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FINAL

ADDITIONAL GROUNDWATER MONITORING WELL INSTALLATION AND THIRD QUARTER 2006 GROUNDWATER MONITORING REPORT

CHEVRON SUNOL PIPELINE SUNOL, CALIFORNIA

Prepared for

Chevron Pipe Line Company
4800 Fournace Place, E320C
Bellaire, Texas 77401

December 2006

URS Corporation
1333 Broadway, Suite 800
Oakland, California 94612

26815217

URS

December 4, 2006

Mr. Jerry Wickham
Department of Environmental Health
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

RE: SLIC Case No. RO0002892, Chevron Sunol Pipeline, 2793 Calaveras Road, Sunol, CA

Dear Mr. Wickham:

On behalf of the Chevron Pipe Line Company (CPL), URS Corporation (URS) has installed two additional groundwater monitoring wells and conducted third quarter 2006 groundwater monitoring activities at the Chevron Sunol Pipeline release site located in Sunol, California. This *Additional Groundwater Monitoring Well Installation and Third Quarter 2006 Groundwater Monitoring Report* discusses the release history and previous investigation activities, the additional well installation activities, the geology and hydrogeology at the site, and the analytical results for soil and groundwater samples collected as part of both the additional monitoring well installation and the third quarter 2006 groundwater monitoring program. This report also provides findings and recommendations based on the investigation and remediation activities conducted at the site to date.

This Report was conducted to fulfill the Alameda County of Environmental Health (ACEH) staff's requests stated in their June 5, 2006 and July 14, 2006 comment letters to CPL. Specifically, this Report is intended to meet the requirement that a groundwater monitoring well installation and third quarter 2006 groundwater monitoring report be submitted by December 4, 2006.

If you have any questions on the Report, please call me at 510-874-3201.

Sincerely yours,

URS CORPORATION

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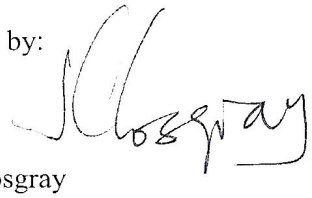
December 4, 2006

Mr. Jerry Wickham
Department of Environmental Health
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Dear Mr. Wickham:

I declare, under penalty of perjury, that the information contained in URS' letter titled "SLIC Case No. RO0002892, Chevron Sunol Pipeline, 2793 Calaveras Rd, Sunol, CA**, Additional groundwater monitoring well installation and third quarter 2006 groundwater monitoring report"** is true and correct to the best of my knowledge at the present time.

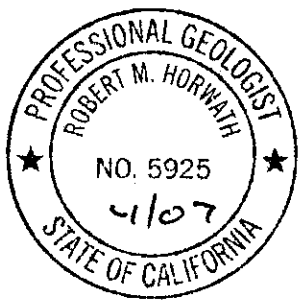
Submitted by:



Jeffrey Cosgray

This report ("**Additional Groundwater Monitoring Well Installation and Third Quarter 2006 Groundwater Monitoring Report**") was prepared under my direct supervision. The information presented in this report is based on our review of available data obtained during our additional monitoring well installation and quarterly sampling activities and our previous subsurface investigation efforts. To the best of our knowledge, we have incorporated into our recommendations all relevant data pertaining to the Chevron Pipeline Release site in Sunol, California.

The additional monitoring well installation and third quarter groundwater monitoring report discussed herein was developed in accordance with the standard of care used to develop this type of report. The assumptions that were made and the recommendations for continued field activities were based on our professional experience and protocols reported in the literature for similar investigations.



URS Corporation
Approved by:

Robert Horwath, P.G.

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ACEH	Alameda County Department of Environmental Health
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CPL	Chevron Pipe Line Company
HASP	Health and Safety Plan
HSA	hollow-stem auger
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
µg/L	microgram(s) per liter
mg/kg	milligram(s) per kilogram
MS	matrix spike
MSD	matrix spike duplicate
msl	mean sea level
PID	photoionization detector
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RPD	relative percent difference
SFPUC	San Francisco Public Utilities Commission
Site	Chevron Sunol Pipeline site
SVE	soil vapor extraction
TPH-GRO	total petroleum hydrocarbons quantified as gasoline range organics
URS	URS Corporation
USEPA	U.S. Environmental Protection Agency
Work Plan	*Work Plan for Additional Groundwater Monitoring Well Installation and SVE System Expansion and Operation* (URS 2006a)

On behalf of the Chevron Pipe Line Company (CPL), URS Corporation (URS) installed two additional groundwater monitoring wells (MW-8 and MW-9) in the unconfined water-bearing zone to further evaluate the soil and groundwater conditions resulting from the August 14, 2005, gasoline pipeline release at the Chevron Sunol Pipeline site (Site) in Sunol, California. The additional investigation was conducted to fulfill the requests stated in the June 5, 2006, and July 14, 2006, Alameda County Environmental Health (ACEH) comment letters to CPL (Appendix A). The investigation was conducted in accordance with *Work Plan for Additional Groundwater Monitoring Well Installation and SVE System Expansion and Operation* (Work Plan) (URS 2006a), which was submitted to ACEH on July 26, 2006.

This report describes the installation of two additional groundwater monitoring wells and discusses the results from the third quarter 2006 groundwater monitoring activities. Specifically, this report is intended to fulfill the ACEH's technical report request to submit a groundwater monitoring well installation and third quarter 2006 groundwater monitoring report by December 4, 2006.

The remainder of this report is organized as follows:

- Section 2 provides a summary of the release history as well as the previous subsurface investigation and remediation activities at the Site.
- Section 3 describes the field activities involved to install of two additional groundwater monitoring wells.
- Section 4 describes the third quarter groundwater monitoring activities.
- Section 5 discusses the geology and hydrogeology of the Site.
- Section 6 summarizes the analytical results of the additional investigation and the third quarter groundwater monitoring results.
- Section 7 summarizes the quality assurance and quality control assessment of the analytical data.
- Section 8 presents the findings and recommendations.
- Section 9 describes the limitations applicable to this report.
- Section 10 presents a list of the reference materials used to prepare this report.

This section provides a summary of the release history as well as the previous investigation and remediation activities at the Site.

2.1 RELEASE HISTORY AND LOCATION

A release of unleaded gasoline occurred at the Site on August 14, 2005, when a third party damaged an underground pipeline (the Bay Area Product Line) during dirt road grading activities. CPL estimated that approximately 700 barrels (29,400 gallons) of unleaded gasoline were released as a spray downslope of the pipeline onto the adjacent hillside and Calaveras Road.

The location of the pipeline release is approximately 2.7 miles south of the intersection of Interstate 680 and Calaveras Road, between Mileposts 2.7 and 2.8 of Calaveras Road, in Sunol Valley, Valle de San Jose Mexican land grant (La Costa Valley Quadrangle) in Alameda County, California. The release location is approximately 4 miles southeast of the city of Sunol, California (Figure 1). The pipeline extends along Calaveras Road and traverses a steep hillside above the east side of the road (Figure 2). The San Francisco Public Utilities Commission (SFPUC) owns the property where the release occurred and leases it to a cattle rancher. A tree nursery (Valley Crest Tree Company) is located immediately west of Calaveras Road at the Site. This operation also leases the property from the SFPUC.

The release location is on a steep, west-facing slope with a grade of 80 to 90 percent in some locations. The grade directly beneath the release location was measured to be 84 percent using an inclinometer on August 25, 2005. Vegetation at the release location is predominantly oak woodlands. An unnamed creek is located approximately 150 to 200 feet north of and downhill from the release location. This creek flows into the Alameda Creek floodplain and joins Alameda Creek seasonally. URS and CPL observed no visible impacts to this creek immediately after the release. A surface-water sample was collected on October 19, 2005, and the sample results confirmed these visual observations (Table 3, URS 2005). URS has outlined a recommendation for continued quarterly surface-water sampling of the unnamed creek in the *First Quarter 2006 Groundwater Monitoring Report* (URS 2006b).

CPL conducted emergency remedial activities immediately after the release occurred. The pipeline rupture was repaired and surface soils surrounding the release were excavated,

characterized, and disposed of off site at an appropriate landfill according to CPL's spill response contractor. In total, 152 tons of gasoline-impacted soil and debris were disposed of as part of the emergency remedial activities. The repaired section of the pipeline was left open and exposed. The impacted portion of Calaveras Road was repaved.

2.2 PREVIOUS INVESTIGATION AND REMEDIAL ACTIVITIES

In response to ACEH's request to evaluate the soil and groundwater impacts of the release, CPL retained URS to conduct an initial subsurface investigation. The purpose of the initial subsurface investigation was to evaluate the lateral and vertical extent of gasoline impacts to soil and groundwater at the release location. As part of this investigation, URS advanced 19 Geoprobe® borings, nine hand-augered borings, two hollow-stem auger (HSA) borings, and four air-rotary auger borings to collect soil and groundwater samples. These activities were conducted between August 25 and November 10, 2005. Three of the air-rotary borings were completed as groundwater monitoring wells (MW-1 through MW-3). The soil boring and monitoring well locations are shown on Figure 2. The investigation results were presented in the *Subsurface Investigation Report* (URS 2005), which was submitted to ACEH on December 15, 2005.

URS conducted the first phase of the initial investigation (10 soil borings [SB-1 through SB-10]) along Calaveras Road in the right-of-way of the County of Alameda Public Works Agency. Typically, the direct-push sampling equipment encountered refusal at approximately 20 feet below ground surface (bgs). No groundwater was encountered during this sampling effort.

The second phase of the investigation was conducted on SFPUC property on the east side of Calaveras Road on the hillside where the release occurred. This phase of the investigation included advancing nine direct-push borings and nine hand-augered borings (SB-11 through SB-27, and SB-13R). During this investigation high photoionization detector (PID) readings and strong gasoline odors were noted in soils from the borings located closest to the spill location. Reduced PID readings and weaker gasoline odors were noted in soils collected farther away from the spill location.

In the nursery on the west side of Calaveras Road, URS advanced two borings with an auger rig in an attempt to locate groundwater (HSA-1 and HSA-2). Groundwater was apparently

encountered in HSA-1 at 37 feet bgs, but not enough water was present to collect a sample. Groundwater was not encountered at HSA-2.

Although groundwater was not sampled, this drilling effort was successful in evaluating site geology to the depths of 37 and 50.5 feet bgs, where refusal was encountered for the two borings. In both borings a gravel layer was encountered where gasoline odors were present. The top of the gravel layer varied in depth from 17–23 feet bgs and the bottom of the layer varied from 37–43 feet bgs. Highly weathered clayey bedrock was encountered at 43 feet bgs at HSA-2; this bedrock was underlain by increasingly less weathered sandy siltstone bedrock from 45 feet bgs to the total explored depth of 50.5 feet bgs.

Due to the difficult drilling conditions encountered at the nursery (i.e., cobbles and refusal with the auger rig), an air-rotary casing hammer drill rig was used to drill four exploratory borings (AR-1 through AR-4) to a maximum depth of 108 feet bgs (AR-2) and complete three of them as monitoring wells (MW-1 through MW-3) to approximately 40 feet bgs. Groundwater was initially encountered in only two of the wells (MW-1 and MW-2), but was present in all three wells after winter rainfall. Although groundwater was not encountered at AR-2, a 75-foot-thick siltstone/claystone confining layer beneath the unconsolidated gravel layer was identified. As discussed in the Work Plan (URS 2006a), one monitoring well, MW-1, frequently had a thin sheen of gasoline on the groundwater surface prior to January 17, 2006. MW-1 displayed the greatest product thickness of 0.17 foot on November 10, 2005. No sheen or measurable free product has been encountered in any of the other monitoring wells.

On November 5 and 8, 2005, as part of site remediation activities, URS installed four soil vapor extraction (SVE) wells (SVE-1D through SVE-4D) on the dirt road where the spill occurred. URS installed and ran a mobile SVE system experimentally for the week beginning November 8, 2005. After the system was determined to be successful, URS continued to operate the system through February 13, 2006. Over the 3 months of operation the SVE system removed approximately 1,041 gallons of hydrocarbons. URS documented the design strategy, operation, monitoring, sampling activities, evaluation, and future recommendations of the SVE system in *Interim Remediation Report, Soil Vapor Extraction System for the Chevron Pipeline Release Location, Sunol, California* (URS 2006c).

URS conducted an additional subsurface investigation from January 17 to 31, 2006 to address the ACEH's request to fully define the extent of contamination in soil and groundwater at the site. As part of the additional subsurface investigation activities URS installed four additional groundwater monitoring wells (MW-4 through MW-7, Figure 2). Three of the wells were installed along Calaveras Road into the confined sandstone water-bearing zone. One well was installed to the west of Calaveras Road to the north of MW-1 and MW-3 into the unconfined gravel water-bearing zone (URS 2006d).

In response to ACEH's request for further evaluation of soil and groundwater conditions at the Site, URS conducted additional subsurface investigation activities on August 15 and 16, 2006. A total of two borings were advanced and completed as groundwater monitoring wells (MW-8 and MW-9) using a truck-mounted HSA and mud rotary drill rig.

3.1 PERMITS AND PRE-DRILLING PROCEDURES

Before initiating field activities, URS obtained soil boring permits from the Zone 7 Alameda County Flood Control and Water Conservation District and an encroachment permit from the County of Alameda Public Works Agency. Copies of these permits are provided in Appendix B. URS notified Underground Service Alert 48 hours before initiating field activities. Also, Cruz Brothers Locators, Inc., a private utility locator from Scotts Valley, California, used electromagnetic methods to clear all boring locations for the presence of underground utilities.

URS developed a site Health and Safety Plan (HASP) that described the potential hazards associated with the proposed field activities (advancing soil borings, soil and groundwater sampling, and well development). The HASP also provided safe work procedures to mitigate the potential work hazards. A copy of the HASP was available on site at all times. The URS site supervisor held tailgate safety meetings each morning to discuss the relevant aspects of the HASP for the day's scheduled work. Job safety analyses were developed for specific work tasks and were discussed during the daily tailgate safety meetings.

3.2 BORINGS AND SAMPLE COLLECTION

URS subcontracted Gregg Drilling and Testing, Inc. (Martinez, California) to advance borings MW-8 and MW-9 to total depths of approximately 25 and 47 feet bgs, respectively, on August 15 and 16, 2006. URS utilized HSA drilling methods to advance boring MW-8 at the foot of the slope along the eastern side of Calaveras Road and mud rotary drilling methods to advance boring MW-9 within the Valley Crest Tree Company property on the west side of Calaveras Road.

Continuous soil cores were obtained at MW-8 ahead of the 8.25-inch-outer-diameter auger flights using split-spoon samplers of various lengths and diameters in an attempt to maximize core recovery. Soil cores were obtained at MW-9 using split-spoon samplers of varying lengths and diameters and a 4-3/8-inch-diameter core barrel. Boring MW-9 was overdrilled with a 6.875-

inch-diameter outer drive casing with bentonite mud slurry injection as the drilling fluid to remove soil cuttings and facilitate well installation. Groundwater was not encountered at MW-8 during drilling and was not observed at MW-9 due to the presence of the bentonite mud slurry drilling fluid.

A URS geologist observed the boring activities and collected soil samples for lithologic characterization and laboratory analysis. Soil cores were logged using the Unified Soil Classification System (ASTM D2487). A portion of each sample interval was collected for headspace analysis to test for the presence of volatile organic compounds using a PID. Any indications of visual or olfactory impacts were noted on the boring log along with the lithologic information (Appendix C). Soil samples were collected for laboratory analysis when indications of impacts were observed. Two soil samples were collected from MW-8 and one soil sample was collected at MW-9. Soil samples intended for possible laboratory analysis were collected using EnCore™ soil sampling kits in accordance with U.S. Environmental Protection Agency (USEPA) Method 5035.

URS placed all soil samples in an ice-filled cooler and transported them under chain-of-custody procedures to Lancaster Laboratories, Inc., of Lancaster, Pennsylvania. The California Department of Health Services has certified this laboratory (California Certification No. 2116). The chain-of-custody forms and the complete laboratory analytical results are provided in Appendix D.

Investigation-derived waste, including soil cuttings, drilling fluid, and decontamination rinsate, was stored on site in 55-gallon drums. All solid and liquid investigation-derived waste was disposed of off site at Filter Recycling Services, of Rialto, California, a CPL-approved facility, on September 20, 2006. In total, approximately 1,400 pounds of soil and 605 gallons of liquid were disposed of as part of site investigation activities. Copies of the waste manifests are provided in Appendix E.

3.3 MONITORING WELL INSTALLATION AND DEVELOPMENT

After boring completion, borings MW-8 and MW-9 were completed as groundwater monitoring wells. These wells were designed and constructed so that they could be converted to groundwater extraction wells, if necessary. Both wells were constructed with 2-inch-diameter, flush-threaded,

Schedule 40 polyvinyl chloride (PVC) blank casings and 0.020-inch-slot PVC well screens. PVC bottom caps extend approximately 0.5 foot below the well screen. The screened interval extended from 14.5 to 24.5 feet bgs in Well MW-8 and from 36 to 46 feet bgs in Well MW-9. The wells were completed with #3 RMC™ sand filter packs placed within the annulus of each well from the bottom of the casing to approximately 0.5 to 1 foot above the top of the well screen. The annulus of each well was sealed with approximately 2 feet of hydrated bentonite chips on top of the filter pack, and a Portland cement and 5 percent bentonite grout slurry seal was tremied to the surface. All wells were completed with flush-mount vault box completions and locking watertight well caps. Copies of the soil boring logs and the well construction details are provided in Appendix C. The well completion details for all nine groundwater monitoring wells at the Site (Wells MW-1 through MW-9) are summarized in Table 1.

On August 18, 2006, after allowing the cement grout seal to cure and the groundwater levels to stabilize for approximately 48 hours, a URS geologist and a Gregg technician developed wells MW-8 and MW-9. The development logs are presented in Appendix F. Total well depths and fluid levels were measured using an oil/water interface probe. The wells were developed using a surge block to remove sediment from the well and filter pack and a 5-foot stainless-steel bailer to purge the entrained sediments. MW-9 was also purged using a Grunfos pump. MW-8 was purged dry, and at least three well volumes (well casing volume plus sandpack volume) of groundwater were removed from MW-9 before considering the wells developed. Periodic measurements of pH, conductivity, temperature, dissolved oxygen, and turbidity were recorded during development using a Horiba U-10 multiparameter meter. Hydrocarbon odors were observed from both wells and a minor product sheen was observed on the purge water from MW-9. All purge water generated during well development was stored on site in 55-gallon drums and disposed of off site at a CPL-approved facility on September 20, 2006.

3.4 ANALYSIS PROGRAM

All soil samples collected for laboratory analysis were placed in a cooler with ice and transported under URS chain of custody to Lancaster Laboratories as described above. The samples were analyzed for the following:

- Total Petroleum Hydrocarbons: Gasoline Range Organics (TPH-GRO) by N. CA LUFT GRO
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8260B

On August 22 through 24, 2006, URS conducted quarterly groundwater monitoring activities to assess the groundwater conditions at the Site. As part of this field effort, URS measured the fluid levels at all nine groundwater monitoring wells (MW-1 through MW-9) and collected analytical samples at seven groundwater monitoring wells (MW-2 through MW-8). URS also collected a surface-water sample for analysis from the unnamed creek, located northwest and downslope of the release location, at the Site (Figure 2).

4.1 FLUID LEVEL COLLECTION AND SAMPLING METHODOLOGY

Prior to collecting groundwater samples, the fluid levels were measured at each well from the top of casing using an electronic oil/water interface meter. Free product was detected at MW-1 and MW-9 with thicknesses of 0.03 and 0.04 foot, respectively. The measured fluid levels are displayed in Table 2 and the calculated groundwater and product elevations are displayed in Table 3.

After measuring the fluid levels at each well, URS conducted groundwater sampling. As discussed in *First Quarter 2006 Groundwater Monitoring Report* (URS 2006b), prior to sampling, MW-2 through MW-5 were purged using low-flow methods and MW-6 and MW-7 were purged dry. Due to poor recharge, MW-8 was also purged dry. Due to the presence of free product at MW-1 and MW-9, these wells were not sampled during third quarter groundwater monitoring activities.

Both purging methods were conducted using disposable low-density polyethylene tubing and a stainless steel electronic submersible continuous discharge pump.

A surface-water sample, labeled SW-Creek, was also collected from the unnamed creek northwest and downslope of the release location.

4.2 MW-2 THROUGH MW-5

After remeasuring the groundwater levels at MW-2 through MW-5, the pump intake was slowly lowered into position in either the center of each well screen if the water level was higher than the top of the screen or the center of the water column if the water level was lower than the top of the screen.

Low-flow purging rates were between 200 to 250 milliliters per minute depending on the rate of recharge at each well. During low-flow purging, the water level in each well was measured periodically to monitor drawdown. The water levels in all of the unconfined water-bearing zone wells (MW-2 through MW-4) were substantially lower than in the previous two quarters due to a lack of precipitation. Groundwater encountered at MW-3 and MW-4 was not hydraulically connected with the unconfined water-bearing zone and represented standing water in the sump of each well installed below the gravel/bedrock contact. Therefore, stabilized drawdown of less than 0.4 foot was not achieved at these wells and the groundwater samples collected did not represent formation water.

Although the drawdown at MW-5 was greater than 0.33 foot, the water level stabilized at 1.33 feet below the static water level after an initial drop when purging began. The static and final groundwater levels before and after sampling are provided on the low-flow groundwater sampling forms for Monitoring Wells MW-1 through MW-5, included in Appendix G.

In addition to monitoring the water level at each well during low-flow sampling, parameters such as temperature, pH, conductivity, oxygen reduction potential, dissolved oxygen, and turbidity of the groundwater were monitored using an in-line flow-through cell and multiparameter device. The multiparameter device was calibrated both days prior to sampling. During purging, the parameter readings described above were recorded every 3 minutes until the parameters stabilized.

At MW-2 and MW-5, where low-flow purging was achievable, the parameters were considered to be stable when three consecutive readings were within the following guidelines: pH +/- 0.2 pH units, conductivity +/- 3 percent of reading, oxygen reduction potential +/- 20 millivolts , dissolved oxygen +/- 0.2 milligram per liter, turbidity +/- 1.0 nephelometric turbidity units (Appendix G). Parameters were also recorded at MW-3 and MW-4, but were not evaluated for stability because the purge water did not represent groundwater from formation.

After monitoring the field parameters, the flow through cell was detached from the pump and tubing assembly. Groundwater samples were collected from MW-2 through MW-5 directly from the pump tubing.

4.3 MW-6 THROUGH MW-8

Because of slow recharge rates at MW-6 through MW-8, low-flow purging methods were not attempted. Instead, the monitoring wells were purged dry. At MW-6, MW-7, and MW-8, approximately 30, 35, and 4 gallons were removed from each well, respectively. After the wells were purged dry, the recharging water levels were monitored until sufficient water was present to collect the groundwater samples. Once a sufficient water column was present, the pump was restarted and operated for approximately 1 minute to flush out any stagnant water remaining in the pump and tubing assembly. The flow-rate during sample collection at MW-6 through MW-8 was approximately 250 to 500 milliliters per minute.

4.4 ANALYTICAL PROGRAM

The groundwater samples from each well were collected in laboratory-provided containers and placed on ice in a cooler immediately after collection. Each sample cooler included a trip blank and was submitted to Lancaster Analytical Laboratory in Lancaster, Pennsylvania, a California Certified Laboratory, under URS chain-of-custody procedures. The samples were analyzed on a standard turn-around time.

As discussed in *Additional Subsurface Investigation Report* (URS 2006d), groundwater samples collected during quarterly groundwater sampling activities are analyzed for the following parameters:

Gasoline Compounds

- BTEX by USEPA Method 8260B
- Ethanol and methanol by USEPA Method 8015B
- TPH-GRO by N. CA LUFT GRO

Geochemical Indicator Parameters

- Nitrate and sulfate by USEPA Method 300.0
- Total manganese and dissolved iron by USEPA Method 6010B
- Ferrous iron by SM20 Method 3500-FE B Modified
- Methane by USEPA Method 8015B Modified
- Alkalinity including breakdown by USEPA Method 310.1

- Total dissolved solids by USEPA Method 160.1

The surface-water sample was analyzed for BTEX, ethanol, methanol, and TPH-GRO.

5.1 GEOLOGY

A URS geologist logged soil borings MW-8 and MW-9, advanced as part of the additional monitoring well installation activities. The logs for the borings are presented in Appendix C.

Based on the log from MW-8 the local lithology consists of sandy silt to silty sand extending from ground surface to 24.5 feet bgs. The silty and sandy layers are underlain by sandstone bedrock. The silty gravel zone observed above the sandstone bedrock in the adjacent boring MW-5 was not encountered at MW-8. The absence of the gravelly zone at MW-8 further indicates the discontinuous nature of this gravelly zone to the north of MW-5, as discussed in *Additional Subsurface Investigation Report* (URS 2006d).

No continuous water-bearing zone was encountered during drilling at MW-8. However, groundwater was observed after well completion during well development activities. The groundwater prior to well development was measured at 19.44 feet bgs (Appendix F).

Based on the log for MW-9, the local lithology consists of interbedded silty sand and sandy silt from ground surface to 25 feet bgs. A coarse gravel layer extending from 25 to 46 feet bgs underlies the silty sand and sandy silt layers. Highly weathered clayey siltstone bedrock underlies the gravel zone. The lithology encountered at MW-9 is consistent with the lithology encountered within previous soil borings advanced on the nursery property (MW-1 through MW-4, HSA-1 and HSA-2, and AR-2).

Due to mud rotary drilling methods utilized to advance soil boring MW-9, the presence or absence of groundwater during drilling could not be determined. Groundwater and free product were observed at MW-9, however, after well completion during well development activities. The product and groundwater levels after well development were 44.03 and 44.07 feet bgs, respectively (Appendix F).

5.2 HYDROLOGY

As part of the third quarter 2006 groundwater monitoring activities, the fluid levels were measured in each well from the top of casing using an electronic oil/water interface meter. Free product was detected in Wells MW-1 and MW-9 at thicknesses of 0.03 and 0.04 foot, respectively. No free product was detected in the other seven wells (MW-2 through MW-8). The

measured depths to product and groundwater are displayed in Table 2 and the calculated product and groundwater elevations are displayed in Table 3.

The groundwater elevations for the unconfined water-bearing zone wells (MW-1 through MW-4 and MW-9), located in the nursery, range from a high of 291.04 feet above average mean sea level (msl) at MW-2 to a low of 290.48 feet msl at MW-9. The groundwater elevation for MW-8, which screens an apparent recharge source for the nursery unconfined water-bearing zone, was 315.22 feet msl.

As previously discussed in *Additional Subsurface Investigation Report* (URS 2006d), the groundwater flow within the unconfined water-bearing zone observed in the nursery wells is controlled by seasonal groundwater fluctuations and the irregular siltstone bedrock surface at the gravel-siltstone contact. Due to dry seasonal conditions, the groundwater elevations at both MW-3 and MW-4 during third quarter 2006 monitoring activities were below the gravel-siltstone contact at each location and, therefore, were not considered hydraulically connected to the unconfined water-bearing zone. Because these wells were isolated from the unconfined water-bearing zone they were not used in the construction of the unconfined water-bearing zone contour map. Only the groundwater data from MW-1, MW-2, and MW-9 were considered in the contouring of the nursery unconfined water-bearing zone. Based on data from these wells, the inferred local groundwater flow direction within the nursery unconfined water-bearing zone appears to be in a northerly direction with an inferred hydraulic gradient of 0.005 feet/feet (Figure 3).

As discussed above, the groundwater observed at MW-8 appears to represent a local recharge source for the unconfined water-bearing zone. The groundwater elevation difference between MW-8 and the nursery wells (MW-1, MW-2, and MW-9) suggests that groundwater from the hillside flows into the unconfined water-bearing zone in a northwesterly direction with a steep hydraulic gradient before leveling out within the localized basin created by the surface of the siltstone bedrock. Once the groundwater from the hillside has entered the nursery unconfined water-bearing zone system it appears to flow toward the north with a shallow hydraulic gradient. Further westward groundwater migration is impeded by the ramped up bedrock surface (URS 2006d). Figure 3 provides groundwater contours for the local recharge source and the unconfined

water-bearing zone as well as bedrock surface contours for the gravel-siltstone contact for comparison.

The potentiometric surface elevations for the confined sandstone water-bearing zone wells (MW-5 through MW-7), located along the eastern shoulder of Calaveras Road, range from 313.72 to 322.88 feet above msl, with the highest groundwater elevation measured from MW-5, the middle well. The groundwater flow direction and hydraulic gradient have not been calculated for the confined sandstone water-bearing zone because these wells are installed in essentially a straight line along Calaveras Road at the base of the hill slope for monitoring purposes. The relative groundwater elevations for these wells are similar with previous quarterly groundwater levels and will continue to be monitored during future quarterly groundwater sampling events. The groundwater elevations for these wells are displayed on Figure 4.

This section presents the analytical results from the soil samples collected as part of the additional groundwater monitoring well installation and the groundwater results from the third quarter 2006 groundwater monitoring activities. The complete laboratory analytical reports for both the additional investigation and the quarterly groundwater monitoring program samples are provided as Appendix D. Table 4 provides a summary of the soil analytical results and Tables 5 and 6 provide summaries of the groundwater analytical results for gasoline compounds and geochemical indicators and other parameters, respectively.

During the installation of additional groundwater monitoring wells, a total of three soil samples were collected from borings MW-8 and MW-9. During the third quarter of 2006 groundwater samples were collected from each of the seven monitoring wells (Wells MW-2 through MW-8). No groundwater samples were collected from MW-1 and MW-9 because measurable free product was present at the time of sample collection. A duplicate sample was also collected from Well MW-7.

6.1 SOIL SAMPLES

Table 4 provides a summary of the soil analytical results for the samples collected during the additional investigation. Two soil samples were collected from boring MW-8 (depths 16.5 to 17.5 bgs and 20.5 to 21 bgs). The TPH-GRO concentrations ranged from 50 milligrams per kilogram (mg/kg) at MW-8-20.5 to 1,100 mg/kg at MW-8-16.5. The benzene concentrations ranged from 0.45 mg/kg at MW-8-20.5 to 1.7 mg/kg at MW-8-16.5. The toluene concentrations ranged from 2.4 mg/kg at MW-8-20.5 to 52 mg/kg at MW-8-16.5. The ethylbenzene concentrations ranged from 0.21 mg/kg at MW-8-20.5 to 16 mg/kg at MW-8-16.5. The total xylenes concentrations ranged from 1.2 mg/kg at MW-8-20.5 to 170 mg/kg at MW-8-16.5.

For the soil sample collected from boring MW-9 (depth 11.5 to 13 feet bgs), the concentrations of TPH-GRO and BTEX were all below the laboratory reporting limits.

6.2 GROUNDWATER SAMPLES

6.2.1 Gasoline Compounds

For the groundwater samples collected as part of the third quarter groundwater monitoring activities from the unconfined water-bearing zone wells at the nursery (Wells MW-2 through

MW-4), some concentrations of TPH-GRO and BTEX were slightly elevated from the second quarter 2006 results. The MW-2 sample contained trace amounts of benzene at 0.5 µg/L, the MW-3 sample contained TPH-GRO at 170 micrograms per liter (µg/L), and the MW-4 sample contained TPH-GRO, benzene, and xylenes at 70, 0.5, and 1 µg/L, respectively. Ethanol and methanol concentrations remained below laboratory reporting limits in all three samples (MW-2 through MW-4). Both Wells MW-1 and MW-9 contained measurable free-product and were not sampled.

For the confined water-bearing zone wells along Calaveras Road (MW-5 through MW-7), the concentrations of TPH-GRO, BTEX, methanol, and ethanol in the groundwater samples remained below their respective laboratory reporting limits for Wells MW-5 and MW-6. At MW-7, the concentrations of benzene, toluene, and xylenes were reported at 2, 1, and 3 µg/L, respectively. The concentrations for the same constituents of the duplicate sample collected at MW-7 were reported at 2, 0.6, and 2 µg/L, respectively. TPH-GRO, ethanol, and methanol concentrations remained below laboratory reporting limits for the MW-7 sample and duplicate.

For the shallow water-bearing zone well located along Calaveras Road (MW-8), the TPH-GRO concentration was reported at 18,000 µg/L. The concentrations of BTEX constituents were reported at 190, 2,600, 590, and 2,800 µg/L, respectively. The ethanol and methanol concentrations were below their respective laboratory reporting limits for MW-8.

6.2.2 Geochemical Indicators and Other Parameters

Geochemical indicator parameters were collected for MW-2 through MW-8 during third quarter 2006 groundwater monitoring activities (Table 6). More data are required to establish a meaningful enhanced bioremediation and/or natural attenuation review. URS recommends continued monitoring of the geochemical indicator parameters at the Site during future quarterly groundwater sampling activities.

7.1 SUMMARY OF QA/QC REVIEW PARAMETERS

The quality assurance/quality control (QA/QC) program includes using standard sample collection procedures in the field and established analytical methodologies in the laboratory. Laboratory and field QC sample results were evaluated to assess the quality of the individual sample results and overall method performance. Analytical performance was evaluated on a "batch QC" basis by evaluating the QC sample results for groups of samples that were prepared and analyzed together. The data evaluation performed included review of:

- Blanks (laboratory method blanks and trip blanks)
- Spikes (laboratory control sample spikes, matrix control spikes, and surrogate spikes)
- Duplicates (laboratory control sample duplicates and field duplicates)
- Sample Integrity (chain-of-custody documentation, sample preservation, and holding time compliance)

7.1.1 Method Holding Times

Analytical methods have prescribed holding times. The method holding time is defined as the maximum amount of time after collection that a sample may be held prior to extraction and/or analysis. Sample integrity becomes questionable for samples extracted and/or analyzed outside of the prescribed holding times due to degradation and/or volatilization of the sample. The QA/QC review identifies results with exceeded method holding times. No analytical method holding times were exceeded during the current reporting period.

7.1.2 Method Blanks

Method blanks are prepared in the laboratory using deionized, distilled (Reagent Grade Type II) water. Method blanks are extracted and/or analyzed following the same procedures as an environmental sample. Analysis of the method blank indicates potential sources of contamination from laboratory procedures (e.g., contaminated reagents, improperly cleaned laboratory equipment) or persistent contamination due to the presence of certain compounds in the ambient laboratory environment. The QA/QC review identifies method blanks with detections of target analytes and evaluates the effect of the detections on associated sample results.

7.1.3 Trip Blanks

Trip blanks are samples of deionized, distilled (Reagent Grade Type II) water that are prepared in the laboratory, taken to the field, retained on site throughout sample collection, returned to the laboratory, and analyzed with the environmental samples. The QA/QC review identifies trip blanks with detections of target analytes and evaluates the effect of the detections on associated sample results.

7.1.4 Matrix Spikes and Laboratory Control Samples

Matrix spikes (MSs), matrix spike duplicates (MSDs), laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) are analyzed by the laboratory to evaluate the accuracy and precision of the sample extraction and analysis procedures and to evaluate potential matrix interference. Matrix interference, the effect of the sample matrix on the analysis, may partially or completely mask the response of analytical instrumentation to the target analyte(s). Matrix interference may have a varying impact on the accuracy and precision of the extraction and/or analysis procedures, and may bias the sample results high or low.

The MS or MSD is prepared by adding a known quantity of the target compound(s) to a sample. The sample is then extracted and/or analyzed as a typical environmental sample and the results are reported as percent recovery. The spike percent recovery is defined as:

$$\text{Recovery (\%)} = \frac{\text{spike analysis result - original sample concentration}}{\text{concentration of spike addition}} \text{ x100\%}$$

MS and MSD recoveries are reviewed for compliance with laboratory-established control limits to evaluate the accuracy of the extraction and/or analysis procedures.

LCSs and LCSDs are prepared exactly like MSs and MSDs using a clean control matrix rather than an environmental sample. Typical control matrices include Reagent Grade Type II water and clean sand. LCSs and LCSDs are used to evaluate laboratory accuracy independent of matrix effects.

The QA/QC review identifies spike recoveries outside laboratory control limits and evaluates the effect of these recoveries on the associated sample results.

7.1.5 Laboratory Duplicate Analyses

The laboratory performs duplicate analyses to evaluate the precision of analytical procedures. The laboratory may perform MSD and/or LCSD analyses.

Precision is evaluated by calculating a relative percent difference (RPD) using the following equation:

$$\text{RPD (\%)} = \left| \frac{\text{(Spike Concentration – Spike Duplicate Concentration)}}{\frac{1}{2}\text{(Spike Concentration + Spike Duplicate Concentration)}} \right| \text{ x } 100\%$$

The RPD is compared to laboratory-established control limits to evaluate analytical precision. The QA/QC review identifies RPDs outside laboratory control limits and evaluates the effect of these recoveries on the associated sample results.

7.1.6 Field Duplicate Analyses

Field duplicate samples are collected in the field and analyzed to evaluate the heterogeneity of the matrices. One field duplicate sample, MW-X (MW-7-DUP), was collected during this sampling event.

7.1.7 Surrogate Recoveries

Surrogates are organic compounds that are similar to the target analytes in terms of their chemical structures and response to the analytical instrumentation, but are not usually detected in environmental samples. Surrogates are added to each environmental and laboratory QC sample to monitor the effect of the matrix on the accuracy of the extraction and/or analysis of organic analytes. Results for surrogate analyses are reported in terms of percent recovery (defined above). Reported recoveries are compared to laboratory-established control limits to evaluate sample-specific accuracy. The QA/QC review identifies surrogate recoveries outside laboratory control limits and evaluates the effect of these recoveries on the sample results.

7.2 EXPLANATION OF ANALYTICAL DATA QUALIFIERS

The analytical data were reviewed and qualified following USEPA guidelines for organic data review (USEPA 1999). A “J” qualifier indicates that the analyte was positively identified, but

that the associated numerical value is an approximate concentration of the analyte in the sample. A "UJ" qualifier indicates that the analyte was not detected above the reported sample quantitation limit (i.e., the laboratory reporting limit); however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. An "R" qualifier indicates that the sample results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria and, therefore, the presence or absence of the analyte could not be verified.

7.3 SUMMARY OF QA/QC REVIEW FINDINGS

The results of the data evaluation are summarized in the following paragraphs.

The continuing calibration standard injected before the method blank was below QC limits in samples MW-5 and MW-8 for methane. The methane detection in sample MW-5 was qualified with a "J," and the nondetect methane result in sample MW-8 was qualified with a "UJ."

All reported results for the laboratory method blanks were nondetect (less than the laboratory reporting limit), indicating no evidence of contamination from laboratory instrumentation. All reported results for the trip blanks were nondetect (less than the laboratory reporting limit), indicating no evidence of contamination during shipping of the laboratory samples. One field duplicate sample, MW-X (MW-7-DUP), was collected during this sampling event. The RPD for ethylbenzene was 50 percent and the RPD for xylenes was 40 percent, indicating sample heterogeneity. The ethylbenzene and xylenes results in Samples MW-7 and MW-X were qualified with a "J," indicating that it was not possible to verify that the sample matrix was homogeneous and the results repeatable.

All reported LCSs, MSs, and surrogate spike recoveries were within laboratory QC limits, with the exception of the following:

- Low trifluorotoluene surrogate recoveries were observed in Samples MW-8-16.5-17.5 and MW-8-20.5-21. The TPH-GRO detections in these samples were qualified with a "J."

Chain-of-custody documentation is complete and consistent. Samples were preserved as required per method specifications. All samples were analyzed within method-specified holding times. Based on the data quality evaluation, no systematic problems were detected and the overall data

objectives for sample contamination, precision, accuracy, and sample integrity were met. These analytical data are of acceptable quality and may be used for their intended purposes.

Based on the results of the additional groundwater monitoring well installation activities and the third quarter groundwater sampling activities, URS made the following findings:

- Lithologic information obtained from soil boring MW-8 supports URS' previous discussion of the discontinuous nature of the thin gravelly zone along Calaveras Road encountered at borings MW-5 and MW-6 at approximately 20 to 25 feet bgs and 15 to 18 feet bgs, respectively (URS 2006d).
- Lithologic information obtained from soil boring MW-9 shows that the subsurface conditions in the northern part of the nursery are consistent with the lithologies encountered at previous investigation borings in that area. The elevation of the siltstone bedrock surface at the gravel-siltstone contact encountered at MW-9 also shows that the local bedrock basin slopes downward to the north. Groundwater flow within the nursery unconfined water-bearing zone appears to generally follow the siltstone bedrock surface contours.
- Groundwater from within the unconfined water-bearing zone appears to be controlled by seasonal groundwater fluctuations and the irregular siltstone bedrock surface at the gravel-siltstone contact. Due to dry seasonal conditions, MW-3 and MW-4 are isolated from the unconfined water-bearing zone because they are located on the western rise of the localized bedrock basin. Because MW-3 and MW-4 are not connected with the unconfined water-bearing zone, the samples collected from these wells are not representative of formation water. Instead, these samples represent standing water present within the well sump and surrounding sandpack.
- Unconfined groundwater encountered at MW-8 at the base of the hillside appears to act as a recharge source for the nursery unconfined water-bearing zone. The gravelly zone encountered at MW-5 appears to be very discontinuous and was not encountered at the adjacent boring MW-8. However, the presence of groundwater at MW-8, within unconsolidated soils above the sandstone bedrock contact, supports URS' previous hypothesis that groundwater from the hillside acts as a preferential pathway for groundwater transport (URS 2006d).

- Confined sandstone water-bearing zone groundwater levels observed at MW-5 through MW-7 during the third quarter 2006 groundwater monitoring activities are consistent with measurements taken during previous quarterly monitoring activities.
- Groundwater sample concentrations for gasoline compounds collected during the third quarter 2006 groundwater monitoring activities at MW-2 through MW-7 are fairly consistent with previous findings. Trace concentrations of benzene were present in the MW-2 sample and low levels of gasoline compounds were present in the MW-3 and MW-4 samples, where contamination was not present during previous quarters. It should also be noted that since MW-3 and MW-4 were hydraulically isolated from the nursery unconfined water-bearing zone, these sample concentrations are not representative of formation water.
- A thin layer of free product was encountered at MW-1 and newly installed MW-9 during third quarter 2006 monitoring activities. Free product was encountered at MW-1 during November and December 2005, but was not present during any of the previous groundwater monitoring activities in 2006. It appears that the free product observed at MW-1 may only accumulate as groundwater levels drop due to dry seasonal conditions. Since no previous fluid level measurements exist for MW-9, no hypothesis can be made about the seasonal influence of free-product accumulation at this well location. The presence of free product, however, confirms that the contamination has migrated to the north at least as far as MW-9. Visual observations of the unnamed creek approximately 140 feet to the north of MW-9 during recent site visits indicate that no contaminants have migrated into the surface water.
- Elevated groundwater sample concentrations for gasoline compounds from the MW-8 sample further support URS' hypothesis that the shallow groundwater encountered at MW-8 acts as a preferential pathway for both groundwater and contaminant transport to the nursery wells.

Based on the findings of this additional subsurface investigation and the third quarter groundwater monitoring activities, URS has made or is currently implementing the following recommendations:

- Continue quarterly groundwater monitoring at all nine monitoring wells (MW-1 through MW-9) to further assess the effect of seasonal groundwater fluctuations on groundwater flow direction and contaminant transport. Due to free product observed at MW-9, URS proposes

moving the sampling location of the unnamed creek to the northwest of MW-9, where the unnamed creek flows into the floodplain, to better monitor potential contaminant migration into surface water.

- Continue analyzing future quarterly groundwater samples for geochemical indicator parameters.
- Conduct free-product bailing at MW-1 and MW-9 when measurable product is recorded.
- Use recent survey data of the unnamed creek along with existing nursery unconfined water-bearing zone groundwater data to assess whether the two systems appear to be hydraulically connected.
- Resume SVE efforts for up to 6 months with an expanded network of nine SVE wells located along the steep hillside below the release location.

No evaluation is thorough enough to preclude the possibility that materials that are currently considered hazardous or materials that may be considered hazardous in the future may be present at a site. Because regulatory evaluation criteria are constantly changing, concentrations of contaminants presently considered nonhazardous may, in the future, fall under different regulatory standards and require remediation. Opinions and judgments expressed herein, which are based on understanding and interpretation of current regulatory standards, should not be construed as legal opinions. This document and the information contained herein have been prepared solely for CPL's use, and reliance on this report by third parties will be at such party's sole risk.

The report discussed herein was developed in accordance with the standard of care used to develop this type of report. The assumptions that were made and the recommendations for additional field activities were based on our professional experience and protocols reported in the literature for similar investigations.

URS Corporation. 2005. *Subsurface Investigation Report, Chevron Pipeline Release, Sunol, California*. December. (Referred to as Subsurface Investigation Report in text)

URS Corporation. 2006a. *Work Plan for Additional Groundwater Monitoring Well Installation and SVE System Expansion and Operation, Chevron Sunol Pipeline, Sunol California.* July. (Referred to as Work Plan in the text)

URS Corporation. 2006b. *SLIC Case No. RO0002892, Chevron Sunol Pipeline, 2793 Calaveras Road, Sunol, CA: First Quarter 2006 Groundwater Monitoring Report*. Memorandum to Jerry Wickham, Alameda County Environmental Health, April 13. (Referred to as *First Quarter 2006 Groundwater Monitoring Report* in Text)

URS Corporation. 2006c. *Interim Remediation Report, Soil Vapor Extraction System for the Chevron Pipeline Release Location, Sunol, California*. February.

URS Corporation. 2006d. *Additional Subsurface Investigation Report, Chevron Sunol Pipeline, Sunol California.* May.

U.S. Environmental Protection Agency (USEPA). 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. October.

Tables

TABLE 1
Monitoring Well Construction Details
Additional Monitoring Well Installation and
Third Quarter 2006 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date Completed	Easting	Northing	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Screen Top (feet bgs)	Screen Bottom (feet bgs)	Total Depth (feet bgs)	Well Diameter
MW-1	10/20/2005	6168139.39	2025761.69	328.49	328.04	29.3	39.3	40.0	4" PVC
MW-2	10/21/2005	6168115.96	2025712.04	324.85	324.15	23.3	38.3	39.0	4" PVC
MW-3	10/21/2005	6168083.90	2025767.15	326.05	325.65	21.3	36.3	37.0	4" PVC
MW-4	1/31/2006	6168112.65	2025821.72	329.97	329.67	30.7	40.7	41.0	4" PVC
MW-5	1/27/2006	6168225.98	2025764.36	335.14	334.81	39.5	49.5	49.8	4" PVC
MW-6	1/27/2006	6168213.24	2025711.81	332.61	332.38	34.7	49.7	50.0	4" PVC
MW-7	1/27/2006	6168231.84	2025799.52	336.46	336.22	34.7	49.7	50.0	4" PVC
MW-8	8/15/2006	6168227.45	2025772.92	335.23	333.93	14.5	24.5	25.0	2" PVC
MW-9	8/16/2006	6168158.53	2025840.07	333.49	333.07	36.0	46.0	46.5	2" PVC

Notes:
Northing and Easting coordinates based on the California Coordinate System Zone 3 NAD83 Datum.
MW-1 through MW-3 surveyed on October 31, 2005.
MW-4 through MW-7 surveyed on February 14, 2006.
MW-8 and MW-9 surveyed on November 10, 2006.
msl - Elevation values displayed in feet above average mean sea level surveyed to NAVD88 datum
bgs - Below ground surface.

TABLE 2
Monitoring Well Groundwater Levels
Additional Monitoring Well Installation and
Third Quarter 2006 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Screen Interval (feet bgs)	Date	Depth to Groundwater (feet TOC-N)	Depth to Product (feet TOC-N)	Product Thickness (feet)
MW-1	29.3-39.3	2/21/2006	36.34	--	--
		6/7/2006	34.28	--	--
		8/22/2006	37.11	37.08	0.03
MW-2	23.3-38.3	2/21/2006	32.19	--	--
		6/7/2006	30.23	--	--
		8/22/2006	33.11	--	--
MW-3	21.3-36.3	2/21/2006	31.97	--	--
		6/7/2006	30.91	--	--
		8/22/2006	34.66	--	--
MW-4	30.7-40.7	2/21/2006	36.72	--	--
		6/7/2006	35.76	--	--
		8/22/2006	38.79	--	--
MW-5	39.5-49.5	2/21/2006	11.48	--	--
		6/7/2006	10.61	--	--
		8/22/2006	11.93	--	--
MW-6	34.7-49.7	2/21/2006	18.02	--	--
		6/7/2006	16.83	--	--
		8/22/2006	18.66	--	--
MW-7	34.7-49.7	2/21/2006	15.43	--	--
		6/7/2006	16.68	--	--
		8/22/2006	16.77	--	--
MW-8	14.5-24.5	8/22/2006	18.71	--	--
MW-9	36.0-46.0	8/22/2006	42.59	42.55	0.04

Notes:
Groundwater and product levels measured from top of casing - north.
Screen intervals measured from feet below ground surface (ft bgs)

TABLE 3
Monitoring Well Groundwater Elevations
Additional Monitoring Well Installation and
Third Quarter 2006 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date Completed	Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Date Measured	Groundwater Elevation (feet msl)	Product Elevation (feet msl)	Product Thickness (feet)
MW-1	10/20/2005	328.49	328.04	2/21/2006	291.70	--	--
				6/7/2006	293.76	--	--
				8/22/2006	290.93	290.96	0.03
MW-2	10/21/2005	324.85	324.15	2/21/2006	291.96	--	--
				6/7/2006	293.92	--	--
				8/22/2006	291.04	--	--
MW-3	10/21/2005	326.05	325.65	2/21/2006	293.68	--	--
				6/7/2006	294.74	--	--
				8/22/2006	290.99	--	--
MW-4	1/31/2006	329.97	329.67	2/21/2006	292.95	--	--
				6/7/2006	293.91	--	--
				8/22/2006	290.88	--	--
MW-5	1/27/2006	335.14	334.81	2/21/2006	323.33	--	--
				6/7/2006	324.20	--	--
				8/22/2006	322.88	--	--
MW-6	1/27/2006	332.61	332.38	2/21/2006	314.36	--	--
				6/7/2006	315.55	--	--
				8/22/2006	313.72	--	--
MW-7	1/27/2006	336.46	336.22	2/21/2006	320.79	--	--
				6/7/2006	319.54	--	--
				8/22/2006	319.45	--	--
MW-8	8/15/2006	335.23	333.93	8/22/2006	315.22	--	--
MW-9	8/16/2006	333.49	333.07	8/22/2006	290.48	290.52	0.04

Notes:
All elevations displayed in feet above average mean sea level (msl).
Groundwater and product elevations calculated from depths as measured from top of casing - north.
MW-1 through MW-3 surveyed on October 31, 2005.
MW-4 through MW-7 surveyed on February 14, 2006.

TABLE 4
Summary of Soil Analytical Results
Additional Monitoring Well Installation and
Third Quarter 2006 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Depth (feet)	TPH-GRO mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes (Total) mg/kg
MW-8	16.5-17.5	**1100 J**	**1.7**	**52**	**16**	**170**
	20.5-21	**50 J**	**0.45**	**2.4**	**0.21**	**1.2**
MW-9	11.5-13	<1.0	<0.025	<0.050	<0.050	<0.050

Notes:
Bold values exceed laboratory reporting limits.

TPH-GRO - total petroleum hydrocarbons quantified as gasoline range organics
J qualifier - Low trifluorotoluene surrogate recoveries were observed in samples MW-8-16.5-17.5 and MW-8-20.5-21.

TABLE 5
Summary of Groundwater Analytical Results
Gasoline Compounds
Additional Monitoring Well Installation and
Third Quarter 2006 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Gasoline Compounds						
		TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-1	2/22/2006	**57000**	**38**	**2700**	**3000**	**8700**	<1,000	<200
	6/8/2006	**37000**	**10**	**330**	**120**	**8200**	<250	<200
	Q3 2006[2)]	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
MW-2	2/21/2006[1)]	<50 / <50	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<50 / <50	<200 / <200
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	8/23/2006	<50	**0.5**	<0.5	<0.5	<0.5	<50	<200
MW-3	2/21/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	8/23/2006	**170**	<0.5	<0.5	<0.5	<0.5	<50	<200
MW-4	2/21/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	8/23/2006	**70**	**0.6**	<0.5	<0.5	**1**	<50	<200
MW-5	2/22/2006	<50	<0.5	**0.6**	<0.5	**1**	<50	<200
	6/8/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	8/24/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
MW-6	2/22/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	8/22/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
MW-7	2/22/2006	<50	**0.7**	**2**	**0.9**	**5**	<50	<200
	6/8/2006	<50	**0.7**	<0.5	**1**	**4**	<50	<200
	8/22/2006[1)]	<50 / <50	**2 / 2**	<0.5 / <0.5	**1 / 0.6 J**	**3 / 2 J**	<50	<200
MW-8	8/24/2006	**18000**	**190**	**2600**	**590**	**2800**	<250	<200
MW-9	Q3 2006[2)]	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
SW-Creek	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200
	8/22/2006	<50	<0.5	<0.5	<0.5	<0.5	<50	<200

Notes:
Bold values exceed laboratory reporting limits.
NS - Not Sampled
J qualifier - The ethylbenzene and xylenes results in sample MW-7 and the MW-7 duplicate were qualified with a J, indicating that it was not possible to verify that the sample matrix was homogeneous and the results repeatable.

1) Both sample and duplicate concentrations from well location are displayed.
2) Sample not collected during quarterly monitoring due to the presence of measurable free product

TABLE 6
Summary of Groundwater Analytical Results
Geochemical Indicators and Other Parameters
Additional Monitoring Well Installation and
Third Quarter 2006 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Geochemical Indicators and Other Parameters											
		DO[1] (mg/L)	ORP[1] (mV)	Nitrate (mg/L)	Manganese (mg/L)	Ferrous Iron (mg/L)	Dissolved Iron (mg/L)	Sulfate (mg/L)	Methane (mg/L)	pH[1]	TDS (mg/L)	Alkalinity to pH 4.5 (mg/L) as $CaCO_3$	Alkalinity to pH 8.3 (mg/L) as $CaCO_3$
MW-1	6/8/2006	0.28	88.15	2.60	0.116	<0.008	<0.052	48.30	<0.002	6.62	494.00	317.00	<0.46
	Q3 2006	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]
MW-2	6/7/2006	NR[3]	36.43	11.90	0.003	<0.008	<0.052	47.50	<0.002	6.56	465.00	286.00	<0.46
	8/23/2006	0.32	25.69	7.00	0.024	0.015	<0.052	121.00	0.005	6.63	811.00	470.00	<0.46
MW-3	6/7/2006	0.37	31.23	10.90	0.005	<0.008	<0.052	45.10	<0.002	6.56	446.00	274.00	<0.46
	8/23/2006	0.30	-1.80	<0.25	0.368	0.240	<0.052	26.30	1.500	6.60	711.00	421.00	<0.46
MW-4	6/7/2006	0.28	29.57	9.20	0.020	0.059	<0.052	60.20	<0.002	6.65	423.00	282.00	<0.46
	8/23/2006	NR[3]	-22.49	<0.25	0.226	0.700	<0.052	78.40	0.003	6.62	590.00	396.00	<0.46
MW-5	6/8/2006	0.19	12.05	<0.25	0.029	0.120	<0.052	71.30	0.004	7.24	502.00	313.00	2.60
	8/24/2006	NR[3]	-151.92	<0.25	0.021	0.280	<0.052	72.20	0.0054 J	7.32	506.00	320.00	<0.46
MW-6	6/7/2006	NM[2]	NM[2]	<0.25	0.599	12.600	<0.052	41.60	<0.002	NM[2]	531.00	364.00	3.70
	8/22/2006	NM[2]	NM[2]	<0.25	0.600	5.500	<0.052	36.90	5.800	NM[2]	553.00	375.00	<0.46
MW-7	6/8/2006	NM[2]	NM[2]	<0.25	0.706	13.400	<0.052	70.40	0.022	NM[2]	542.00	310.00	5.90
	8/22/2006	NM[2]	NM[2]	<0.25	0.160	0.910	<0.052	75.70	0.094	NM[2]	534.00	335.00	<0.46
MW-8	8/24/2006	NM[2]	NM[2]	<0.25	0.171	0.140	<0.052	90.20	<0.002 UJ	NM[2]	563.00	362.00	<0.46
MW-9	Q3 2006	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]

Notes:
DO = Dissolved oxygen
ORP = Oxygen reduction potential
TDS = Total dissolved solids
$CaCO_3$ = Calcium Carbonate
NM = Not measured
NR = Not Reported
J & UJ qualifiers - The continuing calibration standard injected before the method blank was below QC limits in samples MW-5 and MW-8 for methane. The methane detection in sample MW-5 was qualified with a J, and the non-detect methane result in sample MW-8 was qualified with a UJ.

1) DO, ORP, and pH values were obtained in the field using a flow-through cell and a multi-parameter meter.
2) Field data was not collected for DO, ORP, and pH because groundwater was removed from the well without using the in-line flow-through cell due to insufficient recharge.
3) DO meter did not appear to be functioning correctly at MW-2 during the second quarter 2006 sampling activities.
4) The well was not sampled and parameters were not measured due to the presence of free product at this loaction.

Figures

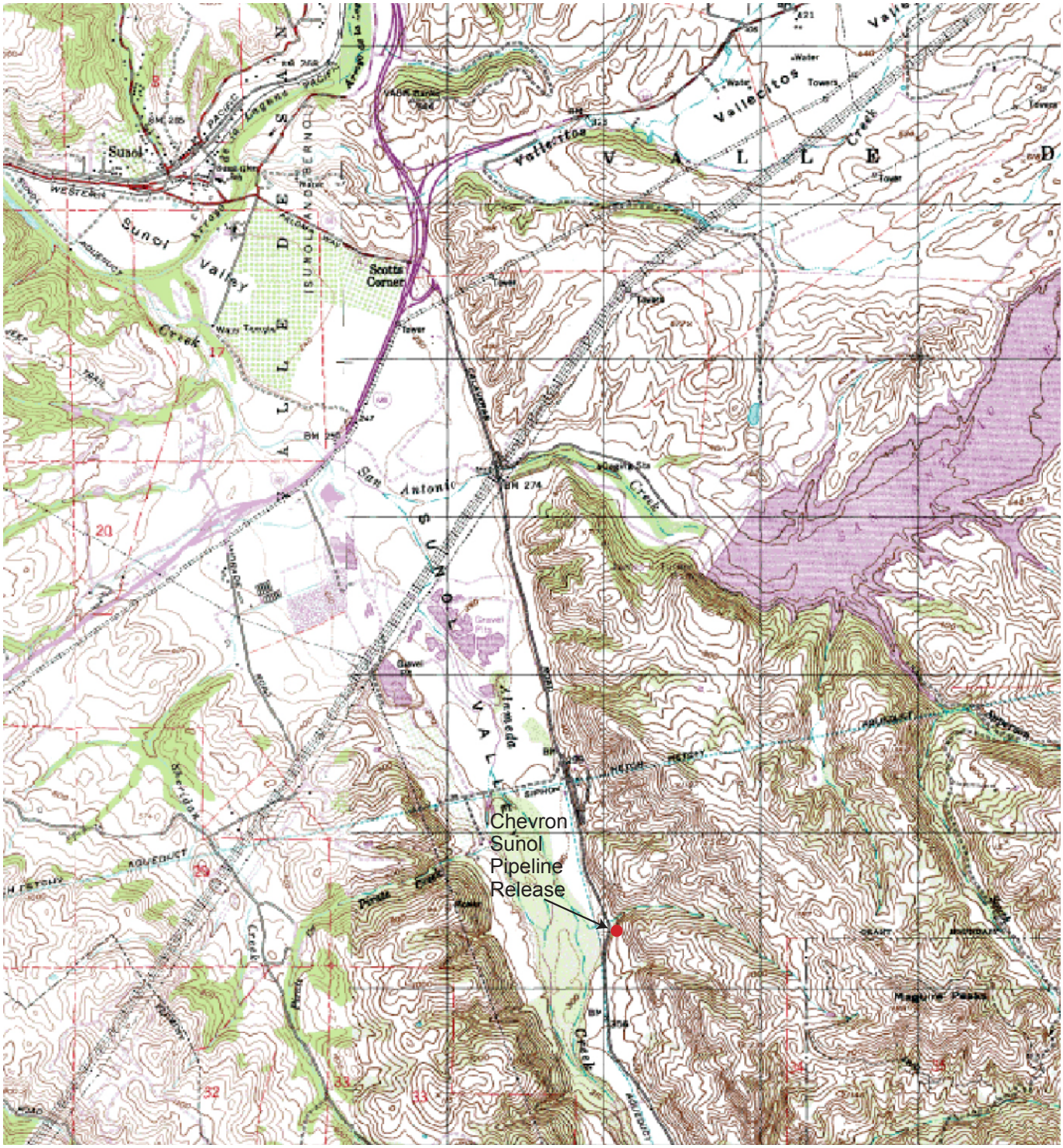


Image obtained from topozone.com

N

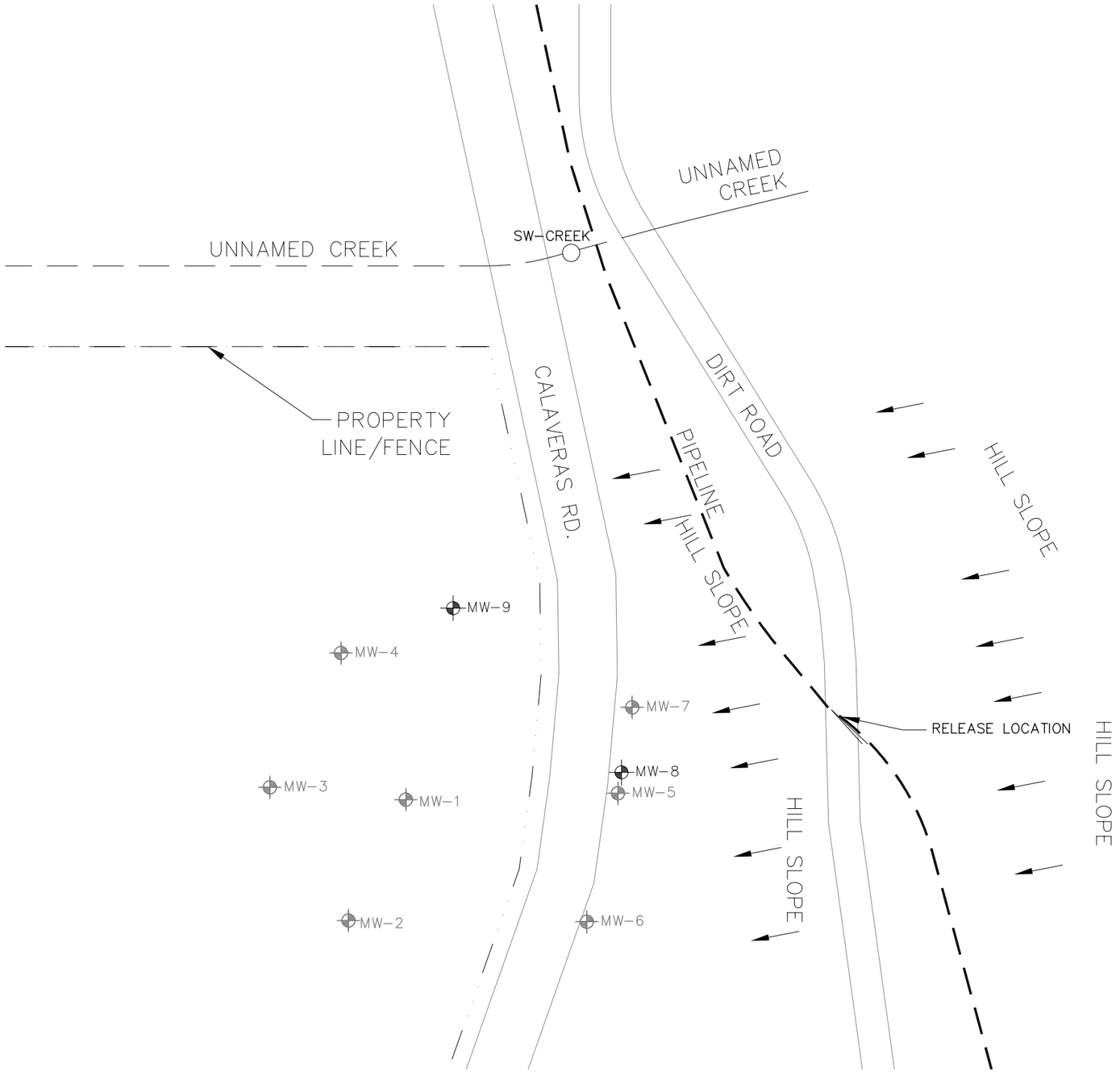
MAP REFERENCE:

PORTION OF U.S.G.S. QUANDRANGLE MAP
7 1/2 MINUTE SERIES (TOPOGRAPHIC)
LA COSTA VALLEY QUADRANGLE

URS	Chevron Pipeline Company Project No. 26815217	SITE VICINITY MAP CHEVRON SUNOL PIPELINE SUNOL, CALIFORNIA	Figure 1

LEGEND:

- MONITORING WELLS (NEWLY INSTALLED)
- MONITORING WELLS (PREVIOUSLY INSTALLED)
- SURFACE WATER SAMPLE
- PIPELINE



NORTH

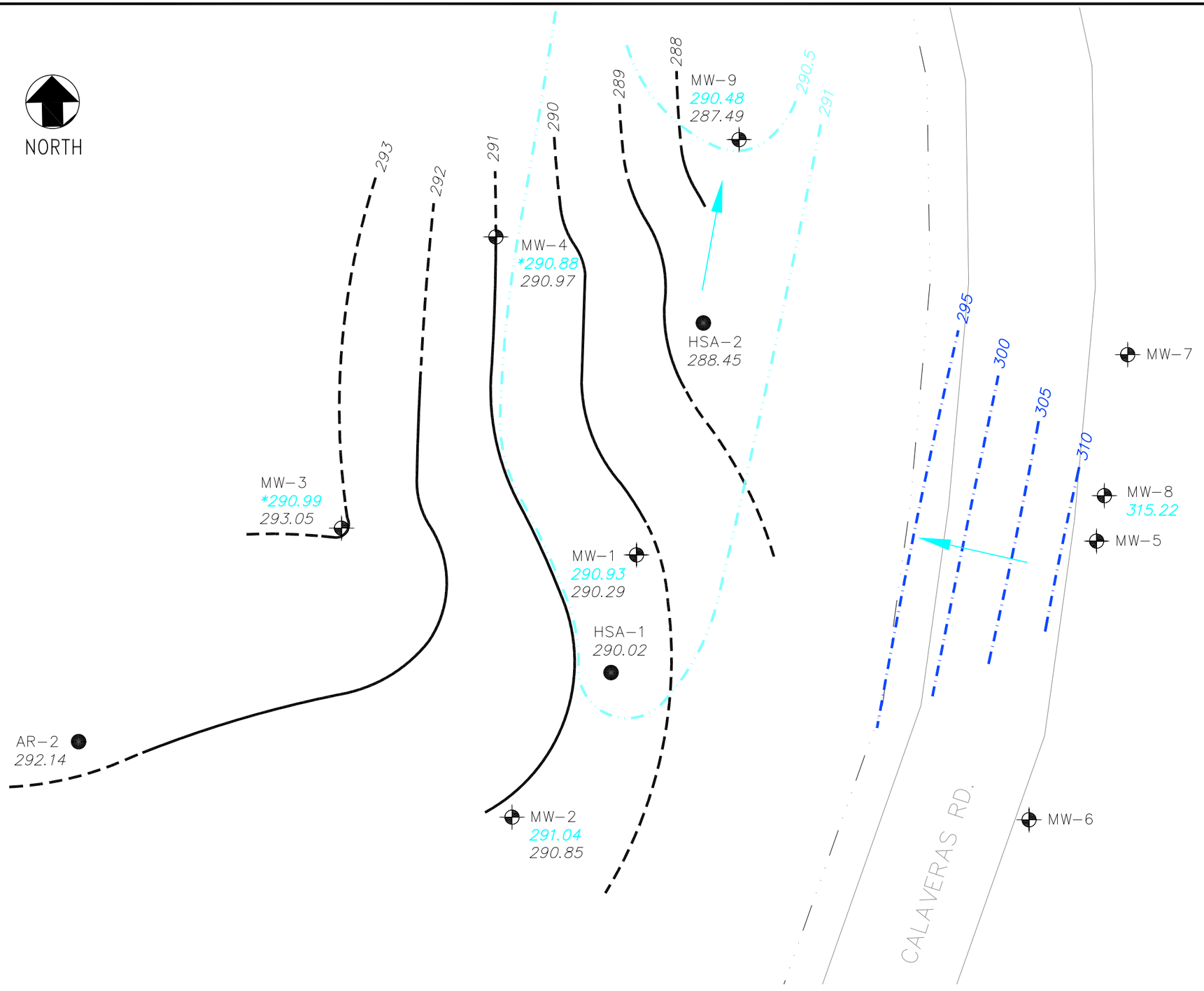
50' 0 50'

SCALE 1"= 50'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	MONITORING WELL LOCATIONS CHEVRON SUNOL PIPELINE	Figure 2

Dec 04, 2006 - 4:59pm
X:\x_env_waste\Chevron Pipe Line Company\Sunol Spill\Quarterly Groundwater Report\Q3 2006 GMR and MW Construction\Figures\Figure 2.dwg

NORTH



LEGEND:

MW-3 293.68 293.05	MONITORING WELL GROUNDWATER ELEVATION BEDROCK CONTACT ELEVATION
HSA-2 288.45	SOIL BORING BEDROCK CONTACT ELEVATION
293	INFERRED SILTSTONE BEDROCK CONTOUR
292	CALCULATED SILTSTONE BEDROCK CONTOUR
305	INFERRED GROUNDWATER CONTOUR (5 FOOT INTERVALS)
290.5	INFERRED GROUNDWATER CONTOUR (0.5 FOOT INTERVALS)
	INFERRED GROUNDWATER FLOW DIRECTION UNCONFINED ZONE

NOTES:

* GROUNDWATER ELEVATIONS AT MW-3 AND MW-4 ARE NOT INCLUDED IN CONTOURING BECAUSE THE GROUNDWATER ENCOUNTERED IN THESE WELLS ARE NOT IN CONNECTION WITH THE UNCONFINED WATER-BEARING ZONE. THE GROUNDWATER IS STANDING WATER WITHIN THE SUMP OF EACH WELL BELOW THE GRAVEL/BEDROCK CONTACT.

1. ELEVATIONS IN FEET ABOVE AVERAGE MEAN SEA LEVEL (msl).
2. GROUNDWATER ELEVATIONS FOR MW-1 THROUGH MW-4 AND MW-8 AND MW-9, AS MEASURED ON AUGUST 22, 2006.
3. BEDROCK ELEVATION DATA OBTAINED FROM THE BORING LOGS OF MW-1 THROUGH MW-4, MW-9, HSA-1, HSA-2, AND AR-2.
4. THE BEDROCK CONTOURS SHOWN REPRESENT THE GRAVEL CONTACT WITH THE WEATHERED SILTSTONE/CLAYSTONE BEDROCK UNIT (POSSIBLY CRETACEOUS-AGE CLAY SHALE OF THE PANOCHE FORMATION).
5. INFERRED HYDRAULIC GRADIENT NORTHERLY FLOW DIRECTION (NURSERY UNCONFINED WATER-BEARING ZONE): DH/DL = 0.005 FT/FT.

20' 0 20'
SCALE 1"= 20'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	BEDROCK AND UNCONFINED WATER-BEARING ZONE CONTOUR MAP CHEVRON SUNOL PIPELINE	Figure 3

Dec 04, 2006 - 4:54pm
X:\x_env_waste\Chevron Pipe Line Company\Sunol Spill\Additional Well Installation 1-06\Add. Investigation Report\Figures\Figure 3A.dwg

NORTH

MW–9

MW–4

MW–3

MW–1

MW–2

MW–7
319.45

MW–8

MW–5
322.88

MW–6
313.72

CALAVERAS RD.

LEGEND:

MW–3
293.68

MONITORING WELL WITH GROUNDWATER ELEVATION

NOTES:

1.) ELEVATIONS IN FEET ABOVE AVERAGE MEAN SEA LEVEL (msl).

2.) GROUNDWATER ELEVATIONS FOR MW–5 THROUGH MW–7 AS MEASURED ON AUGUST 22, 2006.

20' 0 20'
SCALE 1"= 20'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	POTENTIOMETRIC SURFACE ELEVATIONS CONFINED SANDSTONE WATER–BEARING ZONE	Figure 4

Dec 04, 2006 - 4:30pm
X:\x_env_waste\Chevron Pipe Line Company\Sunol Spill\Additional Well Installation 1-06\Add. Investigation Report\Figures\Figure 4A.dwg

Appendix A
ACEH Letters June 5, 2006, and July 7, 2006

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

June 5, 2006

Mr. Jeff Cosgray
Chevron Pipe Line Company
4800 Fournace Place
Bellaire, TX 77401-2324

Subject: SLIC Case No. RO0002892, Chevron Sunol Pipeline, 2793 Calaveras Road, Sunol, CA

Dear Mr. Cosgray:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site and the document entitled, "Additional Subsurface Investigation Report, Chevron Sunol Pipeline Release, Sunol, California," dated May 22, 2006. The report was prepared on your behalf by URS Corporation and discusses site investigation activities conducted from January 17 through January 31, 2006. The report presents recommendations regarding the operation of the soil vapor extraction (SVE) system, quarterly monitoring, and free product recovery. In correspondence dated March 14, 2006, ACEH requested that the SVE system be expanded into the area downslope from the release. Logistical issues related to the steepness of the hillside have prevented the installation of SVE wells on the hillside. The issues related to possible expansion of the SVE system were discussed during a meeting conducted on May 26, 2006 between Jeff Cosgray (Chevron Pipe Line Company), Joe Morgan (URS), Greg White URS), Angela Liang (URS), Ariu Levi (ACEH), Donna Drogos (ACEH), and myself. ACEH believes that continued operation of the SVE system without the addition of SVE wells on the hillside would not address a significant long-term source of contamination at the site. Based on discussions during the May 26, 2006 meeting, Chevron and URS will conduct further evaluation of the feasibility of potential technologies that will allow the installation of SVE wells on the slope.

We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Gravel Layer as Preferential Pathway.** ACEH concurs with the finding in Section 4 of the "Additional Subsurface Investigation Report," that the gravel zone near the top of the bedrock on the hillside and apparently continuing to the west across Calaveras Road, is a preferential pathway. The gravel zone appears to be a preferential pathway for contaminant movement from perched zones beneath the hillside to the shallow gravel zone west of Calaveras Road where free product has been observed intermittently in well MW-1. Monitoring wells MW-5 through MW-7, which were planned to monitor the water table at the top of the bedrock, were screened entirely within sandstone bedrock 10 to 15 feet below the gravel zone and therefore do not monitor this preferential pathway. Although groundwater was not encountered in the gravel layer during installation of wells MW-5 through MW-7, the gravel layer appears to act as a preferential pathway for groundwater and contaminant migration, at least seasonally. In

order to monitor potential contaminant migration within the gravel layer, we request that monitoring wells be installed within the gravel layer at the base of the hillside east of Calaveras Road. Please present plans for well installation in the Work Plan requested below. Please also consider the potential for the fault/unconformity identified along Calaveras Road to affect groundwater and contaminant movement.

2. **Groundwater and Contaminant Migration West of Calaveras Road.** The "Additional Subsurface Investigation Report," concludes that groundwater contamination does not extend as far west as MW-3 and MW-4. We concur that wells MW-3 and MW-4 appear to be properly installed to monitor groundwater contamination at the top of the bedrock and that groundwater contamination does not appear to extend west to these wells. A bedrock surface that slopes to the east and northeast in this area is presumed to be influencing groundwater movement within the unconfined water-bearing zone west of Calaveras Road (Figure 10). Therefore, we request that you install a minimum of one additional monitoring well in a location northeast of MW-1 on the west side of Calaveras Road to monitor contaminant movement along the sloping bedrock surface.

3. **Cross Section D-D' on Figure 7.** On cross section D-D', please correct the length of the screen interval for MW-5 to 10 feet rather than 25 feet in future reports. In addition, please correct the label in the upper left corner to D rather than D'.

4. **Quarterly Groundwater Monitoring.** Please collect groundwater samples from all monitoring wells and the unnamed creek on a quarterly basis. We concur with the proposed analyses for total petroleum hydrocarbons as gasoline and benzene, toluene, ethylbenzene, and xylenes.

5. **Expansion of the SVE System.** We have no objection to continued operation of the existing SVE system. However, as we stated in our March 14, 2006 correspondence, the area downslope of the release has been significantly affected by the release and the SVE system must be expanded to remove the mass of hydrocarbons downslope from the release. We previously requested a Work Plan by May 2, 2006 to install additional SVE wells downslope from the release and continue operations of the SVE system. In follow-up to the discussions during our May 26, 2006 meeting, we now request that you submit a proposal to expand the SVE system by July 26, 2006.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **July 14, 2006** – Proposal for SVE System Expansion and Operation
- **August 11, 2006** – Work Plan for Additional Subsurface Investigation
- **August 15, 2006** – Quarterly Monitoring Report for the Second Quarter 2006

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

Effective **January 31, 2006**, 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. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

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. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for 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 monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

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.

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.

If you have any questions, please call me at (510) 567-6791.

Sincerely,

Jerry Wickham
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Joe Morgan III, URS Corporation, 1333 Broadway, Suite 800, Oakland, CA 94612

Joe Naras, San Francisco Public Utilities Commission, Natural Resources Division, 1657 Rollins Road, Burlingame, CA 94010

Matt Katen, QIC 80201, Zone 7 Water Agency, 100 North Canyons Parkway, Livermore, CA 94551

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

)UNTY
CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

July 14, 2006

Mr. Jeff Cosgray
Chevron Pipe Line Company
4800 Fournace Place
Bellaire, TX 77401-2324

Subject: SLIC Case No. RO0002892, Chevron Sunol Pipeline, 2793 Calaveras Road, Sunol, CA

Dear Mr. Cosgray:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site and the document entitled, "Response to ACEH June 5, 2006 Letter – Technical comment 1. Gravel layer as Preferential Pathway," dated July 10, 2006. The correspondence was prepared on your behalf by URS Corporation and recommends that monitoring wells not be installed within the shallow gravel zone along Calaveras Road. The technical comments below provide our responses to the correspondence.

We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Hypothesis Regarding Groundwater in the Gravel Layer.** The URS correspondence concludes that since groundwater was not observed at the time of drilling in January that groundwater would not be present in the future to collect a representative sample and goes on to conclude that "groundwater appears to be present for very limited periods of time, if at all." The two hypotheses that groundwater is: 1) present at very limited times or 2) not at all, could be tested by the installation of a well in the gravel layer. If groundwater is observed in the gravel layer for short periods during the year, the hypothesis that groundwater is present at very limited times would be confirmed and the mass of contaminants being transported through the migration pathway could be roughly estimated based on the duration of flow and concentration of hydrocarbons in the groundwater. If groundwater is not observed at any time in a well in the gravel layer, the hypothesis that groundwater is not present "at all" would be confirmed. If groundwater never moved through the gravel layer, the observed impact to the gravel layer is likely the result of free phase product flow that affected approximately three feet of the gravel layer above the bedrock (as observed in boring MW-5). This information would also be useful in understanding past and future contaminant migration.

2. **Benefit from Monitoring Groundwater East of Well MW-1.** The URS correspondence states, "Because the locations of the requested borings/wells are between the source area and MW-1 (located approximately 80 feet to the west), it is unclear if any benefit would be gained in monitoring a zone that lies in the middle of the impacted area." This statement appears to be contradictory to widely accepted guidance documents on placement of

monitoring wells at hazardous waste sites, which recommend the placement of wells within a plume or directly downgradient from a source to identify the distribution of contaminant concentrations and monitor contaminant flux from the source area. Well MW-1 is approximately 185 feet west of the source and on the opposite side of a postulated fault from the source. The proposal to monitor the source using only data from well MW-1 is unacceptable.

3. **Requested Groundwater Monitoring Well Installation for Gravel Layer.** We request that you install a minimum of one well (adjacent to MW-5) to monitor the gravel layer above bedrock to address technical comments 1 and 2 or propose an alternative approach to monitor and estimate contaminant flux from the source area to groundwater using sampling locations in addition to well MW-1. Please note the additional request in our June 8, 2006 correspondence to monitor contaminant migration in groundwater along the sloping bedrock surface west of Calaveras Road. Please present your proposals in the Work Plan requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **July 26, 2006** – Proposal for SVE System Expansion and Operation
- **August 11, 2006** – Work Plan for Additional Subsurface Investigation
- **August 15, 2006** – Quarterly Monitoring Report for the Second Quarter 2006

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.

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locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

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.

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.

If you have any questions, please call me at (510) 567-6791.

Sincerely,

Jerry Wickham
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Joe Morgan III, URS Corporation, 1333 Broadway, Suite 800, Oakland, CA 94612

Joe Naras, San Francisco Public Utilities Commission, Natural Resources Division, 1657 Rollins Road, Burlingame, CA 94010

Matt Katen, QIC 80201, Zone 7 Water Agency, 100 North Canyons Parkway, Livermore, CA 94551

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

Appendix B
Permits

County of Alameda Public Works Agency: Roadway Encroachment Permit

Work Order Number:* 80001
*This WO is ___ / is not ✓ open for charges

Permit Number: R05LD6800
Permit Issuance Date: 8-24-05
Permit Expiration Date: 8-23-06

Extension 8/23/07

COUNTY OF ALAMEDA PUBLIC WORKS AGENCY
ROADWAY ENCROACHMENT PERMIT

This Permit is issued in accordance with Chapter 12.08 of the Alameda County General Ordinance Code

Name & Address of Property Owner:
San Francisco Public Utilities Commission
525 Paloma Way, P.O. Box 5390
Phone Number: (925) 862-2233

Name & Address of Contractor:
WLS Corporation
1333 Broadway, Ste 800
Oakland, CA 94612
Phone Number: (510) 893-3600

Job Site Address:
Milepost 2.7 on Calaveras Rd.
Alameda County

(This statement to be completed by the Agency)
This permit is issued to the owner ___ / contractor ✓; if "owner" is checked, he/she is ___ / is not ___ exempt from the requirement that work in the roadway be performed by a licensed contractor.

The Applicant intends to perform the following work scope:
Soil and groundwater investigation along Calaveras Rd. with lane closure and traffic control.

Licensed Contractor Declaration:
I hereby affirm, under penalty of perjury, that I hold the following contractor's license, which is in full force and effect, under the applicable provisions of the State Business and Professions Code.
License Class and No.
Contractor's Signature:

Worker's Compensation Insurance Declaration:
I hereby affirm, under penalty of perjury, that I will, during the performance of any and all work authorized by this permit, satisfy the requirements of the State Labor Code with regard to Worker's Compensation Insurance, as declared below:
___ I will maintain a certificate of consent to self-insure.
___ I will maintain the following insurance policy:
Carrier's Name and Policy No.:
___ I will not employ any person in any manner so as to become subject to the worker's compensation laws of the State.
Owner's/Contractor's Signature:

All work and/or access shall be performed in accordance with the requirements of Chapter 12.08 and, unless otherwise specified below, shall be fully compliant with each of the terms and conditions of the attached General Provisions.

TOM PINGOT

CALL THIS NUMBER FOR INSPECTIONS: 670 5979

Bond Information:

BY: _____ Alameda County

Insp. Fee ✓ or Deposit ___: $74
250 ⁻⁻

Work Completed (Date): _____

Inspector:

I certify that the information that I have entered into this permit application is correct, and I agree to comply with all of the terms and conditions and rules/requirements of the issued Permit.

Shawn Plant Agent for WLS
Signature of Applicant

8/23/05
Date

THIS PERMIT IS INCOMPLETE WITHOUT THE ATTACHED GENERAL PROVISIONS

Zone 7 Alameda County Flood Control and Water Conservation District: Drilling Permit

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100 NORTH CANYONS PARKWAY, LIVERMORE, CA 94551 PHONE (925) 454-5000

August 24, 2006

Mr. Greg White
URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612

Dear Mr. White:

Enclosed is drilling permit 26145 for a monitoring well construction project at Calaveras Road (milepost 2.7) near Sunol for Chevron Pipeline Company. Drilling permit applications for future projects can be downloaded from www.zone7water.com.

Please note that permit conditions A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, permit number and any analysis of the soil and water samples. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact me at extension 5056 or Matt Katen at extension 5071.

Sincerely,

Wyman Hong

Wyman Hong
Water Resources Specialist

Enc.

P:\WRE\GPOs\GPO1\GPO1.MONITORING.wpd

ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 454-5728

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Milepost 2.7 Calaveras Road
Sunol, California - PUC Property

California Coordinates Source _____ Accuracy± _____ ft.
CCN _____ ft. CCE _____ ft.
APN _____

37°, 33', 02" N, 121°, 51', 26" W

CLIENT
Name Chevron Pipeline Company
Address 4800 Fournace Place, E320C Phone _____
City Bellaire, TX Zip 77401

APPLICANT
Name URS Corporation
Greg White Fax 510-874-3268
Address 1333 Broadway Suite 800 Phone 510-874-3347
City Oakland Zip 94612

TYPE OF PROJECT:

Well Construction	☒	Geotechnical Investigation	☐
Well Destruction	☐	Contamination Investigation	☐
Cathodic Protection	☐	Other _____	☐

PROPOSED WELL USE:

Domestic	☐	Irrigation	☐
Municipal	☐	Remediation - S	☒
Industrial	☐	Groundwater Monitoring - 1	☒
Dewatering	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Hollow Stem Auger	☒
Cable Tool	☐	Direct Push	☐	Other Solid Flights	☒

DRILLING COMPANY Cleerheart Drilling & Gregg Drilling
DRILLER'S LICENSE NO. C-57 780357 & C-57 485165

WELL SPECIFICATIONS:
Drill Hole Diameter 6-10 in. Maximum Depth 45 ft.
Casing Diameter 2-4 in. Number 8
Surface Seal Depth ≥10 ft.

SOIL BORINGS:
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE ~~July 24, 2006~~ August 15 2006
ESTIMATED COMPLETION DATE ~~August 31, 2006~~ November 3, 2006

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ Date 8/9/06

ATTACH SITE PLAN OR SKETCH

FOR OFFICE USE

PERMIT NUMBER 26145
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal diameter is four inches greater than the well casing diameter.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. Grout placed by tremie.
4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
5. A sample port is required on the discharge pipe near the wellhead.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
3. Grout placed by tremie.

D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION. See attached.

G. SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after completion of permitted work the well installation report **including all soil and water laboratory analysis results**.

Approved Wyman Hong Date 8/23/06
Wyman Hong

Appendix C
Boring Logs – Additional Groundwater Monitoring Well Installation

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING & WELL CONSTRUCTION

Borehole ID: MW-8

Total Depth: 25 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Gregg Drilling
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Valentin Gudoy
Project Manager: Joe Morgan	**Type of Drilling Rig:** Mobile B-80
RG: Leonard Niles	**Drilling Method:** Hollow stem auger / Hand Auger
Geologist: Gregory White & Renee McFarlan	**Sampling Method:** Split Spoon (varying sizes)
Job Number: 26815217.03207	**Date(s) Drilled:** August 15, 2006

BORING & WELL INFORMATION

Groundwater Depth: Not Encountered During Drilling	**Boring Location:** Valley Crest Tree Company, 8501 Calveras Road
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 8.25 inches
Coordinates: X Y Z	**Boring Type:** Monitoring Well Completion

Depth (ft bgs)	USCS	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Drilling Comments
0	ML	SILT: 0-3: Brown, low plasticity fines, moist, some subrounded fine to coarse gravel and cobbles, trace sand.				10:05 Begin hand augering.
2				7.6	0-12 ft bgs: Cement/ Bentonite grout.	
4		CLAYEY SILT: 3-5: Grades to brown, medium plasticity fines, moist, subrounded to rounded fine to coarse gravel and cobbles, trace sand.				
6		SILT: 5-10: Brown, low plasticity fines, moist, subrounded to rounded fine to coarse gravel and cobbles, occasional yellow sandy zones, caliche veins, trace roots.		7.5	0-14.5 ft bgs: 2" ID sch 40 PVC blank well casing	10:30 Begin HSA.
8						
10		SANDY SILT: 10-13: Grades to light brown, very moist, low plasticity fines, fine sand, fine gravel, caliche veins, trace roots.		11.4		
12				15.1	12-14 ft bgs: Bentonite chips.	
14	SM	SILTY SAND: 13-16: Light brown, loose, moist, low plasticity fines, fine sand, trace medium to coarse sand.		14.7	14.5-24.5 ft bgs: 2" ID sch 40 PVC 0.02" slotted well screen	
16		Increased clay content at 15 ft bgs, slight odor		41.9		11:30 Collected sample MW-8-16.5-17.5.
18		SILTY SAND: 16-24.5: Gray and tan, banded color, moist, medium to very dense, fine to medium sand, brittle and poorly cemented with increasing coherence with depth, odor.		520		11:35 Very difficult drilling at ~17.5 ft bgs. Augers advancing slowly.
20		Iron staining at 18 ft bgs		18.7	14-24.5 ft bgs: #3 Sand.	
22				2197		12:30 Collected sample MW-8-20.5-21.
				378		
				84		

LOG OF BORING

Borehole ID: MW-8

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Comments
24			SANDSTONE: 24.5-25: Greenish gray to light gray weathered, moist to dry, medium to very dense, fine sand with silt.			24.5-25 ft bgs: Bentonite chips. 24.5-25 ft bgs: 2" ID sch 40 bottom cap	13:15 End of boring at 25' bgs, began well installation.
26			**END OF BORING AT 25 FT BGS**				
28							

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING & WELL CONSTRUCTION

Borehole ID: MW-9

Total Depth: 47 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Gregg Drilling
Site Location: Valley Crest Tree Nursery	**Driller:** Valentin Gudoy
Project Manager: Joe Morgan	**Type of Drilling Rig:** Mobile B-80
RG: Leonard Niles	**Drilling Method:** Mud rotary, Hand auger
Geologist: Gregory White	**Sampling Method:** Split Spoon (varying sizes)/Core barrel, 4.375" di
Job Number: 26815217.03207	**Date(s) Drilled:** August 15-16, 2006

BORING & WELL INFORMATION

Groundwater Depth:	**Boring Location:** Valley Crest Tree Company, 8501 Calveras Road
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 6.875 inches
Coordinates: X Y Z	**Boring Type:** Monitoring Well Completion

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Drilling Comments
0	ML		SANDY SILT: Brown, moist, low plasticity fines, fine sand, some clay, trace orange-brown sandy zones, caliche veins throughout. No caliche below 6.5 ft bgs.				16:25 Begin mud rotary, soil samples are wet on outside due to split spoon sampling method, PID readings may be affected.
2						0-36 ft bgs: 2" ID sch 40 PVC blank well casing	
4							
6					13.2		
8					13	0-33 ft bgs: Cement/ Bentonite grout	
10	SM		SILTY SAND: Brown, moist, non-plastic fines, medium dense, fine sand, some medium sand, caliche viens throughout.		13.4		
12	SM		SILTY SAND: Brown, moist, increased low-plasticity fines, medium density, fine sand, some medium sand, trace subrounded fine gravel.		20.5		
14	SM		SILTY SAND: Brown, moist to dry, non-plastic fines, medium density, fine sand, some medium sand.		15.7		
16	ML		SANDY SILT: Brown, moist to dry, low-plasticity fines, some fine to medium sand, very stiff.		14		
18			As above, except trace subangular fine gravel at 18 ft bgs.		16.9		
20	SM		SILTY SAND: Brown, moist to dry, low-plasticity fines, medium density, fine sand, some medium sand, trace subangular fine gravel..		12.9		
22			As above, except minor clay at 21.5 ft bgs.		15.2		
					15.8		

LOG OF BORING

Borehole ID: MW-9

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Comments
24					11.6		
26	SM		GRAVELLY SILTY SAND: Brown, moist, low-plasticity fines, fine sand matix, sub-angular to sub-rounded fine to coarse gravel and cobbles.		11.2		
28	GM		SILTY SANDY GRAVEL: Grayish brown, moist, non-plastic fines, fine to coarse sand, grayish subangular to subrounded fine to coarse gravel and cobbles.		2.7 10.2		
30	GP		GRAVEL: Gray, white, red, moist, subrounded to angular fine gravel with some coarse gravel and cobbles, trace coarse sand.			33-35 ft bgs: Bentonite chips 35-46.5 ft bgs: #? sand 36-46 ft bgs: 2" ID sch 40 PVC 0.02" slotted well screen	18:45 Cannot keep hole open to sample due to gravel and cobbles. Will increase bentonite content of mud and drill to 40' and re-evaluate. 19:40 Bit will not advance past 30' bgs. Cobbles and rock fragments are too large and hard to advance though w/o core barrel. 19:45 End of boring at 30' bgs. Refusal in gravel/cobbles. Will drill to designated depth tomorrow with core barrel. 8/16, 06:45 Begin coring at 30' bgs. 08:10 Reach 40' bgs. Pulled core barrel casing to overdrill with tri-core bit. 08:30 Begin overdrilling with tri-core bit.
32							
34							
36							
38							
40			Logged from cuttings below 40 ft bgs.			46.5-47 ft bgs: slough	
42							
44							
46	CL		CLAYEY SILT: Gray, mediuim plasticity fines, wet. (Completely weathered bedrock?)			46-46.5 ft bgs: 2" ID sch 40 PVC bottom cap	09:15 End of boring at 47' bgs. Cleared out hole to install well.
48			**END OF BORING AT 47 FT BGS**				

Appendix D
Laboratory Analytical Results

Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

713-432-3335

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1001901. Samples arrived at the laboratory on Thursday, August 17, 2006. The PO# for this group is 0015010091 and the release number is COSGRAY.

Client Description	Lancaster Labs Number
MW-8-16.5-17.5 Grab Soil Sample	4843338
MW-8-20.5-21 Grab Soil Sample	4843339
MW-9-11.5-13 Grab Soil Sample	4843340
WP-MW-8-1/8-2 Composite Soil Sample	4843341

ELECTRONIC COPY TO	URS	Attn: Angela Liang
ELECTRONIC COPY TO	URS	Attn: Joe Morgan
ELECTRONIC COPY TO	URS	Attn: Greg White

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300

Respectfully Submitted,

Marla S. Lord
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4843338

MW-8-16.5-17.5 Grab Soil Sample

Sunol, CA
Collected:08/15/2006 11:30 by GW

Account Number: 11875

Submitted: 08/17/2006 08:30
Reported: 08/23/2006 at 14:35
Discard: 09/23/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SUN81

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	1,100.	80.	mg/kg	2000
	The analysis for volatiles was performed on a sample which was preserved in methanol. Therefore, the reporting limits were raised. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07360	BTEX+MTBE by 8260B					
05460	Benzene	71-43-2	1.7	0.030	mg/kg	59.67
05466	Toluene	108-88-3	52.	0.60	mg/kg	596.66
05474	Ethylbenzene	100-41-4	16.	0.060	mg/kg	59.67
06301	Xylene (Total)	1330-20-7	170.	0.60	mg/kg	596.66

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	TPH GRO SW-846 8015B mod	1	08/20/2006 01:00	Linda C Pape	2000
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	08/18/2006 14:33	Angela D Sneeringer	59.67
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	08/18/2006 14:57	Angela D Sneeringer	596.66
01150	GC - Bulk Soil Prep	SW-846 5035	1	08/17/2006 14:59	Eric L Vera	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	08/17/2006 10:32	Stephanie A Sanchez	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	2	08/17/2006 10:32	Stephanie A Sanchez	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 4843339

MW-8-20.5-21 Grab Soil Sample

Sunol, CA
Collected:08/15/2006 12:30 by GW

Account Number: 11875

Submitted: 08/17/2006 08:30
Reported: 08/23/2006 at 14:35
Discard: 09/23/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SUN82

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	50.	4.0	mg/kg	100
	The analysis for volatiles was performed on a sample which was preserved in methanol. Therefore, the reporting limits were raised. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07360	BTEX+MTBE by 8260B					
05460	Benzene	71-43-2	0.45	0.030	mg/kg	60.1
05466	Toluene	108-88-3	2.4	0.060	mg/kg	60.1
05474	Ethylbenzene	100-41-4	0.21	0.060	mg/kg	60.1
06301	Xylene (Total)	1330-20-7	1.2	0.060	mg/kg	60.1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	TPH GRO SW-846 8015B mod	1	08/21/2006 11:26	Linda C Pape	100
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	08/18/2006 15:20	Angela D Sneeringer	60.1
01150	GC - Bulk Soil Prep	SW-846 5035	1	08/17/2006 15:16	Eric L Vera	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	08/17/2006 10:33	Stephanie A Sanchez	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	2	08/17/2006 10:33	Stephanie A Sanchez	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 4843340

MW-9-11.5-13 Grab Soil Sample

Sunol, CA
Collected:08/15/2006 17:30 by GW

Account Number: 11875

Submitted: 08/17/2006 08:30
Reported: 08/23/2006 at 14:35
Discard: 09/23/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SUN91

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	N.D.	1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. Therefore, the reporting limits were raised. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07360	BTEX+MTBE by 8260B					
05460	Benzene	71-43-2	N.D.	0.025	mg/kg	49.9
05466	Toluene	108-88-3	N.D.	0.050	mg/kg	49.9
05474	Ethylbenzene	100-41-4	N.D.	0.050	mg/kg	49.9
06301	Xylene (Total)	1330-20-7	N.D.	0.050	mg/kg	49.9

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	TPH GRO SW-846 8015B mod	1	08/19/2006 23:11	Linda C Pape	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	08/18/2006 15:42	Angela D Sneeringer	49.9
01150	GC - Bulk Soil Prep	SW-846 5035	1	08/17/2006 15:25	Eric L Vera	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	08/17/2006 10:34	Stephanie A Sanchez	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	2	08/17/2006 10:34	Stephanie A Sanchez	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 4843341

WP-MW-8-1/8-2 Composite Soil Sample

Sunol, CA
Collected:08/15/2006 14:30 by GW
through 08/16/2006 08:00
Submitted: 08/17/2006 08:30
Reported: 08/23/2006 at 14:35
Discard: 09/23/2006

Account Number: 11875

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SUN83

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	40.	4.0	mg/kg	100
	The analysis for volatiles was performed on a sample which was preserved in methanol. Therefore, the reporting limits were raised. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07360	BTEX+MTBE by 8260B					
05460	Benzene	71-43-2	0.002	0.0005	mg/kg	1
05466	Toluene	108-88-3	0.050	0.001	mg/kg	1
05474	Ethylbenzene	100-41-4	0.048	0.001	mg/kg	1
06301	Xylene (Total)	1330-20-7	0.40	0.001	mg/kg	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	TPH GRO SW-846 8015B mod	1	08/21/2006 12:03	Linda C Pape	100
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	08/23/2006 00:42	Nicholas R Rossi	1
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	08/22/2006 14:08	Tyler J Zook	n.a.
01150	GC - Bulk Soil Prep	SW-846 5035	1	08/17/2006 15:30	Eric L Vera	n.a.

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1001901
Reported: 08/23/06 at 02:35 PM

Matrix QC may not be reported if 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.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 06231A31A	Sample number(s): 4843338,4843340							
TPH-GRO - Soils	N.D.	1.0	mg/kg	96	96	67-119	1	30
Batch number: 06231A31B	Sample number(s): 4843339,4843341							
TPH-GRO - Soils	N.D.	1.0	mg/kg	96	96	67-119	1	30
Batch number: B062342AA	Sample number(s): 4843341							
Benzene	N.D.	0.5	ug/kg	104		77-119		
Toluene	N.D.	1.	ug/kg	103		81-116		
Ethylbenzene	N.D.	1.	ug/kg	101		82-115		
Xylene (Total)	N.D.	1.	ug/kg	106		82-117		
Batch number: Q062301AA	Sample number(s): 4843338-4843340							
Benzene	N.D.	25.	ug/kg	99	101	77-119	3	30
Toluene	N.D.	50.	ug/kg	98	102	81-116	4	30
Ethylbenzene	N.D.	50.	ug/kg	96	99	82-115	3	30
Xylene (Total)	N.D.	50.	ug/kg	95	99	82-117	4	30

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: 06231A31A	Sample number(s): 4843338,4843340 UNSPK: P843339								
TPH-GRO - Soils	876*	1417*	39-118	36*	30				
Batch number: 06231A31B	Sample number(s): 4843339,4843341 UNSPK: 4843339								
TPH-GRO - Soils	876*	1417*	39-118	36*	30				
Batch number: B062342AA	Sample number(s): 4843341 UNSPK: P845222								
Benzene	102	93	59-120	10	30				
Toluene	107	95	52-121	12	30				
Ethylbenzene	97	86	54-116	13	30				
Xylene (Total)	102	89	44-127	13	30				

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 background result was more than four times the spike added.

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1001901
Reported: 08/23/06 at 02:35 PM

Surrogate Quality Control

Analysis Name: TPH-GRO - Soils
Batch number: 06231A31A

	Trifluorotoluene-F
4843338	9*
4843340	84
Blank	83
LCS	94
LCSD	93
MS	159*
MSD	164*
Limits:	61-122

Analysis Name: TPH-GRO - Soils
Batch number: 06231A31B

	Trifluorotoluene-F
4843339	31*
4843341	29*
Blank	81
LCS	94
LCSD	93
MS	159*
MSD	164*
Limits:	61-122

Analysis Name: BTEX+MTBE by 8260B
Batch number: B062342AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4843341	88	88	97	92
Blank	99	102	93	82
LCS	94	92	98	96
MS	94	90	103	92
MSD	93	95	102	92
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+MTBE by 8260B
Batch number: Q062301AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4843338	89	92	92	89
4843339	90	90	86	84
4843340	90	91	87	85
Blank	92	94	92	85
LCS	95	97	97	91
LCSD	96	96	97	92
Limits:	71-114	70-109	70-123	70-111

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

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11875 Sample #: 4843338-41 SCR#: 242091

1001901

Facility #:
Site Address: Chevron Sunol Pipeline
Chevron PM: Lead Consultant: URS
Consultant/Office: URS - Oakland
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: 510-874-3201 Fax #: 510-874-3268
Sampler: Greg White
Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

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

	Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX + MTBE 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates	Lead 7420 ☐ 7421 ☐
	MW-8-16.5-17.5	S			8/15/06	11:30		X		3	X	X				
	MW-8-20.5-21	S			8/15/06	12:30		X		3	X	X				
*	WP-MW-8-1	S			8/15/06	14:30		X		1	X	X				
	MW-9-11.5-13	S			8/15/06	17:30		X		3	X	X				
*	WP-MW-8-2	S			8/16/06	0800		X		1	X	X				

Comments / Remarks
No MTBE Analyses

Email Result to Joe Morgan, Angela Liang, Greg White of URS

Composite WP-MW-8-1 & WP-MW-8-2 at 1:1

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
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

	Relinquished by:	Date	Time	Received by:	Date	Time
		8/16/06	1230			
	Relinquished by:	Date	Time	Received by:	Date	Time
	Relinquished by:	Date	Time	Received by:	Date	Time
	Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	Date	Time
	Temperature Upon Receipt 2.5° C			Custody Seals Intact? Yes No		

3460 Rev. 10/04/01

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

Lancaster Laboratories
Explanation of Symbols and Abbreviations

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

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< 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.

U.S. EPA 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 quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
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 amount 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 for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

713-432-3335

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1002670. Samples arrived at the laboratory on Wednesday, August 23, 2006. The PO# for this group is 0015010091 and the release number is COSGRAY.

Client Description	Lancaster Labs Number
WP-MW9-Drilling_Mud-1-10 Composite Soil Sample	4847762
SW-Creek Grab Water Sample	4847763
Trip_Blank-8/22/06 Water Sample	4847764
MW-6 Grab Water Sample	4847765
MW-6 Filtered Grab Water Sample	4847766
MW-7 Grab Water Sample	4847767
MW-7 Filtered Grab Water Sample	4847768
MW-X Grab Water Sample	4847769

ELECTRONIC COPY TO	URS	Attn: Angela Liang
ELECTRONIC COPY TO	URS	Attn: Joe Morgan
ELECTRONIC COPY TO	URS	Attn: Greg White

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300

Respectfully Submitted,

Max E. Snavely
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4847762

WP-MW9-Drilling_Mud-1-10 Composite Soil Sample

Sunol, CA
Collected:08/22/2006 11:15 by GW

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

WPMW9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	N.D.	1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. Therefore, the reporting limits were raised. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07360	BTEX+MTBE by 8260B					
05460	Benzene	71-43-2	0.001	0.0005	mg/kg	1
05466	Toluene	108-88-3	0.01	0.001	mg/kg	1
05474	Ethylbenzene	100-41-4	0.004	0.001	mg/kg	1
06301	Xylene (Total)	1330-20-7	0.043	0.001	mg/kg	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	TPH GRO SW-846 8015B mod	1	08/24/2006 20:51	Linda C Pape	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	08/25/2006 06:15	Stephanie A Selis	1
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	08/25/2006 02:16	Stephanie A Selis	n.a.
01150	GC - Bulk Soil Prep	SW-846 5035	1	08/24/2006 10:16	Larry E Bevins	n.a.

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Analysis Report

Lancaster Laboratories Sample No. WW 4847763

SW-Creek Grab Water Sample

Sunol, CA
Collected:08/22/2006 13:45 by GW

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SWCRR

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/24/2006 17:22	Steven A Skiles	1
01412	Methanol and Ethanol	SW-846 8015B	1	08/24/2006 20:57	Hai D Nguyen	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/24/2006 23:33	Kelly E Brickley	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/24/2006 17:22	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/24/2006 23:33	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4847764

Trip_Blank-8/22/06 Water Sample

Sunol, CA
Collected:08/22/2006

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SOLTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06053	BTEX by 8260B	SW-846 8260B	1	08/30/2006 00:32	Kelly E Brickley	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/30/2006 00:32	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4847765

MW-6 Grab Water Sample

Sunol, CA
Collected:08/22/2006 14:45 by GW

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SOL06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07058	Manganese	7439-96-5	600.	0.36	ug/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460.	ug/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	375,000.	460.	ug/l as CaCO3	1
00212	Total Dissolved Solids	n.a.	553,000.	9,700.	ug/l	1
00228	Sulfate	14808-79-8	36,900.	1,500.	ug/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.	250.	ug/l	5
08344	Ferrous Iron	n.a.	5,500.	200.	ug/l	25
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
07105	Volatile Headspace Hydrocarbon					
07106	Methane	74-82-8	5,800.	200.	ug/l	100
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/24/2006 18:02	Steven A Skiles	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4847765

MW-6 Grab Water Sample

Sunol, CA
Collected:08/22/2006 14:45 by GW

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SOL06

07058	Manganese	SW-846 6010B	1	08/29/2006 05:14	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	08/28/2006 14:36	Geraldine C Smith	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	08/28/2006 14:36	Geraldine C Smith	1
00212	Total Dissolved Solids	EPA 160.1	1	08/24/2006 08:49	Yolunder Y Bunch	1
00228	Sulfate	EPA 300.0	1	08/28/2006 14:06	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	08/24/2006 00:02	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	08/23/2006 20:05	Daniel S Smith	25
01412	Methanol and Ethanol	SW-846 8015B	1	08/24/2006 21:15	Hai D Nguyen	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	08/25/2006 11:20	Hai D Nguyen	100
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/30/2006 19:17	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/24/2006 18:02	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/30/2006 19:17	Dawn M Harle	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/28/2006 20:19	James L Mertz	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4847766

MW-6 Filtered Grab Water Sample

Sunol, CA
Collected:08/22/2006 14:45 by GW

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Account Number: 11875

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	52.2	ug/l	1

State of California Lab Certification No. 2116
This sample was filtered in the lab for dissolved metals.

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	08/29/2006 05:18	Eric L Eby	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/28/2006 20:19	James L Mertz	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4847767

MW-7 Grab Water Sample

Sunol, CA
Collected:08/22/2006 15:50 by GW

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SOL07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07058	Manganese	7439-96-5	160.	0.36	ug/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460.	ug/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	335,000.	460.	ug/l as CaCO3	1
00212	Total Dissolved Solids	n.a.	534,000.	9,700.	ug/l	1
00228	Sulfate	14808-79-8	75,700.	3,000.	ug/l	10
00368	Nitrate Nitrogen	14797-55-8	N.D.	250.	ug/l	5
08344	Ferrous Iron	n.a.	910.	40.	ug/l	5
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
07105	Volatile Headspace Hydrocarbon					
07106	Methane	74-82-8	94.	2.0	ug/l	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	2.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	1.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	3.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/24/2006 18:23	Steven A Skiles	1

Lancaster Laboratories Sample No. WW 4847767

MW-7 Grab Water Sample

Sunol, CA
Collected:08/22/2006 15:50 by GW

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SOL07

07058	Manganese	SW-846 6010B	1	08/29/2006 05:22	Eric L Eby	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	08/28/2006 14:36	Geraldine C Smith	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	08/28/2006 14:36	Geraldine C Smith	1
00212	Total Dissolved Solids	EPA 160.1	1	08/24/2006 08:49	Yolunder Y Bunch	1
00228	Sulfate	EPA 300.0	1	08/28/2006 14:21	Ashley M Heckman	10
00368	Nitrate Nitrogen	EPA 300.0	1	08/24/2006 00:17	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	08/23/2006 20:05	Daniel S Smith	5
01412	Methanol and Ethanol	SW-846 8015B	1	08/25/2006 16:46	Hai D Nguyen	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	08/24/2006 15:29	Hai D Nguyen	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/30/2006 19:39	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/24/2006 18:23	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/30/2006 19:39	Dawn M Harle	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/28/2006 20:19	James L Mertz	1

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4847768

MW-7 Filtered Grab Water Sample

Sunol, CA
Collected:08/22/2006 15:50 by GW

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Account Number: 11875

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	52.2	ug/l	1

State of California Lab Certification No. 2116
This sample was filtered in the lab for dissolved metals.

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	08/29/2006 05:25	Eric L Eby	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/28/2006 20:19	James L Mertz	1

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4847769

MW-X Grab Water Sample

Sunol, CA
Collected:08/22/2006 by GW

Account Number: 11875

Submitted: 08/23/2006 10:00
Reported: 09/01/2006 at 16:20
Discard: 10/02/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SOL-X

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
06053	BTEX by 8260B					
05401	Benzene	71-43-2	2.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	0.6	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	2.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/24/2006 17:52	Steven A Skiles	1
06053	BTEX by 8260B	SW-846 8260B	1	08/30/2006 00:55	Kelly E Brickley	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/24/2006 17:52	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/30/2006 00:55	Kelly E Brickley	1

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002670
Reported: 09/01/06 at 04:20 PM

Matrix QC may not be reported if 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.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 06235196101A	Sample number(s): 4847765,4847767							
Sulfate	N.D.	0.30	mg/l	99		89-110		
Nitrate Nitrogen	N.D.	0.050	mg/l	97		90-110		
Batch number: 06235834401A	Sample number(s): 4847765,4847767							
Ferrous Iron	N.D.	0.0080	mg/l	99		95-105		
Batch number: 062360001A	Sample number(s): 4847763,4847765							
Methanol (by Direct Injection)	N.D.	200.	ug/l	104		80-120		
Batch number: 062360002A	Sample number(s): 4847765,4847767							
Methane	N.D.	2.0	ug/l	81		80-120		
Batch number: 06236021201A	Sample number(s): 4847765,4847767							
Total Dissolved Solids	N.D.	9.7	mg/l	102		80-120		
Batch number: 06236A08A	Sample number(s): 4847763,4847769							
TPH-GRO - Waters	N.D.	50.	ug/l	103	112	70-130	9	30
Batch number: 06236A31A	Sample number(s): 4847762							
TPH-GRO - Soils	N.D.	1.0	mg/kg	92		67-119		
Batch number: 06236A53A	Sample number(s): 4847765,4847767							
TPH-GRO - Waters	N.D.	50.	ug/l	107	108	70-130	0	30
Batch number: 062370018A	Sample number(s): 4847767							
Methanol (by Direct Injection)	N.D.	200.	ug/l	115		80-120		
Batch number: 06240020201A	Sample number(s): 4847765,4847767							
Alkalinity to pH 4.5				99		98-103		
Batch number: 062401848001	Sample number(s): 4847765-4847768							
Iron	N.D.	0.0522	mg/l	91		90-112		
Manganese	N.D.	0.00036	mg/l	99		90-110		
Batch number: B062352AC	Sample number(s): 4847762							
Benzene	N.D.	0.5	ug/kg	102		77-119		
Toluene	N.D.	1.	ug/kg	102		81-116		
Ethylbenzene	N.D.	1.	ug/kg	101		82-115		
Xylene (Total)	N.D.	1.	ug/kg	104		82-117		
Batch number: D062363AA	Sample number(s): 4847763							
Ethanol	N.D.	50.	ug/l	137		35-168		
Benzene	N.D.	0.5	ug/l	92		85-117		
Toluene	N.D.	0.5	ug/l	95		85-115		
Ethylbenzene	N.D.	0.5	ug/l	93		82-119		
Xylene (Total)	N.D.	0.5	ug/l	95		83-113		

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002670
Reported: 09/01/06 at 04:20 PM

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: D062414AA	Sample number(s): 4847764,4847769							
Benzene	N.D.	0.5	ug/l	99		85-117		
Toluene	N.D.	0.5	ug/l	98		85-115		
Ethylbenzene	N.D.	0.5	ug/l	99		82-119		
Xylene (Total)	N.D.	0.5	ug/l	100		83-113		
Batch number: D062422AA	Sample number(s): 4847765,4847767							
Ethanol	N.D.	50.	ug/l	102	127	35-168	22	30
Benzene	N.D.	0.5	ug/l	94	96	85-117	2	30
Toluene	N.D.	0.5	ug/l	95	96	85-115	1	30
Ethylbenzene	N.D.	0.5	ug/l	95	96	82-119	2	30
Xylene (Total)	N.D.	0.5	ug/l	96	97	83-113	2	30

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: 06235196101A	Sample number(s): 4847765,4847767 UNSPK: P847857 BKG: P847857								
Sulfate	113*		90-110			5,660.	5,820.	3	3
Nitrate Nitrogen	102		90-110			N.D.	N.D.	0 (1)	2
Batch number: 06235834401A	Sample number(s): 4847765,4847767 UNSPK: P847857 BKG: P847857								
Ferrous Iron	95	96	86-110	1	4	510.	500.	2	8
Batch number: 062360001A	Sample number(s): 4847763,4847765 UNSPK: P847692								
Methanol (by Direct Injection)	108	108	81-117	0	20				
Batch number: 062360002A	Sample number(s): 4847765,4847767 UNSPK: P847482								
Methane	83	83	63-124	0	20				
Batch number: 06236021201A	Sample number(s): 4847765,4847767 UNSPK: P848003 BKG: P848382								
Total Dissolved Solids	97	96	60-140	0	5	8,940.	9,020.	1	5
Batch number: 06236A08A	Sample number(s): 4847763,4847769 UNSPK: P847667								
TPH-GRO - Waters	139	133	63-154	4	30				
Batch number: 06236A31A	Sample number(s): 4847762 UNSPK: P847110								
TPH-GRO - Soils	93	89	39-118	4	30				
Batch number: 06236A53A	Sample number(s): 4847765,4847767 UNSPK: P847668								
TPH-GRO - Waters	111		63-154						
Batch number: 062370018A	Sample number(s): 4847767 UNSPK: P850033								
Methanol (by Direct Injection)	105	105	81-117	0	20				
Batch number: 06240020201A	Sample number(s): 4847765,4847767 UNSPK: P847379 BKG: P847379								
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	4
Alkalinity to pH 4.5	101	101	64-130	0	2	93.1	101.	8*	4

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002670
Reported: 09/01/06 at 04:20 PM

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: 062401848001	Sample number(s): 4847765-4847768 UNSPK: P851237 BKG: P851237								
Iron	95	96	75-125	1	20	0.251	0.243	3 (1)	20
Manganese	100	100	75-125	1	20	0.0654	0.0654	0	20
Batch number: B062352AC	Sample number(s): 4847762 UNSPK: P846481								
Benzene	92	93	59-120	1	30				
Toluene	90	90	52-121	1	30				
Ethylbenzene	83	87	54-116	3	30				
Xylene (Total)	88	91	44-127	2	30				
Batch number: D062363AA	Sample number(s): 4847763 UNSPK: P846092								
Ethanol	89	96	34-161	8	30				
Benzene	90	93	83-128	2	30				
Toluene	87	92	83-127	5	30				
Ethylbenzene	89	93	82-129	5	30				
Xylene (Total)	88	92	82-130	4	30				
Batch number: D062414AA	Sample number(s): 4847764,4847769 UNSPK: P851403								
Benzene	97	102	83-128	5	30				
Toluene	96	103	83-127	7	30				
Ethylbenzene	97	102	82-129	5	30				
Xylene (Total)	97	102	82-130	6	30				
Batch number: D062422AA	Sample number(s): 4847765,4847767 UNSPK: P847692								
Ethanol	116		34-161						
Benzene	102		83-128						
Toluene	103		83-127						
Ethylbenzene	106		82-129						
Xylene (Total)	104		82-130						

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.

Analysis Name: Methanol and Ethanol
Batch number: 062360001A

	Acetone
4847763	105
4847765	104
Blank	103
LCS	100
MS	101
MSD	102
Limits:	67-131

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 062360002A

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002670
Reported: 09/01/06 at 04:20 PM

Surrogate Quality Control

	Propene
4847765	83
4847767	81
Blank	86
LCS	83
MS	84
MSD	86
Limits:	48-132

Analysis Name: TPH-GRO - Waters
Batch number: 06236A08A

	Trifluorotoluene-F
4847763	94
4847769	95
Blank	96
LCS	98
LCSD	100
MS	102
MSD	103
Limits:	63-135

Analysis Name: TPH-GRO - Soils
Batch number: 06236A31A

	Trifluorotoluene-F
4847762	52*
Blank	93
LCS	87
MS	93
MSD	94
Limits:	61-122

Analysis Name: TPH-GRO - Waters
Batch number: 06236A53A

	Trifluorotoluene-F
4847765	84
4847767	86
Blank	83
LCS	97
LCSD	98
MS	96
Limits:	63-135

Analysis Name: Methanol and Ethanol
Batch number: 062370018A

	Acetone
4847767	96
Blank	101
LCS	98
MS	101

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002670
Reported: 09/01/06 at 04:20 PM

Surrogate Quality Control

MSD	96			
Limits:	67-131			

Analysis Name: BTEX+MTBE by 8260B
Batch number: B062352AC

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4847762	39*	86	103	83
Blank	97	95	95	83
LCS	91	91	97	93
MS	91	91	94	93
MSD	92	91	94	92
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+5 Oxygenates+EDC+EDB+ETOH
Batch number: D062363AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4847763	99	97	97	98
Blank	105	99	99	100
LCS	102	97	99	100
MS	100	97	96	100
MSD	102	99	97	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX by 8260B
Batch number: D062414AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4847764	102	94	96	96
4847769	104	96	97	98
Blank	107	100	98	99
LCS	109	100	99	103
MS	107	101	99	103
MSD	112	104	101	107
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX+5 Oxygenates+EDC+EDB+ETOH
Batch number: D062422AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4847765	112	103	101	101
4847767	107	100	100	103
Blank	106	98	96	100
LCS	109	99	99	104
LCSD	109	101	100	104
MS	109	101	100	104
Limits:	80-116	77-113	80-113	78-113

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

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11875 Sample #: 4847762-69 SCR#: 242092
1602670

Facility #:
Site Address: Chevron Sunol Pipeline
Chevron PM: Lead Consultant:
Consultant/Office: URS Oakland
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: 510-893-3600 Fax #: 510-874-3268
Sampler: Greg White, Renee McFarlan
Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

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

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan: Ethanol; Methanol	Oxygenates Methane	Lead 7420 ☐ 7421 ☐ TDS	Dissolved Fe (Lab Filtered)	Manganese	Sulfate/Alkalinity	Ferrous Fe	Nitrate
* WP-MW9-DrillingMud-1,2	Soil			06 8 22	11:15		X		1	X	X									
* WP-MW9-DrillingMud-4,5	Soil			06 8 22	11:15		X		1	X	X									
* WP-MW9-DrillingMud-7,8	Soil			06 8 22	11:15		X		1	X	X									
* WP-MW9-DrillingMud-10,11	Soil			06 8 22	11:15		X		1	X	X									
SW-Creek	W				1345		X		5	X	X		X							
Trip Blank-8/22/06	W								1	X	X									
MW-6	W				1445		X		13	X	X		X	X	X	X	X	X	X	X
MW-7	W				1550		X		13	X	X		X	X	X	X	X	X	X	X
MW-X	W						X		5	X	X									

Comments / Remarks
*: Composite WP Samples to 1 sample for BTEX MTBE
E-mail results to Greg White, Joe Morgan, and Angela Liang

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
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
	8/6/06	1600			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	Date	Time
Temperature Upon Receipt 4.6° C°			Custody Seals Intact? Yes No	N/A	

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

3460 Rev. 10/04/01

Lancaster Laboratories
Explanation of Symbols and Abbreviations

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

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< 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.

U.S. EPA 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 quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
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 amount 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 for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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.

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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 for:

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

713-432-3335

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1003107. Samples arrived at the laboratory on Friday, August 25, 2006. The PO# for this group is 0015010091 and the release number is COSGRAY.

Client Description	Lancaster Labs Number
MW-5 Grab Water Sample	4851183
MW-5 Filtered Grab Water Sample	4851184
MW-8 Grab Water Sample	4851185
MW-8 Filtered Grab Water Sample	4851186
Trip Blank-8/24/06 Water Sample	4851187

ELECTRONIC COPY TO	URS	Attn: Angela Liang
ELECTRONIC COPY TO	URS	Attn: Joe Morgan
ELECTRONIC COPY TO	URS	Attn: April Giangerelli
ELECTRONIC COPY TO	URS	Attn: Greg White

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300

Respectfully Submitted,

Robert Heisey

Robert Heisey
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4851183

MW-5 Grab Water Sample

Sunol, CA
Collected:08/24/2006 09:20

Account Number: 11875

Submitted: 08/25/2006 09:25
Reported: 09/07/2006 at 13:24
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

5URSO

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07058	Manganese	7439-96-5	21.1	0.36	ug/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460.	ug/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	320,000.	460.	ug/l as CaCO3	1
00212	Total Dissolved Solids	n.a.	506,000.	9,700.	ug/l	1
00228	Sulfate	14808-79-8	72,200.	3,000.	ug/l	10
00368	Nitrate Nitrogen	14797-55-8	N.D.	250.	ug/l	5
08344	Ferrous Iron	n.a.	280.	8.0	ug/l	1
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
07105	Volatile Headspace Hydrocarbon					
07106	Methane	74-82-8	5.4	2.0	ug/l	1
	The continuing calibration standard injected before the method blank is below QC limits.					
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4851183

MW-5 Grab Water Sample

Sunol, CA
Collected:08/24/2006 09:20

Account Number: 11875

Submitted: 08/25/2006 09:25
Reported: 09/07/2006 at 13:24
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

5URSO

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/28/2006 16:05	Steven A Skiles	1
07058	Manganese	SW-846 6010B	1	08/31/2006 21:01	John P Hook	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	09/01/2006 14:42	Geraldine C Smith	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	09/01/2006 14:42	Geraldine C Smith	1
00212	Total Dissolved Solids	EPA 160.1	1	08/30/2006 08:12	Yolunder Y Bunch	1
00228	Sulfate	EPA 300.0	3	08/29/2006 07:29	Ashley M Heckman	10
00368	Nitrate Nitrogen	EPA 300.0	1	08/25/2006 16:42	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	08/26/2006 07:00	Daniel S Smith	1
01412	Methanol and Ethanol	SW-846 8015B	1	08/30/2006 16:01	Hai D Nguyen	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	08/28/2006 15:15	Hai D Nguyen	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/31/2006 10:20	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/28/2006 16:05	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/31/2006 10:20	Dawn M Harle	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4851184

MW-5 Filtered Grab Water Sample

Sunol, CA
Collected:08/24/2006 09:20

Account Number: 11875

Submitted: 08/25/2006 09:25
Reported: 09/07/2006 at 13:24
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	52.2	ug/l	1

State of California Lab Certification No. 2116
This sample was filtered in the lab for dissolved metals.

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	08/31/2006 21:06	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4851185

MW-8 Grab Water Sample

Sunol, CA
Collected:08/24/2006 11:10

Account Number: 11875

Submitted: 08/25/2006 09:25
Reported: 09/07/2006 at 13:24
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

8URSO

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	18,000.	1,000.	ug/l	20
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07058	Manganese	7439-96-5	171.	0.36	ug/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460.	ug/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	362,000.	460.	ug/l as CaCO3	1
00212	Total Dissolved Solids	n.a.	563,000.	9,700.	ug/l	1
00228	Sulfate	14808-79-8	90,200.	3,000.	ug/l	10
00368	Nitrate Nitrogen	14797-55-8	N.D.	250.	ug/l	5
08344	Ferrous Iron	n.a.	140.	8.0	ug/l	1
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
07105	Volatile Headspace Hydrocarbon					
07106	Methane	74-82-8	N.D.	2.0	ug/l	1
	The continuing calibration standard injected before the method blank is below QC limits.					
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	250.	ug/l	5
05401	Benzene	71-43-2	190.	3.	ug/l	5
05407	Toluene	108-88-3	2,600.	25.	ug/l	50
05415	Ethylbenzene	100-41-4	590.	3.	ug/l	5
06310	Xylene (Total)	1330-20-7	2,800.	25.	ug/l	50

State of California Lab Certification No. 2116

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

Laboratory Chronicle

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Analysis Report

Lancaster Laboratories Sample No. WW 4851185

MW-8 Grab Water Sample

Sunol, CA
Collected:08/24/2006 11:10

Account Number: 11875

Submitted: 08/25/2006 09:25
Reported: 09/07/2006 at 13:24
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

8URSO

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/28/2006 16:34	Steven A Skiles	20
07058	Manganese	SW-846 6010B	1	08/31/2006 21:11	John P Hook	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	09/01/2006 14:42	Geraldine C Smith	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	09/01/2006 14:42	Geraldine C Smith	1
00212	Total Dissolved Solids	EPA 160.1	1	08/30/2006 08:12	Yolunder Y Bunch	1
00228	Sulfate	EPA 300.0	1	08/29/2006 07:14	Ashley M Heckman	10
00368	Nitrate Nitrogen	EPA 300.0	1	08/25/2006 17:59	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	08/26/2006 07:00	Daniel S Smith	1
01412	Methanol and Ethanol	SW-846 8015B	1	08/30/2006 16:36	Hai D Nguyen	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	08/28/2006 15:28	Hai D Nguyen	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/31/2006 10:43	Dawn M Harle	5
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/31/2006 11:06	Dawn M Harle	50
01146	GC VOA Water Prep	SW-846 5030B	1	08/28/2006 16:34	Steven A Skiles	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/31/2006 10:43	Dawn M Harle	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	08/31/2006 11:06	Dawn M Harle	50
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4851186

MW-8 Filtered Grab Water Sample

Sunol, CA
Collected:08/24/2006 11:10

Account Number: 11875

Submitted: 08/25/2006 09:25
Reported: 09/07/2006 at 13:24
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	52.2	ug/l	1

State of California Lab Certification No. 2116
This sample was filtered in the lab for dissolved metals.

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	08/31/2006 21:16	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4851187

Trip Blank-8/24/06 Water Sample

Sunol, CA
Collected: n.a.

Account Number: 11875

Submitted: 08/25/2006 09:25
Reported: 09/07/2006 at 13:24
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

TB824

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/28/2006 13:07	Steven A Skiles	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/31/2006 11:29	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/28/2006 13:07	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/31/2006 11:29	Dawn M Harle	1

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1003107
Reported: 09/07/06 at 01:24 PM

Matrix QC may not be reported if 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.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 06237196102A	Sample number(s): 4851183,4851185							
Sulfate	N.D.	0.30	mg/l	107		89-110		
Nitrate Nitrogen	N.D.	0.050	mg/l	107		90-110		
Batch number: 06238834401A	Sample number(s): 4851183,4851185							
Ferrous Iron	N.D.	0.0080	mg/l	97		95-105		
Batch number: 062400011A	Sample number(s): 4851183,4851185							
Methane	N.D.	2.0	ug/l	108		80-120		
Batch number: 06240B08A	Sample number(s): 4851183,4851185,4851187							
TPH-GRO - Waters	N.D.	50.	ug/l	104	109	70-130	4	30
Batch number: 062420014A	Sample number(s): 4851183,4851185							
Methanol (by Direct Injection)	N.D.	200.	ug/l	108		80-120		
Batch number: 06242021201A	Sample number(s): 4851183,4851185							
Total Dissolved Solids	N.D.	9.7	mg/l	92		80-120		
Batch number: 062421848001	Sample number(s): 4851183-4851186							
Iron	N.D.	0.0522	mg/l	101		90-112		
Manganese	N.D.	0.00036	mg/l	101		90-110		
Batch number: 06244020201A	Sample number(s): 4851183,4851185							
Alkalinity to pH 4.5				99		98-103		
Batch number: D062431AA	Sample number(s): 4851183,4851185,4851187							
Ethanol	N.D.	50.	ug/l	130	129	35-168	1	30
Benzene	N.D.	0.5	ug/l	92	91	85-117	1	30
Toluene	N.D.	0.5	ug/l	96	94	85-115	2	30
Ethylbenzene	N.D.	0.5	ug/l	91	90	82-119	1	30
Xylene (Total)	N.D.	0.5	ug/l	91	90	83-113	0	30

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: 06237196102A	Sample number(s): 4851183,4851185 UNSPK: P841183 BKG: P841183								
Sulfate	133*		90-110			61.1	69.3	4*	3
Nitrate Nitrogen	107		90-110			N.D.	N.D.	0 (1)	2
Batch number: 06238834401A	Sample number(s): 4851183,4851185 UNSPK: P851232 BKG: P851232								

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1003107
Reported: 09/07/06 at 01:24 PM

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
Ferrous Iron	96	98	86-110	1	4	3.3	3.4	2 (1)	8
Batch number: 062400011A	Sample number(s): 4851183,4851185 UNSPK: P849733								
Methane	108	125*	63-124	8	20				
Batch number: 06240B08A	Sample number(s): 4851183,4851185,4851187 UNSPK: P851212								
TPH-GRO - Waters	119		63-154						
Batch number: 062420014A	Sample number(s): 4851183,4851185 UNSPK: P851220								
Methanol (by Direct Injection)	104	108	81-117	4	20				
Batch number: 06242021201A	Sample number(s): 4851183,4851185 UNSPK: P852794 BKG: P852794								
Total Dissolved Solids	89	95	60-140	4	5	31,700.	31,800.	0	5
Batch number: 062421848001	Sample number(s): 4851183-4851186 UNSPK: P847576 BKG: P847576								
Iron	99	86	75-125	11	20	0.289	0.127	78* (1)	20
Manganese	91	88	75-125	1	20	1.02	0.979	4	20
Batch number: 06244020201A	Sample number(s): 4851183,4851185 UNSPK: P852794 BKG: P852794								
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	4
Alkalinity to pH 4.5	94	95	64-130	1	2	29.5	29.3	1	4
Batch number: D062431AA	Sample number(s): 4851183,4851185,4851187 UNSPK: P851220								
Ethanol	129		34-161						
Benzene	97		83-128						
Toluene	105		83-127						
Ethylbenzene	96		82-129						
Xylene (Total)	96		82-130						

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.

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 062400011A

	Propene
4851183	70
4851185	68
Blank	86
LCS	87
MS	76
MSD	83
Limits:	48-132

Analysis Name: TPH-GRO - Waters
Batch number: 06240B08A

	Trifluorotoluene-F

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1003107
Reported: 09/07/06 at 01:24 PM

Surrogate Quality Control

4851183	95
4851185	91
4851187	91
Blank	97
LCS	98
LCSD	100
MS	99
Limits:	63-135

Analysis Name: Methanol and Ethanol
Batch number: 062420014A

	Acetone
4851183	107
4851185	100
Blank	106
LCS	96
MS	97
MSD	99
Limits:	67-131

Analysis Name: BTEX+5 Oxygenates+EDC+EDB+ETOH
Batch number: D062431AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4851183	106	97	101	93
4851185	106	99	101	97
4851187	108	97	102	95
Blank	109	100	104	96
LCS	108	99	102	99
LCSD	106	99	101	97
MS	109	102	102	98
Limits:	80-116	77-113	80-113	78-113

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

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

GIP # 1003107 242095

For Lancaster Laboratories use only

Acct. #: 11875 Sample #: 485183-87 SCR#:

Facility #:

Site Address: Chevron Sunol Pipeline

Chevron PM: Lead Consultant:

Consultant/Office: URS - Oakland

Consultant Prj. Mgr.: Joe Morgan

Consultant Phone #: 510-874-3201 Fax #: 510-874-3268

Sampler: Greg White & Jeff Polk

Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX + MTBE 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	~~8260 full scan~~ Ethanol + Methanol	~~Oxygenates~~ Methane	~~Lead 7420 ☐ 7421 ☐~~ TDS	Dissolved Fe (Lab Filtr.)	Manganese	Sulfate / Alkalinity	Ferrous Fe	Nitrate
MW-5	W			8/24/06	0920		X		13	X	X		X	X	X	X	X	X	X	X
MW-8	W			8/24/06			X			X	X		X	X	X	X	X	X	X	X
TripBlank-8/24/06	W								1	X	X									

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

Comments / Remarks

Email Results to Angela Lin, Joe Morgan Greg White of URS,

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
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
	8/24/06	12:00			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS FedEx ✓ Other			Received by: A. Carter	8/25/06	0925
Temperature Upon Receipt 3.2 C°			Custody Seals Intact? (Yes) No	8/25/06	0925

Lancaster Laboratories
Explanation of Symbols and Abbreviations

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

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< 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.

U.S. EPA 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 quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
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 amount 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 for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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.

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

713-432-3335

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1002880. Samples arrived at the laboratory on Thursday, August 24, 2006. The PO# for this group is 0015010091 and the release number is COSGRAY.

Client Description	Lancaster Labs Number
MW-2 Grab Water Sample	4849757
MW-2 Filtered Grab Water Sample	4849758
Trip Blank 2-8/23/06 Water Sample	4849759
MW-4 Grab Water Sample	4849760
MW-4 Filtered Grab Water Sample	4849761
MW-3 Grab Water Sample	4849762
MW-3 Filtered Grab Water Sample	4849763
Trip Blank 8/22/06 Water Sample	4849764

ELECTRONIC COPY TO	URS	Attn: Angela Liang
ELECTRONIC COPY TO	URS	Attn: Joe Morgan
ELECTRONIC COPY TO	URS	Attn: April Giangerelli
ELECTRONIC COPY TO	URS	Attn: Greg White

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Analysis Report

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300

Respectfully Submitted,

Max E. Snavely
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4849757

MW-2 Grab Water Sample

Sunol, CA
Collected:08/23/2006 13:30 by GW

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

2CSUN

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07058	Manganese	7439-96-5	24.1	0.36	ug/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460.	ug/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	470,000.	460.	ug/l as CaCO3	1
00212	Total Dissolved Solids	n.a.	811,000.	19,400.	ug/l	1
00228	Sulfate	14808-79-8	121,000.	3,000.	ug/l	10
00368	Nitrate Nitrogen	14797-55-8	7,000.	250.	ug/l	5
08344	Ferrous Iron	n.a.	15.	8.0	ug/l	1
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
07105	Volatile Headspace Hydrocarbon					
07106	Methane	74-82-8	5.3	2.0	ug/l	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	0.5	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/25/2006 15:28	Steven A Skiles	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849757

MW-2 Grab Water Sample

Sunol, CA
Collected:08/23/2006 13:30 by GW

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

2CSUN

07058	Manganese	SW-846 6010B	1	08/31/2006 20:23	John P Hook	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	08/30/2006 14:40	Geraldine C Smith	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	08/30/2006 14:40	Geraldine C Smith	1
00212	Total Dissolved Solids	EPA 160.1	1	08/25/2006 15:20	Yolunder Y Bunch	1
00228	Sulfate	EPA 300.0	1	08/29/2006 02:07	Ashley M Heckman	10
00368	Nitrate Nitrogen	EPA 300.0	1	08/25/2006 02:21	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	08/24/2006 19:50	Daniel S Smith	1
01412	Methanol and Ethanol	SW-846 8015B	1	08/25/2006 17:02	Hai D Nguyen	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	08/25/2006 14:38	Hai D Nguyen	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/30/2006 14:31	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/25/2006 15:28	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/30/2006 14:31	Dawn M Harle	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849758

MW-2 Filtered Grab Water Sample

Sunol, CA
Collected:08/23/2006 13:30 by GW

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Account Number: 11875

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	52.2	ug/l	1

State of California Lab Certification No. 2116
This sample was filtered in the lab for dissolved metals.

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	08/31/2006 20:28	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849759

Trip Blank 2-8/23/06 Water Sample

Sunol, CA
Collected:08/23/2006

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

TB2WC

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/25/2006 12:03	Steven A Skiles	1
06053	BTEX by 8260B	SW-846 8260B	1	08/25/2006 19:44	Kelly E Brickley	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/25/2006 12:03	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/25/2006 19:44	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849760

MW-4 Grab Water Sample

Sunol, CA
Collected:08/23/2006 10:45 by GW

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

4CSUN

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	70.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07058	Manganese	7439-96-5	226.	0.36	ug/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460.	ug/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	396,000.	460.	ug/l as CaCO3	1
00212	Total Dissolved Solids	n.a.	590,000.	19,400.	ug/l	1
00228	Sulfate	14808-79-8	78,400.	3,000.	ug/l	10
00368	Nitrate Nitrogen	14797-55-8	N.D.	250.	ug/l	5
08344	Ferrous Iron	n.a.	700.	8.0	ug/l	1
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
07105	Volatile Headspace Hydrocarbon					
07106	Methane	74-82-8	3.3	2.0	ug/l	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	0.6	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	1.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/25/2006 16:35	Steven A Skiles	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849760

MW-4 Grab Water Sample

Sunol, CA
Collected:08/23/2006 10:45 by GW

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
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Bellaire TX 77401

4CSUN

07058	Manganese	SW-846 6010B	1	08/31/2006 20:33	John P Hook	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	08/30/2006 14:40	Geraldine C Smith	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	08/30/2006 14:40	Geraldine C Smith	1
00212	Total Dissolved Solids	EPA 160.1	1	08/25/2006 15:20	Yolunder Y Bunch	1
00228	Sulfate	EPA 300.0	1	08/29/2006 02:22	Ashley M Heckman	10
00368	Nitrate Nitrogen	EPA 300.0	1	08/25/2006 02:37	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	08/24/2006 19:50	Daniel S Smith	1
01412	Methanol and Ethanol	SW-846 8015B	1	08/25/2006 17:19	Hai D Nguyen	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	08/25/2006 14:51	Hai D Nguyen	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/30/2006 14:53	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/25/2006 16:35	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/30/2006 14:53	Dawn M Harle	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849761

MW-4 Filtered Grab Water Sample

Sunol, CA
Collected:08/23/2006 10:45 by GW

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Account Number: 11875

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	52.2	ug/l	1

State of California Lab Certification No. 2116
This sample was filtered in the lab for dissolved metals.

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	08/31/2006 20:47	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849762

MW-3 Grab Water Sample

Sunol, CA
Collected:08/23/2006 12:10 by GW

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

3CSUN

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	170.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07058	Manganese	7439-96-5	368.	0.36	ug/l	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460.	ug/l as CaCO3	1
00202	Alkalinity to pH 4.5	n.a.	421,000.	460.	ug/l as CaCO3	1
00212	Total Dissolved Solids	n.a.	711,000.	19,400.	ug/l	1
00228	Sulfate	14808-79-8	26,300.	1,500.	ug/l	5
00368	Nitrate Nitrogen	14797-55-8	N.D.	250.	ug/l	5
08344	Ferrous Iron	n.a.	240.	8.0	ug/l	1
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
07105	Volatile Headspace Hydrocarbon					
07106	Methane	74-82-8	1,500.	200.	ug/l	100
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/25/2006 16:57	Steven A Skiles	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849762

MW-3 Grab Water Sample

Sunol, CA
Collected:08/23/2006 12:10 by GW

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

3CSUN

07058	Manganese	SW-846 6010B	1	08/31/2006 20:52	John P Hook	1
00201	Alkalinity to pH 8.3	EPA 310.1	1	08/30/2006 14:40	Geraldine C Smith	1
00202	Alkalinity to pH 4.5	EPA 310.1	1	08/30/2006 14:40	Geraldine C Smith	1
00212	Total Dissolved Solids	EPA 160.1	1	08/25/2006 15:20	Yolunder Y Bunch	1
00228	Sulfate	EPA 300.0	1	08/25/2006 02:52	Ashley M Heckman	5
00368	Nitrate Nitrogen	EPA 300.0	1	08/25/2006 02:52	Ashley M Heckman	5
08344	Ferrous Iron	SM20 3500-Fe B modified	1	08/24/2006 19:50	Daniel S Smith	1
01412	Methanol and Ethanol	SW-846 8015B	1	08/25/2006 17:37	Hai D Nguyen	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	08/29/2006 12:16	Hai D Nguyen	100
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	08/30/2006 15:16	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/25/2006 16:57	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/30/2006 15:16	Dawn M Harle	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849763

MW-3 Filtered Grab Water Sample

Sunol, CA
Collected:08/23/2006 12:10 by GW

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Account Number: 11875

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01754	Iron	7439-89-6	N.D.	52.2	ug/l	1

State of California Lab Certification No. 2116
This sample was filtered in the lab for dissolved metals.

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	08/31/2006 20:57	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	08/30/2006 09:25	Megersa Deyessa	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4849764

Trip Blank 8/22/06 Water Sample

Sunol, CA
Collected:08/22/2006

Account Number: 11875

Submitted: 08/24/2006 09:35
Reported: 09/07/2006 at 13:32
Discard: 10/08/2006

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

TBSUC

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	TPH GRO SW-846 8015B mod	1	08/25/2006 12:24	Steven A Skiles	1
06053	BTEX by 8260B	SW-846 8260B	1	08/25/2006 20:07	Kelly E Brickley	1
01146	GC VOA Water Prep	SW-846 5030B	1	08/25/2006 12:24	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	08/25/2006 20:07	Kelly E Brickley	1

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002880
Reported: 09/07/06 at 01:33 PM

Matrix QC may not be reported if 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.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 06236196102A	Sample number(s): 4849757,4849760,4849762							
Sulfate	N.D.	0.30	mg/l	106		89-110		
Nitrate Nitrogen	N.D.	0.050	mg/l	106		90-110		
Batch number: 06236834401A	Sample number(s): 4849757,4849760,4849762							
Ferrous Iron	N.D.	0.0080	mg/l	99		95-105		
Batch number: 062370016A	Sample number(s): 4849757,4849760,4849762							
Methane	N.D.	2.0	ug/l	100		80-120		
Batch number: 062370018A	Sample number(s): 4849757,4849760,4849762							
Methanol (by Direct Injection)	N.D.	200.	ug/l	115		80-120		
Batch number: 06237021201A	Sample number(s): 4849757,4849760,4849762							
Total Dissolved Solids	N.D.	9.7	mg/l	100		80-120		
Batch number: 06237A20A	Sample number(s): 4849757,4849759-4849760,4849762,4849764							
TPH-GRO - Waters	N.D.	50.	ug/l	118	112	70-130	5	30
Batch number: 06242020201A	Sample number(s): 4849757,4849760,4849762							
Alkalinity to pH 4.5				99		98-103		
Batch number: 062421848001	Sample number(s): 4849757-4849758,4849760-4849763							
Iron	N.D.	0.0522	mg/l	101		90-112		
Manganese	N.D.	0.00036	mg/l	101		90-110		
Batch number: D062373AA	Sample number(s): 4849759,4849764							
Benzene	N.D.	0.5	ug/l	95		85-117		
Toluene	N.D.	0.5	ug/l	94		85-115		
Ethylbenzene	N.D.	0.5	ug/l	97		82-119		
Xylene (Total)	N.D.	0.5	ug/l	97		83-113		
Batch number: D062421AA	Sample number(s): 4849757,4849760,4849762							
Ethanol	N.D.	50.	ug/l	147		35-168		
Benzene	N.D.	0.5	ug/l	93		85-117		
Toluene	N.D.	0.5	ug/l	95		85-115		
Ethylbenzene	N.D.	0.5	ug/l	92		82-119		
Xylene (Total)	N.D.	0.5	ug/l	92		83-113		

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

	MS	MSD	MS/MSD	RPD	BKG	DUP	DUP	Dup RPD

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002880
Reported: 09/07/06 at 01:33 PM

Analysis Name	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD	Max
Batch number: 06236196102A	Sample number(s): 4849757,4849760,4849762 UNSPK: P849807 BKG: P849807								
Sulfate	99		90-110			160.	150.	7*	3
Nitrate Nitrogen	117*		90-110			N.D.	N.D.	0 (1)	2
Batch number: 06236834401A	Sample number(s): 4849757,4849760,4849762 UNSPK: P849754 BKG: P849754								
Ferrous Iron	97	93	86-110	2	4	3.0	2.8	4 (1)	8
Batch number: 062370016A	Sample number(s): 4849757,4849760,4849762 UNSPK: P849661								
Methane	99	89	63-124	10	20				
Batch number: 062370018A	Sample number(s): 4849757,4849760,4849762 UNSPK: P850033								
Methanol (by Direct Injection)	105	105	81-117	0	20				
Batch number: 06237021201A	Sample number(s): 4849757,4849760,4849762 UNSPK: P848473 BKG: P849894								
Total Dissolved Solids	112	100	60-140	5	5	12,000.	12,100.	1	5
Batch number: 06237A20A	Sample number(s): 4849757,4849759-4849760,4849762,4849764 UNSPK: P849929								
TPH-GRO - Waters	72		63-154						
Batch number: 06242020201A	Sample number(s): 4849757,4849760,4849762 UNSPK: P849661 BKG: P849661								
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	4
Alkalinity to pH 4.5	98	99	64-130	0	2	112.	113.	1	4
Batch number: 062421848001	Sample number(s): 4849757-4849758,4849760-4849763 UNSPK: P847576 BKG: P847576								
Iron	99	86	75-125	11	20	0.289	0.127	78* (1)	20
Manganese	91	88	75-125	1	20	1.02	0.979	4	20
Batch number: D062373AA	Sample number(s): 4849759,4849764 UNSPK: P846672								
Benzene	107	105	83-128	2	30				
Toluene	107	104	83-127	2	30				
Ethylbenzene	107	106	82-129	1	30				
Xylene (Total)	106	105	82-130	1	30				
Batch number: D062421AA	Sample number(s): 4849757,4849760,4849762 UNSPK: P849837								
Ethanol	113	141	34-161	22	30				
Benzene	107	106	83-128	0	30				
Toluene	105	105	83-127	0	30				
Ethylbenzene	103	103	82-129	0	30				
Xylene (Total)	101	102	82-130	1	30				

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.

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 062370016A

	Propene
4849757	57
4849760	59
4849762	82
Blank	85
LCS	87
MS	78

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002880
Reported: 09/07/06 at 01:33 PM

Surrogate Quality Control

MSD	66			
Limits:	48-132			

Analysis Name: Methanol and Ethanol
Batch number: 062370018A

	Acetone
4849757	95
4849760	98
4849762	98
Blank	101
LCS	98
MS	101
MSD	96
Limits:	67-131

Analysis Name: TPH-GRO - Waters
Batch number: 06237A20A

	Trifluorotoluene-F
4849757	80
4849759	79
4849760	84
4849762	90
4849764	79
Blank	79
LCS	109
LCSD	107
MS	98
Limits:	63-135

Analysis Name: BTEX by 8260B
Batch number: D062373AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4849759	103	99	100	100
4849764	104	100	101	101
Blank	104	99	101	102
LCS	106	102	101	103
MS	105	101	100	103
MSD	104	101	100	103
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX+5 Oxygenates+EDC+EDB+ETOH
Batch number: D062421AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4849757	104	97	100	94
4849760	105	97	101	94
4849762	105	97	99	93
Blank	105	98	98	94
LCS	106	102	99	99
MS	107	100	102	102
MSD	106	101	102	101

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

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1002880
Reported: 09/07/06 at 01:33 PM

Surrogate Quality Control

Limits:	80-116	77-113	80-113	78-113

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

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11875 Sample #: 489975-69 GRP # 1002880 242094 SCR#:

Facility #:
Site Address: Chevron Sunol Pipeline
Chevron PM: Lead Consultant:
Consultant/Office: URS- Oakland
Consultant Prj. Mgr.: ~~URS Oakland~~ Joe Morgan
Consultant Phone #: ~~Joe Morgan~~ 510 874 3201 Fax #: 510 874-3268
Sampler: Greg White & Renee McFarlen
Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

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

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	~~8260 full scan~~ Ethanol & Methanol	Oxygenates Methanol	~~Lead 7420 ☐ 7421 ☐~~ TDS	Dissolved Fe (Lab Filter)	Manganese	Sulfate / Alkalinity	Ferrous Fe	Nitrate
MW-2	W			8/23/06	1330		X		13	X	X		X	X	X	X	X	X	X	X
Trip Blank 2-8/23/06	W								1	X	X									

Comments / Remarks
Email Results to Greg White Angela Liang Joe Morgan of URS

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
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	8/23/06	1400			
~~Relinquished by:~~	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: 2 coolers. UPS FedEx Other			Received by: [signature]	Date 8/24/06	Time 0935
Temperature Upon Receipt 3.1 4.5 C°			Custody Seals Intact? Yes No		

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only — Acct. #: 11875 Sample #: 4849957-64 SCR#:

GCP# 1002880 242093

Facility #:	
Site Address:	Chevron Sunol Pipeline
Chevron PM:	Lead Consultant:
Consultant/Office:	URS- Oakland
Consultant Prj. Mgr.:	Joe Morgan
Consultant Phone #:	510-874-3201 Fax #: 510-874-3268
Sampler:	Greg White & Renee McFarlen
Service Order #:	☐ Non SAR:

Analyses Requested / **Preservation Codes**

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX + MTBE 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	~~8260 full scan~~ Ethanol & Methanol	~~Oxygenates~~ Methane	~~Lead 7420 ☐ 7421 ☐~~ TDS	Dissolved Fe (Lab Filtered)	Manganese	Sulfate/Alkalinity	Ferrous Fe	Nitrate	
MW-4	W			8/23/06	1045		X		13	X	X		X	X	X	X	X	X	X	X	
MW-3	W			8/23/06	1210		X		13	X	X		X	X	X	X	X	X	X	X	
Trip Blank-8/23/06	W								1	X	X										

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

Comments / Remarks

Email results to Greg White, Angela Liang, Joe Morgan of URS

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
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
Greg White (signature)	8/23/06				
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS (FedEx) Other 2 coolers			Received by: (signature)	8/24/06	0935
Temperature Upon Receipt 3.1-4.5 C° 4.5 (#3 coolers) 8/24/06			Custody Seals Intact? (Yes) No		

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

3460 Rev. 10/04/01

Lancaster Laboratories
Explanation of Symbols and Abbreviations

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

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< 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.

U.S. EPA 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 quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
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 amount 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 for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

Appendix E
Waste Manifests

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CAL 000 303 935
2. Page 1 of: 1
3. Emergency Response Phone: (510) 475-2901
4. Manifest Tracking Number: 001299002 JJK

GENERATOR

5. Generator's Name and Mailing Address: Chevron Pipe Line Company
1546 China Grade Loop
Bakersfield, CA. 93308
Generator's Phone: (661) 303-8095 Attn: Tim Zander

Generator's Site Address (if different than mailing address): Mile post 2.7 Calaveras Rd.
Sunol, CA. 94586

6. Transporter 1 Company Name: Filter Recycling Svc
U.S. EPA ID Number: CAR000 129304

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Filter Recycling
2230 Riverside Ave.
Rialto, CA 92316
Facility's Phone: 909-873-4141
U.S. EPA ID Number: CAD 982 444 481

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. Non-RCRA Hazardous Waste, Liquid (Water w/ trace Hydrocarbons)	5 ~~3~~ gcw 9/12/06	DM	275 ~~120~~ gcw 9/12/06	G	343
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Wear proper PPE while handling Decon J/N 5025
24 hr. emergency contact (Decon Environmental) 510-475-2901 Profile # 06032811
Site address: Milepost 2.7 Calaveras Rd., Sunol CA. 94586 INV # 24820

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Tim Zander
Signature: TZander
Month: 9 Day: 12 Year: 06

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Emery Ford
Signature:
Month: 9 Day: 20 Year: 06

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name Signature Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

~~DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)~~
Used As Generators Initial Copy

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. CAL 000 303 939	Manifest Document No. 50025	2. Page 1 of 1

3. Generator's Name and Mailing Address: Chevron Pipe Line Company, 1546 China Grade Loop, Bakersfield, CA 93308

50026

4. Generator's Phone (661) 303-8095 Attn: Tim Zander

5. Transporter 1 Company Name: Filter Recycling Svc | 6. US EPA ID Number: CAR000129034

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: Filter Recycling, 2230 Riverside Ave. Rialto, CA 92316 | 10. US EPA ID Number: CAD 982 444 481

E. State Facility's ID

F. Facility's Phone 909-873-4141

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-Hazardous waste, Solid (soil with trace hydrocarbons)	2	DM	1,400	P
b. Non-Hazardous waste, liquid (~~Purge water~~ drilling mud [9/11/06 gew] with trace hydrocarbons)	11	DM	605	G
c.				
d.				

G. Additional Descriptions for Materials Listed Above

11a.) Profile # 06032810

11b.) Profile # 06032811

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Wear proper PPE while handling Decon J/N 4949 INV # 24820

24 hour Emergency contact (Decon Environmental) 510-475-2901

Site address: Milepost 2.7, Calaveras Rd., Sunol, CA 94586

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Agent for CP

Printed/Typed Name: Tim Zander | Signature: TEZander | Date Month 9 Day 12 Year 06

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Larry Ford | Signature: Larry Ford | Date Month 9 Day 20 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date Month Day Year

Waste Facility

PRINTED ON RECYCLED PAPER USING SOYBEAN INK · PRINTED WITH SOY INK

Appendix F
Well Development Forms

URS

WELL DEVELOPMENT FORM

Well Identifier: MW-8 | Date Developed: 8/18/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Gerald (Gregg Drilling) | Time (Initial WL): 8:05

Initial Water Level (WL): 18.74 ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): 24.65 ft. | Casing Diameter (D): 2 in.

Casing Volume (A): 0.96 gal. | Saturated Sandpack Volume (B): 4.63 gal.

Total Well Volume (A + B): 5.6 gal. | Total Volume to be Removed: ~17 gal.

PURGE METHOD: BAILER X PUMP _____ OTHER: Mechanical Surge Block

Pump / Bailer Type: Mechanical surge block and 1.5" x 5' Stainless Steel Bailer

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	Odor	Color	**DO (mg/L)**	Comments
9:05	0.25			18.2	7.20	1.95	>999	Slight HC	Gray	5.41	
9:10	4			18.4	7.33	1.85	>999	Slight HC	Gray	5.39	
9:20	5.5	23.81 Rising									
9:30	6	23.84 Rising	24.53	18.1	7.33	1.61	>999	V. Slight HC	Lt. Gray	9.28	
9:40	6.25	23.82 Rising	24.53	18.5	7.37	1.57	>999	V. Slight HC	Lt. Gray	6.12	

Comments: **09:20** Purged dry, recharging slowly

09:30 Purged dry again, will allow well to recharge again to take another set of readings

09:40 Purged dry again after removing ~6.25 gallons

Surge Time: 8:50

Start Purge Time: 9:05 | End Purge Time: 9:45

Total Volume Purged: ~6.25 gal. | Purged Dry? Yes (Three Times)

Final Water Level: 23.82 ft. | Final Depth: 24.53 ft. | Time: 9:40

Formula for Calculating Casing Volume

$$[A] = \frac{\pi D^2 h}{4} * 7.48 \frac{gal}{ft^3}$$

D = Well diameter (feet)
h= Height of water column (feet)

Formula for Calculating Volume of Water within the Filter Pack

$$[B] = \left[\frac{\pi D_b^2}{4} h_{sat} - \frac{\pi D_a^2}{4} h_{sat} \right] * [f_p] * 7.48 \frac{gal}{ft^3}$$

D_a = Well diameter (feet)
D_b = Boring diameter (feet)
h_{sat} = saturated filter pack length (ft)
f_p = filter pack porosity = 30%

URS

WELL DEVELOPMENT FORM

Well Identifier: MW-9 | Date Developed: 8/18/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Gerald (Gregg Drilling) | Time (Initial WL): 10:05

Initial Water Level (WL): No water encountered - mud ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): -- ft. | Casing Diameter (D): 2 in.

Casing Volume (A): 1.19 gal. | Saturated Sandpack Volume (B): 3.87 gal.

Total Well Volume (A + B): 5.1 gal. | Total Volume to be Removed: ~16 gal.

PURGE METHOD: BAILER X PUMP X OTHER: Mechanical Surge Block

Pump / Bailer Type: Mechanical surge block, 1.5" x 5' Stainless Steel Bailer, Grunfos Pump

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (mS/cm)	Turb. (NTU)	Odor	Color	**DO (mg/L)**	Comments
10:25	3										
10:50	6			20.2	10.31	0.00	>999	--	Gray	2.6	
11:25	9			19.2	10.85	1.48	984	--	Gray/Brown	3.71	
12:00	15			22.6	9.34	1.18	998	--	Gray/Brown	3.5	
12:15	18	42.83	46.24	19.6	8.30	1.22	>999	--	Gray/Brown	4.6	
12:55	20			18.8	7.26	1.20	>999	Slight HC	Lt. Gray	4.04	Minor Sheen
13:10	23			18.4	7.04	1.19	>999	Strong HC	Lt. Gray	5.11	Sheen
13:25	30			18.3	7.12	1.17	>999	Strong HC	Lt. Gray	4.7	Sheen
13:30	31			18.2	6.91	1.18	>999	Strong HC	Lt. Gray	4.82	Sheen

Comments: **10:05** Will bail out mud and recheck water level and TD.

10:15 WL - 38.94 / TD - 46.24

10:25 Cleared out thick sediment with bailer. Will surge well before continuing to bail.

11:15 Try purging with pump - still too thick. **12:00** Begin pumping

Surge Time: 10:30 / 12:25

Start Purge Time: 10:10 / 10:45 / 11:20 / 12:00 / 12:30 | End Purge Time: 13:30

Total Volume Purged: 31 gal. | Purged Dry? No

Final Product / Water Level: 43.61 / 43.65 ft. | Final Depth: 46.24 ft. | Time: 13:30

Formula for Calculating Casing Volume

$$[A] = \frac{\pi D^2 h}{4} * 7.48 \frac{\text{gal}}{\text{ft}^3}$$

D = Well diameter (feet)
h= Height of water column (feet)

Formula for Calculating Volume of Water within the Filter Pack

$$[B] = \left[\frac{\pi D_b^2}{4} h_{sat} - \frac{\pi D_a^2}{4} h_{sat} \right] * [f_p] * 7.48 \frac{gal}{ft^3}$$

D_a = Well diameter (feet)
D_b = Boring diameter (feet)
h_{sat} = saturated filter pack length (ft)
f_p = filter pack porosity = 30%

Appendix G
Low-Flow Forms

URS

Troll 9000 | Low-Flow System
08/23/06 | ISI Low-Flow Log

Project Information:

Operator Name	Greg White
Company Name	URS Corporation
Project Name	Chevron Sunol Pipeline
Site Name	Calaveras Rd, Sunol, CA

Pump Information:

Pump Model/Type	Mega Typhoon
Tubing Type	LDPE
Tubing Diameter	0.38 [in]
Tubing Length	40 [ft]
Pump placement from TOC	35.5 [ft]

Well Information:

Well Id	MW-2
Well diameter	4 [in]
Well total depth	38.75 [ft bgs]
Depth to top of screen	23.75 [ft bgs]
Screen length	15 [ft]
Depth to Water	33.11 [ft TOC-N]

Pumping information:

Final pumping rate	250 [mL/min]
Flowcell volume	980.08 [mL]
Calculated Sample Rate	29403 [sec]
Sample rate	180 [sec]
Stabilized drawdown	0.05 [ft]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-1 +/-3 %	+/-1	+/-0.2	+/-20
Last 5 Readings	13:11:17	19.22	6.56	1234.11	5.20	0.37	40.07
	13:14:18	18.68	6.57	1217.28	5.85	0.38	36.41
	13:17:21	19.08	6.62	1218.49	7.35	0.32	33.15
	13:20:24	18.55	6.63	1200.54	7.99	0.32	29.29
	13:23:28	18.79	6.63	1205.16	9.95	0.32	25.69
Variance in last 3 readings	13:17:21	0.40	0.05	1.21	1.51	-0.06	-3.26
	13:20:24	-0.53	0.01	-17.95	0.63	-0.01	-3.86
	13:23:28	0.24	0.00	4.62	1.97	0.00	-3.60

Notes:

Initial water level: 33.11 ft TOC-N
Final water level: 33.16 ft TOC-N
Initial pumping rate: 200 mL/min
Final pumping rate: 250 mL/min
Total volume removed: 3 gal

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Troll 9000 | Low-Flow System
08/23/06 | ISI Low-Flow Log

Project Information:

Operator Name	Greg White
Company Name	URS Corporation
Project Name	Chevron Sunol Pipeline
Site Name	Calaveras Rd, Sunol, CA

Pump Information:

Pump Model/Type	Mega Typhoon
Tubing Type	LDPE
Tubing Diameter	0.38 [in]
Tubing Length	40.68 [ft]
Pump placement from TOC	35.8 [ft]

Well Information:

Well Id	MW-3
Well diameter	4 [in]
Well total depth	37.52 [ft bgs]
Depth to top of screen	22.24 [ft bgs]
Screen length	15 [ft]
Depth to Water	34.66 [ft TOC-N]

Pumping information:

Final pumping rate	0 [mL/min]
Flowcell volume	1024.24 [mL]
Calculated Sample Rate	30728 [sec]
Sample rate	180 [sec]
Stabilized drawdown	2.31 [ft]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-1 +/-3 %	+/-1	+/-0.2	+/-20
Last 5 Readings	11:49:35	19.47	6.54	1091.87	206.8	0.37	8
	11:52:38	20.40	6.55	1114.55	211.90	0.37	6.16
	11:55:40	19.39	6.56	1092.86	282.32	0.35	2.91
	11:58:42	19.93	6.59	1104.25	197.78	0.30	0.13
	12:01:45	19.36	6.60	1091.82	193.07	0.30	-1.80
Variance in last 3 readings	11:55:40	-1.01	0.01	0.99	75.52	-0.02	-5.09
	11:58:42	0.54	0.03	11.39	-84.54	-0.05	-2.78
	12:01:45	-0.57	0.01	-12.43	-4.71	0.00	-1.93

Notes:

Initial water level: 34.66 ft TOC-N
Final water level: 36.97 ft TOC-N
Initial pumping rate: 250 mL/min
Final pumping rate: 250mL/min
Total volume removed: 2.5 gal

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Troll 9000 | Low-Flow System
08/23/06 | ISI Low-Flow Log

Project Information:

Operator Name	Greg White
Company Name	URS Corporation
Project Name	Chevron Sunol Pipeline
Site Name	Calaveras Rd, Sunol, CA

Pump Information:

Pump Model/Type	Mega Typhoon
Tubing Type	LDPE
Tubing Diameter	0.38 [in]
Tubing Length	45 [ft]
Pump placement from TOC	39.3 [ft]

Well Information:

Well Id	MW-4
Well diameter	4 [in]
Well total depth	40.68 [ft bgs]
Depth to top of screen	30.7 [ft bgs]
Screen length	10 [ft]
Depth to Water	38.79 [ft TOC-N]

Pumping information:

Final pumping rate	200 [mL/min]
Flowcell volume	1024.24 [mL]
Calculated Sample Rate	30728 [sec]
Sample rate	180 [sec]
Stabilized drawdown	1.19 [ft]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-1 +/-3 %	+/-1	+/-0.2	+/-20
Last 5 Readings	10:21:21	17.41	6.55	842.62	133.8	6.6	-22
	10:24:25	17.41	6.58	843.54	101.65	6.25	-22.22
	10:27:28	17.49	6.59	844.48	71.90	5.88	-21.83
	10:30:30	17.23	6.61	839.49	81.61	5.73	-21.39
	10:33:33	18.75	6.62	866.99	79.15	5.12	-22.49
Variance in last 3 readings	10:27:28	0.08	0.01	0.94	-29.75	-0.37	0.39
	10:30:30	-0.26	0.02	-4.99	9.71	-0.14	0.44
	10:33:33	1.52	0.01	27.50	-2.46	-0.61	-1.10

Notes:

Initial water level: 38.79 ft TOC-N
Final water level: 39.98 ft TOC-N
Initial pumping rate: 200 mL/min
Final pumping rate: 200 mL/min
Total volume removed: 2 gal

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Troll 9000 | Low-Flow System
08/24/06 | ISI Low-Flow Log

Project Information:

Operator Name	Greg White
Company Name	URS Corporation
Project Name	Chevron Sunol Pipeline
Site Name	Calaveras Road, Sunol, CA

Pump Information:

Pump Model/Type	Mega Typhoon
Tubing Type	LDPE
Tubing Diameter	0.38 [in]
Tubing Length	50 [ft]
Pump placement from TOC	44 [ft]

Well Information:

Well Id	MW-5
Well diameter	4 [in]
Well total depth	49.5 [ft bgs]
Depth to top of screen	39.5 [ft bgs]
Screen length	10 [ft]
Depth to Water	11.93 [ft TOC-N]

Pumping information:

Final pumping rate	250 [mL/min]
Flowcell volume	1232.09 [mL]
Calculated Sample Rate	36963 [sec]
Sample rate	180 [sec]
Stabilized drawdown	1.33 [ft]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-1 +/-3 %	+/-1	+/-0.2	+/-20
Last 5 Readings	9:07:49	18.26	7.32	717.13	0.84	4.70	-144.79
	9:10:52	18.45	7.32	720.99	0.68	4.43	-146.42
	9:13:55	18.55	7.32	722.94	0.71	4.19	-148.29
	9:16:57	18.53	7.33	723.29	0.54	4.00	-149.23
	9:19:59	18.45	7.32	722.83	0.50	3.79	-151.92
Variance in last 3 readings	9:13:55	0.11	0.00	1.95	0.03	-0.24	-1.88
	9:16:57	-0.02	0.00	0.35	-0.17	-0.19	-0.94
	9:19:59	-0.08	0.00	-0.45	-0.04	-0.21	-2.69

Notes:

Initial water level: 11.93 ft TOC-N
Final water level: 13.26 ft TOC-N
Initial pumping rate: 200 mL/min
Final pumping rate: 250 mL/min
Total volume removed: 2.5 gal