Alexis Fischer
Project Manager
Marketing Business Unit

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June 13, 2012

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Facility # 9-0517
Address: 3900 Piedmont Avenue, Oakland, CA

I have reviewed the attached report titled *Work Plan Addendum and Results of Additional Groundwater Monitoring* and dated June 13, 2012.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Alexis Fischer
Project Manager

Enclosure: Report

CONESTOGA-ROVERS & ASSOCIATES

10969 Trade Center Drive
Rancho Cordova, California 95670
Telephone: (916) 889-8900 Fax: (916) 889-8999
www.CRAworld.com

June 13, 2012 Reference No. 611995

Mr. Mark Detterman, P.G., C.E.G.
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Work Plan Addendum and Results of Additional Groundwater Monitoring
Former Chevron Service Station 90517
3900 Piedmont Avenue
Oakland, California
Case No. RO0000138

Dear Mr. Detterman:

Conestoga-Rovers & Associates (CRA) has prepared this *Work Plan Addendum and Results of Additional Groundwater Monitoring* (work plan addendum) on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. CRA previously submitted the June 13, 2011 *Revised Work Plan for Additional Site Investigation* (revised work plan) in which the installation and sampling of two sub-slab vapor probes in the site building was proposed in lieu of previously requested onsite soil sampling to expedite moving the site toward potential case closure. However, in a letter dated March 28, 2012 (Attachment A), Alameda County Environmental Health (ACEH) again requested additional investigation of onsite soil quality in addition to the proposed sub-slab vapor sampling (Technical Comment 1a). A building plan was also requested to confirm that the proposed sub-slab probe locations were appropriate (Technical Comment 1b). As a storm drain inlet was noted on the site plan but no associated underground lines were shown, further evaluation of the presence of any storm drain lines and the potential to act as preferential pathways was also requested (Technical Comment 2). This work plan addendum presents the proposed additional investigation and the requested additional information. As discussed in the most recent groundwater monitoring report (dated March 23, 2012), the previously requested sampling of well MW-1 for waste oil constituents was not able to be performed during first quarter due to rubber mats placed over the well by the new tenant. However, the well was subsequently able to be accessed and sampled; therefore, the results are also presented herein.

Please note that in the March 28, 2012 letter a due date of May 18, 2012 was originally specified for submission of this work plan addendum. However, in an e-mail to CRA on May 15, 2012, an extension of this due date to June 15, 2012 was approved by ACEH. The site description and

background, the results of the storm drain evaluation and sampling of MW-1, our proposed soil quality investigation, and our conclusions and recommendations are presented below.

SITE DESCRIPTION AND BACKGROUND

The site is located on the eastern corner of the intersection of Piedmont Avenue and Montell Street (Figure 1), and is developed with a one-story commercial building and associated parking areas (Figure 2) currently occupied by SOL Performance Training. Land use in the site vicinity is mixed commercial and residential. The site is bounded by Piedmont Avenue to the northwest, Montell Street to the southwest, apartment buildings to the southeast and a restaurant building (now appears vacant) to the northeast.

The site was occupied by a Chevron service station from at least 1940 through 1978; former station features included a lubrication building with two hydraulic hoists and two to three generations of gasoline and used-oil underground storage tanks (USTs) and dispensers. In 1978, the station and USTs were removed, and the existing building was subsequently constructed. Current and former site features are shown on Figure 2.

Environmental work has been performed since 1993, and has included the installation of monitoring wells MW-1 through MW-4 and the drilling of exploratory borings FNBO-1 through FNBO-8 and SB-2 both on- and offsite. Offsite wells MW-3 and MW-4 are currently sampled annually; sampling of onsite wells MW-1 and MW-2 was discontinued in 2009 with ACEH approval. A summary of the environmental work is included as Attachment B. The approximate well and boring locations are shown on Figure 2.

RESULTS OF STORM DRAIN EVALUATION

To further evaluate the presence of any underground storm drain lines at or near the site, CRA performed a site visit on May 10, 2012. On previous site plans, what was identified as a circular storm drain inlet had been shown in the street near the corner of Piedmont Avenue and Montell Street. During the site visit, it was confirmed that there is a large circular metal grate in this area; however, the grate is not a storm drain inlet, but appears to be covering a vault to access underground electric lines. The grate is marked Pacific Gas & Electric Company (PG&E), and numerous small diameter plastic conduits were observed in the vault. The previously shown location of this grate was slightly off (should have been approximately 10 feet to the north) and it lines up with known electric lines. A review of previous photographs taken by CRA of utility

company line location markings confirmed that electric lines run to and from this vault. As this is not a storm drain inlet, we have removed it from the site plan to avoid further confusion.

We did not observe any storm drain inlets onsite. The only storm water conveyance piping was roof drains from the building that directed water into the street. We also did not observe any storm drain inlets (curb gutters) on the streets near the site. The nearest curb inlets observed were two on Montell Street well to the southeast of the site. These inlets are shown on a City sanitary sewer and storm drain map (Attachment C) obtained by CRA that shows underground storm drain lines flowing from these inlets a short distance to the northwest into an underground culvert approximately 475 feet southeast of Piedmont Avenue (upgradient of the site). This map confirms that there are no storm drain lines at or in the near vicinity of the site. The review of previous photographs of utility markings also did not indicate the presence of any storm drain lines. Based on this information, there do not appear to be any underground storm drain lines in the site vicinity.

RESULTS OF SPECIAL WELL SAMPLING EVENT

In the previous letter (dated April 14, 2011), ACEH requested a one-time sampling event from well MW-1 (located adjacent to the former used-oil USTs) to analyze for waste oil constituents as this had not been done to date. After coordination with the tenant, this well was sampled on May 10, 2012 by our groundwater monitoring subcontractor Gettler-Ryan Inc. (G-R) of Dublin, California. After purging, the groundwater sample was collected in the appropriate laboratory-supplied containers, placed in an ice-chilled cooler, and transported under chain-of-custody to Eurofins Lancaster Laboratories, Inc. in Lancaster, Pennsylvania for analysis. The sample was analyzed for the following constituents:

- Total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8015B
- TPH as diesel (TPHd) and motor oil (TPHmo) by EPA Method 8015B both with and without a silica gel cleanup (SGC)
- Volatile organic compounds (VOCs) by EPA Method 8260B
- Semi-VOCs (SVOCs) by EPA Method 8270C
- Polychlorinated biphenyls (PCBs) by EPA Method 8082
- Metals (cadmium [Cd], chromium [Cr], lead [Pb], nickel [Ni], and zinc [Zn]) by EPA Method 6010B

The analytical results are summarized in the table below. A copy of G-R's May 29, 2012 *Groundwater Monitoring and Sampling Report*, including copies of the laboratory analytical report and chain of custody documentation, is included as Attachment D.

GROUNDWATER ANALYTICAL RESULTS – 5/10/12
concentrations in micrograms per liter (µg/L)

Well ID	*TPHmo*	*TPHd*	*TPHg*	*VOCs*	*SVOCs*	*PCBs*	*Cd*	*Cr*	*Pb*	*Ni*	*Zn*
MW-1	2,800/ 1,300*	1,400/ 720*	<50	ND[1]	ND[2]	ND	<0.27	153	92.3	195	154

*	Analysis following silica gel cleanup (10g mass column; capric acid used as reverse surrogate)
<	Indicates constituent was not detected at or above the stated laboratory reporting limit
ND	Not detected; reporting limits vary
1	VOCs not detected except naphthalene at 7 µg/L
2	SVOCs not detected except Diethylphthalate at 2 µg/L and naphthalene at 0.4 µg/L

PROPOSED SUB-SLAB VAPOR SAMPLING

In the June 13, 2011 revised work plan, CRA proposed to install and sample two sub-slab vapor probes inside the building to evaluate potential vapor intrusion risk. Indoor and ambient air samples would also be collected for comparison purposes. The proposed probe locations were selected based on the previous Department of Toxic Substances Control (DTSC) *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (DTSC guidance), in which it states the desired locations are near the center of the slab and in the likely area of highest residual impacts. In the March 28, 2012 letter, ACEH generally concurred with the proposed work but requested a building plan to confirm the proposed locations were appropriate.

A copy of the building plan (obtained from the tenant) is included as Attachment E. The plan does not show utility laterals, but as described in the revised work plan, prior to probe installation ground-penetrating radar will be utilized to identify any utility lines beneath the slab. In addition, utilities entering the building will be identified and marked, and any internal locations where utilities penetrate the slab (e.g. furnace, water heater, circuit breaker box, and water or sewer lines) will be identified and avoided. It should be reiterated that the proposed locations shown on Figure 2 are approximate, and may change based on actual building interior conditions, the findings of the above-mentioned survey, or tenant concerns.

All work will be conducted in accordance with the updated October 2011 DTSC guidance. The details and procedures of the proposed work were presented in the revised work plan and remain in place and will be followed. However, as requested by ACEH, a minimum of two

sampling events from the sub-slab vapor probes at approximate 6-month intervals will be conducted.

PROPOSED ADDITIONAL INVESTIGATION

To further evaluate soil quality onsite, we propose the drilling of five exploratory borings in the planter/walkway areas adjacent to the building. The proposed boring locations are shown on Figure 2. Although not beneath the building, in our opinion the proposed boring locations as shown will achieve the stated objective of evaluating residual soil impacts in the former UST and dispenser areas and the possible effect on groundwater concentrations, without causing additional undue hardship to the new tenant. It should be noted that groundwater concentrations in MW-4 have generally remained relatively stable and those in MW-3 have decreased and only low concentrations remain. Decreasing concentrations in groundwater typically indicate that a residual secondary source in soil is depleting.

Please also note that a previous rationale for requesting soil sampling beneath the building was to determine if several feet of contamination-free soil was present to preclude potential vapor intrusion concerns without any vapor sampling. The planned sub-slab and indoor/ambient air sampling will directly address potential vapor intrusion. Therefore, the collection of soil samples beneath the building for this purpose is no longer necessary.

The details of the proposed investigation are presented below.

Permits, Access Agreement, and Notifications
CRA will obtain all necessary permits for the proposed borings prior to beginning field operations. An updated access agreement between Chevron and the property owner will need to be obtained to cover the installation of the sub-slab probes. A minimum of 72 hours written notification will be given to ACEH prior to initiation of drilling activities.

Health and Safety Plan
CRA will prepare a site-specific health and safety plan (HASP) to inform site workers of known hazards and to provide health and safety guidance. The plan will be reviewed and signed by all site workers and visitors and will be kept onsite during field activities.

Underground Utility Clearance
At least 48 hours prior to the start of drilling activities, CRA will mark the proposed boring locations in the field and will notify Underground Service Alert (USA) to clear the proposed locations with public utility companies. A private utility locator will also be retained to additionally clear the boring locations of utility lines prior to drilling.

Drilling

Each boring will be advanced to the soil/water interface, anticipated to be between 10 and 15 feet below grade (fbg), using a hand auger due to limited access issues and to confirm utility clearance. The final locations and depths of the borings will be based on field conditions. CRA's standard field procedures are included as Attachment F.

Soil Sampling and Laboratory Analysis

Soil samples will be continuously collected from the borings for logging and observation purposes. The soil encountered in the borings will be logged in accordance with American Society for Testing and Materials (ASTM) D-2488 protocols. Soil samples from each boring will be screened in the field for volatile organic vapors using a photo-ionization detector (PID) and visually observed for any evidence of petroleum hydrocarbon impact. Samples will be selected for analysis based on field observations, PID readings, and groundwater depth. Samples that return PID readings of 100 parts per million by volume (ppmv) or greater, or those that have evidence of impact, may be retained for laboratory analysis. If no evidence of hydrocarbons is observed, soil samples collected at approximately 4-foot intervals and just above the groundwater interface (if encountered) from each boring will be submitted for analysis.

Soil samples retained for laboratory analysis will be collected in brass or stainless steel liners, capped using Teflon tape and plastic end caps, labeled, placed in an ice-chilled cooler, and transported under chain-of-custody to a state-certified analytical laboratory for analysis. The soil samples will be analyzed for the following constituents:

- TPHg by EPA Method 8015
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8260B

Groundwater Sampling and Laboratory Analysis

If encountered, a grab-groundwater sample will be collected from the boring located adjacent to previous boring FNBO-6 to evaluate current groundwater quality in this area. Low-flow sampling techniques will be utilized to minimize the potential for higher than actual reported dissolved concentrations due to the presence of impacted sediment in the sample. Once the boring is advanced to the total depth, temporary 1-inch diameter well screen will be placed in the borehole. After the water level has stabilized, clean, unused sample tubing will be lowered into the casing so that the bottom of the tubing is at the approximate mid-point of the water column. Groundwater will be purged at a low flow rate using a peristaltic pump, and monitored using a multi-meter and flow-through cell. Purged water will be monitored for temperature, pH, and conductivity, at a minimum. Purging will continue until groundwater

parameters have stabilized (within 10 percent). At that point, the flow-through cell will be disconnected and a groundwater sample collected. CRA's standard field procedures are included as Attachment F.

The groundwater sample will be collected in the appropriate laboratory-supplied containers, labeled, placed in an ice-chilled cooler, and transported under chain-of-custody to a state-certified analytical laboratory for analysis. The groundwater sample will be analyzed for the same constituents as the soil samples.

Investigation-Derived Waste
Soil cuttings, purge water, and decontamination rinsate generated during drilling activities will be temporarily stored onsite in properly labeled 55-gallon steel drums, and sampled for disposal purposes. Once profiled, the drums will be removed from the site for disposal at an appropriately-permitted facility.

Reporting
Following receipt of the analytical results, CRA will prepare an investigation report documenting the activities and results. The report will include, at a minimum, the following elements:

- A description of field activities
- A figure illustrating the boring and sub-slab vapor probe locations
- Sub-slab vapor probe construction diagrams
- Boring logs
- Tabulated analytical results
- Laboratory analytical reports and chain-of-custody forms
- Our conclusions and recommendations

CONCLUSIONS AND RECOMMENDATIONS

Due to a reported storm drain inlet shown on previous site plans, an evaluation of potential underground storm drain lines at and in the site vicinity was requested by ACEH. A site visit and a review of a City utility map and previous photographs of utility markings by CRA confirmed there are no underground storm drain lines at or in the vicinity of the site. The

previously reported inlet was actually a PG&E electric vault. The site plan has been updated (feature deleted) to reflect this finding.

As requested by ACEH, well MW-1, from which sampling had been discontinued in 2009, was sampled to analyze for waste oil constituents. TPHmo and TPHd were initially reported at 2,800 µg/L and 1,400 µg/L, respectively, but lower concentrations (1,300 µg/L and 720 µg/L, respectively) were reported following the SGC, indicating that approximately half of the material was erroneously reported as dissolved petroleum hydrocarbons. As we know, the SGC removed polar, non-hydrocarbon compounds from the sample extract leaving only non-polar petroleum hydrocarbons to be analyzed by EPA Method 8015B. Additionally, as diesel does not appear to have been dispensed or stored at the site, and this well is located on the northeast side of the site away from, and crossgradient of, the former fuel USTs, the reported TPHd likely represents overlap from the TPHmo range and not diesel fuel. Regardless, the detected concentration following the SGC was low and not a significant concern. TPHg and PCBs were not detected, and VOCs and SVOCs were not detected with the exception of low concentrations of one or two compounds. Several metals were detected; however, the concentrations were not elevated and thus do not appear to be a significant concern. Although TPHmo remains in groundwater in the area of the former used-oil USTs, heavier-end hydrocarbons such as motor oil exhibit characteristics of low mobility and low toxicity in the environment and would not be expected to significantly migrate vertically or horizontally away from the tank area, and are thus not a significant concern with regards to potential risk to human health or the environment. Therefore, no further investigation appears warranted and no further analysis for waste oil constituents is recommended.

The installation and sampling of two sub-slab vapor probes inside the building, as well as indoor and ambient air sampling is planned. The proposed probe locations are shown on Figure 2, and were selected in accordance with the applicable regulatory guidance. As requested by ACEH, a copy of the building plan has been provided with this work plan addendum in order to confirm the locations are appropriate. Please let us know if ACEH concurs with the proposed locations as shown, noting that they may change based on actual site conditions.

To further evaluate onsite soil quality, the drilling of five borings adjacent to the building in the former UST and dispenser areas is proposed for the collection of soil samples. The collection of a grab-groundwater sample near previous boring FNBO-6 is also proposed to evaluate current groundwater quality in this area in relation to the grab-groundwater sample obtained from FNBO-6 in 1993.

CLOSING AND SCHEDULE

Upon receipt of written concurrence from ACEH, and barring any access-related delays, CRA will implement the proposed investigation. Chevron is currently attempting to obtain an access agreement with the property owner and we will keep ACEH informed of any issues encountered. We will submit our investigation report approximately six to eight weeks after receipt of the analytical results.

We appreciate your assistance on this project and look forward to your reply. Please contact James Kiernan at (916) 889-8917 if you have any questions or need any additional information.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

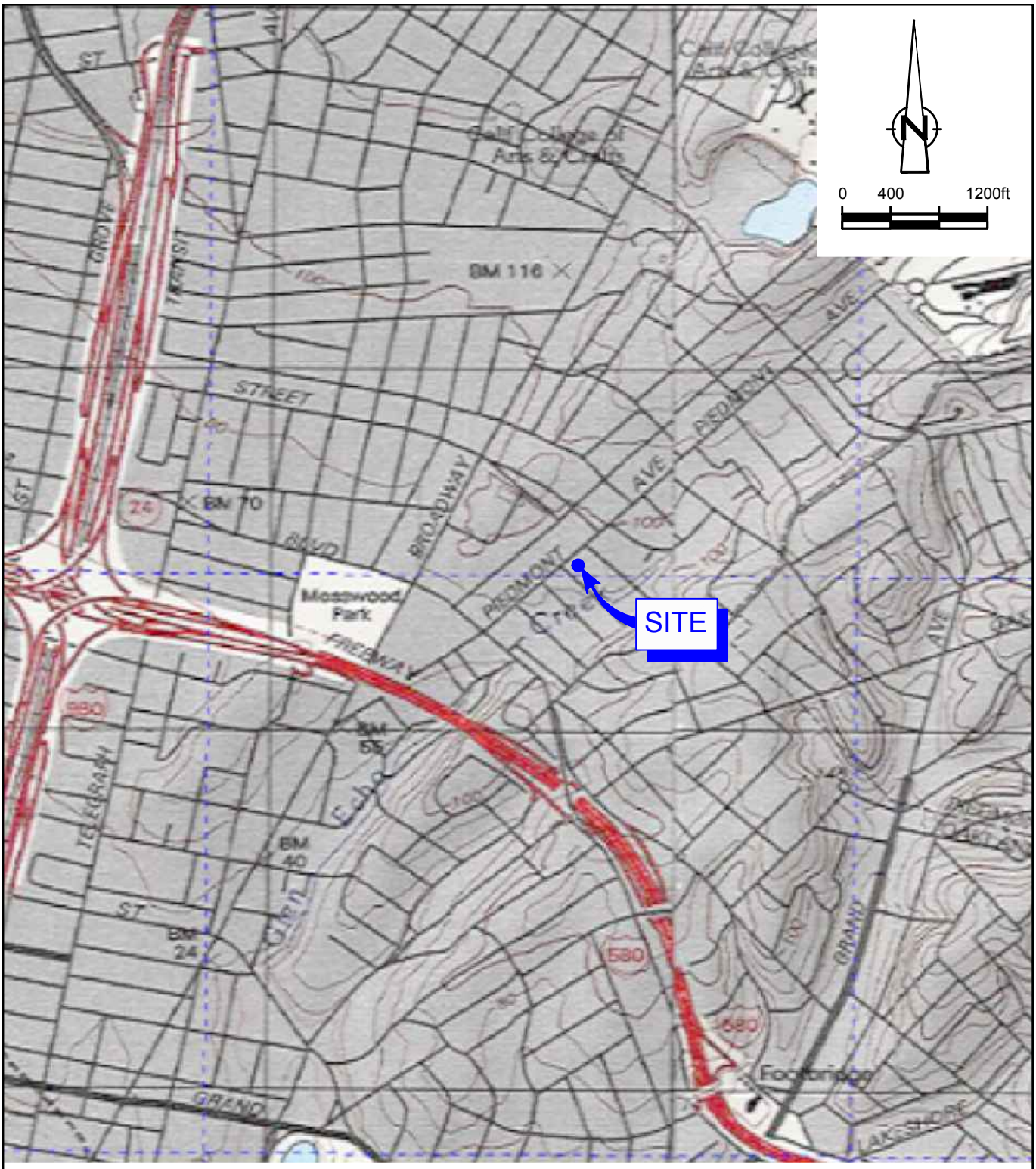
James P. Kiernan, P.E.

JK/de/13
Encl.

Figure 1	Vicinity Map
Figure 2	Site Plan
Attachment A	ACEH Letter Dated March 28, 2012
Attachment B	Summary of Environmental Investigation and Remediation
Attachment C	City Storm Drain and Sanitary Sewer Map
Attachment D	Groundwater Monitoring and Sampling Report
Attachment E	Building Plan
Attachment F	Standard Field Procedures

cc: Ms. Alexis Fischer, Chevron (electronic copy only)
Mr. Ted Plant, property owner

FIGURES



SOURCE: TOPO! MAPS.

figure 1

VICINITY MAP
FORMER CHEVRON SERVICE 9-0517
3900 PIEDMONT AVENUE
Oakland, California

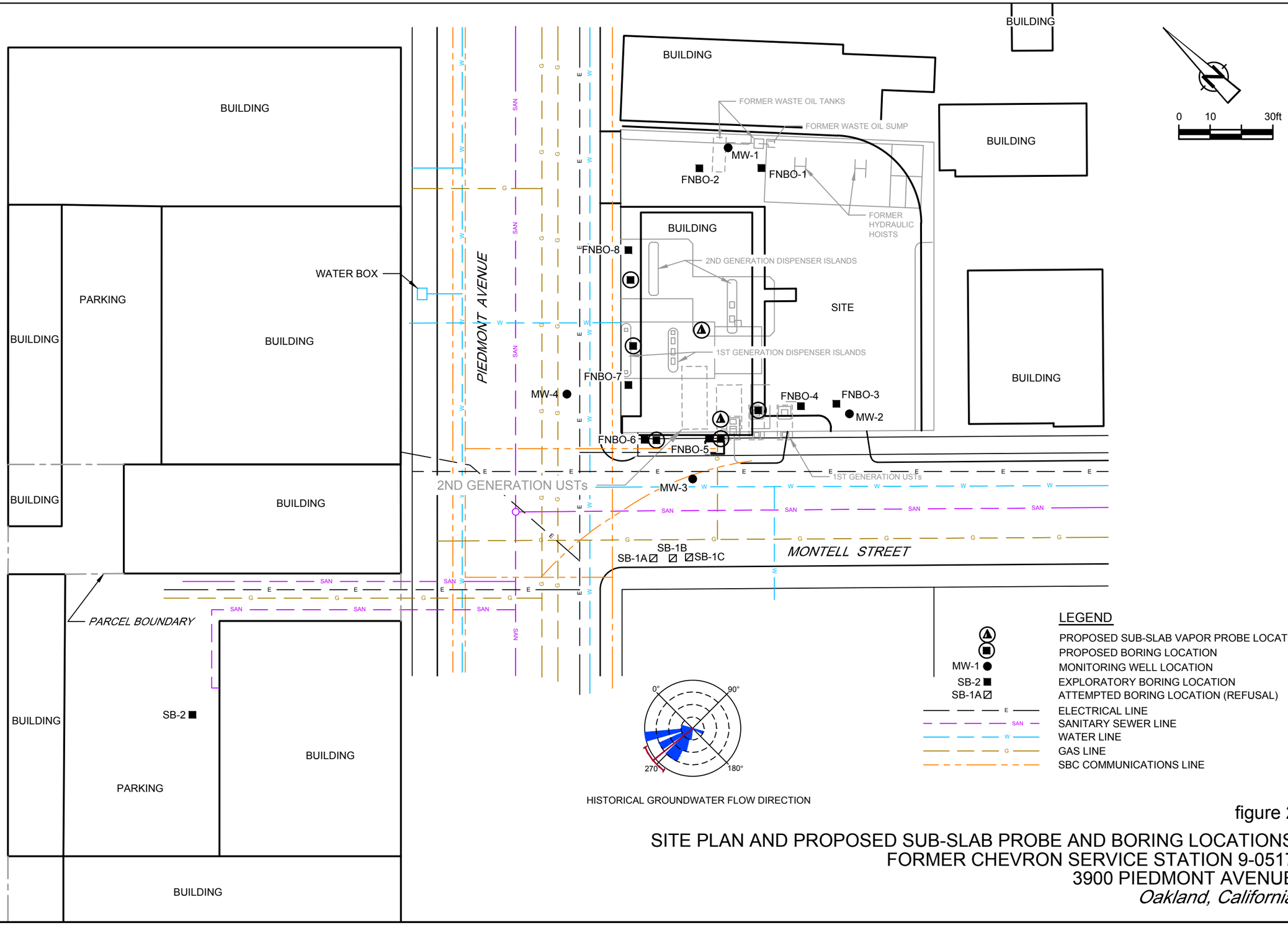


figure 2

SITE PLAN AND PROPOSED SUB-SLAB PROBE AND BORING LOCATIONS
FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
Oakland, California

ATTACHMENT A

ACEH LETTER DATED MARCH 28, 2012

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

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

March 28, 2012

Ms. Olivia Skance
Chevron Environmental Management Co.
6111 Bollinger Canyon Road
San Ramon, CA 94583
(sent via electronic mail to Olivia.Skance@chevron.com)

Ms. Leslie Riasanovsky
Unknown Address

Neil & Diane Goodhue
300 Hillside Avenue
Piedmont, CA 94611

Subject: Request for Work Plan Addendum; Fuel Leak Case No. RO0000138; Global ID # T0600102248; Chevron #9-0517 / Homestead Federal Savings, 3900 Piedmont Avenue, Oakland CA 94610

Dear Mesdames Skance and Riasanovsky, and Mr. & Mrs. Goodhue:

Alameda County Environmental Health Department (ACEH) staff has reviewed the case file, including the *Revised Work Plan for Additional Site Investigation,* dated June 13, 2011, prepared and submitted on your behalf by Conestoga-Rovers & Associates (CRA). Thank you for submitting the work plan.

As previously detailed, the site has been investigated through the installation of four groundwater monitoring wells and nine soil bores. In general the wells and bores have been installed around the perimeter of the existing (former Homestead Federal Savings Association) building. The building was constructed subsequent to the removal of four USTs in 1978. These are understood to have been second generation USTs and dispensers that replaced four first-generation USTs and dispensers, removed at an undefined time previously. Bores at the site were installed near several, but not into any of, the eight former UST locations due to the construction of the building directly over a number of the former USTs and dispensers. The investigations thus have had limited success in evaluating the extent and magnitude of residual soil impacts remaining in proximity to a number of the former USTs or if UST removal spoils were reused to backfill the removal excavations, as would be fairly typical for pre-environmental time periods. This is otherwise indicated by the existence of the most highly impacted groundwater known at the site at the most downgradient wells, MW-3 and MW-4 and in grab groundwater at FNBO-6; all located just offsite in the streets.

As also noted previously, in general this affects two issues of concern at the site, the previously mentioned extent and magnitude of residual contamination beneath the site, especially beneath the existing building, and the potential for vapor intrusion into the building at the site. While the collection of sub-slab vapor samples addresses the potential for vapor intrusion into the building, these activities do not address the magnitude or extent (including vertical extent) of residual contamination that is impacting groundwater beneath, and offsite. As a consequence the previous directive letter requested a subsurface soil and vapor intrusion investigation to determine the magnitude and extent of impacted soil beneath the building, as well as the vapor intrusion risk to the building. This same directive letter (April 14, 2011) also requested a downgradient subsurface investigation to delineate the extent of downgradient soil and vapor impacts.

Based on ACEH staff review of the case file, we request that you address the following technical comments and send us the reports described below.

TECHNICAL COMMENTS

1. **Onsite Subsurface Investigation and Vapor Intrusion -** The referenced work plan proposes the installation of two permanent sub-slab vapor probes within the existing building at the subject site at locations in proximity to several potential worst-case residual contaminant concentrations. The work plan disagreed with the need to investigate the extent and magnitude of soil impacts beneath the building, rationalizing that an evaluation of vapor intrusion would be adequate in determining risk to occupants of the building (as the only currently existing exposure route). The work plan also proposed collection of interior and exterior ambient vapor samples, as well as conducting a building product survey, to allow a comparison to existing background vapor concentrations. ACEH has several concerns with this proposed scope of work, including the following:

    a. **Onsite Subsurface Soil Contamination** – ACEH appreciates that the likely risk driver in the building at the subject site is likely to be vapor intrusion, and that defining the extent and magnitude of soil contamination beneath the existing building may not alter that risk; however, ACEH observes that investigating the extent and magnitude of residual soil beneath the site will define the on-going source of impacts to groundwater at and downgradient of the site, and will determine the residual contaminant reservoir at the site. The collection of data as requested is intended to collect and provide multiple lines of evidence to advance the site. These are gaps in site data. As a consequence, ACEH must disagree with the viewpoint contained in the referenced work plan, and requests a work plan addendum, by the date identified below, to incorporate an onsite subsurface investigation into the proposed scope of work.

    b. **Sub-Slab Vapor Sampling** – As noted, the referenced work plan proposes two permanent sub-slab vapor probes within the existing building at the subject site at locations in proximity to several potential worst-case residual contaminant concentrations. The two locations appear to be reasonable; however, to better determine the affect of interior spaces and utilities on the locations, ACEH requests a building office plan be forwarded with the work plan addendum requested above, with the location of utility laterals. ACEH additionally requests that a minimum of two sub-slab vapor sampling events be conducted at approximate 6-month intervals. ACEH also requests that the updated and revised DTSC guidelines be utilized; these are dated October 2011.

2. **Preferential Pathway Update** – ACEH notes the presence of a storm drain inlet at the corner of Montell Street and Piedmont Avenue, but did not locate the underground portion of the storm drain. As a consequence ACEH requests that the storm drainage system in the site vicinity be incorporated into the subsurface utility network and requests that the depth of these lines be determined, and an evaluation of the storm drain line to transmit contaminated groundwater to the network of utilities (in particular to the sanitary utility which has been determined to be within the groundwater zone). ACEH additionally requests these utilities be incorporated into site cross sections to facilitate site discussions and interpretations. Please incorporate this data in the submittal requested below, as well as in future site plans.

3. **Annual Groundwater Monitoring** – ACEH appreciates the incorporation of potential waste oil contaminants in the next groundwater sampling event, correctly noted to be on an annual basis.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Mr. Mark Detterman), according to the following schedule:

- **May 18, 2012** – Work Plan Addendum (with preferential pathway update)
- **60 Days After Approval of Work Plan** – Subsurface Investigation and Vapor Survey Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Should you have any questions, please contact me at (510) 567--6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2012.03.28 11:28:12 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: James Kiernan, 10969 Trade Center Drive, Suite 106, Rancho Cordova, CA 95670
(sent via electronic mail to jkiernan@craworld.com)

Donna Drogos, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements/Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://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, 6835, 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, later 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 SLIC)	**REVISION DATE:** July 20, 2010
	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 (LOP and SLIC) 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.**
- **Do not 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. **Documents with password protection will not be accepted**.
- 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 deh.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 ftp://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 deh.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.

ATTACHMENT B

SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION

SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION
FORMER CHEVRON STATION 90517
3900 PIEDMONT AVENUE, OAKLAND, CA

May 1993 Phase I Environmental Site Assessment (ESA)

Augeas Corporation (Augeas) conducted a Phase I ESA. It was determined that Chevron owned the property from at least 1940 through 1979, and it was used as a Chevron service station until approximately 1978. Four underground storage tanks (USTs) were identified on a site plan dated 1955. These included two used-oil USTs along the northeastern site boundary, a 7,500-gallon fuel UST, and at least one other UST (size and contents unknown) located further to the east along Montell Street. A copy of an Oakland Fire Prevention Bureau permit dated October 1978 indicated four USTs (7,500-, 5,000-, and 3,000-gallon gasoline USTs, and a 1,000-gallon used-oil UST) were to be removed as the station was to be demolished. It was noted on the permit that the USTs were located 25 feet east of Piedmont Avenue. No information regarding the condition of the tanks upon removal or the underlying soil quality was available. Details of the assessment were presented in Augeas' *Phase I Assessment Report* dated May 1993.

October 1993 Phase II Environmental Site Assessment

Environmental and Science Engineering, Inc. (ESE) advanced exploratory borings FNBO-1 through FNBO-8. A total of 11 soil samples were collected at various depths (6 to 11 feet below grade [fbg]) from the borings for laboratory analysis. A groundwater sample was also collected from boring FNBO-6 located in the southwest corner of the site. Details of the investigation were presented in ESE's *Phase II Environmental Site Assessment* dated November 15, 1993.

July 1998 Monitoring Well Installation

Gettler-Ryan Inc. (G-R) installed onsite wells MW-1 and MW-2 and offsite wells MW-3 and MW-4. Soil samples were collected at depths of 6, 10.5 or 11, and 16 fbg from the well borings for laboratory analysis. The results of the investigation were presented in G-R's *Monitoring Well Installation Report* dated September 17, 1998.

May 2002 Well Search, Utility Survey, and Risk-Based Corrective Action (RBCA) Evaluation

Delta Environmental Consultants, Inc. (Delta) performed a well search, utility survey, and RBCA evaluation. A review of Alameda County Public Works Agency (ACPWA) files did not identify any water-supply wells in the vicinity of the plume. The nearest well was an irrigation well located approximately 750 feet northeast (upgradient) of the site. The utility survey determined that the sewer lines adjacent to the site were approximately 12 to 13 fbg. The specific burial depths of water, gas, and electrical lines were not available, but these lines usually were buried less than 5 fbg. Based on this information, and the historic depth to groundwater, it was concluded that the utility trenches in the site vicinity likely were not acting as preferential pathways. The results of the RBCA evaluation indicated that the risk to potential future residential receptors due to residual contamination at the site was within acceptable levels, and no further

work was warranted. The results of the investigation were presented in Delta's *Well Search/Utility Survey/Risk-Based Corrective Action Evaluation* dated May 3, 2002.

July 2008 Subsurface Investigation

CRA advanced downgradient, offsite exploratory boring SB-2. Three attempts were also made to advance a boring in Montell Street; however, subsurface interference resulted in shallow drilling refusal. Soil samples were collected from SB-2 at approximate depths of 5, 10, 15, and 20 fbg for laboratory analysis. A groundwater sample was also collected from the boring and analyzed. The results of the investigation were presented in CRA's *Site Investigation Report* dated November 24, 2008.

ATTACHMENT C

CITY STORM DRAIN AND SANITARY SEWER MAP

9-0517

270

MONTE VISTA AVENUE

SPRING (SPRING) STREET

MONTELL AVENUE

WEBSTER AVENUE

40TH ST.

AMETHYST ST.

WAY

RIO VISTA (MONTE VISTA) (ROSE)

ROSE AVENUE

(MONTE VISTA LAUREL)

VILLA AVENUE

PEARL ST.

ATTACHMENT D

GROUNDWATER MONITORING AND SAMPLING REPORT

GETTLER-RYAN INC.

May 29, 2012
G-R Job #386420

Ms. Alexis Fisher
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

RE: Special Event of May 10, 2012
Groundwater Monitoring & Sampling Report
Former Chevron Service Station #9-0517
3900 Piedmont Avenue
Oakland, California

Dear Ms. Fisher:

This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

A static groundwater level was measured in one well (MW-1) and the well was checked for the presence of separate-phase hydrocarbons. Static water level data, groundwater elevations, and separate-phase hydrocarbon thickness (if any) are presented in the attached Table.

A groundwater sample was collected from the monitoring well and submitted to a state certified laboratory for analyses. The field data sheet for this event is attached. Analytical results are presented in the table(s) listed below. The chain of custody document and the laboratory analytical reports are also attached. All groundwater and decontamination water generated during sampling activities was removed from the site, per the Standard Operating Procedure.

Please call if you have any questions or comments regarding this report. Thank you.

Sincerely,

Deanna L. Harding
Project Coordinator

PROFESSIONAL GEOLOGIST
DOUGLAS J. LEE
No. 6882
STATE OF CALIFORNIA

Douglas J. Lee
Senior Geologist, P.G. No. 6882

Table 1:	Groundwater Monitoring Data and Analytical Results
Table 2:	Groundwater Analytical Results – Oxygenate Compounds
Table 3:	Groundwater Analytical Results – VOCs
Table 4:	Groundwater Analytical Results –SVOCs
Table 5:	Groundwater Analytical Results –Metals
Table 6:	Groundwater Analytical Results –PCBs
Attachments:	Standard Operating Procedure - Groundwater Sampling
	Field Data Sheets
	Chain of Custody Document and Laboratory Analytical Reports

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-1											
08/03/98	87.89	75.46	12.43	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/23/98	87.89	78.84	9.05	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0
02/08/99	87.89	81.39	6.50	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	87.89	80.76	7.13	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
08/23/99	87.89	78.74	9.15	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/03/99	87.89	78.35	9.54	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
02/15/00	87.89	81.99	5.90	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
05/12/00[3]	87.89	80.84	7.05	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
07/31/00	87.89	79.49	8.40	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
10/30/00	87.89	79.24	8.65	--	--	<50.0	<0.500	<0.500	<0.500	<1.50	<2.50
02/27/01	87.89	82.06	5.83	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
05/15/01	87.89	80.18	7.71	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
08/23/01	87.89	DRY	--	--	--	--	--	--	--	--	--
02/25/02	87.89	81.18	6.71	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/05/02	87.89	79.00	8.89	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
02/11/03	87.89	80.53	7.36	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/09/03[5]	87.89	78.42	9.47	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/25/04[5]	87.89	81.59	6.30	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	87.89	77.77	10.12	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/11/05[5]	87.89	81.10	6.79	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/15/05[5]	87.89	79.00	8.89	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/10/06[5]	87.89	81.24	6.65	--	--	<50	1	<0.5	<0.5	<0.5	<0.5
08/02/06[5]	87.89	80.16	7.73	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/09/07[5]	87.89	80.12	7.77	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/07[5]	87.89	78.30	9.59	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/18/08[5]	87.89	80.48	7.41	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/12/08[5]	87.89	78.11	9.78	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/19/09[5]	87.89	82.28	5.61	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/07/09	87.89	77.67	10.22	--	--	--	--	--	--	--	--
01/29/10	87.89	81.85	6.04	--	--	--	--	--	--	--	--
08/11/10	87.89	79.54	8.35	--	--	--	--	--	--	--	--
02/02/11	87.89	81.35	6.54	--	--	--	--	--	--	--	--
01/31/12	INACCESSIBLE		--	--	--	--	--	--	--	--	--
05/10/12[5]	**87.89**	**80.61**	**7.28**	**1,400/720[6]**	**2,800/1,300[6]**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<1**	**<0.5**

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-2											
08/03/98	86.09	74.75	11.34	--	--	<50	<0.5	<0.5	<0.5	<0.5	3.4
11/23/98	86.09	79.19	6.90	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0
02/08/99	86.09	80.86	5.23	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	86.09	79.97	6.12	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
08/23/99	86.09	79.68	6.41	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/03/99	86.09	78.80	7.29	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
02/15/00	86.09	81.60	4.49	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
05/12/00	86.09	80.19	5.90	--	--	4,000[3]	240	26	100	76	<100
07/31/00	86.09	79.51	6.58	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
10/30/00	86.09	79.86	6.23	--	--	<50.0	<0.500	2.92	<0.500	1.88	4.89
02/27/01	86.09	81.49	4.60	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
05/15/01	86.09	79.79	6.30	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
08/23/01	86.09	78.81	7.28	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
02/25/02	86.09	80.48	5.61	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/05/02	86.09	78.99	7.10	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
02/11/03	86.09	78.64	7.45	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/09/03[5]	86.09	78.44	7.65	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/25/04[5]	86.09	81.24	4.85	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	86.09	77.86	8.23	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/11/05[5]	86.09	80.16	5.93	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/15/05[5]	86.09	78.50	7.59	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/10/06[5]	86.09	80.36	5.73	--	--	<50	0.6	<0.5	<0.5	<0.5	<0.5
08/02/06[5]	86.09	79.14	6.95	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/09/07[5]	86.09	79.80	6.29	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/07[5]	86.09	78.69	7.40	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/18/08[5]	86.09	79.62	6.47	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/12/08[5]	86.09	79.01	7.08	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/19/09[5]	86.09	79.59	6.50	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/07/09	86.09	77.58	8.51	--	--	--	--	--	--	--	--
01/29/10	86.09	79.80	6.29	--	--	--	--	--	--	--	--
08/11/10	86.09	78.89	7.20	--	--	--	--	--	--	--	--
02/02/11	86.09	79.22	6.87	--	--	--	--	--	--	--	--
01/31/12	86.09	79.28	6.81	--	--	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-3											
08/03/98	86.28	74.20	12.08	--	--	4000	160	<5.0	<5.0	73	180
11/23/98	86.28	78.59	7.69	--	--	4000	67.7	7.56	17.1	24.5	41.2
02/08/99	86.28	80.01	6.27	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	86.28	79.32	6.96	--	--	1800	53.6	8.96	33	18.6	21.4
08/23/99	86.28	78.36	7.92	--	--	3970	155	24	88.8	39.8	185
11/03/99	86.28	78.36	7.92	--	--	3320	108	19.9	98.4	44.8	<25
02/15/00	86.28	80.54	5.74	--	--	779	26.7	3.82	15.4	4.24	<12.5
05/12/00	86.28	79.52	6.76	--	--	12,000[3]	3,100	120	980	1,400	820
07/31/00	86.28	78.98	7.30	--	--	1,200[3]	32	<5.0	11	7.3	39
10/30/00	86.28	79.26	7.02	--	--	3,300[4]	119	<5.00	40.0	<15.0	<25.0
02/27/01	86.28	80.39	5.89	--	--	432[3]	15.5	1.53	14.9	1.06	15.7
05/15/01	86.28	79.21	7.07	--	--	3,220[3]	96.4	12.6	11.5	11.6	128
08/23/01	86.28	78.23	8.05	--	--	2,300	48	<10	<10	<10	100
02/25/02	86.28	79.55	6.73	--	--	3,100	27	2.1	4.8	6.6	<2.5
08/05/02	86.28	78.33	7.95	--	--	4,100	87	21	90	47	21
02/11/03	86.28	79.23	7.05	--	--	3,700	21	2.3	4.4	9.0	<20
08/09/03[5]	86.28	78.05	8.23	--	--	1,600	12	1	2	4	0.7
02/25/04[5]	86.28	80.43	5.85	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	86.28	77.23	9.05	--	--	3,000	21	3	3	9	<0.5
02/11/05[5]	86.28	79.26	7.02	--	--	540	15	1	<0.5	0.8	<0.5
08/15/05[5]	86.28	77.87	8.41	--	--	2,600	11	1	1	2	<0.5
02/10/06[5]	86.28	79.35	6.93	--	--	970	20	2	<0.5	3	<0.5
08/02/06[5]	86.28	78.28	8.00	--	--	1,000	16	1	<0.5	3	<0.5
02/09/07[5]	86.28	78.95	7.33	--	--	590	3	<0.5	<0.5	0.5	<0.5
08/23/07[5]	86.28	77.45	8.83	--	--	2,700	18	4	2	8	<0.5
02/18/08[5]	86.28	79.01	7.27	--	--	1,300	8	1	0.6	1	<0.5
08/12/08[5]	86.28	76.70	9.58	--	--	2,000	21	3	1	4	<0.5
02/19/09[5]	86.28	79.52	6.76	--	--	810	<0.5	<0.5	<0.5	1	<0.5
08/07/09[5]	86.28	77.11	9.17	--	--	900	4	0.9	3	3	<0.5
01/29/10[5]	86.28	79.71	6.57	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/11/10[5]	86.28	77.67	8.61	--	--	1,800	9	2	6	5	<0.5
2/2/2011[5]	86.28	79.12	7.16	--	--	97	<0.5	<0.5	<0.5	<0.5	<0.5
01/31/12[5]	86.28	78.61	7.67	--	--	720	0.9	<0.5	<0.5	0.9	<0.5

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-4											
08/03/98	87.22	74.30	12.92	--	--	1900	110	12	<0.5	55	130
11/23/98	87.22	77.82	9.40	--	--	4080	136	17.8	37.2	30.1	51.8
02/08/99[1]	87.22	79.40	7.82	--	--	2900	150	16	<5.0	15	230/30.7[2]
05/07/99	87.22	79.80	7.42	--	--	6050	161	<25	39.8	36.9	<250/30.2[2]
08/23/99	87.22	77.83	9.39	--	--	3930	203	37.6	58.6	42.2	255
11/03/99	87.22	77.41	9.81	--	--	5350	324	44.7	91.5	56.1	<50
02/15/00	87.22	79.50	7.72	--	--	4080	161	27.7	31.1	39.1	73.9
05/12/00	87.22	79.31	7.91	--	--	3,600[3]	170	27	49	64	170
07/31/00	87.22	78.57	8.65	--	--	2,900[3]	160	20	15	56	170
10/30/00	87.22	78.14	9.08	--	--	5,630[4]	301	17.8	11.8	51.5	<25.0
02/27/01	87.22	79.92	7.30	--	--	2,140[3]	95.1	12.8	53.4	43.0	235
05/15/01	87.22	79.07	8.15	--	--	4,580[3]	200	44.1	46.3	51.7	172
08/23/01	87.22	77.89	9.33	--	--	2,700	250	44	21	72	130
02/25/02	87.22	79.42	7.80	--	--	4,100	100	18	27	39	<10
08/05/02	87.22	80.12	7.10	--	--	4,100	130	18	50	20	<10
02/11/03	87.22	79.10	8.12	--	--	4,100	100	23	20	51	<50
08/09/03[5]	87.22	77.67	9.55	--	--	3,700	110	24	10	45	8
02/25/04[5]	87.22	79.16	8.06	--	--	5,400	94	28	34	49	5
08/23/04[5]	87.22	77.03	10.19	--	--	5,100	100	26	7	43	5
02/11/05[5]	87.22	79.25	7.97	--	--	3,900	58	16	25	16	2
08/15/05[5]	87.22	78.40	8.82	--	--	2,400	76	16	11	26	3
02/10/06[5]	87.22	79.41	7.81	--	--	1,600	68	16	8	27	4
08/10/06[5]	87.22	78.64	8.58	--	--	2,500	100	19	5	30	3
02/09/07[5]	87.22	78.51	8.71	--	--	6,200	200	39	16	52	3
08/23/07[5]	87.22	76.84	10.38	--	--	5,800	190	48	20	61	3
02/18/08[5]	87.22	79.11	8.11	--	--	4,900	110	24	11	32	2
08/12/08[5]	87.22	76.64	10.58	--	--	6,100	180	31	9	52	3
02/19/09[5]	87.22	79.50	7.72	--	--	2,900	84	20	5	24	2
08/07/09[5]	87.22	76.80	10.42	--	--	4,900	120	34	11	36	2
01/29/10[5]	87.22	79.20	8.02	--	--	3,800	49	15	4	17	1
08/11/10[5]	87.22	77.03	10.19	--	--	5,400	110	36	11	36	1
2/2/2011[5]	87.22	78.57	8.65	--	--	3,800	76	29	16	31	1
01/31/12[5]	87.22	77.98	9.24	--	--	6,700	110	32	7	34	1

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-DRO (µg/L)	TPH-MO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
TRIP BLANK											
08/03/98	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/23/98	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0
02/08/99	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
08/23/99	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/03/99	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
02/15/00	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
05/12/00	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
07/31/00	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
10/30/00	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.50	<2.50
02/27/01	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
05/15/01	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
08/23/01	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
QA				--	--						
02/25/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/05/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
02/11/03	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/09/03[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/25/04[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/11/05[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/15/05[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/10/06[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/02/06[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/09/07[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/07[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/18/08[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/12/08[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/19/09[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/07/09[5]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
DISCONTINUED											

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to May 12, 2000, were compiled from reports prepared by Blaine Tech Services, Inc.

TOC = Top of Casing
(ft.) = Feet
GWE = Groundwater Elevation
(msl) = Mean sea level
DTW = Depth to Water
TPH = Total Petroleum Hydrocarbons

DRO = Diesel Range Organics
MO = Motor Oil
GRO = Gasoline Range Organics
B = Benzene
T = Toluene
E = Ethylbenzene

X = Xylenes
MTBE = Methyl Tertiary Butyl Ether
(µg/L) = Micrograms per liter
-- = Not Measured/Not Analyzed
QA = Quality Assurance/Trip Blank

* TOC elevations are referenced to msl.

1 Chromatogram pattern indicates gas and an unidentified hydrocarbon.
2 Confirmation run.
3 Laboratory report indicates gasoline C6-C12.
4 Laboratory report indicates hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
5 BTEX and MTBE by EPA Method 8260.
6 Analyzed with silica gel cleanup.

Table 2

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	METHANOL (mg/L)	ETHANOL (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-1									
05/10/12	–	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

EXPLANATIONS:

TBA = t- Butyl alcohol
MTBE = Methyl Tertiary Butyl Ether
DIPE = di-Isopropyl ether
ETBE = Ethyl t - butyl ether
TAME = t- Amyl methyl ether
1,2-DCA = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
(mg/L) = milligrams per liter
(µg/L) = Micrograms per liter
ND = Not Detected
-- = Not Analyzed

ANALYTICAL METHODS:

Oxygenate Compounds EPA Method 8260

Table 3

Groundwater Analytical Results - VOCs

Former Chevron Service Station #9-0517
3900 Piedmont Avenue
Oakland, California

WELL ID/ DATE	Bromodichloromethane (µg/L)	n-Butylbenzene (µg/L)	sec-Butylbenzene (µg/L)	tert-Butylbenzene (µg/L)	Chloroform (µg/L)	1,1-Dichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)	trans-1,2-Dichloroethene (µg/L)	Isopropylbenzene (µg/L)	p-Isopropyltoluene (µg/L)	Naphthalene (µg/L)	n-Propylbenzene (µg/L)	Tetrachloroethene (µg/L)	1,1,1-Trichloroethane (µg/L)	Trichloroethene (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)
MW-1																	
05/10/12	**<1**	**<1**	**<1**	**<1**	**<0.8**	**<1**	**<0.8**	**<0.8**	**<1**	**<1**	**7**	**<1**	**<0.8**	**<0.8**	**<1**	**<1**	**<1**

EXPLANATIONS

(µg/L) = Micrograms per liter
VOC = Volatile Organic Compounds

♦ **All other VOCs by EPA Method 8260B were less than the reporting limit unless noted otherwise.**

ANALYTICAL METHODS:

VOCs by EPA Method 8260 B

Table 4

Groundwater Analytical Results - SVOCs

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	ACENAPHTHENE (µg/L)	ACENAPHTHYLENE (µg/L)	ANTHRACENE (µg/L)	BENZO (a) ANTHRACENE (µg/L)	BENZO (a) PYRENE (µg/L)	BENZO (b) FLUORANTHENE (µg/L)	BENZO (g,h,i) PERYLENE (µg/L)	BENZO (k) FLUORANTHENE (µg/L)	CHRYSENE (µg/L)	DIBENZ (a,h) ANTHRACENE (µg/L)	DIETHYLPHTHALATE (µg/L)	FLUORANTHENE (µg/L)	FLUORENE (µg/L)	INDENO (1,2,3-cd) PYRENE (µg/L)	NAPHTHALENE (µg/L)	PHENANTHRENE (µg/L)	PYRENE (µg/L)
MW-1	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	2	<0.09	<0.09	<0.09	0.4	<0.09	<0.09

EXPLANATIONS

(µg/L) = Micrograms per liter

-- = Not Analyzed

SVOC = Semi Volatile Organic Compounds

♦ **All other SVOCs by EPA Method 8270C were less than the reporting limit unless noted.**

ANALYTICAL METHODS:

SVOCs by EPA Method 8270C

Table 5

Groundwater Analytical Results - Metals

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID	DATE	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)
MW-1	05/10/12	<0.27	153	92.3	195	154

EXPLANATIONS

(µg/L) = Micrograms per liter

ANALYTICAL METHODS:

Metals by EPA Method 6010 B

Table 6

Groundwater Analytical Results - PCBs

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	PCB- 1016 (µg/L)	PCB- 1221 (µg/L)	PCB- 1232 (µg/L)	PCB- 1242 (µg/L)	PCB- 1248 (µg/L)	PCB- 1254 (µg/L)	PCB- 1260 (µg/L)
MW-1							
05/10/12	**<0.095**	**<0.05**	**<0.19**	**<0.095**	**<0.095**	**<0.095**	**<0.14**

EXPLANATIONS

(µg/L) = Micrograms per liter

PCB = Polychlorinated Biphenyl

ANALYTICAL METHODS:

PCB by EPA Method 8082

STANDARD OPERATING PROCEDURE –WELL DEVELOPMENT
GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to well development, each well is monitored for the presence of free-phase hydrocarbons and the depth to water is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by Clean Harbors Environmental Services to Evergreen Oil located in Newark, California.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Chevron #9-0517** Job Number: **386420**
Site Address: **3900 Piedmont Avenue** Event Date: 5/10/12 (inclusive)
City: **Oakland, CA** Sampler: JH

Well ID **MW-1** Date Monitored: 5/10/12
Well Diameter **2**
Total Depth 16.56 ft.
Depth to Water 7.28 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

9.28 xVF .17 = 1.57 x3 case volume = Estimated Purge Volume: 4.73 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.13

Purge Equipment:

Disposable Bailer	X
Stainless Steel Bailer	
Stack Pump	
Suction Pump	
Grundfos	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	X
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ gal
Amt Removed from Well: _____ gal
Water Removed: _____

Start Time (purge): 1415 Weather Conditions: Clear
Sample Time/Date: 1455 / 5/10/12 Water Color: cloudy Odor: Y / (N)
Approx. Flow Rate: - gpm. Sediment Description: Limited
Did well de-water? No If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 8.72

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - (S))	Temperature ((C) / F)	D.O. (mg/L)	ORP (mV)
1419	1.5	7.62	891	19.2		
1424	3.0	7.60	874	19.6		
1429	4.5	7.33	731	19.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/FULL SCAN(8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO w/sgc COLUMN/TPH-DRO (8015)
	2 x 1 liter ambers	YES	NP	LANCASTER	TPH-MO w/sgc COLUMN/TPH-MO (8015)
	2 x 1 liter ambers	YES	NP	LANCASTER	FULL SCAN (8270)
	2 x 1 liter ambers	YES	NP	LANCASTER	PCB's
	1 x 250ml poly	YES	HNO3	LANCASTER	CAM 5 METALS

COMMENTS:

Add/Replaced Lock: ✓ Add/Replaced Plug: ✓ Add/Replaced Bolt: _____

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories

05112-08 IL

Acct. #: 12099 For Lancaster Laboratories use only Sample # 166504002 Group #: 020789

C# 1308658

CRA MTI Project #: 61H-1995

Facility #: SS#9-0517 G-R#386420 Global ID#T0600102248

Site Address: 3900 PIEDMONT AVENUE, OAKLAND, CA

Chevron PM: MTI Lead Consultant: CRAKJ Kiernan

Consultant/Office: G-R, Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568

Consultant Prj. Mgr.: Deanna L. Harding (deanna@grinc.com)

Consultant Phone #: 925-551-7555 Fax #: 925-551-7899

Sampler: Jim Heeran

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

- ☐ J value reporting needed
- ☑ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
- ☐ Confirm highest hit by 8260
- ☐ Confirm all hits by 8260
- ☐ Run ____ oxy's on highest hit
- ☐ Run ____ oxy's on all hits

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Water	Oil	Air	Total Number of Containers	BTEX + MTBE 8260 ☐ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☒ Silica Gel Cleanup	8260 full scan	TPH 8015 (GC/MS)	Total Lead Method	Dissolved Lead Method	PCB's	Full Scan (8270)	TPH-mo ubgc (8015)	TPH-mo (8015)	CAM 5 metals
MW-1	5/10/12	1455	X			X			16		X	X	X	X			X	X	X	X	X

Comments / Remarks

REQUESTING 10 GRAM COLUMN CLEAN UP ON MO AND DRO SAMPLES. CAM 5 METALS INCLUDE: Cd, Cr, Pb, Ni, Zn

Turnaround Time Requested (TAT) (please circle)
STD TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I - Full **EDF/EDD**
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

	Date	Time		Date	Time
Relinquished by:	5/10/12	1600	Received by:	5/10/12	1500
Relinquished by:	5/11/12	1630	Received by: FE		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS (FedEx) Other			Received by:	5/12/12	915
Temperature Upon Receipt 0.7°-1.5° C°			Custody Seals Intact? (Yes) No		

eurofins | Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron c/o CRA
Suite 107
10969 Trade Center Dr
Rancho Cordova CA 95670

May 22, 2012

Project: 90517

Submittal Date: 05/12/2012
Group Number: 1308658
PO Number: 90517
Release Number: MTI
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LLI) #
MW-1-W-120510 Grab Water	6650662

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Gettler-Ryan, Inc.	Attn: Rachelle Munoz
ELECTRONIC COPY TO	Chevron c/o CRA	Attn: Report Contact
ELECTRONIC COPY TO	Chevron	Attn: Anna Avina

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Respectfully Submitted,

Jill M. Parker

Jill M. Parker
Senior Specialist

(717) 556-7262

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Analysis Report

Sample Description: MW-1-W-120510 Grab Water
Facility# 90517 Job# 386420 MTI# 61H-1995 GRD
3900 Piedmont Ave-Oakland T0600102248 MW-1

LLI Sample # WW 6650662
LLI Group # 1308658
Account # 12099

Project Name: 90517

Collected: 05/10/2012 14:55 by JH

Submitted: 05/12/2012 09:45
Reported: 05/22/2012 20:53

Chevron c/o CRA
Suite 107
10969 Trade Center Dr
Rancho Cordova CA 95670

PAO01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10905	Acetone	67-64-1	N.D.	6	1
10905	t-Amyl methyl ether	994-05-8	N.D.	0.5	1
10905	Benzene	71-43-2	N.D.	0.5	1
10905	Bromobenzene	108-86-1	N.D.	1	1
10905	Bromochloromethane	74-97-5	N.D.	1	1
10905	Bromodichloromethane	75-27-4	N.D.	1	1
10905	Bromoform	75-25-2	N.D.	1	1
10905	Bromomethane	74-83-9	N.D.	1	1
10905	2-Butanone	78-93-3	N.D.	3	1
10905	t-Butyl alcohol	75-65-0	N.D.	5	1
10905	n-Butylbenzene	104-51-8	N.D.	1	1
10905	sec-Butylbenzene	135-98-8	N.D.	1	1
10905	tert-Butylbenzene	98-06-6	N.D.	1	1
10905	Carbon Disulfide	75-15-0	N.D.	1	1
10905	Carbon Tetrachloride	56-23-5	N.D.	1	1
10905	Chlorobenzene	108-90-7	N.D.	0.8	1
10905	Chloroethane	75-00-3	N.D.	1	1
10905	2-Chloroethyl Vinyl Ether	110-75-8	N.D.	2	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10905	Chloroform	67-66-3	N.D.	0.8	1
10905	Chloromethane	74-87-3	N.D.	1	1
10905	2-Chlorotoluene	95-49-8	N.D.	1	1
10905	4-Chlorotoluene	106-43-4	N.D.	1	1
10905	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	1
10905	Dibromochloromethane	124-48-1	N.D.	1	1
10905	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10905	Dibromomethane	74-95-3	N.D.	1	1
10905	1,2-Dichlorobenzene	95-50-1	N.D.	1	1
10905	1,3-Dichlorobenzene	541-73-1	N.D.	1	1
10905	1,4-Dichlorobenzene	106-46-7	N.D.	1	1
10905	Dichlorodifluoromethane	75-71-8	N.D.	2	1
10905	1,1-Dichloroethane	75-34-3	N.D.	1	1
10905	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10905	1,1-Dichloroethene	75-35-4	N.D.	0.8	1
10905	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	1
10905	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1
10905	1,2-Dichloropropane	78-87-5	N.D.	1	1
10905	1,3-Dichloropropane	142-28-9	N.D.	1	1
10905	2,2-Dichloropropane	594-20-7	N.D.	1	1
10905	1,1-Dichloropropene	563-58-6	N.D.	1	1
10905	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	1
10905	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	1
10905	Ethanol	64-17-5	N.D.	50	1
10905	Ethyl t-butyl ether	637-92-3	N.D.	0.5	1
10905	Ethylbenzene	100-41-4	N.D.	0.5	1
10905	Freon 113	76-13-1	N.D.	2	1
10905	Hexachlorobutadiene	87-68-3	N.D.	2	1
10905	2-Hexanone	591-78-6	N.D.	3	1
10905	di-Isopropyl ether	108-20-3	N.D.	0.5	1

Sample Description: MW-1-W-120510 Grab Water
Facility# 90517 Job# 386420 MTI# 61H-1995 GRD
3900 Piedmont Ave-Oakland T0600102248 MW-1

LLI Sample # WW 6650662
LLI Group # 1308658
Account # 12099

Project Name: 90517

Collected: 05/10/2012 14:55 by JH

Submitted: 05/12/2012 09:45
Reported: 05/22/2012 20:53

Chevron c/o CRA
Suite 107
10969 Trade Center Dr
Rancho Cordova CA 95670

PAO01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10905	Isopropylbenzene	98-82-8	N.D.	1	1
10905	p-Isopropyltoluene	99-87-6	N.D.	1	1
10905	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10905	4-Methyl-2-pentanone	108-10-1	N.D.	3	1
10905	Methylene Chloride	75-09-2	N.D.	2	1
10905	Naphthalene	91-20-3	7	1	1
10905	n-Propylbenzene	103-65-1	N.D.	1	1
10905	Styrene	100-42-5	N.D.	1	1
10905	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	1	1
10905	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	1
10905	Tetrachloroethene	127-18-4	N.D.	0.8	1
10905	Toluene	108-88-3	N.D.	0.5	1
10905	1,2,3-Trichlorobenzene	87-61-6	N.D.	1	1
10905	1,2,4-Trichlorobenzene	120-82-1	N.D.	1	1
10905	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	1
10905	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	1
10905	Trichloroethene	79-01-6	N.D.	1	1
10905	Trichlorofluoromethane	75-69-4	N.D.	2	1
10905	1,2,3-Trichloropropane	96-18-4	N.D.	1	1
10905	1,2,4-Trimethylbenzene	95-63-6	N.D.	1	1
10905	1,3,5-Trimethylbenzene	108-67-8	N.D.	1	1
10905	Vinyl Chloride	75-01-4	N.D.	1	1
10905	m+p-Xylene	n.a.	N.D.	0.5	1
10905	o-Xylene	95-47-6	N.D.	0.5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.09	1
04678	Acenaphthylene	208-96-8	N.D.	0.09	1
04678	Anthracene	120-12-7	N.D.	0.09	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.09	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.09	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.09	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.09	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.09	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1
04678	Butylbenzylphthalate	85-68-7	N.D.	2	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	1
04678	Carbazole	86-74-8	N.D.	0.5	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1
04678	Chrysene	218-01-9	N.D.	0.09	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.09	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1
04678	1,2-Dichlorobenzene	95-50-1	N.D.	0.5	1

Sample Description: MW-1-W-120510 Grab Water
Facility# 90517 Job# 386420 MTI# 61H-1995 GRD
3900 Piedmont Ave-Oakland T0600102248 MW-1

LLI Sample # WW 6650662
LLI Group # 1308658
Account # 12099

Project Name: 90517

Collected: 05/10/2012 14:55 by JH

Submitted: 05/12/2012 09:45
Reported: 05/22/2012 20:53

Chevron c/o CRA
Suite 107
10969 Trade Center Dr
Rancho Cordova CA 95670

PAO01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	
04678	1,3-Dichlorobenzene	541-73-1	N.D.	0.5	1
04678	1,4-Dichlorobenzene	106-46-7	N.D.	0.5	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1
04678	Diethylphthalate	84-66-2	2	2	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1
04678	Dimethylphthalate	131-11-3	N.D.	2	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	9	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	0.9	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	1
04678	Fluoranthene	206-44-0	N.D.	0.09	1
04678	Fluorene	86-73-7	N.D.	0.09	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.09	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	1
04678	Hexachloroethane	67-72-1	N.D.	0.9	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.09	1
04678	Isophorone	78-59-1	N.D.	0.5	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.09	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.				
04678	Naphthalene	91-20-3	0.4	0.09	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1
04678	4-Nitrophenol	100-02-7	N.D.	9	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.				
04678	Di-n-octylphthalate	117-84-0	N.D.	2	1
04678	Pentachlorophenol	87-86-5	N.D.	0.9	1
04678	Phenanthrene	85-01-8	N.D.	0.09	1
04678	Phenol	108-95-2	N.D.	0.5	1
04678	Pyrene	129-00-0	N.D.	0.09	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1
GC Volatiles	**SW-846 8015B**		**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1

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Analysis Report

Sample Description: MW-1-W-120510 Grab Water
Facility# 90517 Job# 386420 MTI# 61H-1995 GRD
3900 Piedmont Ave-Oakland T0600102248 MW-1

LLI Sample # WW 6650662
LLI Group # 1308658
Account # 12099

Project Name: 90517

Collected: 05/10/2012 14:55 by JH

Submitted: 05/12/2012 09:45
Reported: 05/22/2012 20:53

Chevron c/o CRA
Suite 107
10969 Trade Center Dr
Rancho Cordova CA 95670

PAO01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Pesticides/PCBs	**SW-846 8082**		**ug/l**	**ug/l**	
10227	PCB-1016	12674-11-2	N.D.	0.095	1
10227	PCB-1221	11104-28-2	N.D.	0.095	1
10227	PCB-1232	11141-16-5	N.D.	0.19	1
10227	PCB-1242	53469-21-9	N.D.	0.095	1
10227	PCB-1248	12672-29-6	N.D.	0.095	1
10227	PCB-1254	11097-69-1	N.D.	0.095	1
10227	PCB-1260	11096-82-5	N.D.	0.14	1
GC Petroleum Hydrocarbons	**SW-846 8015B**		**ug/l**	**ug/l**	
08269	TPH-DRO water C10-C28	n.a.	1,400	50	1
GC Petroleum Hydrocarbons	**SW-846 8015B modified**		**ug/l**	**ug/l**	
02500	Total TPH	n.a.	2,800	38	1
02500	TPH Motor Oil C16-C36	n.a.	2,800	38	1
	TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons.				
GC Petroleum Hydrocarbons w/Si	**SW-846 8015B**		**ug/l**	**ug/l**	
02216	TPH-DRO water C10-C28 w/Si Gel	n.a.	720	30	1
	The reverse surrogate, capric acid, is present at <1%.				
GC Petroleum Hydrocarbons w/Si	**SW-846 8015B modified**		**ug/l**	**ug/l**	
10006	Motor Oil C16-C36 w/Si Gel	n.a.	1,300	38	1
10006	Total TPH w/Si Gel	n.a.	1,300	38	1
	TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The reverse surrogate, capric acid, is present at <1%.				
Metals	**SW-846 6010B**		**ug/l**	**ug/l**	
07049	Cadmium	7440-43-9	N.D.	0.27	1
07051	Chromium	7440-47-3	153	1.1	1
07055	Lead	7439-92-1	92.3	2.2	1
07061	Nickel	7440-02-0	195	0.95	1
07072	Zinc	7440-66-6	154	3.2	1

Sample Description: MW-1-W-120510 Grab Water
Facility# 90517 Job# 386420 MTI# 61H-1995 GRD
3900 Piedmont Ave-Oakland T0600102248 MW-1

LLI Sample # WW 6650662
LLI Group # 1308658
Account # 12099

Project Name: 90517

Collected: 05/10/2012 14:55 by JH

Submitted: 05/12/2012 09:45
Reported: 05/22/2012 20:53

Chevron c/o CRA
Suite 107
10969 Trade Center Dr
Rancho Cordova CA 95670

PA001

General Sample Comments

State of California Lab Certification No. 2501
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10905	8260 Full List w/ Sep. Xylenes	SW-846 8260B	1	N121391AA	05/18/2012 20:37	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N121391AA	05/18/2012 20:37	Linda C Pape	1
04678	TCL SVOC 8270C Water	SW-846 8270C	1	12135WAB026	05/15/2012 12:24	Brian K Graham	1
00813	BNA Water Extraction	SW-846 3510C	1	12135WAB026	05/14/2012 17:30	Nicholas W Shroyer	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12138A20A	05/17/2012 18:11	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12138A20A	05/17/2012 18:11	Marie D John	1
10227	PCBs in Water 8082	SW-846 8082	1	121350042A	05/19/2012 07:21	Jessica L Miller	1
11117	PCB Waters Extraction	SW-846 3510C	1	121350042A	05/15/2012 10:00	William H Saadeh	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	121350013A	05/16/2012 06:57	Tracy A Cole	1
02500	TPH Fuels by GC (Waters)	SW-846 8015B modified	1	121370007A	05/17/2012 02:10	Heather E Williams	1
02216	TPH-DRO water C10-C28 w/Si Gel	SW-846 8015B	1	121350014A	05/19/2012 05:51	Michele D Hamilton	1
10006	TPH Fuels water w/Si Gel	SW-846 8015B modified	1	121370009A	05/17/2012 23:12	Heather E Williams	1
11172	DRO by 8015 w/ Silica Gel Ext	SW-846 3510C	1	121350014A	05/15/2012 05:47	Roman Kuropatkin	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	121350013A	05/15/2012 05:47	Roman Kuropatkin	1
11191	TPH Fuels Waters Extraction	SW-846 3510C	1	121370007A	05/16/2012 14:00	Kelli M Barto	1
11195	TPH w/ Silica Gel Waters Ext.	SW-846 3510C	1	121370009A	05/16/2012 14:00	Kelli M Barto	1
07049	Cadmium	SW-846 6010B	1	121351848001	05/15/2012 08:05	Tara L Snyder	1
07051	Chromium	SW-846 6010B	1	121351848001	05/15/2012 08:05	Tara L Snyder	1
07055	Lead	SW-846 6010B	1	121351848001	05/15/2012 08:05	Tara L Snyder	1
07061	Nickel	SW-846 6010B	1	121351848001	05/15/2012 08:05	Tara L Snyder	1
07072	Zinc	SW-846 6010B	1	121351848001	05/15/2012 08:05	Tara L Snyder	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	121351848001	05/14/2012 12:25	James L Mertz	1

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 05/22/12 at 08:53 PM

Group Number: 1308658

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: N121391AA	Sample number(s): 6650662							
Acetone	N.D.	6.	ug/l	210		38-212		
t-Amyl methyl ether	N.D.	0.5	ug/l	89		66-120		
Benzene	N.D.	0.5	ug/l	102		77-121		
Bromobenzene	N.D.	1.	ug/l	99		80-120		
Bromochloromethane	N.D.	1.	ug/l	100		77-130		
Bromodichloromethane	N.D.	1.	ug/l	98		73-120		
Bromoform	N.D.	1.	ug/l	85		61-120		
Bromomethane	N.D.	1.	ug/l	64		44-120		
2-Butanone	N.D.	3.	ug/l	147		53-155		
t-Butyl alcohol	N.D.	5.	ug/l	118		68-125		
n-Butylbenzene	N.D.	1.	ug/l	93		73-130		
sec-Butylbenzene	N.D.	1.	ug/l	96		74-124		
tert-Butylbenzene	N.D.	1.	ug/l	97		80-120		
Carbon Disulfide	N.D.	1.	ug/l	85		62-125		
Carbon Tetrachloride	N.D.	1.	ug/l	87		67-122		
Chlorobenzene	N.D.	0.8	ug/l	104		80-120		
Chloroethane	N.D.	1.	ug/l	74		49-129		
2-Chloroethyl Vinyl Ether	N.D.	2.	ug/l	59		56-129		
Chloroform	N.D.	0.8	ug/l	98		77-122		
Chloromethane	N.D.	1.	ug/l	87		60-129		
2-Chlorotoluene	N.D.	1.	ug/l	99		80-120		
4-Chlorotoluene	N.D.	1.	ug/l	99		80-120		
1,2-Dibromo-3-chloropropane	N.D.	2.	ug/l	84		56-126		
Dibromochloromethane	N.D.	1.	ug/l	88		72-120		
1,2-Dibromoethane	N.D.	0.5	ug/l	107		76-120		
Dibromomethane	N.D.	1.	ug/l	102		80-120		
1,2-Dichlorobenzene	N.D.	1.	ug/l	100		80-120		
1,3-Dichlorobenzene	N.D.	1.	ug/l	99		80-120		
1,4-Dichlorobenzene	N.D.	1.	ug/l	98		80-120		
Dichlorodifluoromethane	N.D.	2.	ug/l	84		47-120		
1,1-Dichloroethane	N.D.	1.	ug/l	98		79-120		
1,2-Dichloroethane	N.D.	0.5	ug/l	97		64-130		
1,1-Dichloroethene	N.D.	0.8	ug/l	105		80-120		
cis-1,2-Dichloroethene	N.D.	0.8	ug/l	104		80-120		
trans-1,2-Dichloroethene	N.D.	0.8	ug/l	104		80-120		
1,2-Dichloropropane	N.D.	1.	ug/l	101		80-120		
1,3-Dichloropropane	N.D.	1.	ug/l	101		80-120		
2,2-Dichloropropane	N.D.	1.	ug/l	95		67-124		
1,1-Dichloropropene	N.D.	1.	ug/l	100		80-120		
cis-1,3-Dichloropropene	N.D.	1.	ug/l	106		78-120		
trans-1,3-Dichloropropene	N.D.	1.	ug/l	96		79-120		
Ethanol	N.D.	50.	ug/l	122		54-149		
Ethyl t-butyl ether	N.D.	0.5	ug/l	88		66-120		
Ethylbenzene	N.D.	0.5	ug/l	101		79-120		
Freon 113	N.D.	2.	ug/l	100		69-128		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 05/22/12 at 08:53 PM

Group Number: 1308658

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Hexachlorobutadiene	N.D.	2.	ug/l	88		58-120		
2-Hexanone	N.D.	3.	ug/l	113		53-139		
di-Isopropyl ether	N.D.	0.5	ug/l	96		71-124		
Isopropylbenzene	N.D.	1.	ug/l	102		77-120		
p-Isopropyltoluene	N.D.	1.	ug/l	95		77-121		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	94		68-121		
4-Methyl-2-pentanone	N.D.	3.	ug/l	104		58-133		
Methylene Chloride	N.D.	2.	ug/l	103		80-126		
Naphthalene	N.D.	1.	ug/l	78		47-126		
n-Propylbenzene	N.D.	1.	ug/l	97		77-130		
Styrene	N.D.	1.	ug/l	104		77-120		
1,1,1,2-Tetrachloroethane	N.D.	1.	ug/l	101		79-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	ug/l	96		75-123		
Tetrachloroethene	N.D.	0.8	ug/l	101		79-120		
Toluene	N.D.	0.5	ug/l	98		79-120		
1,2,3-Trichlorobenzene	N.D.	1.	ug/l	90		71-120		
1,2,4-Trichlorobenzene	N.D.	1.	ug/l	94		72-120		
1,1,1-Trichloroethane	N.D.	0.8	ug/l	86		70-121		
1,1,2-Trichloroethane	N.D.	0.8	ug/l	103		80-120		
Trichloroethene	N.D.	1.	ug/l	101		80-120		
Trichlorofluoromethane	N.D.	2.	ug/l	99		56-128		
1,2,3-Trichloropropane	N.D.	1.	ug/l	95		76-120		
1,2,4-Trimethylbenzene	N.D.	1.	ug/l	96		69-122		
1,3,5-Trimethylbenzene	N.D.	1.	ug/l	97		68-124		
Vinyl Chloride	N.D.	1.	ug/l	86		56-123		
m+p-Xylene	N.D.	0.5	ug/l	102		77-120		
o-Xylene	N.D.	0.5	ug/l	102		77-120		
Batch number: 12135WAB026	Sample number(s): 6650662							
Acenaphthene	N.D.	0.1	ug/l	95	99	75-114	4	30
Acenaphthylene	N.D.	0.1	ug/l	98	102	80-122	4	30
Anthracene	N.D.	0.1	ug/l	98	100	76-115	1	30
Benzo(a)anthracene	N.D.	0.1	ug/l	102	102	75-116	0	30
Benzo(a)pyrene	N.D.	0.1	ug/l	103	106	64-126	3	30
Benzo(b)fluoranthene	N.D.	0.1	ug/l	98	99	66-125	0	30
Benzo(g,h,i)perylene	N.D.	0.1	ug/l	111	112	66-132	0	30
Benzo(k)fluoranthene	N.D.	0.1	ug/l	109	111	66-131	2	30
4-Bromophenyl-phenylether	N.D.	0.5	ug/l	99	102	75-115	3	30
Butylbenzylphthalate	N.D.	2.	ug/l	97	98	77-115	1	30
Di-n-butylphthalate	N.D.	2.	ug/l	93	95	76-115	2	30
Carbazole	N.D.	0.5	ug/l	98	98	75-120	0	30
4-Chloro-3-methylphenol	N.D.	0.5	ug/l	87	85	70-123	2	30
4-Chloroaniline	N.D.	0.5	ug/l	67	68	43-116	3	30
bis(2-Chloroethoxy)methane	N.D.	0.5	ug/l	86	87	74-124	2	30
bis(2-Chloroethyl)ether	N.D.	0.5	ug/l	85	86	77-108	0	30
2-Chloronaphthalene	N.D.	0.4	ug/l	112	113	43-132	1	30
2-Chlorophenol	N.D.	0.5	ug/l	89	87	71-114	2	30
4-Chlorophenyl-phenylether	N.D.	0.5	ug/l	97	98	77-114	1	30
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	ug/l	80	80	65-113	1	30
Chrysene	N.D.	0.1	ug/l	98	99	76-116	1	30
Dibenz(a,h)anthracene	N.D.	0.1	ug/l	111	113	67-131	2	30
Dibenzofuran	N.D.	0.5	ug/l	94	98	75-117	4	30
1,2-Dichlorobenzene	N.D.	0.5	ug/l	83	82	55-118	2	30
1,3-Dichlorobenzene	N.D.	0.5	ug/l	82	81	61-111	1	30
1,4-Dichlorobenzene	N.D.	0.5	ug/l	81	82	53-119	0	30
3,3'-Dichlorobenzidine	N.D.	2.	ug/l	84	85	37-117	1	30
2,4-Dichlorophenol	N.D.	0.5	ug/l	91	90	77-117	1	30
Diethylphthalate	N.D.	2.	ug/l	85	83	66-116	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 05/22/12 at 08:53 PM

Group Number: 1308658

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2,4-Dimethylphenol	N.D.	0.5	ug/l	91	91	72-110	0	30
Dimethylphthalate	N.D.	2.	ug/l	64	57	29-138	12	30
4,6-Dinitro-2-methylphenol	N.D.	5.	ug/l	90	92	65-126	2	30
2,4-Dinitrophenol	N.D.	10.	ug/l	78	78	52-131	0	30
2,4-Dinitrotoluene	N.D.	1.	ug/l	91	92	76-119	1	30
2,6-Dinitrotoluene	N.D.	0.5	ug/l	95	98	76-118	3	30
bis(2-Ethylhexyl)phthalate	N.D.	2.	ug/l	100	101	78-117	0	30
Fluoranthene	N.D.	0.1	ug/l	102	103	76-119	1	30
Fluorene	N.D.	0.1	ug/l	96	98	76-116	2	30
Hexachlorobenzene	N.D.	0.1	ug/l	92	94	75-119	3	30
Hexachlorobutadiene	N.D.	0.5	ug/l	86	90	57-124	5	30
Hexachlorocyclopentadiene	N.D.	5.	ug/l	61	63	36-118	3	30
Hexachloroethane	N.D.	1.	ug/l	75	77	52-113	2	30
Indeno(1,2,3-cd)pyrene	N.D.	0.1	ug/l	111	112	69-121	1	30
Isophorone	N.D.	0.5	ug/l	87	88	74-117	1	30
2-Methylnaphthalene	N.D.	0.1	ug/l	92	93	69-108	1	30
2-Methylphenol	N.D.	0.5	ug/l	76	75	58-110	1	30
4-Methylphenol	N.D.	0.5	ug/l	71	69	49-108	3	30
Naphthalene	N.D.	0.1	ug/l	88	90	70-111	2	30
2-Nitroaniline	N.D.	0.5	ug/l	90	92	75-120	3	30
3-Nitroaniline	N.D.	0.5	ug/l	87	89	74-113	2	30
4-Nitroaniline	N.D.	0.5	ug/l	73	72	59-100	1	30
Nitrobenzene	N.D.	0.5	ug/l	92	94	75-109	2	30
2-Nitrophenol	N.D.	0.5	ug/l	86	87	76-118	0	30
4-Nitrophenol	N.D.	10.	ug/l	42	42	16-78	0	30
N-Nitroso-di-n-propylamine	N.D.	0.5	ug/l	77	77	69-110	0	30
N-Nitrosodiphenylamine	N.D.	0.5	ug/l	96	96	67-136	1	30
Di-n-octylphthalate	N.D.	2.	ug/l	86	88	68-128	2	30
Pentachlorophenol	N.D.	1.	ug/l	88	91	53-110	4	30
Phenanthrene	N.D.	0.1	ug/l	95	96	76-113	2	30
Phenol	N.D.	0.5	ug/l	40	39	21-67	1	30
Pyrene	N.D.	0.1	ug/l	97	99	75-119	2	30
1,2,4-Trichlorobenzene	N.D.	0.5	ug/l	86	87	71-112	1	30
2,4,5-Trichlorophenol	N.D.	0.5	ug/l	95	96	79-107	1	30
2,4,6-Trichlorophenol	N.D.	0.5	ug/l	100	103	76-120	3	30
Batch number: 12138A20A	Sample number(s): 6650662							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	91	100	75-135	10	30
Batch number: 121350042A	Sample number(s): 6650662							
PCB-1016	N.D.	0.10	ug/l	90	92	51-128	2	30
PCB-1221	N.D.	0.10	ug/l					
PCB-1232	N.D.	0.20	ug/l					
PCB-1242	N.D.	0.10	ug/l					
PCB-1248	N.D.	0.10	ug/l					
PCB-1254	N.D.	0.10	ug/l					
PCB-1260	N.D.	0.15	ug/l	92	94	56-135	2	30
Batch number: 121350013A	Sample number(s): 6650662							
TPH-DRO water C10-C28	N.D.	32.	ug/l	88	94	56-122	7	20
Batch number: 121370007A	Sample number(s): 6650662							
Total TPH	N.D.	40.	ug/l	70	78	52-119	10	20
TPH Motor Oil C16-C36	N.D.	40.	ug/l					
Batch number: 121350014A	Sample number(s): 6650662							
TPH-DRO water C10-C28 w/Si Gel	N.D.	32.	ug/l	81	81	50-124	0	20

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 05/22/12 at 08:53 PM

Group Number: 1308658

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 121370009A	Sample number(s): 6650662							
Motor Oil C16-C36 w/Si Gel	N.D.	40.	ug/l					
Total TPH w/Si Gel	N.D.	40.	ug/l	59	71	50-129	19	20
Batch number: 121351848001	Sample number(s): 6650662							
Cadmium	0.76	0.27	ug/l	102		90-112		
Chromium	N.D.	1.1	ug/l	102		90-110		
Lead	N.D.	2.2	ug/l	103		88-110		
Nickel	N.D.	0.95	ug/l	103		90-111		
Zinc	N.D.	3.2	ug/l	99		90-110		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: N121391AA	Sample number(s): 6650662 UNSPK: P647785								
Acetone	111	110	52-139	2	30				
t-Amyl methyl ether	80	81	65-117	2	30				
Benzene	103	102	72-134	1	30				
Bromobenzene	96	92	82-115	4	30				
Bromochloromethane	98	98	76-134	1	30				
Bromodichloromethane	93	91	78-125	2	30				
Bromoform	79	78	48-118	2	30				
Bromomethane	69	68	38-149	1	30				
2-Butanone	99	102	57-138	2	30				
t-Butyl alcohol	96	94	67-119	2	30				
n-Butylbenzene	97	96	73-128	1	30				
sec-Butylbenzene	99	97	79-125	2	30				
tert-Butylbenzene	97	97	81-121	0	30				
Carbon Disulfide	89	89	67-135	1	30				
Carbon Tetrachloride	93	91	72-135	2	30				
Chlorobenzene	105	100	87-124	5	30				
Chloroethane	77	77	51-145	0	30				
2-Chloroethyl Vinyl Ether	0*	0*	10-151	0	30				
Chloroform	96	93	81-134	4	30				
Chloromethane	85	87	67-154	2	30				
2-Chlorotoluene	100	94	82-118	6	30				
4-Chlorotoluene	97	95	84-122	3	30				
1,2-Dibromo-3-chloropropane	77	75	54-134	2	30				
Dibromochloromethane	84	81	74-116	4	30				
1,2-Dibromoethane	103	99	77-116	4	30				
Dibromomethane	97	95	83-119	2	30				
1,2-Dichlorobenzene	96	92	84-119	4	30				
1,3-Dichlorobenzene	95	92	86-121	3	30				
1,4-Dichlorobenzene	98	95	85-121	3	30				
Dichlorodifluoromethane	89	90	52-129	1	30				
1,1-Dichloroethane	100	98	84-129	2	30				
1,2-Dichloroethane	93	89	68-131	4	30				
1,1-Dichloroethene	111	111	85-142	0	30				
cis-1,2-Dichloroethene	105	103	85-125	2	30				
trans-1,2-Dichloroethene	108	107	87-126	1	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 05/22/12 at 08:53 PM

Group Number: 1308658

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,2-Dichloropropane	99	97	83-124	2	30				
1,3-Dichloropropane	98	93	81-120	4	30				
2,2-Dichloropropane	98	97	69-135	1	30				
1,1-Dichloropropene	105	105	86-137	0	30				
cis-1,3-Dichloropropene	101	99	70-116	2	30				
trans-1,3-Dichloropropene	91	86	74-119	5	30				
Ethanol	110	115	53-146	5	30				
Ethyl t-butyl ether	82	82	74-122	0	30				
Ethylbenzene	104	100	71-134	4	30				
Freon 113	109	108	89-148	0	30				
Hexachlorobutadiene	85	88	56-134	3	30				
2-Hexanone	90	89	55-127	2	30				
di-Isopropyl ether	93	92	70-129	1	30				
Isopropylbenzene	106	101	75-128	4	30				
p-Isopropyltoluene	97	96	76-123	2	30				
Methyl Tertiary Butyl Ether	88	88	72-126	1	30				
4-Methyl-2-pentanone	95	91	63-123	4	30				
Methylene Chloride	103	99	78-133	3	30				
Naphthalene	73	77	52-125	4	30				
n-Propylbenzene	101	97	74-134	3	30				
Styrene	102	99	78-125	3	30				
1,1,1,2-Tetrachloroethane	98	93	82-119	5	30				
1,1,2,2-Tetrachloroethane	89	87	72-128	2	30				
Tetrachloroethene	111	105	80-128	6	30				
Toluene	101	97	80-125	4	30				
1,2,3-Trichlorobenzene	84	87	69-119	4	30				
1,2,4-Trichlorobenzene	88	90	70-124	1	30				
1,1,1-Trichloroethane	89	87	74-131	2	30				
1,1,2-Trichloroethane	100	95	77-124	6	30				
Trichloroethene	105	104	88-133	2	30				
Trichlorofluoromethane	103	106	64-146	2	30				
1,2,3-Trichloropropane	89	85	76-118	5	30				
1,2,4-Trimethylbenzene	96	93	72-130	3	30				
1,3,5-Trimethylbenzene	98	94	76-120	3	30				
Vinyl Chloride	92	93	66-133	1	30				
m+p-Xylene	104	100	79-125	4	30				
o-Xylene	102	97	79-125	5	30				
Batch number: 121351848001	Sample number(s): 6650662 UNSPK: P650551 BKG: P650551								
Cadmium	99	100	83-116	1	20	0.71	0.75	5 (1)	20
Chromium	102	101	81-120	1	20	1.8	1.2	40* (1)	20
Lead	101	102	75-125	1	20	7.7	8.0	4 (1)	20
Nickel	100	101	86-115	1	20	1.8	2.5	31* (1)	20
Zinc	97	98	85-117	1	20	6.7	6.8	1 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 05/22/12 at 08:53 PM

Group Number: 1308658

Surrogate Quality Control

Analysis Name: VOCs by 8260B(Extended) -Water
Batch number: N121391AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6650662	97	101	94	95
Blank	98	101	95	93
LCS	100	106	100	100
MS	98	104	101	101
MSD	98	104	101	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TCL SVOC 8270C Water
Batch number: 12135WAB026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6650662	31	19	59	91	92	103
Blank	58	32	89	92	94	109
LCS	62	35	85	92	96	110
LCSD	62	35	85	95	102	113
Limits:	10-98	10-74	22-150	52-120	63-114	34-118

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 12138A20A

	Trifluorotoluene-F
6650662	83
Blank	83
LCS	102
LCSD	102
Limits:	63-135

Analysis Name: PCBs in Water 8082
Batch number: 121350042A

	Tetrachloro-m-xylene	Decachlorobiphenyl
6650662	97	87
Blank	101	99
LCS	102	98
LCSD	102	95
Limits:	30-150	30-150

Analysis Name: TPH-DRO water C10-C28
Batch number: 121350013A

	Orthoterphenyl
6650662	63
Blank	88
LCS	99
LCSD	102
Limits:	50-154

Analysis Name: TPH-DRO water C10-C28 w/Si Gel

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 05/22/12 at 08:53 PM

Group Number: 1308658

Surrogate Quality Control

Batch number: 121350014A

	Orthoterphenyl
6650662	78
Blank	95
LCS	91
LCSD	90
Limits:	50-154

Analysis Name: TPH Fuels by GC (Waters)
Batch number: 121370007A

	Chlorobenzene	Orthoterphenyl
6650662	85	83
Blank	67	67
LCS	72	80
LCSD	78	83
Limits:	28-152	52-131

Analysis Name: TPH Fuels water w/Si Gel
Batch number: 121370009A

	Chlorobenzene	Orthoterphenyl
6650662	57	62
Blank	62	69
LCS	64	68
LCSD	70	76
Limits:	28-152	52-131

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as "analyze immediately" are not performed within 15 minutes.

ATTACHMENT E

BUILDING PLAN

DRIVEWAY

GATE

3900 PIEDMONT AVENUE

TREATMENT RM #1

TREATMENT RM #2

COUNTER

RECEPTION

FRONT DOORS

BACK DOOR

SIDEWALK

TREATMENT RM #3

TREATMENT RM #4/ KITCHEN

SINK

RR

RR

STORAGE

UTILITY

TRASH

PIEDMONT AVENUE

GATE

SIDEWALK

DRIVEWAY

MONTELL AVENUE

N

0 5 10 20

Scale (ft)

ATTACHMENT F

STANDARD FIELD PROCEDURES

Conestoga-Rovers & Associates

STANDARD FIELD PROCEDURES FOR HAND-AUGER SOIL BORINGS

This document describes Conestoga-Rovers & Associates standard field methods for drilling and sampling soil borings using a hand-auger. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Hand-auger borings are typically drilled using a hand-held bucket auger to remove soil to the desired sampling depth. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the augered hole. The vertical location of each soil sample is determined using a tape measure. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Augering and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

The borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.