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WORK PLAN

PHASE I SOIL AND GROUND-WATER INVESTIGATION CALMAR FACILITY CITY OF INDUSTRY, CALIFORNIA

December 27, 1991
LF 2455.04

Prepared for:

California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

LEVINE·FRICKE

LEVINE·FRICKE

December 27, 1991 LF 2455.04

Mr. Phillip Chandler
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Subject: Proposed Work Plan to Conduct Phase I Soil and Ground-Water Investigations at the Calmar Facility, 333 Turnbull Canyon Road, City of Industry, California

Dear Phil:

Enclosed is Levine•Fricke's proposed Work Plan to conduct a Soil and Ground-water Investigation at the Calmar, Inc. (Calmar) facility located at 333 Turnbull Canyon Road, City of Industry, California ("the Site"; Figure 1). Based on previous investigations conducted by BCL Associates (BCL) and Camp, Dresser & McKee (CDM), the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) has requested further investigation to clarify possible environmental concerns at the Site. Calmar has retained Levine•Fricke to conduct this further investigation.

Previous investigations at the Site have shown that ground water beneath the Site has been affected by chlorinated volatile organic compounds (VOCs). The objective of this investigation is to further assess soil and ground-water conditions on- and off-Site. The investigation will consist of the collection and analysis of soil and ground-water samples in on- and off-site areas that will assist in meeting this objective.

If you have any questions or comments about this proposed Work Plan, please call Eileen Wintemute, Principal Engineer, or me

at (714) 955-1390, or send your comments to us by facsimile at (714) 955-0683.

Sincerely,

David E. Field, R.G.
Senior Hydrogeologist

cc: Aldie Johnson, Calmar, Inc.
Bruce Howard, Allen, Matkins, Leck, Gamble & Mallory

December 27, 1991 LF 2455.04

PROPOSED WORK PLAN TO CONDUCT A PHASE I SOIL AND GROUND-WATER INVESTIGATION AT THE CALMAR FACILITY CITY OF INDUSTRY, CALIFORNIA

INTRODUCTION

At the request of Calmar Incorporated (Calmar), Levine•Fricke is proposing a soil and ground-water investigation at the Calmar facility located at 333 South Turnbull Canyon Road in the City of Industry, Los Angeles County, California ("the Site"; Figure 1). Based on previous investigations conducted by BCL Associates (BCL) and Camp, Dresser & McKee (CDM), the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) has requested further investigation to clarify possible environmental concerns at the Site.

Previous investigations at the Site have shown that ground water beneath the Site has been affected by chlorinated volatile organic compounds (VOCs). VOCs have also been detected at relatively low concentrations (less than or equal to 1 part per million [ppm]) in shallow (less than 10 feet below ground surface [bgs]) soils at the Site. The objective of this investigation is to assess whether activities at the Site may have contributed to this impact on ground water, or if the VOCs detected in the ground water may be attributed to off-site sources. The investigation will consist of the collection and analysis of soil and ground-water samples in on- and off-site areas that will assist in meeting this objective. In addition, we propose to conduct further regulatory review of other facilities in the immediate site vicinity in an attempt to identify other potential sources of the VOCs.

PREVIOUS INVESTIGATIONS

Based on Calmar's response to the RWQCB's questionnaire, Calmar was required to conduct an environmental investigation at the Site. Calmar retained BCL to conduct an environmental assessment and audit of the Site in 1988. The results of BCL's investigation, reported in October 1988, indicated relatively minor concentrations (less than 1 ppm) of VOCs in shallow soils and concentrations exceeding pertinent VOC

regulatory levels in the ground water. The major analytes detected in soil and ground-water samples were trichloroethene (TCE) and tetrachloroethene (PCE). Other analytes detected included 1,1-dichloroethane (DCA), 1,1-dichloroethylene (DCE), and 1,1,1-trichloroethylene (TCA).

CDM conducted a soil-gas survey at the Site in 1991 (reported May 1991). Relatively minor concentrations of the abovementioned analytes were detected in soil gases beneath most of the areas of the Site which were surveyed. Areas of anomalous (two to three orders of magnitude above site background) soil-gas results were found, including near the southwest corner of the building and along the southwestern fenceline near monitoring well MW-2.

CDM and Levine•Fricke conducted ground-water monitoring in 1991. The results of this monitoring were similar to those found during the BCL 1988 ground-water sampling. The CDM monitoring results were summarized in reports dated May and July 1991, and the Levine•Fricke results were summarized in a report dated November 1991.

SCOPE OF WORK

The Scope of Work for the Work Plan includes preparation of a site-specific Health and Safety Plan, collection of soil samples from four soil borings, installation of four ground-water monitoring wells and the deepening of one existing well, chemical analysis of soil and ground-water samples, evaluation of the data collected, report preparation, and project management.

The following specific tasks are proposed to implement the Scope of Work:

Task 1: Preparation of a Site-Specific Health and Safety Plan

Task 2: Soil Sampling

Task 3: Monitoring Well Installation and Deepening of Existing Monitoring Well MW-3

Task 4: Ground-Water Sampling

Task 5: Laboratory Analyses

Task 6: Data Evaluation and Report Preparation

Task 7: Project Management

Detailed descriptions of each of these tasks follow.

Task 1: Preparation of a Site-Specific Health and Safety Plan

In accordance with federal Occupational Safety and Health Administration (OSHA) regulations, a site-specific Health and Safety Plan (HSP) will be prepared prior to initiating field investigations.

The HSP will document the potential hazards to worker health and safety on the Site and will specify the appropriate means to mitigate or control these potential hazards. The HSP will address the potential for exposure to hazardous substances as well as outline the general safety procedures which will be required for the safe operation of mechanical equipment used during the investigations.

Task 2: Soil Sampling

A total of four soil borings will be drilled to collect soil samples. The proposed locations of the borings are shown in Figure 2. All soil borings will be drilled to the first ground water, which is anticipated to be approximately 40 feet bgs. The borings will be drilled and soil samples collected in accordance with the protocols outlined in Appendix A.

One soil boring (LFSB-1) will be drilled adjacent to the clarifier located inside the building at the Site. The purpose of this boring is to assess whether possible leakage from the clarifier may have impacted soils. A second boring (LFSB-2) will be drilled inside the building along the path of the discharge pipe from the clarifier. This boring will be located in the vicinity of the slightly elevated VOC soil-gas concentrations detected during the CDM investigation and is intended to assess the possible leakage from this discharge pipe.

A third soil boring (LFSB-3) will be drilled along the southwestern fenceline near existing monitoring well MW-2. Slightly elevated concentrations of VOCs were found in soil vapors and in the soils at this location during the previous investigations.

A fourth soil boring (LFSB-4) will be located near the southwestern corner of the building. Elevated VOC soil vapor concentrations were detected at this location during the CDM investigation. The purpose of this soil boring is to assess soil conditions at this soil gas anomaly and to verify the concentrations and distribution of VOCs previously detected in soil at this location.

Task 3: Monitoring Well Installation and Deepening of Existing Monitoring Well MW-3

Four shallow ground-water monitoring wells will be installed on- and off site to further evaluate ground-water conditions hydraulically upgradient from the Site. The new wells will be installed to an anticipated depth of 50 feet bgs. The proposed monitoring well locations are shown in Figure 2.

Because ground-water levels in the site vicinity have dropped in recent years, existing monitoring well MW-3 (now dry) will be deepened so that it can be used as a ground-water monitoring point.

Assuming access can be obtained, three of the monitoring wells will be located at the adjacent facility southwest of the Site (Figure 2). If access cannot be obtained, one of these wells may be located on Turnbull Canyon Road. The fourth new well will be installed on site approximately 150 feet northeast of existing well P-3. It has been assumed that Calmar will attempt to acquire access to the neighboring property.

All well construction activities will be conducted in accordance with the protocols outlined in Appendix A. Soil samples for possible chemical analysis will be collected above the ground-water table (estimated to be approximately 40 feet bgs) while drilling the borings for these wells. The screened interval of the wells will extend 30 to 50 feet bgs. This screened interval was selected based upon historic and present ground-water levels. By installing a screen over this interval, it is anticipated that the wells will continue to be useful monitoring points in the event ground-water levels continue to fall or rise due to precipitation.

Task 4: Ground-Water Sampling

Two sets of ground-water samples will be collected from each of the newly installed monitoring wells and deepened well MW-3 (total of five wells). At least one week's time will elapse

between the collection of sample sets. One set of ground-water samples will also be collected from each of the existing wells. Sampling will be conducted in accordance with the protocols outlined in Appendix A.

For Quality Assurance/Quality Control (QA/QC) purposes, one duplicate ground-water sample and one field blank sample will be collected for each sample set. The duplicate and field blank samples will be submitted to the analytical laboratory for chemical analysis along with the other ground-water samples.

Water generated during well development and sampling will be stored on site in a Baker Tank. Calmar will be the owner of this water and will be responsible for disposal. Levine•Fricke will assist Calmar in identifying and implementing disposal options.

Task 5: Laboratory Analyses

Terra Tech Labs of Santa Ana, California, will be the analytical laboratory used for this investigation. Terra Tech is certified by the state of California to conduct the analytical methods described below. Shipment of samples to the laboratories will be carried out in accordance with the protocols outlined in Appendix A.

Based upon the suite of chemicals previously detected at the Site, soil, ground-water, and QA/QC samples will be analyzed for VOCs using EPA Methods 8260 (soil) and 624 (water).

Four soil samples from each soil boring (16 soil samples) will be submitted for chemical analysis. Up to four soil samples from each well boring will be submitted for analysis if deemed necessary based on field observations. The samples selected for chemical analysis will be based on the field screening methods described in Appendix A. The criteria for selection of samples for analysis on the Site will be to attempt to indicate that VOCs previously found in shallow soils have not reached ground water, and off the Site (from the well borings) attempt to identify possible off-site sources of the VOCs.

A total of four soil samples from various borings and soil types will be analyzed for physical parameters including total organic carbon (TOC), porosity, bulk density, hydraulic conductivity, and grain size. These data will be useful for evaluating possible risks and/or remedial alternatives, if it

is deemed necessary. Analyzing for these physical parameters at this time will avoid the need to re-sample in the future should risk modeling be conducted.

Task 6: Data Evaluation and Report Preparation

Once the laboratory data are received, it will be evaluated in light of the project objective and existing data and findings from the regulatory review of other investigations in the Site vicinity. Interpretations of the subsurface condition and probable sources will then be made, along with conclusions and recommendations.

A report will be prepared that summarizes the data and presents our interpretations and assessments from the soil and ground-water investigation. The report will include detailed descriptions of the methodologies used to collect the data, our evaluation and interpretation of the data, and the rationale for all conclusions reached.

Task 7: Project Management

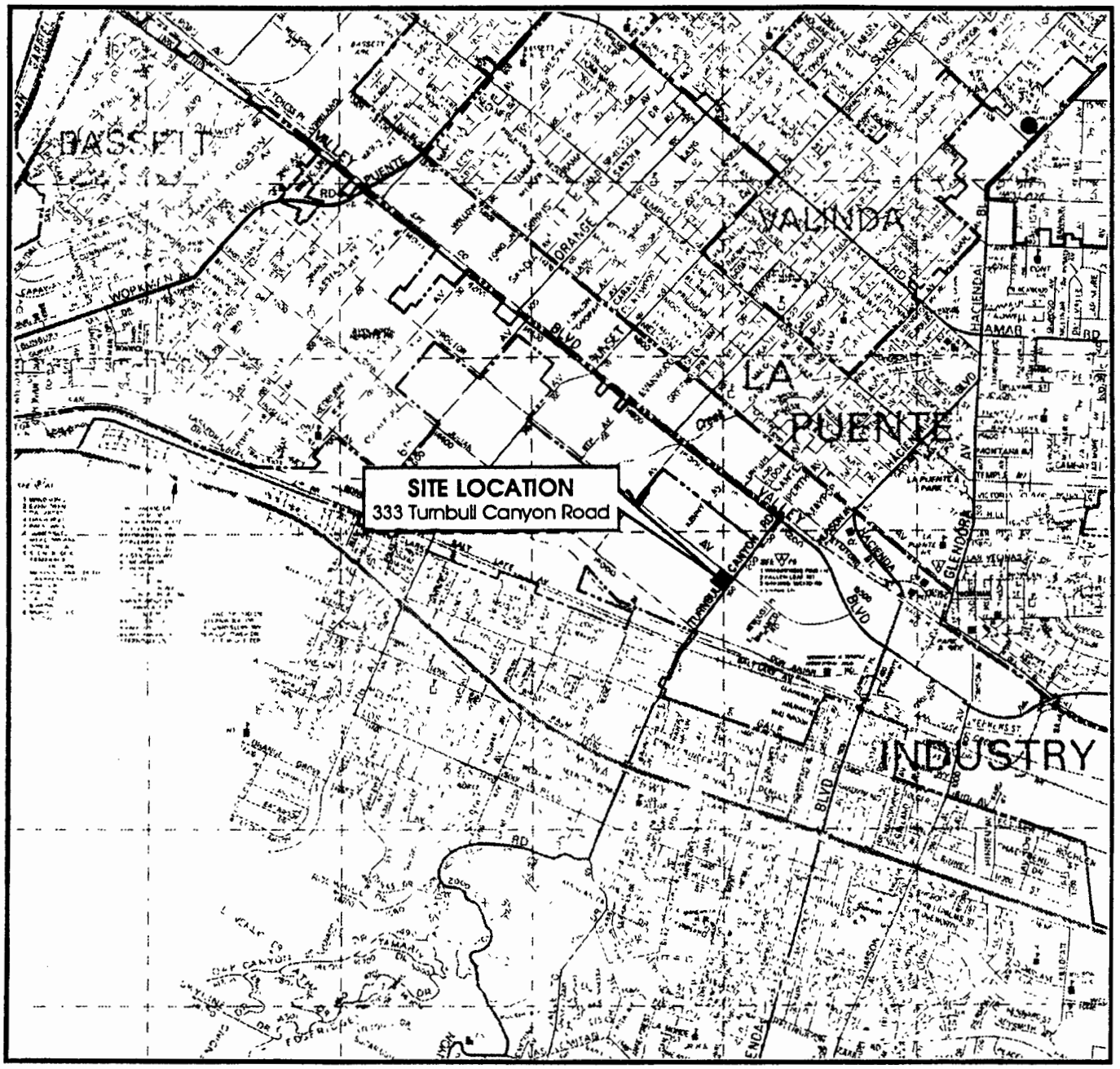
Project management includes activities conducted on Calmar's behalf which are not directly related to the individual tasks outlined above. These activities may include, but are not limited to, progress reporting to Calmar, in-house project meetings, regulatory agency interfacing, cost tracking, and scheduling.

David Field, R.G., Senior Hydrogeologist, will be the Project Manager. As such, he will be the primary contact for Calmar and will be responsible for all technical and administrative aspects of the project. William B. Henry, Senior Project Geologist, and James D. Levine, Principal Engineer and President, will provide project peer review. Eileen Wintemute, Principal Engineer, will be the Project Director and will provide overall technical and administrative review.

SCHEDULE

Based on the schedule established by Calmar and Levine•Fricke, field work for the investigation will commence approximately two weeks after the final approval of this Work Plan and/or access to off-site properties has been obtained. We anticipate field work to take approximately three weeks to complete. The laboratory data will be received approximately

two weeks following completion of field work activities. A report summarizing the investigation will be submitted to the RWQCB approximately six weeks after receipt of laboratory data.



MAP SOURCE: Thomas Bros. Guide, Los Angeles County, California, p. 48,B5, 1991.

N

SCALE

0 1/4 1/2 1 MILE

Figure 1 : SITE VICINITY

Project No. 2455.02
Calmar-City of Industry

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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

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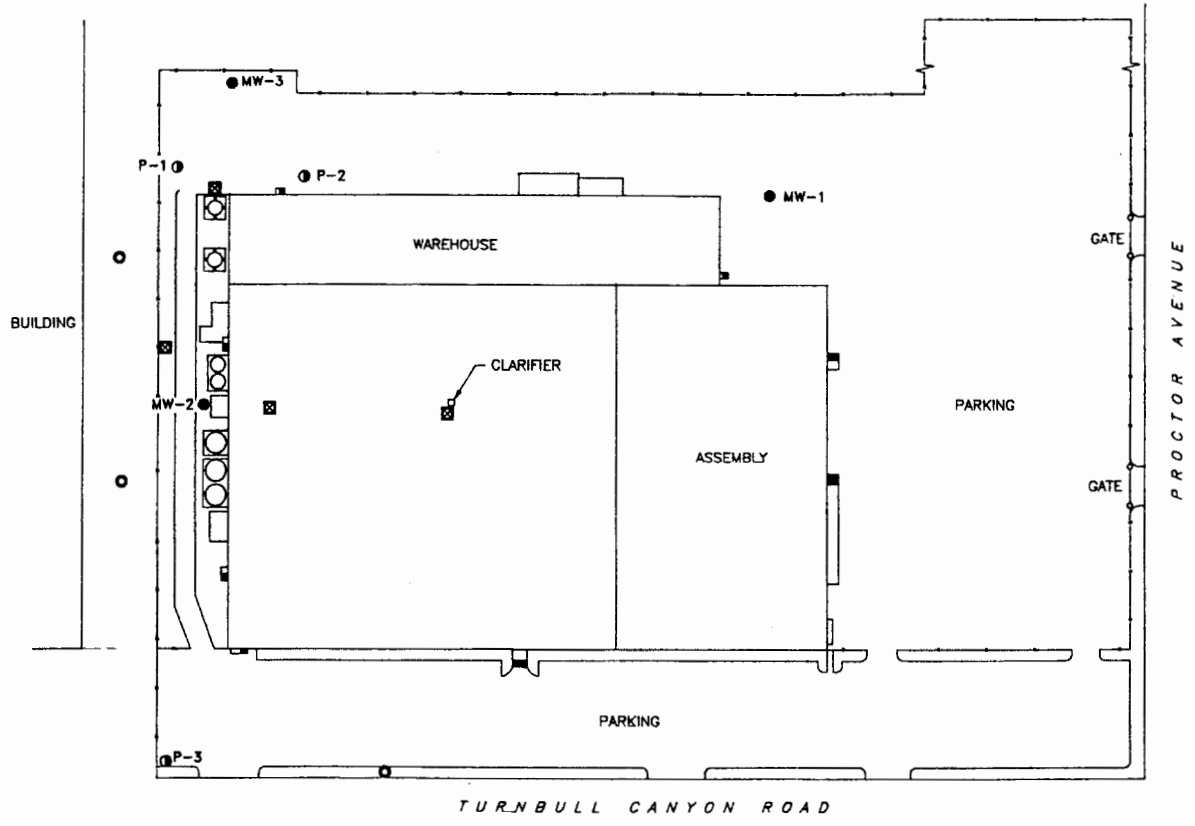

EXPLANATION

MW-3 ● Monitoring Well

P-3 ◑ Piezometer

⊠ Proposed Soil Boring

O Proposed Monitoring Well

SCALE

0 40 80 160 FEET

1 INCH = 80 FEET

2455-A01

Figure 2 :

APPROXIMATE LOCATION OF PROPOSED SOIL BORINGS AND GROUND-WATER MONITORING WELLS

Project No. 2455
Calmar-City of Industry

LEVINE•FRICKE

A P P E N D I X A

FIELD PROCEDURES

APPENDIX A

FIELD PROCEDURES

Drilling

A limited magnetic survey will be conducted prior to commencing work in an attempt to identify underground utilities in the vicinity of the proposed drilling locations. Necessary permits will also be acquired prior to drilling activities.

Borings will be advanced using the hollow-stem auger drilling method. Eight-inch and ten-inch diameter augers will be used for soil borings and ground-water monitoring wells, respectively. To reduce the potential for cross-contamination between borings, auger flights and all downhole drilling and sampling equipment will be steam cleaned prior to use at each drilling location.

Soils generated during drilling activities will be placed in Department of Transportation (DOT)-approved roll-off bins and stored on site pending evaluation of disposal options. The soils will be covered with plastic sheeting while being stored. The soil receptacles will be labeled to identify those drilling location(s) from which the soils were generated.

Soil Sampling

The soil samples will be collected using a split-spoon sampler lined with clean brass or stainless steel tubes. Soil sampling equipment will be scrubbed with a laboratory-grade detergent and double-rinsed with distilled water between sampling intervals.

Soils will be sampled at 5-foot intervals, or at other selected intervals specified by the site work plan, or at the discretion of the on-site Levine•Fricke geologist or engineer. Soil samples will be lithologically described and classified using the Unified Soil Classification System. A lithologic log will be prepared for each boring. Drilling and logging will be performed under the direction of a Levine•Fricke California Registered Geologist (RG).

Soil samples will be screened in the field for volatile organic compound (VOC) emissions using a flame ionization detector (FID) or a photo ionization detector (PID). The FID or PID will be calibrated prior to use. One soil sample from each sampling interval will be placed in a plastic bag, broken apart, and allowed to stand for a minimum of five minutes prior to screening. The concentration of the VOCs in the resultant "head space" gas will then be measured with the FID or PID and recorded.

In each boring, one brass or stainless steel tube from each sampling interval will be retained for possible chemical analysis. The retained tubes will be covered on both ends with Teflon sheeting and sealed using plastic caps. The samples will then be labeled and stored in a chilled cooler pending delivery to the analytical laboratory. Strict chain-of-custody protocol will be followed throughout all phases of the sample handling process.

The selection of soil samples to be submitted for chemical analysis will be based on field observations such as VOC emission measurements using the FID or PID and soil staining.

The soil sampling boreholes will be backfilled to grade with a bentonite grout slurry and capped with a minimum of six inches of concrete after soil sampling is completed.

Monitoring Well Construction

Ground-water monitoring wells will be constructed of 4-inch inside diameter, Schedule 40 PVC flush-threaded well casing. Screened intervals will be completed with 0.02-inch slotted casing. After installing the well casing in each well boring, the well annulus opposite and extending 2 feet above the perforated casing will be backfilled with sand. The sand pack will be sealed by the installation of a 2-foot-thick layer of bentonite. A bentonite well grout will be pumped from the top of the bentonite seal to ground surface using a tremie pipe for effective placement of the grout. The top of each well will be secured using an appropriate utility box and locking well cap.

Ground-Water Monitoring Well Development and Sampling

All equipment used to develop or sample the wells will be washed in a laboratory-grade detergent and/or steam-cleaned prior to use in each monitoring well.

Development of ground-water monitoring wells prior to sampling will be conducted to remove sediments from the well boring and enhance communication with the surrounding formation. Development will be conducted using one or a combination of the following techniques: over pumping, surging, swabbing, jetting and bailing. The ground-water temperature, specific conductivity, turbidity, and pH will be monitored during the development process.

Prior to ground-water sampling, approximately four to ten casing volumes will be purged from each well. Purging will be conducted using a submersible pump. The ground-water temperature, specific conductance, turbidity, and pH will be measured throughout the purging process. These ground-water parameters will be allowed to reach relative stabilization before ground-water samples are collected, for the purpose of collecting a representative ground-water sample.

Purged ground water will be collected in DOT-approved drums for storage on-site, or stored in an on-site PolyTank.

Ground-water samples will be collected from all wells using a Teflon disposable bailer suspended by a clean (new) length of rope. Ground-water samples will be decanted from the bailer into appropriate laboratory-supplied 40-milliliter vials using a bottom decanting pep-cock device. The containers will be sealed, labeled, and placed in a chilled cooler for delivery to the analytical laboratory. Strict chain-of-custody protocol will be followed throughout the sample handling process.

Measurement of Ground-Water Elevation

After the ground-water monitoring wells have been installed, the top of each well casing will be surveyed for vertical and horizontal control by a licensed surveyor. Elevation will be surveyed to the nearest 0.01 foot mean sea level (MSL). Horizontal control will be tied to a USGS or Los Angeles County bench mark.

An electronic water-level meter will be used to measure the depth to ground water to the nearest 0.01 foot in each well. Ground-water elevations will be calculated and used to construct ground-water elevation contour maps from which the direction of ground-water flow and gradient may be evaluated.