Brown and Caldwell

3480 Buskirk Avenue
Pleasant Hill, CA 94523-4342
P.O Box 8045
Walnut Creek, CA 94596-1220
(510) 937-9010
FAX (510) 937-9026

September 29, 1994

Ms. Madhulla Logan
Hazardous Materials Specialist
Alameda County Department of Environmental Health
1311 Harbor Bay Parkway, Second Floor
Alameda, California 94502

11-1564-07/1

Subject: Submittal of Technical Report for E-Z Serve Management Company
Site #100877, 525 West A Street, Hayward, California

Dear Ms. Logan:

Brown and Caldwell has been retained by the E-Z Serve Management Company (E-Z Serve) to prepare a Technical Report for E-Z Serve's Site #100877 located in Hayward at 525 West A Street (Site). This Technical Report directly responds to the California Regional Water Quality Control Board - San Francisco Bay Region's (RWQCB) letter "Legal Request for Submittal of a Technical Report Resulting from the Alameda County Department of Environmental Health's Enforcement Panel Meeting of June 21, 1994", dated August 26, 1994, included as Attachment A. The work proposed below will be performed in accordance with the Tri-Regional Board Staff Recommendations for the Preliminary Evaluation and Investigation of Underground Storage Tank Sites, dated August 10, 1990.

This document proposes additional field investigations to further delineate the vertical and horizontal limits of hydrocarbon-affected soil and groundwater in the vicinity of the Site. The results of this investigation will be used to assess the best available technology for remediation of the Site. Following evaluation of the remediation alternatives, interim remediation measures will be implemented.

Background

In 1986, a fuel system leak was discovered in one of the four underground storage tanks (UST) located on the Site. Subsequent Site assessments revealed that soil and groundwater had been impacted. In 1990, the USTs, dispenser islands, and associated piping were excavated and removed from the property. To date, eight monitoring wells have been installed on the Site and three wells off the Site. All wells have been completed to a depth of approximately 30 feet below ground surface (bgs), except well MW-1A which is 17.8 feet deep.

The Site is currently not in use. The only structures on the Site are the canopy over the former dispenser islands and some lights. The Site is surrounded by a chain link fence.

Soils beneath the site consist predominantly of silts and clays. Sand has been observed in some borings at an approximate depth of 10 to 15 feet bgs and again at approximately 25 to 30 feet bgs. The maximum depth explored to date is 30 feet bgs. Groundwater is at approximately 17.8 feet bgs (June 1993). The groundwater gradient was toward the west at 0.0014 in June 1993. The depth to groundwater has ranged from approximately 16 feet to 22 feet bgs.

The highest reported concentration of petroleum hydrocarbons in soil samples taken from the Site is 19 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg) in the boring for well MW-4. The highest concentration of benzene reported in soil samples (at 2.7 ppm) is also from the boring for well MW-4. All other on-site borings contained reportable concentrations of TPHg and benzene. Concentrations of petroleum hydrocarbons in the June 1993 on-site groundwater samples ranged from 5,700 parts per billion (ppb) TPHg to 60,000 ppb TPHg. Concentrations of petroleum hydrocarbons in the June 1993 samples from off-site wells MW-7, MW-9, and MW-10 were similar. Petroleum hydrocarbons were reported in the sample from well MW-8 (upgradient) at a concentration of 350 ppb TPHg.

Quarterly groundwater sampling was conducted on September 20, 1994.

Proposed Scope of Work

The scope of work proposed below directly responds to the RWQCBs August 26, 1994 letter.

1) Brown and Caldwell proposes to conduct an off-site in situ groundwater investigation using the Hydropunch[tm] or BAT sampling systems. Samples will be collected at the approximate locations identified on Figure 1. Based on the results of the in-situ groundwater investigation, a maximum of four groundwater monitoring wells will be installed at appropriate off-site locations. Field procedures for conducting this work are included in Attachment B.

2) Based on the results of the in-situ groundwater investigation, and the September and December 1994, quarterly groundwater monitoring events, Brown and Caldwell will develop a Corrective Action Plan for the remediation of the petroleum hydrocarbon affected soil and groundwater in the vicinity of the Site. The Corrective Action Plan is discussed further below.

2 nearby access point if necessary

3) Brown and Caldwell will investigate the locations of on-site and nearby off-site underground utilities and assess the potential for local utilities to act as conduits for petroleum hydrocarbon vapor migration. The potential for utility conduits to act as migration pathways for vapor will be assessed by obtaining organic vapor measurements from at least two nearby access points for each utility. If necessary, a soil gas vapor survey will be used in proximity to the site to measure organic vapors in the backfill material surrounding the underground utilities. Results of the underground utility survey will be included in the Corrective Action Plan.

4) Brown and Caldwell will conduct a records search to identify the location of nearby domestic, irrigation, and industrial wells. County and State databases will be reviewed and wells determined to be within one-half mile of the site will be located on a regional site map. Results of the well survey will be included in the Corrective Action Plan.

5) Brown and Caldwell will prepare a risk screening assessment to assess the potential impact of the petroleum hydrocarbon constituents to off-site receptors. The results of the risk screening assessment will be presented to the local and state agencies in a report. Brown and Caldwell will convene with the representative agencies to discuss the results of the screening assessment and determine whether a full risk assessment is necessary.

off-site receptors

6) The remediation of on-site soils, including soils used as backfill material will be specifically addressed during the design of the remediation system. Additionally, petroleum hydrocarbon concentrations remaining in the on-site soil will be identified prior to closure of the site.

7) Upon completion of the off-site investigation, Brown and Caldwell will prepare a Corrective Action Plan, in accordance with the Underground Storage Tank Clean-up Fund Guidelines, which will delineate the size of the petroleum hydrocarbon plume in soil and groundwater, assess the potential for remediation, discuss the applicable remedial options available, and recommend the most applicable option(s) (best available technology) for remediation of the site.

8) Brown and Caldwell proposes to complete the work outlined above on the following schedule:

Task	Completion date
Off-site in situ groundwater investigation	October 28, 1994
Domestic, Agricultural, Industrial Well Survey	December 30, 1994
Underground utility pathway investigation	October 28, 1994
Initial risk screening	November 15, 1994
Corrective Action Plan	December 30, 1994

If you have any questions or require additional information, please call me at your earliest convenience at (510) 210-2278.

Sincerely,

BROWN AND CALDWELL

Thomas K. Wheeler

for Todd Miller
Project Manager

TM:

E:\LRE\1564\1564WP1.WP5
HPLaserIIID

ATTACHMENT A

AUGUST 26, 1994 REGIONAL WATER QUALITY CONTROL BOARD LETTER

STATE OF CALIFORNIA

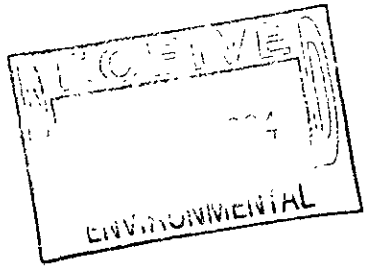
CALIFORNIA REGIONAL WATER QUALITY CON
SAN FRANCISCO BAY REGION
'01 WEBSTER STREET, SUITE 500
KLAND, CA 94612
(510) 286-1255

Post-it™ Fax Note 7671	Date 8/02/94	# of pages ▶ 3
To Tom Wheeler	From B. Cobb	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

Aug. 26, 1994

E-Z Serve Mgmt. Co.
(Contact: Brian Cobb)
P.O. Box 922021
Houston, Texas 77292-2021

L.A. & Margaret Thompsen
P.O. Box 16290
Houston Texas 77222



RE: **Legal Request for Submittal of a Technical Report Resulting from the Alameda County Department of Environmental Health's Enforcement Panel Meeting of June 21, 1994.**

Dear Sirs:

It has been brought to my attention by Regional Board staff that a condition of soil and ground water pollution exists on your property from an underground storage tank release. The Alameda County Department of Environmental Health (ACHD) staff have requested technical reports from you to fulfill your obligations per California Code of Regulations, Title 23, Waters, Chapter 16, Underground Storage Tank Regulations, Article 11, Corrective Action Requirements. It is my understanding that ACHD staff were unsuccessful in eliciting your co-operation in resolving these issues through normal correspondence.

A Pre-Enforcement Review Panel was held at the ACHD Offices on June 21, 1994, attended by Kevin Graves, of my staff. Information submitted at that meeting, and follow up submittals received pursuant to that meeting, have established that you are Responsible Parties pursuant to Section 13304 of the California Water Code. Therefore, pursuant to the Regional Board's authority under Section 13267(b) of the California Water Code, you are hereby required to submit a technical report to address soil and ground water pollution by October 4, 1994. The information provided at the hearing, and in follow up submittals, is inconclusive as to the legal responsibilities of Powerine Oil Company and Autotronic Systems, Inc. as Responsible Parties as of this date. The inclusion of Powerine Oil Company and Autotronic Systems, Inc. as Responsible Parties is therefore deferred. This action is without prejudice and should be taken neither as a finding of nonresponsibility or responsibility.

The technical report should specifically address the following numbered items:

1) A proposal to delineate the vertical and lateral extent and severity of soil and ground water contamination resulting from the site. Delineation of the plume must incorporate the installation of additional permanent monitoring wells, although hydropunches/temporary wells may be used as a screening tool;

2) A proposal to contain **all** of the ground water contaminant plume, both on and off site, from further migration;

3) A proposal to conduct a survey on streets adjacent to the site to determine whether utility lines are acting as a conduit for plume migration;

4) A proposal to conduct a survey for any nearby domestic/ irrigation or industrial wells potentially impacted by the site or influencing the migration of the site's contaminant plume. Converse Environmental's June 30, 1988 report identified at least one domestic/irrigation well fairly close to the site (the exact location was not given);

5) A proposal to conduct a Risk Assessment to determine whether releases from the site are creating a potential human-health threat to neighboring sites. For example, the adjacent property to the north is occupied by residents of a trailer park. This office is concerned with potential vapor inhalation at the site, since the site is not paved.

6) There is information to indicate that contaminated excavated soil from the site was placed back into the excavation pits in 1990. The remediation of this soil must be addressed by the air sparging/vapor extraction remediation system, proposed and approved in March 1994. As stipulated in the County's March 25, 1994 letter, close attention shall be given to studying this remediation system, from the onset of its operation, to assure that the air sparging activity will not influence further plume migration off site. Quarterly status reports addressing the effectiveness of this remediation system shall be submitted to this office;

7) Following the delineation of soil and ground water contamination off site, a proposal to remediate the off-site contamination will be required. Additionally, if the proposed air sparging/ vapor extraction system does not effectively remediate soil and ground water contamination on site, another more effective remediation proposal will be required; and

8) A timetable for the above required work shall be included in the technical report.

All proposed work should adhere to the requirements articulated in The Tri-Regional Board Staff Recommendations for the Preliminary Evaluation and Investigation of Underground Storage Tank Sites - 8/10/90 and Article 11 of Title 23, Waters, California Code of Regulations.

I am hereby transmitting this request for a technical report to ACHD for service and continued case handling. You should be aware that failure on your part to submit the requested technical report, or a submittal received after the date specified in this request may result in fines up to $1,000 per day of delinquency. Your response to this technical report request should be sent to Juliet Shin, at ACHD. Please inform Juliet Shin at least three working days in advance of all field activities.

Please be advised that this is a formal request for technical reports pursuant to California Water Code Section 13267(b). Any extensions of the stated deadlines, or modifications of the required tasks, must be confirmed in writing by either this agency or the Alameda County Department of Environmental Health, Hazardous Materials Division.

If you have any questions regarding the contents of this letter, please contact Juliet Shin, of ACHD, at (510) 567-6763.

Sincerely,

Steven R. Ritchie
Executive Officer

cc: Gil Jensen, Alameda County District Attorney's Office, Consumer & Environmental Protection Division.
Juliet Shin, Hazardous Materials Specialist, ACHD.
Jon K. Wactor, Luce, Forward, Hamilton & Scripps 100 Bush St., 20th Flr., S.F., CA 94104
Gretchen R. Stroud, Cooley Godward, Five Palo Alto Square, 4th Flr., Palo Alto, CA 94306-2155
Jonathan Redding, Fitzgerald, Abbott & Beardsley, 1221 Broadway, 21st Flr., Oakland, CA 94612-1837
Coralie Kupfer, Rodi, Pollock, Pettker, Galbraith & Phillips 801 South Grand Ave., Ste 400, Los Angeles, CA 90017

ATTACHMENT B

FIELD PROCEDURES

IN SITU GROUNDWATER INVESTIGATION

The in situ groundwater investigation is conducted by a licensed drilling subcontractor, using a truck-mounted drilling rig or cone penetrometer testing rig. The drilling subcontractor, using 8-inch diameter hollow-stem augers, drills to approximately 3 feet above the depth of sampling then drives the in situ sampling device to the selected depth using an impact hammer. The cone penetrometer testing rig would push the sampling device to the appropriate depth using the hydraulic jack mounted on the rig. The sampling device is then opened to the water-bearing unit. Groundwater is allowed to fill the sampling device until the groundwater approaches equilibrium.

A groundwater sample is then collected and transferred to the appropriate laboratory supplied sampling bottles. Samples are immediately placed in a cooler contained crushed or cubed ice and stored until reaching the laboratory.

Sampling equipment is extracted from the borehole and the borehole is immediately backfilled from bottom to top with neat cement or bentonite chips.

To prevent cross contamination during the investigation, all downhole equipment is decontaminated prior to reuse. Decontamination procedures may include: 1) using a steam cleaner/pressure washer; or 2) rinsing with a non-phosphate detergent (i.e. alconox) and rinsing twice with tap water.

BOREHOLE DRILLING

Boreholes are drilled by a licensed drilling subcontractor, using a truck-mounted drilling rig equipped with nominal 6-inch-diameter hollow-stem augers. Boreholes are drilled by continuous coring to a predetermined depth below the ground surface, or to groundwater, whichever is encountered first. Borehole depths are based on site conditions, including but not limited to conditions such as depth to water, topography, and depth to bedrock. Borehole depths also may be governed by obtaining two readings on a photoionization detector, or equivalent instrument, which are less than 50 parts per million above the background reading, in which case the borehole is terminated.

At the end of the drilling and sampling operations, boreholes are immediately backfilled from bottom to top with a bentonite/cement slurry pumped through a tremie pipe.

To prevent cross contamination during drilling, all equipment is steam cleaned prior to and between use at each borehole.

Soil sampling and monitoring procedures during borehole drilling are described in a separate appendix.

SOIL SAMPLING DURING DRILLING

Soil samples will be collected during the drilling operations for three reasons: (1) for field identification of the borehole lithology, (2) for qualitative field screening for the presence of contaminants, and (3) for chemical analysis.

For purposes of collecting soil samples for lithologic identification and for field screening, each borehole will be continuously cored. The soil cores will be examined in the field and classified according the Unified Soil Classification system. In addition to evaluating the borehole lithology, the soil cores will be screened in the field with a photoionization detector (PID) or similar instrument, and the relative permeability of the soil will be qualitatively estimated. The lithology, PID reading, and estimated permeability of each sample will be recorded on the borehole log next to the depth interval from which the sample was obtained.

Soil samples for laboratory chemical analysis will be collected at 5-foot intervals, at a minimum, to the total depth of the boring. The samples will be obtained using a 2-inch-diameter by 18-inch-long split-spoon sampler lined with three 6-inch-long thin-walled brass tubes. The sampler will be driven its entire length into undisturbed soil, either hydraulically or by a 140-pound drop hammer.

When the sampler is extracted from the borehole, the brass tubes will be removed and the ends of the tubes will immediately be screened for the presence of hydrocarbons with a PID or equivalent instrument. One sample per 5-foot sampling interval will be selected for possible chemical analysis on the basis of the highest PID reading. The ends of the selected brass tube will be (1) covered with aluminum foil and plastic caps, which will then be taped with plastic tape to provide an air-tight seal; (2) labeled and placed into zip-lock plastic bags, and (3) stored in a cooled ice chest for delivery to the analytical laboratory. These procedures minimize the potential for cross contamination and volatilization of volatile organic compounds prior to chemical analysis.

To prevent cross contamination during sampling, all equipment will be washed with laboratory-grade detergent, rinsed with tap water, and rinsed with deionized water before and between collecting each sample.

GROUNDWATER MONITORING WELLS

Monitoring Well Drilling. Groundwater monitoring wells will be drilled by the method described in the section entitled Borehole Drilling, with the exception that they will be drilled to a depth of 15 or 20 feet below the water table or piezometric surface, depending upon known conditions and upon unanticipated conditions encountered during drilling. The borehole will then be completed as a monitoring well by the method described below.

Monitoring Well Completion. Groundwater monitoring wells will be completed with PVC screen and casing. On-site monitoring wells will be completed with 4-inch-diameter PVC screen and blank casing, while off-site wells will be completed with 2-inch-diameter PVC. A PVC cap will be installed at the bottom of each well.

The well screen typically will be 0.020-inch slotted flush-threaded PVC, extending from a depth of approximately 15 or 20 feet below the water table or piezometric surface to 5 to 10 feet above. The well design is intended to accommodate seasonal water-level fluctuations within the slotted interval. The well design may be modified in the field during the drilling operation, depending upon conditions encountered during drilling. In no case does the monitoring well penetrate clay zones greater than 5 feet thick, which might allow downward migration of contaminants into lower water-bearing zones. Blank casing extends from the top of the perforated section to the ground surface (or above, in the case of above-ground completion).

The annular space surrounding the well screen and casing will be packed with No. 1/20 (or equivalent) sand, from the bottom of the screen to approximately 2 feet above the top of the screen. The well will then be bailed or surged to settle the filter pack, and more sand will be added as necessary to return the level to a height of 2 feet above the top of the screen. A 2- to 3-foot-thick seal of bentonite pellets will be placed above the sand pack. The well will then be grouted with bentonite-cement slurry or neat cement, from the top of the bentonite seal to the surface. Groundwater monitoring wells commonly will be completed below grade and protected with a water-tight locking cover. A typical well construction is illustrated on Figure _____-1.

The top of casing (TOC) will be surveyed by a licensed surveyor, and all depths to water will be measured in relation to the surveyed mark on the TOC.

Monitoring Well Development. Groundwater monitoring wells will be developed by surging, bailing, or pumping until clean, sediment-free water is produced from the well. The length of development time varies, depending upon field conditions. Development water is contained in 55-gallon barrels, which will be stored temporarily on site until disposal.

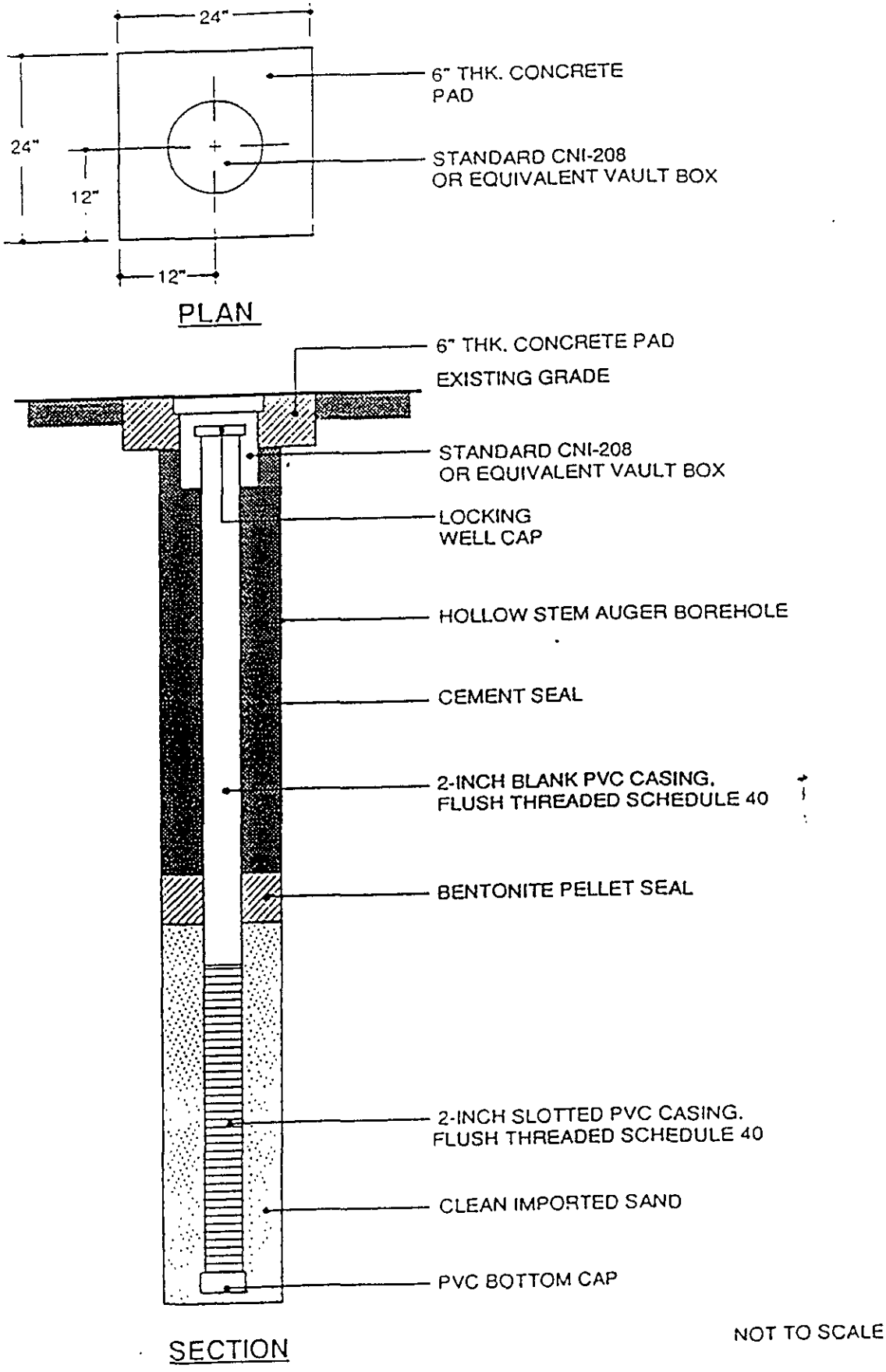


Figure A-1. Typical Monitoring Well Construction

GROUNDWATER SAMPLING

Prior to collecting a sample of groundwater from a well, the well will be purged by removing three or more well volumes of water, using either a pump or a bailer. A well volume is defined as the amount of groundwater in the well casing and the sand pack in the annular space surrounding the casing, assuming a sand porosity of 35 percent. The pH and electrical conductivity of the water will be measured periodically during the purging.

The groundwater sample will be obtained with a teflon bailer equipped with a bottom-emptying valve. To release water from the bailer with minimal aeration, the protrusion on the bottom-emptying device actuates the bottom check valve and regulates the flow into the sample bottle.

The sample bottle will be obtained precleaned from the analytical laboratory, and it will be specific with respect to size and material to the type of analysis to be performed. The bottle will be carefully filled to the very top, in order to create a meniscus, and sealed with a teflon-lined cap (septa). These precautions aid in eliminating air from the sample. The sample will be visually inspected to ensure that no air bubbles remain within.

Depending on the type of chemical analysis required, samples will be preserved with acid and/or they are cooled to 4 degrees Celsius. Samples then will be labeled, stored, and transported in cooled ice chests to the analytical laboratory within the permissible holding time.

SAMPLING FROM STOCKPILES AND EXCAVATIONS

Soil samples from stockpiles are composites, collected at a rate of one composite sample for every 100 cubic yards of soil. The composite sample consists of about three, and not more than four, individual soil samples of approximately equal volume. The individual soil samples will be collected using a decontaminated stainless steel trowel or an impact sampler. The soils will be packed into a 2-inch by 6-inch brass tube, and the ends of the tube will be covered with aluminum foil and plastic end caps. The end caps will be taped in place with duct or plastic electrical tape. The individual soil samples comprising the composite soil sample will be homogenized at the analytical laboratory.

Soil samples from excavations will be collected using a decontaminated stainless steel trowel or an impact sampler. They will be packed individually into 2-inch by 6-inch brass tubes. The ends of the tubes will be covered with aluminum foil and plastic end caps, and the end caps will be taped in place with duct or plastic electrical tape. For deep excavations that are not safe to enter, the soil samples will be collected from the bucket of a backhoe or other excavating machinery, which has scraped soil from the excavation wall or floor, as directed by the on-site geologist.

Soil samples from the product-piping trenches of underground storage tanks will be collected as described above, at a rate of one sample for every 20 feet of pipeline.

Water samples from excavations will be collected by lowering into the cavity a decontaminated glass jar or bottle at the end of a rope or rod. The water in the glass container will be slowly poured into 40-milliliter vials to a height that forms a meniscus at the rim of the vial. The vials will be capped with lids having teflon septa, and they will be inspected to ensure that no air bubbles remain within.

All samples will be labeled and handled as described in the Brown and Caldwell operating procedure entitled Sample Handling.

SAMPLE HANDLING

Samples are handled during collection and shipment in such a way as to ensure maximum sample quality and integrity. All samples will be collected by experienced Brown and Caldwell field personnel. The samples will be collected in containers that are appropriate to the sample material and the required analyses. All containers will have been precleaned by the analytical laboratory or the container manufacturer. All sampling equipment will be decontaminated prior to and between use by washing in laboratory-grade detergent, rinsing with tap water, and then rinsing with deionized water.

Each sample container will have a label affixed in the field that identifies the date and time of sample collection, name of sampler, job number, and a unique sample number. This information will be recorded on the boring log or in the field records. Samples are stored and shipped to the laboratory in a cooled chest. Only analytical laboratories certified by the California Department of Health Services will be used.

A chain-of-custody form will be used to record possession of samples from the time of collection to the time of arrival at the laboratory. The sample-control officer at the laboratory will verify sample integrity and confirm that they were collected in the proper containers, preserved correctly, and that there is an adequate volume for analysis. If these conditions are met, the samples will be assigned a unique log number for identification throughout analysis and reporting. The log number will be recorded on the chain-of-custody form and in the log book maintained at the analytical laboratory. The sample description, date received, client's name, and other relevant information will also be recorded.

QUALITY ASSURANCE PLAN

Proper collection and handling are essential to ensure the quality of samples. Proper documentation of sample collection and handling procedures is essential to verify the integrity of the data.

All samples will be collected by experienced Brown and Caldwell field personnel, and placed in containers appropriate to the required analysis. Brass tubes used to collect soil samples will be cleaned by washing in laboratory-grade detergent, rinsing with tap water, and rinsing again with deionized water. All glass containers will have been precleaned by the manufacturer or at the analytical laboratory according to guidelines established by the U.S. Environmental Protection Agency.

Following collection and inspection of soil samples, the ends of the brass tubes will be covered with aluminum foil and plastic caps and sealed with plastic tape. Groundwater samples will be collected in sampling bottles that have caps with Teflon septa. After filling, the bottles will be visually inspected to ensure that no air bubbles remain within. All samples will be labeled and then placed in zip-lock plastic bags. Samples will be stored and transported in a closed ice chest and protected from meltwater. Samples will be stored for analysis no longer than the maximum allowable holding time.

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis will have a label affixed to identify the project number, sampler, date of collection, sample location, the monitoring-well number (if appropriate), and a number unique to that sample. That information will be recorded on the borehole log or in the field records, along with a description of the sample, field measurements, sampling methodology, names of sampling personnel, and other pertinent field observations.

A standard Brown and Caldwell chain-of-custody form will be used to document possession of samples from time of collection to arrival at the laboratory. All samples will be submitted to an analytical laboratory that has been certified by the California Department of Health Services. The sample-control officer at the laboratory will verify sample integrity and confirm that samples were collected in the proper container, preserved correctly, and that there is an adequate volume for analysis. If these conditions are met, the sample will be assigned a unique log number by the laboratory for identification throughout analysis and reporting. The log number will be recorded on the chain-of-custody form and in the legally required log book maintained at the laboratory. The sample description, date received, client's name, and other relevant information will also be recorded.