

W O R K P L A N

# REVISED WORKPLAN FOR THE SUNOL SITE DATA GAPS INVESTIGATION

SLIC CASE #RO0002892  
CHEVRON PIPELINE COMPANY  
SUNOL SPILL  
2793 CALAVERAS RD.  
SUNOL, CA

*Prepared for*  
Alameda County Health Agency  
1131 Harbor Bay Parkway  
Alameda, CA 94502

**RECEIVED**

*11:01 am, Jul 16, 2012*

Alameda County  
Environmental Health

July 2012

**URS**

URS Corporation  
1333 Broadway, Suite 800  
Oakland, CA 94612

26818071



**Stephen Gwin**  
Environmental Specialist

**Health, Environment & Safety**  
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July 13, 2012

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

RE: Chevron Pipe Line Company Sunol, CA Site

Dear Mr. Wickham:

I declare, under penalty of perjury, that the information and/or recommendations contained in URS' report titled "**SLIC Case No. RO0002892, Chevron Sunol Pipeline, 2793 Calaveras Road, Sunol, CA – July 13, 2012 Investigation Workplan**" are true and correct to the best of my knowledge at the present time.

Submitted by:

A handwritten signature in black ink that reads "Stephen Gwin". The signature is written in a cursive style.

Stephen Gwin  
Chevron Pipe Line Company



This Site Investigation Workplan was prepared under my direct supervision. The information presented in this report is based on our review of available data obtained during our Conceptual Site Model development and our previous subsurface investigation efforts. To the best of our knowledge, we have incorporated into our recommendations all relevant data pertaining to the Chevron Pipeline Company's Sunol Spill Site in Sunol, California.

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

**URS Corporation**  
Approved by:



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Joe Morgan III, Senior Project Manager

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Robert Horwath, P.G.

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## **Revised Workplan for the Sunol Site Data Gaps Investigation for the Chevron Pipeline Company Site in Sunol, California**

URS Corporation (URS) is pleased to submit our revised 2012 Data Gaps Workplan on behalf of Chevron Pipeline Company (CPL) for the Sunol Spill site (Site) in Sunol, California, to the Alameda County Environmental Health Department (ACEHD). This workplan is based on the following factors.

- The results of the URS conceptual site model (CSM) for the Site submitted to ACDEH on October 28, 2010.
- April 26, 2012 comments from the ACEHD on our earlier Sunol data gaps investigation workplan submittal and a personal communication with Jerry Wickham, the ACEHD case worker.
- A CPL Sunol site tour conducted on June 13, 2012 with CPL/URS/ACDEH staff.
- A meeting held on June 14, 2012 in the ACDEH offices.

### **BACKGROUND**

On Sunday August 14, 2005, at 16:30 hours, CPL noted a pressure drop in their 8-inch-diameter gasoline pipeline, the Bay Area Pile Line (BAPL) that traverses the Sunol area of the San Francisco Bay Area. Upon investigation by CPL personnel, it was discovered that the lessee of a property that the pipeline traverses had hired a contractor to grade a dirt road on the property. The grading operation ruptured the pipeline, resulting in a gasoline release. The property is owned by the San Francisco Public Utilities Commission (SFPUC), and is managed as part of the nearby Calaveras Reservoir. Immediately across Calaveras Road and hydraulically downgradient from the release is Valley Crest Nursery, a commercial plant nursery that also leases property from the SFPUC. No spill-related injuries were reported.

URS prepared a CSM for the Site and submitted it to the ACEHD on October 28, 2010. The ACEHD provides regulatory oversight for the Site under delegated authority from the San Francisco Bay Regional Water Quality Control Board (RWQCB). During the preparation of the CSM, URS identified several data gaps and recommended that the data gaps be filled before resuming soil vapor extraction (SVE) remediation activities as requested by the ACEHD.

Groundwater concentrations of gasoline compounds are gradually decreasing in all the site's groundwater monitoring wells based on the ongoing semi-annual groundwater sample collection and analytical program conducted by URS. In MW-8, which is located at the bottom of the hillside where the release occurred, dissolved-phase gasoline compound concentrations rose in August 2011 and decreased in the March 2012.

**REGULATORY REQUIREMENTS and ISSUES**

The California Environmental Protection Agency's Water Quality Control Board's environmental screening levels (ESLs) for total petroleum hydrocarbons (TPH) and benzene in groundwater that is a potential drinking water source for shallow and deep soil sites are as follows.

- TPH – as gasoline 100 micrograms/Liter (µg/L).
- Benzene – 1.0 µg/L.

The most recent semi-annual groundwater monitoring data from the wells with gasoline compounds in the groundwater are provided below.

Monitoring Well Number	TPH-g Concentrations as of 1 <sup>st</sup> Quarter 2012 in µg/L	Benzene Concentration as of 1 <sup>st</sup> Quarter of 2012 in µg/L
MW-1 at Valley Crest Nursery	880	<0.5
MW-8 at the hillside base	52,000	1,000
MW-9 at Valley Crest Nursery	2,500	<0.5

The State Water Resources Control Board adopted a new low threat closure policy on June 9, 2012. This policy is tentatively scheduled to be approved of by the California Office of Administrative Law on approximately August 1, 2012. This policy is based on a number of studies that demonstrate that natural attenuation of petroleum hydrocarbons in groundwater will occur over time and provides a number of scenarios that can be used for Site closure. CPL/URS believe that the Sunol Site meets the criteria for groundwater specific scenario 1 of this policy, with the following criteria.

- The contaminant plume that exceeds water quality objectives is less than 100 feet in length.
- There is no free product.
- The nearest existing water supply well or surface water body is greater than 250 feet from the defined plume boundary.

CPL/URS conclude that after completion of the scope of work of this workplan, and assuming that the data collected in the upcoming work is supportive, that the Sunol site is an appropriate site for application of the low-threat closure policy, and will request for Site closure.

### **SCOPE of WORK**

Under this workplan, URS will perform the following tasks, which are based on the results of the CSM.

- Update the Job Site Safety Plan (JSSP).
- Conduct the biological survey identified in the CSM as a data gap.
- Develop a geological transect of the shallow soils along Calaveras Road based on the soil boring data collected during the installation of the following groundwater monitoring wells: MW-5, MW-6, MW, 7 and MW-8. Only MW-8 is currently in service. The geological transect and drilling observations of the borings discussed below will be used to determine the new monitoring wells' screen intervals.
- Based on the results of the geological transect, additional soil investigation and groundwater well installation will be conducted along Calaveras Road. This will include up to four borings and new groundwater monitoring wells, based on field conditions.
- Conduct a well survey within 0.5 miles of the Site by reviewing the Department of Water Resources and Zone 7 files to supplement and update the CSM on the local drinking water well information.
- Develop an investigation report for the tasks in this workplan.
- Add the new wells to the semi-annual groundwater monitoring program.
- Dispose of investigation-derived waste water and soil.
- Fulfill GeoTracker and ACDEH investigation reporting requirements.
- Participate in meetings with CPL and ACDEH staff.

The workplan tasks are described in more detail below.

#### **Task 1–Job Site Safety Plan Update**

Before field activities begin, the existing JSSP and Job Safety Analyses (JSAs) will be reviewed and updated. A site-specific health-and-safety orientation will be conducted for all onsite personnel. The JSSP will include the following topics:

- Stop work authority.
- Hazard identification tool.
- Site health and safety personnel names and alternates responsible for site health and safety.

- Site hazards, as identified in the JSSP and JSAs, for example biological, chemicals of concern, traffic, slip, trip, and fall, and tool (cutting) hazards.
- Journey management plan, including road hazards along Calaveras Road.
- Personal protective equipment (PPE).
- Fire prevention.
- Heat stress symptoms and control measures that will be employed.
- Applicable CPL Health, Safety, and Environment (HES) Guidelines and URS Safety Management Standards (SMSs).
- Safe work practices, including those discussed in the JSSP, the JSAs, the CPL's HES Guidelines, and the URS SMSs.
- Personnel and equipment decontamination procedures.
- Air monitoring.
- Emergency procedures.
- Other applicable topics.
- At the end of the briefing, attendees will be informally quizzed to assess their understanding of the health and safety requirements.

In addition to the initial site-specific health-and-safety briefing, daily health-and-safety meetings will be conducted to address health-and-safety concerns. These meetings will be documented using the On-Site Health and Safety Tailgate Meeting Record Form included in the JSSP. The JSAs will also be reviewed daily during the safety tailgate meeting. CPL work permitting requirements will be conducted on site on the first day of field activities by CPL representatives.

### **Task 2–Biological Survey**

One data gap identified during the preparation of the CSM was that an update to the initial December 2005 biological survey was needed. Although no significant Site changes have occurred since the initial survey, URS recommended that another survey be conducted to confirm that no new ecological receptors (e.g., burrowing animals) are present at the Site. Results of the biological survey will be included in the soil and groundwater investigation report. The biological survey will be conducted during a monthly groundwater gauging or semi-annual groundwater-monitoring event, so that one person is not working alone on the isolated site.

### **Task 3– Develop Geological Transect for Area on the east side of Calaveras Road**

URS will develop a geological transect of the subsurface soil conditions on the east side of Calaveras Road based on the boring log information from the following closed wells: MW-5, MW-6, and MW-7 and the currently used well MW-8 as requested by the ACDEH staff. This transect will be used along with field observations during the drilling of the additional

groundwater monitoring wells described below in Task 4, to establish the screening levels for the proposed new groundwater monitoring wells along Calaveras Road.

#### **Task 4 - Soil Investigation and Well Installation**

A data gap identified during the preparation of the CSM was that current analytical results for Site soils were needed. Furthermore, the GORE™ module passive soil gas survey conducted in 2009 provided a snapshot of the hillside soil source and provided evidence that groundwater impacts were likely compounded by surface water infiltration through the hillside soils.

CPL/URS propose to address this data gap by obtaining soil data by advancing soil borings below the hillside release area, at the base of the hillside. This will enable a more comprehensive evaluation of the hillside soil contaminant migration since the initial release. URS believes the hillside release area contaminant migration to be very slow. Data from the soil investigation and subsequent groundwater-monitoring well installation proposed below will improve understanding of the migration pathways and potential impacts on the north and south of MW-8 along the base of the hillside in the vicinity of the Calaveras fault.

An encroachment permit will be obtained from County of Alameda Public Works to work in the shoulder along Calaveras Road and to close one lane of Calaveras Road, before the start of the proposed soil investigation/well installation. Soil boring and monitoring well installation permits will be obtained from Alameda County Flood Control and Water Conservation District (Zone 7) before the investigation starts.

URS will notify Underground Service Alert 48 hours before initiating field activities. In addition, URS will hire a private utility locator to clear all proposed boring locations for the presence of underground utilities.

To minimize potential fire hazards, URS will thoroughly wet the work area with water before any field work is conducted (e.g., soil boring). At the beginning of the work day and as needed thereafter, the water will be sprayed from a water buffalo equipped with a hose and nozzle. This procedure is based on a site inspection with the drilling contractor on January 13, 2012, which revealed that the area is extremely dry due to the low amounts of rainfall received this winter. URS has confirmed that the water can be obtained from the Valley Crest Nursery, located across Calaveras Road.

The soil investigation includes advancing up to four soil borings along Calaveras Road to bedrock, which is approximately 25 feet below ground surface (bgs), and converting the soil borings to 4-inch-diameter groundwater monitoring wells, as described in the following text. The first two soil borings will be advanced and the wells installed along Calaveras Road, one 25 feet



north and one 25 feet south of the existing well MW-8. These soil boring locations were discussed on the site tour conducted on June 13, 2012 with CPL/URS/ACDEH staff. The soil borings will be advanced to bedrock (approximately 25 feet bgs) using a tracked hollow stem auger drill rig. A URS field geologist will continuously log soil borings per the Unified Soil Classification System (USCS). Soil samples will be collected continuously from 5 feet bgs to 25 feet bgs (or bedrock) and monitored with a PID.

Soil samples will be collected in clean acrylic tubes from the sampler or in jars provided by the analytical laboratory. Soil samples that are collected for analysis will be typically collected at 5-foot intervals, starting at 5 to 5.5 feet bgs. If high PID readings are found along the continuous cores, samples from those depths will be substituted for the next planned sampling interval.

The acrylic soil tubes for the soil samples will be cut to length; the ends will be covered with Teflon sheets and capped. Sample containers will be labeled with project-specific unique labels, placed on ice, and shipped to the analytical laboratory under URS chain of custody. Samples will be analyzed for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260B.

The first two borings located 25 feet to the south and north of the existing MW-8 will be converted into groundwater monitoring wells. Groundwater samples from the first two wells will be sent to the analytical laboratory for a 24-hour rush turnaround for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260B to provide additional information for the determination of whether the additional two borings/wells are needed.

The final decision as to the number of well installations will be made based on the rush analytical data. If the rush analytical results for both new wells show that the groundwater gasoline concentrations are below the ESLs for deep groundwater that is a potential source, no additional borings will be advanced. If both of the first wells have groundwater gasoline concentration above the ESLs for deep groundwater that is a potential drinking water source, a second set of two borings/wells will be drilled, one 50 feet north and one 50 feet south of MW-8. If one boring/well has groundwater gasoline concentration above the ESLs and the other boring/well is below the ESL, one additional boring will be advanced and a well will be installed 25 feet beyond the contaminated well, in line with MW-8 and the newly installed contaminated well. For example, if the boring/well that is 25 feet north of well MW-8 has contaminated groundwater, an additional boring will be advanced 25 feet north of that boring/well, and a well will be installed at the location of the new boring. A figure showing the locations of the proposed borings/wells is attached. If additional wells are installed above the two initial wells, they will be sampled and analyzed for the same analytes on a standard turn-around basis.

Four-inch-diameter wells will be installed as part of this program to provide greater flexibility for the future, (i.e., so that the wells may be used for extraction or injection, if needed). During the boring advancement, URS will use photo-ionization detection (PID) to evaluate the soil borings for the presence of gasoline compounds and to evaluate the need to advance the second two borings.

URS believes it likely that the screened interval of the new wells will closely resemble the water-bearing zone monitored by nearby well MW-8, which is at a depth of 14.5 feet to 24.5 feet bgs. The wells will be installed with a sand pack and sealed with a bentonite cement mix and neat cement. The wells will be developed by the drilling contractor and will be equipped with locking tops and traffic-rated boxes. URS will survey the wells for future depth to groundwater measurements.

URS will subcontract with a traffic safety firm to conduct the traffic control while working along Calaveras Road.

Each soil boring location will be cleared to a depth of 5 feet bgs, using a hand auger to ensure that subsurface utilities are not present. This task's field work is anticipated to take up to 4 days. Well development will take an additional 2 days, assuming that four wells are installed.

Soil cuttings, decontamination water, and monitoring well development water will be drummed, sampled, and analyzed for offsite disposal in accordance with applicable regulations.

URS will submit a written report of findings from the soil and groundwater investigation from the well drilling activities to the ACDEH via the ACDEH file transfer website and to GeoTracker.

#### **Task 5 – Drinking Water Well Survey**

URS will supplement the drinking water well survey reported in the CSM by reviewing the Department of Water Resources files in Sacramento and the Zone 7 files for drinking water wells within 0.5 miles of the Sunol Site. The results of the survey will be reported as part of the investigation report described below.

### **Task 6 - Reporting**

At the conclusion of the work described herein, a summary report will be generated evaluating the overall success of the program and incorporating recommendations, as needed. Data tables submitted for the semiannual groundwater reporting will also include the results from the work conducted under this SOW. The report will provide a detailed description of the field activities and an analytical data review by a URS staff person trained in data Quality Assurance/Quality control (QA/QC). The tabulated data will include QA/QC qualifiers for the intended data use. The report and associated attachments will be peer reviewed by senior URS representatives, and then the report will be submitted to the ACDEH via the ACDEH file transfer website and to the Geotracker website; analytical data sheets will be provided electronically in the final report only.

### **Task 7 – Investigation Derived Waste Disposal and Coordination**

All investigation-derived waste will be stored on-site in 55-gallon drums. URS will coordinate with a certified waste disposal contractor to pick up and transport liquid and soil waste generated during investigation activities to a Chevron-approved waste-disposal facility.

### **SCHEDULE**

Once the ACEHD approves this workplan, URS will submit a budget estimate to the CPL to implement the approved workplan. URS will begin field activities within 2 to 3 weeks of the budget approval, based on our subcontractors' availability. The work detailed in this SOW is anticipated to start in approximately late August-September 2012.



NORTH

0 50 100

SCALE IN FEET

CURRENT STREAM SAMPLE LOCATION

VERY SMALL STREAM

SW-CREEK  
(Former Surface Water Sampling Location)

UPPER DIRT ROAD

LOWER DIRT ROAD

PIPELINE

CALAVERAS ROAD

PROPERTY LINE/FENCE

HILL SLOPE

RELEASE LOCATION

HILL SLOPE

**LEGEND:**



SURFACE WATER SAMPLE LOCATIONS



MONITORING WELL



ABANDONED MONITORING WELLS



SVE WELL



PROPOSED NEW BORINGS/GROUNDWATER MONITORING WELLS LOCATIONS



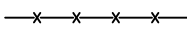
PROPOSED NEW INJECTION WELL LOCATION



SHELF



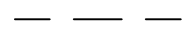
STAIRS



FENCE



PIPELINE



VERY SMALL STREAM



PROPERTY LINE/FENCE



HILL SLOPE 80-90% GRADE

MW-11

MW-9

MW-4

MW-3

MW-1

MW-2

MW-7

MW-8

MW-5

MW-6

SVE-1D

SVE-2S

SVE-8

SVE-3S

SVE-4D

SVE-5

SVE-7

SVE-6

SVE-9

MW-10

Legend box containing symbols and descriptions for various site features.

Project information box including URS logo, Chevron Pipeline Company name, project number, and figure title.

Jun 26, 2012 - 1:41pm X:\x\_env\waste\Chevron Pipeline Company\Sunol Spill - Current\Site Figures\CADD\FIGURE 1-062612.dwg