>	
							*C	Analyst	nit <u>\$A\$</u>	
SAMPLE CONTAINERS		2	7 ,			NUMBERS				
GENERAL MINERAL/GENERAL	- 	 	1 3	4	5	<u> </u>	7	8	9	10
PE UNPRESERVED							 			-
INORGANIC CHEMICAL METALS			ļ — —	 -			·		 	
INORGANIC CHEMICAL METALS		_	 	 			 			ļ
CYANIDE			<u> </u>			 				<u> </u>
NITROGEN FORMS							<u> </u>			
TOTAL SULFIDE		 					-			
. NITRATE / NITRITE		† -	 			 	 			
TOTAL ORGANIC CARBON					<u> </u>					<u> </u>
TOX			<u>-</u>	· · · · · · · · · · · · · · · · · · ·						
CHEMICAL OXYGEN DEMAND										
PHENOLICS								_		
I VOA VIAL TRAVEL BLANK	A(Z)				-					
J VOA VIAL	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	16	A 161	Ada	A 6	A.6.	A.6.	1 1/2	1.7	A . /
EPA 413.1, 413.2, 418.1			Σ. Ψ		7		74.07	74.0	74161	4 6
ODOR										
DIOLOGICAL										
CTERIOLOGICAL										
nt VOA VIAL-son unfres.		B(3)	B (3)	B(3)	B(3)	B(3)	B(3)	B(3)	B(3)	B(3)
EPA 508/608/8080				- 12,		12 ()/	00	-12121	12121	_12(2)
EPA 515.1/8150				-						
EPA 525							-			
EPA 525 TRAVEL BLANK		_								
nl EPA 547										
nl EPA 531.1					_					
EPA 548										
EPA 549										
EPA 632								_		
EPA 8015M			<u> </u>							
AMBER										i
- JAR										
Z. JAR										
SLEEVE		-			··-					
VIAL										
STIC BAG										
ROUS IRON										
ORE										
RT KIT										
										
ına Canister	[1	,			J.		J			11



Chain of Custody and Cooler Receipt Form for 1317587 Page 5 of 12

ubmission #: [3-17-58-			OLER REC			Rev. No.		01/13 P	Page 2	<u> </u>
SHIPPING INFO	Hand D	- It		Ice Ch	nest 🖅	G CONTA None Decify)	Box 🗇		FREE LIC	NO □ JUID
Refrigerant: Ice Ø Blue Ice	∍ □ Nc	one 🗍	Other []	Com	ments:					
ustody Seals Ice Chest □	Conta	iners □ es □ No □	None	e 🗗 Com		· ·				
I samples received? Yes ☐ No ☐		les containe		Yes□ No		Descrir	ption(s) mat			
COC Received I	Emissivity:	0.97	Container:	:_Voc	Thermor	meter ID:	207	Date/Tim	ne <u>8,15,1</u>	3 2230
		ure: (A)					*C	Analyst I	Init <u>5A5</u>	
SAMPLE CONTAINERS			1 ; 		SAMPLE	NUMBERS				
GENERAL MINERAL/ GENERAL		1 (2	1 3	14	15	16	17	LB	l 9	10
PE UNPRESERVED	1	+	 	 	 	ļ				
INORGANIC CHEMICAL METALS	1-	 	 	 -	 			ļ	<u> </u>	
INORGANIC CHEMICAL METALS	+	 	 	 	 		 	ļ	ļ <u>.</u>	
CYANIDE	+	 	+	 		 	 		<u> </u>	
VITROGEN FORMS	+	 	 	 	 			 		
FOTAL SULFIDE		 	 		 	 	 	 	└	
NITRATE / NITRITE	 	 		 		 	ļ'	<u> </u>	<u> </u>	
FOTAL ORGANIC CARBON	1	 		 	 		<u> </u> '	 '		
OX	1		 '		 	 '	 	<u> </u>	 	<u> </u> !
CHEMICAL OXYGEN DEMAND				 	 			 -		-
PHENOLICS				 	 		 			
VOA VIAL TRAVEL BLANK		ļ —				 				
VOA VIAL	A 161	A 6	A 16	A.6	A 60	A 160	A.6.	16	A 161	1/2
CPA 413.1, 413.2, 418.1							77.4		A 101	A 16
DOR										
10L0G1CAL	 									 -
TERIOLOGICAL	1 - ()									
IVOA VIAL SAT UN Pres.	B(3)	B(3)	B(3)	B(3)	B(3)	B(3)	B/3)	B(3)	B(3)	13/3)
PA 508/608/8080	 							****	1-1-1	- KI-X
PA 515.1/8150	 									
PA 525	 									
PA 525 TRAVEL BLANK	├ ──┤									
EPA 547	 									
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PA 548	\longmapsto	\longrightarrow								
PA 549	 									
PA 632										
PA 8015M										
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JAR										
SLEEVE	-			$ \downarrow$						
IAL CIGNAG	\longrightarrow									
FIC BAG										
OUS IRON										
RE										
T KFT										
a Canister										





Chain of Custody and Cooler Receipt Form for 1317587

LABURATURIES INC.	7	COC	LER REC	EIPT FO	RM	Rev. No.	15 07/0	1/13 Pa	3ge <u>3</u>	of <u>9</u>
15 1758 <u>Ibmission #: 13-1758</u>	'			-,						
SHIPPING INF deral Express D UPS D				s	HIPPING	CONTA	INER	l F	REE LIC	บเบ
Lab Field Service OF Oth	Hand De er □ (Snecif	uivery vì		Ice Ch	est 🗷	None 🗆	Box 🗆		ES 🗆 r	
, in the second	_ (-,			0"	er □ (Spe	city)	·			
frigerant: Ice 🗹 Blue Ic	e □ No	ne 🗆	Other []	Come	nents:					
stody Seals Ice Chest □		ners 🗆	·				_			
Intact? Yes □ No □	Integet? Ye	of the edition of the edition of		☑ Com	ments:					•
samples received? Yes 🗆 No 🗆	All sample	s containe	rs intact? \	/es□ No	0	Descrip	tion(s) mat	ch COC? Y	es□ No	
COC Received	Emissivity:	0.97	Container;	Voc	Thermon	anter ID:	207		<u> </u>	
ØYES □ NO								Date/Time		
	Temperatu	re: (A}	1.9	_°C /	101 1	<u>. </u>	°C	Analyst In	iit _ <i>SAS</i>	
					SAMPLE I					
SAMPLE CONTAINERS	2 1	22	Zз	24	25	6	7	T . 1		-
ENERAL MINERAL/ GENERAL								8	9	10
E UNPRESERVED										
NORGANIC CHEMICAL METALS										
ORGANIC CHEMICAL METALS										
YANIDE										
TROGEN FORMS	 									
TAL SULFIDE			<u> </u>							
TTRATE / NITRITE										
TAL ORGANIC CARBON	-									
DX										
HEMICAL OXYGEN DEMAND	_									
TENOLICS OA VIAL TRAVEL BLANK										
OA VIAL	A.6.	A.6.	1 1/2	A 16.	1.1		<u> </u>			
A 413.1, 413.2, 418.1	74.6	71.6	74 161	AIG	A 161	t 1	1 3	t 1	- 1 1	t 1
OR										
DLOGICAL										
ERIOLOGICAL										
VOA VIAL SOF UYPES.	B(3)	B(3)	B(3)							
A 508/608/8080										
A 515.1/8150										
A 525										
A 525 TRAVEL BLANK										
EPA 547										
EPA 531.1						_				
A 54B										
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1 632	 _ 									
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AR	<u> </u>									
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EEVE										
CP+C										
CBAG	+									
US IRON							-			
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KJT										
Canister										





Chain of Custody and Cooler Receipt Form for 1317587 Page 7 of 12 DU LABORA I UNIES INC. COOLER RECEIPT FORM Rev. No. 15 Page 4 of 9 07/01/13 Submission #: 13-17587 SHIPPING INFORMATION SHIPPING CONTAINER BC Lab Field Service FREE LIQUID Hand Delivery Ice Chest 🗷 None 🗆 Box 🗅 Other [] (Specify) YES 🗆 NO 🗆 Other [] (Specify)_ Refrigerant: Ice 🛭 Blue Ice □ None 🗆 Other 🗆 Comments: Custody Seals Ice Chest □ Containers 🗆 None Z Comments: Intact? Yes □ No □ Intact? Yes 🖂 No 🖂 All samples received? Yes 🗆 No 🗆 All samples containers intact? Yes □ No □ Description(s) match COC? Yes □ No □ COC Received Emissivity: 0.98 Container: DF PE Thermometer ID: 207 Date/Time 8.15.13 2230 **⊠**YES □ NO Temperature: (A) 1.3 _°C / (C) 1.4 Analyst Init 5A5 SAMPLE NUMBERS SAMPLE CONTAINERS T GENERAL MINERAL/ GENERAL T PE UNPRESERVED T INORGANIC CHEMICAL METALS TINORGANIC CHEMICAL METALS T CYANIDE . F NITROGEN FORMS TOTAL SULFIDE z. NITRATE / NITRITE G TOTAL ORGANIC CARBON 1> CHEMICAL OXYGEN DEMAND ml VOA VIAL TRAVEL BLANK ni voa vial EPA 413.1, 413.2, 418.1 ODOR . DIOLOGICAL CTERIOLOGICAL ml VOA VIAL- 504 EPA 508/608/8080 EPA 515.1/8150 EPA 525 EPA 525 TRAVEL BLANK ml EPA 547 ml EPA 531.1 EPA 548 EPA 549 EPA 632 EPA 8015M MBER EF . JAR Z. JAR SLEEVE VIAL STIC BAG ROUS IRON ORE RTKIT ma Canister le Numbering Completed By: //// Date/Time: 8/16/13@ 08/0 [S:\MvDDCS\WordPerfort) Att noncompage



nma Canister

ple Numbering Completed By: Aut

Environmental Testing Laboratory Since 1949 Chain of Custody and Cooler Receipt Form for 1317587 Page 8 of 12 C LABORATORIES INC. COOLER RECEIPT FORM Page <u>5</u> Of 9 Rev. No. 15 07/01/13 ubmission #: (3-17587 SHIPPING INFORMATION SHIPPING CONTAINER FREE LIQUID ederal Express DUPS DC Lab Field Service Hand Delivery Ice Chest None □ Box □ YES 🗆 NO 🗆 Other [(Specify) Other [] (Specify) lce 🗹 Blue Ice □ lefrigerant: None □ Other 🗆 Comments: ustody Seals Ice Chest Containers | None Z Comments: Intact? Yes □ No □ Intact? Yes
No samples received? Yes □ No □ All samples containers intact? Yes ☐ No ☐ Description(s) match COC? Yes □ No □ Emissivity: 0.98 Container: Q+PE Thermometer ID: 207 COC Received Date/Time 8.15.13 2230 **Z**YES "C / (C) Analyst Init _ 5A5 SAMPLE NUMBERS SAMPLE CONTAINERS GENERAL MINERAL/ GENERAL PE UNPRESERVED INORGANIC CHEMICAL METALS INORGANIC CHEMICAL METALS CYANIDE NITROGEN FORMS TOTAL SULFIDE . NITRATE / NITRITE TOTAL ORGANIC CARBON D CHEMICAL OXYGEN DEMAND PHENOLICS al VOA VIAL TRAVEL BLANK al VOA VIAL EPA 413.1, 413.2, 418.1 ODOR DIOLOGICAL CTERIOLOGICAL nl VOA VIAL- 504 EPA 508/608/8080 EPA 515.1/8150 EPA 525 EPA 525 TRAVEL BLANK ml EPA 547 ml EPA 531.1 EPA 548 EPA 549 EPA 632 EPA 8015M AMBER Z. JAR OZ. JAR L SLEEVE VIAL STIC BAG ROUS IRON CORE ART KIT

Date/Time: \$ 16 13@0810

[S:\MyDOCS\WordPerfect\LAB_DOCS\FORMS\SAMREC15]





Chain of Custody and Cooler Receipt Form for 1317587

Submission #: 13-1758		COC	LER RECI	EIPT FOR	IM	Rev. No.	15 07/0	1/13 P	age <i>6</i> (0f <u>9</u>
				·						
SHIPPING INF Federal Express UPS U BC Lab Field Service Oth	1 bacH	alivoru		Ice Che	HIPPING est Ø er □ (Spec	None 🗆	NER Box □		FREE LIO YES 🗆 N	
Refrigerant: Ice 🗵 Blue lo	ce□ N	one 🗆	Other 🗆	Comm	nents:					
Custody Seals Ice Chest L		ainers □ ′es □ No □	None.	IP Comi						•
.ll samples received? Yes □ No □			rs intact? Y	es □ No.		Docario	tion/ol			
COC Received			Container:					ch COC? Y		
ØYES □ NO			1.6						nit <u>345</u>	
SAMPLE CONTAINERS					SAMPLE N	HMRERS				
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EPA 508/608/8080										
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AMBER	 									
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Chain of Custody and Cooler Receipt Form for 1317587 Page 10 of 12

Submission #: 13-17587	_		DLER REC	Lit i i Oji	-	Rev. No. 1	15 07/0	1/13 Pa	ige 7 c	of
SHIPPING INFO ederal Express UPS UPS C IC Lab Field Service Other	Hand D.	.D		Ice Che	st 🗷	CONTAII None 🗅	NER Box 🗆	F Y	REE LIQ	UID IO 🗆
Refrigerant: Ice 🌠 Blue Ice	□ No	ne 🗆	Other 🗆	Comm	onto					
ustody Seals Ice Chest 🗆	100000000000000000000000000000000000000		1	Comm						
Intact7_Yes ☐ No ☐		ners 🗌 s 🗆 No 🗖		🗹 Comi	nents:					
I samples received? Yes ☐ No ☐	All sample	s containe	rs.intact? Y	es 🗋 No		Descript	ion(s) mate	th COC? Ye	≘s □ No	
COC Received	missivity:	0.95	Container:	Dt Ambe.	Thermon	seter ID:	207	D 4 (70)	0 15 .	-50
ZYES □ NO									<u> 8:15:13</u>	
	remperatu	re: (A)_	1.3	_°C /	C)	느	*C	Analyst In	it <u>3A5</u>	
SAMPLE CONTAINERS					SAMPLE	NUMBERS				
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	-	-	 							_
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INORGANIC CHEMICAL METALS CYANIDE			 							
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TOTAL ORGANIC CARBON	0	D								
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Chain of Custody and Cooler Receipt Form for 1317587

I BU LABURATURIES INC.	ccipt i o	COO	LER RECE	IPT FOR	:N/I	Day No. 1	E 07/0	1125 D.	X c	. 4 "
Submission #: 13-17-587			LEIT TILOT	<u> </u>	IIVI	Rev. No. 1	5 07/0	1/13 Pa	age <u>Y</u> C	"
SHIPPING INFOR	NOTATION			6	HIDDING	CONTAI	UED.			
Federal Express UPS	Hand Del	livery		lce Che	est 🗷	None	Rox II		FREE LIQ /ES 🗆 N	
BC Lab Field Service 🙎 Other i	☐ (Specify	y)		Othe	er □ (Spe	cify)	20x _	'		, o 🗓
							***	_		
Refrigerant: Ice Ø Blue Ice [□ Nor	ne 🗆	Other 🗆	Comn	nents:					
Custody Seals Ice Chest Intact? Yes FL No FL	Contair _Intact? Yes	ners ☐ s ☐ No ☐		🗹 Com	ments:					
All samples received? Yes □ No □	All sample	s container	s.intact? Y	es 🔘 No	0	Descrip	tion(s) mate	ch COC? Y	es □ No	
COC Received En	nissivity:	0.95	Container:	Dr Anh	Therman	antar ID.	207			
I LÆTYES □NO I										3 2230
	Temperatur	re: (A)	1.3	_°C /	(C)_ /	Ч	°C	Analyst I	nit _ <i>5A5</i>	_
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OT GENERAL MINERAL/ GENERAL						-		В	9	10
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QT INORGANIC CHEMICAL METALS								<u> </u>	 	
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PT CYANIDE										
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Chain of Custody and Cooler Receipt Form for 1317587 Page 12 of 12

LABURATORIES INC.			LER RECE						9	- a
			EN NECE	IPT FUR	IVI	Rev. No. 1	15 07/0	1/13 P	age <u>J</u> C)f <u>7</u>
Submission #: 3- 7587					_					
SHIPPING INFO	RMATION	[SI	HIPPING	CONTAI	MER		FREE LIQ	- IIID
ederal Express UPS 🗆	Hand De	livery				None			YES N	
IC Lab Field Service 🗹 💮 Other	☐ (Specify	/\		Othe	r □ (Spe					
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Refrigerant: Ice 🗗 Blue Ice	Cl Nor	ne 🗆 🔻	Other D	C						
			Other 🗆	Comm						
ustody Seals Ice Chest □	Contair	ners 🗆	None -	🗹 Comi	nents:				e 1	,
Intact? Yes □ No □	Intact? Yes	<u>. □ No □</u>								,
II samples received? Yes □ No □	Alf cample	s containers	n intent? V							
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					CAMBLE	NUMBERS				
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CYANIDE										
NITROGEN FORMS										
TOTAL SULFIDE										
L NITRATE / NITRITE										
TOTAL ORGANIC CARBON						-				
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CHEMICAL OXYGEN DEMAND										
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2000 Powell Street 7th Floor Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1317587-01 **COC Number:**

> **Project Number:** 0752 Sampling Location:

Sampling Point: QA-W-130815

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: Sampling Date: 08/15/2013 00:00

Sample Depth: Lab Matrix: Water

Blank Water Sample Type: Delivery Work Order:

Global ID: T0600101486 Location ID (FieldPoint): QA

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-02 **COC Number:**

> **Project Number:** 0752 Sampling Location:

Sampling Point: MW-1-W-130815

GRD Sampled By:

08/15/2013 22:35 Receive Date: 08/15/2013 12:49 Sampling Date:

Sample Depth: Water Lab Matrix: Water Sample Type: Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-1

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-03 **COC Number:**

> **Project Number:** 0752 Sampling Location:

MW-2-W-130815 Sampling Point:

Sampled By: GRD Receive Date: 08/15/2013 22:35 08/15/2013 12:04 Sampling Date:

Sample Depth: Water Lab Matrix: Water Sample Type:

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-2

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1317587-04 COC Number: --

Project Number: 0752 Sampling Location: ---

Sampling Point: MW-3-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 08:58

Sample Depth: --Lab Matrix: Water
Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-3

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-05 COC Number: ---

Project Number: 0752
Sampling Location: ---

Sampling Point: MW-4-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 09:35

Sample Depth: --
Lab Matrix: Water

Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-4

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-06 COC Number: --

Project Number: 0752 Sampling Location: ---

Sampling Point: MW-5-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 11:07

Sample Depth: --Lab Matrix: Water
Sample Type: Water
Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-5

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1317587-07 COC Number:

Project Number: 0752 Sampling Location: ---

Sampling Point: MW-6-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 10:14

Sample Depth: --Lab Matrix: Water
Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-6

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-08 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: MW-7-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 08:05

Sample Depth: --Lab Matrix: Water
Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-7

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-09 COC Number: --

Project Number: 0752
Sampling Location: ---

Sampling Point: MW-8-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 07:25

Sample Depth: --Lab Matrix: Water
Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MW-8

Matrix: W

Sample QC Type (SACode): CS

2000 Powell Street 7th Floor Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1317587-10 **COC Number:**

> **Project Number:** 0752 Sampling Location:

Sampling Point: A-MW-1-W-130815

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: Sampling Date: 08/15/2013 12:00

Sample Depth: Lab Matrix: Water Water Sample Type:

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): A-MW-1

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-11 COC Number:

> 0752 **Project Number:** Sampling Location:

A-MW-2-W-130815 Sampling Point:

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: 08/15/2013 11:05 Sampling Date:

Sample Depth: Water Lab Matrix: Water Sample Type: Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): A-MW-2

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-12 **COC Number:**

> 0752 **Project Number:** Sampling Location:

A-MW-3-W-130815 Sampling Point:

Sampled By: GRD

08/15/2013 22:35 Receive Date: 08/15/2013 10:05 Sampling Date:

Sample Depth: Water Lab Matrix: Sample Type: Water Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): A-MW-3

Matrix: W

Sample QC Type (SACode): CS

2000 Powell Street 7th Floor Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1317587-13 COC Number:

> **Project Number:** 0752 Sampling Location:

Sampling Point: A-MW-4-W-130815

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: Sampling Date: 08/15/2013 12:45

Sample Depth: Lab Matrix: Water Water Sample Type:

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): A-MW-4

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-14 COC Number:

> 0752 **Project Number:** Sampling Location:

A-MW-5-W-130815 Sampling Point:

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: 08/15/2013 06:30 Sampling Date:

Sample Depth: Water Lab Matrix: Water Sample Type:

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): A-MW-5

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-15 **COC Number:**

> 0752 **Project Number:** Sampling Location:

A-MW-6-W-130815 Sampling Point:

Sampled By: GRD

08/15/2013 22:35 Receive Date: 08/15/2013 07:20 Sampling Date:

Sample Depth: Water Lab Matrix: Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): A-MW-6

Matrix: W

Sample QC Type (SACode): CS

2000 Powell Street 7th Floor Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1317587-16 COC Number:

> **Project Number:** 0752 Sampling Location:

Sampling Point: A-MW-7-W-130815

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: Sampling Date: 08/15/2013 08:10

Sample Depth: Lab Matrix: Water Water Sample Type:

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): A-MW-7

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-17 COC Number:

> 0752 **Project Number: Sampling Location:**

S-MW-1-W-130815 Sampling Point:

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: 08/15/2013 08:50 Sampling Date:

Sample Depth: Water Lab Matrix:

Water Sample Type: Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): S-MW-1

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-18 **COC Number:**

> 0752 **Project Number:** Sampling Location:

S-MW-2-W-130815 Sampling Point:

Sampled By: GRD

08/15/2013 22:35 Receive Date: 08/15/2013 10:10 Sampling Date:

Sample Depth: Water Lab Matrix: Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): S-MW-2

Matrix: W

Sample QC Type (SACode): CS

2000 Powell Street 7th Floor Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory **Client Sample Information**

1317587-19 COC Number:

> **Project Number:** 0752 Sampling Location:

Sampling Point: S-MW-3-W-130815

Sampled By: **GRD**

08/15/2013 22:35 **Receive Date:** Sampling Date: 08/15/2013 10:50

Sample Depth: Lab Matrix: Water Water Sample Type:

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): S-MW-3

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-20 COC Number:

> 0752 **Project Number:** Sampling Location:

S-MW-4-W-130815 Sampling Point:

Sampled By: **GRD**

08/15/2013 22:35 Receive Date: 08/15/2013 09:05 Sampling Date:

Sample Depth: Water Lab Matrix: Water Sample Type: Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): S-MW-4

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-21 **COC Number:**

> 0752 **Project Number:** Sampling Location:

S-MW-5-W-130815 Sampling Point:

Sampled By: GRD

08/15/2013 22:35 Receive Date: 08/15/2013 12:45 Sampling Date:

Sample Depth: Water Lab Matrix: Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): S-MW-5

Matrix: W

Sample QC Type (SACode): CS

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1317587-22 COC Number: --

Project Number: 0752 Sampling Location: ---

Sampling Point: S-MW-6-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 11:30

Sample Depth: --Lab Matrix: Water
Sample Type: Water

Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486

Location ID (FieldPoint): S-MW-6

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-23 COC Number: ---

Project Number: 0752
Sampling Location: ---

Sampling Point: S-EW-1-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 08:12

Sample Depth: --Lab Matrix: Water
Sample Type: Water
Metal Analysis: 2-Lab Filtered and

Acidified

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): S-EW-1

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1317587-24 COC Number: --

Project Number: 0752 Sampling Location: ---

Sampling Point: MPE-1-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 **Sampling Date:** 08/15/2013 09:30

Sample Depth: --Lab Matrix: Water
Sample Type: Water
Delivery Work Order:
Global ID: T0600101486

Location ID (FieldPoint): MPE-1 Matrix: W

viatrix. VV

Sample QC Type (SACode): CS



Arcadis Reported: 08/29/2013 11:14

2000 Powell Street 7th FloorProject: 0752Emeryville, CA 94608Project Number: 351646Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1317587-25 COC Number: ---

Project Number: 0752 Sampling Location: ---

Sampling Point: MP-1-W-130815

Sampled By: GRD

Receive Date: 08/15/2013 22:35 Sampling Date: 08/15/2013 12:05

Sample Depth: ---

Lab Matrix: Water Sample Type: Water

Delivery Work Order: Global ID: T0600101486 Location ID (FieldPoint): MP-1

Matrix: W

Sample QC Type (SACode): CS

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-01	Client Sampl	e Name:	0752, QA-W-13081	5, 8/15/2013 12:0	0:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		94.9	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Se	urrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/19/13 11:03	EAR	MS-V12	1	BWH1433	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-01	Client Sampl	e Name:	Name: 0752, QA-W-130815, 8/15/2013 12:00:00AM						
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #		
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1		
a,a,a-Trifluorotoluene	(FID Surrogate)	103	%	70 - 130 (LCL - UCL)	EPA-8015B			1		

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	08/22/13	08/23/13 01:52	jjh	GC-V9	1	BWH1804		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-02	Client Sampl	e Name:	0752, MW-1-W-130	815, 8/15/2013 1	2:49:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	100	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		86.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Si	urrogate)	97.5	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/19/13 11:20	EAR	MS-V12	1	BWH1433	



Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

Arcadis

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID:	1317587-02	Client Sampl	e Name:	0752, MW-1-	W-130815, 8/15/2013 12	2:49:00PM		
						МВ	Lab	
Constituent Acenaphthene		Result ND	Units ug/L	PQL 2.0	Method EPA-8270C	Bias ND	Quals	Run #
Acenaphthylene		ND	ug/L	2.0	EPA-8270C	ND		1
Aldrin		ND	ug/L	2.0	EPA-8270C	ND		1
Aniline		ND	ug/L	5.0	EPA-8270C	ND		1
Anthracene		ND	ug/L	2.0	EPA-8270C	ND		1
Benzidine		ND	ug/L	20	EPA-8270C	ND		1
Benzo[a]anthracene		ND	ug/L	2.0	EPA-8270C	ND		1
Benzo[b]fluoranthene		ND	ug/L	2.0	EPA-8270C	ND		1
Benzo[k]fluoranthene		ND	ug/L	2.0	EPA-8270C	ND		<u>'</u> 1
Benzo[a]pyrene		ND	ug/L	2.0	EPA-8270C	ND		<u>·</u> 1
Benzo[g,h,i]perylene		ND	ug/L	2.0	EPA-8270C	ND		1
Benzoic acid		ND	ug/L	10	EPA-8270C	ND		<u>·</u> 1
Benzyl alcohol		ND	ug/L	2.0	EPA-8270C	ND		1
Benzyl butyl phthalate		ND	ug/L	2.0	EPA-8270C	ND		1
alpha-BHC		ND	ug/L	2.0	EPA-8270C	ND		1
beta-BHC		ND	ug/L	2.0	EPA-8270C	ND		1
delta-BHC		ND	ug/L	2.0	EPA-8270C	ND		1
gamma-BHC (Lindane)		ND	ug/L	2.0	EPA-8270C	ND		1
bis(2-Chloroethoxy)meth	ane	ND	ug/L	2.0	EPA-8270C	ND		1
bis(2-Chloroethyl) ether		ND	ug/L	2.0	EPA-8270C	ND		1
bis(2-Chloroisopropyl)etl	ner	ND	ug/L	2.0	EPA-8270C	ND		1
bis(2-Ethylhexyl)phthalat	e	ND	ug/L	5.0	EPA-8270C	ND		1
4-Bromophenyl phenyl e	ther	ND	ug/L	2.0	EPA-8270C	ND		1
4-Chloroaniline		ND	ug/L	2.0	EPA-8270C	ND		1
2-Chloronaphthalene		ND	ug/L	2.0	EPA-8270C	ND		1
4-Chlorophenyl phenyl e	ther	ND	ug/L	2.0	EPA-8270C	ND		1
Chrysene		ND	ug/L	2.0	EPA-8270C	ND		1
4,4'-DDD		ND	ug/L	2.0	EPA-8270C	ND		1
4,4'-DDE		ND	ug/L	3.0	EPA-8270C	ND		1
4,4'-DDT		ND	ug/L	2.0	EPA-8270C	ND		1
Dibenzo[a,h]anthracene		ND	ug/L	3.0	EPA-8270C	ND		1
Dibenzofuran		ND	ug/L	2.0	EPA-8270C	ND		1
1,2-Dichlorobenzene		ND	ug/L	2.0	EPA-8270C	ND		1



Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

Arcadis

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID:	1317587-02	Client Sampl	e Name:	0752, MW-1-V	N-130815, 8/15/2013 12	2:49:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
1,3-Dichlorobenzene		ND	ug/L	2.0	EPA-8270C	ND ND	Quais	Run #_ 1
1,4-Dichlorobenzene		ND	ug/L	2.0	EPA-8270C	ND		1
3,3-Dichlorobenzidine		ND	ug/L	10	EPA-8270C	ND		1
Dieldrin		ND	ug/L	3.0	EPA-8270C	ND		1
Diethyl phthalate		ND	ug/L	2.0	EPA-8270C	ND		1
Dimethyl phthalate		ND	ug/L	2.0	EPA-8270C	ND		1
Di-n-butyl phthalate		ND	ug/L	2.0	EPA-8270C	ND		1
2,4-Dinitrotoluene		ND	ug/L	2.0	EPA-8270C	ND		1
2,6-Dinitrotoluene		ND	ug/L	2.0	EPA-8270C	ND		1
Di-n-octyl phthalate		ND	ug/L	2.0	EPA-8270C	ND		1
1,2-Diphenylhydrazine		ND	ug/L	2.0	EPA-8270C	ND		1
Endosulfan I		ND	ug/L	10	EPA-8270C	ND		1
Endosulfan II		ND	ug/L	10	EPA-8270C	ND		1
Endosulfan sulfate		ND	ug/L	3.0	EPA-8270C	ND		1
Endrin		ND	ug/L	2.0	EPA-8270C	ND		1
Endrin aldehyde		ND	ug/L	10	EPA-8270C	ND		1
Fluoranthene		ND	ug/L	2.0	EPA-8270C	ND		1
Fluorene		ND	ug/L	2.0	EPA-8270C	ND		1
Heptachlor		ND	ug/L	2.0	EPA-8270C	ND		1
Heptachlor epoxide		ND	ug/L	2.0	EPA-8270C	ND		1
Hexachlorobenzene		ND	ug/L	2.0	EPA-8270C	ND		1
Hexachlorobutadiene		ND	ug/L	2.0	EPA-8270C	ND		1
Hexachlorocyclopentadier	ie	ND	ug/L	2.0	EPA-8270C	ND		1
Hexachloroethane		ND	ug/L	2.0	EPA-8270C	ND		1
ndeno[1,2,3-cd]pyrene		ND	ug/L	2.0	EPA-8270C	ND		1
sophorone		ND	ug/L	2.0	EPA-8270C	ND		1
2-Methylnaphthalene		ND	ug/L	2.0	EPA-8270C	ND		1
Naphthalene		ND	ug/L	2.0	EPA-8270C	ND		1
-Naphthylamine		ND	ug/L	20	EPA-8270C	ND		1
2-Nitroaniline		ND	ug/L	2.0	EPA-8270C	ND		1
3-Nitroaniline		ND	ug/L	2.0	EPA-8270C	ND		1
I-Nitroaniline		ND	ug/L	5.0	EPA-8270C	ND		1
Nitrobenzene		ND	ug/L	2.0	EPA-8270C	ND		1

Reported: 08/29/2013 11:14

2000 Powell Street 7th FloorProject:0752Emeryville, CA 94608Project Number:351646Project Manager:Kathy Brandt

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID:	1317587-02	Client Sampl	e Name:	0752, MW-1-W-130	815, 8/15/2013 1	2:49:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
N-Nitrosodimethylamine)	ND	ug/L	2.0	EPA-8270C	ND		1
N-Nitrosodi-N-propylam	ine	ND	ug/L	2.0	EPA-8270C	ND		1
N-Nitrosodiphenylamine	•	ND	ug/L	2.0	EPA-8270C	ND		1
Phenanthrene		ND	ug/L	2.0	EPA-8270C	ND		1
Pyrene		ND	ug/L	2.0	EPA-8270C	ND		1
1,2,4-Trichlorobenzene		ND	ug/L	2.0	EPA-8270C	ND		1
4-Chloro-3-methylpheno	ol	ND	ug/L	5.0	EPA-8270C	ND		1
2-Chlorophenol		ND	ug/L	2.0	EPA-8270C	ND		1
2,4-Dichlorophenol		ND	ug/L	2.0	EPA-8270C	ND		1
2,4-Dimethylphenol		ND	ug/L	2.0	EPA-8270C	ND		1
4,6-Dinitro-2-methylphe	nol	ND	ug/L	10	EPA-8270C	ND		1
2,4-Dinitrophenol		ND	ug/L	10	EPA-8270C	ND		1
2-Methylphenol		ND	ug/L	2.0	EPA-8270C	ND		1
3- & 4-Methylphenol		ND	ug/L	2.0	EPA-8270C	ND		1
2-Nitrophenol		ND	ug/L	2.0	EPA-8270C	ND		1
4-Nitrophenol		ND	ug/L	2.0	EPA-8270C	ND		1
Pentachlorophenol		ND	ug/L	10	EPA-8270C	ND		1
Phenol		ND	ug/L	2.0	EPA-8270C	ND		1
2,4,5-Trichlorophenol		ND	ug/L	5.0	EPA-8270C	ND		1
2,4,6-Trichlorophenol		ND	ug/L	5.0	EPA-8270C	ND		1
2-Fluorophenol (Surroga	ate)	42.7	%	30 - 120 (LCL - UCL)	EPA-8270C			1
Phenol-d5 (Surrogate)		30.4	%	12 - 110 (LCL - UCL)	EPA-8270C			1
Nitrobenzene-d5 (Surro	gate)	65.5	%	60 - 130 (LCL - UCL)	EPA-8270C			1
2-Fluorobiphenyl (Surro	gate)	77.1	%	55 - 125 (LCL - UCL)	EPA-8270C			1
2,4,6-Tribromophenol (S	Surrogate)	80.2	%	40 - 150 (LCL - UCL)	EPA-8270C			1
p-Terphenyl-d14 (Surro	gate)	75.4	%	40 - 150 (LCL - UCL)	EPA-8270C			1

	Run						QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8270C	08/21/13	08/27/13 15:21	SKC	MS-B2	1	BWH2165		

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08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-02	Client Sampl	e Name:	0752, MW-1-W-130	815, 8/15/2013 1			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	107	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run			QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	08/22/13	08/23/13 06:57	jjh	GC-V9	1	BWH1804			

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 Reported:
 08/29/2013
 11:14

 2000 Powell Street 7th Floor
 Project:
 0752

Emeryville, CA 94608 Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

0752, MW-1-W-130815, 8/15/2013 12:49:00PM BCL Sample ID: 1317587-02 **Client Sample Name:** MB Lab Run# Constituent Result Units **PQL** Method Quals Bias RSK-175M ND Methane ND mg/L 0.0010

			Run			QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 09:06	EAR	GC-V1	1	BWH1667	



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-02	Client Sampl	e Name:	0752, MW-1-\	0752, MW-1-W-130815, 8/15/2013 12:49:00PM						
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #			
Total Alkalinity as Ca	iCO3	45	mg/L	4.1	EPA-310.1	ND		1			
Nitrate as NO3		1.9	mg/L	0.44	EPA-300.0	ND		2			
Sulfate		12	mg/L	1.0	EPA-300.0	ND		2			
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3			
Non-Volatile Organic	Carbon	0.75	mg/L	0.30	EPA-415.1	ND		4			

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/21/13	08/21/13 10:54	RML	MET-1	1	BWH1658
2	EPA-300.0	08/16/13	08/16/13 20:08	LS1	IC5	1	BWH1408
3	EPA-353.2	08/16/13	08/16/13 11:46	TDC	KONE-1	1	BWH1341
4	EPA-415.1	08/27/13	08/27/13 14:35	CDR	TOC2	1	BWH1608



Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor
Emeryville, CA 94608 Pro

Metals Analysis

BCL Sample ID:	1317587-02	Client Sampl	e Name:	0752, MW-1-V	V-130815, 8/15/2013 1:	2:49:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Cadmium		ND	ug/L	10	EPA-6010B	ND		1
Dissolved Chromium		ND	ug/L	10	EPA-6010B	ND		1
Dissolved Iron		52	ug/L	50	EPA-6010B	ND		1
Dissolved Lead		ND	ug/L	50	EPA-6010B	ND		1
Dissolved Nickel		ND	ug/L	10	EPA-6010B	ND		1
Dissolved Zinc		ND	ug/L	10	EPA-6010B	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 13:33	ARD	PE-OP2	1	BWH1539	

08/29/2013 11:14 Reported: Project: 0752 2000 Powell Street 7th Floor Emeryville, CA 94608

Project Number: 351646 Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-03	Client Sampl	e Name:	0752, MW-2-W-130	815, 8/15/2013 1	2:04:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		89.7	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Si	urrogate)	99.0	%	80 - 120 (LCL - UCL)	EPA-8260B			1

				QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/19/13 11:38	EAR	MS-V12	1	BWH1433	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-03	Client Sampl	e Name:	0752, MW-2-W-130	815, 8/15/2013 1	2:04:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	109	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/23/13 07:17	jjh	GC-V9	1	BWH1804	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752 Project Number: 351646

Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-03	Client Sampl	e Name:	0752, MW-2-W	0752, MW-2-W-130815, 8/15/2013 12:04:00PM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Methane		ND	mg/L	0.0010	RSK-175M	ND		1	

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 09:10	EAR	GC-V1	1	BWH1667	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-03	Client Sampl	e Name:	0752, MW-2-W-130815, 8/15/2013 12:04:00PM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	68	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		10	mg/L	0.44	EPA-300.0	ND		2
Sulfate		60	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	0.88	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/21/13	08/21/13 11:06	RML	MET-1	1	BWH1658
2	EPA-300.0	08/16/13	08/16/13 20:23	LS1	IC5	1	BWH1408
3	EPA-353.2	08/16/13	08/16/13 11:46	TDC	KONE-1	1	BWH1341
4	EPA-415.1	08/27/13	08/27/13 15:30	CDR	TOC2	1	BWH1608



2000 Powell Street 7th Floor

Emeryville, CA 94608

08/29/2013 11:14 Reported:

> Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-03	Client Sampl	e Name:	0752, MW-2-V	V-130815, 8/15/2013 12	2:04:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		ND	ug/L	50	EPA-6010B	ND		1

			Run				QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-6010B	08/16/13	08/20/13 13:35	ARD	PE-OP2	1	BWH1539			

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-04	Client Sampl	e Name:	0752, MW-3-W-130	815, 8/15/2013	3:58:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		4.0	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		1.4	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		340	ug/L	2.5	EPA-8260B	ND	A01	2
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Sur	rogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Sur	rogate)	94.9	%	75 - 125 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		95.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		85.1	%	80 - 120 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Su	rrogate)	114	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	rrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260B			2

			Run		QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	08/19/13	08/19/13 11:56	EAR	MS-V12	1	BWH1433
2	EPA-8260B	08/20/13	08/20/13 19:37	EAR	MS-V12	5	BWH1433

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08/29/2013 11:14 Reported:

Project: 0752

Project Number: 351646 Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-04	Client Sampl	e Name:	0752, MW-3-W-130	815, 8/15/2013	8:58:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Gasoline Range Orga	nics (C6 - C12)	410	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	130	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 09:39	jjh	GC-V9	1	BWH1804	

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Reported: 08/29/2013 11:14

Project: 0752 Project Number: 351646

Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-04	Client Sampl	e Name:	0752, MW-3-V	V-130815, 8/15/2013 8	3:58:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Methane		1.6	mg/L	0.0050	RSK-175M	ND	A01	1

			Run				QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	RSK-175M	08/22/13	08/22/13 10:19	EAR	GC-V1	5	BWH1667			



Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

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Water Analysis (General Chemistry)

BCL Sample ID:	1317587-04	Client Sampl	e Name:	0752, MW-3-\	W-130815, 8/15/2013	8:58:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Total Alkalinity as Ca	CO3	230	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate		11	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	3.7	mg/L	0.30	EPA-415.1	ND		4

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-310.1	08/21/13	08/21/13 11:12	RML	MET-1	1	BWH1658	
2	EPA-300.0	08/16/13	08/16/13 21:10	LS1	IC5	1	BWH1409	
3	EPA-353.2	08/16/13	08/16/13 11:46	TDC	KONE-1	1	BWH1341	
4	EPA-415.1	08/27/13	08/27/13 15:44	CDR	TOC2	1	BWH1608	



4200

ug/L

Arcadis

Dissolved Iron

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

ND

Project Number: 351646
Project Manager: Kathy Brandt

EPA-6010B

Metals Analysis

 BCL Sample ID:
 1317587-04
 Client Sample Name:
 0752, MW-3-W-130815, 8/15/2013
 8:58:00AM

 Constituent
 Result
 Units
 PQL
 Method
 Bias
 Quals
 Run #

			Run				QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-6010B	08/16/13	08/20/13 15:19	ARD	PE-OP2	1	BWH1540			

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-05	Client Sampl	e Name:	0752, MW-4-W-130	815, 8/15/2013	9:35:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	ırrogate)	105	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		88.0	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (S	urrogate)	99.9	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/19/13 12:13	EAR	MS-V12	1	BWH1433		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-05	Client Sampl	e Name:	0752, MW-4-W-130	815, 8/15/2013	9:35:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	107	%	70 - 130 (LCL - UCL)	EPA-8015B			1

	Run					QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	08/22/13	08/24/13 10:00	jjh	GC-V9	1	BWH1804		

Emeryville, CA 94608

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 Reported:
 08/29/2013
 11:14

 2000 Powell Street 7th Floor
 Project:
 0752

Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-05	Client Sample	e Name:	0752, MW-4-W-130815, 8/15/2013 9:35:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		0.0017	mg/L	0.0010	RSK-175M	ND		1

	Run					QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 09:31	EAR	GC-V1	1	BWH1667	



Arcadis Reported: 2000 Powell Street 7th Floor

Project: 0752 Emeryville, CA 94608 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

08/29/2013 11:14

BCL Sample ID:	1317587-05	Client Sampl	e Name:	0752, MW-4-V	V-130815, 8/15/2013	9:35:00AM	9:35:00AM			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #		
Total Alkalinity as Ca	CO3	68	mg/L	4.1	EPA-310.1	ND		1		
Nitrate as NO3		2.2	mg/L	0.44	EPA-300.0	ND		2		
Sulfate		14	mg/L	1.0	EPA-300.0	ND		2		
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3		
Non-Volatile Organic	Carbon	1.2	mg/L	0.30	EPA-415.1	ND		4		

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/21/13	08/21/13 11:18	RML	MET-1	1	BWH1658
2	EPA-300.0	08/16/13	08/16/13 21:25	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:46	TDC	KONE-1	1	BWH1341
4	EPA-415.1	08/27/13	08/27/13 15:59	CDR	TOC2	1	BWH1608

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

0752, MW-4-W-130815, 8/15/2013 9:35:00AM BCL Sample ID: 1317587-05 **Client Sample Name:** MB Lab Run# Constituent Result Units **PQL** Method Quals Bias EPA-6010B Dissolved Iron 61 ug/L ND

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 15:28	ARD	PE-OP2	1	BWH1540	

Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-06	Client Sampl	e Name:	0752, MW-5-W-130	815, 8/15/2013 1	1:07:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		24	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		2.0	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		6.7	ug/L	0.50	EPA-8260B	ND		1
Toluene		6.1	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		9.2	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		94.9	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	ırrogate)	112	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/19/13 12:31	EAR	MS-V12	1	BWH1433		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-06	Client Sampl	e Name:	0752, MW-5-W-130	0752, MW-5-W-130815, 8/15/2013 11:07:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Orga	nics (C6 - C12)	50	ug/L	50	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	106	%	70 - 130 (LCL - UCL)	EPA-8015B			1	

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 10:20	jjh	GC-V9	1	BWH1804	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	Client Sampl	e Name:	0752, MW-5-W-130815, 8/15/2013 11:07:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		0.0040	mg/L	0.0010	RSK-175M	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 09:35	EAR	GC-V1	1	BWH1667	



2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-06	Client Sampl	e Name:	0752, MW-5-V	V-130815, 8/15/2013 1	1:07:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	150	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate		7.4	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	2.9	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/21/13	08/21/13 11:24	RML	MET-1	1	BWH1658
2	EPA-300.0	08/16/13	08/16/13 21:40	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:46	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/27/13 16:40	CDR	TOC2	1	BWH1608



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Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

0752, MW-5-W-130815, 8/15/2013 11:07:00AM BCL Sample ID: 1317587-06 **Client Sample Name:** MB Lab Run# Constituent Result Units **PQL** Method Quals Bias EPA-6010B Dissolved Iron 580 ug/L ND

	Run					QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 15:29	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-07	Client Sampl	e Name:	0752, MW-6-W-130	815, 8/15/2013 1	0:14:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		0.82	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Sui	rogate)	105	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		90.5	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	rrogate)	105	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/19/13 12:49	EAR	MS-V12	1	BWH1433	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-07	Client Sampl	e Name:	0752, MW-6-W-130	815, 8/15/2013 1			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	106	%	70 - 130 (LCL - UCL)	EPA-8015B			1

	Run				QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 10:40	jjh	GC-V9	1	BWH1804	

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Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-07	Client Sampl	e Name:	0752, MW-6-W-130815, 8/15/2013 10:14:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Methane		ND	mg/L	0.0010	RSK-175M	ND		1	

		QC						
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 09:38	EAR	GC-V1	1	BWH1667	



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 08/29/2013
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 2000 Powell Street 7th Floor
 Project:
 0752

Emeryville, CA 94608 Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-07	Client Sampl	e Name:	0752, MW-6-W-130815, 8/15/2013 10:14:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	110	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		0.71	mg/L	0.44	EPA-300.0	ND		2
Sulfate		13	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	2.0	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/21/13	08/21/13 11:30	RML	MET-1	1	BWH1658
2	EPA-300.0	08/16/13	08/16/13 21:56	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:50	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/27/13 16:55	CDR	TOC2	1	BWH1608



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-07	Client Sampl	e Name:	0752, MW-6-W-130815, 8/15/2013 10:14:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Dissolved Iron		100	ug/L	50	EPA-6010B	ND		1	

	Run					QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 15:31	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-08	Client Sampl	e Name:	0752, MW-7-W-130	815, 8/15/2013	3:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		11	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		5.0	ug/L	0.50	EPA-8260B	ND		1
Toluene		1.3	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		1.2	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Sui	rrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		90.9	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	ırrogate)	100	%	80 - 120 (LCL - UCL)	EPA-8260B			1

	Run						QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/19/13 13:07	EAR	MS-V12	1	BWH1433		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-08	Client Sampl	e Name:	0752, MW-7-W-130	815, 8/15/2013	8:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Gasoline Range Orga	nics (C6 - C12)	95	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	112	%	70 - 130 (LCL - UCL)	EPA-8015B			1

	Run					QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	08/22/13	08/24/13 11:00	jjh	GC-V9	1	BWH1804		

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752

Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-08	Client Sampl	e Name:	0752, MW-7-W	V-130815, 8/15/2013 8	3:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		ND	mg/L	0.0010	RSK-175M	ND		1

	Run						QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 09:43	EAR	GC-V1	1	BWH1667	



2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	Client Sampl	e Name:	0752, MW-7-\	W-130815, 8/15/2013	8:05:00AM			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	100	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate		17	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	2.1	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/19/13 23:48	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/16/13 22:11	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:50	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/27/13 17:09	CDR	TOC2	1	BWH1608



2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Bra

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-08	Client Sample	nt Sample Name: 0752, MW-7-W-130815, 8/15/2013 8:05:00			8:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		260	ug/L	50	EPA-6010B	ND		1

	Run						QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 15:32	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-09	Client Sampl	e Name:	0752, MW-8-W-130	815, 8/15/2013	7:25:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	urrogate)	105	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		90.2	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (S	urrogate)	98.9	%	80 - 120 (LCL - UCL)	EPA-8260B			1

	Run						QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/19/13 13:25	EAR	MS-V12	1	BWH1433		

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

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Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-09	Client Sampl	e Name:	0752, MW-8-W-130	815, 8/15/2013	7:25:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	112	%	70 - 130 (LCL - UCL)	EPA-8015B			1

	Run					QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	08/22/13	08/24/13 11:20	jjh	GC-V9	1	BWH1804		



2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752

Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-09	Client Sampl	e Name:	0752, MW-8-W	V-130815, 8/15/2013 7	7:25:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		ND	mg/L	0.0010	RSK-175M	ND		1

	Run					QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 09:47	EAR	GC-V1	1	BWH1667	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-09	Client Sampl	e Name:	0752, MW-8-	W-130815, 8/15/2013	7:25:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	98	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		1.0	mg/L	0.44	EPA-300.0	ND		2
Sulfate		17	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	1.9	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 00:01	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/16/13 22:27	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:50	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/27/13 17:23	CDR	TOC2	1	BWH1608



Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

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Metals Analysis

BCL Sample ID:	1317587-09	Client Sample	e Name:	0752, MW-8-	W-130815, 8/15/2013 7	:25:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		71	ug/L	50	EPA-6010B	ND		1

	Run					QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-6010B	08/16/13	08/20/13 16:26	ARD	PE-OP2	1	BWH1540		

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-10	Client Sampl	e Name:	0752, A-MW-1-W-1	30815, 8/15/2013	12:00:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		840	ug/L	12	EPA-8260B	ND	A01	1
1,2-Dibromoethane		ND	ug/L	5.0	EPA-8260B	ND	A01	2
1,2-Dichloroethane		ND	ug/L	5.0	EPA-8260B	ND	A01	2
Ethylbenzene		93	ug/L	5.0	EPA-8260B	ND	A01	2
Methyl t-butyl ether		790	ug/L	5.0	EPA-8260B	ND	A01	2
Toluene		100	ug/L	5.0	EPA-8260B	ND	A01	2
Total Xylenes		160	ug/L	10	EPA-8260B	ND	A01	2
Ethanol		ND	ug/L	2500	EPA-8260B	ND	A01	2
1,2-Dichloroethane-d4 (Su	ırrogate)	105	%	75 - 125 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Su	ırrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		97.2	%	80 - 120 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		94.1	%	80 - 120 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (S	urrogate)	98.5	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (S	urrogate)	97.7	%	80 - 120 (LCL - UCL)	EPA-8260B			2

			Run				QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8260B	08/20/13	08/21/13 14:31	EAR	MS-V12	25	BWH1433			
2	EPA-8260B	08/19/13	08/19/13 23:55	EAR	MS-V12	10	BWH1433			

Arcadis Reported:

Project: 0752 2000 Powell Street 7th Floor Emeryville, CA 94608 Project Number: 351646 Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

08/29/2013 11:14

BCL Sample ID:	1317587-10	Client Sampl	e Name:	0752, A-MW-1-W-1	752, A-MW-1-W-130815, 8/15/2013 12:00:00PM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Orga	nics (C6 - C12)	5800	ug/L	500	EPA-8015B	ND	A01	1	
a,a,a-Trifluorotoluene	(FID Surrogate)	107	%	70 - 130 (LCL - UCL)	EPA-8015B			1	

	Run					QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	08/22/13	08/26/13 16:14	jjh	GC-V9	10	BWH1804		

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Reported:

08/29/2013 11:14

Gas Testing in Water

BCL Sample ID:	1317587-10	Client Sample	e Name:	0752, A-MW-	0752, A-MW-1-W-130815, 8/15/2013 12:00:00PM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Methane		0.32	mg/L	0.0010	RSK-175M	ND		1	

			Run				QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	RSK-175M	08/22/13	08/22/13 09:50	EAR	GC-V1	1	BWH1667		



Arcadis 2000 Powell Street 7th Floor

Emeryville, CA 94608

 Reported:
 08/29/2013 11:14

 treet 7th Floor
 Project:
 0752

Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-10	Client Sampl	e Name:	0752, A-MW-1-W-130815, 8/15/2013 12:00:00PM						
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #		
Total Alkalinity as Ca	СОЗ	430	mg/L	4.1	EPA-310.1	ND		1		
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2		
Sulfate		34	mg/L	1.0	EPA-300.0	ND		2		
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3		
Non-Volatile Organic	Carbon	12	mg/L	1.5	EPA-415.1	ND	A01	4		

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 00:07	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/16/13 22:42	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:50	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/28/13 12:04	CDR	TOC2	5	BWH1608



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646

Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-10	Client Sample	e Name:	0752, A-MW-1-W-130815, 8/15/2013 12:00:00PM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		3100	ug/L	50	EPA-6010B	ND		1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:27	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-11	Client Sample	e Name:	0752, A-MW-2-W-1	30815, 8/15/2013	30815, 8/15/2013 11:05:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #		
Benzene		1200	ug/L	50	EPA-8260B	ND	A01	1		
1,2-Dibromoethane		ND	ug/L	5.0	EPA-8260B	ND	A01	2		
1,2-Dichloroethane		ND	ug/L	5.0	EPA-8260B	ND	A01	2		
Ethylbenzene		820	ug/L	50	EPA-8260B	ND	A01	1		
Methyl t-butyl ether		1700	ug/L	50	EPA-8260B	ND	A01	1		
Toluene		5600	ug/L	50	EPA-8260B	ND	A01	1		
Total Xylenes		4400	ug/L	100	EPA-8260B	ND	A01	1		
Ethanol		ND	ug/L	2500	EPA-8260B	ND	A01	2		
1,2-Dichloroethane-d4 (Su	rrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260B			1		
1,2-Dichloroethane-d4 (Su	rrogate)	108	%	75 - 125 (LCL - UCL)	EPA-8260B			2		
Toluene-d8 (Surrogate)		100	%	80 - 120 (LCL - UCL)	EPA-8260B			1		
Toluene-d8 (Surrogate)		95.5	%	80 - 120 (LCL - UCL)	EPA-8260B			2		
4-Bromofluorobenzene (Su	ırrogate)	99.5	%	80 - 120 (LCL - UCL)	EPA-8260B			1		
4-Bromofluorobenzene (Su	ırrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260B			2		

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/20/13	08/21/13 14:48	EAR	MS-V12	100	BWH1433	
2	EPA-8260B	08/19/13	08/20/13 00:13	EAR	MS-V12	10	BWH1433	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-11	Client Sampl	e Name:	0752, A-MW-2-W-1	0752, A-MW-2-W-130815, 8/15/2013 11:05:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Orga	nics (C6 - C12)	1500	ug/L	500	EPA-8015B	ND	A01	1	
a,a,a-Trifluorotoluene	(FID Surrogate)	116	%	70 - 130 (LCL - UCL)	EPA-8015B			1	

	Run				QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/27/13 15:00	jjh	GC-V9	10	BWH1805	



2000 Powell Street 7th Floor

Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646

Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-11	Client Sampl	e Name:	0752, A-MW-2-W-130815, 8/15/2013 11:05:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#	
Methane		3.3	mg/L	0.010	RSK-175M	ND	A01	1	

			Run				QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	RSK-175M	08/22/13	08/22/13 10:34	EAR	GC-V1	10	BWH1667		



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2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-11	Client Sampl	e Name:	0752, A-MW-	0752, A-MW-2-W-130815, 8/15/2013 11:05:00AM						
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #			
Total Alkalinity as Ca	CO3	520	mg/L	4.1	EPA-310.1	ND		1			
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2			
Sulfate		ND	mg/L	1.0	EPA-300.0	ND		2			
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3			
Non-Volatile Organic	Carbon	24	mg/L	6.0	EPA-415.1	ND	A01	4			

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 00:15	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/16/13 22:57	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:57	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/28/13 15:07	CDR	TOC2	20	BWH1608



2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752 Project Number: 351646

Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-11	Client Sampl	e Name:	0752, A-MW-2-W-130815, 8/15/2013 11:05:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Dissolved Iron		7800	ug/L	50	EPA-6010B	ND		1	

	Run					QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:29	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-12	Client Sampl	e Name:	0752, A-MW-3-W-1	30815, 8/15/2013	10:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		87.1	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Si	urrogate)	98.8	%	80 - 120 (LCL - UCL)	EPA-8260B			1

	Run						QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/20/13 19:55	EAR	MS-V12	1	BWH1433		

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-12	Client Sampl	e Name:	0752, A-MW-3-W-1	0752, A-MW-3-W-130815, 8/15/2013 10:05:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Orga	nics (C6 - C12)	86	ug/L	50	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	110	%	70 - 130 (LCL - UCL)	EPA-8015B			1	

	Run					QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 12:20	jjh	GC-V9	1	BWH1805	



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-12	Client Sample	e Name:	0752, A-MW-3-W-130815, 8/15/2013 10:05:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		0.0036	mg/L	0.0010	RSK-175M	ND		1

	Run						QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	RSK-175M	08/22/13	08/22/13 09:59	EAR	GC-V1	1	BWH1668		



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 Reported:
 08/29/2013
 11:14

 2000 Powell Street 7th Floor
 Project:
 0752

Emeryville, CA 94608 Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-12	Client Sampl	e Name:	0752, A-MW-	-3-W-130815, 8/15/2013			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	iCO3	120	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		34	mg/L	0.44	EPA-300.0	ND		2
Sulfate		44	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	1.4	mg/L	0.30	EPA-415.1	ND		4

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-310.1	08/19/13	08/20/13 00:24	RML	MET-1	1	BWH1521	
2	EPA-300.0	08/16/13	08/16/13 23:13	LS1	IC5	1	BWH1409	
3	EPA-353.2	08/16/13	08/16/13 11:57	TDC	KONE-1	1	BWH1342	
4	EPA-415.1	08/27/13	08/27/13 18:33	CDR	TOC2	1	BWH1609	



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2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-12	Client Sampl	e Name:	0752, A-MW-3-W-130815, 8/15/2013 10:05:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Dissolved Iron		ND	ug/L	50	EPA-6010B	ND		1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:31	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-13	Client Sampl	e Name:	0752, A-MW-4-W-1	30815, 8/15/2013	12:45:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene		620	ug/L	12	EPA-8260B	ND	A01	1
1,2-Dibromoethane		ND	ug/L	2.5	EPA-8260B	ND	A01	2
1,2-Dichloroethane		ND	ug/L	2.5	EPA-8260B	ND	A01	2
Ethylbenzene		62	ug/L	2.5	EPA-8260B	ND	A01	2
Methyl t-butyl ether		1200	ug/L	12	EPA-8260B	ND	A01	1
Toluene		38	ug/L	2.5	EPA-8260B	ND	A01	2
Total Xylenes		67	ug/L	5.0	EPA-8260B	ND	A01	2
Ethanol		ND	ug/L	1200	EPA-8260B	ND	A01	2
1,2-Dichloroethane-d4 (Su	rrogate)	98.8	%	75 - 125 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Su	rrogate)	104	%	75 - 125 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		98.7	%	80 - 120 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		91.9	%	80 - 120 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Si	urrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Si	urrogate)	96.1	%	80 - 120 (LCL - UCL)	EPA-8260B			2

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	08/20/13	08/21/13 15:06	EAR	MS-V12	25	BWH1433
2	EPA-8260B	08/19/13	08/20/13 00:49	EAR	MS-V12	5	BWH1433

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-13	Client Sampl	e Name:	0752, A-MW-4-W-1	30815, 8/15/2013	12:45:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Gasoline Range Orga	nics (C6 - C12)	1100	ug/L	500	EPA-8015B	ND	A01	1
a,a,a-Trifluorotoluene	(FID Surrogate)	96.6	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/26/13 16:54	jjh	GC-V9	10	BWH1805	



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-13	Client Sample	e Name:	0752, A-MW-	-4-W-130815, 8/15/2013	12:45:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		0.45	mg/L	0.0010	RSK-175M	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 10:37	EAR	GC-V1	1	BWH1668	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-13	Client Sample Name:		0752, A-MW-4	I-W-130815, 8/15/2013			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	510	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate		4.0	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	15	mg/L	1.5	EPA-415.1	ND	A01	4

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 00:31	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/16/13 23:28	LS1	IC5	1	BWH1409
3	EPA-353.2	08/16/13	08/16/13 11:57	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/28/13 12:31	CDR	TOC2	5	BWH1609

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752 Project Number: 351646

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-13	Client Sampl	e Name:	0752, A-MW-4	4-W-130815, 8/15/2013	12:45:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		3300	ug/L	50	EPA-6010B	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:32	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-14	Client Sampl	e Name:	0752, A-MW-5-W-1	30815, 8/15/2013	6:30:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		0.72	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Sur	rogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		95.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	rrogate)	98.0	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/20/13 01:06	EAR	MS-V12	1	BWH1433		

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2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-14	Client Sampl	e Name:	0752, A-MW-5-W-1	30815, 8/15/2013	6:30:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	104	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 14:41	jjh	GC-V9	1	BWH1805	

2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-14	Client Sample	e Name:	0752, A-MW-	5-W-130815, 8/15/2013	6:30:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Methane		0.0010	mg/L	0.0010	RSK-175M	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 10:41	EAR	GC-V1	1	BWH1668	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-14	Client Sampl	e Name:	0752, A-MW-	5-W-130815, 8/15/2013	6:30:00AM	30:00AM MB Lab Bias Quals ND ND ND		
Constituent		Result	Units	PQL	Method			Run #	
Total Alkalinity as Ca	CO3	150	mg/L	4.1	EPA-310.1	ND		1	
Nitrate as NO3		19	mg/L	0.44	EPA-300.0	ND		2	
Sulfate		51	mg/L	1.0	EPA-300.0	ND		2	
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3	
Non-Volatile Organic	Carbon	2.6	mg/L	0.30	EPA-415.1	ND		4	

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 00:40	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/17/13 00:14	LS1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 11:57	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/27/13 20:11	CDR	TOC2	1	BWH1609



2000 Powell Street 7th Floor

Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-14	Client Sample	e Name:	0752, A-MW-	5-W-130815, 8/15/2013	6:30:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		ND	ug/L	50	EPA-6010B	ND		1

			Run			QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-6010B	08/16/13	08/20/13 16:34	ARD	PE-OP2	1	BWH1540		

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-15	Client Sampl	e Name:	0752, A-MW-6-W-1	30815, 8/15/2013	7:20:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		93.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	urrogate)	99.7	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/20/13 01:24	EAR	MS-V12	1	BWH1433		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-15	Client Sampl	e Name:	0752, A-MW-6-W-1	30815, 8/15/2013	7:20:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	108	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run		QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 15:02	jjh	GC-V9	1	BWH1805	

2000 Powell Street 7th Floor

Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752

Project Number: 351646 Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-15	Client Sampl	e Name:	0752, A-MW-6	-W-130815, 8/15/2013	7:20:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		ND	mg/L	0.0010	RSK-175M	ND		1

			Run			QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 11:44	EAR	GC-V1	1	BWH1668	



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2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-15	Client Sampl	e Name:	0752, A-MW-6	6-W-130815, 8/15/2013	7:20:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	180	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate		62	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	3.4	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 00:46	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/17/13 00:30	LS1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 11:57	TDC	KONE-1	1	BWH1342
4	EPA-415.1	08/27/13	08/27/13 20:25	CDR	TOC2	1	BWH1609

2000 Powell Street 7th Floor

Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646

Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-15	Client Sampl	e Name:	0752, A-MW	-6-W-130815, 8/15/2013	7:20:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		120	ug/L	50	EPA-6010B	ND		1

			Run			QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:36	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-16	Client Sampl	e Name:	0752, A-MW-7-W-1	30815, 8/15/2013	8:10:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	99.5	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		94.7	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	urrogate)	98.7	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/20/13 01:42	EAR	MS-V12	1	BWH1637	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-16	Client Sampl	e Name:	0752, A-MW-7-W-1	30815, 8/15/2013	8:10:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	106	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 15:22	jjh	GC-V9	1	BWH1805	

Arcadis Reported: 08/29/2013 11:14

2000 Powell Street 7th FloorProject:0752Emeryville, CA 94608Project Number:351646Project Manager:Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-16	Client Sample	e Name:	0752, A-MW-	7-W-130815, 8/15/2013	8:10:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Methane		ND	mg/L	0.0010	RSK-175M	ND		1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 11:22	EAR	GC-V1	1	BWH1668	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-16	Client Sampl	ple Name: 0752, A-MW-7-W-130815, 8/15/2013			8:10:00AM	8:10:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Total Alkalinity as Ca	iCO3	250	mg/L	4.1	EPA-310.1	ND		1	
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2	
Sulfate		58	mg/L	1.0	EPA-300.0	ND		2	
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3	
Non-Volatile Organic	Carbon	4.4	mg/L	0.30	EPA-415.1	ND		4	

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 00:53	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/17/13 00:45	LD1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 11:57	TDC	KONE-1	1	BWH1343
4	EPA-415.1	08/27/13	08/27/13 20:40	CDR	TOC2	1	BWH1609



2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

0752, A-MW-7-W-130815, 8/15/2013 8:10:00AM BCL Sample ID: 1317587-16 **Client Sample Name:** MB Lab Run# Constituent Result Units **PQL** Method Quals Bias EPA-6010B Dissolved Iron 340 ug/L ND

			Run				QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-6010B	08/16/13	08/20/13 16:44	ARD	PE-OP2	1	BWH1540		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-17	Client Sampl	e Name:	0752, S-MW-1-W-1	30815, 8/15/2013	8:50:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		820	ug/L	50	EPA-8260B	ND	A01	1
1,2-Dibromoethane		ND	ug/L	5.0	EPA-8260B	ND	A01	2
1,2-Dichloroethane		ND	ug/L	5.0	EPA-8260B	ND	A01	2
Ethylbenzene		65	ug/L	5.0	EPA-8260B	ND	A01	2
Methyl t-butyl ether		7300	ug/L	50	EPA-8260B	ND	A01	1
Toluene		50	ug/L	5.0	EPA-8260B	ND	A01	2
Total Xylenes		99	ug/L	10	EPA-8260B	ND	A01	2
Ethanol		ND	ug/L	2500	EPA-8260B	ND	A01	2
1,2-Dichloroethane-d4 (S	Surrogate)	101	%	75 - 125 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (S	Surrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		97.8	%	80 - 120 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		94.9	%	80 - 120 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (\$	Surrogate)	98.0	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (\$	Surrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			2

			Run				QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/20/13	08/21/13 15:24	EAR	MS-V12	100	BWH1637		
2	EPA-8260B	08/19/13	08/20/13 02:00	EAR	MS-V12	10	BWH1637		

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-17	Client Sampl	e Name:	0752, S-MW-1-W-1	30815, 8/15/2013	8:50:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Gasoline Range Orga	nics (C6 - C12)	7200	ug/L	1000	EPA-8015B	ND	A01	1
a,a,a-Trifluorotoluene	(FID Surrogate)	97.7	%	70 - 130 (LCL - UCL)	EPA-8015B			1

		Run				QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	08/22/13	08/26/13 17:14	jjh	GC-V9	20	BWH1805		

Reported: 08/29/2013 11:14

2000 Powell Street 7th FloorProject:0752Emeryville, CA 94608Project Number:351646Project Manager:Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-17	Client Sample	e Name:	0752, S-MW-	-1-W-130815, 8/15/2013	8:50:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		1.7	mg/L	0.0050	RSK-175M	ND	A01	1

			Run			QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 11:52	EAR	GC-V1	5	BWH1668	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-17	Client Sampl	e Name:	e: 0752, S-MW-1-W-130815, 8/15/2013 8:				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	430	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate		ND	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	29	mg/L	3.0	EPA-415.1	ND	A01	4

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/19/13	08/20/13 01:00	RML	MET-1	1	BWH1521
2	EPA-300.0	08/16/13	08/17/13 01:01	LD1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 11:58	TDC	KONE-1	1	BWH1343
4	EPA-415.1	08/27/13	08/28/13 12:45	CDR	TOC2	10	BWH1609

2000 Powell Street 7th Floor

Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646

Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-17	Client Sample	e Name:	0752, S-MW	-1-W-130815, 8/15/2013	8:50:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Dissolved Iron		3500	ug/L	50	EPA-6010B	ND		1

	Run						QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-6010B	08/16/13	08/20/13 16:46	ARD	PE-OP2	1	BWH1540		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-18	Client Sampl	e Name:	0752, S-MW-2-W-1	0752, S-MW-2-W-130815, 8/15/2013 10:10:00AM							
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #				
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1				
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1				
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1				
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1				
Methyl t-butyl ether		ND	ug/L	0.50	EPA-8260B	ND		1				
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1				
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1				
Ethanol		ND	ug/L	250	EPA-8260B	ND		1				
1,2-Dichloroethane-d4 (Su	rrogate)	102	%	75 - 125 (LCL - UCL)	EPA-8260B			1				
Toluene-d8 (Surrogate)		92.5	%	80 - 120 (LCL - UCL)	EPA-8260B			1				
4-Bromofluorobenzene (Su	urrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260B			1				

				QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/20/13 02:18	EAR	MS-V12	1	BWH1637	

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-18	Client Sampl	e Name:	0752, S-MW-2-W-1	0752, S-MW-2-W-130815, 8/15/2013 10:10:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	110	%	70 - 130 (LCL - UCL)	EPA-8015B			1	

		QC						
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 16:02	jjh	GC-V9	1	BWH1805	

MU

Arcadis

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-18	Client Sampl	e Name:	0752, S-MW-2	0752, S-MW-2-W-130815, 8/15/2013 10:10:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Methane		0.0021	mg/L	0.0010	RSK-175M	ND		1	

			Run	QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 10:57	EAR	GC-V1	1	BWH1668	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-18	Client Sampl	ample Name: 0752, S-MW-2-W-130815, 8/15/2013 10:10:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	97	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		62	mg/L	0.44	EPA-300.0	ND		2
Sulfate		32	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic Carbon		2.6	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/20/13	08/20/13 11:06	RML	MET-1	1	BWH1561
2	EPA-300.0	08/16/13	08/17/13 01:16	LD1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 11:58	TDC	KONE-1	1	BWH1343
4	EPA-415.1	08/27/13	08/27/13 21:08	CDR	TOC2	1	BWH1609

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

Metals Analysis

BCL Sample ID:	1317587-18	Client Sampl	e Name:	0752, S-MW-	0752, S-MW-2-W-130815, 8/15/2013 10:10:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #		
Dissolved Iron		ND	ug/L	50	EPA-6010B	ND		1		

				QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:48	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-19	Client Sampl	e Name:	0752, S-MW-3-W-1	30815, 8/15/2013	10:50:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		1.1	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Sui	rogate)	104	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		92.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	rrogate)	98.0	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/20/13 02:36	EAR	MS-V12	1	BWH1637	

Reported: 08/29/2013 11:14

2000 Powell Street 7th Floor Project: 0752
Emeryville, CA 94608 Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-19	Client Sampl	e Name:	0752, S-MW-3-W-1	0752, S-MW-3-W-130815, 8/15/2013 10:50:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	107	%	70 - 130 (LCL - UCL)	EPA-8015B			1	

	Run				QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 16:22	jjh	GC-V9	1	BWH1805	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752 Project Number: 351646

Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-19	Client Sample	e Name:	0752, S-MW-3-W-130815, 8/15/2013 10:50:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		ND	mg/L	0.0010	RSK-175M	ND		1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 11:02	EAR	GC-V1	1	BWH1668	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-19	Client Sampl	e Name:	0752, S-MW-	3-W-130815, 8/15/2013	10:50:00AM	0:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #			
Total Alkalinity as Ca	CO3	160	mg/L	4.1	EPA-310.1	ND		1			
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2			
Sulfate		19	mg/L	1.0	EPA-300.0	ND		2			
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3			
Non-Volatile Organic	Carbon	1.9	mg/L	0.30	EPA-415.1	ND		4			

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/20/13	08/20/13 11:12	RML	MET-1	1	BWH1561
2	EPA-300.0	08/16/13	08/17/13 01:31	LD1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 11:58	TDC	KONE-1	1	BWH1343
4	EPA-415.1	08/27/13	08/27/13 21:22	CDR	TOC2	1	BWH1609

2000 Powell Street 7th Floor

Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752

Project Number: 351646 Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-19	Client Sample	e Name:	0752, S-MW-3-W-130815, 8/15/2013 10:50:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		110	ug/L	50	EPA-6010B	ND		1

				QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:49	ARD	PE-OP2	1	BWH1540	

MU

Arcadis

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-20	Client Sampl	e Name:	0752, S-MW-4-W-1	30815, 8/15/2013	9:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		25	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Sui	rogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		93.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	rrogate)	105	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/19/13	08/20/13 02:54	EAR	MS-V12	1	BWH1637	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-20	Client Sampl	e Name:	0752, S-MW-4-W-1	30815, 8/15/2013	9:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Gasoline Range Orga	nics (C6 - C12)	98	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	120	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 16:42	jjh	GC-V9	1	BWH1805	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-20	Client Sampl	e Name:	0752, S-MW-4	-W-130815, 8/15/2013	9:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane	·	ND	mg/L	0.0010	RSK-175M	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 11:06	EAR	GC-V1	1	BWH1668	



Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-20	Client Sampl	e Name:	0752, S-MW-4	-W-130815, 8/15/2013	9:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	290	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate		15	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	3.9	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/20/13	08/20/13 11:18	RML	MET-1	1	BWH1561
2	EPA-300.0	08/16/13	08/17/13 01:47	LD1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 12:01	TDC	KONE-1	1	BWH1343
4	EPA-415.1	08/27/13	08/27/13 21:37	CDR	TOC2	1	BWH1609

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Arcadis

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-20	Client Sampl	e Name:	0752, S-MW-4	1-W-130815, 8/15/2013	9:05:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		1300	ug/L	50	EPA-6010B	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:51	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

BCL Sample ID:	1317587-21	Client Sampl	e Name:	0752, S-MW-5-W-1	30815, 8/15/2013	12:45:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene		1900	ug/L	12	EPA-8260B	ND	A01	1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
Ethylbenzene		390	ug/L	12	EPA-8260B	ND	A01	1
Methyl t-butyl ether		20000	ug/L	250	EPA-8260B	ND	A01	3
Toluene		590	ug/L	12	EPA-8260B	ND	A01	1
Total Xylenes		1100	ug/L	25	EPA-8260B	ND	A01	1
Ethanol		ND	ug/L	250	EPA-8260B	ND		2
1,2-Dichloroethane-d4	(Surrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4	(Surrogate)	110	%	75 - 125 (LCL - UCL)	EPA-8260B			2
1,2-Dichloroethane-d4	(Surrogate)	101	%	75 - 125 (LCL - UCL)	EPA-8260B			3
Toluene-d8 (Surrogate	e)	95.8	%	80 - 120 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate	e)	96.9	%	80 - 120 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate	e)	97.7	%	80 - 120 (LCL - UCL)	EPA-8260B			3
4-Bromofluorobenzen	e (Surrogate)	100	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzen	e (Surrogate)	82.7	%	80 - 120 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzen	e (Surrogate)	103	%	80 - 120 (LCL - UCL)	EPA-8260B			3

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	08/20/13	08/21/13 15:41	EAR	MS-V12	25	BWH1637
2	EPA-8260B	08/19/13	08/20/13 03:12	EAR	MS-V12	1	BWH1637
3	EPA-8260B	08/22/13	08/22/13 11:01	EAR	MS-V12	500	BWH1637

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-21	Client Sampl	e Name:	0752, S-MW-5-W-1	30815, 8/15/2013			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Orga	nics (C6 - C12)	8000	ug/L	2500	EPA-8015B	ND	A01	1
a,a,a-Trifluorotoluene	(FID Surrogate)	96.3	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/26/13 17:34	jjh	GC-V9	50	BWH1805	

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brand

Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-21	Client Sample	e Name:	0752, S-MW	-5-W-130815, 8/15/2013	12:45:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Methane		2.2	mg/L	0.0050	RSK-175M	ND	A01	1

			Run					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 11:57	EAR	GC-V1	5	BWH1668	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-21	Client Sampl	e Name:	: 0752, S-MW-5-W-130815, 8/15/2013 12:45:00PM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	iCO3	670	mg/L	8.2	EPA-310.1	ND		1
Nitrate as NO3		ND	mg/L	0.88	EPA-300.0	ND	A01	2
Sulfate		ND	mg/L	1.0	EPA-300.0	ND		3
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		4
Non-Volatile Organic	Carbon	28	mg/L	3.0	EPA-415.1	ND	A01	5

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/20/13	08/20/13 11:25	RML	MET-1	2	BWH1561
2	EPA-300.0	08/16/13	08/17/13 02:02	LD1	IC5	2	BWH1410
3	EPA-300.0	08/16/13	08/17/13 13:42	LD1	IC5	1	BWH1410
4	EPA-353.2	08/16/13	08/16/13 12:01	TDC	KONE-1	1	BWH1343
5	EPA-415.1	08/27/13	08/28/13 13:00	CDR	TOC2	10	BWH1609

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-21	Client Sampl	e Name:	0752, S-MW-5	5-W-130815, 8/15/2013	12:45:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron		7300	ug/L	50	EPA-6010B	ND		1

			Run			QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:53	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	317587-22	Client Sampl	e Name:	0752, S-MW-6-W-1	30815, 8/15/2013	11:30:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		0.79	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		1000	ug/L	12	EPA-8260B	ND	A01	2
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Sur	rogate)	101	%	75 - 125 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Sur	rogate)	100	%	75 - 125 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		98.1	%	80 - 120 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		97.2	%	80 - 120 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Su	rrogate)	100	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	rrogate)	97.0	%	80 - 120 (LCL - UCL)	EPA-8260B			2

			Run		QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	08/19/13	08/20/13 20:12	EAR	MS-V12	1	BWH1637
2	EPA-8260B	08/22/13	08/22/13 11:19	EAR	MS-V12	25	BWH1637

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-22	Client Sampl	e Name:	0752, S-MW-6-W-1	30815, 8/15/2013			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Orga	nics (C6 - C12)	58	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	102	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run		QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 17:23	jjh	GC-V9	1	BWH1805	

2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brane

Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-22	Client Sample	e Name:	0752, S-MW-	6-W-130815, 8/15/2013			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		0.0051	mg/L	0.0010	RSK-175M	ND		1

			Run			QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 12:03	EAR	GC-V1	1	BWH1801	

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2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-22	Client Sampl	e Name:	0752, S-MW-				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	180	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		6.3	mg/L	0.44	EPA-300.0	ND		2
Sulfate		26	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	7.4	mg/L	0.60	EPA-415.1	ND	A01	4

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-310.1	08/20/13	08/20/13 11:32	RML	MET-1	1	BWH1561	
2	EPA-300.0	08/16/13	08/17/13 02:18	LD1	IC5	1	BWH1410	
3	EPA-353.2	08/16/13	08/16/13 12:01	TDC	KONE-1	1	BWH1343	
4	EPA-415.1	08/27/13	08/28/13 14:52	CDR	TOC2	2	BWH1610	



2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

0752, S-MW-6-W-130815, 8/15/2013 11:30:00AM BCL Sample ID: 1317587-22 **Client Sample Name:** MB Lab Run# Constituent Result Units **PQL** Method Bias Quals EPA-6010B Dissolved Iron ND ug/L ND

			Run			QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:54	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-23	Client Sampl	e Name:	0752, S-EW-1-W-13	30815, 8/15/2013	8:12:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run#
Benzene		67	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		1.3	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		57	ug/L	0.50	EPA-8260B	ND		1
Toluene		1.7	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		3.3	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	104	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		93.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	urrogate)	106	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	08/19/13	08/20/13 03:47	EAR	MS-V12	1	BWH1637		

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-23	Client Sampl	e Name:	0752, S-EW-1-W-13	30815, 8/15/2013			
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Orga	nics (C6 - C12)	290	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	110	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			QC					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 17:43	jjh	GC-V9	1	BWH1805	_

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

BCL Sample ID:	1317587-23	Client Sample	e Name:	0752, S-EW-1-W-130815, 8/15/2013 8:12:00AM				
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Methane		ND	mg/L	0.0010	RSK-175M	ND		1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	RSK-175M	08/22/13	08/22/13 12:12	EAR	GC-V1	1	BWH1801	



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

BCL Sample ID:	1317587-23	Client Sampl	e Name:	0752, S-EW-	1-W-130815, 8/15/2013	8:12:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as Ca	CO3	150	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3		1.1	mg/L	0.44	EPA-300.0	ND		2
Sulfate		13	mg/L	1.0	EPA-300.0	ND		2
Nitrite as NO2		ND	mg/L	0.17	EPA-353.2	ND		3
Non-Volatile Organic	Carbon	2.5	mg/L	0.30	EPA-415.1	ND		4

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-310.1	08/20/13	08/20/13 11:38	RML	MET-1	1	BWH1561
2	EPA-300.0	08/16/13	08/17/13 02:33	LD1	IC5	1	BWH1410
3	EPA-353.2	08/16/13	08/16/13 12:01	TDC	KONE-1	1	BWH1343
4	EPA-415.1	08/27/13	08/27/13 23:58	CDR	TOC2	1	BWH1610

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

BCL Sample ID:	1317587-23	Client Sampl	e Name:	0752, S-EW-1-W-130815, 8/15/2013 8:12:00AM					
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #	
Dissolved Iron	·	1300	ug/L	50	EPA-6010B	ND	_	1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	08/16/13	08/20/13 16:58	ARD	PE-OP2	1	BWH1540	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-24	Client Sampl	e Name:	0752, MPE-1-W-130	0815, 8/15/2013	9:30:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		110	ug/L	2.5	EPA-8260B	ND	A01	1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		2
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		2
Ethylbenzene		17	ug/L	0.50	EPA-8260B	ND		2
Methyl t-butyl ether		610	ug/L	5.0	EPA-8260B	ND	A01	3
Toluene		23	ug/L	0.50	EPA-8260B	ND		2
Total Xylenes		45	ug/L	1.0	EPA-8260B	ND		2
Ethanol		ND	ug/L	250	EPA-8260B	ND		2
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	97.4	%	75 - 125 (LCL - UCL)	EPA-8260B			2
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LCL - UCL)	EPA-8260B			3
Toluene-d8 (Surrogate)		93.9	%	80 - 120 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		96.2	%	80 - 120 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		98.1	%	80 - 120 (LCL - UCL)	EPA-8260B			3
4-Bromofluorobenzene	(Surrogate)	102	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene	(Surrogate)	101	%	80 - 120 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene	(Surrogate)	97.9	%	80 - 120 (LCL - UCL)	EPA-8260B			3

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	08/20/13	08/21/13 15:59	EAR	MS-V12	5	BWH1637	
2	EPA-8260B	08/19/13	08/20/13 04:05	EAR	MS-V12	1	BWH1637	
3	EPA-8260B	08/22/13	08/22/13 10:26	EAR	MS-V12	10	BWH1637	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-24	Client Sampl	e Name:	0752, MPE-1-W-130	0815, 8/15/2013	9:30:00AM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Orga	nics (C6 - C12)	820	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	102	%	70 - 130 (LCL - UCL)	EPA-8015B			1

	Run							
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	08/22/13	08/24/13 19:46	jjh	GC-V9	1	BWH1805	



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	1317587-25	Client Sampl	e Name:	0752, MP-1-W-1308	315, 8/15/2013 12	2:05:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dibromoethane		ND	ug/L	0.50	EPA-8260B	ND		1
1,2-Dichloroethane		ND	ug/L	0.50	EPA-8260B	ND		1
Ethylbenzene		ND	ug/L	0.50	EPA-8260B	ND		1
Methyl t-butyl ether		2.4	ug/L	0.50	EPA-8260B	ND		1
Toluene		ND	ug/L	0.50	EPA-8260B	ND		1
Total Xylenes		ND	ug/L	1.0	EPA-8260B	ND		1
Ethanol		ND	ug/L	250	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Su	rrogate)	104	%	75 - 125 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		94.6	%	80 - 120 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	ırrogate)	104	%	80 - 120 (LCL - UCL)	EPA-8260B			1

			Run				QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8260B	08/19/13	08/20/13 04:23	EAR	MS-V12	1	BWH1637			

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1317587-25	Client Sampl	e Name:	0752, MP-1-W-1308	315, 8/15/2013 12	2:05:00PM		
Constituent		Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organ	nics (C6 - C12)	ND	ug/L	50	EPA-8015B	ND		1
a,a,a-Trifluorotoluene	(FID Surrogate)	97.6	%	70 - 130 (LCL - UCL)	EPA-8015B			1

			Run			QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	08/22/13	08/24/13 20:06	jjh	GC-V9	1	BWH1805		

Reported: 08/29/2013 11:14

2000 Powell Street 7th FloorProject: 0752Emeryville, CA 94608Project Number: 351646Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWH1433						
Benzene	BWH1433-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BWH1433-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BWH1433-BLK1	ND	ug/L	0.50		
 Ethylbenzene	BWH1433-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BWH1433-BLK1	ND	ug/L	0.50		
Toluene	BWH1433-BLK1	ND	ug/L	0.50		
Total Xylenes	BWH1433-BLK1	ND	ug/L	1.0		
Ethanol	BWH1433-BLK1	ND	ug/L	250		
1,2-Dichloroethane-d4 (Surrogate)	BWH1433-BLK1	102	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BWH1433-BLK1	99.9	%	80 - 120	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BWH1433-BLK1	101	%	80 - 120	0 (LCL - UCL)	
QC Batch ID: BWH1637						
Benzene	BWH1637-BLK1	ND	ug/L	0.50		
	BWH1637-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BWH1637-BLK1	ND	ug/L	0.50		
 Ethylbenzene	BWH1637-BLK1	ND	ug/L	0.50		
	BWH1637-BLK1	ND	ug/L	0.50		
Toluene	BWH1637-BLK1	ND	ug/L	0.50		
Total Xylenes	BWH1637-BLK1	ND	ug/L	1.0		
Ethanol	BWH1637-BLK1	ND	ug/L	250		
1,2-Dichloroethane-d4 (Surrogate)	BWH1637-BLK1	102	%	75 - 125	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BWH1637-BLK1	97.8	%	80 - 120	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BWH1637-BLK1	101	%	80 - 120	0 (LCL - UCL)	

2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Laboratory Control Sample

	-		-		-		-				
				Spike		Percent		Control I	<u>imits</u>	Lab	
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals	
QC Batch ID: BWH1433											
Benzene	BWH1433-BS1	LCS	28.860	25.000	ug/L	115		70 - 130			
Toluene	BWH1433-BS1	LCS	27.470	25.000	ug/L	110		70 - 130			
1,2-Dichloroethane-d4 (Surrogate)	BWH1433-BS1	LCS	9.9900	10.000	ug/L	99.9		75 - 125			
Toluene-d8 (Surrogate)	BWH1433-BS1	LCS	9.7900	10.000	ug/L	97.9		80 - 120			
4-Bromofluorobenzene (Surrogate)	BWH1433-BS1	LCS	10.140	10.000	ug/L	101		80 - 120			
QC Batch ID: BWH1637											
Benzene	BWH1637-BS1	LCS	25.010	25.000	ug/L	100		70 - 130			
Toluene	BWH1637-BS1	LCS	23.760	25.000	ug/L	95.0		70 - 130			
1,2-Dichloroethane-d4 (Surrogate)	BWH1637-BS1	LCS	9.8700	10.000	ug/L	98.7		75 - 125			
Toluene-d8 (Surrogate)	BWH1637-BS1	LCS	9.9900	10.000	ug/L	99.9		80 - 120			
4-Bromofluorobenzene (Surrogate)	BWH1637-BS1	LCS	10.240	10.000	ug/L	102		80 - 120			

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Precision & Accuracy

							Control Limits				
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BWH1433	Use	d client samp	ole: N								
Benzene	─ MS	1316295-10	ND	25.870	25.000	ug/L		103		70 - 130	
	MSD	1316295-10	ND	27.170	25.000	ug/L	4.9	109	20	70 - 130	
Toluene	MS	1316295-10	ND	25.780	25.000	ug/L		103		70 - 130	
	MSD	1316295-10	ND	25.300	25.000	ug/L	1.9	101	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1316295-10	ND	9.8900	10.000	ug/L		98.9		75 - 125	
	MSD	1316295-10	ND	10.500	10.000	ug/L	6.0	105		75 - 125	
Toluene-d8 (Surrogate)	MS	1316295-10	ND	9.9900	10.000	ug/L		99.9		80 - 120	
	MSD	1316295-10	ND	9.7300	10.000	ug/L	2.6	97.3		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1316295-10	ND	9.7600	10.000	ug/L		97.6		80 - 120	
	MSD	1316295-10	ND	10.050	10.000	ug/L	2.9	100		80 - 120	
QC Batch ID: BWH1637	Use	d client samp	ole: N								
Benzene	MS	1316295-12	ND	25.110	25.000	ug/L		100		70 - 130	
	MSD	1316295-12	ND	24.560	25.000	ug/L	2.2	98.2	20	70 - 130	
Toluene	MS	1316295-12	ND	23.630	25.000	ug/L		94.5		70 - 130	
	MSD	1316295-12	ND	24.170	25.000	ug/L	2.3	96.7	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1316295-12	ND	10.330	10.000	ug/L		103		75 - 125	
	MSD	1316295-12	ND	9.8300	10.000	ug/L	5.0	98.3		75 - 125	
Toluene-d8 (Surrogate)	MS	1316295-12	ND	9.8900	10.000	ug/L		98.9		80 - 120	
	MSD	1316295-12	ND	10.060	10.000	ug/L	1.7	101		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1316295-12	ND	9.7700	10.000	ug/L		97.7		80 - 120	
	MSD	1316295-12	ND	10.010	10.000	ug/L	2.4	100		80 - 120	



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Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Arcadis 2000 Powell Street 7th Floor Emeryville, CA 94608

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL Lab Qu	als
QC Batch ID: BWH2165						
Acenaphthene	BWH2165-BLK1	ND	ug/L	2.0		
Acenaphthylene	BWH2165-BLK1	ND	ug/L	2.0		
Aldrin	BWH2165-BLK1	ND	ug/L	2.0		
Aniline	BWH2165-BLK1	ND	ug/L	5.0		
Anthracene	BWH2165-BLK1	ND	ug/L	2.0		
Benzidine	BWH2165-BLK1	ND	ug/L	20		
Benzo[a]anthracene	BWH2165-BLK1	ND	ug/L	2.0		
Benzo[b]fluoranthene	BWH2165-BLK1	ND	ug/L	2.0		
Benzo[k]fluoranthene	BWH2165-BLK1	ND	ug/L	2.0		
Benzo[a]pyrene	BWH2165-BLK1	ND	ug/L	2.0		
Benzo[g,h,i]perylene	BWH2165-BLK1	ND	ug/L	2.0		
Benzoic acid	BWH2165-BLK1	ND	ug/L	10		
Benzyl alcohol	BWH2165-BLK1	ND	ug/L	2.0		
Benzyl butyl phthalate	BWH2165-BLK1	ND	ug/L	2.0		
alpha-BHC	BWH2165-BLK1	ND	ug/L	2.0		
beta-BHC	BWH2165-BLK1	ND	ug/L	2.0		
delta-BHC	BWH2165-BLK1	ND	ug/L	2.0		
gamma-BHC (Lindane)	BWH2165-BLK1	ND	ug/L	2.0		
bis(2-Chloroethoxy)methane	BWH2165-BLK1	ND	ug/L	2.0		
bis(2-Chloroethyl) ether	BWH2165-BLK1	ND	ug/L	2.0		
bis(2-Chloroisopropyl)ether	BWH2165-BLK1	ND	ug/L	2.0		
bis(2-Ethylhexyl)phthalate	BWH2165-BLK1	ND	ug/L	5.0		
4-Bromophenyl phenyl ether	BWH2165-BLK1	ND	ug/L	2.0		
4-Chloroaniline	BWH2165-BLK1	ND	ug/L	2.0		
2-Chloronaphthalene	BWH2165-BLK1	ND	ug/L	2.0		
4-Chlorophenyl phenyl ether	BWH2165-BLK1	ND	ug/L	2.0		
Chrysene	BWH2165-BLK1	ND	ug/L	2.0		
4,4'-DDD	BWH2165-BLK1	ND	ug/L	2.0		
4,4'-DDE	BWH2165-BLK1	ND	ug/L	3.0		
4,4'-DDT	BWH2165-BLK1	ND	ug/L	2.0		
Dibenzo[a,h]anthracene	BWH2165-BLK1	ND	ug/L	3.0		
Dibenzofuran	BWH2165-BLK1	ND	ug/L	2.0		
1,2-Dichlorobenzene	BWH2165-BLK1	ND	ug/L	2.0		
1,3-Dichlorobenzene	BWH2165-BLK1	ND	ug/L	2.0		



Arcadis 2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWH2165						
1,4-Dichlorobenzene	BWH2165-BLK1	ND	ug/L	2.0		
3,3-Dichlorobenzidine	BWH2165-BLK1	ND	ug/L	10		
Dieldrin	BWH2165-BLK1	ND	ug/L	3.0		
Diethyl phthalate	BWH2165-BLK1	ND	ug/L	2.0		
Dimethyl phthalate	BWH2165-BLK1	ND	ug/L	2.0		
Di-n-butyl phthalate	BWH2165-BLK1	ND	ug/L	2.0		
2,4-Dinitrotoluene	BWH2165-BLK1	ND	ug/L	2.0		
2,6-Dinitrotoluene	BWH2165-BLK1	ND	ug/L	2.0		
Di-n-octyl phthalate	BWH2165-BLK1	ND	ug/L	2.0		
1,2-Diphenylhydrazine	BWH2165-BLK1	ND	ug/L	2.0		
Endosulfan I	BWH2165-BLK1	ND	ug/L	10		
Endosulfan II	BWH2165-BLK1	ND	ug/L	10		
Endosulfan sulfate	BWH2165-BLK1	ND	ug/L	3.0		
Endrin	BWH2165-BLK1	ND	ug/L	2.0		
Endrin aldehyde	BWH2165-BLK1	ND	ug/L	10		
Fluoranthene	BWH2165-BLK1	ND	ug/L	2.0		
Fluorene	BWH2165-BLK1	ND	ug/L	2.0		
Heptachlor	BWH2165-BLK1	ND	ug/L	2.0		
Heptachlor epoxide	BWH2165-BLK1	ND	ug/L	2.0		
Hexachlorobenzene	BWH2165-BLK1	ND	ug/L	2.0		
Hexachlorobutadiene	BWH2165-BLK1	ND	ug/L	2.0		
Hexachlorocyclopentadiene	BWH2165-BLK1	ND	ug/L	2.0		
Hexachloroethane	BWH2165-BLK1	ND	ug/L	2.0		
Indeno[1,2,3-cd]pyrene	BWH2165-BLK1	ND	ug/L	2.0		
Isophorone	BWH2165-BLK1	ND	ug/L	2.0		
2-Methylnaphthalene	BWH2165-BLK1	ND	ug/L	2.0		
Naphthalene	BWH2165-BLK1	ND	ug/L	2.0		
2-Naphthylamine	BWH2165-BLK1	ND	ug/L	20		
2-Nitroaniline	BWH2165-BLK1	ND	ug/L	2.0		
3-Nitroaniline	BWH2165-BLK1	ND	ug/L	2.0		
4-Nitroaniline	BWH2165-BLK1	ND	ug/L	5.0		
Nitrobenzene	BWH2165-BLK1	ND	ug/L	2.0		
N-Nitrosodimethylamine	BWH2165-BLK1	ND	ug/L	2.0		
N-Nitrosodi-N-propylamine	BWH2165-BLK1	ND	ug/L	2.0		



Arcadis 2000 Powell Street 7th Floor

Emeryville, CA 94608

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Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
OC Potob ID: BWU2465						
QC Batch ID: BWH2165 N-Nitrosodiphenylamine	BWH2165-BLK1	ND	ug/L	2.0		
		ND ND		2.0		
Phenanthrene	BWH2165-BLK1		ug/L			
Pyrene	BWH2165-BLK1	ND	ug/L	2.0		
1,2,4-Trichlorobenzene	BWH2165-BLK1	ND	ug/L	2.0		
4-Chloro-3-methylphenol	BWH2165-BLK1	ND	ug/L	5.0		
2-Chlorophenol	BWH2165-BLK1	ND	ug/L	2.0		
2,4-Dichlorophenol	BWH2165-BLK1	ND	ug/L	2.0		
2,4-Dimethylphenol	BWH2165-BLK1	ND	ug/L	2.0		
4,6-Dinitro-2-methylphenol	BWH2165-BLK1	ND	ug/L	10		
2,4-Dinitrophenol	BWH2165-BLK1	ND	ug/L	10		
2-Methylphenol	BWH2165-BLK1	ND	ug/L	2.0		
3- & 4-Methylphenol	BWH2165-BLK1	ND	ug/L	2.0		
2-Nitrophenol	BWH2165-BLK1	ND	ug/L	2.0		
4-Nitrophenol	BWH2165-BLK1	ND	ug/L	2.0		
Pentachlorophenol	BWH2165-BLK1	ND	ug/L	10		
Phenol	BWH2165-BLK1	ND	ug/L	2.0		
2,4,5-Trichlorophenol	BWH2165-BLK1	ND	ug/L	5.0		
2,4,6-Trichlorophenol	BWH2165-BLK1	ND	ug/L	5.0		
2-Fluorophenol (Surrogate)	BWH2165-BLK1	50.9	%	30 - 120	(LCL - UCL)	
Phenol-d5 (Surrogate)	BWH2165-BLK1	36.0	%	12 - 110	(LCL - UCL)	
Nitrobenzene-d5 (Surrogate)	BWH2165-BLK1	83.5	%	60 - 130	(LCL - UCL)	
2-Fluorobiphenyl (Surrogate)	BWH2165-BLK1	82.6	%	55 - 125	(LCL - UCL)	
2,4,6-Tribromophenol (Surrogate)	BWH2165-BLK1	83.0	%	40 - 150	(LCL - UCL)	
p-Terphenyl-d14 (Surrogate)	BWH2165-BLK1	93.2	%	40 - 150	(LCL - UCL)	



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Laboratory Control Sample

								Control L	imits	
O and the section	00.0	-	D 14	Spike	11	Percent	DDD	Percent	DDD	Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWH2165	_									
Acenaphthene	BWH2165-BS1	LCS	47.210	50.000	ug/L	94.4		50 - 120		
1,4-Dichlorobenzene	BWH2165-BS1	LCS	44.530	50.000	ug/L	89.1		50 - 120		
2,4-Dinitrotoluene	BWH2165-BS1	LCS	49.240	50.000	ug/L	98.5		50 - 120		
Hexachlorobenzene	BWH2165-BS1	LCS	53.970	50.000	ug/L	108		60 - 120		
Hexachlorobutadiene	BWH2165-BS1	LCS	34.480	50.000	ug/L	69.0		40 - 110		
Hexachloroethane	BWH2165-BS1	LCS	45.080	50.000	ug/L	90.2		40 - 120		
Nitrobenzene	BWH2165-BS1	LCS	45.800	50.000	ug/L	91.6		50 - 120		
N-Nitrosodi-N-propylamine	BWH2165-BS1	LCS	41.560	50.000	ug/L	83.1		50 - 120		
Pyrene	BWH2165-BS1	LCS	52.060	50.000	ug/L	104		40 - 140		
1,2,4-Trichlorobenzene	BWH2165-BS1	LCS	41.820	50.000	ug/L	83.6		45 - 120		
4-Chloro-3-methylphenol	BWH2165-BS1	LCS	52.440	50.000	ug/L	105		50 - 120		
2-Chlorophenol	BWH2165-BS1	LCS	44.910	50.000	ug/L	89.8		50 - 120		
2-Methylphenol	BWH2165-BS1	LCS	44.030	50.000	ug/L	88.1		40 - 110		
3- & 4-Methylphenol	BWH2165-BS1	LCS	78.880	100.00	ug/L	78.9		40 - 110		
4-Nitrophenol	BWH2165-BS1	LCS	11.310	50.000	ug/L	22.6		10 - 110		
Pentachlorophenol	BWH2165-BS1	LCS	29.190	50.000	ug/L	58.4		30 - 120		
Phenol	BWH2165-BS1	LCS	21.220	50.000	ug/L	42.4		20 - 110		
2,4,6-Trichlorophenol	BWH2165-BS1	LCS	48.180	50.000	ug/L	96.4		54 - 120		
2-Fluorophenol (Surrogate)	BWH2165-BS1	LCS	49.630	80.000	ug/L	62.0		30 - 120		
Phenol-d5 (Surrogate)	BWH2165-BS1	LCS	36.080	80.000	ug/L	45.1		12 - 110		
Nitrobenzene-d5 (Surrogate)	BWH2165-BS1	LCS	79.680	80.000	ug/L	99.6		60 - 130		
2-Fluorobiphenyl (Surrogate)	BWH2165-BS1	LCS	73.190	80.000	ug/L	91.5		55 - 125		
2,4,6-Tribromophenol (Surrogate)	BWH2165-BS1	LCS	81.600	80.000	ug/L	102		40 - 150		
p-Terphenyl-d14 (Surrogate)	BWH2165-BS1	LCS	34.720	40.000	ug/L	86.8		40 - 150		



2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
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Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BWH2165	Use	d client samp	ole: N								
Acenaphthene	∟ MS	1316295-27	ND	46.820	50.000	ug/L		93.6		50 - 120	
, too naphulone	MSD	1316295-27	ND	44.350	50.000	ug/L	5.4	88.7	30	50 - 120	
1,4-Dichlorobenzene		1316295-27	ND	43.700	50.000			87.4		47 - 120	
1,4-Dichlorobertzerie	MS MSD	1316295-27	ND	41.710	50.000	ug/L ug/L	4.7	83.4	30	47 - 120 47 - 120	
							7.7				
2,4-Dinitrotoluene	MS	1316295-27	ND	48.480	50.000	ug/L	4.0	97.0	20	50 - 130	
	MSD	1316295-27	ND	49.240	50.000	ug/L	1.6	98.5	30	50 - 130	
Hexachlorobenzene	MS	1316295-27	ND	51.410	50.000	ug/L		103		62 - 120	
	MSD	1316295-27	ND	50.300	50.000	ug/L	2.2	101	30	62 - 120	
Hexachlorobutadiene	MS	1316295-27	ND	34.810	50.000	ug/L		69.6		40 - 110	
	MSD	1316295-27	ND	33.720	50.000	ug/L	3.2	67.4	30	40 - 110	
Hexachloroethane	MS	1316295-27	ND	41.420	50.000	ug/L		82.8		40 - 120	
	MSD	1316295-27	ND	42.800	50.000	ug/L	3.3	85.6	30	40 - 120	
Nitrobenzene	MS	1316295-27	ND	46.070	50.000	ug/L		92.1		50 - 120	
	MSD	1316295-27	ND	41.790	50.000	ug/L	9.7	83.6	30	50 - 120	
N-Nitrosodi-N-propylamine	MS	1316295-27	ND	40.870	50.000	ug/L		81.7		50 - 120	
,	MSD	1316295-27	ND	39.590	50.000	ug/L	3.2	79.2	30	50 - 120	
Pyrene	MS	1316295-27	ND	54.110	50.000	ug/L		108		40 - 140	
,,	MSD	1316295-27	ND	51.540	50.000	ug/L	4.9	103	30	40 - 140	
1,2,4-Trichlorobenzene	MS	1316295-27	ND	42.880	50.000	ug/L		85.8		43 - 120	
1,2,4-111011010561126116	MSD	1316295-27	ND	38.360	50.000	ug/L	11.1	76.7	30	43 - 120	
4 Chloro 2 mothylphonol						-					
4-Chloro-3-methylphenol	MS MSD	1316295-27 1316295-27	ND ND	52.290 49.050	50.000 50.000	ug/L ug/L	6.4	105 98.1	30	50 - 120 50 - 120	
							0.4				
2-Chlorophenol	MS	1316295-27	ND	44.820	50.000	ug/L	0.0	89.6	20	50 - 120	
	MSD	1316295-27	ND	45.110	50.000	ug/L	0.6	90.2	30	50 - 120	
2-Methylphenol	MS	1316295-27	ND	41.150	50.000	ug/L		82.3		40 - 110	
	MSD	1316295-27	ND	41.500	50.000	ug/L	0.8	83.0	30	40 - 110	
3- & 4-Methylphenol	MS	1316295-27	ND	75.420	100.00	ug/L		75.4		40 - 110	
	MSD	1316295-27	ND	74.040	100.00	ug/L	1.8	74.0	30	40 - 110	
4-Nitrophenol	MS	1316295-27	ND	10.140	50.000	ug/L		20.3		10 - 110	
	MSD	1316295-27	ND	10.610	50.000	ug/L	4.5	21.2	30	10 - 110	
Pentachlorophenol	MS	1316295-27	ND	37.710	50.000	ug/L		75.4		30 - 120	
	MSD	1316295-27	ND	36.470	50.000	ug/L	3.3	72.9	30	30 - 120	
Phenol	MS	1316295-27	ND	20.550	50.000	ug/L		41.1		20 - 110	
	MSD	1316295-27	ND	20.570	50.000	ug/L	0.1	41.1	30	20 - 110	
2.4.6 Trichlorophonel							***				
2,4,6-Trichlorophenol	MS	1316295-27	ND	46.970 44.850	50.000	ug/L	16	93.9 80.7	30	50 - 120 50 - 120	
-	MSD	1316295-27	ND	44.850	50.000	ug/L	4.6	89.7	30	50 - 120	



2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

	-		-			-					
								Control Limits			
	Source	Source		Spike			Percent		Percent	Lab	
Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals	
Use	d client samp	ole: N									
MS	1316295-27	ND	48.680	80.000	ug/L		60.8		30 - 120		
MSD	1316295-27	ND	48.360	80.000	ug/L	0.7	60.4		30 - 120		
MS	1316295-27	ND	34.520	80.000	ug/L		43.2		12 - 110		
MSD	1316295-27	ND	34.870	80.000	ug/L	1.0	43.6		12 - 110		
MS	1316295-27	ND	75.810	80.000	ug/L		94.8		60 - 130		
MSD	1316295-27	ND	76.920	80.000	ug/L	1.5	96.2		60 - 130		
MS	1316295-27	ND	73.470	80.000	ug/L		91.8		55 - 125		
MSD	1316295-27	ND	69.520	80.000	ug/L	5.5	86.9		55 - 125		
MS	1316295-27	ND	79.540	80.000	ug/L		99.4		40 - 150		
MSD	1316295-27	ND	78.660	80.000	ug/L	1.1	98.3		40 - 150		
MS	1316295-27	ND	37.190	40.000	ug/L		93.0		40 - 150		
MSD	1316295-27	ND	34.150	40.000	ug/L	8.5	85.4		40 - 150		
	MS MSD MS MSD MS MSD MS MSD MS MSD MS MSD MS MSD MS MSD MS MSD MS MSD MS	Type Sample ID Used client samp MS 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27 MSD 1316295-27	Type Sample ID Result Used client sample: N MS 1316295-27 ND MSD 1316295-27 ND MS 1316295-27 ND MS 1316295-27 ND MSD 1316295-27 ND MSD 1316295-27 ND MSD 1316295-27 ND MS 1316295-27 ND MS 1316295-27 ND MSD 1316295-27 ND MSD 1316295-27 ND MSD 1316295-27 ND MS 1316295-27 ND	Type Sample ID Result Result Used client sample: N MS 1316295-27 ND 48.680 MSD 1316295-27 ND 48.360 MS 1316295-27 ND 34.520 MSD 1316295-27 ND 75.810 MSD 1316295-27 ND 76.920 MS 1316295-27 ND 73.470 MSD 1316295-27 ND 69.520 MS 1316295-27 ND 79.540 MSD 1316295-27 ND 78.660 MS 1316295-27 ND 37.190	Type Sample ID Result Result Added Used client sample: N MS 1316295-27 ND 48.680 80.000 MSD 1316295-27 ND 48.360 80.000 MS 1316295-27 ND 34.520 80.000 MSD 1316295-27 ND 34.870 80.000 MS 1316295-27 ND 75.810 80.000 MSD 1316295-27 ND 76.920 80.000 MS 1316295-27 ND 73.470 80.000 MSD 1316295-27 ND 69.520 80.000 MS 1316295-27 ND 79.540 80.000 MSD 1316295-27 ND 78.660 80.000 MS 1316295-27 ND 37.190 40.000	Type Sample ID Result Result Added Units Used client sample: N MS 1316295-27 ND 48.680 80.000 ug/L MSD 1316295-27 ND 48.360 80.000 ug/L MS 1316295-27 ND 34.520 80.000 ug/L MSD 1316295-27 ND 34.870 80.000 ug/L MS 1316295-27 ND 75.810 80.000 ug/L MSD 1316295-27 ND 76.920 80.000 ug/L MSD 1316295-27 ND 73.470 80.000 ug/L MSD 1316295-27 ND 69.520 80.000 ug/L MSD 1316295-27 ND 79.540 80.000 ug/L MSD 1316295-27 ND 78.660 80.000 ug/L MS 1316295-27 ND 37.190 40.000 ug/L	Type Sample ID Result Result Added Units RPD Use∪ client sample: N MS 1316295-27 ND 48.680 80.000 ug/L 0.7 MSD 1316295-27 ND 48.360 80.000 ug/L 0.7 MS 1316295-27 ND 34.520 80.000 ug/L 1.0 MSD 1316295-27 ND 34.870 80.000 ug/L 1.0 MS 1316295-27 ND 75.810 80.000 ug/L 1.5 MS 1316295-27 ND 76.920 80.000 ug/L 1.5 MS 1316295-27 ND 73.470 80.000 ug/L 5.5 MS 1316295-27 ND 79.540 80.000 ug/L 5.5 MS 1316295-27 ND 78.660 80.000 ug/L 1.1 MS 1316295-27 ND 37.190 40.000 ug/L 1.1	Type Sample ID Result Added Units RPD Recovery Use-Client sample: N MS 1316295-27 ND 48.680 80.000 ug/L 0.7 60.8 MSD 1316295-27 ND 48.360 80.000 ug/L 0.7 60.4 MS 1316295-27 ND 34.520 80.000 ug/L 1.0 43.6 MSD 1316295-27 ND 34.870 80.000 ug/L 1.0 43.6 MS 1316295-27 ND 75.810 80.000 ug/L 94.8 MSD 1316295-27 ND 76.920 80.000 ug/L 1.5 96.2 MS 1316295-27 ND 73.470 80.000 ug/L 91.8 MSD 1316295-27 ND 69.520 80.000 ug/L 5.5 86.9 MS 1316295-27 ND 79.540 80.000 ug/L 99.4 MSD 1316295	Source Source Source Spike Added Units RPD Recovery RPD	Used client sample: N MS 1316295-27 ND 34.870 80.000 ug/L 1.5 96.2 60 - 130 MSD 1316295-27 ND 75.810 80.000 ug/L 1.5 96.2 60 - 130 MSD 1316295-27 ND 75.810 80.000 ug/L 1.5 96.2 60 - 130 MSD 1316295-27 ND 75.810 80.000 ug/L 1.5 86.9 55 - 125 MSD 1316295-27 ND 79.540 80.000 ug/L 5.5 86.9 55 - 125 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 1.1 98.3 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 78.660 80.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 37.190 40.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 37.190 40.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 37.190 40.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 37.190 40.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 37.190 40.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 37.190 40.000 ug/L 93.0 40 - 150 MSD 1316295-27 ND 37.190 40.000 ug/L 93.0 40 - 150 40 - 150 40 - 150 40 - 150 40 - 150 40 - 150 40 - 1	



2000 Powell Street 7th Floor Emeryville, CA 94608 **Reported:** 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWH1804						
Gasoline Range Organics (C6 - C12)	BWH1804-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	BWH1804-BLK1	104	%	70 - 130	(LCL - UCL)	
QC Batch ID: BWH1805						
Gasoline Range Organics (C6 - C12)	BWH1805-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	BWH1805-BLK1	101	%	70 - 130	(LCL - UCL)	

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

							Control Limits				
				Spike		Percent		Percent		Lab	
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals	
QC Batch ID: BWH1804											
Gasoline Range Organics (C6 - C12)	BWH1804-BS1	LCS	882.41	1000.0	ug/L	88.2		85 - 115			
a,a,a-Trifluorotoluene (FID Surrogate)	BWH1804-BS1	LCS	41.820	40.000	ug/L	105		70 - 130			
QC Batch ID: BWH1805											
Gasoline Range Organics (C6 - C12)	BWH1805-BS1	LCS	878.22	1000.0	ug/L	87.8		85 - 115			
a,a,a-Trifluorotoluene (FID Surrogate)	BWH1805-BS1	LCS	40.874	40.000	ug/L	102		70 - 130			

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BWH1804	Use	d client samp	ole: N								
Gasoline Range Organics (C6 - C12)	MS	1316245-30	ND	892.12	1000.0	ug/L		89.2		70 - 130	
	MSD	1316245-30	ND	969.42	1000.0	ug/L	8.3	96.9	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1316245-30	ND	36.992	40.000	ug/L		92.5		70 - 130	
	MSD	1316245-30	ND	41.682	40.000	ug/L	11.9	104		70 - 130	
QC Batch ID: BWH1805	Use	d client samp	ole: N								
Gasoline Range Organics (C6 - C12)	MS	1316245-31	ND	991.10	1000.0	ug/L		99.1		70 - 130	
	MSD	1316245-31	ND	1035.3	1000.0	ug/L	4.4	104	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1316245-31	ND	40.771	40.000	ug/L		102		70 - 130	
	MSD	1316245-31	ND	39.964	40.000	ug/L	2.0	99.9		70 - 130	



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752

Project Number: 351646 Project Manager: Kathy Brandt

Gas Testing in Water

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWH1667						
Methane	BWH1667-BLK1	ND	mg/L	0.0010		
QC Batch ID: BWH1668						
Methane	BWH1668-BLK1	ND	mg/L	0.0010		
QC Batch ID: BWH1801						
Methane	BWH1801-BLK1	ND	mg/L	0.0010		

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Gas Testing in Water

Quality Control Report - Laboratory Control Sample

							Control Limits			
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWH1667										
Methane	BWH1667-BS1	LCS	0.011774	0.010843	mg/L	109		80 - 120		
	BWH1667-BSD1	LCSD	0.011694	0.010843	mg/L	108	0.7	80 - 120	20	
QC Batch ID: BWH1668										
Methane	BWH1668-BS1	LCS	0.010659	0.010843	mg/L	98.3		80 - 120		
	BWH1668-BSD1	LCSD	0.010581	0.010843	mg/L	97.6	0.7	80 - 120	20	
QC Batch ID: BWH1801										
Methane	BWH1801-BS1	LCS	0.010560	0.010843	mg/L	97.4		80 - 120		
	BWH1801-BSD1	LCSD	0.010467	0.010843	mg/L	96.5	0.9	80 - 120	20	



Arcadis 2000 Powell Street 7th Floor

Emeryville, CA 94608

Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	
QC Batch ID: BWH1341							
Nitrite as NO2	BWH1341-BLK1	ND	mg/L	0.17			
QC Batch ID: BWH1342							
Nitrite as NO2	BWH1342-BLK1	ND	mg/L	0.17			
QC Batch ID: BWH1343							
Nitrite as NO2	BWH1343-BLK1	ND	mg/L	0.17			
QC Batch ID: BWH1408							
Nitrate as NO3	BWH1408-BLK1	ND	mg/L	0.44			
Sulfate	BWH1408-BLK1	ND	mg/L	1.0			
QC Batch ID: BWH1409							
Nitrate as NO3	BWH1409-BLK1	ND	mg/L	0.44			
Sulfate	BWH1409-BLK1	ND	mg/L	1.0			
QC Batch ID: BWH1410							
Nitrate as NO3	BWH1410-BLK1	ND	mg/L	0.44			
Sulfate	BWH1410-BLK1	ND	mg/L	1.0			
QC Batch ID: BWH1521							
Total Alkalinity as CaCO3	BWH1521-BLK1	ND	mg/L	4.1			
QC Batch ID: BWH1561							
Total Alkalinity as CaCO3	BWH1561-BLK1	ND	mg/L	4.1			
QC Batch ID: BWH1608							
Non-Volatile Organic Carbon	BWH1608-BLK1	ND	mg/L	0.30			
QC Batch ID: BWH1609							
Non-Volatile Organic Carbon	BWH1609-BLK1	ND	mg/L	0.30			
QC Batch ID: BWH1610							
Non-Volatile Organic Carbon	BWH1610-BLK1	ND	mg/L	0.30			
QC Batch ID: BWH1658							
Total Alkalinity as CaCO3	BWH1658-BLK1	ND	mg/L	4.1			

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

					-		Control Limits					
				Spike		Percent		Percent		Lab		
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals		
QC Batch ID: BWH1341												
Nitrite as NO2	BWH1341-BS1	LCS	1.6627	1.6425	mg/L	101		90 - 110				
QC Batch ID: BWH1342												
Nitrite as NO2	BWH1342-BS1	LCS	1.6167	1.6425	mg/L	98.4		90 - 110				
QC Batch ID: BWH1343												
Nitrite as NO2	BWH1343-BS1	LCS	1.6344	1.6425	mg/L	99.5		90 - 110				
QC Batch ID: BWH1408												
Nitrate as NO3	BWH1408-BS1	LCS	23.484	22.134	mg/L	106		90 - 110				
Sulfate	BWH1408-BS1	LCS	102.41	100.00	mg/L	102		90 - 110				
QC Batch ID: BWH1409												
Nitrate as NO3	BWH1409-BS1	LCS	23.161	22.134	mg/L	105		90 - 110				
Sulfate	BWH1409-BS1	LCS	102.98	100.00	mg/L	103		90 - 110				
QC Batch ID: BWH1410												
Nitrate as NO3	BWH1410-BS1	LCS	23.537	22.134	mg/L	106		90 - 110				
Sulfate	BWH1410-BS1	LCS	103.65	100.00	mg/L	104		90 - 110				
QC Batch ID: BWH1521												
Total Alkalinity as CaCO3	BWH1521-BS3	LCS	97.520	100.00	mg/L	97.5		90 - 110				
QC Batch ID: BWH1561												
Total Alkalinity as CaCO3	BWH1561-BS3	LCS	95.390	100.00	mg/L	95.4		90 - 110				
QC Batch ID: BWH1608												
Non-Volatile Organic Carbon	BWH1608-BS1	LCS	5.0960	5.0000	mg/L	102		85 - 115				
QC Batch ID: BWH1609												
Non-Volatile Organic Carbon	BWH1609-BS1	LCS	5.1380	5.0000	mg/L	103		85 - 115				
QC Batch ID: BWH1610												
Non-Volatile Organic Carbon	BWH1610-BS1	LCS	5.1030	5.0000	mg/L	102		85 - 115				
QC Batch ID: BWH1658												
Total Alkalinity as CaCO3	BWH1658-BS3	LCS	100.10	100.00	mg/L	100		90 - 110				



2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752 Project Number: 351646 Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
OC Potob ID: PWIL1244	Use	d client sam	nle· N								
QC Batch ID: BWH1341 Nitrite as NO2	DUP	1317576-04	0.016918	ND		mg/L			10		A02
Nume do NO2	MS	1317576-04	0.016918	1.8086	1.7289	mg/L		104	10	90 - 110	7102
	MSD	1317576-04	0.016918	1.8164	1.7289	mg/L	0.4	104	10	90 - 110	
	_	d client sam					2012 14	1.07			
QC Batch ID: BWH1342			•	•	V-3-VV-13U6	•	2013 1	1.07	40		
Nitrite as NO2	DUP	1317587-06 1317587-06	0.011742	ND 1 7220	1 7200	mg/L		00.0	10	90 - 110	
	MS MSD	1317587-06	0.011742 0.011742	1.7220 1.7395	1.7289 1.7289	mg/L mg/L	1.0	98.9 99.9	10	90 - 110	
	_									30 110	
QC Batch ID: BWH1343	Use	d client sam		•	ЛW-7-W-13(5/2013	08:10			
Nitrite as NO2	DUP	1317587-16	0.0088649	ND		mg/L			10		A02
	MS	1317587-16	0.0088649	1.6682	1.7289	mg/L		96.0	40	90 - 110	
	MSD	1317587-16	0.0088649	1.7072	1.7289	mg/L	2.3	98.2	10	90 - 110	
QC Batch ID: BWH1408	Use	d client sam	ple: N								
Nitrate as NO3	DUP	1317478-01	5.4007	5.7327		mg/L	6.0		10		
	MS	1317478-01	5.4007	29.208	22.358	mg/L		106		80 - 120	
	MSD	1317478-01	5.4007	29.105	22.358	mg/L	0.4	106	10	80 - 120	
Sulfate	DUP	1317478-01	57.726	58.222		mg/L	0.9		10		
	MS	1317478-01	57.726	164.85	101.01	mg/L		106		80 - 120	
	MSD	1317478-01	57.726	165.19	101.01	mg/L	0.2	106	10	80 - 120	
QC Batch ID: BWH1409	Use	d client sam	ple: Y - Des	cription: MV	V-3-W-1308	15, 08/15/2	2013 08	3:58			
Nitrate as NO3	DUP	1317587-04	0.39841	0.45153		mg/L	12.5		10		A02
	MS	1317587-04	0.39841	24.719	22.358	mg/L		109		80 - 120	
	MSD	1317587-04	0.39841	24.745	22.358	mg/L	0.1	109	10	80 - 120	
Sulfate	DUP	1317587-04	11.099	11.598		mg/L	4.4		10		
	MS	1317587-04	11.099	115.76	101.01	mg/L		104		80 - 120	
	MSD	1317587-04	11.099	116.40	101.01	mg/L	0.6	104	10	80 - 120	
QC Batch ID: BWH1410	Use	d client sam	ple: Y - Des	cription: A-N	ЛW-5-W-13(0815, 08/1	5/2013	06:30			
Nitrate as NO3	→ DUP	1317587-14	19.473	20.226		mg/L	3.8		10		
	MS	1317587-14	19.473	43.758	22.358	mg/L		109		80 - 120	
	MSD	1317587-14	19.473	43.959	22.358	mg/L	0.5	110	10	80 - 120	
Sulfate	DUP	1317587-14	51.263	53.769		mg/L	4.8		10		
	MS	1317587-14	51.263	161.88	101.01	mg/L		110		80 - 120	
	MSD	1317587-14	51.263	161.78	101.01	mg/L	0.1	109	10	80 - 120	
QC Batch ID: BWH1521	Use	d client sam	ple: Y - Des	cription: MV	V-7-W-1308	15, 08/15/2	2013 08	3:05			
Total Alkalinity as CaCO3	」 DUP	1317587-08	102.39	102.84		mg/L	0.4		10		
QC Batch ID: BWH1561	Use	d client sam	ple: N								
Total Alkalinity as CaCO3	DUP	1317724-01	396.76	395.54		mg/L	0.3		10		
						<u> </u>					

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BWH1608	Use	d client samp	ole: Y - Des	scription: MV	V-1-W-1308	15, 08/15/	2013 12	2:49			
Non-Volatile Organic Carbon	DUP	1317587-02	0.74800	0.77700		mg/L	3.8		10		
	MS	1317587-02	0.74800	5.9980	5.0251	mg/L		104		80 - 120	
	MSD	1317587-02	0.74800	6.0221	5.0251	mg/L	0.4	105	10	80 - 120	
QC Batch ID: BWH1609	Use	d client samp	ole: Y - Des	scription: A-N	/IW-3-W-130	0815, 08/1	5/2013	10:05			
Non-Volatile Organic Carbon	DUP	1317587-12	1.3710	1.4400		mg/L	4.9		10		
	MS	1317587-12	1.3710	6.4935	5.0251	mg/L		102		80 - 120	
	MSD	1317587-12	1.3710	6.4955	5.0251	mg/L	0.0	102	10	80 - 120	
QC Batch ID: BWH1610	Use	d client samp	ole: Y - Des	scription: S-N	/IW-6-W-130	0815, 08/1	5/2013	11:30			
Non-Volatile Organic Carbon	DUP	1317587-22	7.4320	8.0860		mg/L	8.4		10		
	MS	1317587-22	7.4320	18.338	10.050	mg/L		109		80 - 120	
	MSD	1317587-22	7.4320	18.866	10.050	mg/L	2.8	114	10	80 - 120	
QC Batch ID: BWH1658	Use	d client samp	ole: Y - Des	scription: MV	V-1-W-1308	15, 08/15/	2013 12	2:49			
Total Alkalinity as CaCO3	 DUP	1317587-02	45.180	45.030		mg/L	0.3		10		



Arcadis

2000 Powell Street 7th Floor Emeryville, CA 94608

08/29/2013 11:14 Reported:

Project: 0752

Project Number: 351646 Project Manager: Kathy Brandt

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWH1539						
Dissolved Cadmium	BWH1539-BLK1	ND	ug/L	10		
Dissolved Chromium	BWH1539-BLK1	ND	ug/L	10		
Dissolved Iron	BWH1539-BLK1	ND	ug/L	50		
Dissolved Lead	BWH1539-BLK1	ND	ug/L	50		
Dissolved Nickel	BWH1539-BLK1	ND	ug/L	10		
Dissolved Zinc	BWH1539-BLK1	ND	ug/L	10		
QC Batch ID: BWH1540						
Dissolved Iron	BWH1540-BLK1	ND	ug/L	50		



Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

2000 Powell Street 7th Floor Emeryville, CA 94608

Arcadis

Metals Analysis

Quality Control Report - Laboratory Control Sample

		_					Control Limits			
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BWH1539										
Dissolved Cadmium	BWH1539-BS1	LCS	193.92	200.00	ug/L	97.0		85 - 115		
Dissolved Chromium	BWH1539-BS1	LCS	195.07	200.00	ug/L	97.5		85 - 115		
Dissolved Iron	BWH1539-BS1	LCS	1015.7	1000.0	ug/L	102		85 - 115		
Dissolved Lead	BWH1539-BS1	LCS	405.25	400.00	ug/L	101		85 - 115		
Dissolved Nickel	BWH1539-BS1	LCS	402.84	400.00	ug/L	101		85 - 115		
Dissolved Zinc	BWH1539-BS1	LCS	496.97	500.00	ug/L	99.4		85 - 115		
QC Batch ID: BWH1540										
Dissolved Iron	BWH1540-BS1	LCS	995.48	1000.0	ug/L	99.5		85 - 115		

Arcadis

2000 Powell Street 7th Floor Emeryville, CA 94608 Reported: 08/29/2013 11:14

Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Metals Analysis

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BWH1539	Use	d client samp	ole: N								
Dissolved Cadmium	_ DUP	1317693-01	ND	ND		ug/L			20		
	MS	1317693-01	ND	201.80	204.08	ug/L		98.9		75 - 125	
	MSD	1317693-01	ND	202.09	204.08	ug/L	0.1	99.0	20	75 - 125	
Dissolved Chromium	DUP	1317693-01	ND	ND		ug/L			20		
	MS	1317693-01	ND	194.81	204.08	ug/L		95.5		75 - 125	
	MSD	1317693-01	ND	194.82	204.08	ug/L	0.0	95.5	20	75 - 125	
Dissolved Iron	DUP	1317693-01	32.150	ND		ug/L			20		
	MS	1317693-01	32.150	1011.3	1020.4	ug/L		96.0		75 - 125	
	MSD	1317693-01	32.150	1025.1	1020.4	ug/L	1.4	97.3	20	75 - 125	
Dissolved Lead	DUP	1317693-01	ND	ND		ug/L			20		
	MS	1317693-01	ND	411.41	408.16	ug/L		101		75 - 125	
	MSD	1317693-01	ND	409.24	408.16	ug/L	0.5	100	20	75 - 125	
Dissolved Nickel	DUP	1317693-01	ND	ND		ug/L			20		
	MS	1317693-01	ND	402.90	408.16	ug/L		98.7		75 - 125	
	MSD	1317693-01	ND	403.20	408.16	ug/L	0.1	98.8	20	75 - 125	
Dissolved Zinc	DUP	1317693-01	ND	ND		ug/L			20		
	MS	1317693-01	ND	506.30	510.20	ug/L		99.2		75 - 125	
	MSD	1317693-01	ND	508.65	510.20	ug/L	0.5	99.7	20	75 - 125	
QC Batch ID: BWH1540	Use	d client samp	ole: Y - Des	scription: MV	V-3-W-1308	15, 08/15/	2013 08	3:58		<u> </u>	
Dissolved Iron	DUP	1317587-04	4161.7	4091.7		ug/L	1.7		20		
	MS	1317587-04	4161.7	4893.8	1020.4	ug/L		71.7		75 - 125	A03
	MSD	1317587-04	4161.7	5020.7	1020.4	ug/L	2.6	84.2	20	75 - 125	



Arcadis Reported: 08/29/2013 11:14

2000 Powell Street 7th Floor Project: 0752
Emeryville, CA 94608 Project Number: 351646
Project Manager: Kathy Brandt

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

A02 The difference between duplicate readings is less than the PQL.

A03 The sample concentration is more than 4 times the spike level.



Appendix **F**

MPE Pilot Test Pressure Transducer Data

Time (hh:mm)	Elapsed Time (hh:mm)	Groundwater Extraction Flow Rate (GPM)	PZ-1 DTW (ft BTOC)	MW-5 DTW (ft BTOC)	MW-4 DTW (ft BTOC)	MP-1 DTW (ft BTOC)
9:05	0:00	1.0	19.33	19.48	18.66	19.17
9:06	0:01	1.0	18.81	19.47	18.66	19.17
9:07	0:02	1.0	20.35	19.54	18.75	19.20
9:08	0:03	1.0	19.55	19.58	18.79	19.21
9:09	0:04	1.0	18.75	19.54	18.73	19.19
9:10	0:05	1.0	19.01	19.50	18.66	19.18
9:11	0:06	1.0	19.10	19.49	18.65	19.17
9:12	0:07	1.0	19.58	19.47	18.65	19.17
9:13	0:08	1.0	20.16	19.58	18.77	19.21
9:14	0:09	1.0	19.47	19.58	18.75	19.22
9:15	0:10	1.0	19.50	19.54	18.68	19.20
9:16	0:11	1.0	19.20	19.52	18.69	19.19
9:17	0:12	1.0	19.47	19.53	18.68	19.18
9:18	0:13	1.0	19.62	19.55	18.70	19.19
9:19	0:14	1.0	19.33	19.56	18.71	19.20
9:20	0:15	1.0	20.10	19.58	18.72	19.21
9:21	0:16	1.0	19.62	19.59	18.75	19.21
9:22	0:17	1.0	19.45	19.58	18.72	19.21
9:23	0:18	1.0	19.43	19.56	18.71	19.20
9:24	0:19	1.0	19.50	19.56	18.69	19.18
9:25	0:20	1.0	20.65	19.59	18.70	19.20
9:26	0:21	1.0	20.56	19.67	18.83	19.23
9:27	0:22	1.0	20.41	19.70	18.85	19.26
9:28	0:23	1.0	18.52	19.64	18.79	19.22
9:29	0:24	1.0	19.03	19.60	18.68	19.20
9:30	0:25			19.55	18.66	19.18
9:31	0:26			19.62	18.74	19.22
9:32	0:27			19.60	18.73	19.22
9:33	0:28		-	19.56	18.70	19.21
9:34	0:29		-	19.56	18.70	19.20
9:35	0:30		1	19.54	18.69	19.19
9:36	0:31		-	19.54	18.69	19.19
9:37	0:32		-	19.53	18.68	19.18
9:38	0:33			19.51	18.67	19.18
9:39	0:34			19.51	18.67	19.17
9:40	0:35			19.48	18.61	19.16
9:41	0:36			19.45	18.61	19.16
9:42	0:37			19.50	18.64	19.17
9:43	0:38			19.56	18.74	19.20
9:44	0:39			19.57	18.72	19.19
9:45	0:40			19.54	18.70	19.19
9:46	0:41			19.52	18.69	19.18
9:47	0:42			19.53	18.68	19.18
9:48	0:43			19.52	18.68	19.18
9:49	0:44			19.49	18.67	19.18
9:50	0:45			19.51	18.66	19.17
9:51	0:46			19.50	18.67	19.17
9:52	0:47			19.50	18.67	19.16
9:53	0:48			19.50	18.66	19.17

Time (hh:mm)	Elapsed Time (hh:mm)	Groundwater Extraction Flow Rate (GPM)	PZ-1 DTW (ft BTOC)	MW-5 DTW (ft BTOC)	MW-4 DTW (ft BTOC)	MP-1 DTW (ft BTOC)
9:54	0:49			19.51	18.67	19.17
9:55	0:50			19.48	18.67	19.16
9:56	0:51			19.49	18.66	19.16
9:57	0:52			19.50	18.66	19.16
9:58	0:53			19.49	18.66	19.16
9:59	0:54			19.46	18.61	19.15
10:00	0:55			19.53	18.67	19.18
10:01	0:56			19.55	18.70	19.19
10:02	0:57			19.53	18.67	19.18
10:03	0:58	3.0	19.38	19.51	18.66	19.18
10:04	0:59	3.0	19.37	19.50	18.66	19.17
10:05	1:00	3.0	19.28	19.50	18.66	19.17
10:06	1:01	3.0	21.33	19.60	18.74	19.22
10:07	1:02	3.0	22.47	19.73	18.92	19.28
10:08	1:03	3.0	23.23	19.89	19.05	19.32
10:09	1:04	3.0	24.20	20.07	19.13	19.38
10:10	1:05	3.0	23.76	20.23	19.23	19.43
10:11	1:06	3.0	24.45	20.40	19.36	19.48
10:12	1:07	3.0	23.93	20.54	19.44	19.52
10:13	1:08	3.0	24.51	20.68	19.52	19.57
10:14	1:09	3.0	24.28	20.80	19.59	19.61
10:15	1:10	3.0	24.18	20.90	19.63	19.65
10:16	1:11	3.0	24.71	21.00	19.67	19.69
10:17	1:12	3.0	24.60	21.07	19.69	19.74
10:18	1:13	3.0	24.40	21.15	19.74	19.76
10:19	1:14	3.0	24.38	21.22	19.76	19.79
10:20	1:15	3.0	24.58	21.29	19.78	19.80
10:21	1:16	3.0	24.98	21.33	19.82	19.82
10:22	1:17	3.0	24.80	21.40	19.85	19.84
10:23	1:18	3.0	24.63	21.48	19.87	19.88
10:24	1:19	3.0	24.56	21.51	19.89	19.88
10:25	1:20	3.0	24.50	21.56	19.91	19.91
10:26	1:21	3.0	24.44	21.58	19.93	19.92
10:27	1:22	3.0	24.86	21.62	19.92	19.94
10:28	1:23	3.0	24.72	21.64	19.93	19.96
10:29	1:24	3.0	24.38	21.66	19.94	19.95
10:30	1:25	3.0	24.56	21.70	19.95	19.98
10:31	1:26	3.0	24.39	21.71	19.96	19.98
10:32	1:27	3.0	24.69	21.72	19.98	20.00
10:33	1:28	3.0	25.03	21.74	19.98	20.01
10:34	1:29	3.0	24.62	21.76	20.00	20.01
10:35	1:30	3.0	24.52	21.78	20.01	20.03
10:36	1:31	3.0	24.81	21.79	20.02	20.04
10:37	1:32	3.0	24.56	21.80	20.02	20.05
10:38	1:33	3.0	24.46	21.83	20.02	20.05
10:39	1:34	3.0	24.94	21.85	20.03	20.06
10:40	1:35	3.0	24.72	21.85	20.04	20.07
10:41	1:36	3.0	24.57	21.86	20.06	20.08
10:42	1:37	3.0	24.86	21.88	20.07	20.09

Time (hh:mm)	Elapsed Time (hh:mm)	Groundwater Extraction Flow Rate (GPM)	PZ-1 DTW (ft BTOC)	MW-5 DTW (ft BTOC)	MW-4 DTW (ft BTOC)	MP-1 DTW (ft BTOC)
10:43	1:38	3.0	24.96	21.89	20.08	20.09
10:44	1:39	3.0	24.65	21.89	20.08	20.10
10:45	1:40	3.0	24.60	21.91	20.08	20.11
10:46	1:41	3.0	24.64	21.92	20.10	20.11
10:47	1:42	3.0	24.54	21.94	20.09	20.11
10:48	1:43	3.0	25.08	21.93	20.10	20.11
10:49	1:44	3.0	24.72	21.95	20.11	20.11
10:50	1:45	3.0	24.63	21.96	20.11	20.13
10:51	1:46	3.0	24.51	21.98	20.12	20.14
10:52	1:47	3.0	24.72	21.97	20.11	20.12
10:53	1:48	3.0	24.42	21.98	20.13	20.14
10:54	1:49	3.0	25.06	21.99	20.13	20.14
10:55	1:50	3.0	24.73	22.00	20.13	20.15
10:56	1:51	3.0	24.68	22.01	20.12	20.15
10:57	1:52	3.0	25.00	22.01	20.14	20.17
10:58	1:53	3.0	24.33	22.01	20.14	20.16
10:59	1:54	3.0	24.76	22.02	20.16	20.18
11:00	1:55	3.5	24.93	22.03	20.16	20.17
11:01	1:56	3.5	25.25	22.03	20.17	20.18
11:02	1:57	3.5	24.89	22.05	20.18	20.20
11:03	1:58	3.5	24.79	22.07	20.19	20.21
11:04	1:59	3.5	25.17	22.08	20.20	20.20
11:05	2:00	3.5	25.12	22.08	20.21	20.20
11:06	2:01	3.5	24.89	22.11	20.21	20.22
11:07	2:02	3.5	24.82	22.12	20.22	20.22
11:08	2:03	3.5	25.22	22.13	20.23	20.23
11:09	2:04	3.5	25.09	22.13	20.23	20.23
11:10	2:05	3.5	24.91	22.15	20.24	20.24
11:11	2:06	3.5	24.83	22.16	20.25	20.24
11:12	2:07	3.5	25.23	22.15	20.25	20.24
11:13	2:08	3.5	24.98	22.16	20.24	20.24
11:14	2:09	3.5	24.96	22.19	20.27	20.25
11:15	2:10	3.5	24.89	22.19	20.27	20.25
11:16	2:11	3.5	25.27	22.19	20.26	20.25
11:17	2:12	3.5	25.39	22.20	20.28	20.28
11:18	2:13	3.5	25.02	22.18	20.28	20.28
11:19	2:14	3.5	24.98	22.19	20.29	20.28
11:20	2:15	3.5	25.16	22.20	20.28	20.27
11:21	2:16	3.5	25.34	22.21	20.29	20.29
11:22	2:17	3.5	25.16	22.22	20.30	20.29
11:23	2:18	3.5	24.97	22.22	20.30	20.28
11:24	2:19	3.5	24.90	22.24	20.30	20.29
11:25	2:20	3.5	25.28	22.23	20.31	20.30
11:26	2:21	3.5	25.38	22.22	20.31	20.30
11:27	2:22	3.5	25.01	22.26	20.32	20.31
11:28	2:23	3.5	24.94	22.25	20.33	20.33
11:29	2:24	3.5	25.12	22.23	20.31	20.31
11:30	2:25	3.5	25.45	22.25	20.32	20.32
11:31	2:26	3.5	25.08	22.28	20.33	20.32

	1	Oracinadio atan				
Time	Elapsed Time	Groundwater Extraction Flow	PZ-1 DTW	MW-5 DTW	MW-4 DTW	MP-1 DTW
(hh:mm)	(hh:mm)	Rate	(ft BTOC)	(ft BTOC)	(ft BTOC)	(ft BTOC)
(111111111)	(111111111)	(GPM)	(11 100)	(11 21 00)	(11 11 100)	(1100)
11:32	2:27	3.5	25.00	22.26	20.33	20.31
11:33	2:28	3.5	24.93	22.28	20.33	20.33
11:34	2:29	3.5	25.31	22.28	20.33	20.33
11:35	2:30	3.5	25.12	22.28	20.34	20.33
11:36	2:31	3.5	25.07	22.28	20.34	20.35
11:37	2:32	3.5	25.05	22.29	20.34	20.34
11:38	2:33	3.5	24.99	22.29	20.35	20.34
11:39	2:34	3.5	25.36	22.29	20.35	20.35
11:40	2:35	3.5	25.33	22.28	20.35	20.34
11:41	2:36	3.5	25.07	22.29	20.35	20.34
11:42	2:37	3.5	24.99	22.29	20.35	20.35
11:43	2:38	3.5	25.27	22.30	20.35	20.35
11:44	2:39	3.5	25.38	22.30	20.35	20.35
11:45	2:40	3.5	25.22	22.31	20.35	20.35
11:46	2:41	3.5	25.09	22.32	20.36	20.36
11:47	2:42	3.5	25.06	22.34	20.36	20.36
11:48	2:43	3.5	24.95	22.31	20.36	20.37
11:49	2:44	3.5	25.35	22.33	20.36	20.36
11:50	2:45	3.5	25.29	22.32	20.37	20.36
11:51	2:46	3.5	25.07	22.33	20.37	20.37
11:52	2:47	3.5	25.03	22.34	20.38	20.39
11:53	2:48	3.5	24.96	22.35	20.37	20.36
11:54	2:49	3.5	25.34	22.37	20.38	20.37
11:55	2:50	3.5	25.43	22.35	20.38	20.38
11:56	2:51	3.5	25.08	22.36	20.38	20.38
11:57	2:52	3.5	25.02	22.36	20.39	20.38
11:58	2:53	3.5	24.97	22.37	20.38	20.38
11:59	2:54	3.5	25.29	22.36	20.38	20.39
12:00	2:55	3.5	25.46	22.35	20.38	20.39
12:01	2:56	3.5	25.15	22.37	20.38	20.39
12:02	2:57	3.5	25.05	22.36	20.39	20.38
12:03	2:58	3.5	24.93	22.37	20.40	20.38
12:04	2:59	3.5	24.97	22.37	20.39	20.39
12:05	3:00	3.5	25.20	22.38	20.40	20.41
12:06	3:01	3.5	25.39	22.37	20.40	20.39
12:07	3:02	3.5	25.36	22.37	20.40	20.39
12:08	3:03	3.5	25.13	22.37	20.40	20.39
12:09	3:04	3.5	25.01	22.36	20.41	20.39
12:10	3:05	3.5	24.99	22.38	20.41	20.40
12:11	3:06	3.5	25.34	22.38	20.41	20.40
12:12	3:07	3.5	25.33	22.39	20.42	20.40
12:13	3:08	3.5	25.48	22.36	20.42	20.39
12:14	3:09	3.5	25.31	22.40	20.42	20.41
12:15	3:10	3.5	25.14	22.41	20.42	20.40
12:16	3:11	3.5	25.05	22.39	20.42	20.41
12:17	3:12	3.5	25.02	22.39	20.42	20.41
12:18	3:13	3.5	25.12	22.40	20.41	20.41
12:19	3:14	3.5	25.31	22.39	20.42	20.41
12:20	3:15	3.5	25.45	22.41	20.41	20.41

Table 1

Summary of MPE Pilot Test Pressure Transducer Data Phase 1: Pump Test Drawdown Data

Chevron Site ID 351646

800, 726, and 706 Harrison Street, Oakland, California

Time (hh:mm)	Elapsed Time (hh:mm)	Groundwater Extraction Flow Rate (GPM)	PZ-1 DTW (ft BTOC)	MW-5 DTW (ft BTOC)	MW-4 DTW (ft BTOC)	MP-1 DTW (ft BTOC)
12:21	3:16	3.5	25.18	22.41	20.43	20.41
12:22	3:17	3.5	25.21	22.41	20.43	20.41
12:23	3:18	3.5	25.09	22.39	20.43	20.42
12:24	3:19	3.5	24.94	22.41	20.43	20.41
12:25	3:20	3.5	25.00	22.40	20.42	20.43
12:26	3:21	3.5	25.20	22.41	20.42	20.42
12:27	3:22	3.5	25.40	22.43	20.43	20.42
12:28	3:23	3.5	25.28	22.41	20.43	20.42
12:29	3:24	3.5	25.23	22.40	20.43	20.42
12:30	3:25	3.5	25.10	22.41	20.44	20.43
12:31	3:26	3.5	25.08	22.41	20.43	20.42
12:32	3:27	3.5	25.02	22.42	20.43	20.45
12:33	3:28	3.5	25.15	22.44	20.44	20.43
12:34	3:29	3.5	25.47	22.42	20.44	20.43
12:35	3:30	3.5	25.34	22.42	20.44	20.43
12:36	3:31	3.5	25.18	22.45	20.44	20.44
12:37	3:32	3.5	25.05	22.41	20.44	20.42
12:38	3:33	3.5	25.03	22.42	20.45	20.43
12:39	3:34	3.5	25.02	22.42	20.45	20.43
12:40	3:35	3.5	25.29	22.44	20.46	20.43
12:41	3:36	3.5	25.45	22.43	20.45	20.45
12:42	3:37	3.5	25.42	22.43	20.45	20.44
12:43	3:38	3.5	25.22	22.44	20.45	20.45
12:44	3:39	3.5	25.11	22.43	20.45	20.44
12:45	3:40	3.5	24.98	22.42	20.44	20.44
12:46	3:41	3.5	25.01	22.43	20.45	20.43
12:47	3:42	3.5	25.36	22.44	20.45	20.46
12:48	3:43	3.5	25.49	22.44	20.45	20.44
12:49	3:44	3.5	25.60	22.46	20.48	20.46
12:50	3:45	3.5	25.55	22.48	20.51	20.47

Notes:

MPE - Multi-phase extraction GPM - Gallon per minute DTW - Depth to water

ft - Feet

BTOC - Below top of casing

Figure 1
Water Level in PZ-1
Pressure Transducer Data
Multi-Phase Extraction Pilot Test

Chevron Site ID 351646 800, 726, and 706 Harrison Street Oakland, California

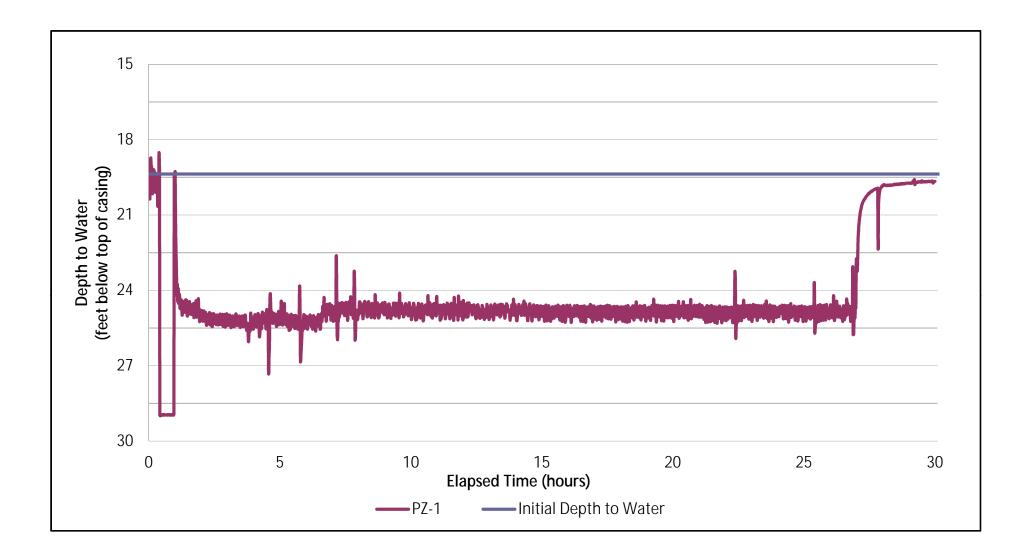


Figure 2
Water Level in Monitoring Network Wells
Pressure Transducer Data
Multi-Phase Extraction Pilot Test: Phase 1 and Phase 2

Chevron Site ID 351646 800, 726, and 706 Harrison Street Oakland, California

