ADDITIONAL SUBSURFACE INVESTIGATION REPORT

CHEVRON SUNOL PIPELINE SUNOL, CALIFORNIA

Prepared for

Chevron Pipe Line Company
4800 Fournace Place, E320C
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May 2006

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26815217

URS

May 22, 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 four additional groundwater monitoring wells at the Chevron Sunol Pipeline release site located in Sunol, California. This Additional Subsurface Investigation Report discusses the release history and previous investigation activities, the additional subsurface investigation activities, the geology and hydrogeology at the site, and the analytical results for soil and groundwater samples collected as part of both the additional subsurface investigation and the first 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 request to further define the horizontal and vertical extent of contamination in the soil and groundwater at the Site, as detailed in their December 30, 2005 letter to CPL. Specifically, this Report is intended to meet the requirement that an additional subsurface investigation report be submitted by May 22, 2006.

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

Sincerely yours,

URS CORPORATION

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Senior Project Manager

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May 22, 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 and/or recommendations contained in URS' report titled "**Additional Subsurface Investigation Report, Chevron Sunol Pipeline, Sunol, California**" are true and correct to the best of my knowledge at the present time.

Submitted by:

Sincerely,

Jeff Cosgray

URS

DISCLOSURE

This report ("**Additional Subsurface Investigation Report, Chevron Sunol Pipeline, Sunol, California**") was prepared under my direct supervision. The information presented in this report is based on our review of available data obtained during our investigation efforts and first quarter groundwater sampling activities and from studies performed by others. To the best of our knowledge, we have incorporated into our findings and recommendations all relevant data pertaining to the Chevron Sunol Pipeline Release site in Sunol, California.

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
Approved by:

Leonard P. Niles

Leonard P. Niles, R.G./C.H.G.

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µg/L	micrograms per liter
ACEH	Alameda County Department of Environmental Health
ARCH	air-rotary casing hammer
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CPL	Chevron Pipe Line Company
DO	dissolved oxygen
HASP	Health and Safety Plan
HSA	hollow-stem auger
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
mg/kg	milligrams per kilogram
ml	milliliter
MS	matrix spike
MSD	matrix spike duplicate
MTBE	methyl tertiary butyl ether
ORP	oxidation-reduction potential
PID	photoionization detector
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
ROW	right-of-way
RPD	relative percent difference
SFPUC	San Francisco Public Utilities Commission
SVE	soil vapor extraction
TDS	total dissolved solids
TPH-GRO	total petroleum hydrocarbons quantified as gasoline range organics
URS	URS Corporation
USEPA	U.S. Environmental Protection Agency
VOA	volatile organic analysis (container)
VOC	volatile organic compound

On behalf of the Chevron Pipe Line Company (CPL), URS Corporation (URS) conducted an additional subsurface investigation to further evaluate the soil and groundwater conditions in association with 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 request by staff at Alameda County Department of Environmental Health (ACEH) to further define the horizontal and vertical extent of gasoline release impacts to soil and groundwater at the Site. This request was made in a December 30, 2005, letter to CPL. URS conducted the additional investigation from January 17 through 31, 2006. The additional investigation included advancing four borings using a sonic drill rig and installing a groundwater monitoring well at each boring location (MW-4 through MW-7).

URS recommends that the following activities be continued or be implemented in the future:

- Discuss resuming Soil Vapor Extraction (SVE) activities along the dirt road on the hillside for up to 6 months with Mr. Jerry Wickham of the ACEH on May 26th, 2006. The actual duration of the SVE activities should be based on concentrations of total petroleum hydrocarbons quantified as gasoline range organics (TPH-GRO) in the soil gas.
- Evaluate installing clear plastic sheeting on the hillside below the release location as a means of enhancing SVE system performance.
- Continue the quarterly groundwater monitoring program (now for seven monitoring wells).
- As part of the quarterly groundwater monitoring program, collect a surface water sample from the unnamed creek located north and downslope of the release location on the east side of Calaveras Road.
- As part of the future quarterly groundwater monitoring program, evaluate dissolved oxygen (DO) and oxidation-reduction potential (ORP) data as indicators of aerobic conditions in the saturated zone.
- As part of the future quarterly groundwater monitoring program, evaluate geochemical indicator parameters, including nitrate, sulfate, ferrous iron, methane, and manganese. These evaluation results can be used to assess the potential for using monitored natural attenuation at the Site.

- As part of the future quarterly groundwater monitoring program, evaluate pH, total dissolved solids (TDS), and alkalinity conditions in the groundwater to assess if the subsurface conditions are suitable for using bioremediation at the Site.
- As discussed in the *Work Plan for Additional Investigation Activities, Chevron Sunol Pipeline Site, 2793 Calaveras Road, Sunol, California* (Work Plan) (URS 2006a), continue free-product monitoring and additional bailing at MW-1 if measurable free-product is found. Measurable free-product has not been encountered at MW-1 since January 11, 2006.

On behalf of the Chevron Pipe Line Company (CPL), URS Corporation (URS) conducted an additional subsurface investigation to further evaluate the soil and groundwater conditions in association with the August 14, 2005, gasoline pipeline release at the Chevron Sunol Pipeline site (Site) in Sunol, California (Figure 1). The additional investigation was conducted from January 17 through 31, 2006, to supplement the previous investigation activities reported in *Subsurface Investigation Report: Chevron Pipeline Release, Sunol, California* (SIR) (URS 2005). The additional investigation was conducted to fulfill the request by staff at Alameda County Department of Environmental Health (ACEH) to further define the horizontal and vertical extent of gasoline release impacts to soil and groundwater at the Site. This request was made in a December 30, 2005, letter to CPL. The work associated with the additional investigation was performed according to *Work Plan for Additional Investigation Activities, Chevron Sunol Pipeline Site, 2793 Calaveras Road, Sunol, California* (Work Plan) (URS 2006a), which was submitted to ACEH on January 19, 2006.

The scope of work described in the Work Plan included the following:

- Soil and groundwater sampling and well installation at four locations: three locations along Calaveras Road at the foot of the slope (below the site of the pipeline release) and one location within the Valley Crest Tree Company facility north of existing wells MW-1 and MW-3.
- Evaluation of the measurable free-phase product observed at well MW-1 before January 17, 2006.
- Implementation of a quarterly groundwater monitoring program for all of the monitoring wells at the Site. (The results of the first quarter 2006 groundwater sampling activities are presented in *Chevron Sunol Pipeline, 2793 Calaveras Road, Sunol, CA: First Quarter 2006 Groundwater Monitoring Report* (referred to as Q1 2006 GMR) (URS 2006c) and are summarized in this report.)

This report describes these additional investigation activities. 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 additional field activities conducted.
- Section 4 discusses the geology and hydrogeology of the Site.
- Section 5 summarizes the analytical results of the additional investigation.
- Section 6 summarizes the quality assurance and quality control assessment of the analytical data.
- Section 7 is the findings and recommendations.
- Section 8 describes the limitations applicable to this report.
- Section 9 is 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 an underground pipeline (the Bay Area Product Line) was damaged by a third party 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 Q1 2006 GMR (URS 2006c).

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 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 SIR (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 (ROW) 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). 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.

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 (ARCH) 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 free-product on the groundwater surface prior to January 17, 2006. MW-1 displayed the greatest product thickness of 0.17 feet 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 (Figure 2). 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 2006b).

In response to ACEH's request for further evaluation of soil and groundwater conditions at the Site, URS conducted additional subsurface investigation activities from January 17 through 31, 2006. A total of four borings were advanced and completed as groundwater monitoring wells (MW-4 through MW-7) using a truck-mounted sonic 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 A. 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

Because of the drilling difficulties encountered using the hollow-stem auger (HSA) and ARCH soil sampling limitations encountered during the initial investigation, URS used a sonic drill rig to advance the four borings required as part of the additional subsurface investigation. The sonic drill rig was capable of recovering continuous soil cores as the borings were advanced. Continuous soil cores were obtained using a 4-inch-diameter core barrel. The boring was then overdrilled with an 8-inch-diameter outer drive casing with water injection as the drilling fluid to facilitate well installation. Three borings (MW-5 through MW-7) were advanced along Calaveras Road at the foot of the slope (below the pipeline release site), and one boring (MW-4) was advanced within the Valley Crest Tree Company facility north of MW-1 and MW-3 (Figure 2).

Borings MW-5 through MW-7 were advanced at least 5 feet away from the shoulder line of Calaveras Road at the maximum distances up the slope that the wells could be drilled.

URS subcontracted RSI Drilling (Woodland, California) to advance borings MW-4 through MW-7 to total depths of approximately 47 feet bgs, 49.8 feet bgs, 50 feet bgs, and 50 feet bgs, respectively, from January 17 through 31, 2006. Groundwater was encountered in boring MW-4 during drilling at 36.5 feet bgs, within the gravel unit just above the weathered siltstone bedrock contact. Groundwater was encountered in borings MW-5 through MW-7 during drilling at depths of 44.8 ft bgs, 46 ft bgs, and 44.2 ft bgs, respectively, within the weathered silty sandstone bedrock.

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 (VOCs) using a PID. Any indications of visual or olfactory impacts were noted on the boring log along with the lithologic information (Appendix B). Generally, soil samples were collected for laboratory analysis when indications of impacts were observed. Several additional soil samples were collected just above the first-encountered groundwater. 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.

Grab groundwater samples were collected from borings MW-4 and MW-7 before well installation using dedicated disposable bailers within the open borehole. The groundwater samples were collected in 40-milliliter (ml) volatile organic analysis containers (VOAs) preserved with hydrochloric acid. Although groundwater was encountered at borings MW-5 and MW-6, no grab groundwater samples were collected. During the drilling at MW-5, the inner casing broke while advancing through the weathered bedrock and prevented a groundwater sample from being collected. At boring MW-6, the sediment load entrained in the groundwater was too high to collect a sample using a bailer.

URS placed all soil and groundwater samples in ice-filled coolers and transported them under chain-of-custody procedures to Lancaster Laboratories, Inc., of Lancaster, Pennsylvania. This laboratory has been certified by the California Department of Health Services (California

Certification No. 2116). The chain-of-custody forms and the complete laboratory analytical results are provided in Appendix C.

Investigation-derived waste, including soil cuttings, drilling fluid, and decontamination rinsate, was stored on-site in a roll-off bin, 55-gallon drums, and in a 4,000-gallon polyethylene plastic tank. All solid and liquid investigation-derived waste was disposed of off-site at CPL-approved facilities on April 3 and 4, 2006. In total, approximately 10 tons of soil and 13 tons of liquid were disposed of as part of site investigation activities.

3.3 MONITORING WELL INSTALLATION AND DEVELOPMENT

After boring completion, borings MW-4 through MW-7 were completed as groundwater monitoring wells. These wells were designed and constructed so that they could be converted to groundwater extraction wells, if necessary. All four wells were constructed with 4-inch-diameter, flush-threaded, Schedule 40 polyvinyl chloride (PVC) blank casings and 0.020-inch-slot PVC well screens. PVC bottom caps extend approximately 0.3 feet below the well screen. The screened interval extended from 30.7 feet bgs to 40.7 feet bgs in well MW-4, from 39.5 feet bgs to 49.5 feet bgs in well MW-5, from 34.7 feet bgs to 49.7 feet bgs in MW-6, and from 34.7 feet bgs to 49.7 feet bgs in MW-7. 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 1.5 to 2 feet above the top of the well screen. The annulus of each well was sealed with approximately 2 feet of hydrated bentonite chips or pellets 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 B. The well completion details for all seven groundwater monitoring wells at the Site (wells MW-1 through MW-7) are summarized in Table 1.

On February 14 and 15, 2006, after allowing the cement grout seal and well heads to cure for over 72 hours, a URS geologist and an RSI driller developed wells MW-4 through MW-7. Well MW-3 was developed on January 10, 2006, because no groundwater was present in the well on October 27, 2005, when wells MW-1 and MW-2 were developed. The development logs for wells MW-3 through MW-7 are presented in Appendix D, the development logs for wells MW-1 and MW-2 are provided in the SIR (URS 2005). Total well depths and depths to water were

measured at wells MW-3 through MW-7 using an electronic water level indicator. The wells were developed using a surge block to remove sediment from the well and filter pack and a 10-foot stainless-steel bailer to purge the entrained sediments. At least three well volumes (well casing volume plus sandpack volume) of groundwater were removed from each well. Periodic measurements of pH, conductivity, temperature, and turbidity were recorded during development using a Horiba U-10 multi-parameter meter or Myron 6P Ultrameter. No product sheen was observed on the purge water from any of the wells during development. 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 April 3, 2006.

3.4 ANALYSIS PROGRAM

All soil and groundwater samples collected for laboratory analysis were placed in coolers 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.
- Ethanol and methanol by USEPA Method 8015B (groundwater samples only).
- The Work Plan (URS 2006a) did not include analyzing for fuel oxygenates because all soil and groundwater results for samples collected during the previous investigation were below detection limits. Although analysis for methyl tertiary butyl ether (MTBE) was not specifically requested, Lancaster Laboratories analyzed for MTBE by USEPA Method 8260B for several soil and groundwater samples, and these results are included in this report. No analysis for MTBE is planned for possible future soil or groundwater sampling at the Site.

The pipeline release site is located on a steep hillside above the east side of Calaveras Road. Bedrock is present on the hillside at shallow depths and is exposed in numerous upslope outcrops. The bedrock geology of the hillside consists of Miocene-age marine sandstone and/or siltstone of the Briones Formation, the bedding of which dips steeply to the east as part of the western limb of a syncline. The axis of the syncline is located upslope a few hundred feet east of Calaveras Road and trends northwest paralleling the ridge line. Farther up the hillside east of the synclinal axis, the bedding reverses dip direction toward the west (California Division of Mines and Geology 1966; Dibblee 1980). According to a map in Dibblee 1980, the surface trace of the Calaveras Fault is located approximately 300 feet west of Calaveras Road. However, an area-specific fault map shows the surface trace of the Calaveras Fault trending along the east side of Calaveras Road at the bottom of the hillside downslope from the release location, as shown on Figure 3 (Herd 1978). Valley Crest Tree Company is located on what appears to be an alluvial terrace within Sunol Valley on the down-dropped block west of the Calaveras Fault. The bedrock geology underlying the tree nursery consists of siltstone and/or claystone, possibly of the Cretaceous-age Panoche Formation. The Alameda Creek floodplain is located about 100 feet to the west of the nursery terrace and is approximately 35 feet lower in elevation.

A URS geologist logged each soil boring advanced as part of the additional investigation (see logs in Appendix B). The logs for the borings advanced during the previous investigation and remediation activities are presented in Appendix E. Cross sections A-A', B-B', C-C', and D-D' (Figures 4 through 7) represent the subsurface geology and were generated using information obtained from the soil borings from both the additional investigation and the previous investigation. These cross sections provide a more complete characterization of the site subsurface than the cross sections provided in the SIR (i.e., Figures 3 and 4 in URS 2005). The updated cross-section locations are shown on Figure 2.

Based on the logs from the borings advanced on the hillside above Calaveras Road (Figure 4), local lithology consists of sandy silt to silty sand colluvium extending to depths ranging from approximately 3 to 32 feet bgs. The silty sand colluvium is underlain by gravelly fine sand and fine sandy gravel to total depths ranging from approximately 10 to 40 feet bgs. Beneath the sand and gravel layer (observed in the borings that reached the greatest depths) a thin silty/clayey weathered zone was encountered just before refusal on what appeared to be the sandstone

bedrock. Sandstone bedrock overlain by a gravel bed is exposed along the dirt road cut to the north of the pipeline release site.

No continuous water-bearing zone was encountered within the colluvial deposits on the hillside. However, perched groundwater zones were encountered on the hillside at depths ranging from 24 to 39 feet bgs in four of the borings (CP-SB-11, CP-SB-12, CP-SB-20, and CP-SB-25).

Based on the logs for MW-5 through MW-7 (Appendix B) and SB-6 and SB-7 (Appendix E), which were advanced along the east side of Calaveras Road (Figure 5), the lithology consists of sandy and silty clays extending to approximately 5 to 9 feet bgs. The clayey soils are underlain by a sandy silt to silty sand layer extending to approximately 15 to 25 feet bgs. Underlying the silty/sandy layer at MW-5, MW-6, SB-6, and SB-7, a gravelly zone in a silty to clayey matrix extends to depths of approximately 20 to 25 feet bgs. The gravelly zone appears to be limited in extent to the north and was not encountered at MW-7. Underlying the gravelly zone (where present) is a thin clayey zone extending to approximately 22 to 25 feet bgs. At MW-6, SB-6, and SB-7, the clayey zone is underlain by a thin silty zone that extends to approximately 24 feet bgs. The clayey and silty zones appear to be discontinuous weathering horizons encountered just above the bedrock contact. At approximately 24 to 25 feet bgs weathered sandstone/silty sandstone bedrock was encountered in all of the borings. In boring MW-7, a large unweathered sandstone block was encountered from 36 to 41 feet bgs within the weathered zone; this may be landslide debris from upslope or a result of preferential weathering. The weathered zone extends to a depth of 47 to 48 feet bgs, where well-cemented sandstone bedrock was encountered (MW-5 and MW-6).

Although groundwater was not encountered in any of the direct-push borings advanced along Calaveras Road during the initial investigation (SB-1 through SB-10), which was conducted from August through November 2005, a water-bearing zone was encountered within the weathered sandstone unit in the additional investigation borings MW-5 through MW-7 during January 2006. During drilling the groundwater levels at MW-5, MW-6, and MW-7 were measured at depths of 44.8 feet bgs, 46 feet bgs, and 44.2 feet bgs, respectively. On February 21, 2006, after the water levels stabilized and the wells had been developed, the water levels at MW-5 through MW-7 were measured to be 11.81 feet bgs, 18.25 feet bgs, and 15.67 feet bgs, respectively (Table 2). As discussed in the Q1 2006 GMR (URS 2006c), the measured

groundwater levels for the wells along Calaveras Road are all at least 15 feet above the top of the screened interval within the first encountered saturated zone at each well. This suggests that groundwater encountered within the weathered sandstone bedrock is under confined or partially confined conditions.

The subsurface conditions encountered at MW-4 are consistent with those encountered during the initial investigation in the tree nursery property to the west of Calaveras Road (Figure 6). Local lithology consists of sandy to clayey silt and silty sand to a depth of about 17 to 35 feet bgs that is underlain by sandy to silty gravel to a depth of about 29 to 43 feet bgs. Unlike the weathered sandstone bedrock encountered within the borings advanced along Calaveras Road, a highly weathered siltstone/sandy siltstone bedrock was encountered in the borings in the nursery. The weathered siltstone was present at depths ranging from 29 to 43 feet bgs and was underlain by progressively less weathered siltstone, clayey siltstone, and silty claystone to approximately 97 feet bgs as observed in boring AR-2, where a weathered and sheared clay layer was encountered that appears to be fault gouge. It is possible that the clay layer could be a fault gouge marking the subsurface contact with the Calaveras Fault zone. At approximately 105 feet bgs, hard, dark ultrabasic igneous rock, which appeared to be basalt or gabbro (possibly of the Cretaceous-Jurassic-age Franciscan Formation), was encountered at the total explored depth of 108 feet bgs.

During the initial investigation, groundwater was encountered during drilling in three of the borings (HSA-1, AR-1/MW-1, and AR-3/MW-2) within the tree nursery property, at a depth of approximately 37 to 39 feet bgs. During the development of MW-1 and MW-2 on October 27, 2005, continuous groundwater recharge was observed at both wells, indicating that the perched groundwater zone within the gravel alluvium may behave like a continuous water table during seasons of high precipitation. As expected, winter rains raised groundwater levels within the nursery wells and MW-3 exhibited continuous recharge during development on January 10, 2006. During drilling, groundwater was encountered at MW-4 at a depth of 36.5 feet bgs. MW-4 was developed on February 15, 2006. On February 21, 2006, before the first quarter groundwater sampling, the measured groundwater levels at MW-1 through MW-4 were 36.79 feet bgs, 32.89 feet bgs, 32.37 feet bgs, and 37.02 feet bgs, respectively (Table 2). As discussed in the Q1 2006 GMR (URS 2006c), the measured groundwater levels for the wells within the nursery are all below the top of the screened intervals within the first encountered saturated zones. This

suggests unconfined conditions in which groundwater levels are influenced by local surface water infiltration rather than the confined/semi-confined conditions observed within the Calaveras Road wells.

As discussed above, an area-specific fault map, provided as Figure 3, shows the surface trace of the Calaveras Fault trending northwest and southeast along the east side of Calaveras Road at the Site (Herd 1978). Information collected during both the initial and the additional subsurface investigations are consistent with this fault location. The bedrock discontinuities and differing groundwater conditions observed over a relatively short lateral distance (~80 feet) between the nursery wells and the Calaveras Road wells support the presence of an unconformity running along Calaveras Road. The location of the apparent Calaveras Fault Zone is shown on Figure 7.

Based on the boring logs, the thick gravel unit observed in the nursery wells is believed to be connected to the thin gravelly layer encountered between 20 to 25 feet bgs at MW-5 and MW-6 and to continue locally up the slope along the top of the weathered sandstone bedrock unit (Figure 7). Although no water-bearing zone was observed within the thin gravelly layer when advancing MW-5 and MW-6, the Site geology and topography suggest that the gravel zone may act as a preferential recharge pathway to the unconfined water-bearing zone encountered in the nursery wells rather than migrating downwards into the confined sandstone water-bearing zone. Vertical groundwater infiltration into the confined sandstone water-bearing zone would be impeded by fine-grained, low-permeability sediments observed within shallower soils in MW-5 through MW-7. Therefore, during periods of recharge, groundwater within the gravel zone would flow primarily along the bedrock contact and act as a recharge source for the unconfined water-bearing zone encountered in the nursery wells.

Although regional topography suggests that the groundwater flow direction of the unconfined water-bearing zone would be to the west towards Alameda Creek, the groundwater surface map generated using the nursery wells indicates otherwise (Figure 8). Based on the stabilized groundwater levels collected as part of the first quarterly groundwater monitoring event, which was conducted on February 21, 2006 (Table 2), the inferred groundwater flow direction of the unconfined water-bearing zone is to the southeast-east**,** towards the hillside with a hydraulic gradient of 0.031 (Figure 8). The groundwater levels for the wells along Calaveras Road are displayed on Figure 9. In an effort to better understand the local groundwater behavior within the

unconfined water-bearing zone, URS mapped the siltstone bedrock contact elevations using the boring information from wells MW-1 through MW-4 and exploratory borings HSA-1, HSA-2, and AR-2 (Figure 10). Based on the contour map, the bedrock appears to be an irregularly eroded surface that ramps up to the west near MW-3 and AR-2, forming a localized bedrock "sink" or depression that is influencing groundwater movement within the unconfined water-bearing zone. The groundwater contours for the nursery wells are also shown on Figure 10 for comparison, and are generally consistent with the gravel/bedrock contact contours.

As discussed in Section 3, all soil and groundwater samples collected as part of the additional investigation were analyzed for TPH-GRO and BTEX. Several soil and groundwater samples were also analyzed for MTBE (Section 3.4). In addition, all groundwater samples were analyzed for ethanol and methanol. Section 3 includes a detailed discussion of the activities conducted during the additional investigation. For completeness, the results of the groundwater samples collected on February 21 and 22, 2006, as part of the initial sampling effort for the quarterly groundwater monitoring program are also discussed. The complete laboratory analytical reports for both the additional investigation and the quarterly groundwater monitoring program samples are provided as Appendix C.

Tables 3 provides a summary of the soil analytical results for the samples collected during the additional investigation, and Table 4 provides a summary of the groundwater analytical results for the additional investigation. Table 5 provides a summary of the groundwater analytical results for the samples collected during the first quarter groundwater monitoring activities.

During the additional subsurface investigation a total of 11 soil samples were collected from borings MW-4 through MW-7. Two grab groundwater samples were collected at borings MW-4 and MW-7 before well installation. During the first quarter of 2006 a groundwater sample was collected from each of the seven monitoring wells (wells MW-1 and MW-7). A duplicate sample was also collected from well MW-2.

5.1 SOIL SAMPLES

For the soil samples, the TPH-GRO, benzene, toluene, ethylbenzene, and total xylene concentrations ranged from below detection limits in all of the samples from borings MW-4 and MW-6 to 10 milligrams per kilogram (mg/kg), 0.15 mg/kg, 2.8 mg/kg, 0.64 mg/kg, and 3.8 mg/kg, respectively, in the boring MW-5 sample collected at a depth of 46 feet bgs. MTBE concentrations were below detection limits in all of the samples collected from borings MW-5 through MW-7. MTBE was not analyzed in the samples collected from boring MW-4.

5.2 GROUNDWATER SAMPLES

For the two grab groundwater samples collected during drilling activities, TPH-GRO, benzene, toluene, ethylbenzene, and total xylene concentrations ranged from below detection limits in the boring MW-4 sample to 1,700 micrograms per liter (µg/L), 39 µg/L, 250 µg/L, 41 µg/L, and 160

µg/L, respectively, from the boring MW-7 sample. Ethanol and methanol concentrations were below detection limits in both the boring MW-4 and the boring MW-7 sample. The MTBE concentration was below detection limits in the boring MW-7 sample. MTBE was not analyzed in the boring MW-4 sample.

For the groundwater samples collected as part of the first quarter groundwater monitoring activities, the TPH-GRO, benzene, toluene, ethylbenzene, and xylenes concentrations in the groundwater samples collected from the nursery wells (wells MW-1 through MW-4) were all below their respective laboratory reporting limits with the exception of well MW-1. The well MW-1 sample contained TPH-GRO, benzene, toluene, ethylbenzene, and total xylenes at concentrations of 57,000 µg/L, 38 µg/L, 2,700 µg/L, 3,000 µg/L, and 8,700 µg/L, respectively. Ethanol and methanol concentrations were below their detection limits for all of the wells in the nursery.

Benzene, toluene, ethylbenzene, and total xylenes concentrations for the groundwater samples collected from the wells along Calaveras Road (wells MW-5 through MW-7) ranged from below laboratory reporting limits at well MW-6 to concentrations of 0.7 µg/L, 2 µg/L, 0.9 µg/L, and 5 µg/L in the sample from well MW-7. The TPH-GRO, ethanol, and methanol concentrations were below their detection limits for all of the Calaveras Road wells.

6.1 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 the 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)

6.1.1 Method Holding Times

Analytical methods have prescribed holding times. The method holding time is defined as the maximum amount of time after sample collection that the sample may be held before extraction and/or analysis. Sample integrity becomes questionable for samples extracted and/or analyzed outside of their prescribed holding times due to degradation and/or volatilization of the sample. The QA/QC review identifies results with exceeded method holding times. EnCore™ soil samples MW-6-46' and MW-6-17', collected on January 26, 2006, and submitted for BTEX and MTBE analysis by USEPA Method 8260B, were received by the laboratory and prepped outside the 48-hour hold time per URS approval. BTEX and MTBE were not detected in either of the soil samples. Since TPH-GRO was not detected in the samples, it does not appear that the sample integrity was affected by the samples being prepped outside of the 48-hour hold time.

No other analytical method holding times were exceeded during the soil and groundwater sample analysis during the current reporting period.

6.1.2 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 or 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.

6.1.3 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 these detections on the associated sample results.

6.1.4 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 (i.e., the effect of the sample matrix on the analysis) can potentially partially or completely mask the response of analytical instrumentation to the target analyte(s). Matrix interference can also have a varying impact on the accuracy and precision of the extraction and/or analysis procedures and can potentially 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 of the laboratory control limits and evaluates the effect of these recoveries on the associated sample results.

6.1.5 Laboratory Duplicate Analyses

Duplicate analyses are performed by the laboratory to evaluate the precision of the 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:

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

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

6.1.6 Field Duplicate Analyses

Field duplicate samples are collected in the field and analyzed to evaluate the heterogeneity of the matrices. One duplicate water sample was collected for this project. No analytes were detected in the field duplicate sample, so no evaluation of the heterogeneity of the matrix could be made.

6.1.7 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 of the laboratory control limits and evaluates the effect of these recoveries on the sample results.

6.2 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) but that 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 the QC criteria; for the results with this qualifier, the presence or absence of the analyte could not be verified.

6.3 SUMMARY OF QA/QC REVIEW FINDINGS

EnCore™ soil samples MW-6-46' and MW-6-17', which were collected on January 26, 2006, and submitted for BTEX and MTBE analysis by USEPA Method 8260B, were received by the laboratory and prepped outside of the 48-hour hold time per URS approval. BTEX and MTBE were not detected in either of the soil samples. Because TPH-GRO was not detected in the samples, it does not appear that the sample integrity was affected by the samples being prepped outside of the 48-hour hold time.

The cooler of samples collected on January 30, 2006, arrived at the laboratory a day late and with elevated sample temperatures ranging from 8.8 degrees Celsius to 12.5 degrees Celsius due to a Federal Express shipping error. The samples contained in this cooler included grab soil samples MW-4-21.5', MW-4-33', and MW-4-36.5'; grab groundwater sample MW-4-GW; and a trip blank water sample. Because BTEX was not detected in any of the samples, it does not

appear that the BTEX sample results were affected by these samples arriving at an elevated temperature. Also, since TPH-GRO was not detected in soil sample MW-4-21.5'or groundwater sample MW-4-GW, it does not appear that the TPH-GRO sample results were affected by these samples arriving at an elevated temperature. However, grab soil samples MW-4-33' and MW-4-36.5' were also noted by the laboratory as having headspace in the jars. In a telephone conversation between Greg White of URS and Megan Moeller of Lancaster Labs on May 15, 2006, Ms. Moeller stated that the soil for TPH-GRO analysis was actually collected from the moisture sample jars submitted for each sampling point, as not enough EnCore™ samplers were submitted for TPH-GRO and BTEX analysis. Headspace was noted in the moisture sample jars for soil samples MW-4-33' and MW-4-36.5', probably as a result of the soil settling in the jars during sample shipment. Ms. Moeller acknowledged that the laboratory should have specified the required amount of EnCore™ samplers for each sampling point based on the URS-requested laboratory analyses. Based on the elevated sample temperatures and the headspace in the sample jars for TPH-GRO analysis in samples MW-4-33' and MW-4-36.5', the TPH-GRO results in these samples were qualified with a "UJ," indicating that the analyte was not detected above the laboratory reporting limit but that the laboratory reporting 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.

All reported results for the laboratory method blanks were non-detect (less than the laboratory reporting limit), indicating no evidence of contamination from laboratory instrumentation. All reported results for the trip blanks were non-detect (less than the laboratory reporting limit), indicating no evidence of contamination during shipping of the laboratory samples. Because the result of the field duplicate sample collected was non-detect, it was not possible to verify that the sample matrix was homogeneous and that the results were repeatable.

All reported LCS, MS, and surrogate spike recoveries were within laboratory QC limits, with the exception of the following, which did not require qualification:

- High MS/MSD recoveries were observed for methanol in Batch 060580012A. The LCS recovery was within QC limits, so no qualification was necessary.

The chain-of-custody documentation was 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 subsurface investigation and the first quarter groundwater sampling activities, URS made the following findings:

- The field PID results and the laboratory analytical results from the additional investigation indicated that elevated gasoline concentrations in soil are present within the gravelly layer that appears to extend continuously from east to west along the bedrock contacts underlying the Site. These findings are supported by the geologic discussion of the gravel layer presented in Section 4. Because the course-grained gravel unit is relatively permeable compared to surrounding soils and is underlain by relatively impermeable sandstone (hillside) and siltstone (nursery) bedrock, the gravelly layer acts as a preferential pathway to the unconfined nursery water-bearing zone for both groundwater and contaminant transport.
- The highest contaminant concentrations in groundwater from the samples collected as part of the quarterly groundwater monitoring program were found at well MW-1, within the unconfined water-bearing zone in the nursery. Sheen was also measured in well MW-1 during various site visits until January 17, 2006. However, the first quarter groundwater monitoring results from the other three wells in the nursery (wells MW-2 through MW-4) were all below detection limits. The localized depression observed at the gravel/siltstone bedrock contact at the nursery (Section 4) appears to be limiting westward contaminant migration (observed at MW-1) from the hillside release location. The analytical results from groundwater samples collected at wells MW-2 through MW-4 support this finding.
- The bedrock discontinuities and differing groundwater conditions observed over a relatively short lateral distance (approximately 80 feet) between the nursery wells and the Calaveras Road wells indicate the presence of an unconformity trending northwest to southeast along Calaveras Road. The location of the Calaveras Fault on the Herd Map (Herd 1978) supports URS' finding of an unconformity along Calaveras Road at the Site. Verification of the location of the Calaveras Fault has provided a better understanding of Site geology and hydrogeology and has resolved apparent anomalies relating to bedrock and groundwater variations observed during field activities.

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

- Discuss resuming Soil Vapor Extraction (SVE) activities along the dirt road on the hillside for up to 6 months with Mr. Jerry Wickham of the ACEH on May 26th, 2006. The reason to continue the SVE activities is to continue contaminant removal from the source area and inhibit downslope contaminant migration. The actual duration of the SVE activities should be based on the amount of petroleum hydrocarbons being removed from the subsurface, quantified by TPH-GRO concentrations in the soil gas.
- Evaluate installing clear plastic sheeting on the hillside below the release location as a means of enhancing SVE system performance. The plastic sheeting should be removed periodically to reduce impacts to the newly planted hillside vegetation. The sheeting should be put in place and removed from the dirt road on the hillside to avoid hazards associated with working on the steep slope.
- Continue quarterly groundwater sampling for the seven (7) groundwater monitoring wells.
- As part of the quarterly groundwater monitoring activities, continue to collect a surface water sample from the unnamed creek north and downslope of the release location on the east side of Calaveras Road.
- As part of future quarterly groundwater monitoring activities, evaluate dissolved oxygen (DO) and oxidation-reduction potential (ORP) data as indicators of aerobic conditions in the groundwater at the Site. The results of the evaluation of these parameters can be used to suggest possible future remediation alternatives to treat the contamination observed at well MW-1.
- As part of future quarterly groundwater monitoring activities, evaluate geochemical indicator parameters, including nitrate, sulfate, ferrous iron, methane, and manganese. These evaluation results can be used to assess the potential for using monitored natural attenuation at the Site.
- As part of future quarterly groundwater monitoring activities, evaluate pH, total dissolved solids (TDS), and alkalinity conditions in the groundwater to assess if the subsurface conditions are suitable for using bioremediation at the Site.

- As discussed in the Work Plan (URS 2006a), continue free-product monitoring and additional bailing at MW-1 if measurable free-product is found. Measurable free-product has not been encountered at MW-1 since January 11, 2006.

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 the use of Chevron Pipe Line Company, and reliance on this report by third parties shall 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.

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Tables

Table 1
Monitoring Well Construction Details
Additional Subsurface Investigation 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)	Comments
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	2025712.03	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

Notes:
Northing and Easting coordinates based on the California Coordinate System Zone 3 NAD83 Datum.
Wells MW-1 through MW-3 surveyed on October 31, 2005.
Wells MW-4 through MW-7 surveyed on February 14, 2006.

bgs = below ground surface
msl = Elevation values displayed in feet above average mean sea level surveyed to NAVD88 datum

Table 2
Monitoring Well Groundwater Levels and Elevations
Additional Subsurface Investigation Report
Chevron Sunol Pipeline

Well ID	Date	TOC Elevation (feet msl)	Groundwater Levels (ft below TOC-N)	Groundwater Elevations (ft msl)	Comments
MW-1*	2/21/2006	328.04	36.34	291.70	No product observed since 1/17/2006.
MW-2	2/21/2006	324.15	32.19	291.96	
MW-3	2/21/2006	325.65	31.97	293.68	
MW-4	2/21/2006	329.67	36.72	292.95	
MW-5	2/21/2006	334.81	11.48	323.33	
MW-6	2/21/2006	332.38	18.02	314.36	
MW-7	2/21/2006	336.22	15.43	320.79	

Notes:
* During field measurements before January 17, 2006, well MW-1 frequently contained a thin layer of free-phase product.
Wells MW-1 through MW-3 surveyed on October 31, 2005.
Wells MW-4 through MW-7 surveyed on February 14, 2006.

msl = Elevation values displayed in feet above average mean sea level surveyed to NAVD88 datum.
TOC-N = Groundwater levels displayed in feet below the north side of the top of each well casing.

Table 3
Summary of Soil Analytical Results
Additional Subsurface Investigation Report
Chevron Sunol Pipeline

Sample ID	Depth (feet bgs)	TPH-GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (Total) (mg/kg)	MTBE (mg/kg)
MW-4	21.5	<1.0	<0.019	<0.038	<0.038	<0.038	NA
	33	<1.0 UJ	<0.024	<0.049	<0.049	<0.049	NA
	36.5	<1.0 UJ	<0.018	<0.037	<0.037	<0.037	NA
MW-5	10	**1.1**	**0.13**	**0.69**	<0.050	**1.3**	<0.025
	20	**1.5**	**0.089**	**0.16**	<0.042	**0.78**	<0.021
	46	**10**	**0.15**	**2.8**	**0.64**	**3.8**	<0.022
	48	**3**	<0.019	<0.038	<0.038	**0.11**	<0.019
MW-6	17	<1.0	<0.021	<0.042	<0.042	<0.042	<0.021
	46	<1.0	<0.022	<0.044	<0.044	<0.044	<0.022
MW-7	18	<1.0	<0.023	**0.065**	<0.047	**0.068**	<0.023
	22.5	**9.1**	**0.087**	**1.1**	**0.33**	**2.1**	<0.021

Notes
Bold values exceed laboratory detection limits.

bgs = below ground surface
MTBE = methyl tertiary butyl ether
mg/kg = milligrams per kilogram
NA = not analyzed
TPH-GRO = total petroleum hydrocarbons quantified as gasoline range organics
UJ = the analyte was not detected above the laboratory reporting limit: however, the laboratory reporting 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

Table 4
Summary of Groundwater Analytical Results
Additional Subsurface Investigation Report
Chevron Sunol Pipeline

Sample ID	Sample Depth (feet bgs)	Date	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (Total) (µg/L)	MTBE (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-4-GW	36.5	1/30/2006	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	<200
MW-7-GW	42	1/27/2006	**1,700**	**39**	**250**	**41**	**160**	<0.5	<50	<200

Notes:
Grab groundwater samples collected from open borehole before well installation.
Bold values exceed laboratory detection limits.

µg/L = micrograms per liter
MTBE = methyl tertiary butyl ether
NA = not analyzed
TPH-GRO = total petroleum hydrocarbons quantified as gasoline range organics

Table 5
Summary of Groundwater Analytical Results
Groundwater Monitoring Program First Quarter 2006
Chevron Sunol Pipeline

Well ID	Date	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (Total) (µg/L)	Ethanol (µg/L)	Methanol (µg/L)
MW-1	2/22/2006	**57,000**	**38**	**2,700**	**3,000**	**8,700**	<1,000	<200
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
MW-3	2/21/2006	<50	<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
MW-5	2/22/2006	<50	<0.5	**0.6**	<0.5	**1**	<50	<200
MW-6	2/22/2006	<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

Notes:
All values are displayed in µg/L.
Bold values exceed laboratory detection limits.
[1] Both sample and duplicate concentrations from well location are displayed, respectively.

µg/L = micrograms per liter
MTBE = methyl tertiary butyl ether
TPH-GRO = total petroleum hydrocarbons quantified as gasoline range organics

Figures

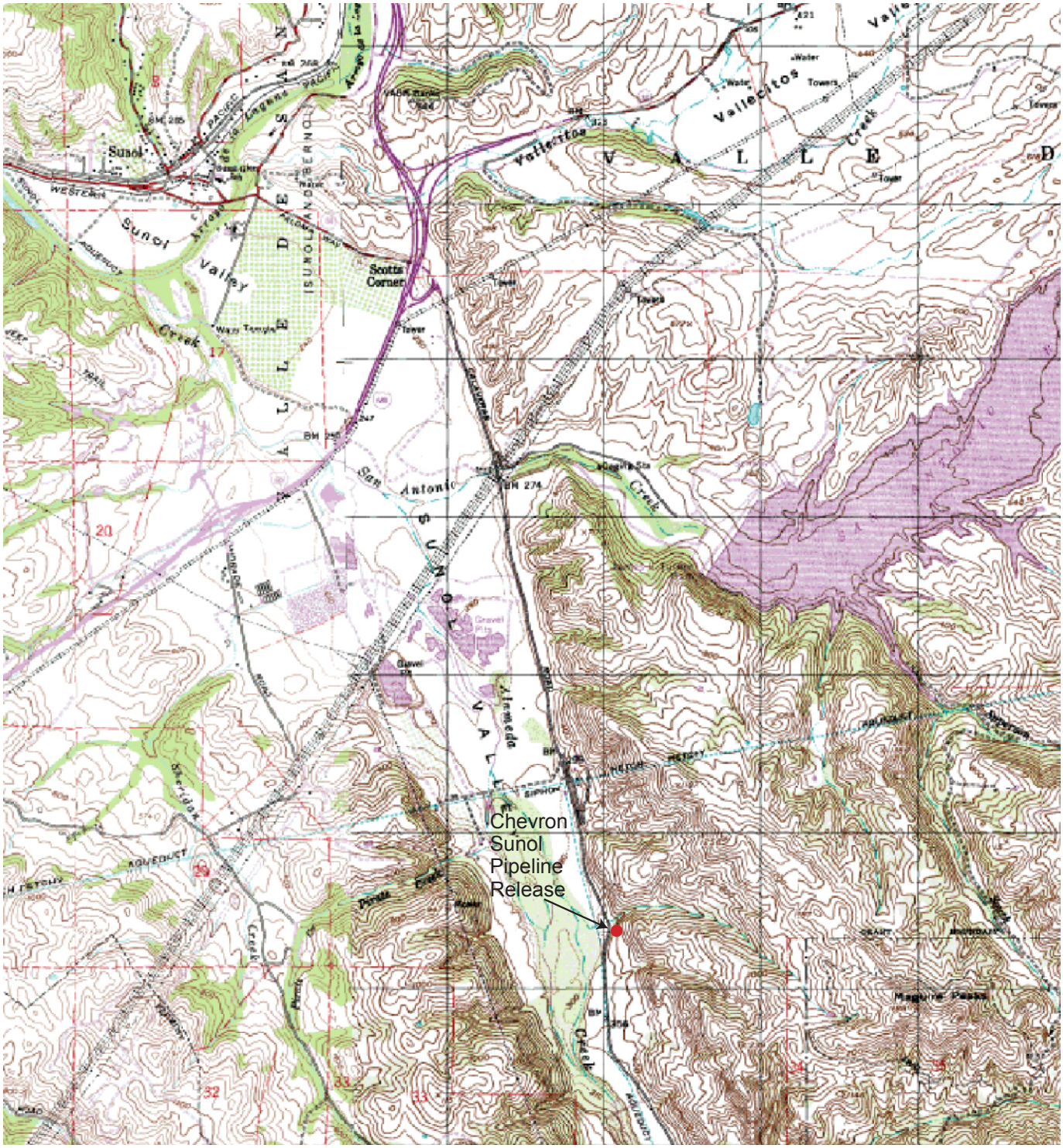


Image obtained from topozone.com

N

0 0.6 1.2 1.8 2.4 3 km

0 0.4 0.8 1.2 1.6 2 mi

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:

- SURFACE WATER SAMPLE
- SOIL BORING
- MONITORING WELL
- SVE WELL
- PIPELINE
- HILL SLOPE 80–90% GRADE

NORTH

SB–27
UNNAMED CREEK
SW–CREEK
UNNAMED CREEK
SB–26
PROPERTY LINE/FENCE
CALAVERAS RD.
PIPELINE
DIRT ROAD
A
SB–14
SB–13R
SB–13
SB–15
SB–16
HILL SLOPE
HILL SLOPE
SB–1
SB–10
SB–12
SVE–1D
SB–17
SB–11
SVE–2S
MW–4
C
HSA–2
B
SB–9
MW–7
SB–2
SB–18
SB–24
SB–19
RELEASE LOCATION
SVE–3S
SB–22
MW–3
MW–1
SB–3
MW–5
SB–8
SB–23
HILL SLOPE
SVE–4D
SB–20
HSA–1
D'
SB–4
SB–7
AR–2
HILL SLOPE
D
C'
MW–2
MW–6
SB–21
SB–5
B'
SB–6
SB–25
A'

40' 0 40'
SCALE 1"= 40'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	SITE MAP AND CROSS–SECTION LOCATIONS CHEVRON SUNOL PIPELINE	Figure 2

May 17, 2006 - 1:51pm
X:\x_env_waste\Chevron Pipe Line Company\Sunol Spill\Additional Well Installation 1-06\Add. Investigation Report\Figures\Figure 2 SVE.dwg

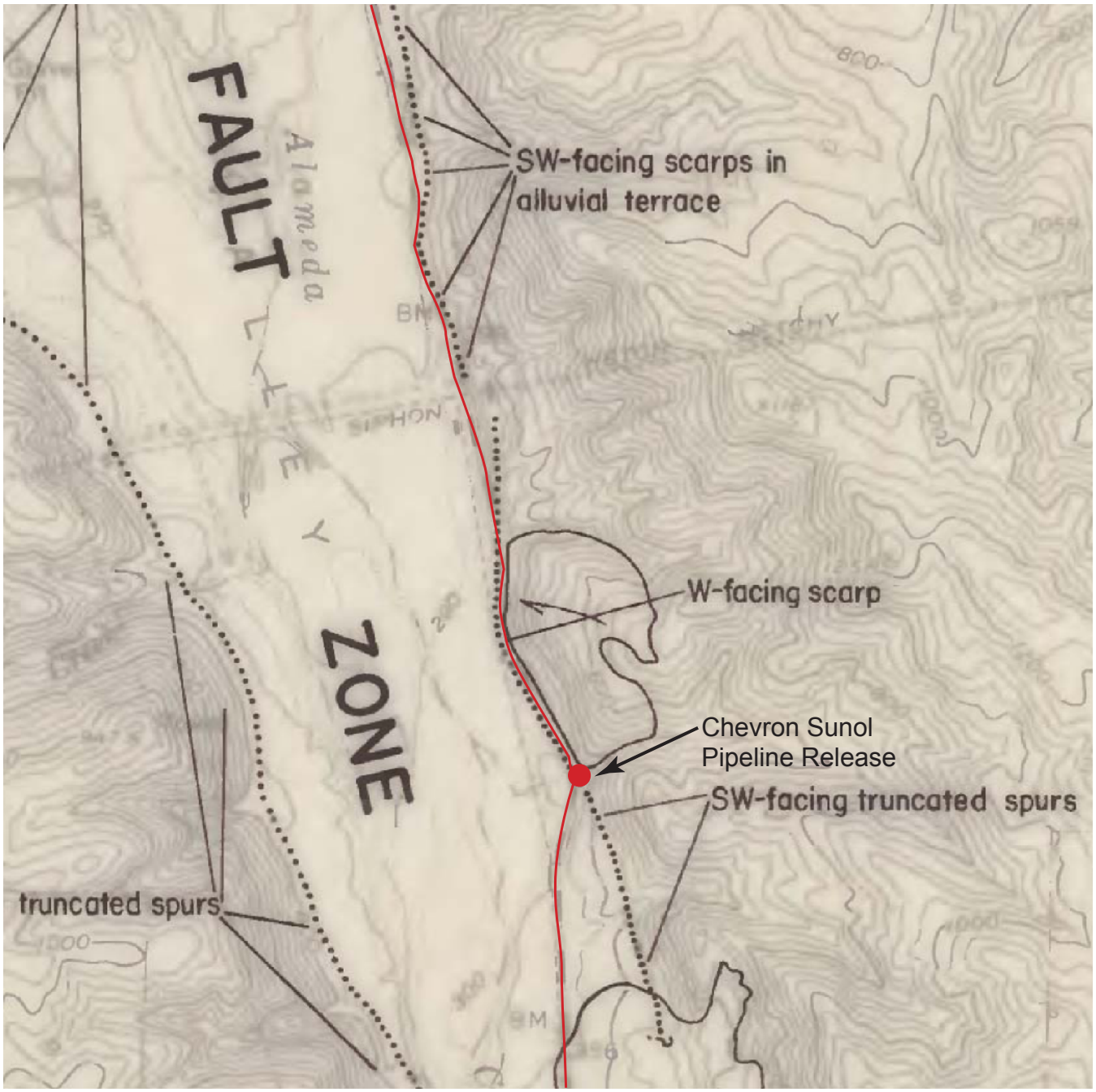


Image obtained from usgs.gov

Calaveras Road

Calaveras Fault Trace

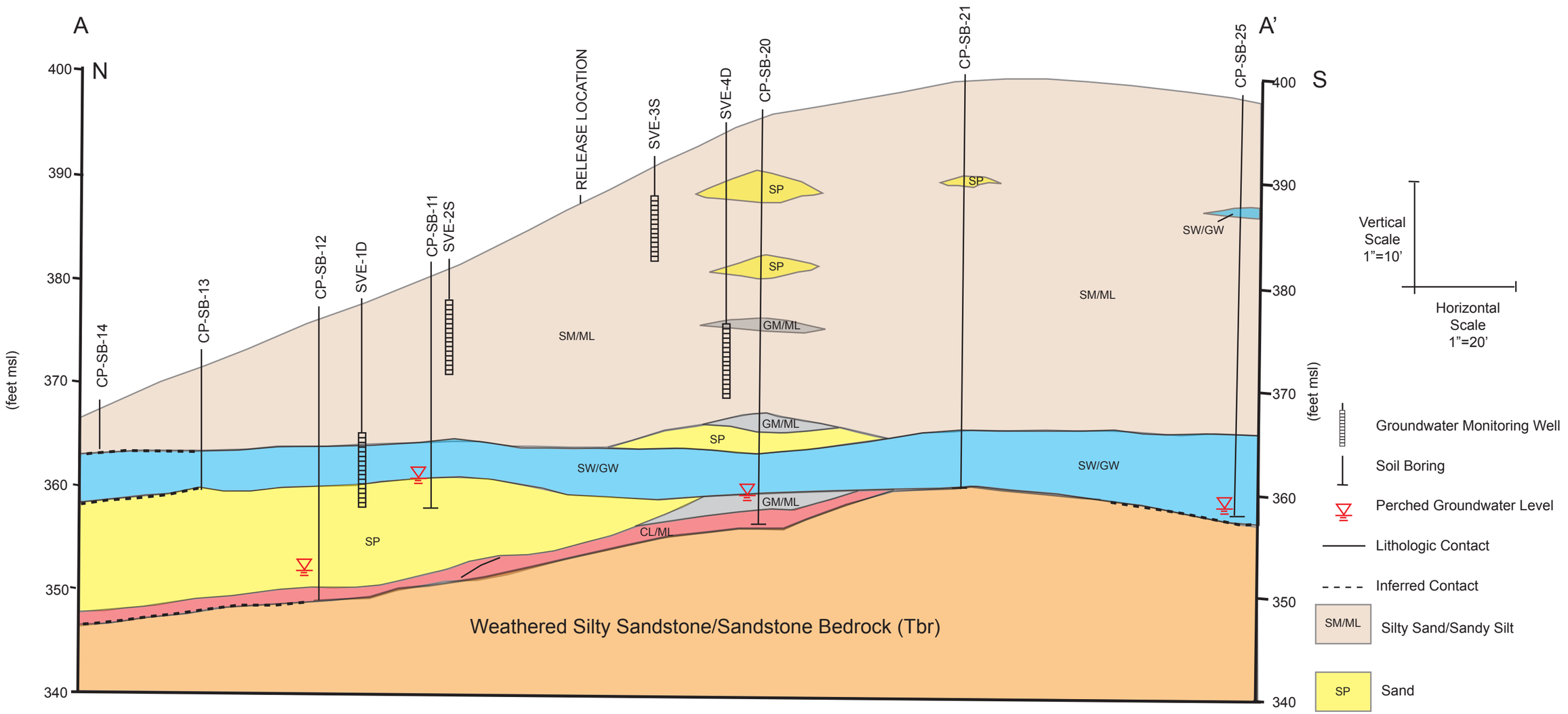
1 Mile

N

MAP REFERENCE:

MAP OF QUATERNARY FAULTING
ALONG THE NORTHERN CALAVERAS FAULT ZONE
BY DARRELL HERD, 1978
(PORTION OF U.S.G.S. QUADRANGLE MAP
7 1/2 MINUTE SERIES (TOPOGRAPHIC)
LA COSTA VALLEY QUADRANGLE)

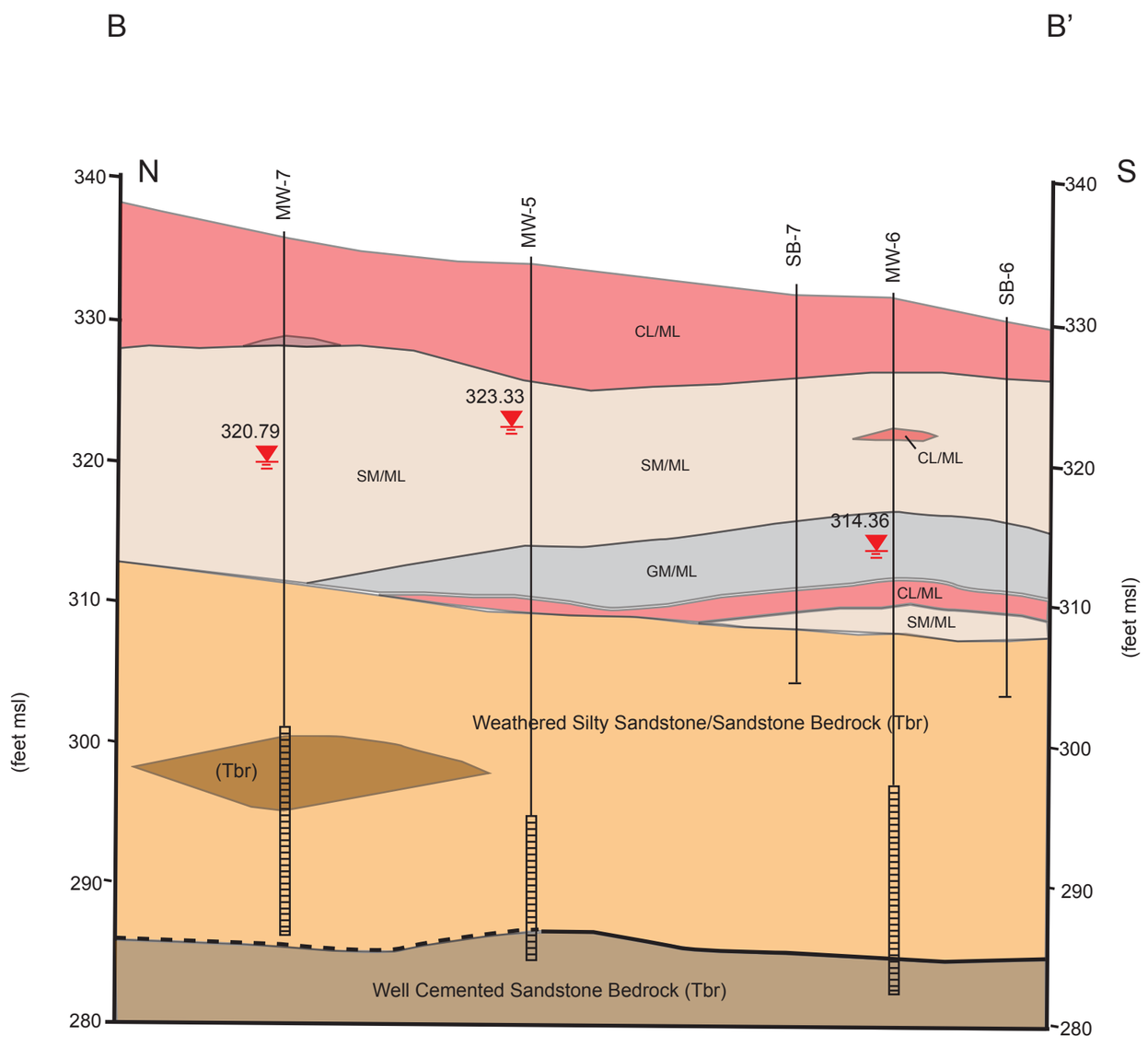
URS	Chevron Pipeline Company Project No. 26815217	CALAVERAS FAULT LOCATION MAP CHEVRON SUNOL PIPELINE SUNOL, CALIFORNIA	Figure 3



Notes

1) Elevation in feet above average mean sea level (msl).
2) Depths to groundwater within SB-11, SB-12, SB-20, and SB-25 were approximately 20 ft bgs, 24 ft bgs, 35 ft bgs, and 39 ft bgs, respectively, at time of drilling (October, 2005)

	URS	Additional Subsurface Investigation Report Chevron Sunol Pipeline Sunol, California Project No. 26815217	HYDROGEOLOGIC CROSS SECTION A-A'	Figure 4



Vertical Scale 1"=10'

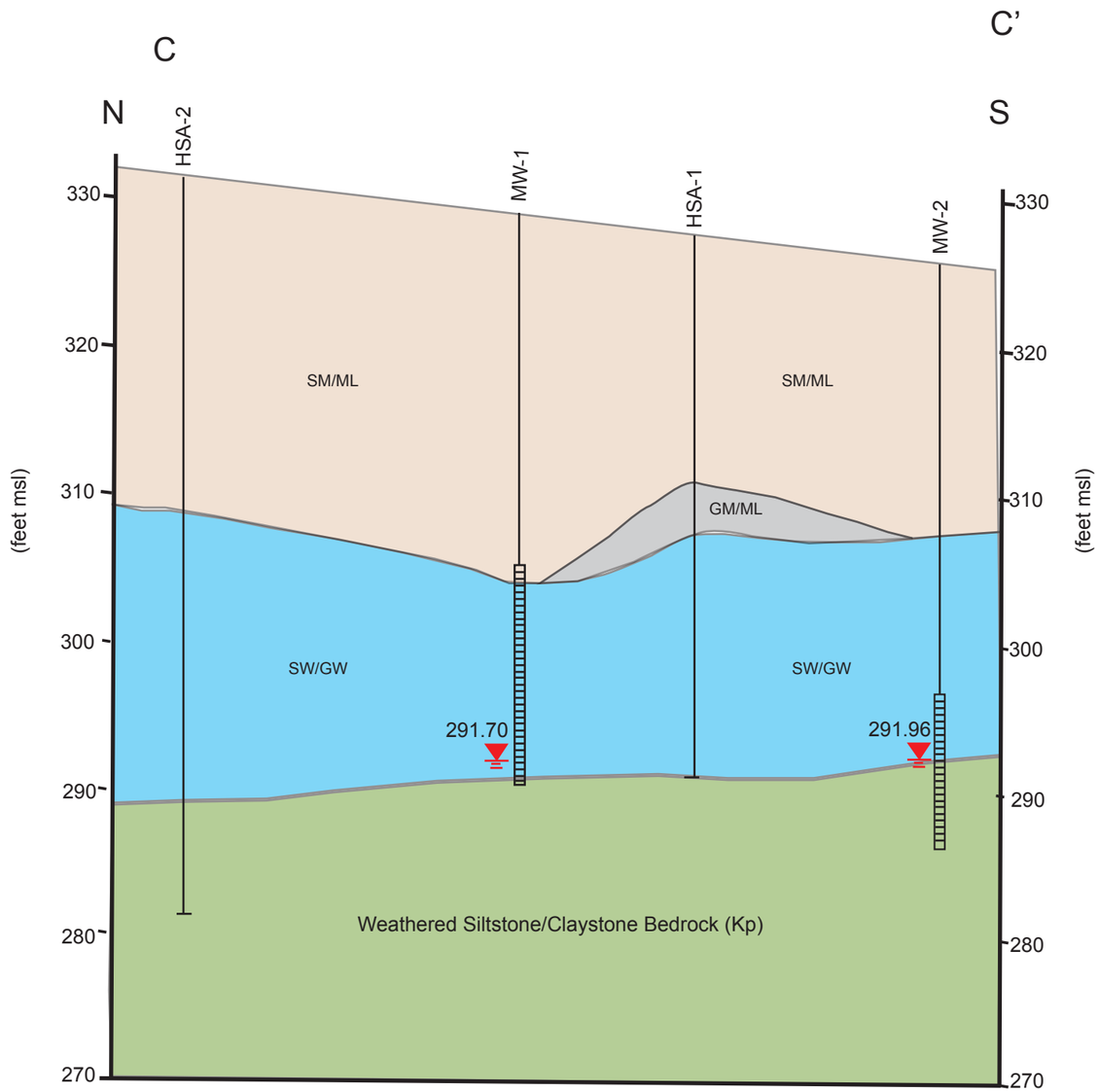
Horizontal Scale 1"=20'

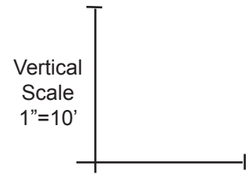
- SM/ML — Silty Sand/Sandy Silt
- SP — Sand
- GM/ML — Silty Gravel/Gravelly Silt
- SW/GW — Gravelly Sand/Sandy Gravel
- CL/ML — Clay & Silt
- Tbr — Weathered Silty Sandstone/Sandstone Bedrock (Tbr) - Tertiary marine sandstone (Briones Formation)
- Tbr — Well Cemented Sandstone Bedrock (Tbr) - Tertiary marine sandstone (Briones Formation)
- Groundwater Monitoring Well
- Soil Boring
- Groundwater Level
- Lithologic Contact
- Inferred Contact

Notes

1) Elevation in feet above average mean sea level (msl).
2) Groundwater elevations for MW-5, MW-6, and MW-7 as measured on February 21, 2006.

	URS	Additional Subsurface Investigation Report Chevron Sunol Pipeline Sunol, California Project No. 26815217	HYDROGEOLOGIC CROSS SECTION B-B'	Figure 5





SM/ML Silty Sand/Sandy Silt

SP Sand

GM/ML Silty Gravel/Gravelly Silt

SW/GW Gravelly Sand/Sandy Gravel

CL/ML Clay & Silt

Kp Weathered Siltstone/Claystone Bedrock (Kp) - Cretaceous clay shale (Panoche Formation)

Groundwater Monitoring Well

Soil Boring

Groundwater Level

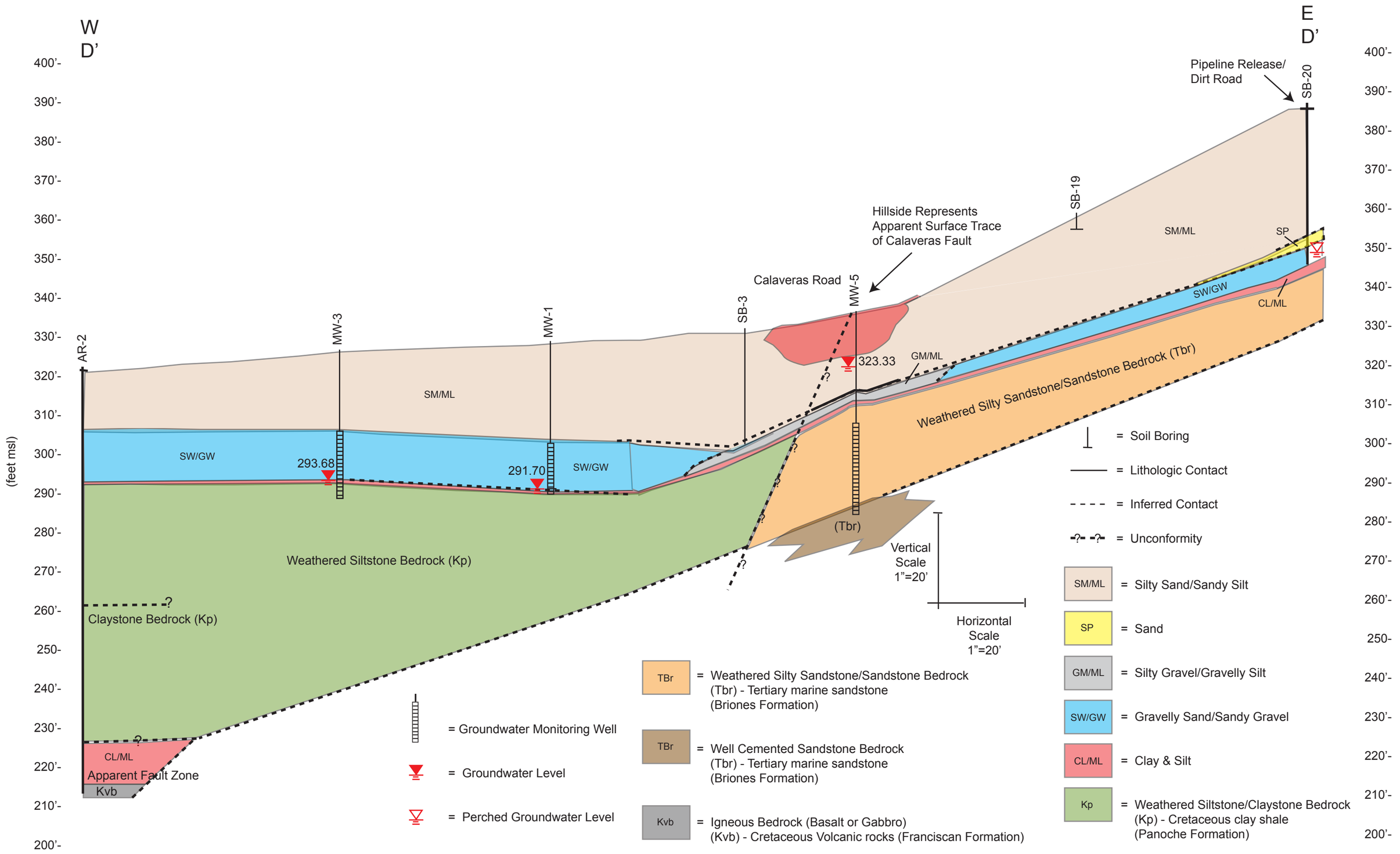
Lithologic Contact

Inferred Contact

Notes

1) Elevation in feet above average mean sea level (msl).
2) Groundwater elevations for MW-1 and MW-2 as measured on February 21, 2006.

	URS	Additional Subsurface Investigation Report Chevron Sunol Pipeline Sunol, California Project No. 26815217	HYDROGEOLOGIC CROSS SECTION C-C’	Figure 6



Notes
1) Elevation in feet above average mean sea level (msl).
2) Ground water elevations for MW-1, MW-3, and MW-5 as measured on February 21, 2006.
3) Depth to perched groundwater within SB-20 was approximately 35 ft bgs at the time of drilling (October, 2005)

URS

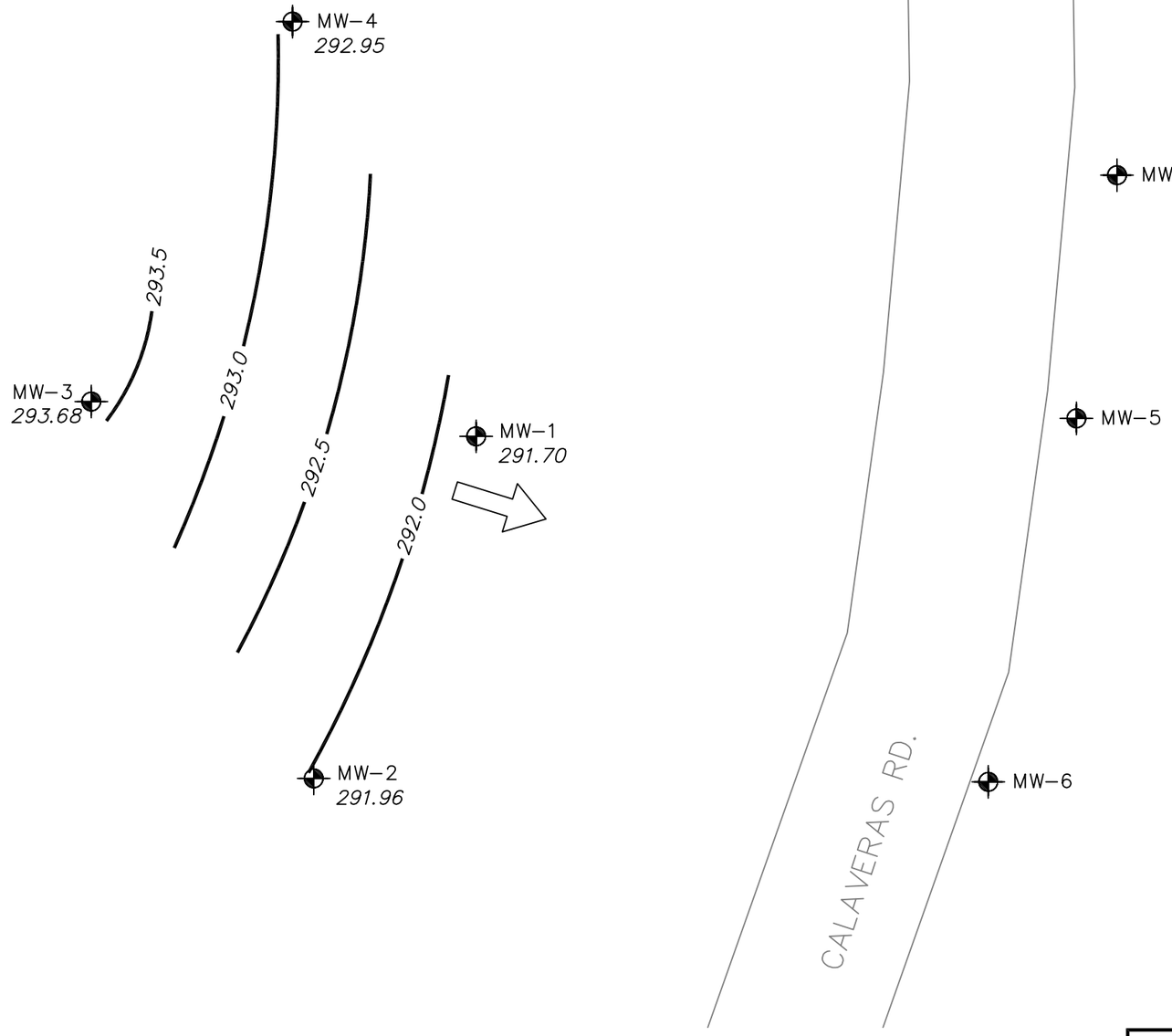
Additonal Subsurface Investigation Report
Chevron Sunol Pipeline
Sunol, California

Project No. 26815217

HYDROGEOLOGIC
CROSS SECTION D-D'

Figure
7

NORTH



LEGEND:

MW–3 *293.68* — MONITORING WELL WITH GROUNDWATER ELEVATION

293.5 — GROUNDWATER CONTOURS

INFERRED GROUNDWATER FLOW DIRECTION UNCONFINED ZONE

NOTES:

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

2.) GROUNDWATER ELEVATIONS FOR MW–1 THROUGH MW–4 AS MEASURED ON FEBRUARY 21, 2006.

3.) CALCULATED GROUNDWATER GRADIENT dh/d1 = 0.031 ft./ft.

20' 0 20'

SCALE 1"= 20'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	GROUNDWATER SURFACE CONTOURS UNCONFINED WATER–BEARING ZONE CHEVRON SUNOL PIPELINE	Figure 8

May 12, 2006 - 11:10am
X:\x_env_waste\Chevron Pipe Line Company\Sunol Spill\Additional Well Installation 1-06\Add. Investigation Report\Figures\Figure 8.dwg

NORTH

MW–4

MW–3

MW–1

MW–2

MW–7
320.79

MW–5
323.33

MW–6
314.26

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 FEBRUARY 21, 2006.

20' 0 20'
SCALE 1"= 20'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	POTENTIOMETRIC SURFACE ELEVATIONS CONFINED SANDSTONE WATER–BEARING ZONE	Figure 9

May 12, 2006 - 10:49am
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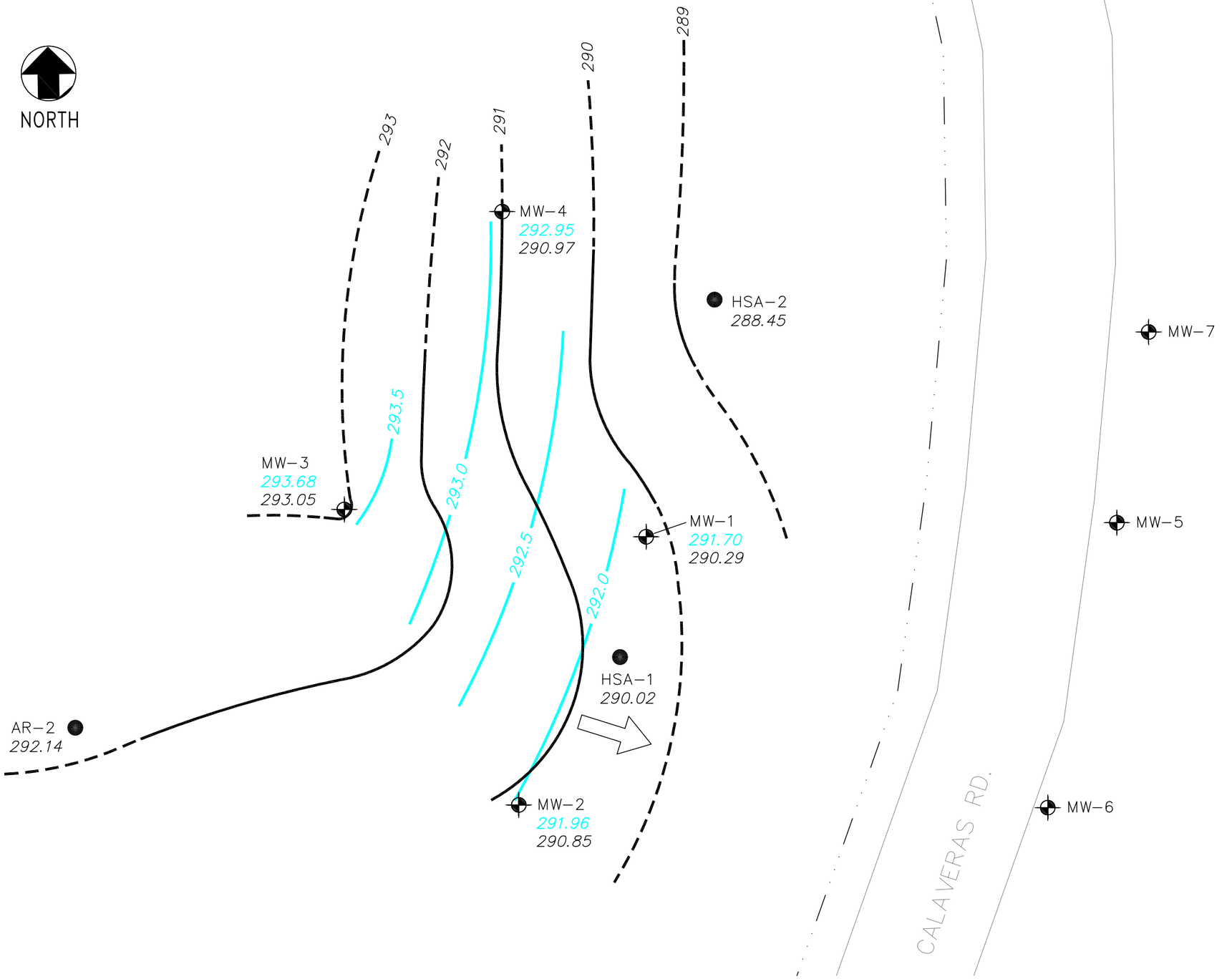
NORTH



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 BEDROCK CONTOUR
292	CALCULATED BEDROCK CONTOUR
293.5	CALCULATED GROUNDWATER CONTOUR
	INFERRED GROUNDWATER FLOW DIRECTION UNCONFINED ZONE

NOTES:

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

2.) GROUNDWATER ELEVATIONS FOR MW-1 THROUGH MW-4 AS MEASURED ON FEBRUARY 21, 2006.

3.) BEDROCK ELEVATION DATA OBTAINED FROM THE BORING LOGS OF MW-1 THROUGH MW-4, HSA-1 AND HSA-2, AND AR-2.

4.) THE BEDROCK CONTOURS SHOWN REPRESENT THE CONTACT WITH THE WEATHERED SILTSTONE/CLAYSTONE BEDROCK UNIT (POSSIBLY CRETACEOUS-AGE CLAY SHALE OF THE PANOCHE FORMATION).

20' 0 20'
SCALE 1"= 20'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	BEDROCK CONTOUR MAP AND UNCONFINED WATER-BEARING ZONE CHEVRON SUNOL PIPELINE	Figure 10

May 12, 2006 - 10:51am
X:\x_env_waste\Chevron Pipe Line Company\Sunol Spill\Additional Well Installation 1-06\Add. Investigation Report\Figures\Figure 10.dwg

Appendix A
Permits

County of Alameda Public Works Agency: Roadway Encroachment Permit

Work Order Number:* 80001

*This WO is ___ / is not ✓ open for charges.

Permit Number: R05 LD 6800

Permit Issuance Date: 8-24-05

Permit Expiration Date: 8-23-06

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
505 Paloma Way, P.O. Box 550
Sunol, CA 94586
Phone Number: (925) 862-2233

Name & Address of Contractor:
ULS 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 RINGOT

CALL THIS NUMBER FOR INSPECTIONS: 670 5979

Bond Information:

BY: _____, Alameda County

Insp. Fee ✓ or Deposit ___ $74 250 ⁰⁰

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 other requirements of the issued Permit.

Steven Plant Agent for ULS
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

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 Rd Sunol CA & within Valley Crest Tree Co. 8501 Calaveras Rd, Sunol CA, 94586 soil contaminating PUC property

California Coordinates Source _____ Accuracy± _____ ft.
CCN _____ ft. CCE _____ ft.
APN _____
37°, 33', 02" N, 121° 51', 26" W

CLIENT
Name ~~URS Corporation~~ Chevron Pipeline Company
Address 2811 Hayes Rd Phone (281) 576-3564
City Houston, TX Zip 77082

APPLICANT
Name URS Corporation
Greg White Fax (510) 874-3268
Address 1333 Broadway, Suite 800 Phone (510) 874-3247
City Oakland, CA Zip 94612

TYPE OF PROJECT:

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

PROPOSED WELL USE:

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

DRILLING METHOD:

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

DRILLING COMPANY West Hazmat/Test America Drilling
DRILLER'S LICENSE NO. C57-819548 Exp. 5/31/07

WELL SPECIFICATIONS:
Drill Hole Diameter 8 in. Maximum
Casing Diameter 11x4" & 1-2" in. Depth 50 ft.
Surface Seal Depth 20 ft. Number 12

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

ESTIMATED STARTING DATE 12/5/05
ESTIMATED COMPLETION DATE 1/31/06

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S
SIGNATURE _____ Date 11/29/05

ATTACH SITE PLAN OR SKETCH

FOR OFFICE USE

PERMIT NUMBER 25214
WELL NUMBER 4S/1E-27N13 to 27N24
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 12/7/05
Wyman Hong

Appendix B
Additional Subsurface Investigation Boring Logs and Well Construction Details

LIST OF BORING LOGS INCLUDED IN APPENDIX:

- MW-4
- MW-5
- MW-6
- MW-7

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING & WELL CONSTRUCTION

Borehole ID: MW-4

Total Depth: 47 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Resonant Sonic International
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Valentin Gudoy
Project Manager: Joe Morgan	**Type of Drilling Rig:** Sonic Continuous Core Rig
RG: Leonard Niles	**Drilling Method:** 8"x10' Core Barrel with water wash
Geologist: Gregory White & Renee McFarlan	**Sampling Method:** 4"x10' Core Barrel
Job Number: 26815217.03003	**Date(s) Drilled:** January 30-31, 2006

BORING & WELL INFORMATION

Groundwater Depth: 36.72 ft from TOC-N (Static 2/21/06)	**Boring Location:** Valley Crest Tree Company, 8501 Calveras Road
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 8 inches
Coordinates: **X** 6168112.65 **Y** 2025821.72 **Z** 329.67 (TOC)	**Boring Type:** Monitoring Well Completion

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Drilling Comments
0	ML		SANDY SILT: 0-5 Very dark brown (10YR2/2), soft, medium plasticity, moist, ~40% sand, ~10% clay, ~50% silt, some root material, trace fine gravel.		0.0	Well installed on January 30 and 31, 2006. Surface Completion: Flush-mounted cast iron well box.	09:30 Begin hand augering to 5 ft bgs. Ambient PID: 0.0 ppm.
6	ML		SANDY SILT: 5-10 Very dark brown to dark brown (10YR2/2), medium stiff, moist, ~40% fine sand, ~5% clay, ~60% silt, with caliche veining and fine to coarse subangular to subrounded gravel.		0.0		09:40 Begin coring with Sonic Rig from 5 ft bgs.
10	SM		SILTY SAND: 10-13 Dark brown, medium dense, moist, ~70% sand, ~30% silt, with fine to coarse angular to subrounded gravel.		0.0	0.3-30.7 ft bgs: 4" Sch. 40 PVC riser. 0.8-27 ft bgs: 95% cement / 5% bentonite grout.	09:45 PID not functioning correctly, will collect soil samples for headspace readings later.
14	ML		SANDY SILT: 13-18 Dark brown, stiff, moist, ~40% fine to very fine sand, ~60% silt, with fine subrounded gravel.		0.0 0.0		
18	NR		NO RECOVERY: 18-20 No recovery.				
20	SM		SILTY SAND: 20-22 Brown (10YR4/3), medium dense, moist, ~70-75% fine sand, ~25-30% silt, ~5% clay, with fine to coarse gravel and cobbles.		0.0		10:45 Collect soil sample MW-4-21.5'
22			SANDY GRAVEL: 22-32.5 Light gray, loose, dry, subangular to subrounded clasts, ~60-70% fine to coarse gravel and cobbles (some cobbles as large as 4" in diameter), ~30-35% sand, ~5% silt and clay.		0.0		
24							
26							

LOG OF BORING

Borehole ID : MW-4

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Comments
28	GW				0.0	27-29 ft bgs: Bentonite chip seal.	
30					0.0		
32	SW		GRAVELLY SAND: 32.5-33.5 Brown to light gray, loose, moist, ~80% fine to coarse sand, ~15-20% fine subrounded gravel, ~5% silt and clay.		0.0	30.7-40.7 ft bgs: 4" Sch 40 PVC 0.020" screen.	
34			GRAVELLY SANDY SILT: 33.5-39 Light brown, moist to wet at ~36.5, ~60% silt, ~20-25% fine to coarse subangular to subrounded gravel, ~15-20% fine sand.		0.0	29-41 ft bgs: #3 RMC sand.	
36 ▽	ML				0.0		10:45 Groundwater encountered during drilling at 36.5 ft bgs. (Static water level measured at 36.72 ft below TOC-N on 2/21/06)
38							
40			WEATHERED SILTSTONE: 39-47 Gray, moist to dry, hard, ~100% silt.		0.0	40.7-41 ft bgs: 4" PVC silt trap and well cap.	
42					0.0		
44							
46					0.0		
48			**END OF BORING AT 47 FT BGS**		0.0		10:50 End of boring at ~47 ft bgs on coherent bedrock. Hole collapsed ~5 ft, so will set well at ~42 ft bgs. 10:56 Collect soil sample MW-4-33'. 11:00 Collect grab groundwater sample MW-4-GW. 11:02 Collect soil sample MW-4-36.5'.
50							
52							
54							
56							
58							
60							

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING & WELL CONSTRUCTION

Borehole ID: MW-5

Total Depth: 49.8 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Resonant Sonic International
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Valentin Gudoy
Project Manager: Joe Morgan	**Type of Drilling Rig:** Sonic Continuous Core Rig
RG: Leonard Niles	**Drilling Method:** 8"x10' Core Barrel with water wash
Geologist: Leonard Niles & Greg White	**Sampling Method:** 4"x10' Core Barrel
Job Number: 26815217.03003	**Date(s) Drilled:** January 24-27, 2006

BORING & WELL INFORMATION

Groundwater Depth: 11.48 ft from TOC-N (Static 2/21/06)	**Boring Location:** Along the east side of Calveras Road (near milepost 2.7)
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 8 inches
Coordinates: **X** 6168225.98 **Y** 2025764.36 **Z** 334.81 (TOC)	**Boring Type:** Monitoring/Remediation Well Completion

Depth (ft bgs)	USCS	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Drilling Comments
0						
2		SANDY CLAY: 0-5 Very dark brown (10YR2/2), low to medium plasticity, damp to moist, soft, 15-20% fine sand, 5-10% coarse gravel (up to 2" in diameter), 70-80% clayey to silty fines, root material.			Well installed on January 25-27, 2006.	1/24 09:00 Begin hand augering to 5 ft bgs. Ambient PID: 0.0 ppm.
4						
6	CL	SANDY CLAY: 5-9 As above, except moist to wet on the outside of the core (due to rainwater infiltration) from 5-6.5 ft. No gravel, moist from 6.5-9 ft, grades to clayey silt from 7-9 ft.		10.2	Surface Completion: Flushed mounted cast-iron well box.	1/24 09:30 Begin drilling with 4" core barrel.
8				49.3	0.33-39.5 ft bgs: 4" Sch. 40 PVC riser.	
10	ML	CLAYEY SILT: 9-10 Yellowish brown (10YR4/3), very low plasticity, hard, damp, 10-15% fine sand, <30% clay, > 50% silt, caliche veins, slight HC odor.		73.5	0.8-36 ft bgs: 95% cement / 5% bentonite grout.	1/24 11:20 Collect soil sample MW-5-10'.
12		NO RECOVERY: 10-15 No recovery.				
14						
16		SLOUGH: 15-16 Probable slough from above.		24.6		
18	ML	CLAYEY TO SANDY SILT: 16-19 Yellowish brown (10YR4/3), no plasticity, damp, increasing fine sand to 15-20%. decreasing clay, HC odor. 19-20.5 Color change to brownish yellow (10YR6/8), increasing sand and clay, 20% fine sand.		34.4		
20				2349		1/24 11:35 Collect soil sample MW-5-20'.
22	GM	SILTY GRAVEL: 20.5-24.7 Light gray (N7/), 20% silt, 15% fine sand, 65% coarse gravel to cobbles (up to 4" in diameter), fine grained sandstone clasts, strong HC odor, dry, subangular to subrounded clasts.		2827 55.3		
24						
26	CL	CLAY: 24.7-25 Dark brown, medium to high plasticity, moist, < 10% fine sand.		75.3		

LOG OF BORING

Borehole ID : MW-5

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Comments
28	SP		SAND: 25-30 WEATHERED SANDSTONE bedrock, crumbles to sand, light gray (N7/), very soft, damp, 10-15% silt, 85-90% fine sand. Grades to weathered sandy siltstone at 30 ft bgs.		5.9 3.2		
30	ML		SANDY SILT: 30-32 WEATHERED SANDY SILTSTONE bedrock, light gray (N7/) to dark gray (N4/), very soft, no plasticity, damp to moist, 50-60% silt, 40-50% fine sand, slight HC odor. Grades to weathered silty sandstone at 32 ft bgs.		2.0 4.1		1/24 12:45 4" Core barrel very warm, steam rising off of it.
32	SM		SILTY SAND: 32-38 WEATHERED SILTY SANDSTONE bedrock, light to dark gray (N7/ to N4/), very soft, moist, 60-70% fine sand, 30-40% silt. Grades to weathered sandstone from 38-38.6 ft bgs.		4.3 4.8 4.3 4.9	36-38 ft bgs: Bentonite pellet seal.	1/24 13:30 Drilling difficult 40-45 ft bgs. 13:50 Collect soil sample MW-5-46'
34							
36							
38	SP		SAND: 38-40 WEATHERED SANDSTONE bedrock, light gray (N7/), soft, moist, 10% silt, 90% fine sand, more consolidated and less weathered than above. Grades to silty sandstone at 40 ft bgs.				13:55 Groundwater measured at 44.8 ft bgs during drilling. (Static water level 11.48 ft below TOC-N on 2/21/06)
40					4.8 4.4		
42	SM		SILTY SAND: 40-45 WEATHERED SILTY SANDSTONE, light to dark gray (N7/ to N4), soft, moist, 10-15% silt, 85-90% fine sand, decreasing silt from 42-44 ft, then increasing at 44 ft to 15-20% silt. 45-48 As above except wet at 45-45.5 ft, moist 46-47 ft. Increasing silt content to 20-30% at 46 ft, then decreasing to 10% at 47 ft, strong HC odor. Grades to sandstone at 48 ft bgs.		5.0	39.5-49.5 ft bgs: 4" Sch 40 PVC 0.020" screen.	1/24 14:30 Broke 4" core barrel joint at ~30 ft bgs. 20 ft of 4" casing in bottom of boring from 30-50 ft bgs.
44 ▽							
46					6.6 643	38-49.8 ft bgs: #3 RMC sand.	
48			SANDSTONE: 48-49.5 As above except increasingly unweathered and hard, wet, weathered to SANDY SILT (SM) along fractures, 10-15% silt, fractured disks by coring, harder and massive at 49.8 ft, quartz veins.		42 4.3	49.5-49.8 ft bgs: 4" PVC silt trap and well cap.	1/25 08:25 Drove fishing tool into broken casing stuck at 30 ft bgs. 08:30 Install 12" surface casing to ~8 ft bgs. Begin reaming out boring with 8" casing. 10:30 Blow water fitting at 25 ft bgs. Shut down rig to repair fitting. 13:45 Resume drilling with 8" casing. 14:30 Reach 50 ft bgs with 8" casing. Pull 4" casing from inside 8" casing using fishing tool. End of boring at ~50 ft bgs.
50			**END OF BORING AT 49.8 FT BGS**				
52							
54							
56							
58							
60							
62							

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING & WELL CONSTRUCTION

Borehole ID: MW-6

Total Depth: 50 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Resonant Sonic International
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Valentin Gudoy
Project Manager: Joe Morgan	**Type of Drilling Rig:** Sonic Continuous Core Rig
RG: Leonard Niles	**Drilling Method:** 8"x10' Core Barrel with water wash
Geologist: Leonard Niles and Greg White	**Sampling Method:** 4"x10' Core Barrel
Job Number: 26815217.03003	**Date(s) Drilled:** January 26-27, 2006

BORING & WELL INFORMATION

Groundwater Depth: 18.02 from TOC-N (Static 2/21/06)	**Boring Location:** Along the east side of Calveras Road (near milepost 2.7)
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 8 inches
Coordinates: **X** 6168213.24 **Y** 2025711.81 **Z** 332.38 (TOC)	**Boring Type:** Monitoring/Remediation Well Completion

Depth (ft bgs)	USCS	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Drilling Comments
0	CL	SANDY CLAY: 0-5 Dark brown (10YR2/2), medium plasticity, moist, 15-20% fine to medium sand, 80-85% clayey to silty fines, ~5% coarse gravel at 1 foot, some root material.		1.5	Well installed on January 26-27, 2006 Surface Completion: Flushed mounted cast-iron well box.	10:00 Begin hand augering to 5 ft bgs. Ambient PID: 0.0 ppm.
5	ML	SANDY SILT: 5-9 Dark brown (10YR2/2), very low plasticity, damp, 15-20% fine sand, 80-85% silt and clay, minor gravel at 8-10 ft, increasing clay at 8-9 ft, some root material.		0.2	0.23-34.7 ft bgs: 4" Sch. 40 PVC riser.	10:25 Begin coring from 5 ft bgs.
10	CL	SANDY CLAY: 9-10 As above except %clay>%silt, low to moderate plasticity, 20% sand, 5% gravel.		2.3		
	ML	SANDY SILT: 10-15 Yellowish brown (10YR4/3), no plasticity, damp, 20-30% fine grained sand, 5-10% fine to coarse subrounded gravel, some root material and caliche fragments.		0.6	0.8-31 ft bgs: 95% cement / 5% bentonite grout.	
15				0.6		
	CL	GRAVELLY CLAY: 15-18 Very dark brown (10YR2/2), moderate plasticity, damp, 10% fine sand, 20% coarse gravel to 3" in diameter. Color change at 16 ft to yellowish brown (10YR4/3), increasing fine to coarse sand to 15-25%, increasing fine to coarse gravel at 17-18 ft.		7.7 16.0		15:20 Collect soil sample MW-6-17'
20		NO RECOVERY: 18-20 No recovery.				
	CL	SANDY CLAY: 20-22 Yellowish brown (10YR6/8) and dark olive gray (5Y3/2) mottled, low plasticity, damp, 10-20% fine sand.		6.5		11:00 Ambient PID: 0.0 ppm Advance a split spoon at 20 ft bgs to see if a pearched water zone exists within the gravel layer.
25	ML	SANDY SILT: 22-24 Yellowish brown (10YR6/8) and dark olive gray (5Y3/2) mottled, very low plasticity, damp, 15-20% fine sand, increasing sand at 23.6 ft.				
		SILTY SAND: 24-46 Light gray (N7/), highly WEATHERED SILTY SANDSTONE, no plasticity, damp to moist at 35-40 ft, 40-50% silt, 50-60% very fine sand.		0.0		
26						

LOG OF BORING

Borehole ID : MW-6

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Comments
28			As Above		0.0		
30					0.0		
32					0.0	31-33 ft bgs: Bentonite pellet seal.	12:00 Ambient PID: 0,0 ppm
34					0.0		
36	SM				0.0		
38							
40					0.0		
42					0.0	34.7-49.7 ft bgs: 4" Sch 40 PVC 0.020" screen.	
44					0.0		Groundwater encountered during drilling at 46 ft bgs.
46 ▽			SILTY SAND: 46-46.8 Light gray (N7/), increasing less WEATHERED SANDSTONE, wet, powdered and pulverized by coring bit.		0.0	33-50 ft bgs: #3 RMC sand.	
48			SILTY SANDSTONE: 46.8-50 Light gray (N7/), hard, well cemented, dry, 15-20% silt, 80-85% very fine to fine sand, fractured and pulverized by coring bit.				12:45 Groundwater measured at 49 ft bgs after removing 4" casing.
50			**END OF BORING AT 50 FT BGS**			49.7-50 ft bgs: 4" PVC silt trap and well cap.	13:30 Groundwater rises to 46.7 ft bgs. Begin overdrilling boring with 8" casing. (Static water level 18.02 ft below TOC-N on 2/21/06).
52							15:15 Collect soil sample MW-6-46'.
54							
56							
58							
60							
62							

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING & WELL CONSTRUCTION

Borehole ID: MW-7

Total Depth: 50 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Resonant Sonic International
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Valentin Gudoy
Project Manager: Joe Morgan	**Type of Drilling Rig:** Sonic Continuous Core Rig
RG: Leonard Niles	**Drilling Method:** 8"x10' Core Barrel with water wash
Geologist: Greg White & Leonard Niles	**Sampling Method:** 4"x10' Core Barrel
Job Number: 26815217.03003	**Date(s) Drilled:** January 27, 2006

BORING & WELL INFORMATION

Groundwater Depth: 15.43 ft from TOC-N (Static 2/21/06)	**Boring Location:** Along the east side of Calveras Road (near milepost 2.7)
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 8 inches
Coordinates: **X** 6168231.84 **Y** 2025799.52 **Z** 336.22 (TOC)	**Boring Type:** Monitoring/Remediation Well Completion

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Drilling Comments
0	CL		SILTY CLAY: 0-5 Very dark brown (10YR2/2), soft, medium plasticity, moist, some coarse sand and tree roots.		5.1	Well installed on January 27, 2006. Surface Completion: Flush mounted cast-iron well box.	08:15 Begin hand augering to 5 ft bgs. Ambient PID: 0.3 ppm.
5	CL		SILTY CLAY: 5-7 Same as above except medium stiff and wet from 5-5.5 ft.		5.0		08:35 Begin coring with 4" casing from 5 ft bgs.
7	GW		SANDY GRAVEL: 7-7.2 Brown to yellowish brown (10YR4/3 to 10YR6/8), loose, moist, fine to coarse sand and gravel, subangular to subrounded, some silt.		7.5	0.24-34.7 ft bgs: 4" Sch. 40 PVC riser.	08:40 Faint HC odor from 7-7.6 ft bgs.
8	ML		SILT: 7.2-7.5 Dark brown, hard, moist to dry, brittle, some caliche veins, with fine to coarse subrounded to rounded gravel, trace root material.				
10	NR		NO RECOVERY: 7.5-10		25.8	0.8-31 ft bgs: 95% cement / 5% bentonite grout.	
12	SM		SILTY SAND: 10-15 Grayish brown, dry, with subangular to subrounded gravel, some caliche veins, trace root material, ~60% fine sand, 30-35% silt, 5-10% gravel.		30.7 45.2		
15	ML		SANDY SILT: 15-16 Grayish brown, low plasticity, moist, with subangular to subrounded fine to medium gravel, trace root material, ~60% silt, ~30% sand, ~5% clay, ~5% gravel.		102		
16	SM		SILTY SAND: 16-18 Brownish yellow (10YR6/8), medium dense, moist, trace gravel, ~55-60% fine sand, ~40-45% silt.				
18	NR		NO RECOVERY: 18-20		174		
20	SM		SILTY SAND: 20-24.5 Brownish yellow (10YR6/8), medium dense, moist, trace gravel, ~55-60% fine sand, ~40-45% silt.		137 595		
24			SILTY SAND: 24.5-36 Gray, moist, WEATHERED SILTY SANDSTONE bedrock, ~60% fine sand, ~40% silt.		124		
26							

LOG OF BORING

Borehole ID : MW-7

Depth (ft bgs)	USCS	Symbol	Lithologic Description	% Recovery	PID Reading	Well Construction Details	Comments
28							09:15 Sheer bolts break on rig head at 30 ft bgs.
30					1.7		09:20 Collect sample MW-7-18'.
32	SM				4.2		09:55 Down-hole PID at 30 ft bgs is 0.4 ppm.
34					2.0	31-32.9 ft bgs: Bentonite pellet seal.	10:00 Resume coring from 30 ft bgs.
36			SILTY SANDSTONE: 36-41 Gray to light gray, well cemented.		2.0		10:10 20-25 foot sample has noticable odor.
38					1.9		10:28 Collect soil sample MW-7-22.5'.
40							
42 ▽			SILTY SAND: 41-48 Gray, moist, WEATHERED SILTY SANDSTONE bedrock, ~60% fine sand, ~40% silt.		3.2	34.7-49.7 ft bgs: 4" Sch 40 PVC 0.020" screen.	11:10 End of boring at 50 ft bgs, lose 2 ft of core down hole. Inital water level 44.2 ft bgs.
44 ▽	SM						11:30 Water level now 42 ft bgs. Collect grab groundwater sample MW-7-GW. (Static Water level 15.43 ft below TOC-N on 2/21/06).
46					5.9	32.9-50 ft bgs: #3 RMC sand.	
48	NR		NO RECOVERY: 48-50 No Recovery.		7.1	49.7-50 ft bgs: 4" PVC silt trap and well cap.	Begin overdrilling with 8" casing to 50 ft bgs.
50			**END OF BORING AT 50 FT BGS**				
52							
54							
56							
58							
60							
62							

Appendix C
Laboratory Analytical Results

Soil and Groundwater Analytical Results: Additional Subsurface Investigation

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 975539. Samples arrived at the laboratory on Wednesday, January 25, 2006. The PO# for this group is 99011184.

Client Description	Lancaster Labs Number
MW-5-10' Soil Sample	4695273
MW-5-20' Soil Sample	4695274
MW-5-46' Soil Sample	4695275

ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Angela Liang
ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Joe Morgan
ELECTRONIC COPY TO	Chevron Pipeline Co	Attn: Greg White

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Heidi L Ortenzi at (717) 656-2300

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

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

Lancaster Laboratories Sample No. SW 4695273

MW-5-10' Soil Sample
Sunol, CA

Collected:01/24/2006 11:20 by GW

Account Number: 11875

Submitted: 01/25/2006 09:15
Reported: 01/31/2006 at 12:51
Discard: 03/03/2006

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

MW510

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	1.1	1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.025	mg/kg	49.7
05460	Benzene	71-43-2	0.13	0.025	mg/kg	49.7
05466	Toluene	108-88-3	0.69	0.050	mg/kg	49.7
05474	Ethylbenzene	100-41-4	N.D.	0.050	mg/kg	49.7
06301	Xylene (Total)	1330-20-7	1.3	0.050	mg/kg	49.7

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	N. CA LUFT GRO	1	01/26/2006 07:27	Linda C Pape	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	01/30/2006 09:21	Seth J Good	49.7
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/25/2006 20:34	Jesse L Mertz	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/25/2006 13:37	Larry E Bevins	n.a.

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4695274

MW-5-20' Soil Sample
Sunol, CA

Collected:01/24/2006 11:35 by GW

Account Number: 11875

Submitted: 01/25/2006 09:15
Reported: 01/31/2006 at 12:51
Discard: 03/03/2006

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

MW520

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	1.5	1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.021	mg/kg	41.53
05460	Benzene	71-43-2	0.089	0.021	mg/kg	41.53
05466	Toluene	108-88-3	0.16	0.042	mg/kg	41.53
05474	Ethylbenzene	100-41-4	N.D.	0.042	mg/kg	41.53
06301	Xylene (Total)	1330-20-7	0.78	0.042	mg/kg	41.53

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	N. CA LUFT GRO	1	01/26/2006 09:51	Corie L Hilyer	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	01/30/2006 09:44	Seth J Good	41.53
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/25/2006 20:36	Jesse L Mertz	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/25/2006 13:38	Larry E Bevins	n.a.

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4695275

MW-5-46' Soil Sample
Sunol, CA

Collected:01/24/2006 14:15 by GW

Account Number: 11875

Submitted: 01/25/2006 09:15
Reported: 01/31/2006 at 12:51
Discard: 03/03/2006

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

MW546

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	10.	1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.022	mg/kg	43.25
05460	Benzene	71-43-2	0.15	0.022	mg/kg	43.25
05466	Toluene	108-88-3	2.8	0.043	mg/kg	43.25
05474	Ethylbenzene	100-41-4	0.64	0.043	mg/kg	43.25
06301	Xylene (Total)	1330-20-7	3.8	0.043	mg/kg	43.25

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	N. CA LUFT GRO	1	01/26/2006 10:28	Corie L Hilyer	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	01/30/2006 10:07	Seth J Good	43.25
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/25/2006 20:37	Jesse L Mertz	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/25/2006 13:38	Larry E Bevins	n.a.

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 975539
Reported: 01/31/06 at 12:51 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: 06025A02A	Sample number(s): 4695273							
TPH-GRO - Soils	N.D.	1.0	mg/kg	84		67-119		
Batch number: 06026A33A	Sample number(s): 4695274-4695275							
TPH-GRO - Soils	N.D.	1.0	mg/kg	76		67-119		
Batch number: Q060272AB	Sample number(s): 4695273-4695275							
Methyl Tertiary Butyl Ether	N.D.	25.	ug/kg	95	97	75-125	2	30
Benzene	N.D.	25.	ug/kg	100	103	77-119	3	30
Toluene	N.D.	50.	ug/kg	98	99	81-116	1	30
Ethylbenzene	N.D.	50.	ug/kg	99	101	82-115	1	30
Xylene (Total)	N.D.	50.	ug/kg	100	102	82-117	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: 06025A02A	Sample number(s): 4695273 UNSPK: P684453								
TPH-GRO - Soils	95	94	39-118	0	30				
Batch number: 06026A33A	Sample number(s): 4695274-4695275 UNSPK: P689684								
TPH-GRO - Soils	80	86	39-118	8	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: TPH-GRO - Soils
Batch number: 06025A02A

	Trifluorotoluene-F
4695273	76
Blank	93
LCS	113
MS	87
MSD	87
Limits:	61-122

*- 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: 975539
Reported: 01/31/06 at 12:51 PM

Surrogate Quality Control

Analysis Name: TPH-GRO - Soils
Batch number: 06026A33A

	Trifluorotoluene-F
4695274	76
4695275	68
Blank	85
LCS	70
MS	83
MSD	82
Limits:	61-122

Analysis Name: BTEX+MTBE by 8260B
Batch number: Q060272AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4695273	91	89	86	82
4695274	82	78	75	71
4695275	80	85	79	76
Blank	106	106	96	91
LCS	91	87	87	88
LCSD	91	90	87	87
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 #: 4695273-75 SCR#: 242016

012406-09

975539

Facility #: Chevron Pipeline
Site Address: Calaveras Rd Sunol, CA
Chevron PM: _____ Lead Consultant: _____
Consultant/Office: URS- Oakland
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: 510-874-3201 Fax #: 510-874-3600
Sampler: Greg White
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	Oxygenates ___	Lead 7420 ☐ 7421 ☐
MW-5-10'	S			1/24/06	11:20					X	X				
MW-5-20'	S			1/24/06	11:35					X	X				
MW-5-46'	S			1/24/06	14:15					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
Joe Morgan,
Angela Liang,
Greg White
or
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

	Date	Time		Date	Time
Relinquished by:	1/24/06	15:00	Received by:	1/24/06	15:00
Relinquished by:	1/24/06	17:0	Received by:	1/24/06	1710
Relinquished by:	1/24/06	1715	Received by: FedEx	1/24/06	
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	1/25/06	0915
Temperature Upon Receipt 2.1°, 3.4°C° 4.8°			Custody Seals Intact? Yes No		

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

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
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< 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

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

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

ppb parts per billion

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

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

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

Inorganic Qualifiers

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

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

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

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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 975724. Samples arrived at the laboratory on Thursday, January 26, 2006. The PO# for this group is 99011184.

Client Description	Lancaster Labs Number
MW-5-48' Grab Soil Sample	4696267

ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Angela Liang
ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Joe Morgan
ELECTRONIC COPY TO	Chevron Pipeline Co	Attn: Greg White

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Heidi L Ortenzi at (717) 656-2300

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

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

Lancaster Laboratories Sample No. SW 4696267

MW-5-48' Grab Soil Sample
Sunol, CA

Collected:01/25/2006 15:00 by GW

Account Number: 11875

Submitted: 01/26/2006 09:00
Reported: 01/31/2006 at 12:54
Discard: 03/03/2006

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

MW548

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	3.0	1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.019	mg/kg	38.34
05460	Benzene	71-43-2	N.D.	0.019	mg/kg	38.34
05466	Toluene	108-88-3	N.D.	0.038	mg/kg	38.34
05474	Ethylbenzene	100-41-4	N.D.	0.038	mg/kg	38.34
06301	Xylene (Total)	1330-20-7	0.11	0.038	mg/kg	38.34

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	N. CA LUFT GRO	1	01/27/2006 04:23	Corie L Hilyer	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	01/30/2006 08:34	Seth J Good	38.34
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/26/2006 23:25	Jesse L Mertz	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/26/2006 12:33	Larry E Bevins	n.a.

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 975724
Reported: 01/31/06 at 12:54 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: 06026A33B	Sample number(s): 4696267							
TPH-GRO - Soils	N.D.	1.0	mg/kg	76		67-119		
Batch number: Q060272AB	Sample number(s): 4696267							
Methyl Tertiary Butyl Ether	N.D.	25.	ug/kg	95	97	75-125	2	30
Benzene	N.D.	25.	ug/kg	100	103	77-119	3	30
Toluene	N.D.	50.	ug/kg	98	99	81-116	1	30
Ethylbenzene	N.D.	50.	ug/kg	99	101	82-115	1	30
Xylene (Total)	N.D.	50.	ug/kg	100	102	82-117	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: 06026A33B	Sample number(s): 4696267 UNSPK: P689684								
TPH-GRO - Soils	80	86	39-118	8	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: TPH-GRO - Soils
Batch number: 06026A33B

	Trifluorotoluene-F
4696267	79
Blank	98
LCS	70
MS	83
MSD	82
Limits:	61-122

Analysis Name: BTEX+MTBE by 8260B
Batch number: Q060272AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4696267	72	81	76	72

*- 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: 975724
Reported: 01/31/06 at 12:54 PM

Surrogate Quality Control

Blank	106	106	96	91
LCS	91	87	87	88
LCSD	91	90	87	87
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 #: 4696267 SCR#: 240989

012506-15

975724

Facility #: Chevron Pipeline
Site Address: Chevron Rd, Sunol, CA
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
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	Oxygenates ___	Lead 7420 ☐ 7421 ☐
MW-5-48	S			06/01/25	16:00		X			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
Joe Morgan
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
[signature]	1/26/06	16:00	Leonard Niles	1/25/06	15:00
Leonard Niles	1/25/06	15:00	Andrea Amaya	1/26/06	1500
Andrea Amaya	1/25/06	15:15	FedEx	1/25/06	
Relinquished by Commercial Carrier: UPS FedEx Other ____			Received by: [signature]	1/26/06	0900
Temperature Upon Receipt 1.4° C°			Custody Seals Intact? Yes No		

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

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
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< 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

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

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

ppb parts per billion

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

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

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

Inorganic Qualifiers

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

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

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

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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 976140. Samples arrived at the laboratory on Monday, January 30, 2006. The PO# for this group is 99011184.

Client Description	Lancaster Labs Number
MW-6-46 Soil Sample	4698722
MW-6-17 Soil Sample	4698723

ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Angela Liang
ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Joe Morgan
ELECTRONIC COPY TO	Chevron Pipeline Co	Attn: Greg White

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Heidi L Ortenzi at (717) 656-2300

Respectfully Submitted,

Lawrence M. Taylor
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4698722

MW-6-46 Soil Sample
Sunol, CA

Collected:01/26/2006 15:15 by GW

Account Number: 11875

Submitted: 01/30/2006 09:10
Reported: 02/08/2006 at 12:02
Discard: 03/11/2006

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

MW646

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. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.022	mg/kg	43.63
05460	Benzene	71-43-2	N.D.	0.022	mg/kg	43.63
05466	Toluene	108-88-3	N.D.	0.044	mg/kg	43.63
05474	Ethylbenzene	100-41-4	N.D.	0.044	mg/kg	43.63
06301	Xylene (Total)	1330-20-7	N.D.	0.044	mg/kg	43.63

State of California Lab Certification No. 2116
EnCore samplers were received and prepped outside the 48 hour hold time per client approval.

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	N. CA LUFT GRO	1	01/30/2006 21:06	Christopher A Guessford	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	02/01/2006 09:50	Seth J Good	43.63
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/30/2006 16:41	Christopher A Guessford	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/30/2006 16:05	Lisa J Cooke	n.a.

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

Lancaster Laboratories Sample No. SW 4698723

MW-6-17 Soil Sample
Sunol, CA

Collected:01/26/2006 15:20 by GW

Account Number: 11875

Submitted: 01/30/2006 09:10
Reported: 02/08/2006 at 12:02
Discard: 03/11/2006

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

MW617

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. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.021	mg/kg	42.3
05460	Benzene	71-43-2	N.D.	0.021	mg/kg	42.3
05466	Toluene	108-88-3	N.D.	0.042	mg/kg	42.3
05474	Ethylbenzene	100-41-4	N.D.	0.042	mg/kg	42.3
06301	Xylene (Total)	1330-20-7	N.D.	0.042	mg/kg	42.3

State of California Lab Certification No. 2116
EnCore samplers were received and prepped outside the 48 hour hold time per client approval.

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	N. CA LUFT GRO	1	01/30/2006 21:47	Christopher A Guessford	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	02/01/2006 10:13	Seth J Good	42.3
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/30/2006 16:51	Christopher A Guessford	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/30/2006 16:06	Lisa J Cooke	n.a.

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

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 976140
Reported: 02/08/06 at 12:02 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: 06027A02B	Sample number(s): 4698722-4698723							
TPH-GRO - Soils	N.D.	1.0	mg/kg	99		67-119		
Batch number: Q060311AB	Sample number(s): 4698722-4698723							
Methyl Tertiary Butyl Ether	N.D.	25.	ug/kg	104	104	75-125	1	30
Benzene	N.D.	25.	ug/kg	105	104	77-119	0	30
Toluene	N.D.	50.	ug/kg	101	103	81-116	1	30
Ethylbenzene	N.D.	50.	ug/kg	99	100	82-115	1	30
Xylene (Total)	N.D.	50.	ug/kg	102	101	82-117	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: 06027A02B	Sample number(s): 4698722-4698723 UNSPK: 4698722								
TPH-GRO - Soils	112	117	39-118	5	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: TPH-GRO - Soils
Batch number: 06027A02B

	Trifluorotoluene-F
4698722	79
4698723	90
Blank	91
LCS	112
MS	90
MSD	93
Limits:	61-122

Analysis Name: BTEX+MTBE by 8260B
Batch number: Q060311AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene

*- 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: 976140
Reported: 02/08/06 at 12:02 PM

Surrogate Quality Control

4698722	83	84	75	73
4698723	92	91	83	79
Blank	92	94	85	80
LCS	94	92	89	88
LCSD	91	90	88	87
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

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012606-06

For Lancaster Laboratories use only
Acct. #: 11875 Sample #: 4698722-23 SCR#: 242019

976140

Facility #: Chevron Pipeline
Site Address: Calaveras Rd Sunol, CA
Chevron PM: _____ Lead Consultant: _____
Consultant/Office: URS-Oakland
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: 510-874-3201 Fax #: 510-874-3247
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-6-46	S			1/26/06	15:15		X			X	X										
MW-6-17	S			1/26/06	15:20		X			X	X										

Comments / Remarks
Email Results
to
Joe Morgan,
Angela Liens
Greg White

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

	Date	Time		Date	Time
Relinquished by:	1/26/06	15:30	Received by: Leonard Niles	1/26/06	15:30
Relinquished by: Leonard Niles	1/26/06	16:45	Received by: Andrea Lemaye	1/26/06	1645
Relinquished by: Andrea Lemaye	1/26/07	1655	Received by: FedEx	1/26/06	
Relinquished by Commercial Carrier: UPS (FedEx) Other _____			Received by:	Date	Time
Temperature Upon Receipt 2.1 C°			Custody Seals Intact? (Yes) No	1/30/06	0910

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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
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< 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

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

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

ppb parts per billion

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

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

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

Inorganic Qualifiers

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

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

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

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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 976081. Samples arrived at the laboratory on Saturday, January 28, 2006. The PO# for this group is 99011184.

Client Description	Lancaster Labs Number
MW-7-18' Soil Sample	4698347
MW-7-22.5' Soil Sample	4698348
MW-7-GW Grab Water Sample	4698349
Trip_Blank Water Sample	4698350

ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Angela Liang
ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Joe Morgan
ELECTRONIC COPY TO	Chevron Pipeline Co	Attn: Greg White

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Analysis Report

Questions? Contact your Client Services Representative
Heidi L Ortenzi at (717) 656-2300

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4698347

MW-7-18' Soil Sample
Sunol, CA

Collected:01/27/2006 09:20 by LN

Account Number: 11875

Submitted: 01/28/2006 10:05
Reported: 02/09/2006 at 10:25
Discard: 03/12/2006

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

SN718

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. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.023	mg/kg	46.9
05460	Benzene	71-43-2	N.D.	0.023	mg/kg	46.9
05466	Toluene	108-88-3	0.065	0.047	mg/kg	46.9
05474	Ethylbenzene	100-41-4	N.D.	0.047	mg/kg	46.9
06301	Xylene (Total)	1330-20-7	0.068	0.047	mg/kg	46.9

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	N. CA LUFT GRO	1	01/30/2006 10:27	Corie L Hilyer	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	02/01/2006 09:03	Seth J Good	46.9
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/30/2006 00:58	Corie L Hilyer	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/28/2006 12:46	Justin M Bowers	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 4698348

MW-7-22.5' Soil Sample
Sunol, CA

Collected:01/27/2006 10:28 by LN

Account Number: 11875

Submitted: 01/28/2006 10:05
Reported: 02/09/2006 at 10:25
Discard: 03/12/2006

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

SN722

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	9.1	1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. 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					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.021	mg/kg	41.88
05460	Benzene	71-43-2	0.087	0.021	mg/kg	41.88
05466	Toluene	108-88-3	1.1	0.042	mg/kg	41.88
05474	Ethylbenzene	100-41-4	0.33	0.042	mg/kg	41.88
06301	Xylene (Total)	1330-20-7	2.1	0.042	mg/kg	41.88

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	N. CA LUFT GRO	1	01/30/2006 09:51	Corie L Hilyer	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	02/01/2006 09:27	Seth J Good	41.88
01150	GC - Bulk Soil Prep	SW-846 5035	1	01/30/2006 01:00	Corie L Hilyer	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	01/28/2006 12:47	Justin M Bowers	n.a.

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Analysis Report

Lancaster Laboratories Sample No. WW 4698349

MW-7-GW Grab Water Sample

Sunol, CA
Collected:01/27/2006 11:30 by LN

Account Number: 11875

Submitted: 01/28/2006 10:05
Reported: 02/09/2006 at 10:25
Discard: 03/12/2006

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

SN7GW

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	1,700.	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
06059	BTEX+5 Oxygenates+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	39.	0.5	ug/l	1
05407	Toluene	108-88-3	250.	3.	ug/l	5
05415	Ethylbenzene	100-41-4	41.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	160.	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	N. CA LUFT GRO	1	01/31/2006 19:27	Steven A Skiles	1
01412	Methanol and Ethanol	SW-846 8015B	1	02/07/2006 14:16	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	02/06/2006 18:30	Ginelle L Feister	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	02/06/2006 18:54	Ginelle L Feister	5
01146	GC VOA Water Prep	SW-846 5030B	1	01/31/2006 19:27	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/06/2006 18:30	Ginelle L Feister	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	02/06/2006 18:54	Ginelle L Feister	5

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Analysis Report

Lancaster Laboratories Sample No. WW 4698350

Trip_Blank Water Sample

Sunol, CA
Collected:01/27/2006 11:30

Account Number: 11875

Submitted: 01/28/2006 10:05
Reported: 02/09/2006 at 10:25
Discard: 03/12/2006

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

SNTRB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
06059	BTEX+5 Oxygenates+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	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
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	02/06/2006 18:06	Ginelle L Feister	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/06/2006 18:06	Ginelle L Feister	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 976081
Reported: 02/09/06 at 10:25 AM

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: 06027A34B	Sample number(s): 4698347-4698348							
TPH-GRO - Soils	N.D.	1.0	mg/kg	101		67-119		
Batch number: 06031A07A	Sample number(s): 4698349							
TPH-GRO - Waters	N.D.	50.	ug/l	92	101	70-130	10	30
Batch number: 060380002A	Sample number(s): 4698349							
Methanol (by Direct Injection)	N.D.	200.	ug/l	96		80-120		
Batch number: Q060311AB	Sample number(s): 4698347-4698348							
Methyl Tertiary Butyl Ether	N.D.	25.	ug/kg	104	104	75-125	1	30
Benzene	N.D.	25.	ug/kg	105	104	77-119	0	30
Toluene	N.D.	50.	ug/kg	101	103	81-116	1	30
Ethylbenzene	N.D.	50.	ug/kg	99	100	82-115	1	30
Xylene (Total)	N.D.	50.	ug/kg	102	101	82-117	0	30
Batch number: Z060371AA	Sample number(s): 4698349-4698350							
Ethanol	N.D.	50.	ug/l	104		35-168		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	114		73-119		
Benzene	N.D.	0.5	ug/l	100		85-117		
Toluene	N.D.	0.5	ug/l	106		85-115		
Ethylbenzene	N.D.	0.5	ug/l	107		82-119		
Xylene (Total)	N.D.	0.5	ug/l	108		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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 06027A34B	Sample number(s): 4698347-4698348 UNSPK: P689684								
TPH-GRO - Soils	80	88	39-118	10	30				
Batch number: 06031A07A	Sample number(s): 4698349 UNSPK: P698407								
TPH-GRO - Waters	109		63-154						
Batch number: 060380002A	Sample number(s): 4698349 UNSPK: P699014								
Methanol (by Direct Injection)	104	100	66-133	4	20				
Batch number: Z060371AA	Sample number(s): 4698349-4698350 UNSPK: P698476								
Ethanol	96	99	34-161	3	30				
Methyl Tertiary Butyl Ether	120	114	69-127	5	30				
Benzene	110	108	83-128	1	30				
Toluene	115	113	83-127	1	30				

*- 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: 976081
Reported: 02/09/06 at 10:25 AM

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
Ethylbenzene	114	112	82-129	2	30				
Xylene (Total)	113	113	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: TPH-GRO - Soils
Batch number: 06027A34B

	Trifluorotoluene-F
4698347	77
4698348	88
Blank	97
LCS	101
MS	79
MSD	84
Limits:	61-122

Analysis Name: TPH-GRO - Waters
Batch number: 06031A07A

	Trifluorotoluene-F
4698349	90
Blank	86
LCS	109
LCSD	112
MS	116
Limits:	63-135

Analysis Name: Methanol and Ethanol
Batch number: 060380002A

	Acetone
4698349	97
Blank	92
LCS	95
MS	100
MSD	99
Limits:	78-128

Analysis Name: BTEX+MTBE by 8260B
Batch number: Q060311AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4698347	92	90	84	80

*- 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: 976081
Reported: 02/09/06 at 10:25 AM

Surrogate Quality Control

4698348	90	87	83	79
Blank	92	94	85	80
LCS	94	92	89	88
LCSD	91	90	88	87
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+5 Oxygenates+ETOH
Batch number: Z060371AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4698349	106	98	91	100
4698350	107	98	105	98
Blank	107	99	103	97
LCS	104	99	103	106
MS	105	102	104	103
MSD	105	100	105	105
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

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For Lancaster Laboratories use only
Acct. #: 11875 Sample #: 461837-50 SDG#: 240987 976081

012706-14

Facility #: Chevron Pipeline
Site Address: Milepost 20, Calaveras Rd., Sunol, CA
Chevron PM: _____ Lead Consultant: _____
Consultant/Office: URS - Oakland
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: (510) 874-3201 Fax #: (510) 874-3268
Sampler: Leonard Niles
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 ☐	Ethanol & Methanol
MW-7-18	S		18	1/27/06	9:20		X		1	X	X					
MW-7-22.5	S		22.5	1/27/06	10:28		X		1	X	X					
MW-7-GW	W		42	1/27/06	11:30		X		3	X	X					
Trip Blank	W		—	1/27/06	11:30		X		1	X	X					X

Comments / Remarks
E-mail results to Joe Morgan, Angela Liang, Greg White

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

	Date	Time		Date	Time
Relinquished by: Leonard Niles	1/27/06	16:25	Received by: Karen Wright	1/27/06	16:30
Relinquished by: Andrea Lemay	1/27/06	1650	Received by: Fed Ex	1/27/06	
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS (FedEx) Other _____			Received by:	1/28/06	1005
Temperature Upon Receipt 3.4° C°			Custody Seals Intact? (Yes) No		

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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
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< 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

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

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

ppb parts per billion

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

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

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

Inorganic Qualifiers

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

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

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

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 976425. Samples arrived at the laboratory on Wednesday, February 01, 2006. The PO# for this group is 99011184.

Client Description	Lancaster Labs Number
MW-4-21.5' Grab Soil Sample	4700179
MW-4-33' Grab Soil Sample	4700180
MW-4-36.5' Grab Soil Sample	4700181
MW-4-GW Grab Water Sample	4700182
Trip_Blank Water Sample	4700183

ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Angela Liang
ELECTRONIC COPY TO	Chevron Pipeline Co.	Attn: Joe Morgan
ELECTRONIC COPY TO	Chevron Pipeline Co	Attn: Greg White

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Analysis Report

Questions? Contact your Client Services Representative
Heidi L Ortenzi at (717) 656-2300

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4700179

MW-4-21.5' Grab Soil Sample
Sunol, CA

Collected:01/30/2006 10:45 by GW

Account Number: 11875

Submitted: 02/01/2006 09:00
Reported: 02/13/2006 at 21:06
Discard: 03/16/2006

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

SUN21

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. The reporting limits were adjusted appropriately. 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.	0.019	mg/kg	38.4
05466	Toluene	108-88-3	N.D.	0.038	mg/kg	38.4
05474	Ethylbenzene	100-41-4	N.D.	0.038	mg/kg	38.4
06301	Xylene (Total)	1330-20-7	N.D.	0.038	mg/kg	38.4

State of California Lab Certification No. 2116
The temperature of the sample(s) upon receipt at the lab was 8.8-12.5 C.

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	N. CA LUFT GRO	1	02/01/2006 23:02	Christopher A Guessford	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	02/09/2006 17:54	Susan McMahon-Luu	38.4
01150	GC - Bulk Soil Prep	SW-846 5035	1	02/01/2006 20:16	Christopher A Guessford	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	02/01/2006 12:24	Larry E Bevins	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 4700180

MW-4-33' Grab Soil Sample
Sunol, CA

Collected:01/30/2006 10:56 by GW

Account Number: 11875

Submitted: 02/01/2006 09:00
Reported: 02/13/2006 at 21:06
Discard: 03/16/2006

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

SUN33

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. The reporting limits were adjusted appropriately. 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. This sample was submitted with headspace.					
07360	BTEX+MTBE by 8260B					
05460	Benzene	71-43-2	N.D.	0.024	mg/kg	48.54
05466	Toluene	108-88-3	N.D.	0.049	mg/kg	48.54
05474	Ethylbenzene	100-41-4	N.D.	0.049	mg/kg	48.54
06301	Xylene (Total)	1330-20-7	N.D.	0.049	mg/kg	48.54

State of California Lab Certification No. 2116
The temperature of the sample(s) upon receipt at the lab was 8.8-12.5 C.

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	N. CA LUFT GRO	1	02/01/2006 23:51	Christopher A Guessford	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	02/09/2006 21:46	Susan McMahon-Luu	48.54
01150	GC - Bulk Soil Prep	SW-846 5035	1	02/01/2006 20:18	Christopher A Guessford	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	02/01/2006 12:25	Larry E Bevins	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 4700181

MW-4-36.5' Grab Soil Sample
Sunol, CA

Collected:01/30/2006 11:02 by GW

Account Number: 11875

Submitted: 02/01/2006 09:00
Reported: 02/13/2006 at 21:06
Discard: 03/16/2006

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

SUN36

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. The reporting limits were adjusted appropriately. 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. This sample was submitted with headspace.					
07360	BTEX+MTBE by 8260B					
05460	Benzene	71-43-2	N.D.	0.018	mg/kg	36.5
05466	Toluene	108-88-3	N.D.	0.037	mg/kg	36.5
05474	Ethylbenzene	100-41-4	N.D.	0.037	mg/kg	36.5
06301	Xylene (Total)	1330-20-7	N.D.	0.037	mg/kg	36.5

State of California Lab Certification No. 2116
The temperature of the sample(s) upon receipt at the lab was 8.8-12.5 C.

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	N. CA LUFT GRO	1	02/02/2006 00:49	Christopher A Guessford	25
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	02/10/2006 16:53	Susan McMahon-Luu	36.5
01150	GC - Bulk Soil Prep	SW-846 5035	1	02/01/2006 20:20	Christopher A Guessford	n.a.
08390	GC/MS - HL Encore Prep	SW-846 5035	1	02/01/2006 12:26	Larry E Bevins	n.a.

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Analysis Report

Lancaster Laboratories Sample No. WW 4700182

MW-4-GW Grab Water Sample

Sunol, CA
Collected:01/30/2006 11:00 by GW

Account Number: 11875

Submitted: 02/01/2006 09:00
Reported: 02/13/2006 at 21:06
Discard: 03/16/2006

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

SUNGW

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
The temperature of the sample(s) upon receipt at the lab was 8.8-12.5 C.

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	N. CA LUFT GRO	1	02/03/2006 21:58	Steven A Skiles	1
01412	Methanol and Ethanol	SW-846 8015B	1	02/07/2006 16:17	Laura A Lockard	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	02/07/2006 09:10	Ginelle L Feister	1
01146	GC VOA Water Prep	SW-846 5030B	1	02/03/2006 21:58	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/07/2006 09:10	Ginelle L Feister	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4700183

Trip_Blank Water Sample

Sunol, CA
Collected:01/30/2006

Account Number: 11875

Submitted: 02/01/2006 09:00
Reported: 02/13/2006 at 21:06
Discard: 03/16/2006

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

SUNTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
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
The temperature of the sample(s) upon receipt at the lab was 8.8-12.5 C.

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
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	02/07/2006 09:34	Ginelle L Feister	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/07/2006 09:34	Ginelle L Feister	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 976425
Reported: 02/13/06 at 09:06 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: 06027A02C	Sample number(s): 4700179-4700181							
TPH-GRO - Soils	N.D.	1.0	mg/kg	99		67-119		
Batch number: 06034A07A	Sample number(s): 4700182							
TPH-GRO - Waters	N.D.	50.	ug/l	79	76	70-130	3	30
Batch number: 060380002A	Sample number(s): 4700182							
Methanol (by Direct Injection)	N.D.	200.	ug/l	96		80-120		
Batch number: R060392AB	Sample number(s): 4700179							
Benzene	N.D.	25.	ug/kg	89	98	77-119	10	30
Toluene	N.D.	50.	ug/kg	88	98	81-116	10	30
Ethylbenzene	N.D.	50.	ug/kg	88	99	82-115	11	30
Xylene (Total)	N.D.	50.	ug/kg	88	98	82-117	11	30
Batch number: R060401AA	Sample number(s): 4700180							
Benzene	N.D.	25.	ug/kg	99	96	77-119	4	30
Toluene	N.D.	50.	ug/kg	98	96	81-116	2	30
Ethylbenzene	N.D.	50.	ug/kg	99	96	82-115	3	30
Xylene (Total)	N.D.	50.	ug/kg	98	95	82-117	3	30
Batch number: R060401AB	Sample number(s): 4700181							
Benzene	N.D.	25.	ug/kg	99	96	77-119	4	30
Toluene	N.D.	50.	ug/kg	98	96	81-116	2	30
Ethylbenzene	N.D.	50.	ug/kg	99	96	82-115	3	30
Xylene (Total)	N.D.	50.	ug/kg	98	95	82-117	3	30
Batch number: Z060381AA	Sample number(s): 4700182-4700183							
Ethanol	N.D.	50.	ug/l	107		35-168		
Benzene	N.D.	0.5	ug/l	100		85-117		
Toluene	N.D.	0.5	ug/l	105		85-115		
Ethylbenzene	N.D.	0.5	ug/l	104		82-119		
Xylene (Total)	N.D.	0.5	ug/l	106		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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 06027A02C	Sample number(s): 4700179-4700181 UNSPK: P698722								
TPH-GRO - Soils	112	117	39-118	5	30				
Batch number: 06034A07A	Sample number(s): 4700182 UNSPK: P701157								

*- 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: 976425
Reported: 02/13/06 at 09:06 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
TPH-GRO - Waters	91		63-154						
Batch number: 060380002A	Sample number(s): 4700182 UNSPK: P699014								
Methanol (by Direct Injection)	104	100	66-133	4	20				
Batch number: Z060381AA	Sample number(s): 4700182-4700183 UNSPK: P702356								
Ethanol	104	106	34-161	2	30				
Benzene	106	107	83-128	1	30				
Toluene	109	112	83-127	3	30				
Ethylbenzene	109	112	82-129	2	30				
Xylene (Total)	108	111	82-130	3	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: TPH-GRO - Soils
Batch number: 06027A02C

	Trifluorotoluene-F
4700179	84
4700180	88
4700181	82
Blank	99
LCS	112
MS	90
MSD	93
Limits:	61-122

Analysis Name: TPH-GRO - Waters
Batch number: 06034A07A

	Trifluorotoluene-F
4700182	91
Blank	84
LCS	109
LCSD	108
MS	114
Limits:	63-135

Analysis Name: Methanol and Ethanol
Batch number: 060380002A

	Acetone
4700182	99
Blank	92
LCS	95

*- 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: 976425
Reported: 02/13/06 at 09:06 PM

Surrogate Quality Control

MS 100
MSD 99

Limits: 78-128

Analysis Name: BTEX+MTBE by 8260B
Batch number: R060392AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4700179	77	85	77	75
Blank	87	91	90	85
LCS	87	91	87	89
LCSD	86	90	88	86
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+MTBE by 8260B
Batch number: R060401AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4700180	84	87	84	80
Blank	87	91	90	85
LCS	87	89	89	86
LCSD	91	93	94	96
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+MTBE by 8260B
Batch number: R060401AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4700181	80	84	81	76
Blank	86	90	89	85
LCS	87	89	89	86
LCSD	91	93	94	96
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+5 Oxygenates+EDC+EDB+ETOH
Batch number: Z060381AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4700182	107	100	101	98
4700183	105	98	102	97
Blank	106	98	103	97
LCS	104	97	103	105
MS	106	101	103	104
MSD	104	100	104	106
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 #: 4700179-183 SCR#: 242018

Group# 976625

Facility #: Chevron Pipeline
Site Address: Clawiter Rd, Sonol, CA
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 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 + MTBE 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates ___	Lead 7420 ☐ 7421 ☐	EtOH	Methanol
MW-4-21.5'	S			1/30/06	10:45		X			X	X						
MW-4-33'	S			1/30/06	10:56		X			X	X						
MW-4-36.5	S			1/30/06	11:02		X			X	X						
MW-4-GW	W			1/30/06	11:00		X			X	X					X	X
TRIP BLANK	W			1/30/06						X	X					X	X

Comments / Remarks
Standard TAT
Email Results to Joe Morgan, Angela Liang, 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
[signature]	1/30/06	13:30			
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: [signature]	Date 2-1-06	Time 0900
Temperature Upon Receipt 7.1° C°			Custody Seals Intact? Yes No (N/A)		

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2425 New Holland Pike • Lancaster, PA 17601

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
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< 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

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

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

ppb parts per billion

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

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

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

Inorganic Qualifiers

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

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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

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

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Groundwater Analytical Results: First Quarter 2006 Groundwater Monitoring Program

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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 979364. Samples arrived at the laboratory on Friday, February 24, 2006. The PO# for this group is 0015010091.

Client Description	Lancaster Labs Number
MW-4-2/21/06 Grab Water Sample	4716936
Trip Blank-2/21/06 Water Sample	4716937
MW-3-2/21/06 Grab Water Sample	4716938
MW-2-2/21/06 Grab Water Sample	4716939
DUP-2/21/06 Grab Water Sample	4716940
MW-6-2/22/06 Grab Water Sample	4716941
MW-5-2/22/06 Grab Water Sample	4716942
MW-7-2/22/06 Grab Water Sample	4716943
SVE3S-2/22/06 Grab Water Sample	4716944
SVE1D-2/22/06 Grab Water Sample	4716945
MW-1-2/22/06 Grab Water Sample	4716946
Trip Blank-2/22/06 Water Sample	4716947

ELECTRONIC COPY TO	URS	Attn: Angela Liang
ELECTRONIC COPY TO	URS	Attn: Joe Morgan
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,

Jenifer E. Hess
Manager

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4716936

MW-4-2/21/06 Grab Water Sample

Sunol, CA
Collected:02/21/2006 14:35 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:56
Discard: 04/10/2006

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

4CRSC
e

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
06059	BTEX+5 Oxygenates+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	N. CA LUFT GRO	1	02/27/2006 09:58	Steven A Skiles	1
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 15:42	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/03/2006 11:33	Ginelle L Feister	1
01146	GC VOA Water Prep	SW-846 5030B	1	02/27/2006 09:58	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/03/2006 11:33	Ginelle L Feister	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716937

Trip Blank-2/21/06 Water Sample

Sunol, CA
Collected:02/21/2006

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:56
Discard: 04/10/2006

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

QA221
e

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
06059	BTEX+5 Oxygenates+ETOH					
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
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/03/2006 11:57	Ginelle L Feister	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/03/2006 11:57	Ginelle L Feister	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716938

MW-3-2/21/06 Grab Water Sample

Sunol, CA
Collected:02/21/2006 15:55 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:56
Discard: 04/10/2006

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

72555
e

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
06059	BTEX+5 Oxygenates+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	N. CA LUFT GRO	1	02/27/2006 10:27	Steven A Skiles	1
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 16:25	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/03/2006 12:21	Ginelle L Feister	1
01146	GC VOA Water Prep	SW-846 5030B	1	02/27/2006 10:27	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/03/2006 12:21	Ginelle L Feister	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716939

MW-2-2/21/06 Grab Water Sample

Sunol, CA
Collected:02/21/2006 17:15 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:56
Discard: 04/10/2006

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

22221
e

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
06059	BTEX+5 Oxygenates+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	N. CA LUFT GRO	1	02/27/2006 10:56	Steven A Skiles	1
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 16:54	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/03/2006 12:45	Ginelle L Feister	1
01146	GC VOA Water Prep	SW-846 5030B	1	02/27/2006 10:56	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/03/2006 12:45	Ginelle L Feister	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716940

DUP-2/21/06 Grab Water Sample

Sunol, CA
Collected:02/21/2006 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:56
Discard: 04/10/2006

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

UP216
e

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
06059	BTEX+5 Oxygenates+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	N. CA LUFT GRO	1	02/27/2006 11:25	Steven A Skiles	1
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 17:08	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/03/2006 13:09	Ginelle L Feister	1
01146	GC VOA Water Prep	SW-846 5030B	1	02/27/2006 11:25	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/03/2006 13:09	Ginelle L Feister	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716941

MW-6-2/22/06 Grab Water Sample

Sunol, CA
Collected:02/22/2006 12:45 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:56
Discard: 04/10/2006

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

62226
e

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
06059	BTEX+5 Oxygenates+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	N. CA LUFT GRO	1	03/03/2006 13:28	K. Robert Caulfeild-James	1
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 17:23	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/07/2006 21:17	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/03/2006 13:28	K. Robert Caulfeild-James	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/07/2006 21:17	Dawn M Harle	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716942

MW-5-2/22/06 Grab Water Sample

Sunol, CA
Collected:02/22/2006 13:50 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:56
Discard: 04/10/2006

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

52226
e

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
06059	BTEX+5 Oxygenates+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	0.6	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	N. CA LUFT GRO	1	03/03/2006 15:16	K. Robert Caulfeild-James	1
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 17:37	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/07/2006 21:40	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/03/2006 15:16	K. Robert Caulfeild-James	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/07/2006 21:40	Dawn M Harle	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716943

MW-7-2/22/06 Grab Water Sample

Sunol, CA
Collected:02/22/2006 15:15 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:57
Discard: 04/10/2006

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

72226
e

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
06059	BTEX+5 Oxygenates+ETOH					
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
05401	Benzene	71-43-2	0.7	0.5	ug/l	1
05407	Toluene	108-88-3	2.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	0.9	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	5.	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	N. CA LUFT GRO	1	03/03/2006 13:57	K. Robert Caulfeild-James	1
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 17:51	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/07/2006 22:04	Dawn M Harle	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/03/2006 13:57	K. Robert Caulfeild-James	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/07/2006 22:04	Dawn M Harle	1

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Analysis Report

Lancaster Laboratories Sample No. WW 4716944

SVE3S-2/22/06 Grab Water Sample

Sunol, CA
Collected:02/22/2006 16:07 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:57
Discard: 04/10/2006

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

35226
e

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	71,000.	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.					
01412	Methanol and Ethanol					
01414	Methanol (by Direct Injection)	67-56-1	N.D.	200.	ug/l	1
	The acetone surrogate recovery is above QC limits. Since methanol was not detected in the sample, the data is accepted.					
06059	BTEX+5 Oxygenates+ETOH					
01587	Ethanol	64-17-5	N.D.	1,000.	ug/l	20
05401	Benzene	71-43-2	3,300.	10.	ug/l	20
05407	Toluene	108-88-3	20,000.	50.	ug/l	100
05415	Ethylbenzene	100-41-4	1,700.	10.	ug/l	20
06310	Xylene (Total)	1330-20-7	13,000.	50.	ug/l	100

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	N. CA LUFT GRO	1	03/07/2006 17:52	K. Robert Caulfeild-James	20
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 18:06	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/08/2006 09:44	Ginelle L Feister	20
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/08/2006 10:56	Ginelle L Feister	100
01146	GC VOA Water Prep	SW-846 5030B	1	03/07/2006 17:52	K. Robert Caulfeild-James	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/08/2006 09:44	Ginelle L Feister	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	03/08/2006 10:56	Ginelle L Feister	100

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Analysis Report

Lancaster Laboratories Sample No. WW 4716945

SVE1D-2/22/06 Grab Water Sample

Sunol, CA
Collected:02/22/2006 16:22 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:57
Discard: 04/10/2006

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

SVE1D
e

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	46,000.	500.	ug/l	10
	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
06059	BTEX+5 Oxygenates+ETOH					
01587	Ethanol	64-17-5	N.D.	500.	ug/l	10
05401	Benzene	71-43-2	750.	5.	ug/l	10
05407	Toluene	108-88-3	7,600.	25.	ug/l	50
05415	Ethylbenzene	100-41-4	1,500.	5.	ug/l	10
06310	Xylene (Total)	1330-20-7	11,000.	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

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	N. CA LUFT GRO	1	03/07/2006 17:24	K. Robert Caulfeild-James	10
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 18:20	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/08/2006 10:08	Ginelle L Feister	10
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/08/2006 11:20	Ginelle L Feister	50
01146	GC VOA Water Prep	SW-846 5030B	1	03/07/2006 17:24	K. Robert Caulfeild-James	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/08/2006 10:08	Ginelle L Feister	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	03/08/2006 11:20	Ginelle L Feister	50

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Analysis Report

Lancaster Laboratories Sample No. WW 4716946

MW-1-2/22/06 Grab Water Sample

Sunol, CA
Collected:02/22/2006 17:25 by GW

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:57
Discard: 04/10/2006

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

M1222
e

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	57,000.	2,500.	ug/l	50
	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
06059	BTEX+5 Oxygenates+ETOH					
01587	Ethanol	64-17-5	N.D.	1,000.	ug/l	20
05401	Benzene	71-43-2	38.	10.	ug/l	20
05407	Toluene	108-88-3	2,700.	10.	ug/l	20
05415	Ethylbenzene	100-41-4	3,000.	10.	ug/l	20
06310	Xylene (Total)	1330-20-7	8,700.	10.	ug/l	20

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	N. CA LUFT GRO	1	03/07/2006 14:31	K. Robert Caulfeild-James	50
01412	Methanol and Ethanol	SW-846 8015B	1	03/03/2006 18:35	Laura A Lockard	1
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/08/2006 10:32	Ginelle L Feister	20
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/08/2006 11:44	Ginelle L Feister	20
01146	GC VOA Water Prep	SW-846 5030B	1	03/07/2006 14:31	K. Robert Caulfeild-James	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/08/2006 11:44	Ginelle L Feister	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	03/08/2006 10:32	Ginelle L Feister	20

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Analysis Report

Lancaster Laboratories Sample No. WW 4716947

Trip Blank-2/22/06 Water Sample

Sunol, CA
Collected:02/22/2006

Account Number: 11875

Submitted: 02/24/2006 09:10
Reported: 03/10/2006 at 08:57
Discard: 04/10/2006

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

QA206
e

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
06059	BTEX+5 Oxygenates+ETOH					
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
06059	BTEX+5 Oxygenates+ETOH	SW-846 8260B	1	03/03/2006 13:33	Ginelle L Feister	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/03/2006 13:33	Ginelle L Feister	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 979364
Reported: 03/10/06 at 08:57 AM

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: 060580012A	Sample number(s): 4716936,4716938-4716946							
Methanol (by Direct Injection)	N.D.	200.	ug/l	100		80-120		
Batch number: 06058A08A	Sample number(s): 4716936,4716938-4716940							
TPH-GRO - Waters	N.D.	50.	ug/l	118	119	70-130	0	30
Batch number: 06062A16A	Sample number(s): 4716941-4716943							
TPH-GRO - Waters	N.D.	50.	ug/l	101	102	70-130	1	30
Batch number: 06062A16B	Sample number(s): 4716944-4716946							
TPH-GRO - Waters	N.D.	50.	ug/l	101	102	70-130	1	30
Batch number: Z060621AA	Sample number(s): 4716936-4716940,4716947							
Ethanol	N.D.	50.	ug/l	113	113	35-168	0	30
Benzene	N.D.	0.5	ug/l	92	94	85-117	2	30
Toluene	N.D.	0.5	ug/l	96	97	85-115	1	30
Ethylbenzene	N.D.	0.5	ug/l	95	97	82-119	2	30
Xylene (Total)	N.D.	0.5	ug/l	97	99	83-113	2	30
Batch number: Z060663AA	Sample number(s): 4716941-4716943							
Ethanol	N.D.	50.	ug/l	111		35-168		
Benzene	N.D.	0.5	ug/l	95		85-117		
Toluene	N.D.	0.5	ug/l	98		85-115		
Ethylbenzene	N.D.	0.5	ug/l	98		82-119		
Xylene (Total)	N.D.	0.5	ug/l	101		83-113		
Batch number: Z060671AA	Sample number(s): 4716944-4716946							
Ethanol	N.D.	50.	ug/l	108		35-168		
Benzene	N.D.	0.5	ug/l	91		85-117		
Toluene	N.D.	0.5	ug/l	95		85-115		
Ethylbenzene	N.D.	0.5	ug/l	95		82-119		
Xylene (Total)	N.D.	0.5	ug/l	98		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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 060580012A	Sample number(s): 4716936,4716938-4716946 UNSPK: 4716936								
Methanol (by Direct Injection)	124*	124*	81-117	0	20				
Batch number: 06058A08A	Sample number(s): 4716936,4716938-4716940 UNSPK: P717640								
TPH-GRO - Waters	67		63-154						

*- 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: 979364
Reported: 03/10/06 at 08:57 AM

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: 06062A16A	Sample number(s): 4716941-4716943 UNSPK: P719606								
TPH-GRO - Waters	116		63-154						
Batch number: 06062A16B	Sample number(s): 4716944-4716946 UNSPK: P719606								
TPH-GRO - Waters	116		63-154						
Batch number: Z060621AA	Sample number(s): 4716936-4716940,4716947 UNSPK: P716850								
Ethanol	116		34-161						
Benzene	100		83-128						
Toluene	103		83-127						
Ethylbenzene	103		82-129						
Xylene (Total)	104		82-130						
Batch number: Z060663AA	Sample number(s): 4716941-4716943 UNSPK: P721550								
Ethanol	109	106	34-161	3	30				
Benzene	103	104	83-128	1	30				
Toluene	104	104	83-127	1	30				
Ethylbenzene	103	102	82-129	1	30				
Xylene (Total)	89	87	82-130	1	30				
Batch number: Z060671AA	Sample number(s): 4716944-4716946 UNSPK: P721567								
Ethanol	119	123	34-161	3	30				
Benzene	100	97	83-128	3	30				
Toluene	101	98	83-127	3	30				
Ethylbenzene	99	97	82-129	2	30				
Xylene (Total)	97	94	82-130	3	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: Methanol and Ethanol
Batch number: 060580012A

	Acetone
4716936	115
4716938	116
4716939	114
4716940	113
4716941	117
4716942	113
4716943	116
4716944	277*
4716945	116
4716946	119
Blank	107
LCS	107
MS	115

*- 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: 979364
Reported: 03/10/06 at 08:57 AM

Surrogate Quality Control

MSD	113
Limits:	67-131

Analysis Name: TPH-GRO - Waters
Batch number: 06058A08A

	Trifluorotoluene-F
4716936	64
4716938	66
4716939	64
4716940	67
Blank	66
LCS	72
LCSD	73
MS	74
Limits:	63-135

Analysis Name: TPH-GRO - Waters
Batch number: 06062A16A

	Trifluorotoluene-F
4716941	123
4716942	121
4716943	101
Blank	114
LCS	94
LCSD	94
MS	94
Limits:	63-135

Analysis Name: TPH-GRO - Waters
Batch number: 06062A16B

	Trifluorotoluene-F
4716944	126
4716945	98
4716946	92
Blank	90
LCS	94
LCSD	94
MS	94
Limits:	63-135

Analysis Name: BTEX+5 Oxygenates+ETOH
Batch number: Z060621AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4716936	88	84	90	83
4716937	89	85	90	84
4716938	89	84	91	85
4716939	89	85	90	84
4716940	89	84	90	84
4716947	89	85	90	84
Blank	88	84	90	86

*- 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: 979364
Reported: 03/10/06 at 08:57 AM

Surrogate Quality Control

LCS	87	85	91	91
LCSD	88	85	91	88
MS	87	85	91	88
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX+5 Oxygenates+ETOH
Batch number: Z060663AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4716941	89	83	89	86
4716942	88	83	89	84
4716943	91	85	83	85
Blank	88	83	91	87
LCS	88	84	91	89
MS	89	84	88	88
MSD	89	84	88	88
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX+5 Oxygenates+ETOH
Batch number: Z060671AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4716944	86	81	90	87
4716945	87	81	90	87
4716946	87	82	91	87
Blank	90	84	90	84
LCS	88	84	90	88
MS	89	85	88	89
MSD	88	84	88	88
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.

Grp# 979364 — For Lancaster Laboratories use only — 242020

Acct. #: 11875 Sample #: 471936-47 SCR#:

Analyses Requested

Facility #: Chevron Pipeline
Site Address: Calvary Rd, Sunol, CA
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 McFarlan
Service Order #: _____ ☐ Non SAR: _____

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	Preservation Codes												Analyses Requested
										BTEX MTBE 8260 ☐ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates	Lead 7420 ☐ 7421 ☐	Ethanol	Methanol					
MW-4-2/21/06	W			2/21/06	14:35		X			X	X					X	X					
TRIP BLANK-2/21/06	W			2/21/06						X												
MW-3-2/21/06	W			2/21/06	15:55		X			X	X					X	X					
MW-2-2/21/06	W			2/21/06	17:15		X			X	X					X	X					
DUP-2/21/06	W			2/21/06			X			X	X					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 Liang, Joe Morgan, Greg White, 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]	2/23/06	10:00			
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: [signature]	2-24-06	0910
Temperature Upon Receipt 5.5° C°			Custody Seals Intact? Yes No	n/a	

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

Grp # 979364
For Lancaster Laboratories use only
242090

Acct. #: 11875 Sample #: 4916936-47 SCR#:

Facility #: Chevron Pipeline
Site Address: Calaveras Rd, Sunol, CA
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

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 ☐	EtHanol	MeHanol
MW-6-2/22/06	W			2/22/06	12:45		X			X	X					X	X
MW-5-2/22/06	W			2/22/06	13:50		X			X	X					X	X
MW-7-2/22/06	W			2/22/06	15:15		X			X	X					X	X
SVE-3S-2/22/06	W			2/22/06	16:07		X			X	X					X	X
SVE-1D-2/22/06	W			2/22/06	16:22		X			X	X					X	X
MW-1-2/22/06	W			2/22/06	17:25		X			X	X					X	X
TRIP BLANK 2/22/06	W			2/22/06			X										

Comments / Remarks

Email Results to
Joe Morgan,
Angela Liang,
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

	Date	Time		Date	Time
Relinquished by:	2/23/06	10:00	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by: Kathy Binkley	2-24-06	0910
Temperature Upon Receipt 1.6° C°			Custody Seals Intact? Yes No	N/A	

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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Appendix D
Well Development Forms

LIST OF WELL DEVELOPMENT FORMS INCLUDED IN APPENDIX:

- MW-3
- MW-4
- MW-5
- MW-6
- MW-7

URS

WELL DEVELOPMENT FORM

Well Identifier: MW-3 | Date Developed: 1/10/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Junior (Resonant Sonic) | Time (Initial WL): 7:56

Initial Water Level (WL): 30.94 ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): 37.46 ft. | Casing Diameter (D): 4 in.

Casing Volume (A): 4.26 gal. | Saturated Sandpack Volume (B): 5.19 gal.

Total Well Volume (A + B): 9.45 gal. | Total Volume to be Removed: ~30 gal.

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

Pump / Bailer Type: Mechanical surge block and 10' x 3.5" Stainless Steel Bailer

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (µS/cm)	Turb. (Visual)	Odor	Color	Comments
8:37	3			13.4	7.07	1078	Turbid	None	Dark Brown	
8:41	13			14.8	6.97	1039	Very Cloudy	None	Brown	
8:46	17			14.9	7.03	1036	Cloudy	None	Brown	
8:50	21			15.2	7.08	1027	Cloudy	None	Brown	
8:53	26			15.3	7.06	1023	Cloudy	None	Light Brown	
8:55	34			15.1	7.01	1001	Cloudy	None	Light Brown	
8:58	37			15.0	6.99	1002	Cloudy-Clear	None	Light Brown	
9:01	44			15.1	7.00	995.3	Clear	None	Clear	
9:03	49			15.2	6.95	990.6	Clear	None	Clear	
9:05	53			15.2	6.94	994.9	Clear	None	Clear	
9:07	55			15.2	6.92	995.6	Clear	None	Clear	

Comments: Ambient PID reading: 0.3 ppm

Surge Time: 08:05 - 08:20

Start Purge Time: 8:35 | End Purge Time: 9:05

Total Volume Purged: 55 gal. | Purged Dry? No

Final Water Level: 30.94 ft. | Final Depth: 37.46 ft. | Time: 9:10

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-4 | Date Developed: 2/15/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Junior (Resonant Sonic) | Time (Initial WL): 15:00

Initial Water Level (WL): 36.52 ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): 40.66 ft. | Casing Diameter (D): 4 in.

Casing Volume (A): 2.7 gal. | Saturated Sandpack Volume (B): 2.41 gal.

Total Well Volume (A + B): 5.11 gal. | Total Volume to be Removed: ~20 gal.

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

Pump / Bailer Type: Mechanical surge block and 10' x 3.5" Stainless Steel Bailer

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (µS/cm)	Turb. (NTU)	Odor	Color	**DO (mg/L)**	Comments
15:26	2			16.3	6.75	1000	412	None	Gray	3.4	
15:35	12			15.7	6.57	1060	770	None	Gray	3.53	
15:43	18			15.5	6.49	925	999	None	Gray	3.32	
15:48	26			15.6	6.46	926	999	None	Gray	3.55	
15:58	36			15.6	6.48	929	999	None	Gray	4.33	
16:07	48			15.3	6.50	929	999	None	Gray	4.55	

Comments: _____

Surge Time: 15:05-15:20

Start Purge Time: 15:25 | End Purge Time: 16:10

Total Volume Purged: 48 gal. | Purged Dry? No

Final Water Level: 36.52 ft. | Final Depth: 40.66 ft. | Time: 17:00

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-5 | Date Developed: 2/14/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Junior (Resonant Sonic) | Time (Initial WL): 9:30

Initial Water Level (WL): 12.48 ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): 49.02 ft. | Casing Diameter (D): 4 in.

Casing Volume (A): 23.85 gal. | Saturated Sandpack Volume (B): 6.93 gal.

Total Well Volume (A + B): 30.78 gal. | Total Volume to be Removed: ~90 gal.

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

Pump / Bailer Type: Mechanical surge block and 10' x 3.5" Stainless Steel Bailer

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (µS/cm)	Turb. (NTU)	Odor	Color	**DO (mg/L)**	Comments
10:04	3			17.0	6.75	714	999	Slight	Gray	2.33	
10:07	18			17.1	6.89	719	999	Slight	Gray	2.09	
10:10	28			17.0	6.88	707	999	None	Lt. Gray	3.42	
10:14	38	42.0 Rising		17.2	6.93	723	999	None	Lt. Gray	1.86	
10:18	52			17.2	6.97	730	999	None	Lt. Gray	2.05	
10:30	60			17.2	7.05	732	652	None	Lt. Gray	4.01	
10:35	75			16.9	7.01	733	694	None	Lt. Gray	3.01	
10:40	85			17.1	7.02	735.0	490	None	V. Lt. Gray	4	
10:43	87			17.0	7.12	735.0	491	None	V. Lt. Gray	3.68	
10:48	90	45.8 Rising	49.04	17.0	6.99	735.0	475	None	V. Lt. Gray	3.06	
10:54		37.5 Rising									
10:57	95			17.2	7.08	735.00	152	None	Cloudy	4.62	
11:00	100			17.0	7.06	732.00	305	None	V. Lt. Gray	3.69	

Comments: _____

Surge Time: 09:35-09:55

Start Purge Time: 10:00 | End Purge Time: 11:00

Total Volume Purged: ~100 gal. | Purged Dry? No

Final Water Level: 20.42 ft. | Final Depth: 49.04 ft. | Time: 12:25

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-6 | Date Developed: 2/15/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Junior (Resonant Sonic) | Time (Initial WL): 9:15

Initial Water Level (WL): 17.08 ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): 48.04 ft. | Casing Diameter (D): 4 in.

Casing Volume (A): 20.21 gal. | Saturated Sandpack Volume (B): 9.99 gal.

Total Well Volume (A + B): 30.2 gal. | Total Volume to be Removed: ~90 gal.

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

Pump / Bailer Type: Mechanical surge block and 10' x 3.5" Stainless Steel Bailer

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (µS/cm)	Turb. (NTU)	Odor	Color	**DO (mg/L)**	Comments
10:00	12			15.9	6.68	99	999	None	Gray	1.45	Very Silty
10:03	25			16.0	6.95	92	999	None	Gray	2.6	Very Silty
10:35	45	48.0 Rising	50.65								Hard Bottom

Comments: **10:20** Well bailed dry - very silty/sandy. Will add water to aid additional sediment removal (Add 20 gallons).

10:40 Bailed out 20 gallons of added water. Well goes dry. Will add another 20 gallons, surge well, and bail out remaining water.

10:50 Begin surging **11:10** Finish surging. WL: 28 ft below TOC-N. **11:15** Begin purging **11:30** Finish purging ~20 gallon of added water.

Surge Time: 09:20-09:40

Start Purge Time: See Comments | End Purge Time: See Comments

Total Volume Purged: ~70 gal. | Purged Dry? Yes (Three Times)

Final Water Level: 45.09 ft. | Final Depth: 50.56 ft. | Time: 13:06

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-7 | Date Developed: 2/14/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Junior (Resonant Sonic) | Time (Initial WL): 12:30

Initial Water Level (WL): 18.93 ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): 47.73 ft. | Casing Diameter (D): 4 in.

Casing Volume (A): 18.8 gal. | Saturated Sandpack Volume (B): 10.05 gal.

Total Well Volume (A + B): 28.85 gal. | Total Volume to be Removed: ~90 gal.

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

Pump / Bailer Type: Mechanical surge block and 10' x 3.5" Stainless Steel Bailer

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (µS/cm)	Turb. (NTU)	Odor	Color	**DO (mg/L)**	Comments
13:02	3			18.3	7.23	594	1000	Slight	Gray	0	Very Silty
13:15	24	47.5	50.2		6.95	92	1000	None	Gray		Let WL Rise
14:20	29			18.7	7.74	754	1000	None	Gray		Very Silty
14:23	31			18.5	7.68	797	1000	None	Gray	3.33	Very Silty

Comments: **13:15** Very silty, bail well dry. Let WL rise. **13:30** Continue bailing **13:40** Add ~7 gallons and begin surging again

13:40 Stop surging, will begin purging slowly again. **14:15** Begin purging again

14:40 Stop purging, well is dry again. Will surge and purge well again tomorrow to aid in sediment removal.

Surge Time: 12:30-12:50

Start Purge Time: See Comments | End Purge Time: See Comments

Total Volume Purged: 36 gal. | Purged Dry? Yes (Two times)

Final Water Level: 47.63 ft. | Final Depth: 50.6 ft. | Time: 15:00

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-7 | Date Developed: 2/15/2006

Project Name: Chevron Pipeline | Project Number: 26815217

Personnel: Greg White (URS) & Junior (Resonant Sonic) | Time (Initial WL): 13:25

Initial Water Level (WL): 16:36 ft. | Depth to Product: -- ft.

Total Well Depth (T.D.): 50.44 ft. | Casing Diameter (D): 4 in.

Casing Volume (A): 22.25 gal. | Saturated Sandpack Volume (B): 10.05 gal.

Total Well Volume (A + B): 32.3 gal. | Total Volume to be Removed: ~90 gal.

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

Pump / Bailer Type: Mechanical surge block and 10' x 3.5" Stainless Steel Bailer

Time	Volume Removed (gal)	Depth to Water (ft.)	Depth to Bottom (ft.)	Temp. (°C)	pH	Cond. (µS/cm)	Turb. (NTU)	Odor	Color	**DO (mg/L)**	Comments
13:51	4			16.7	7.26	1000	706	None	Gray	3.54	Silty
13:56	16			17.2	7.28	980	999	None	Gray	3.98	Silty
14:00	29				7.33	990	849	None	Gray	4.25	Silty

Comments: _____

Surge Time: 13:30-13:45

Start Purge Time: 13:50 | End Purge Time: 14:05

Total Volume Purged: 32 gal. | Purged Dry? Yes

Final Water Level: 47.08 ft. | Final Depth: 50.46 ft. | Time: 14:30

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%

Appendix E
Previous Investigation Boring Logs and Well Construction Details

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING

Borehole ID: CP-SB-1

Total Depth: 34 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/25/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth:	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SANDY SILT: Brown/black (2.5 YR 5/4), organic rich, 70% silt, 30% very fine sand, dry, non-plastic, soft, minor cobbles and gravel present <5%	ML	0.2	CP-SB-1 @ 0.5-1		Hand augered to 5' bgs
2				0.8	CP-SB-1 @ 1-1.5		
4					CP-SB-1 @ 2-2.5		
6		Same as above Same as above except (2.5 YR 5/4) 80% silt, 20% very fine sand, dry, slightly firm, non-plastic			CP-SB-1 @ 5.5-6		
8							
10					CP-SB-1 @ 9.5-10		
12		Same as above except brown (10 YR 4/3), sand content increases 25%, very fine to medium sand wtih minor gravel, distinct calcite veining present					
14							
16		SANDY CLAYEY SILT: content of fines increasing, very fine, (10 YR 4/3), dry/slightly damp, non-plastic, 70% silt, 20% clay, 10% sand, minor calcite staining	ML		CP-SB-1 @ 15.5-16		
18							
20					CP-SB-1 @ 19.5-20		
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		SANDY SILT: dry sandy silt, gray, dry to slightly damp	ML/S		CP-SB-1 @ 25-25.5		
26							
28		SILTY SAND: (10 YR 4/3), 60% fine to medium sand with minor gravel, 30% silt, quartz rich, subangular to subrounded	SM				
30					CP-SB-1 @ 30-30.5		
32							
34							Refusal at 34' bgs, end of boring
36							

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING

Borehole ID: CP-SB-2

Total Depth: 31 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/25/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		ROAD BASE: Road base material	ML		CP-SB-2 @ 0.5-1		Hand augered to 5' bgs
		SANDY SILT: Brown (10 YR 4/3), very fine, dry, <20% sand, soil horizon organic material present			CP-SB-2 @ 1-1.5		
2							
					CP-SB-2 @ 2-2.5		
4		Dark brown (10 YR 2/2), 80% silt, 20% very fine sand, dry, non-plastic, moderately stiff					
					CP-SB-2 @ 5-5.5		
6							
		Caliche veining present, otherwise no change					
8							
					CP-SB-2 @ 10-10.5		
10							
		CLAYEY SILT: (10 YR 2/2), 70% silt, 20% clay, minor gravel, dry	ML/ CL				
12							
					CP-SB-2 @ 15-15.5		
14							
16							
18							
20					CP-SB-2 @ 20-20.5		
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
26					CP-SB-2 @ 25-25.5		
28		SILTY SAND: (10 YR 4/3), very fine, moist, soft, low plasticity	SM				
30					CP-SB-2 @ 30-30.5		End of boring at 31' bgs, dry
32							

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING

Borehole ID: CP-SB-3

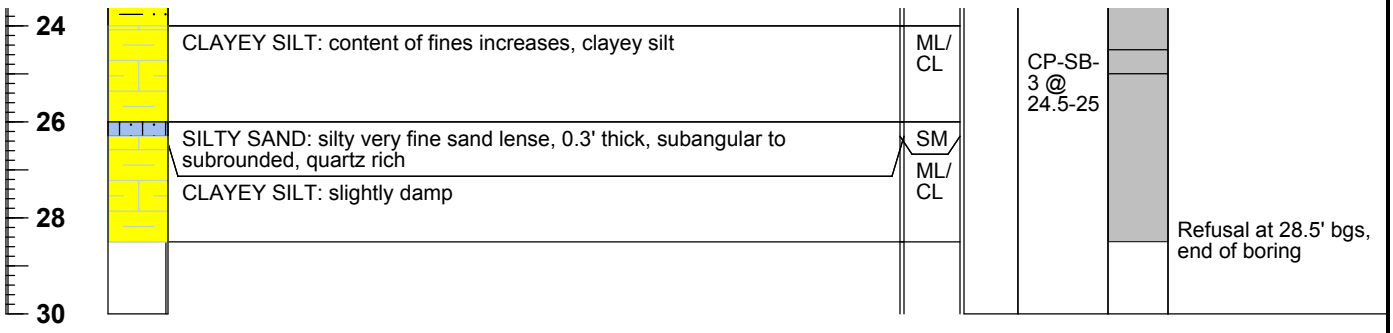
Total Depth: 28.5 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/25/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** NW of creek downhill from the leak
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		ROAD BASE: Road base material, gravel			CP-SB- 3 @ 0.5-1		Hand augered to 5' bgs
2		SANDY SILT: Dark brown (10 YR 2/2), 80% silt, organic rich soil horizon, caliche veins throughout, moderately stiff, dry	ML				
4							
6					CP-SB-3 @ 5-5.5		
8							
10					CP-SB-3 @ 9.5-10		
12							
14		same as above except roots present and caliche veining throughout					
16					CP-SB-3 @ 15-15.5		
18							
20					CP-SB-3 @ 19.5-20		
22							


Depth (ft bgs)
Symbol
Lithologic Description
USCS
PID (ppm)
Sample I.D.
Recovery
Comments
24
26
28
30
CLAYEY SILT: content of fines increases, clayey silt
ML/ CL
CP-SB-3 @ 24.5-25
SILTY SAND: silty very fine sand lense, 0.3' thick, subangular to subrounded, quartz rich
SM
CLAYEY SILT: slightly damp
ML/ CL
Refusal at 28.5' bgs, end of boring

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING

Borehole ID: CP-SB-4

Total Depth: 28 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/25/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		ROAD BASE	ML				Hand augered to 5' bgs.
2		SANDY SILT: Dark brown (10 YR 2/2), very fine, 80% silt, 20% sand, rich in organics, dry			CP-SB-4 @ 1-1.5		
4							
6		Caliche veining present, otherwise same as above			CP-SB-4 @ 5-5.5		
8							
10					CP-SB-4 @ 9.5-10		
12							
14							
16		Dry, otherwise same as above			CP-SB-4 @ 14.5-15		
18							
20					CP-SB-4 @ 19.5-20		
22		Tree roots present, otherwise same as above					

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		SANDY GRAVELLY SILT: (2.5 YR 3/6), some gravel present, sand content increasing	ML/ SM		CP-SB-4 @ 24.5-25		
26		Light gray, 30% sand, 30% gravel, 40% silt, coarse content increasing, dry, sub angular to subrounded, quartz rich					
28							Refusal at 28' bgs, end of boring.

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LOG OF BORING

Borehole ID: CP-SB-5

Total Depth: 27 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/25/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		ROAD BASE	ML/ CL		CP-SB-5 @ 0.5-1		Hand augered to 5' bgs
		CLAYEY SILT: Dark brown (10 YR 2/2), 80% silt, 20% clay, non-plastic, slightly damp, organic rich A horizon			CP-SB-5 @ 1-1.5		
2							
					CP-SB-5 @ 2-2.5		
4							
					CP-SB-5 @ 5.5-6		
6							
		Caliche veining present, minor gravel <5%, roots present, dry, otherwise no change					
8							
					CP-SB-5 @ 9.5-10		
10							
12							
14							
		Color change (10 YR 4/3) otherwise same as above			CP-SB-5 @ 15-15.5		
16							
18							
		SANDY SILT: (10 YR 6/8), 30% very fine sand, 80% silt, low strength, some oxidizer present, slightly damp	ML		CP-SB-5 @ 19.5-20		
20							
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		Some coarse cobbles in sandy silt matrix			CP-SB-5 @ 25-25.5		Very hard to push
26							Refusal, end of boring at 27' bgs
28							

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LOG OF BORING

Borehole ID: CP-SB-6

Total Depth: 27 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/26/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		CLAYEY SILT: (10 YR 2/2), dry, firm roots throughout, organic rich	ML				Hand augered to 5' bgs
2					CP-SB-6 @ 1-1.5		
					CP-SB-6 @ 2-2.5		
4							
6					CP-SB-6 @ 5.5-6		
8							
		minor gravel, otherwise same as above					
10					CP-SB-6 @ 9.5-10		
12		SANDY SILT: Very fine, 60% silt, 40% sand, slightly damp	SM/ ML				
14							
16					CP-SB-6 @ 15-15.5		
18							
20					CP-SB-6 @ 19.5-20		
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
26		Color change- gray (5G 5/1), very fine			CP-SB-6 @ 25-25.5		
28							Refusal at 27' bgs, end of boring

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LOG OF BORING

Borehole ID: CP-SB-7

Total Depth: 28 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
PG: Barbara Jakub	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/26/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		CLAYEY SILT: (10 YR 2/2), medium dense, dry, caliche rich, some roots present	ML				Hand augered to 5' bgs
12		same as above except sand content increasing					
14		SANDY SILT: Very fine sandy silt with < 10% clay	ML				
16		same as above except (2.5 YR 3/6), 70% silt, 20% sand, minor gravel <2%, dry, low density, loose, quartz rich			CP-SB-7 @ 15-15.5		
18		same as above except slightly moist					
20		same as above except (2.5 YR 3/6), oxidation staining present			CP-SB-7 @ 19.5-20		
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
26					CP-SB-7 @ 25-25.5		
28							Refusal at 28' bgs, end of boring

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LOG OF BORING

Borehole ID: CP-SB-8

Total Depth: 21 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/26/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		CLAYEY SILT: (10 YR 2/2), slightly damp, organic rich, roots	ML		CP-SB-8 @ 0.5-1		Hand augered to 5' bgs
2					CP-SB-8 @ 1-1.5		
4					CP-SB-8 @ 2-2.5		
6		SANDY SILT: (10 YR 4/3), dry, soft, caliche rich, some roots, minor gravel	ML		CP-SB-8 @ 5.5-6		
8							
10		same as above except (10 YR 6/8), 40% very fine sand, 60% silt, dry, non-plastic, low strength			CP-SB-8 @ 9.5-10		
12							
14							
16					CP-SB-8 @ 15-15.5		
18		same as above except some oxidation staining present					very strong hydrocarbon odor
20					CP-SB-8 @ 19.5-20		Refusal at 21' bgs, end of boring
22							

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LOG OF BORING

Borehole ID: CP-SB-9

Total Depth: 28 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/29/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILT: (10 YR 2/2), slightly damp, low strength, organic rich A horizon	ML		CP-SB-9 @ 0.5-1		Hand augered to 5' bgs
2					CP-SB-9 @ 1-1.5		
4							
6					CP-SB-9 @ 5.5-6		
8		SANDY SILT: sand content increasing, dry, low strength, calcite veining throughout	ML				
10					CP-SB-9 @ 9.5-10		
12		Same as above except (10 YR 6/8), 30% very fine sand, 70% silt, <5% clay, slightly damp					
14							
16					CP-SB-9 @ 15.5-16		
18							
20					CP-SB-9 @ 19.5-20		
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							becoming harder
26					CP-SB-9 @ 25.5-26		
28							Refusal at 28' bgs, end of boring

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LOG OF BORING

Borehole ID: CP-SB-10

Total Depth: 38 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline, Sunol	**Drilling Company:** Gregg Drilling and Testing, Inc.
Site Location: Calaveras Ave., Sunol, CA	**Driller:** Vince
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe
RG: Leonard Niles	**Drilling Method:** Direct Push
Geologist: Steven Plunkett	**Sampling Method:** Micro Core
Job Number: 26815217.00500	**Date(s) Drilled:** 8/29/05

BORING INFORMATION

Groundwater Depth: not reached	**Boring Location:** Adjacent to Calaveras Ave.
Air Knife or Hand Auger Depth: 5.0 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		CLAYEY SILT: (10 YR 2/2), dry, medium strength, calcite/caliche veining, some gravel, organic rich soil horizon A	ML		CP-SB-10 @ 0.5-1		Hand augered to 5' bgs
2					CP-SB-10 @ 1-1.5		
4					CP-SB-10 @ 2.5-3		
6					CP-SB-10 @ 5.5-6		
8							
10					CP-SB-10 @ 9.5-10		
12							
14							
16		SANDY SILT: (10 YR 6/8), dry, medium strength, caliche, very fine	ML/ SM		CP-SB-10 @ 15.5-16		
18							
20		CLAYEY SILT: (10 YR 4/3), <10% very fine sand, medium strength, non-plastic, dry	ML		CP-SB-10 @ 19.5-20		
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
26					CP-SB-10 @ 25-25.5		
28		SANDY SILT: 70% silt, 30% very fine sand, dry	ML				
30					CP-SB-10 @ 29.5-30		
32		SILTY CLAY: (10 YR 4/3), <10% very fine sand, slightly damp, soft, low plasticity	ML/ CL				
34							
36		SILTY SAND: moist, quartz rich, subangular to subrounded, medium density	SM/ MK		CP-SB-10 @ 35-35.5		
38					CP-SB-10 @ 39-39.5		Note: interval sample ID is incorrect, was 37.5'-38' Refusal on coarse cobbles at 38' bgs, end of boring.
40							

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LOG OF BORING

Borehole ID: CP-SB-11

Total Depth: 22.5 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:** Power Probe 9630 Pro-D
RG: Leonard Niles	**Drilling Method:** Hand Auger and Direct Push
Geologist: Greg White	**Sampling Method:** 6" brass sleeve/4' acetate sleeve
Job Number: 26815217.00300	**Date(s) Drilled:** 10/11/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Dirt road on steep hillside
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, dry, loose, silty fine sand with some fine gravel and roots.	SM		10:00 CP-SB-11 @ 0.5 - 1		Hand auger from 0 - 5'
2					10:05 CP-SB-11 @ 1 - 1.5		
4					10:10 CP-SB-11 @ 2.5 - 3		Begin direct push drilling at 5'
6				0.0	10:30 CP-SB-11 @ 5.5 - 6		
8							
10					10:42 CP-SB-11 @ 10-10.5		Driller switched from dual tube to macro sleeve due to poor recovery
12		SANDY SILT: Brown, moist, loose fine sandy silt with fine gravel.	ML	0.0			Drilling resumes with macro sampler at 12' bgs
14		SAND: Light brown, dry, loose, very fine sand with a slight odor.	SP	21			
16		GRAVELLY SAND: Light brown, dry to wet (at 20 ft), loose, fine to coarse gravelly fine sand, some rock fragments.	SP/ GP		11:05 CP-SB-11 @ 15.5 - 16		
18				705			
20		SAND: Gray, moist, very dense, fine sand.	SP		11:16 CP-SB-11 @ 19.5 - 20		
22				0.0			Refusal at 22.5' bgs. Install 3/4" PVC to see if any groundwater will enter borehole.

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LOG OF BORING

Borehole ID: CP-SB-12

Total Depth: 27 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:** Power Probe 9630 Pro-D
RG: Leonard Niles	**Drilling Method:** Direct push/hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeve/4' acetate sleeve
Job Number: 26815217.00300	**Date(s) Drilled:** 10/11/05

BORING INFORMATION

Groundwater Depth: 24 feet bgs during drilling	**Boring Location:** Dirt road on steep hillside
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, dry, loose, silty fine sand with some fine gravel and roots.	SM		13:50 CP-SB-12 @ 0.5 - 1		Hand auger from 0 - 5'
2					13:57 CP-SB-12 @ 1 - 1.5		
4					14:00 CP-SB-12 @ 2 -2.5		
6				0	14:25 CP-SB-12 @ 5 - 5.5		Begin advancing borings with Geoprobe at 5'
8							
10		SILTY SAND: Light brown, moist, loose, silty very fine sand with some medium gravel.	SM	16	14:30 CP-SB-12 @ 10 - 10.5		
12		GRAVELLY SAND: Light brown, moist, loose, fine to coarse gravelly fine to medium sand that contains rock fragments. Gravel and rock fragments are increasing with depth.	GP/ SP				
14				3.0			
16		SAND: Light brown to gray, moist, dense, medium sand with trace amounts of gravel and some iron staining.	SP		14:38 CP-SB-12 @ 15 - 15.5		
18		same as above		0			
20				5.4	16:05 CP-SB-12 @ 19.5 - 20		Only able to recover 2' samples at a time due to sluff in borehole after removing micro sampler.
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24				0			▼
26		GRAVELLY CLAY: Brown, moist to wet, coarse gravelly, fine sandy clay.	GC/ CL				End borehole at 27' bgs. Groundwater encountered at ~24' bgs.
28							
30							

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LOG OF BORING

Borehole ID: CP-SB-13

Total Depth: 12 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:** Power Probe 9630 Pro-D
RG: Leonard Niles	**Drilling Method:** Direct push/hand auger
Geologist: Greg White	**Sampling Method:** 6" brass tubes/4' acetate sleeve
Job Number: 26815217.00300	**Date(s) Drilled:** 10/12/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Dirt road on steep hillside
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, moist, loose, silty fine sand with roots and trace amounts of gravel.	SM	0	08:30 CP-SB-13 @ 0.5 - 1 08:35 CP-SB-13 @ 1 - 1.5		Hand auger from 0 - 5'.
6		SANDY SILT: Yellow brown, moist, loose, fine sandy silt with roots. Large root at 7'.	ML	5.7	08:40 CP-SB-13 @ 2 - 2.5		Begin advancing boring with Direct Push method at 5' bgs.
8		GRAVELLY SAND: Brown grading to gray, moist, fine to coase gravelly fine sand. Gravel content increasing with depth.	GP/ SP	2.7	08:50 CP-SB-13 @ 5 - 5.5 09:00 CP-SB-13 @ 10 - 10.5		Refusal at 12' on rock.
12							
14							

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LOG OF BORING

Borehole ID: CP-SB-13R

Total Depth: 10 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:** Power Probe 9630 Pro-D
RG: Leonard Niles	**Drilling Method:** Direct push/hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves/4' acetate sleeve
Job Number: 26815217.00300	**Date(s) Drilled:** 10/12/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** 5' downhill step-out boring of CP-SB-13
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		Blind drill to 10' bgs.			10:00 CP-SB-14 @ 0.5 - 1		Begin hand augering from 0 - 5'
2		(0 - 5' bgs with hand auger)			10:02 CP-SB-14@ 1 - 1.5		
4		(See CP-SB-13 log for Geology)			10:05 CP-SB-14 @ 2 - 2.5		
6							Begin drilling with Geoprobe at 5'
8							Refusal at 10' bgs on same rock obstruction at 12' as at CP-SB-13
10							End of boring at 10' bgs
12							

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LOG OF BORING

Borehole ID: CP-SB-14

Total Depth: 3.5 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:** Power Probe 9630 Pro-D
RG: Leonard Niles	**Drilling Method:** Direct push/hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves/4' acetate sleeve
Job Number: 26815217.00300	**Date(s) Drilled:** 10/12/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Dirt road on steep hillside
Air Knife or Hand Auger Depth: 3.5 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, moist, loose, silty fine sand with roots and some gravel	SM		10:00 CP-SB-14 @ 0.5 - 1 10:02 CP-SB-14@ 1 - 1.5 10:05 CP-SB-14 @ 2 - 2.5		Begin hand augering from 0 - 5' Refusal at 3.5' with hand auger on coarse gravel and cobbles. The hole continues to collapse after pulling out the hand auger. Begin hand augering again approximately 2' up the dirt road and try to advance hand auger to 5'. Again refusal occurs on cobbles at 3.5'.
2							
4							
6							
8							
10							

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LOG OF BORING

Borehole ID: CP-SB-15

Total Depth: 10.5 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/12/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Steep hillside below dirt road
Air Knife or Hand Auger Depth: 10.5 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, dry to moist, loose, silty fine sand with roots and some gravel.	SM		15:00 CP-SB-15 @ 0.5 - 1		Begin hand augering.
2				18.3	15:05 CP-SB-15 @ 1 - 1.5		
4					15:15 CP-SB-15 @ 2.5 - 3		
6					15:35 CP-SB-15 @ 5 - 5.5		
8							
10		SANDY SILT: Brownish gray, moist sandy silt with gravel.	ML	31.4	16:30 CP-SB-15 @ 10 - 10.5		End of boring with hand auger at 10.5'.
12							

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LOG OF BORING

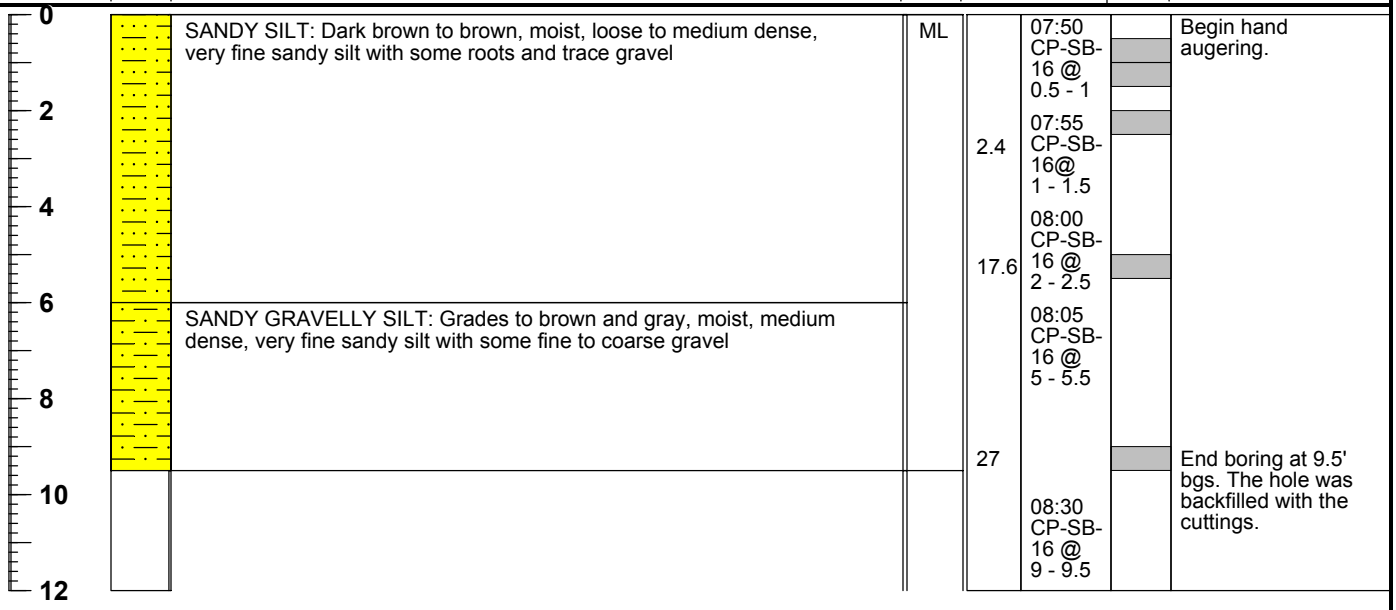
Borehole ID: CP-SB-16

Total Depth: 9.5 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass tubes
Job Number: 26815217.00300	**Date(s) Drilled:** 10/13/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Steep hillside below dirt road
Air Knife or Hand Auger Depth: 9.5 feet bgs	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil



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LOG OF BORING

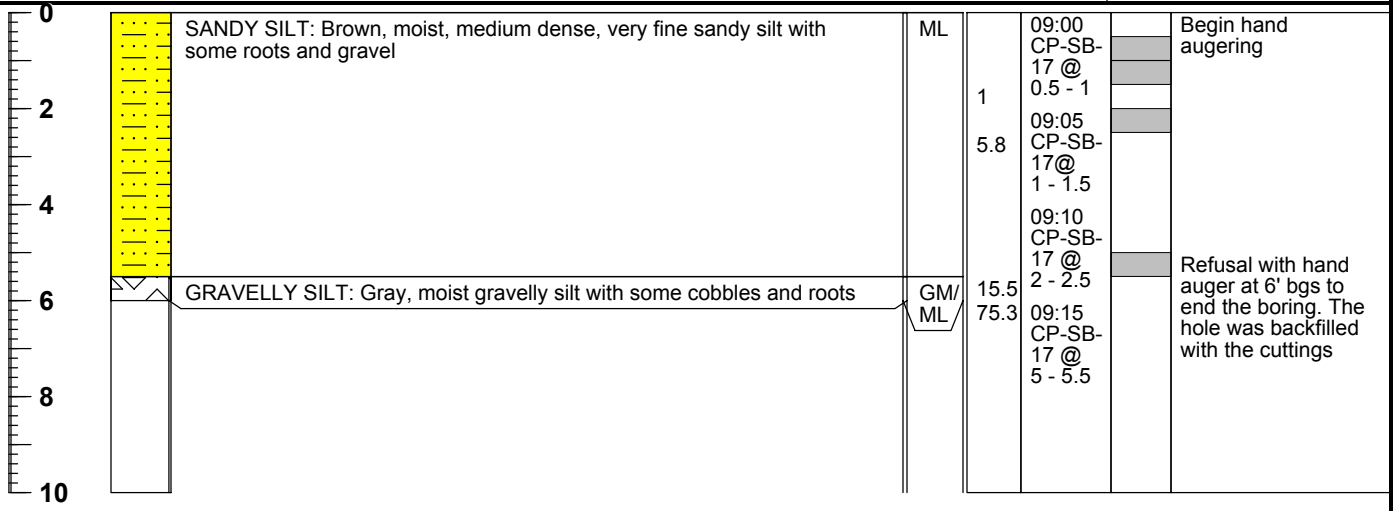
Borehole ID: CP-SB-17

Total Depth: 6 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/13/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Steep hillside below dirt road
Air Knife or Hand Auger Depth: 6.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil



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LOG OF BORING

Borehole ID: CP-SB-18

Total Depth: 9 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/13/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Steep hillside below dirt road
Air Knife or Hand Auger Depth: 9.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SANDY SILT: Brown, moist, loose to medium dense, very fine sandy silt with trace rocks and gravel. The rock content increases at 3', odor present	ML	5.0	10:05 CP-SB-18 @ 0.5 - 1		Begin hand augering.
2				13.7	10:10 CP-SB-18@ 1 - 1.5		odor present
4		SAND: Light brown, moist, loose, fine sand with some coarse gravel and cobbles	SP	5.8	10:25 CP-SB-18 @ 2 - 2.5		
		SILT: Gray moist silt with some gravel	ML	4.5	10:40 CP-SB-18 @ 5 - 5.5		
6		SANDY SILT: Gray with some brown mottling, moist, medium dense sandy silt with some coarse gravel, odor present	ML	149	11:15 CP-SB-18 @ 8.5 - 9		odor present
8		SILT: Gray with some light brown mottling, moist, silt with some gravel and sand	ML	381			End of boring at 9' bgs.
10							

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LOG OF BORING

Borehole ID: CP-SB-19

Total Depth: 3 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/13/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Steep hillside below dirt road
Air Knife or Hand Auger Depth: 3.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, moist, loose, silty fine sand with trace gravel and some roots	SM	478	11:40 CP-SB-19 @ 0.5 - 1		Begin hand augering
							Strong odor in soil
2		SANDY SILT: Light brown to gray, loose, fine sandy silt, gravel increasing with depth	ML	1085			
					11:45 CP-SB-19 @ 1 - 1.5		Strong odor in soil
				1178			Strong odor in soil
4					11:55 CP-SB-19 @ 2 - 2.5		Refusal of hand auger at 3' bgs on rock or large cobble. The steep slope conditions and high PID readings will end the boring. The hole was backfilled with the soil
6							
8							

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LOG OF BORING

Borehole ID: CP-SB-20

Total Depth: 39 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Jose
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe 6620 DT
RG: Leonard Niles	**Drilling Method:** Hand auger and direct push
Geologist: Greg White	**Sampling Method:** 6" brass tube and 4" acetate sleeve
Job Number: 26815217.00300	**Date(s) Drilled:** 10/17/05

BORING INFORMATION

Groundwater Depth: 36' during driilling, 34.6' static	**Boring Location:** dirt road
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, dry to moist, silty fine sand	SM		09:40 CPSB20 @ 0.5-1		Begin hand augering to 5 feet bgs
					09:45 CPSB20 @ 1.5-2		
2					09:50 CPSB20 @ 2.5-3		
4							
6		GRAVELLY SAND: Brown, moist, loose fine sand with gravel and trace roots	SP	22.6	10:25 CPSB20 @ 5-5.5		Begin direct push method
8		SILTY SAND: Gray, moist, fine to coarse gravelly silt	ML				
10		GRAVELLY SILTY SAND: Brown, moist, silty fine sand with gravel	GM	8.6	10:35 CPSB20 @ 10-10.5		
12		SILTY GRAVELLY SAND: Light brown, moist, loose, silty gravelly fine sand	SM				
14		SAND: Light brown, moist, loose, fine sand	SP	18.6			
16		SILT: Brown, moist, friable, silt as above with trace sand and gravel	ML		11:00 CPSB20 @ 15-15.5		
18				2.5			
20		SILTY SAND: Brown, dry to moist, friable, silty fine sand with some gravel	SM		11:15 CPSB20 @ 19.5-20		
22				5.7			

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		as above except light brown			12:00 CPSB20 @ 25-25.5		
26							
28		SANDY SILT: Brown with some yellow mottling, moist, very stiff, fine sandy silt with some calcite veins	ML				
		GRAVELLY SANDY SILT: Brownish gray, moist, very stiff, gravelly fine sandy silt	GM/ ML				
30		SAND: Light brown, moist, fine sand	SP				
32		GRAVELLY SAND: Light brown, moist, gravelly fine sand	GP/ SP				
34		SANDY GRAVEL: Brown, moist, sandy gravel with cobbles	SP/ GP	1236	12:15 CPSB20 @ 30-30.5		▼
36		GRAVELLY SILT: Brown and gray with some red staining, wet, stiff, gravelly silt	GM/ ML				Sample is wet at 36' bgs. No standing water in borehole. Will try to advance borehole in order to get a good groundwater sample.
38		SILT: Gray, moist, very hard silt	ML	1420			End of boring because groundwater was encountered. Set 3/4" PVC pipe well and take groundwater level with a WL meter. Groundwater level is 34.6' bgs.
40							
42							
44							
46							

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LOG OF BORING

Borehole ID: CP-SB-21

Total Depth: 39 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Jose
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe 6620 DT
PG: Barbara Jakub	**Drilling Method:** Hand auger and direct push
Geologist: Greg White	**Sampling Method:** 6" brass tube and acetate sleeve
Job Number: 26815217.00300	**Date(s) Drilled:** 10/17/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Dirt road on steep hillside
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, dry to moist, silty fine sand with trace gravel and roots	SM		10:05 CPSB21 @ 0.5-1		Begin hand augering to 5 feet bgs
2					10:10 CPSB21 @ 1.5-2		
4					10:15 CPSB21 @ 2-2.5		Begin direct push method
6				1.4	14:10 CPSB21 @ 5-5.5		
8							
10		SAND: Grades to brown, moist, fine sand as above except light brown	SP	1.8	14:15 CPSB21 @ 10-10.5		
12							
14		SILTY SAND: Grades to brown, moist, silty fine sand	SM	2.8	14:20 CPSB21 @ 15-15.5		
16							
18				2.4			
20					14:25 CPSB21 @ 19.5-20		
22				1.5			

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
		SANDY SILT: Brown, moist, very stiff to hard, fine sandy silt	ML				
26				6.1	14:30 CPSB21 @ 25-25.5		
28		SILTY SAND: Brown, moist, medium dense, silty fine sand	SM				
30				1.4			
		as above except, light brown, medium stiff, with gravel					
32							
34		GRAVELLY SAND: Gray and brown, moist, fine to coarse gravelly sand, some cobbles	SP/ GP	9.9			
36					15:15 CPSB21 @ 38-38.5		
38				316			Refusal on rock at 39' bgs. Insert 3/4" PVC well to see if groundwater enters the borehole.
40							
42							

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LOG OF BORING

Borehole ID: CP-SB-22

Total Depth: 9 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/13/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Above dirt road on steep hillside
Air Knife or Hand Auger Depth: 9.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, dry to moist, loose, silty fine sand with some gravel	SM	0.4	15:05 CPSB22 0.5 - 1		Begin hand augering
2				0.7			
				2.1	15:10 CPSB22 1 - 1.5		
4					15:30 CPSB22 2 - 2.5		
6					15:35 CPSB22 5.5 - 6		Soil will not stay in sampler at 5' bgs. Will try sampling 5.5-6' in more coherent soil.
8				0.3			Attempt to collect sample from 8.5-9' bgs. Soil was too loose and kept falling out of sleeve.
10							Terminate boring at 9' bgs. Backfill with cuttings.
12							

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LOG OF BORING

Borehole ID: CP-SB-23

Total Depth: 9 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan and Jorge
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/13/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Above dirt road on steep hillside
Air Knife or Hand Auger Depth: 9.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, moist, silty very fine sand with some gravel and roots	SM	1.3	16:20 CP-SB-23 @ 0.5 - 1		Begin hand augering
2				0.1			
				0.0	16:25 CP-SB-23 @ 1 - 1.5		
4		As above except slightly moist (almost no cohesion)			16:35 CP-SB-23 @ 2 - 2.5		
6				0.0	16:45 CP-SB-23 @ 5 - 5.5		
8							End of borind at 9' bgs. Downhole PID: 1ppm. Backfill borehole with cuttings.
				1.0	17:00 CP-SB-23 @ 8.5 - 9		
10							

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LOG OF BORING

Borehole ID: CP-SB-24

Total Depth: 6 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Juan and Jorge
Project Manager: Joe Morgan	**Type of Drilling Rig:**
RG: Leonard Niles	**Drilling Method:** Hand auger
Geologist: Greg White	**Sampling Method:** 6" brass sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/13/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** hillside above dirt road
Air Knife or Hand Auger Depth: 6.0	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, moist, loose, silty fine sand with gravel	SM	2.5	14:25 CPSB24 @ 0.5 - 1		Begin hand augering
2				2.5			
				3.1	14:30 CPSB24 @ 1 - 1.5		
4					14:35 CPSB24 @ 2 - 2.5		
		As above except an increased gravel content from 0-5' bgs.					Cannot collect sample at 5-5.5' because soil is too loose to stay in sampling sleeve. Will try and advance past loose sediment.
6				0.9			Refusal on rock at 6' bgs so end of boring. Backfill hole with cuttings.
8							
10							
12							

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LOG OF BORING

Borehole ID: CP-SB-25

Total Depth: 40 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Jose
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe 6620
RG: Leonard Niles	**Drilling Method:** Hand auger and direct push
Geologist: Greg White	**Sampling Method:** 6" brass tubes and 4' acetate liners
Job Number: 26815217.00300	**Date(s) Drilled:** 10/17/05

BORING INFORMATION

Groundwater Depth: 39' bgs during drilling	**Boring Location:** Tog of dirt road above steep hillside
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Brown, moist, silty fine sand with roots and some gravel	SM		15:25 CP-SB-25 @ 0.5-1		Begin hand augering to 5 feet bgs
2					15:30 CP-SB-25 @ 1.5-2		
4					15:35 CP-SB-25 @ 2.5-3		Begin direct push method from 5' bgs 09:45.
6				0	15:50 CP-SB-25 @ 5-5.5		
8							
10		GRAVELLY SAND: Grades to light brown, moist, loose, gravelly fine sand	GP/ SP	1.8	16:00 CP-SB-25 @ 10-10.5		
12		SAND: Grades to light brown, moist, loose to medium dense, fine sand As above except with some gravel	SP				
14				1.3			
16					16:05 CP-SB-25 @ 15-15.5		
18				0.7			
20		As above except brown			16:08 CP-SB-25 @ 19.5-20		
22				1.6			

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
26				2.2	16:50 CP-SB-25 @ 25-25.5		
28		SILTY SAND: Brown, moist, very dense grading to medium dense, silty fine sand	SM				
30				4.2			
32		GRAVELLY SAND: Brown and gray, dry to moist, loose, fine to coarse gravelly sand with some cobbles	GP/ SP				
34				14.5			
36					17:10 CP-SB-25 @ 35-35.5		
38							
40		SANDY GRAVEL: Brown, wet, loose, sandy gravel; red soil horizon at 39.5-39.8' bgs	GP				▼ End of boring at 40' bgs. Groundwater encountered at 39' bgs and a 3/4" PVC well was set for groundwater sampling.
42							
44							

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LOG OF BORING

Borehole ID: CP-SB-26

Total Depth: 39 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Jose
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe 6600 - Truck Mounted
RG: Leonard Niles	**Drilling Method:** Hand auger and direct push
Geologist: Greg White	**Sampling Method:** 6" brass tubes and acetate sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/25/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Tog of dirt road above steep hillside
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Dark grayish brown (10 YR 4/2), fine, loose, moist, with gravel, roots, adn caliche veining	SM		09:20 CP-SB-26 @ 0.5-1		Begin hand augering to 5 feet bgs
2					09:25 CP-SB-26 @ 1.5-2		
4				0.0	09:30 CP-SB-26 @ 2.5-3		
6				0.0	09:55 CP-SB-26 @ 5-5.5		Begin direct push method from 5' bgs 09:45.
8		Same as above but becoming medium dense		0.0			
10					10:00 CP-SB-26 @ 10-10.5		
12				0.0			
14							
16		Same as above but brown (10 YR 4/3) and very dense		0.0	10:05 CP-SB-26 @ 15-15.5		
18				0.0			
20		GRAVELLY SAND: Brown (10 YR 4/3), medium dense, moist, fine to coarse gravel, fine sand, some chert and sandstone fragments	SP		10:20 CP-SB-26 @ 20-20.5		
		SILTY SAND: Brown (10 YR 4/3), medium dense, moist, silty fine sand with some fine gravel	SM				
22				0.0			

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		SANDSTONE: Sandstone fragment, poorly cemented, medium to coarse grained sandstone	SS				
		SILTY SAND: Brown (10 YR 4/3), very dense to dense, moist, silty fine sand with some fine gravel	SM				
26		SAND: Brown (10 YR 4/3), medium dense, moist, fine	SP	0.0	10:45 CP-SB-26 @ 25-25.5		
		SANDY SILT: Dark brown (10 YR 3/2), medium stiff, moist, fine sandy silt with some fine gravel	ML				
28		SILTY SAND: Olive brown (2.5 YR 4/3), dense, moist, some gavel, fine sand	SM				
		SANDY CLAY: Dark olive brown (2.5 Y 3/3), stiff, moist, fine sandy clay, with gravel and some cobbles	CL				
30				0.0			
32							
		SAND: Pale olive and light gray mottled (5 Y 6/4 - 7/1), very dense, moist, fine sand with some fine gravel. Some large sandstone clasts in sample sleeve from 36-39' bgs.	SP				
34				0.0			
36				0.0	10:50 CP-SB-26 @ 30-30.5		
38							
		SILTSTONE: Siltstone bedrock, gray (5 Y 6/1)					
40							End of boring at 39' bgs on siltstone bedrock at 11:20. Will install a temporary 3/4" PVC well to see if a groundwater sample can be taken.
42							
44							

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LOG OF BORING

Borehole ID: CP-SB-27

Total Depth: 38 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Resonant Sonic
Site Location: Calaveras Rd., Sunol, CA	**Driller:** Jose
Project Manager: Joe Morgan	**Type of Drilling Rig:** Geoprobe 6600 - Truck Mounted
RG: Leonard Niles	**Drilling Method:** Hand auger and direct push
Geologist: Greg White	**Sampling Method:** Dual tube with 1.5" acetate sleeves
Job Number: 26815217.00300	**Date(s) Drilled:** 10/25/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** NW of creek downhill from the leak
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Soil

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		SILTY SAND: Black (5 Y 2.5/2), loose, moist to dry, silty fine sand with some gravel and roots	SM	0.0			Begin hand augering to 5 feet bgs at 11:45.
6		SANDY SILT: Black (5 Y 2.5/2), medium stiff, moist, fine sandy silt with some gravel and caliche veining	ML	0.0			Begin direct push method from 5' bgs 13:00.
8		SILTY SAND: Dark brown (10 YR 3/2), medium dense, moist, fine, some gravel, roots, and caliche veining	SM	0.0			
12		SANDY SILT: Grades to sandy silt, dark brown (10 YR 3/2), medium stiff, moist, fine sandy silt with some gravel and caliche veining	ML	0.0			
16		SILTY SAND: Grades to silty sand, olive brown (2.5 Y 4/3), medium dense, moist, fine, caliche veining	SM	0.0			
20		SANDY CLAY: Olive brown (2.5 Y 4/3), medium stiff, moist, fine, caliche veins	CL				
22		SANDY SILT: Grades to sandy silt, olive brown (2.5 Y 4/3), medium stiff, moist, fine caliche veins	ML	0.0			

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		SILTY SAND: Grades to silty sand, olive brown (2.5 Y 4/4), medium dense, moist, fine	SM	0.0			
26							
28		SANDY SILT: Grades to sandy silt, olive brown (2.5 Y 4/4), medium stiff, moist, fine	ML				
		SANDY SILT: Sa,e as above but with some clayey sandy zones	SM	0.0			
30							
32		GRAVELLY SAND: Olive brown (2.5 Y 4/4), loose, moist, fine to coarse gravelly fine sand	SP				
		SAND: Light olive brown (2.5 Y 5/4), with some light gray (2.5 Y 7/1) mottling, very dense, moist, fine sand, fine to coarse gravel	SP	0.0			
34							
36		SAND: Same as above with trace gravel	SP	0.0			
38		SILTSTONE: Siltstone bedrock			13:55 CP-SB-27 @ 37.5-38		End of boring at 38' bgs on siltstone bedrock.
40							

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LOG OF BORING

Borehole ID: HSA-1

Total Depth: 37 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Clear Heart Drilling, Inc.
Site Location: 8501 Calaveras Rd., Sunol, CA	**Driller:** Rick Schneider
Project Manager: Joe Morgan	**Type of Drilling Rig:** CME-75
PG: Barbara Jakub	**Drilling Method:** Hollow Stem Auger
Geologist: Leonard Niles	**Sampling Method:** Slide hammer to 2.5', split spoon (1.5 and 2" ID) below
Job Number: 26815217.00500	**Date(s) Drilled:** 10/11/05

BORING INFORMATION

Groundwater Depth:	**Boring Location:** Valley Crest Tree Company
Air Knife or Hand Auger Depth: 4.5 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Exploratory, grouted to surface with bentonite/cement

Depth (ft bgs)	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0	FILL: Thin layer of gravel fill at the surface.	ML		10:30 HSA-1-0.5-1		Begin hand augering to 4.5 feet.
2	SANDY SILT: Dark grayish brown, 15-20% fine grained sand, 60% silt, 20% clay, very low plasitcity, damp, root material, no odor		0	10:35 HSA-1-1-1.5		Collected samples with slide hammer to 2.5' bgs.
4				10:40 HSA-1-2-2.5		
6	as above except no root material, caliche veins		0			Grouted boring from 15 feet bgs to surface with cement slurry, and from 37' to 15' bgs with bentonite slurry.
8						
10	SANDY SILT: as above except dark yellowish brown, increasing fine grained sand, no odor	ML	0	11:03 HSA-1-9.8-10.4		
12						
14						
16			0			
18	SILTY GRAVEL: yellowish brown, 15-20% silt, 20-30% fine to coarse grained sand, 50-65% fine to coarse gravel, damp, no odor	GM				
20	SANDY GRAVEL: Sandy gravel with silt, olive gray, 10-15% silt, 25-35% fine to coarse sand, 50-65% fine to coarse gravel, dry no odor	GW/ GM	0	11:24 HSA-1-20-20.5		
22						

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
26							
28							
30		as above except 20-30% fine to coarse grained sand, 55-70% fine to coarse gravel		0			
32							
34							
36		Encountered cobbles at 35 feet bgs, sandstone clasts to 2-3" diameter in cuttings, strong gasoline odor	GW	305			▼ Encounter refusal at total depth of 37' bgs, 2" of water/mud at bottom measured at 12:45 with WLP. Not enough water to sample.
38							
40							
42							

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LOG OF BORING

Borehole ID: HSA-2

Total Depth: 50.5 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Clear Heart Drilling, Inc.
Site Location: 8501 Calaveras Rd., Sunol, CA	**Driller:** Rick Schneider
Project Manager: Joe Morgan	**Type of Drilling Rig:** CME-75
RG: Leonard Niles	**Drilling Method:** Hollow Stem Auger
Geologist: Leonard Niles	**Sampling Method:** 2" slide hammer/core barrel to 2.5', 2"and 1.5" split spoon
Job Number: 26815217.00500	**Date(s) Drilled:** 10/11/05

BORING INFORMATION

Groundwater Depth:	**Boring Location:** Valley Crest Tree Company
Air Knife or Hand Auger Depth: 4.5 feet	**Boring Diameter:** 2"
Coordinates: X Y	**Boring Type:** Exploratory, grouted to surface with bentonite/cement

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		FILL: Thin layer of gravel fill at the surface.	ML		14:55 HSA-2-0.5-1		Hand augered to 4.5 feet. Collected samples with a slide hammer to 2.5 feet bgs.
2		SANDY SILT: Dark grayish brown, 15-20% fine sand, 20% clay, 60-65% silt, caliche veins, damp		0	15:00 HSA-2-1-1.5		
4					15:05 HSA-2-2-2.5		
6							Grouted boring with bentonite slurry to 15' bgs, then with cement slurry from 15' bgs to the surface.
8		as above with minor, <2%, coarse sand					
10				0	15:20 HSA-2-9.5-10		
12							
14		SANDY SILT: as above except color change to olive brown, increasing fine sand to 20-30%, 60-70% silt, 10-20% clay	ML	0			
16							
18							
20		as above, olive brown to yellowish brown, minor coarse sand to fine gravel		0	15:45 HSA-2-20-20.5		
22		Contact at 23' bgs, from drill rig behavior					
		SANDY GRAVEL: with silt, olive gray, 10-15% silt, 25-35% fine to	GW/				Driller encounters

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		coarse sand, fine to coarse gravel, dry, no odor, logged from cuttings	GM				gravel at 23' bgs.
26							
28							
30							
32							
34							
36							
38							
40							
42		Contact at 43' bgs - drill rig behavior					
44		SANDY CLAY: Dark greenish gray, highly weathered sandstone bedrock, dry, hard, no odor	CL				Accordingt to driller, out of gravel zone at 43' bgs, highly weathered bedrock below. No groundwater encountered.
46		SANDY SILT: Grades to sandy siltstone to silty sandstone at 45.2' bgs. Light bluish-green gray, weathered, soft, dry, no odor			16:25 HSA-2-45-45.5		
48		Grades to less weathered siltstone, approximate contact at 47' bgs from cuttings.					Weathered dark greenish gray siltstone in cuttings, dry
50		dark bluish-green gray, 20-30% very fine to fine sand, 70-80% silt and clay, weathered, soft, dry, no noticeable odor		189	16:55 HSA-2-50-50.5		Auger encountered refusal at 50' bgs, total depth is 50.5' bgs from split spoon sampler. PID reading downhole from top of auger is 189 ppm.
52							
54							

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LOG OF BORING

Borehole ID: AR-1 (MW-1)

Total Depth: 41 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Test America Drilling
Site Location: 8501 Calaveras Rd., Sunol, CA	**Driller:** Mike Thomas
Project Manager: Joe Morgan	**Type of Drilling Rig:** Schramm T660W Rotadrill
RG: Leonard Niles	**Drilling Method:** Air Rotary Casing Hammer
Geologist: Leonard Niles	**Sampling Method:** 1.5" Standard Penetrometer, 2" Split Spoon
Job Number: 26815217.00500	**Date(s) Drilled:** 10/18/05, 10/20/05

BORING INFORMATION

Groundwater Depth: 37.9 feet bgs (initial), 38.2 feet bgs (static)	**Boring Location:** Valley Crest Tree Company
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 9"
Coordinates: X Y	**Boring Type:** Completed as groundwater monitoring well MW-1.

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		FILL: Thin gravel fill layer, 1" thick at surface	ML				Hand augered to 5 feet bgs.
		SANDY SILT: Very dark gray (2.5 Y 3/1), 5% clay, 75% silt, 20% fine sand, very low plasticity, very stiff, damp, white caliche fragments					
2							Well completion: 4" ID sch 40 PVC, screened at 29.3-39.3' bgs, see well diagram for details
4							
6				0			Begin rotary drilling at 5', drove 6" casing behind bit
8							
		SANDY SILT: Dark grayish brown (10 YR 4/2), 10-20% clay, 15-20% fine grained sand, 60-75% silt, hard, damp to dry, <5% coarse grained sand	ML	0			
10							
12							
14							
16							
18		as above, brown (10 YR 4/3)					
20				0			
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		contact at 25' bgs, from cuttings					
26		SANDY GRAVEL: Grayish brown (10 YR 5/2), 10% silt, 30% fine to coarse sand, fine to coarse sub rounded gravel to 2" diameter, dry - logged from cuttings	GW				
28				0			
30		as above, subrounded to angular sandstone, chert and greenstone clasts					
32							
34							
36							PID reading collected from top of drive casing in open borehole
38				3	MW-1-38.5 -39 on 10/18/05		
40		SILTSTONE: very dark greenish gray (10 YR 3/1), 80-85% silt and clay, 15-20% very fine sand, soft, moist, hydrocarbon odor, weathered		1.6 70	Ground-water sample MW-1-GW @ 15:00 on 10/20/05		Depth to water = 37.9' @ 14:16, 0.6" water in the hole. 10/18/05 - drilled to 38 ft bgs with 6" casing.
42				650			10/20/05 overdrilled with 9" casing to 41 ft bgs, total depth of boring at 10:15.
44							
46							
48							
50							

Well Construction Details

(monitoring well)

Project: Chevron Pipeline - Sunol

Project Number: 26815217.02400

Well Name: MW-1 (boring AR-1)

Well Type: Groundwater Monitoring

Supervised by: G. White / L. Niles

Installation Date: 10 / 20 / 2005

Drilling Company: Test America

Construction Method: Air Rotary Casing Hammer

Drilling Method (if different): Air Rotary Casing Hammer

Well Owner: Chevron Pipeline Company

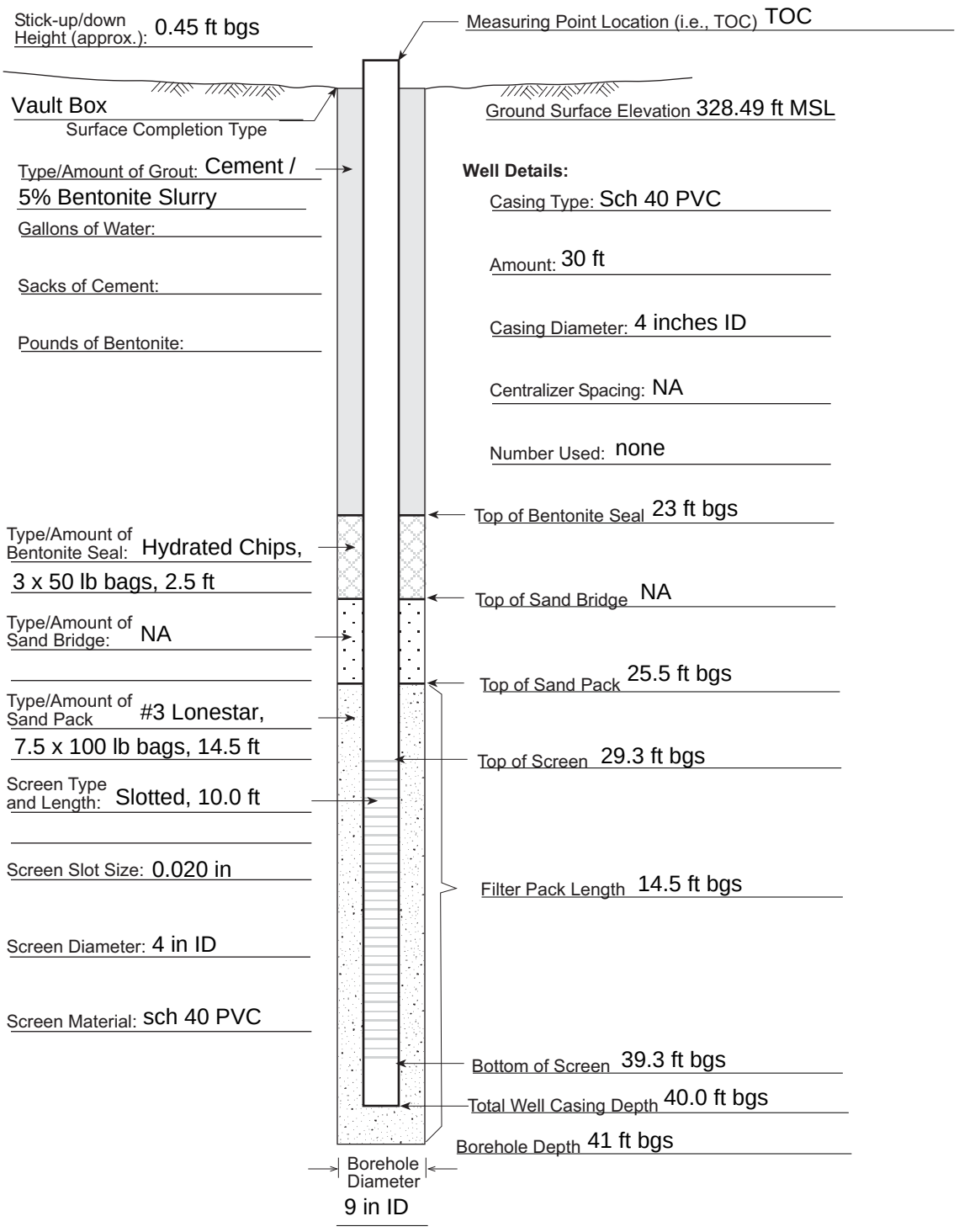
Address: 2811 Hayes Rd., Houston, TX 77082

Phone (281) 596-3564

Location Description:

Valley Crest Tree Co.

8501 Calaveras Rd., Sunol, CA



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LOG OF BORING

Borehole ID: AR-2

Total Depth: 108 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Test America Drilling
Site Location: 8501 Calaveras Rd., Sunol, CA	**Driller:** Mike Thomas
Project Manager: Joe Morgan	**Type of Drilling Rig:** Schramm T660W Rotadrill
RG: Leonard Niles	**Drilling Method:** Air Rotary Casing Hammer
Geologist: Leonard Niles	**Sampling Method:** 1.5" Standard Penetrometer, 2" Split Spoon
Job Number: 26815217.00500	**Date(s) Drilled:** 10/18/05, 10/19/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Valley Crest Tree Company
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 6"
Coordinates: X Y	**Boring Type:** Exploratory, grouted to surface with cement/ 5% bentonite

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		FILL: Thin layer of gravel fill at the surface.	ML				Hand augered to 5 feet bgs.
2		SANDY SILT: Very dark gray (10 YR 3/1), 10% clay, 60-70% silt, 20-30% fine grained sand, very low plasticity, damp, caliche gragments and veins					Grouted boring to surface with cement/ 5% bentonite grout slurry on 10/19/05.
4							
6							Drilled with 6" rotary and drove casing to 8.5'
8							
10		SANDY SILT: as above except grayish brown (10 YR 5/2), 5-10% clay, 50-60% silt, 35-50% fine grained sand, hard, dry, no hydrocarbon odor, high estimated permeability	ML	0			
12							
14							
16		SANDY GRAVEL: Very dark gray (2.5 Y 3/1), 10% silt and clay, 25-30% fine to coarse sand, 60-65% fine to coarse, sub-rounded to sub-angular gravel, very dense, dry, sandstone and chert gravel clasts to 2" diameter, no hydrocarbon odor	GW				
18				0	CP-AR-2-18.5-19		
20							
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		as above but moist (not wet)					
26		CLAYEY SILT: Very dark greenish gray (10 Y 3/1), 20-30% clay, 60-70% silt, 10% very fine grained sand, soft, dry, no hydrocarbon odor, low estimated permeability	ML	0	CP-AR-2-28.5-29		Drove 6" casing to 28.5'. Bedrock encountered at 29', no water found.
28		as above except numerous sandstone adn chert clasts in cuttings-slough falling from above?					Drilled below 30' with tri-cone rotary bit, 6" casing at 29'.
30		Very dark greenish gray (10 Y 3/1), as above except increasing clay to 30-40%, 50-60% silt, 10-15% fine grained sand; about 2" of gravel slough at top of sampler; siltstone appears to be grading to claystone, no hydrocarbon odor		0			
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
58		grading to silty claystone, contact approximate from cuttings					
60		SILTY CLAY: Very dark greenish gray (10 Y 3/1), 50-60% clay, 40-50% silt, <10% very fine grained sand, low estimated permeability, soft, dry-logged from cuttings	CL				
62							
64							
66							
68							
70							
72							
74							
76							
78		Silty claystone as above except dark greenish gray (10 Y 3/1), 50-60% clay, 40-50% silt, 5-10% fine grained sand, soft, damp, moderate plasticity (when wet), no hydrocarbon odor, low-very low est. k		0			
80							Drilled to 79' with tri-cone rotary bit, drove standard penetrometer to 79.5'.
82							
84							
86							
88							
90							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
92							
94		Contact approximately 95' bgs					
96		SILTY CLAY: dark greenish gray (10 Y 3/1) 50-60% clay, 40-50% silt, 10% very fine grained sand, hard, damp to moist, very low estimated permeability; appears to be highly weathered claystone, possibly fault gauge, disturbed structure	CL	0			
98							Rotary bit at 97', drove standard penetrometer 97-97.5'.
100							
102							
104		Contact approximately 105 ft bgs from drill rig behavior					
106		ULTRABASIC IGNEOUS ROCK: Basalt or Gabbro, very dark gray (2.5 Y 3/1), minor quartz, mostly dark minerals, hard, damp to dry, very low estimated permeability.	BAS or GAB				More difficult drilling at 105'
108							Borehole ends, no sample recovery at 108' bgs, total depth of borehole @ 14:45, 10/19/05.
110							
112							
114							

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LOG OF BORING

Borehole ID: AR-3 (MW-2)

Total Depth: 39 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Test America Drilling
Site Location: 8501 Calaveras Rd., Sunol, CA	**Driller:** Mike Thomas
Project Manager: Joe Morgan	**Type of Drilling Rig:** Schramm T660W Rotadrill
RG: Leonard Niles	**Drilling Method:** Air Rotary Casing Hammer
Geologist: Leonard Niles and Greg White	**Sampling Method:** 1.5" Standard Penetration Split Spoon
Job Number: 26815217.00500	**Date(s) Drilled:** 10/20/05 - 10/21/05

BORING INFORMATION

Groundwater Depth: 38.7 feet bgs (initial), 34.5 feet bgs (static)	**Boring Location:** Valley Crest Tree Company
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 9"
Coordinates: X Y	**Boring Type:** Completed as groundwater monitoring well MW-2

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		FILL: Thin gravel fill layer, 1" thick at surface	ML				Hand augered to 5' bgs.
2		SANDY SILT: Very dark gray to black (10 YR 3/1 - 2/1), < 10% clay, 50-60% silt, 40-50% fine to coarse grained sand, <5% gravel, damp, caliche fragments and veins					Moved location 2 ft after obstruction (gravel) encountered at 4.5 ft bgs. Encountered obstruction again at 4.5 ft but hand augered through to 5' bgs.
4		Encountered gravel clasts at 4.5' bgs					
6							Well completion: 4" ID sch 40 PVC, screened at 23.3-38.3 ft bgs, see well diagram for details.
8		Same as above except very dark grayish brown (10 YR 3/2), increased plasticity, hard, friable, damp, caliche veins, some fine to coarse gravel, trace roots		0.0			
10							
12		same as above, color change to brown (10 YR 4/3) from cuttings					
14							
16		same as above, dark grayish brown (10 YR 4/2), increasing coarse sand and fine gravel, damp					
18							drove 9" casing to 18.5'
20		SANDY GRAVEL: Dark grayish brown (10 YR 4/2) to dark gray (10 YR 4/1), 10-15% silt, 20-30% fine to coarse sand, 45-55% fine to coarse gravel, dry	GW/ GM				Resumed drilling on 10/21/05 from 10/20/05.
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24							
26		SANDY GRAVEL: Dark greenish gray (Y 4/1) to light olive brown (2.5 Y 5/3), fine to coarse gravel, moist	GW				
28							
30				0.0			Moisture content in cuttings is increasing at 32' bgs. Collect cuttings.
32		Color as above, fine to coarse sand and gravel, little fines, moist, logged from cuttings		0.0			Cuttings change color to a darker gray and become fined at ~34' bgs.
34		Bedrock contact at 34' bgs, from cuttings SILTSTONE: Dark greenish gray (5 G 4/1), moist					{Water level is 34.5 ' bgs at 09:20 on 10/27/05.}
36							
38							▼
40				0.0			Bedrock encountered in splitspoon collected from 39' bgs.
42							Brought casing up to ~34' and checked water level. Borehole open to total depth of 39' bgs and the water level is at 38.7' bgs, at 9:00 on 10/21/05.
44							
46							
48							

Well Construction Details

(monitoring well)

Project: Chevron Pipeline - Sunol

Project Number: 26815217.02400

Well Name: MW-2 (boring AR-3)

Well Type: Groundwater Monitoring

Supervised by: G. White

Installation Date: 10 / 21 / 2005

Drilling Company: Test America

Construction Method: Air Rotary Casing Hammer

Drilling Method (if different): Air Rotary Casing Hammer

Well Owner: Chevron Pipeline Company

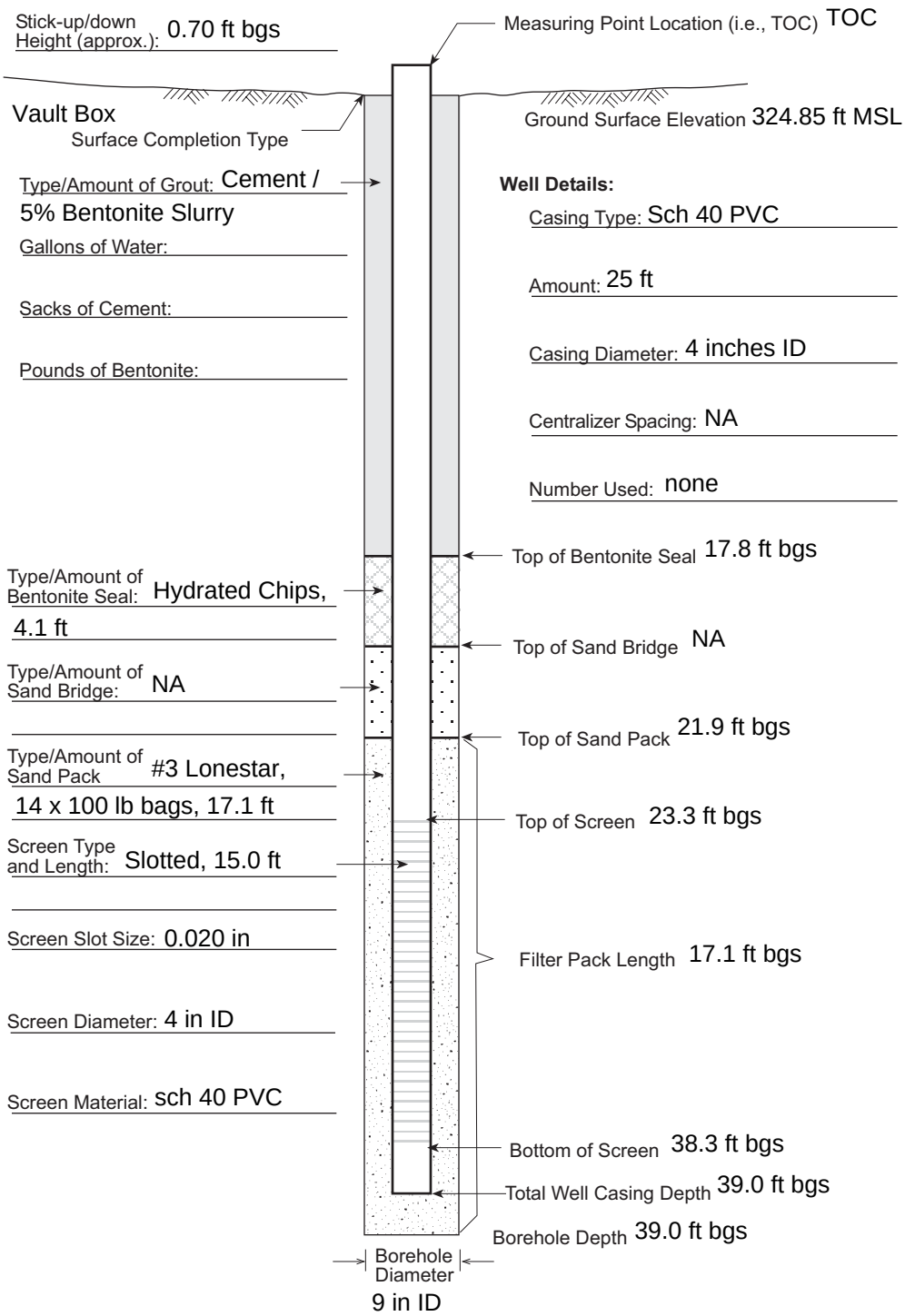
Address: 2811 Hayes Rd., Houston, TX 77082

Phone (281) 596-3564

Location Description:

Valley Crest Tree Co.

8501 Calaveras Rd., Sunol, CA



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LOG OF BORING

Borehole ID: AR-4 (MW-3)

Total Depth: 38 feet bgs

PROJECT INFORMATION	DRILLING INFORMATION
Project: Chevron Pipeline	**Drilling Company:** Test America
Site Location: 8501 Calaveras Rd., Sunol, CA	**Driller:** Mike Thomas
Project Manager: Joe Morgan	**Type of Drilling Rig:** Schramm T660W Rotadrill
RG: Leonard Niles	**Drilling Method:** Air Rotary Casing Hammer
Geologist: Greg White	**Sampling Method:** 18" standard split spoon
Job Number: 26815217.00500	**Date(s) Drilled:** 10/21/05

BORING INFORMATION

Groundwater Depth: Not Encountered	**Boring Location:** Valley Crest Tree Company
Air Knife or Hand Auger Depth: 5.0 feet	**Boring Diameter:** 9"
Coordinates: X Y	**Boring Type:** Completed as groundwater monitoring well MW-3.

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample ID	Recovery	Comments
0		FILL	ML				Hand augered to 5' bgs.
2		SANDY SILT: Black (10 YR 2/1), soft, moist, track gravel, caliche veins, fine					Well completion: 4" ID sch 40 PVC screened at 21.3-36.3 ft bgs, see well diagram for details.
4							
6							
8		Very dark grayish brown (10 YR 3/2), increased fine sand content, stiff, moist, some gravel, chert nodules, caliche veins, poorly cemented sandstone fragments.					
10							
12							
14							
16							
18		Dark yellowish brown (10 YR 4/4), fine to medium sand, gravel and rock fragments increasing with depth					
20		SANDY GRAVEL: Gray to yellowish brown (10 YR 5/1 - 5/3), some fines, fine to coarse sand and gravel, moist	GW				
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Sample I.D.	Recovery	Comments
24		SANDY GRAVEL as above, logged from cuttings					
26							
28							
30		as above except increased moisture content in cuttings		0.0			Logged cuttings from hopper at 29' bgs because split spoon recovery has been very poor in the gravel layer.
32							
34		SILTSTONE: Bedrock contact at 33' bgs, from cuttings					At 32' bgs moisture content in soil increased.
36							Cuttings changed to gray fines - bedrock contact at 33' bgs.
38							End of boring in siltstone layer at 38' bgs. Checked water level after pulling casing up to 33' bgs. No groundwater was encountered. Completed as monitoring well to 38' bgs in case groundwater rises into the well.
40							
42							
44							

Well Construction Details

(monitoring well)

Project: Chevron Pipeline - Sunol

Project Number: 26815217.02400

Well Name: MW-3 (boring AR-4)

Well Type: Groundwater Monitoring

Supervised by: G. White

Installation Date: 10 / 21 / 2005

Drilling Company: Test America

Construction Method: Air Rotary Casing Hammer

Drilling Method (if different): Air Rotary Casing Hammer

Well Owner: Chevron Pipeline Company

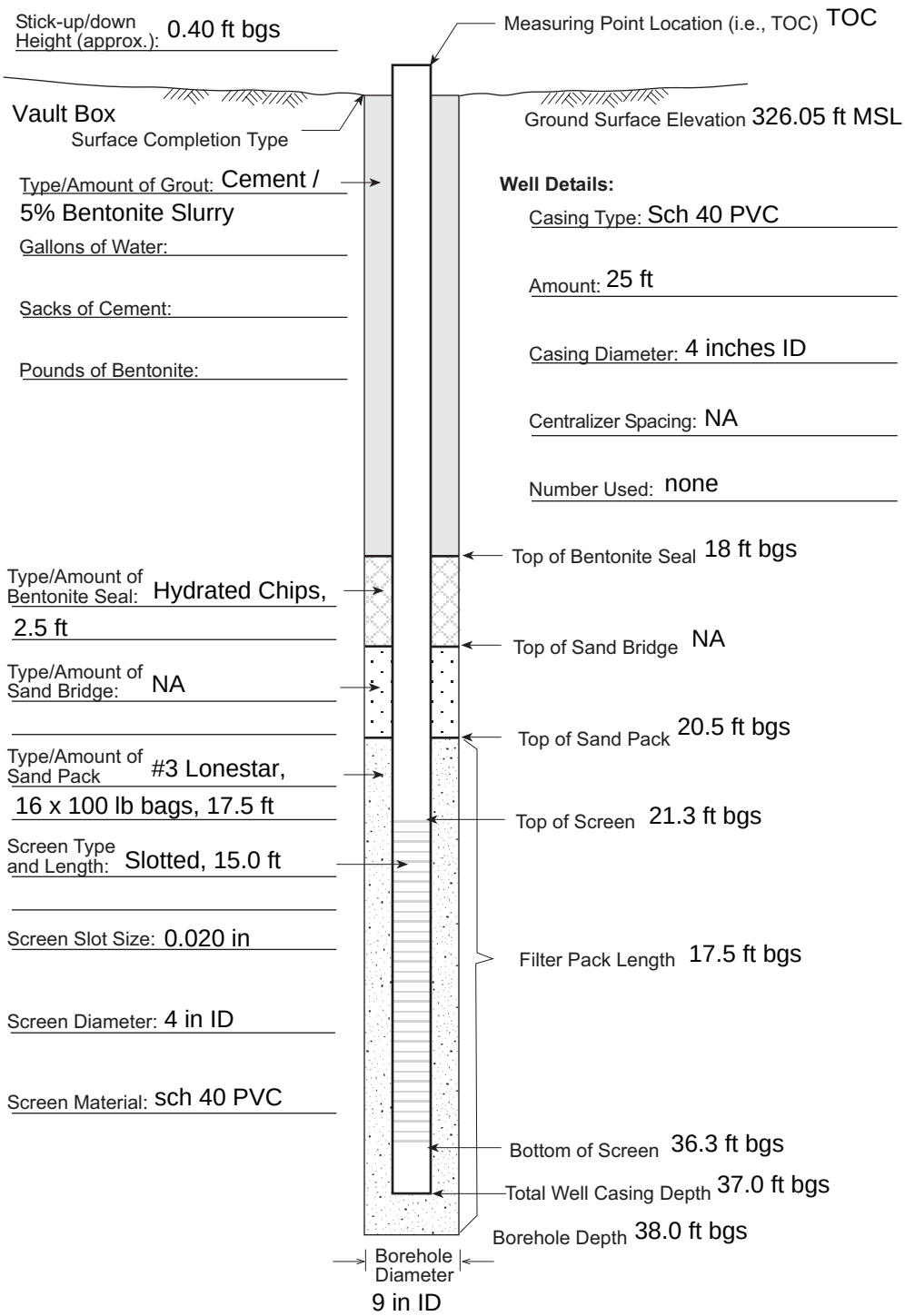
Address: 2811 Hayes Rd., Houston, TX 77082

Phone (281) 596-3564

Location Description:

Valley Crest Tree Co.

8501 Calaveras Rd., Sunol, CA



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LOG OF BORING

Borehole ID: SVE-1D

Total Depth: 20 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Gregg Drilling & Testing
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Chris S.
Project Manager: Joe Morgan	**Type of Drilling Rig:** Marl M5T
RG: Leonard Niles	**Drilling Method:** Hollow Stem Auger
Geologist: Gregory White	**Sampling Method:** Blind Drilling - No Sampling
Job Number: 26815217.02400	**Date(s) Drilled:** November 5, 2005
BORING INFORMATION	
Groundwater Depth: 17 ft bgs (during drilling)	**Boring Location:** Dirt road on steep hillside above Calveras Road
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 10 inches
Coordinates: X 6168313.98 Y 2025831.92	**Boring Type:** Soil Vapor Extraction

Depth (ft bgs)	Symbol	Lithologic Description	USCS	Well Construction Details	Drilling Comments
0		HAND AUGER TO 5 FT BGS			10:30 Begin hand augering to 5 ft bgs. Ambient PID: 0.0 ppm
2					
4				1-12.6 ft bgs: 4" Sch. 40 PVC riser.	
6		BLIND DRILL WITH HSA RIG FROM 5-20 FT BGS. (SEE LOG OF CP-SB-12 FOR LITHOLOGY)		1.5-9.5 ft bgs: 95% cement / 5% bentonite grout.	10:35 Begin drilling with augers at 5 ft bgs.
8					
10				9.5-11.5 ft bgs: Baroid bentonite chip seal.	
12				12.6-19.6 ft bgs: 4" Sch 40 PVC 0.020" screen.	11:10 Drilling becomes very difficult at 12 ft bgs- into gravel, sand, and cobble zone.
14					
16	▽			11.5-20 ft bgs: #3 RMC sand.	17 ft bgs: Water encountered during drilling.
18					
20		**END OF BORING AT 20 FT BGS**		19.6-20 ft bgs: 4" PVC silt trap and well cap.	12:20 End of boring at 20 ft bgs. Begin well installation.
22					

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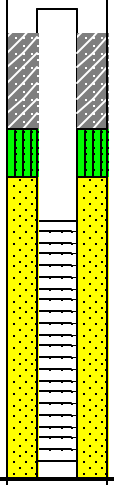
LOG OF BORING

Borehole ID: SVE-2S

Total Depth: 10.8 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Gregg Drilling & Testing
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Chris S.
Project Manager: Joe Morgan	**Type of Drilling Rig:** Marl M5T
RG: Leonard Niles	**Drilling Method:** Hollow Stem Auger
Geologist: Gregory White	**Sampling Method:** Blind Drilling - No Sampling
Job Number: 26815217.02400	**Date(s) Drilled:** November 5, 2005

BORING INFORMATION	
Groundwater Depth: Not Encountered	**Boring Location:** Dirt road on steep hillside above Calveras Road
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 10 inches
Coordinates: **X** 6168314.18 **Y** 2025817.01	**Boring Type:** Soil Vapor Extraction

Depth (ft bgs)	Symbol	Lithologic Description	USCS	Well Construction Details	Drilling Comments
0		HAND AUGER TO 5 FT BGS		 1.0-5.4 ft bgs: 4" Sch. 40 PVC riser. 1.5-3.5 ft bgs: 95% cement / 5% bentonite grout. 3.5-4.5 ft bgs: Baroid bentonite chip seal. 5.4-10.4 ft bgs: 4" Sch 40 PVC 0.020" screen. 4.5-10.8 ft bgs: #3 RMC sand. 10.4-10.8 ft bgs: 4" PVC silt trap and well cap.	09:20 Begin hand augering to 5 ft bgs. Ambient PID: 0.0 ppm
2					
4					
6		BLIND DRILL WITH HSA RIG FROM 5-10.8 FT BGS. (SEE LOG OF CP-SB-11 FOR LITHOLOGY)			09:35 Begin drilling with augers at 5 ft bgs.
8					
10					09:50 End of boring at 10.8 ft bgs. Begin well installation.
12		**END OF BORING AT 10.8 FT BGS**			
14					
16					
18					
20					
22					

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LOG OF BORING

Borehole ID: SVE-3S

Total Depth: 11 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Gregg Drilling & Testing
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Chris S.
Project Manager: Joe Morgan	**Type of Drilling Rig:** Marl M5T
RG: Leonard Niles	**Drilling Method:** Hollow Stem Auger
Geologist: Gregory White	**Sampling Method:** Blind Drilling - No Sampling
Job Number: 26815217.02400	**Date(s) Drilled:** November 5, 2005

BORING INFORMATION	
Groundwater Depth: Not Encountered	**Boring Location:** Dirt road on steep hillside above Calveras Road
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 10 inches
Coordinates: **X** 6168317.87 **Y** 2025774.02	**Boring Type:** Soil Vapor Extraction

Depth (ft bgs)	Symbol	Lithologic Description	USCS	Well Construction Details	Drilling Comments
0		HAND AUGER TO 5 FT BGS		1.0-5.6 ft bgs: 4" Sch. 40 PVC riser. 1.5-3.0 ft bgs: 95% cement / 5% bentonite grout. 3.0-4.3 ft bgs: Baroid bentonite chip seal. 5.6-10.6 ft bgs: 4" Sch 40 PVC 0.020" screen. 4.3-11 ft bgs: #3 RMC sand. 10.6-11.0 ft bgs: 4" PVC silt trap and well cap.	15:00 Begin hand augering to 5 ft bgs. Ambient PID: 2.6 ppm 15:45 Begin drilling with augers at 5 ft bgs. 16:00 End of boring at 11 ft bgs. Begin well installation.
2					
4					
6		BLIND DRILL WITH HSA RIG FROM 5-11 FT BGS. (SEE LOG OF CP-SB-20 FOR LITHOLOGY)			
8					
10					
12		**END OF BORING AT 11.0 FT BGS**			
14					
16					
18					
20					
22					

URS

1333 Broadway, Suite 800
Oakland, California 94612

LOG OF BORING

Borehole ID: SVE-4D

Total Depth: 28 ft bgs

PROJECT INFORMATION	DRILLING INFORMATION
Client: Chevron Pipeline	**Drilling Company:** Gregg Drilling & Testing
Site Location: Milepost 2.7 Calaveras Road, Sunol, California	**Driller:** Bob D.
Project Manager: Joe Morgan	**Type of Drilling Rig:** Marl M5T
RG: Leonard Niles	**Drilling Method:** Hollow Stem Auger
Geologist: Gregory White	**Sampling Method:** Blind Drilling - No Sampling
Job Number: 26815217.02400	**Date(s) Drilled:** November 8, 2005

BORING INFORMATION	
Groundwater Depth: Not Encountered	**Boring Location:** Dirt road on steep hillside above Calveras Road
Air Knife or Hand Auger Depth: 5 ft bgs	**Boring Diameter:** 10 inches
Coordinates: **X** 6168318.74 **Y** 2025761.01	**Boring Type:** Soil Vapor Extraction

Depth (ft bgs)	Symbol	Lithologic Description	USCS	Well Construction Details	Drilling Comments
0		HAND AUGER TO 5 FT BGS			09:05 Begin hand augering to 5 ft bgs. Ambient PID: 0.0 ppm
2					
4				1.0-17.6 ft bgs: 4" Sch. 40 PVC riser.	
6		BLIND DRILL WITH HSA RIG FROM 5-28 FT BGS. (SEE LOG OF CP-SB-21 FOR LITHOLOGY)			09:25 Begin drilling with augers at 5 ft bgs.
8				1.4-15.0 ft bgs: 95% cement / 5% bentonite grout.	
10					
12					
14					
16				15.0-16.0 ft bgs: Baroid bentonite chip seal.	
18					10:00 Drilling becomes very difficult at 18 ft bgs- through tight silt zone.
20				17.6-27.6 ft bgs: 4" Sch 40 PVC 0.020" screen.	
22					
24				16.0-28.0 ft bgs: #3 RMC sand.	
26				27.6-28.0 ft bgs: 4" PVC silt trap and well cap.	10:25 End of boring at 28 ft bgs. Begin well installation.
28		**END OF BORING AT 28 FT BGS**			