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CAMBRIA

April 30, 2003

Scott Seery
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Alameda County
MAY 02 2003
Environmental Health

Re: **Subsurface Investigation Work Plan**
Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842
Cambria Project #245-0497-013

Dear Mr. Seery:

Cambria Environmental Technology, Inc. (Cambria) has prepared this *Subsurface Investigation Work Plan* on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) in response to a February 27, 2003 Alameda County Health Care Services Agency (ACHCSA) letter. This letter references a February 13, 2003 meeting with representatives from Shell, Cambria, the ACHCSA and Zone 7 Water Agency (Zone 7) in attendance. Detailed below are the site summary, our response to the February 27, 2003 letter, and our proposed scope of work.

SITE SUMMARY

Site Description: This active Shell-branded service station is located on the southwest corner of the intersection at Hopyard Road and Las Positas Boulevard in Pleasanton, California. Primarily, the site is surrounded by commercial and residential property (Figures 1 and 2). The service station layout includes a station building, two dispenser islands, a waste oil underground storage tank (UST), and a gasoline UST complex. The site is located near several active municipal wells. The locations of these wells in relation to the site are shown on Figure 3.

Groundwater Depth and Flow Direction: Measured depth to groundwater in site monitoring wells has ranged from approximately 11.52 to 19.59 feet below grade (fbg), which corresponds to a range of elevations of 318.14 to 308.65 feet above mean sea level (msl), since March of 1991. The groundwater flow direction, as calculated by the on- and off-site groundwater monitoring wells, has ranged from south-southeast to southeast.

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Site Lithology: The site subsurface consists of a relatively low permeability zone. This zone is underlain by a relatively higher permeability zone, underlain by another low permeability zone. The uppermost low permeability zone consists of interbedded layers of sandy clay, clayey sand, silty clay and clay from the surface to approximately 43 to 53 fbg. The higher permeability zone consists of silt and sand interbeds to approximately 75 fbg. The lowermost low permeability zone consists of silts and clays to approximately the total explored depth of 120 fbg. A sandy layer was encountered at approximately 117 fbg in one boring installed downgradient of the site.

1986 Subsurface Investigation: On January 22 and 23, 1986 Emcon Associates of San Jose, California advanced five soil borings (S-A through S-E) to document hydrocarbon levels for soil disposal related to future UST replacement activities. Soil samples from boring S-A, located adjacent to the former waste oil tank at the site, were analyzed for waste oil only, and no waste oil was detected. Borings S-B through S-E were advanced in the vicinity of the former USTs. Soil samples collected from each boring contained volatile fuel hydrocarbons (calculated as gasoline and including benzene, toluene, xylenes and ethyl benzene) and benzene with the highest detected concentrations of 5,100 parts per million (ppm) and 14 ppm, respectively, detected in boring S-C between 7 to 8.5 fbg. Table 1 summarizes historical soil samples collected at the site.

1987 Subsurface Investigation: On October 28, 1987, Pacific Environmental Group, Inc. (PEG) of Santa Clara, California installed two tank backfill wells (ST-1 and ST-2) and two groundwater monitoring wells (S-1 and S-2) at the site. Soil samples were collected between 13 and 14.5 fbg in borings ST-1 and ST-2, and between 14 to 15.5, 19 to 20.5 and 33.5 to 35 fbg in wells S-1 and S-2. The highest gasoline concentration of 57 ppm was detected in soil samples collected from monitoring well S-1 at 14 to 15.5 fbg (Table 1). The highest benzene concentration of 6.7 ppm was detected in soil samples collected from well S-2 at 14 to 15.5 fbg (Table 1).

1988 Subsurface Investigation: On January 26, 1998, PEG installed wells S-3 through S-5 at the site. Soil samples were collected between 19 to 20.5 fbg and analyzed for gasoline, benzene, toluene and xylenes. None of the analytes were detected in soil samples collected from monitoring well S-3. The highest concentrations of 4,700 ppm gasoline and 50 ppm benzene were detected in well S-5 (Table 1).

1988 Tank Removal: On August 3, 1988, three gasoline USTs were removed from the site. Kaprealian Engineering, Inc. of Benicia, California collected 10 soil samples beneath the tanks at various depths. All soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene and xylenes (BTEX). The highest TPHg and benzene concentrations detected were 2,100 ppm TPHg in sample A2 and 13 ppm benzene in sample A1 (Table 1). None of the analytes were detected in sample A1X. Well S-1 was properly destroyed on August 6, 1988 due to the construction.

A new tank pit was excavated and three tanks were subsequently installed. Soil samples (A5, A-10, A-15) were collected at 5, 10 and 15 fbg in one location during the tank pit excavation. The highest detected TPHg and benzene in these soil samples was 4.4 ppm at 15 fbg and 1.3 ppm at 5 fbg, respectively (Table 1).

1988 Subsurface Investigation: Two groundwater monitoring wells (S-6 and S-7) were installed on October 4, 1988 by Woodward-Clyde Consultants (Woodward-Clyde) of Oakland, California. Soil samples collected from the borings were analyzed for gasoline and BTEX. None of the analytes were detected in boring S-7. Gasoline and benzene were detected in soil samples collected from well S-6 only with the highest respective concentrations of 9 ppm (14 to 15.5 fbg) and 0.05 ppm (9 to 10.5 fbg and 19 to 20.5 fbg) (Table 1).

1989 Subsurface Investigation: Woodward-Clyde installed two groundwater monitoring wells (S-8 and S-9) on February 24, 1989. Soil samples collected from the borings were analyzed for gasoline and BTEX. None of the analytes was detected in either of the soil borings (Table 1).

1989 Subsurface Investigation: In August and September 1990, Geostrategies Inc. (Geostrategies) of Hayward, California installed monitoring well S-10 and extraction wells SR-1 through SR-3 at the site. No TPHg or BTEX was detected in soil samples collected from well S-10. The highest detected TPHg and benzene concentrations in soil samples collected from the extraction wells SR-1 through SR-3 were 67 ppm (SR-2 at 15 fbg) and 5.4 ppm (SR-1 at 20 fbg), respectively (Table 1).

1990 Aquifer Test: In February 1990, Geostrategies conducted a constant-rate pump test on well SR-3 at the site, and slug tests on wells SR-3, S-2, S-3, S-5 and S-7 through S-10. Calculated hydraulic conductivity values ranged from 1.0 to 10.5 feet per day based on SR-3 pump test results, and from 3.2 to 58.2 feet per day based on slug test results.

1997 Risk Assessment: In January 1997, Cambria submitted a risk evaluation for the site noting that the site met criteria for a low-risk groundwater site based on historical benzene concentrations at that time.

Groundwater Extraction (GWE): As initiated by Shell, beginning the week of May 14, 2001, Advanced Cleanup Technologies Inc. of Benicia, California conducted three weekly 8-hour mobile GWE events using site monitoring wells S-2 and S-4 and tank backfill well T-2. Three additional GWE events were performed in August 2001. At Shell's direction, Onyx Industrial Service initiated twice-monthly events extracting from tank backfill well T-2 beginning in April 2002. Groundwater was also extracted from well S-4 between June 2002 and September 2002. Extraction from well S-4 was discontinued due to low extraction volumes. Tank backfill well T-4 was added to the twice-monthly extraction events in October 2002.

Mobile GWE vacuum operations consist of lowering dedicated stingers into monitoring wells and extracting fluids using a vacuum truck. Mass removal estimates are submitted with quarterly groundwater monitoring reports for the site. Through the end of February 2003, an estimated 0.96 pounds of TPHg and 9.31 pounds of MTBE have been removed through GWE at the site. Mobile GWE was discontinued in March 2003 due to the installation of a fixed GWE system at the site (see below).

2002 Sensitive Receptor Survey: At Shell's request, in April 2002, Cambria completed and submitted a sensitive receptor survey for the site to the ACHCSA. Based on a review of Department of Water Resources (DWR) records, six wells were identified within a ½-mile radius of the site, including one active municipal well, one destroyed municipal well, one abandoned irrigation well, one destroyed irrigation well and two wells of unknown use (as shown on Figure 1). The nearest identified surface water body is the Arroyo Mocho Canal located approximately 350 feet south of the site. The utility survey, which was also presented, was later determined to be inaccurate. An updated utility survey was presented in 2003. Based on utility survey results, utilities in the site vicinity are not expected to affect groundwater flow or to provide preferential groundwater migration pathways.

2002 Dispenser and Piping Upgrades: In July 2002, Shell voluntarily initiated upgrades at the service station. Paradiso Mechanical, Inc. (Paradiso) of San Leandro upgraded the fuel system equipment at the site. Paradiso replaced and upgraded the fuel dispensers and product, vapor and vent lines. Additionally, Paradiso added dispenser pans under the new dispensers and replaced the UST fuel fill port sumps and all associated piping in the tank pit area above the USTs. Cambria collected three piping samples (P-1 through P-3) and four dispenser samples (D-1 through D-4). Hydrocarbons were detected in four of the seven soil samples collected beneath the dispensers and piping. Maximum concentrations of 260 ppm TPHg and 0.079 ppm benzene were both detected in sample P-1 at 3.5 fbg (Table 1). MTBE was not detected in any of the soil samples collected. Soil sampling results were reported in Cambria's *Dispenser and Piping Upgrade Soil Sampling Report* dated January 21, 2003.

2002 Investigation: Between July and November 2002, Cambria installed two additional downgradient monitoring wells (S-11 and S-12) and two cone penetrometer testing (CPT) borings (CPT-1 and CPT-2) at the site. Soil samples collected during the installation of wells S-11 and S-12 did not contain any TPHg, BTEX or MTBE. The CPT borings were continuously logged for soil lithology and completed to approximately 120 fbg. Grab groundwater samples collected in boring CPT-1 at 66 fbg and 79 fbg did not contain any TPHg, benzene or MTBE. Grab groundwater samples collected in boring CPT-2 at approximately 26 fbg, 47 fbg, 60 fbg, 68 fbg and 88 fbg did not contain any TPHg, BTEX or MTBE. Investigation results were reported in Cambria's March 28, 2003 *Subsurface Investigation Report.*

Interim Remediation Work Plan: At Shell's request, on August 28, 2002, Cambria submitted an *Interim Remediation Work Plan* proposing the installation of a fixed GWE system at the site. This work plan was approved in a September 9, 2002 ACHCSA letter. The system is expected to start operating during the second quarter of 2003.

Quarterly Monitoring: Groundwater monitoring has been conducted at the site since 1987. The highest TPHg, benzene and MTBE concentrations detected in groundwater monitoring samples collected at the site are 16,000 parts per billion (ppb), 1,600 ppb, and 100,000 ppb, respectively. Monitoring results for the fourth quarter 2002 indicate that the current highest TPHg, benzene and MTBE concentrations in site monitoring and tank backfill wells are 2,100, 7.8 and 5,100 ppb, respectively. The extent of benzene in groundwater is defined in the downgradient direction of the site by monitoring wells S-6, S-7, S-8, S-9, S-10, S-11 and S-12. The southeastern downgradient extent of MTBE in groundwater is defined by monitoring wells S-10, S-11 and S-12.

AGENCY RESPONSE

The February 27, 2003 ACHCSA letter makes several requests, including re-submittal and correction of the April 9, 2002 preferential pathway study, preparation of a site conceptual model (SCM), additional contaminant plume definition, and preparation of a corrective action plan (CAP). Our response to each request is detailed below.

Preferential Pathway Study

Revised Utility Conduit Study: A revised map and conduit study was presented in Cambria's March 28, 2003 *Subsurface Investigation Report* with a professional interpretation as requested. The corrected utility locations are also shown on Figure 2 presented herein.

Abandoned Irrigation Well: Section 3.3.2.4 of the American Petroleum Institute's February 2000 Publication No. 4699 entitled *Strategies for Characterizing Subsurface Releases of Gasoline Containing MtBE*, indicates that abandoned well locations may be identified by historical aerial photograph review, by the use of geophysical tools, or by review of hydraulic heads in shallow aquifers which may identify areas of groundwater convergence. As noted in Cambria's April 9, 2003 *Agency Response and Extension Request*, Cambria has completed a historical aerial photograph review, and determined the most likely location for the abandoned irrigation well to be beneath the office building located at 3930 Hopyard Road. Site monitoring wells S-8 and S-9 are located between the site and the potential abandoned irrigation well. Cambria reviewed historical groundwater contour maps for the site dating back to

September 1989 to determine if a convergence pattern was noted near wells S-8 and S-9. The reviewed historical groundwater contour maps are included as Attachment A. No evidence of an obvious convergence pattern was noted.

Based on United States Geological Survey Fact Sheet 163-95 dated January 1995 and entitled *Magnetic Surveys for Located Abandoned Irrigation Wells*, magnetic surveys are useful in determining abandoned well locations by mapping magnetic disturbances or reflections caused by the steel-well casings of such wells. The DWR form for the referenced well, provided in Cambria's April 9, 2003 *Agency Response and Extension Request*, does not indicate casing type, but based on the installation date, a steel casing can be assumed. Due to the apparent location of the abandoned irrigation well near or within the building footprint where rebar, metal conduits and metal pipes are likely present in foundation and floor slabs, non-invasive methods such as magnetic surveys are unlikely to be effective in locating the abandoned irrigation well. Therefore, Cambria does not propose to investigate the existence of the abandoned irrigation well further.

SCM

As requested, Cambria has prepared an SCM for the site, presented in Appendix B and illustrated on Figure 4. As noted in the SCM, the potential receptors in the site vicinity include the Arroyo Mocho Canal located approximately 350 feet south of the site, and the active municipal well (Hop-6) located approximately 1,500 feet southeast of the site. According to an electronic mail correspondence from Colleen Winey of Zone 7, the elevation of the bottom of the Arroyo Mocho Canal is estimated to be 310 feet above msl. As noted above, measured depth to groundwater in site monitoring wells has ranged from approximately 11.52 to 19.59 fbg, which corresponds to a range of elevations of 318.14 to 308.65 feet above msl, since March 1991. Calculated groundwater elevations in well S-12, located adjacent to the Arroyo Mocho Canal, have ranged from 308.02 to 304.81 feet above msl since installation in September 2002. Based on this information, the Arroyo Mocho Canal does not typically encounter groundwater and is therefore a "losing" stream. Cambria is currently having the creek water and base elevations surveyed to determine if groundwater intercepts the canal seasonally.

conflict w/ SCM App. B

In addition, well S-12 is located downgradient of the site, is screened across the water table, is immediately adjacent to the Arroyo Mocho Canal and sampling has not detected any TPHg, BTEX or MTBE since installation in September 2002. Based on this data, impact to the Arroyo Mocho Canal is unlikely, and this receptor pathway appears not to be complete.

As 5/04, MTBE detected in S-12, as well as S-10 and S-11

Impact to municipal well Hop-6 is also unlikely based on the distance from the site to Hop-6 and the presence of approximately 50 vertical feet of low permeability soil between the potential shallow sources at the site and the first-encountered high permeability soils in the site subsurface. In addition, ongoing monitoring of well S-12 has not detected any TPHg, BTEX or MTBE since

installation in September 2002, and depth-discrete grab groundwater samples collected during the installation of boring CPT-2 did not detect any TPHg, benzene or MTBE. Both locations are downgradient between the site and well Hop-6. Therefore, information to date indicates that the furthest downgradient groundwater in the direction of Hop-6 has not been impacted and that the potential pathway for direct groundwater migration to Hop-6 is not complete.

Potential pathways for contaminant migration in groundwater in the site vicinity include subsurface utilities, the identified abandoned irrigation well, and higher permeability soils in the subsurface. As reported in Cambria's March 28, 2003 *Subsurface Investigation Report*, utilities in the site vicinity are shallower than the groundwater table and therefore unable to serve as preferential pathways for contaminant migration in groundwater. Therefore, Cambria recommends no further investigation of subsurface utilities.

The abandoned irrigation well could potentially serve as a preferential pathway depending upon well location and construction details, neither of which have been accurately determined to date, and would also depend upon the presence of a downward vertical groundwater gradient. As detailed below, to address this potential pathway, Cambria proposes to investigate the vertical extent of impacts to groundwater downgradient of the site in the direction of the best known location of the abandoned irrigation well, and to install at least one shallow and deep well cluster to evaluate potential vertical groundwater gradients.

In addition, silt lenses of higher permeability than the predominant clayey soils in the shallow subsurface of the site may provide preferential pathways for groundwater flow that are not currently targeted by monitoring wells. The proposed investigation, detailed below, addresses the logging, sampling and installation of wells within identified zones of higher permeability.

Contaminant Plume Definition

The February 27, 2003 ACHCSA letter requests several items in reference to contaminant plume definition at the site including: groundwater monitoring at multiple depths at and downgradient of the site; a three-dimensional assessment of lithology and soil and groundwater contamination; mass balance calculations for the source area; determinations of vertical groundwater gradients; and a proposal for monitoring at multiple discrete water-bearing zones. In order to accomplish these tasks, Cambria recommends a phased approach to investigation at the site. For the first phase, specific and consistent lithology should be determined to identify any preferential groundwater-bearing zones beneath the site, and discrete soil and groundwater samples should be collected to determine the vertical and lateral extent of contamination. The data collected will also be used to update the working SCM for the site. Due to the need for highly specific and consistent lithology data, Cambria recommends CPT boring installation for this phase of work.

The February 27, 2003 ACHCSA letter requested that mass-balance calculations are to be completed for the source area. Conceptually, a mass balance would consist of an equation to express the input and output of chemical mass across the boundary of a defined volume. In this case, the "source area" could be defined within the tank backfill volume and soils immediately beneath the dispensers and piping, or within another defined area outside the fueling equipment themselves. If surface spills were also one of the suspected sources of spills or leaks, then the entire paved area of the service station may be considered as the source area. As an equation, this could be expressed as:

Inputs (leaks or spills) = Outputs (groundwater transport, evaporation, etc.)
+ Decay (biological, chemical, etc.)
+ Accumulation/storage
(pore water storage, sorption to soil, etc.)

However, since specific leaks and/or spills have not been identified to be the source(s) of MTBE and other hydrocarbons detected in groundwater, and their quantity, locations, dates, rates of release, and duration are not and cannot be known, it will be impossible to quantify the total "inputs" side of the mass balance with accuracy. Likewise, on the "outputs" side of the equation, Cambria believes that it will be infeasible to establish a sufficient soil and groundwater-sampling network to accurately quantify current or historical rates and quantities of groundwater transport, biological and chemical decay, and storage of the chemicals of concern. Therefore, Cambria recommends not attempting to establish a quantitative mass balance for the source areas. In addition, Cambria believes that attempting to quantify a mass balance for the source area will not advance either the remediation and control of the known impacts to soil and groundwater or the investigation of the vertical and lateral extent of impacts to soil and groundwater.

The second phase of investigation will include monitoring well installation with screen intervals based on the information collected during CPT boring installation and appropriate for determining vertical groundwater gradients. Following monitoring well installation, a CAP will be prepared to determine clean-up objectives for the site and the most cost-efficient remedial techniques available to meet the identified clean-up objectives. The GWE system currently under construction at the site will serve as interim remediation pending CAP submittal.

Presented below is our proposed scope of work for the first tier of investigation at the site.

PROPOSED SCOPE OF WORK

The rose diagram presented on Figure 2 includes flow directions calculated between the second quarter 1997 through the fourth quarter 2002. Historical groundwater gradients dating back to

September 1989 (see Attachment A) were reviewed and determined to be consistent with those shown on the rose diagram. As shown by the rose diagram, groundwater flow at the site has fluctuated from southeast to south-southeast. Using the identified range of groundwater flow, Cambria identified the most likely zones of contaminant migration from each of the potential source areas at the site including the former USTs and dispenser islands, and the current USTs and dispenser islands (see Figure 2). Cambria proposes to install borings along an approximate centerline of the identified migration zone and along two transects perpendicular to the groundwater flow direction. Assuming the absence of subsurface and overhead obstructions, Cambria proposes installing 10 CPT boring clusters in the approximate locations shown on Figure 2.

Each proposed location will include one CPT boring installed for continuous and consistent lithologic logging and one adjacent CPT boring installed for soil and grab groundwater sample collection. Except for the two boring clusters located near well S-9, the initial CPT borings installed at each location will be installed to 40 fbg to stay within the lower permeability zone identified beneath the site and above the higher permeability soils encountered between 43 and 53 fbg during previous investigations. Depths for soil and grab groundwater samples will be determined based on the lithologies identified during continuous CPT logging in the field.

As discussed above, the SCM has identified deep groundwater pumped by the active municipal well as a potential receptor of concern, and the abandoned irrigation well as a potential transport pathway. However, previous investigation at CPT-2 and ongoing groundwater monitoring of well S-12 indicates that direct groundwater migration to the active municipal well is not occurring. To evaluate possible impacts to deeper groundwater and the potential for vertical chemical migration to deeper groundwater via the abandoned irrigation well, Cambria proposes to advance the two CPT borings to 75 fbg in the vicinity of well S-9, as noted on Figure 2. These borings will intercept the higher permeability zone identified between approximately 43 and 75 fbg (as identified in CPT-1 and CPT-2), and log and identify higher permeability deeper-zone sediments suitable for screening a deep-zone monitoring well. Following lithology logging by CPT, and depth-discrete soil and groundwater sampling to the total explored depth, proposed well screen intervals will be determined for a minimum of one deep and shallow well cluster, based on lithology, to evaluate possible vertical groundwater gradients in the vicinity of well S-9.

Our standard field procedures for CPT boring installation are included as Attachment C. Our scope of work for this investigation includes the following tasks:

Utility Location: Cambria will notify Underground Service Alert (USA) of our drilling activities. USA will have the utilities in the vicinity identified.

Site Health and Safety Plan: We will prepare a comprehensive site specific safety plan to protect site workers. The plan will be kept onsite during field activities and signed by each site worker

Access Agreement: Cambria will contact the property owner of 3730 Hopyard Road to obtain an updated access agreement for boring installation. To expedite the investigation, Cambria will begin access agreement negotiation prior to receiving final work plan approval.

Permits: We will obtain the necessary boring installation permits from the Alameda County Department of Public Works for the proposed borings, and the appropriate encroachment permits from the City of Pleasanton for the installation of borings in the City of Pleasanton right-of-way.

CPT Boring Installation: Assuming the absence of subsurface and overhead obstruction, 10 CPT boring clusters will be advanced in the approximate locations shown on Figure 2. Eight of the proposed boring clusters will be advanced to 40 fbg and the remaining two will be advanced to 75 fbg. Tip resistance, sleeve friction, pore water pressure and bulk soil resistivity will be logged continuously to the total depth of each boring. Based on the field CPT log, a second CPT boring will be installed adjacent to each initial boring to the same total depth to collect soil samples and discrete grab groundwater samples at appropriate depths as determined by the lithology data collected. Soil samples will be collected at a minimum at 5-foot intervals as well as at major lithologic changes identified during initial boring installation and will be field screened for hydrocarbons using a photo-ionization detector. **Grab groundwater samples will be collected at a minimum in each of the more permeable lenses identified.** Following installation, the borings will be backfilled with grout using a tremie pipe or equivalent means and capped to match the existing grade.

Laboratory Analyses: Soil and grab groundwater samples collected for analysis during CPT boring installation will be analyzed by a state-certified analytical laboratory for TPHg, BTEX, and MTBE using EPA Method 8260.

Interim Subsurface Investigation Report: The February 2003 ACHCSA letter specifies a deadline for the interim subsurface investigation report of 60 days after approval of this work plan. In order to allow for access agreement negotiation, driller availability, and field time to complete this aggressive plan, Cambria respectfully requests a due date of 45 days following the completion of the scheduled fieldwork. The interim report will contain, at a minimum:

- A summary of the site background and history;
- Descriptions of drilling and sampling activities;
- CPT logs and soil boring logs;
- Tabulated analytical results;
- A figure presenting the site boring and well locations;
- Updated cross-section diagrams for the site;

- An updated SCM for the site;
- Analytical reports and chain-of-custody forms;
- A discussion of hydrocarbon distribution in soil and groundwater;
- Conclusions and recommendations; and
- A proposal and schedule for further investigation at the site, including additional soil and groundwater investigation, if needed, and proposed groundwater monitoring well locations and screened intervals.

Following completion of the soil and water investigation, including installation and sampling of new monitoring wells, a soil and water investigation completion report will be submitted. Following submittal of the investigation completion report, Cambria will submit a CAP.

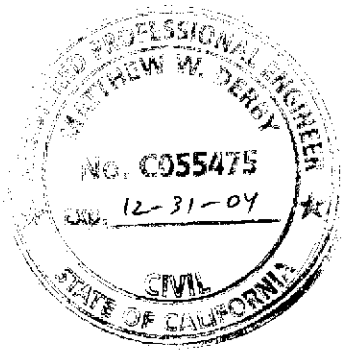
CLOSING

Please call Jacquelyn Jones at (510) 420-3316 if you have any questions or comments regarding this report.

Sincerely,
Cambria Environmental Technology, Inc.

Jacquelyn L. Jones
Project Geologist

Matthew W. Derby, P.E.
Senior Project Engineer



Figures:
1 - Vicinity/Area Well Survey Map
2 - Site Plan
3 - Municipal Well Location Map
4 - Site Conceptual Model

Table:
1 - Historical Soil Analytical Data

Attachments:
A - Historical Groundwater Contour Maps
B - Site Conceptual Model
C - Standard Field Procedures for Cone Penetrometer Testing

cc: Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank CA 91510-7869
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Danielle Stefani, Livermore-Pleasanton Fire Department, 3560 Nevada Street, Pleasanton, CA 94566
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Tri-Valley Management, 3730 Hopyard Road, Pleasanton CA 94588

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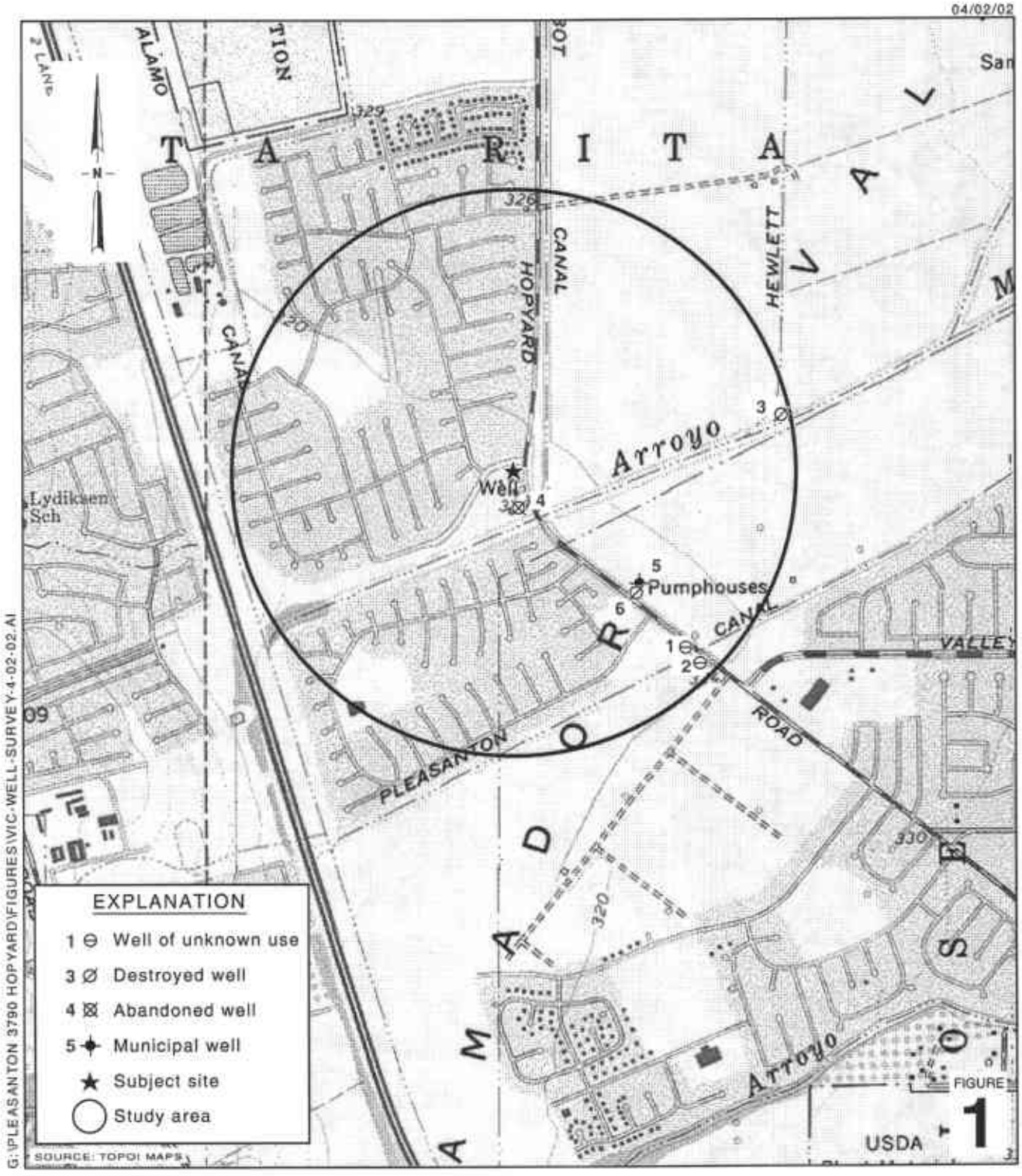

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Vicinity/Area Well Survey Map

1/2 Mile Radius

04/30/03

Site Plan

EXPLANATION

Proposed soil boring clusters to 40 fbg	Storm drain line (SD)
Proposed soil boring clusters to 75 fbg	Sanitary sewer line (SS)
S-2 Monitoring well	Water main (W)
SR-1 Groundwater recovery well	Gas line (G)
T-1 Tank backfill well	Electrical line (E)
S-1 Destroyed monitoring well location	Telephone (T)
ST-1 Destroyed tank backfill well (PEG,1987)	FH Fire hydrant
CPT-1 CPT boring location	PG&E PG&E vault
A1 Tank removal soil sample location (KEI, 1988)	fbg Feet below grade
S-A Soil boring location (Emcon, 1986)	Flow direction
D-1 Dispenser soil sampling location (Cambria, 7/26/02)	
P-1 Product piping soil sampling location (7/26/02)	

Note: Utility locations are approximate

Municipal Well
Located 1,500 ft. SE
of Shell site

Groundwater Flow Direction
(2Q97 to 3Q02)

Las Positas
Office Plaza

LAS POSITAS BOULEVARD

HOPYARD ROAD

ARROYO MOCHO CANAL

Downgradient
Flow Zone

7-Eleven
3760 Hopyard

Shell-branded
Service Station
3790 Hopyard

Business Center
3730 Hopyard

DMV
6280 Las Positas

invert elevation = 315'

Storm Drain culvert flows to creek

planter
walkway
planter

creek bridge

fence

bike path

SCALE 1:60
0 30 60 120
FEET

FIGURE
2

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Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

G:\PLEASANTON3790HOPYARD\FIGURES\SITEPLAN-3-03.AI

EXPLANATION

- Active municipal well
- Destroyed municipal well
- Inactive municipal well

N

0 250 500 1,000

Scale (ft)

G:\PLEASANTON\3790HOPYARD\FIGURES\AREA-MAP-2.DWG

Municipal Well Location Map

Shell-branded Service Station

3790 Hopyard Road
Pleasanton, California
Incident #98995842

FIGURE

3

CAMBRIA

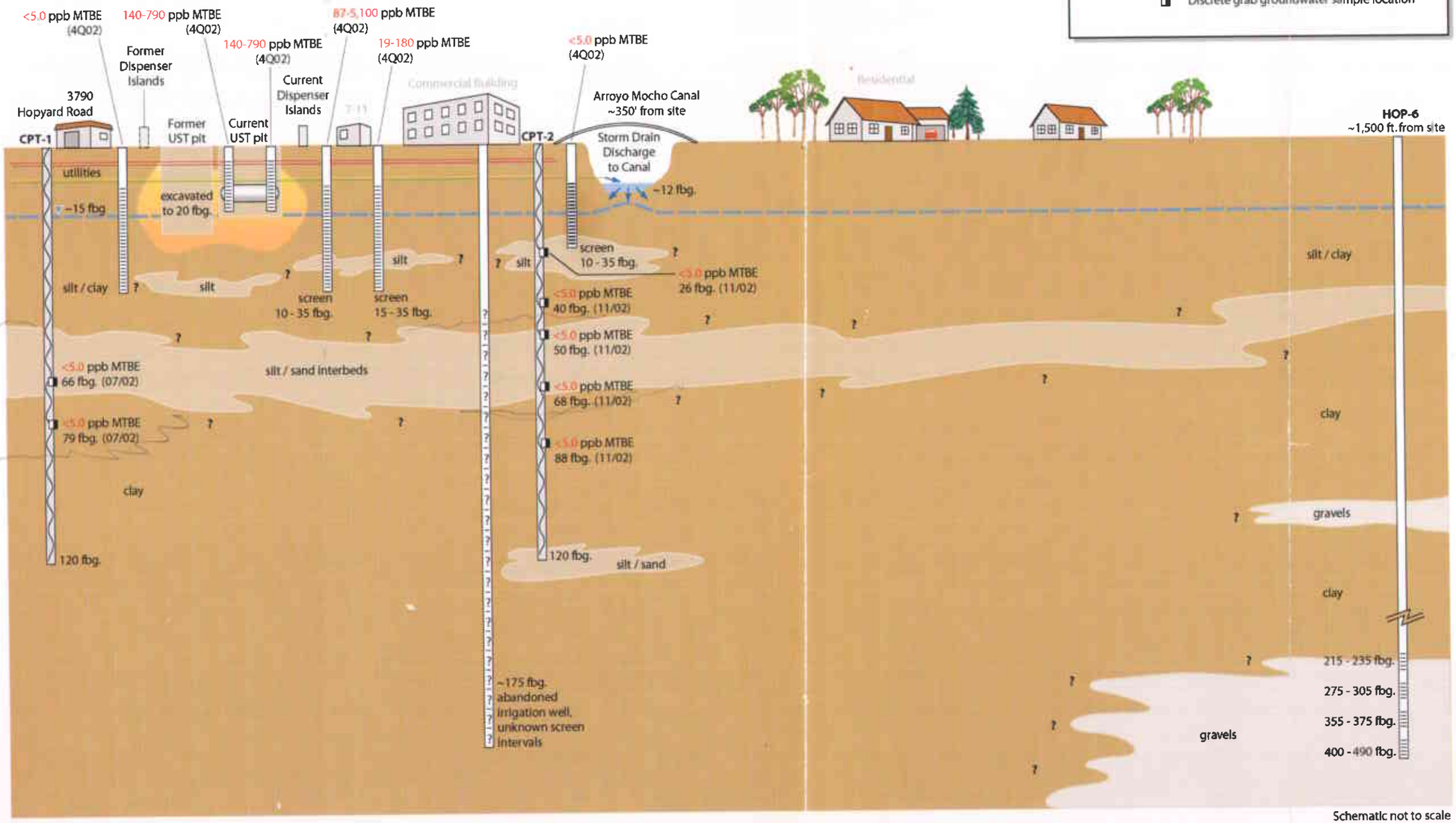
04/30/03

Site Conceptual Model

EXPLANATION

19-180 ppb MTBE (4Q02) — Range of MTBE concentrations in groundwater in represented wells (sample date in parenthesis)

Discrete grab groundwater sample location



Schematic not to scale

FIGURE

4

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
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Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
S-B	01/21/82	4 - 5.5	30	---	---	---	---	---
S-B	01/21/82	8 - 9.5	74	---	---	---	---	---
S-B	01/21/82	11.5 - 13	79	---	---	---	---	---
S-C	01/21/82	4 - 5.5	2	---	---	---	---	---
S-C	01/21/82	7 - 8.5	5,100	---	---	---	---	---
S-C	01/21/82	11.5 - 13	420	---	---	---	---	---
S-D	01/21/82	4 - 5.5	2	---	---	---	---	---
S-D	01/21/82	7 - 8.5	10	---	---	---	---	---
S-D	01/21/82	11.5 - 13	110	---	---	---	---	---
S-E	01/21/82	4 - 5.5	ND	---	---	---	---	---
S-E	01/21/82	7 - 8.5	6	---	---	---	---	---
S-E	01/21/82	11.5 - 13	6	---	---	---	---	---
ST-1	10/27/83	13.0 - 14.5	13	---	2.7	0.3	---	1.4
ST-2	10/27/83	13.0 - 14.5	23	---	0.22	0.7	---	4.3
S-1	10/27/83	14.0 - 15.5	57	---	5.3	0.3	---	6.8
S-1	10/27/83	19.0 - 20.5	9	---	0.43	0.1	---	0.8
S-1	10/27/83	33.5 - 35.0	<5	---	<0.05	<0.1	---	<0.4
S-2	10/27/83	14.0 - 15.5	53	---	6.7	0.1	---	8
S-2	10/27/83	19.0 - 20.5	5	---	0.07	<0.1	---	0.4
S-2	10/27/83	33.5 - 35.0	<5	---	<0.05	<0.1	---	<0.4

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
S-3	01/25/84	19.0 - 20.5	<5	---	<0.05	<0.1	---	<0.4
S-4	01/25/84	19.0 - 20.5	41	---	6.2	<0.1	---	5.9
S-5	01/25/84	19.0 - 20.5	4,700	---	50	170	---	900
A1	08/02/84	14	1300	---	13	110	45	230
A1X	08/02/84	20	<1.0	---	<0.1	<0.1	<0.1	<0.1
A2	08/02/84	14	2100	---	11	32	72	350
A2X	08/02/84	20.5	80	---	1.3	2.6	3.4	16
B-1	08/02/84	14	11	---	0.2	<0.1	<0.1	<0.1
B-2	08/02/84	14	120	---	5.9	5.8	3.7	19
B2X	08/02/84	20.5	1.5	---	<0.1	<0.1	<0.1	<0.1
C-1	08/02/84	14	110	---	2.8	0.4	7.8	31
C-1X	08/02/84	16	9.1	---	0.8	<0.1	1.1	0.6
C-2	08/02/84	14	52	---	4.8	0.1	4.4	3.9
Comp A	08/02/84	---	<1	---	<0.1	<0.1	<0.1	<0.1
Comp B	08/02/84	---	8.7	---	<0.1	0.2	0.1	0.6
Comp C	08/02/84	---	35	---	0.5	2.1	1.9	11
Comp D	08/02/84	---	32	---	0.3	0.1	0.1	5.9

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
A5	08/04/84	5	3.0	---	1.3	<0.1	<0.1	<0.1
A10	08/04/84	10	3.5	---	0.5	<0.1	0.2	0.2
A15	08/04/84	15	4.4	---	0.7	<0.1	0.5	0.3
S-6-2A	10/03/84	9 - 10.5	<5	---	0.05	<0.1	<0.1	<0.3
S-6-3A	10/03/84	14 - 15.5	9	---	<0.05	<0.1	<0.1	<0.3
S-6-4A	10/03/84	19 - 20.5	6	---	0.05	<0.1	0.1	<0.3
S-6-5A	10/03/84	24 - 25.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-2A	10/03/84	9 - 10.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-3A	10/03/84	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-4A	10/03/84	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-8-3A	02/23/85	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-8-4A	02/23/85	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-9-3A	02/23/85	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-9-4A	02/23/85	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
SR-1-15	08/08/85	15	<5	---	<0.1	<0.1	<0.1	<0.3
SR-1-20	08/08/85	20	40	---	5.4	<0.1	2.5	2.7
S-10-15	08/08/85	15	<5	---	<0.05	<0.1	<0.1	<0.3
S-10-20	08/08/85	20	<5	---	<0.05	<0.1	<0.1	<0.3

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
SR-3-10	09/18/85	10	<5.0	---	0.98	<0.1	<0.1	<0.3
SR-3-15	09/18/85	15	54	---	3.9	<0.2	4.2	2.7
SR-3-20	09/18/85	20	<5.0	---	<0.05	<0.1	0.2	<0.3
SR-2-10	09/19/85	10	<5.0	---	0.05	<0.1	<0.1	<0.3
SR-2-15	09/19/85	15	67	---	0.11	0.1	0.1	<0.3
SR-2-20	09/19/85	20	8.4	---	<0.05	<0.1	1.0	<0.3
D-1	07/25/98	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
D-2	07/25/98	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
D-3	07/25/98	3.5	**4.0**	<0.5	<0.005	<0.005	**0.012**	**0.011**
D-4	07/25/98	3.5	**1.8**	<0.5	<0.005	<0.005	**0.053**	**0.018**
P-1	07/25/98	3.5	**260**	<0.5	**0.079**	**0.072**	**0.48**	**1.1**
P-2	07/25/98	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
P-3	07/25/98	3.5	**10**	<0.5	**0.0083**	<0.005	**0.26**	<0.005
S-11-5.5	08/25/98	5.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-10.5	08/25/98	10.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-15.5	08/25/98	15.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-20.5	08/25/98	20.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-24.5	08/25/98	24.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
S-12-5.5	09/18/98	5.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-10.5	09/18/98	10.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-15.5	09/18/98	15.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-20.5	09/18/98	20.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-24.5	09/18/98	24.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005

Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8015; analyzed by EPA Method 8260B starting August 26, 2002

MTBE = Methyl tert-butyl ether, analyzed by EPA Method 8260B

Benzene, ethylbenzene, toluene, xylenes, analyzed by EPA Method 8020; analyzed by EPA Method 8260B starting August 26, 2002

fbg = feet below grade

ppm = parts per million

--- = Not analyzed

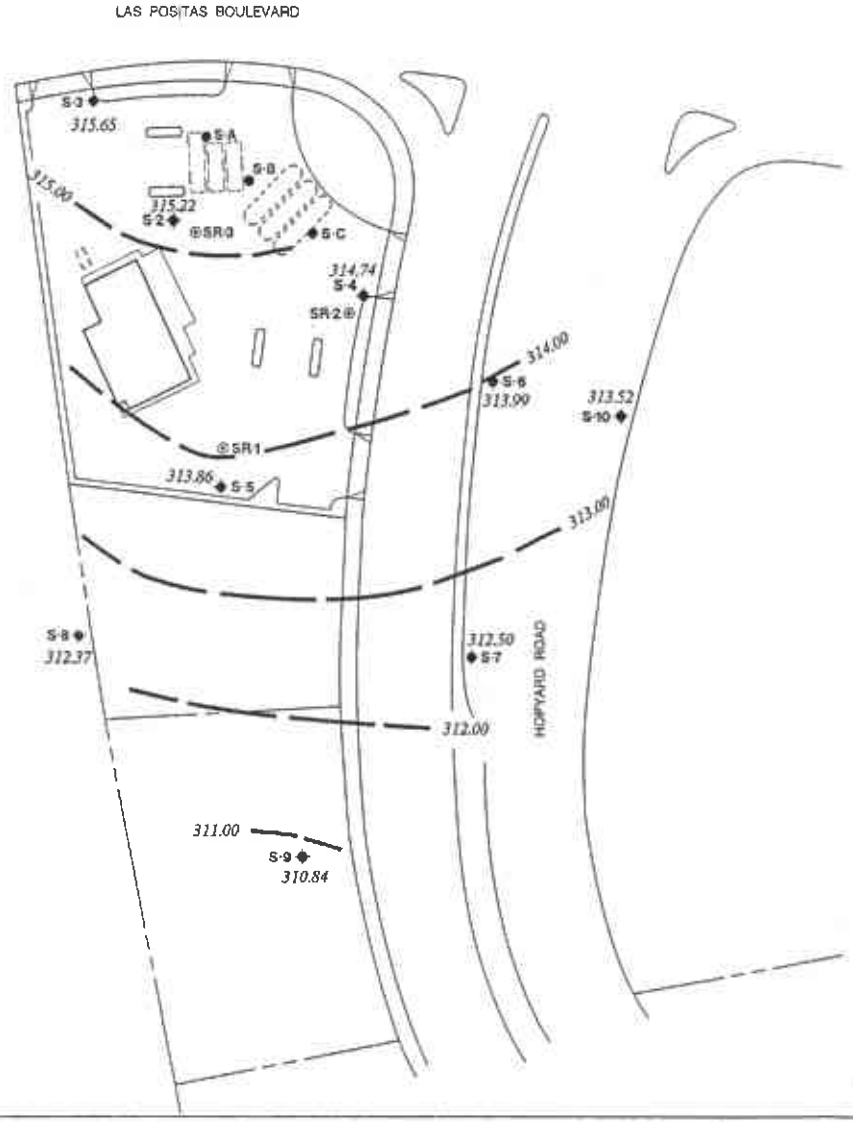
ND = None Detected

<X = Below laboratory detection limit of X

G:\Pleasanton 3790 Hopyard\[3790 Pleasanton Historical Soil Table.xls]Historical Soil

ATTACHMENT A

Historical Groundwater Contour Maps



EXPLANATION

- S-1 Ground-water monitoring well location
- SR-1 Recovery well location
- S-A Soil boring location
- 312.00 Ground-water elevation contour Approximate Gradient = 0.01
- 313.99 Ground-water elevation measured on September 8, 1989 in feet referenced to mean sea level (MSL)

Note: Contours may be influenced by irrigation practices and/or site construction activities

N

0 60 120

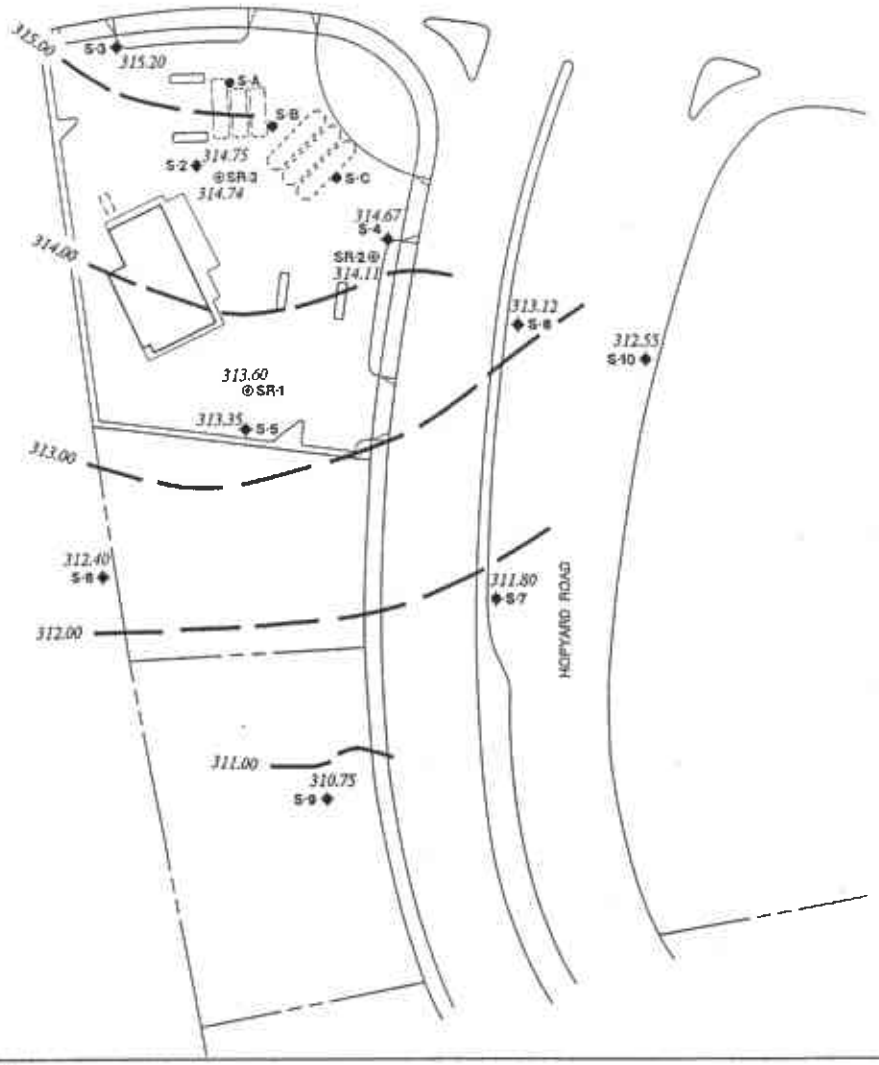
Scale in Feet

GSI GeoStrategies Inc.

Potentiometric Map
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 3

JOB NUMBER	REVIEWED BY/DATE	DATE	REVISED DATE	REVISED DATE
7632	DAMP 12/1/89	11/89		



EXPLANATION

- S-1 Ground-water monitoring well location
- SR-1 Recovery well location
- S-A Soil boring location
- 313.00 Ground-water elevation contour Approximate Gradient = 0.01
- 314.11 Ground-water elevation measured on December 14, 1989 in feet referenced to Mean Sea Level (MSL)

Note: Contours may be influenced by irrigation practices and/or site construction activities

N

0 60 120

Scale in Feet

GeoStrategies Inc.

Potentiometric Map
Shell Service Station
3790 Hopyard Road
Pleasanton, California

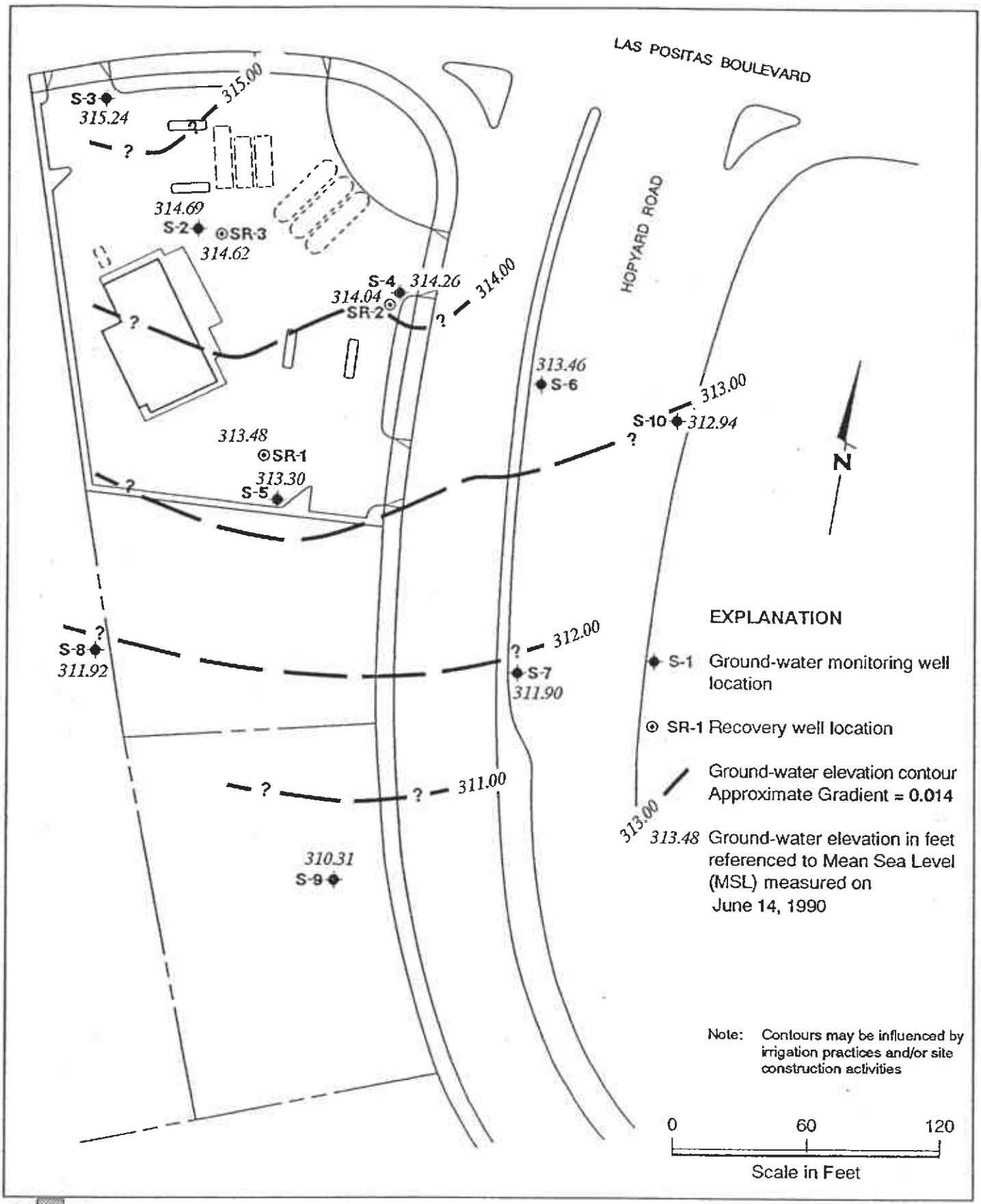
PLATE 3

JOB NUMBER 7632

REVISED BY RG/DSJ Plumbers 1262

DATE 2/90 REVISED DATE REVISED DATE

2 of 9



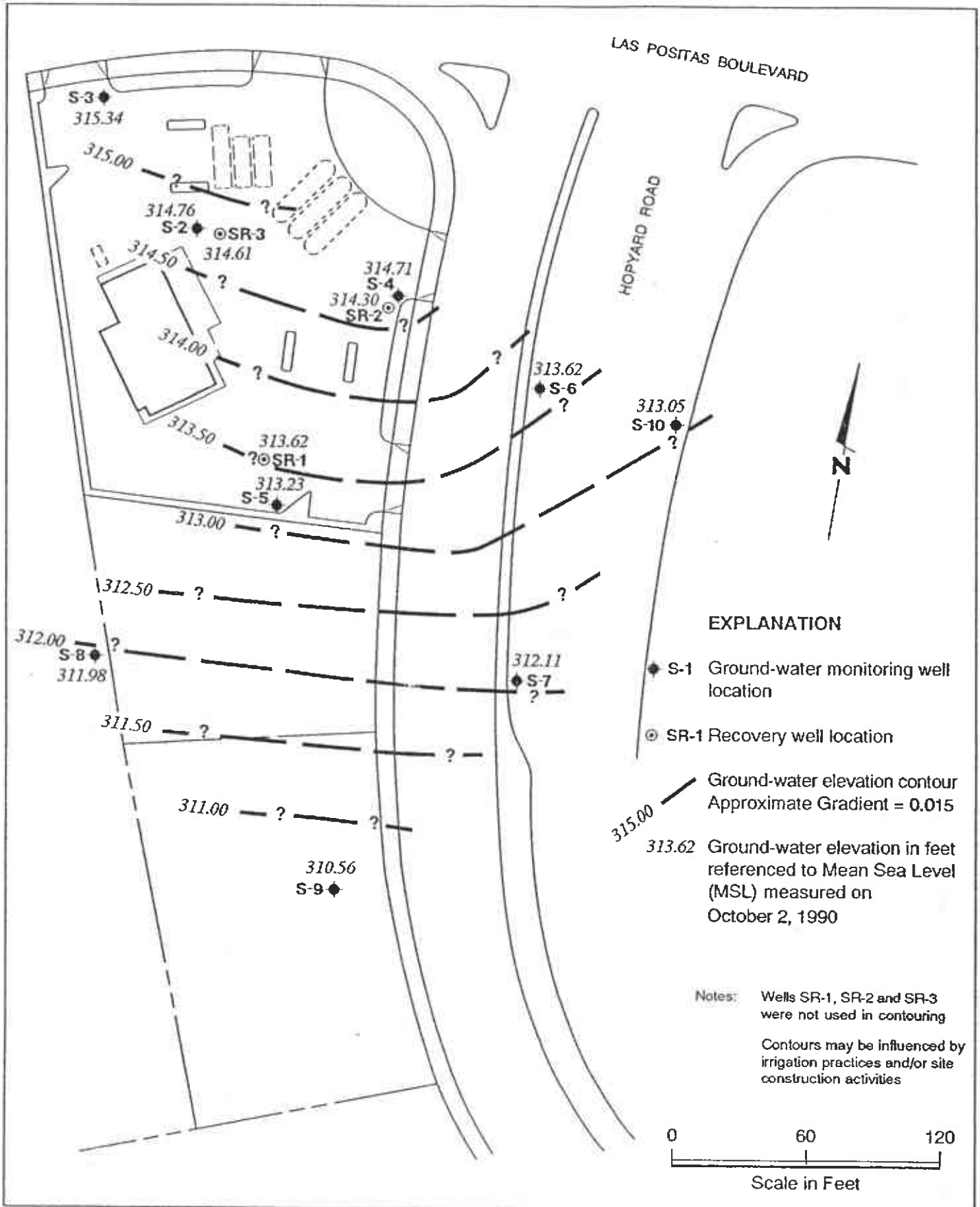
GeoStrategies Inc.

Potentiometric Map
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CWP CEG 1262	7/90		

3990



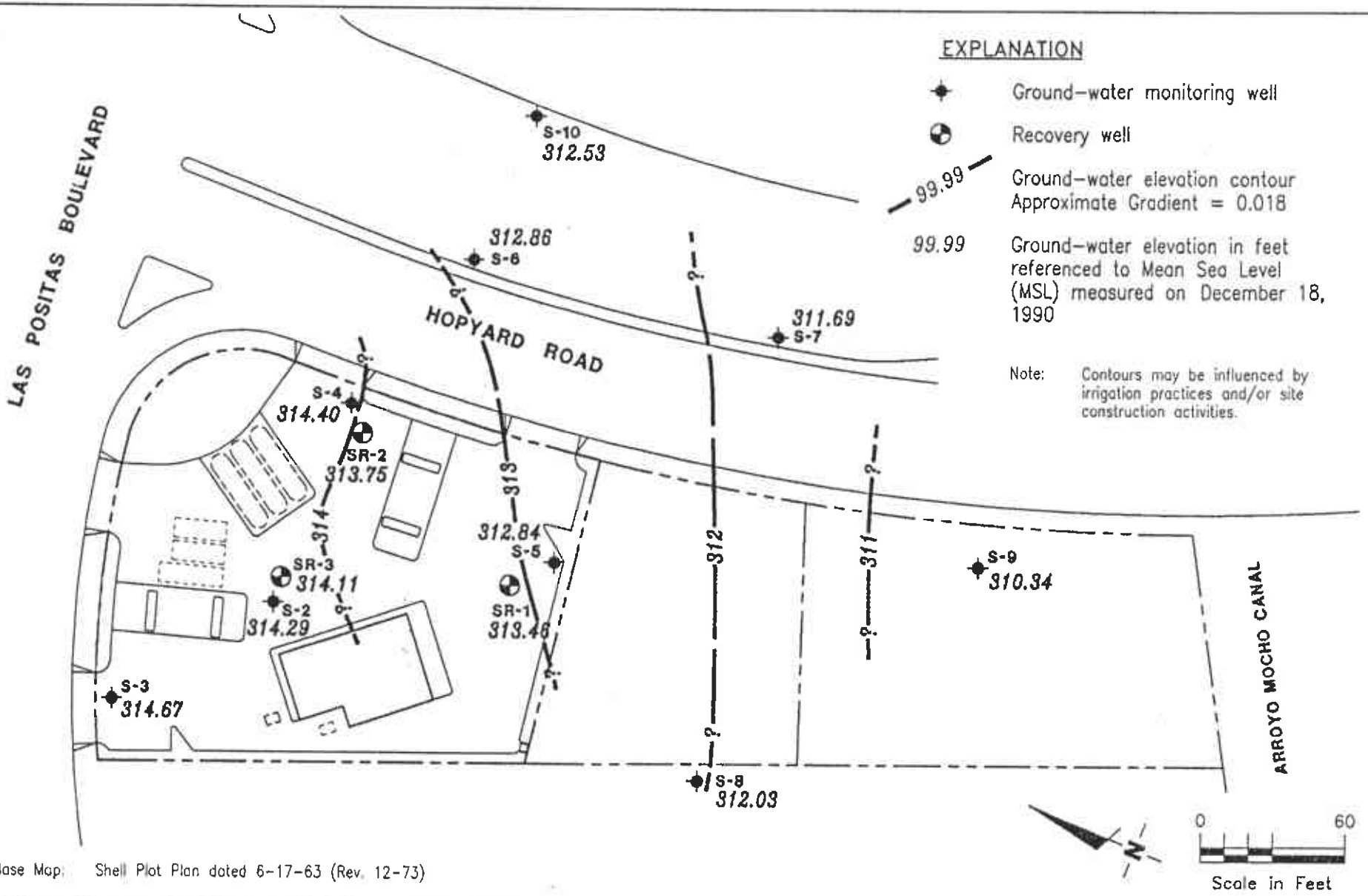
GeoStrategies Inc.

Potentiometric Map
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CEG 1262	11/90		

4 of 90



GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
3

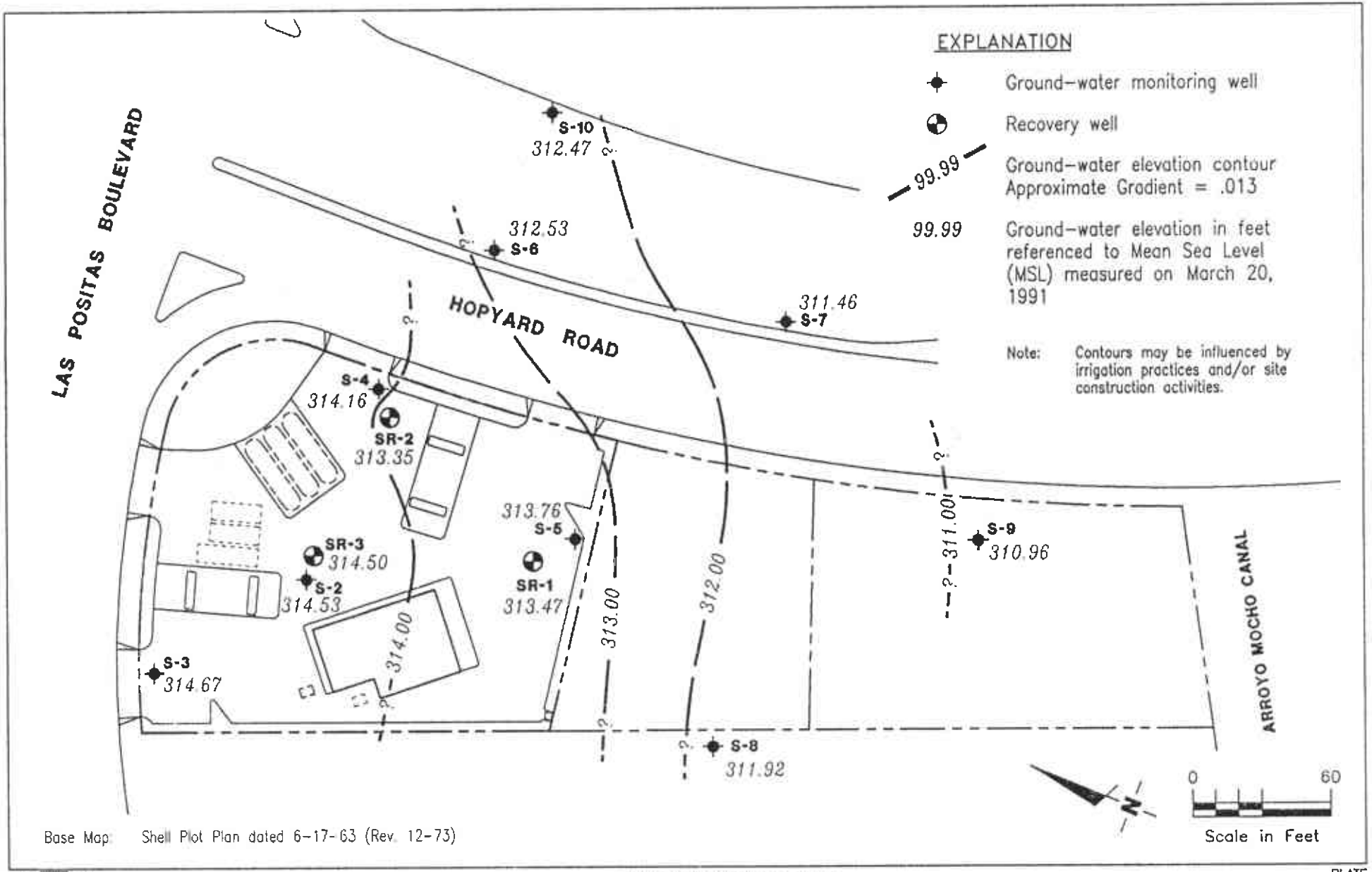
JOB NUMBER
763201-8

REVIEWED BY

DATE
2/91

REVISED DATE

1 of 91



GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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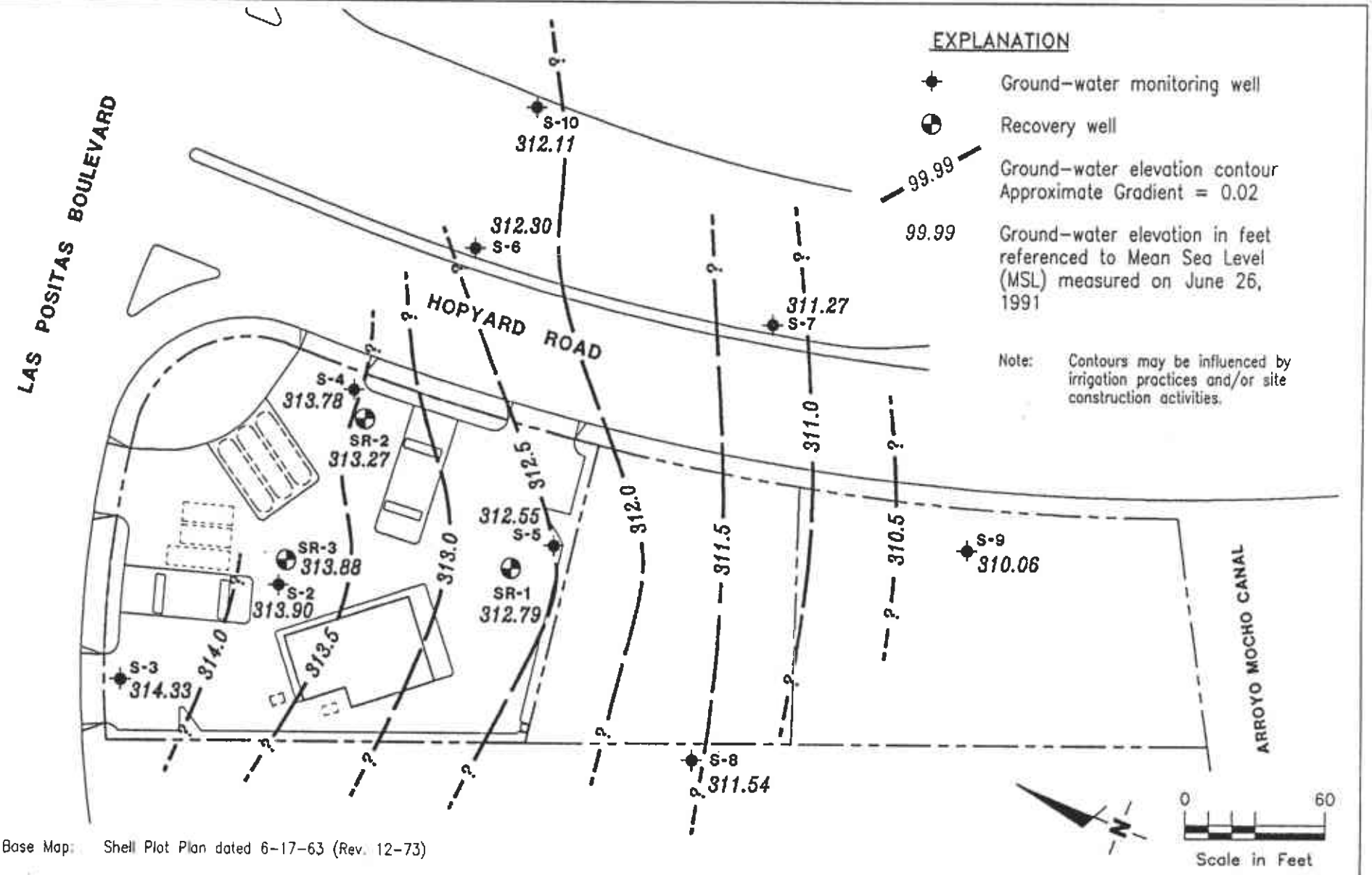
2 8 91



GSI GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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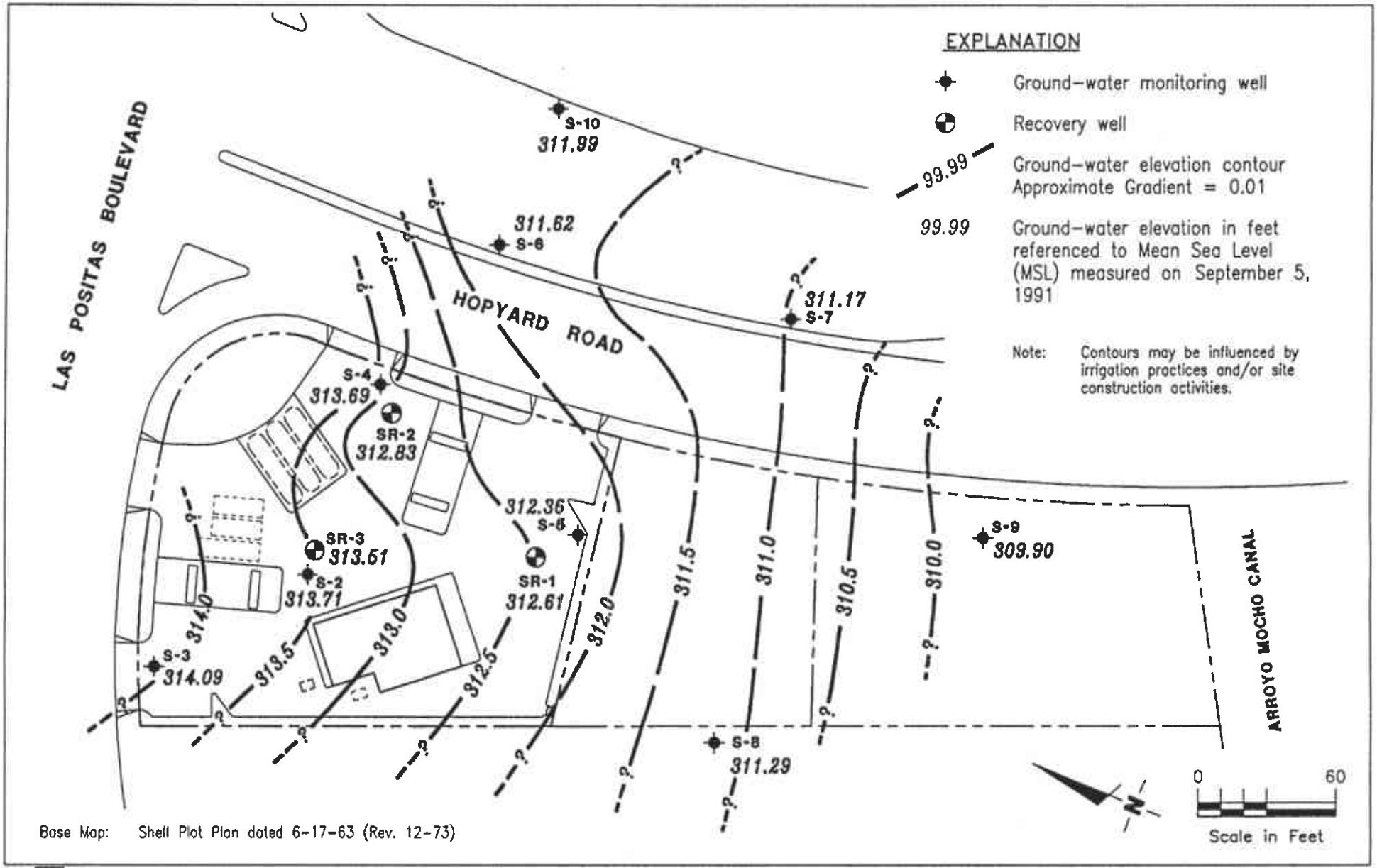
3891



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POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE **3**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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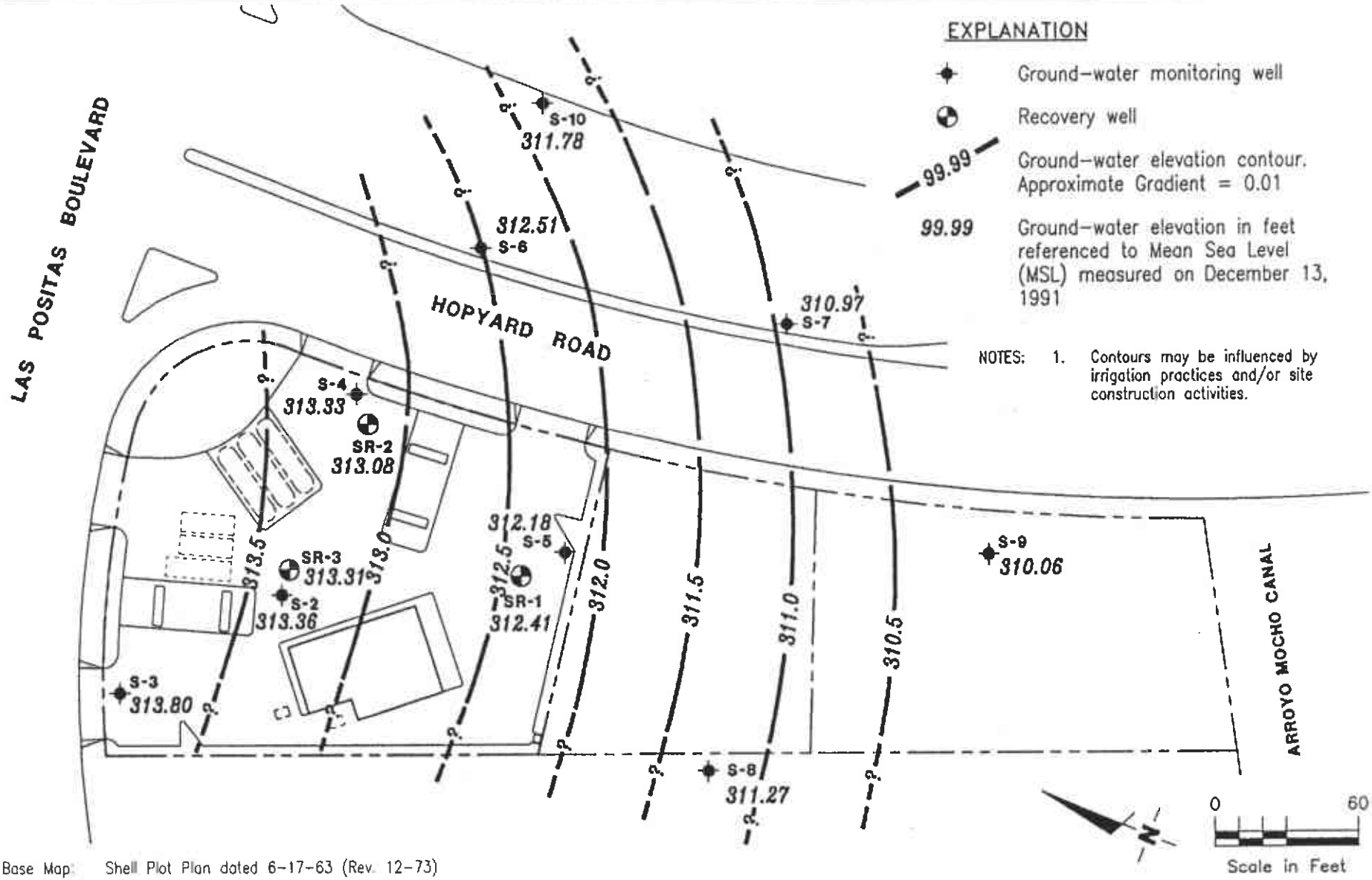

Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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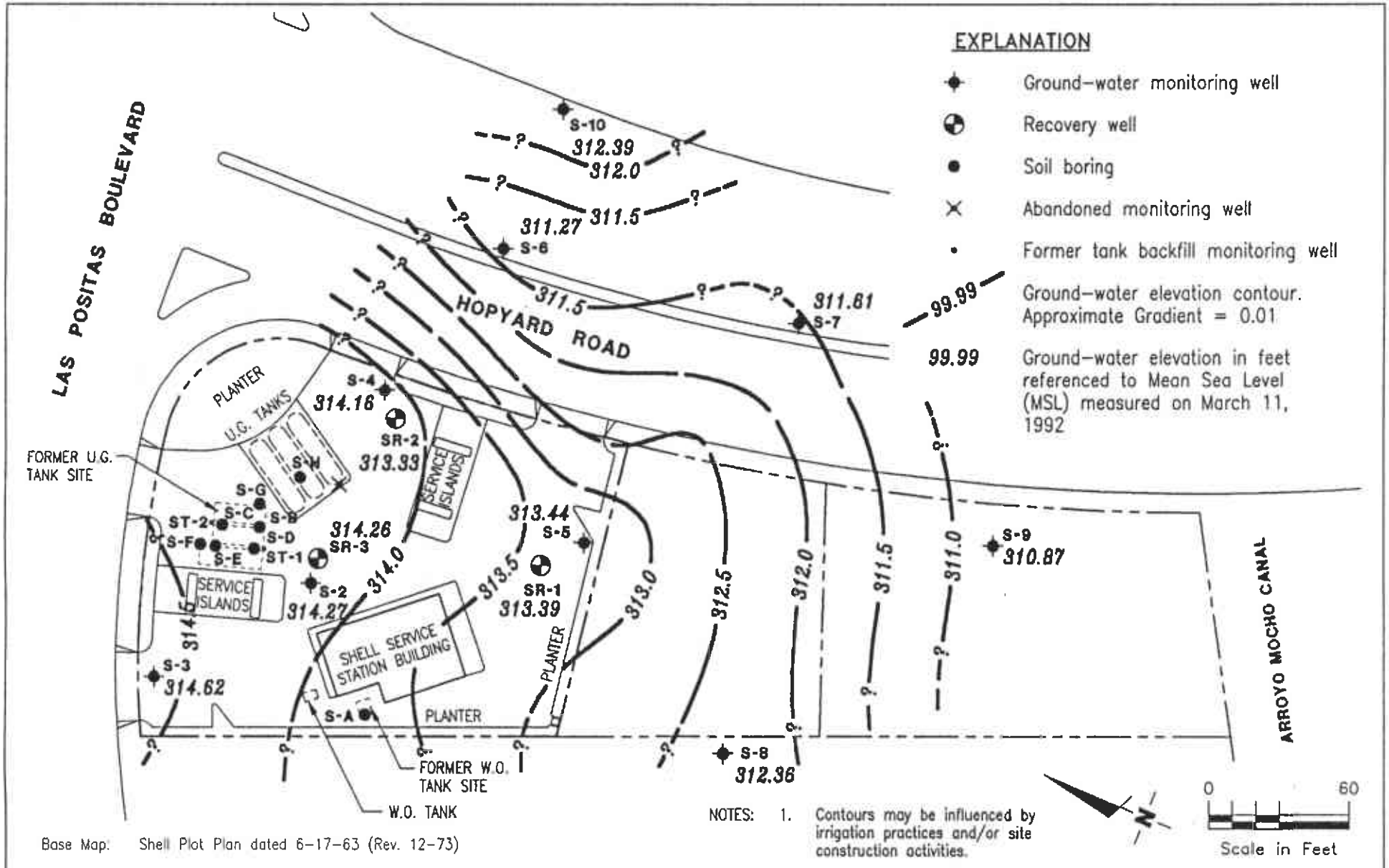
1892



Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

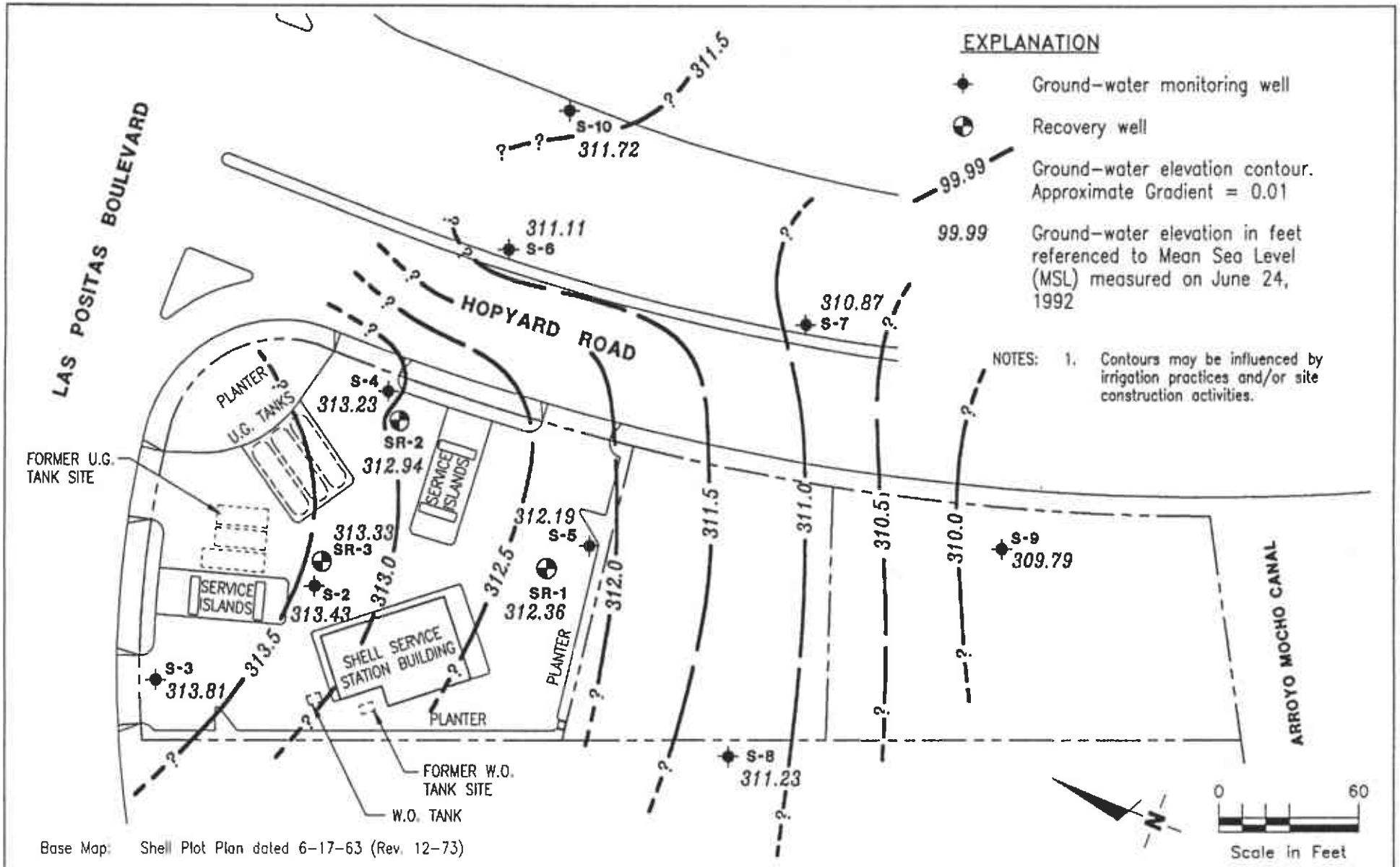
GSI GeoStrategies Inc.

SITE PLAN/POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-13		5/92	

2892



Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

SITE PLAN/POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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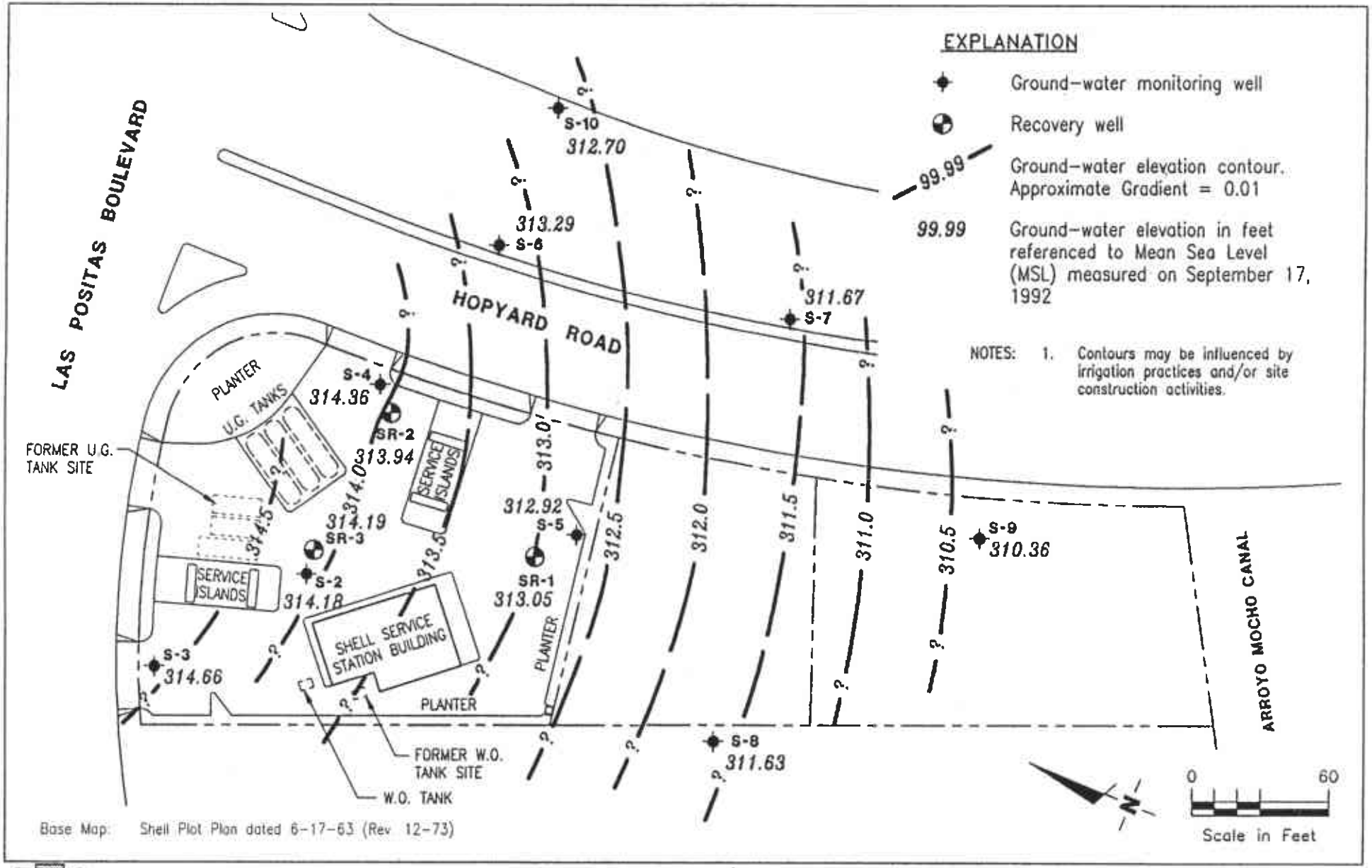

GeoStrategies Inc.

SITE PLAN/POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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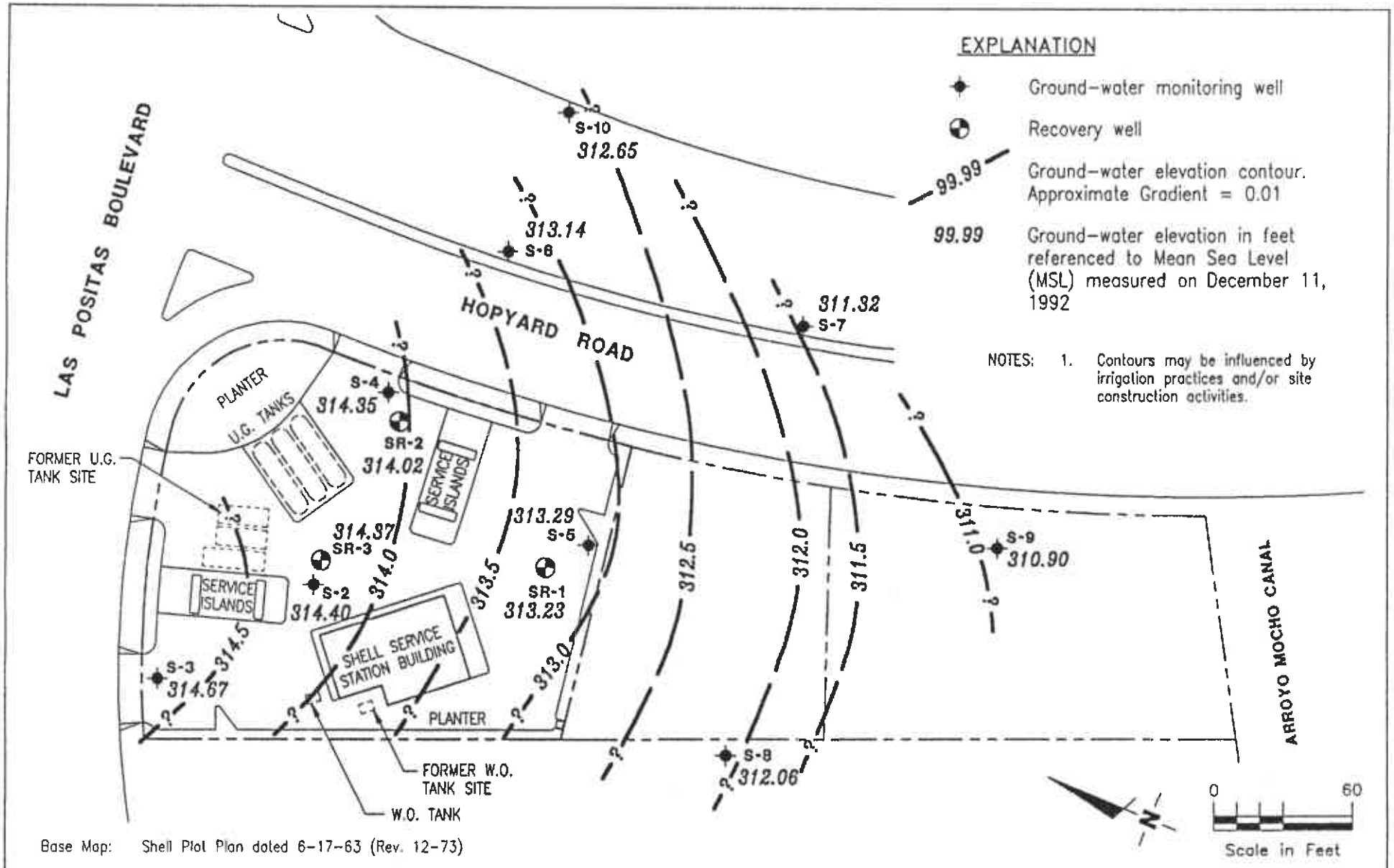
4892



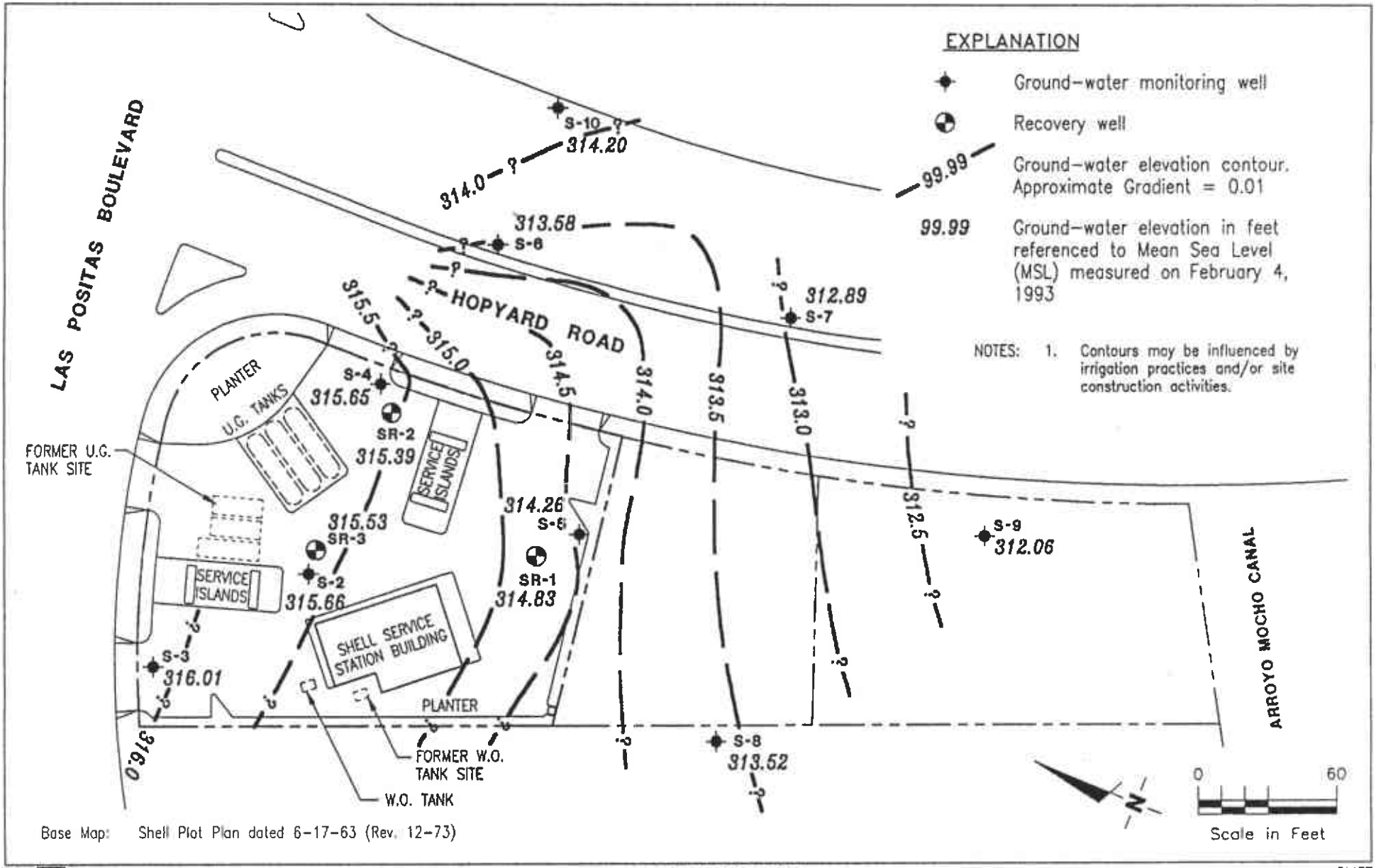
GeoStrategies Inc.

SITE PLAN/POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-16		2/93	

1 of 93



Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GSI GeoStrategies Inc.

SITE PLAN/POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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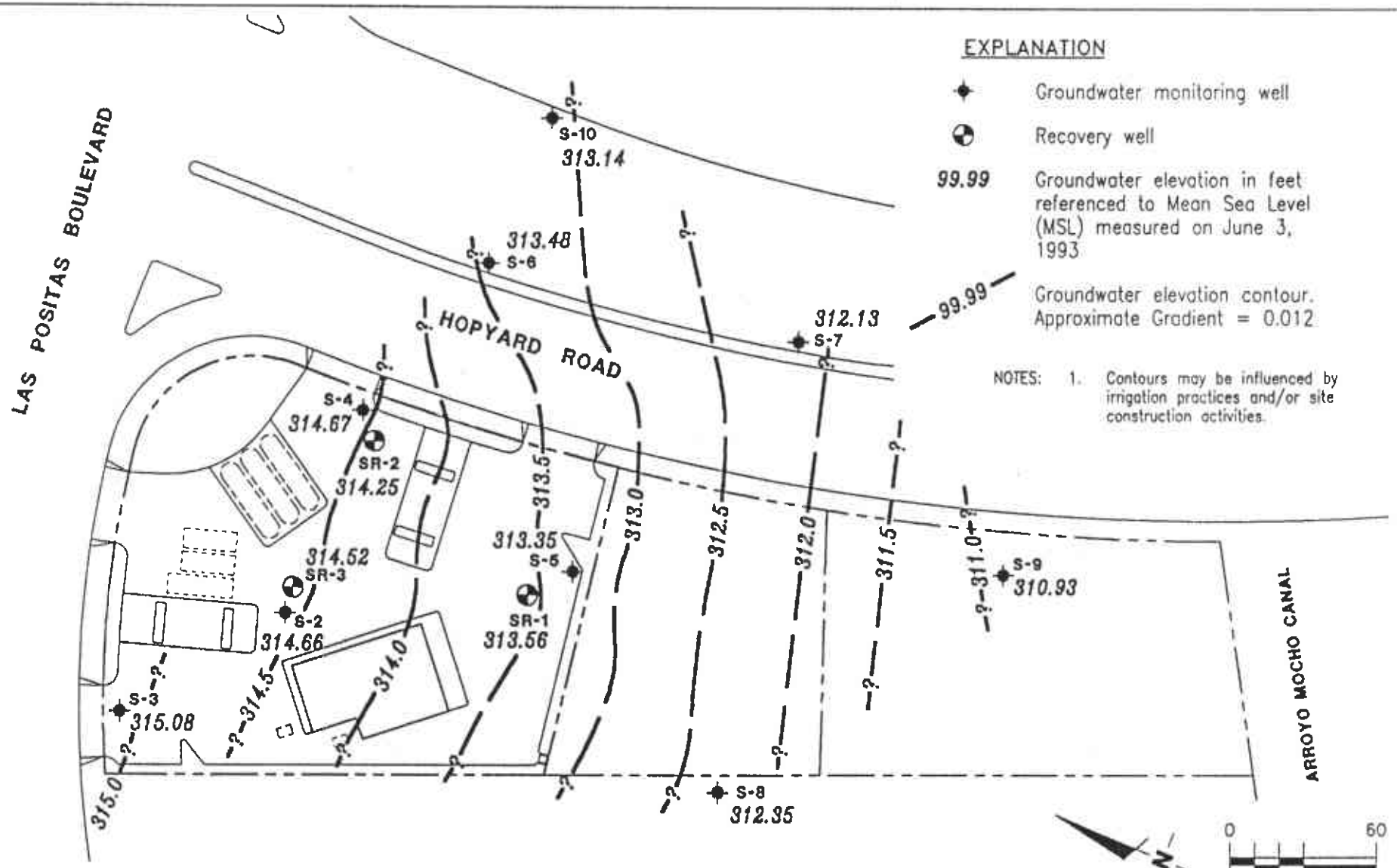

Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GSI GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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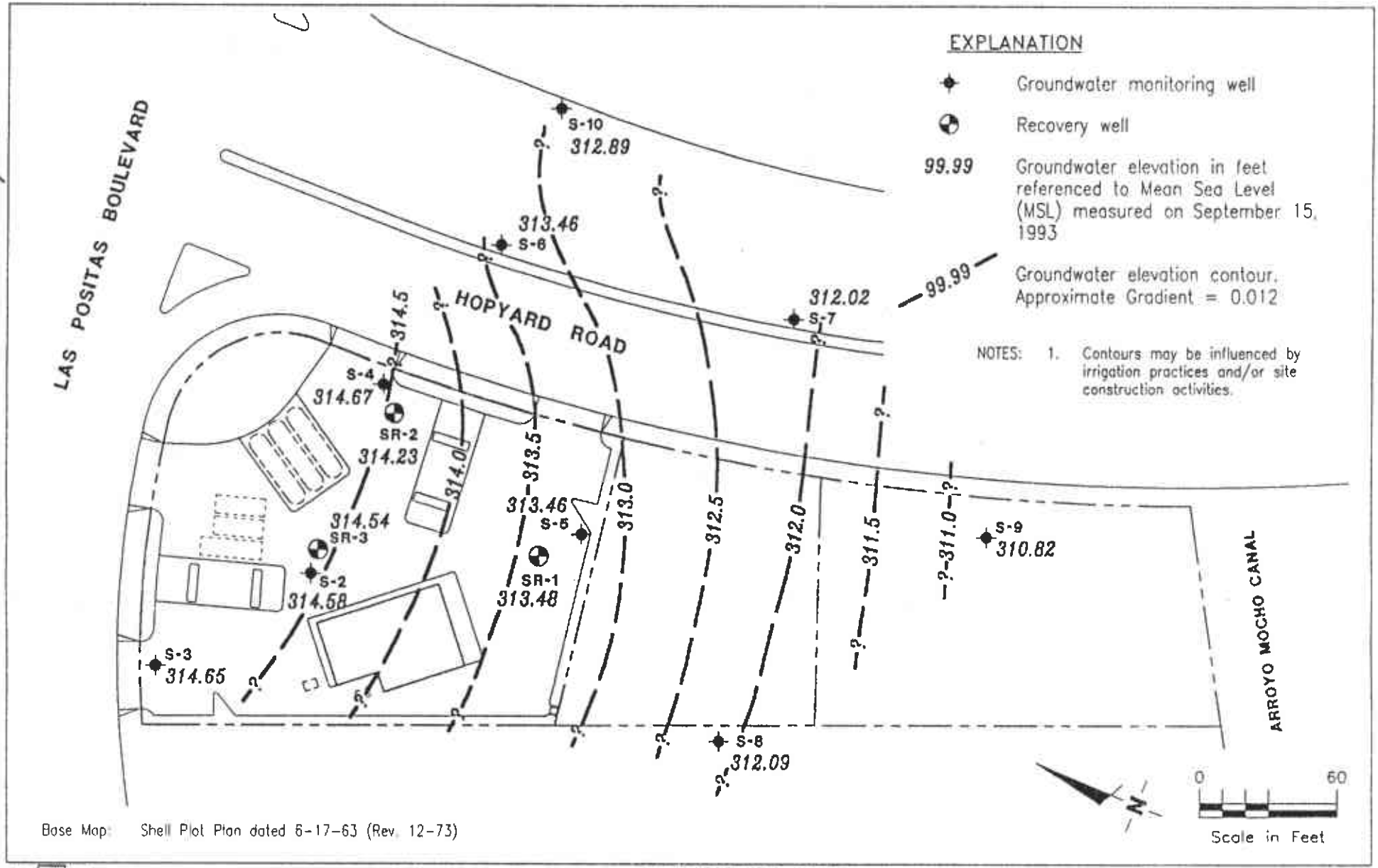

Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
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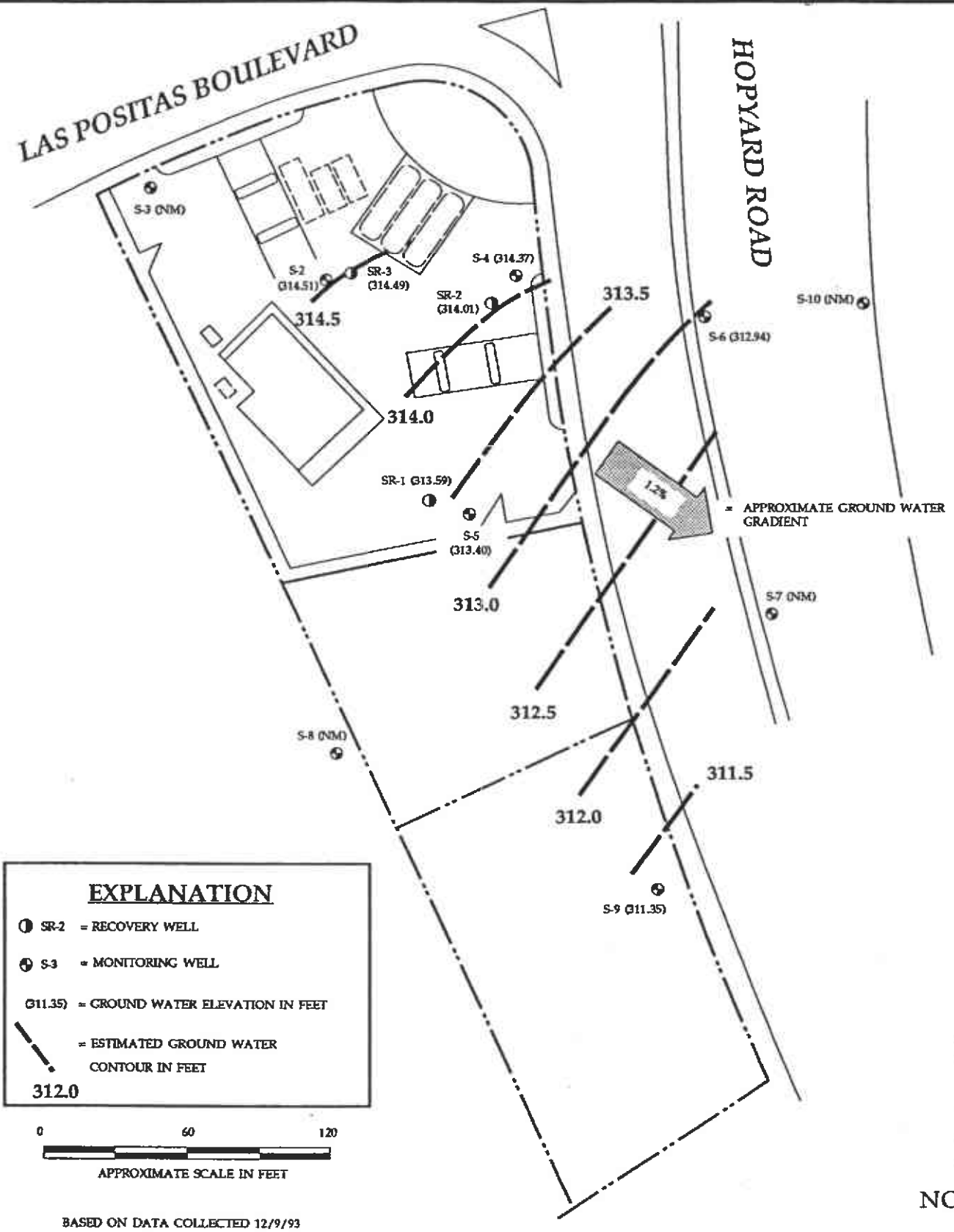
Hg93



HYDR◆- ENVIR◆NMENTAL TECHN◆LOGIES, INC.	GROUND WATER CONTOUR MAP Shell Service Station WIC# 204-6138-0501 3790 Hopyard Road Pleasanton, California	Figure 3 12-012 1/94

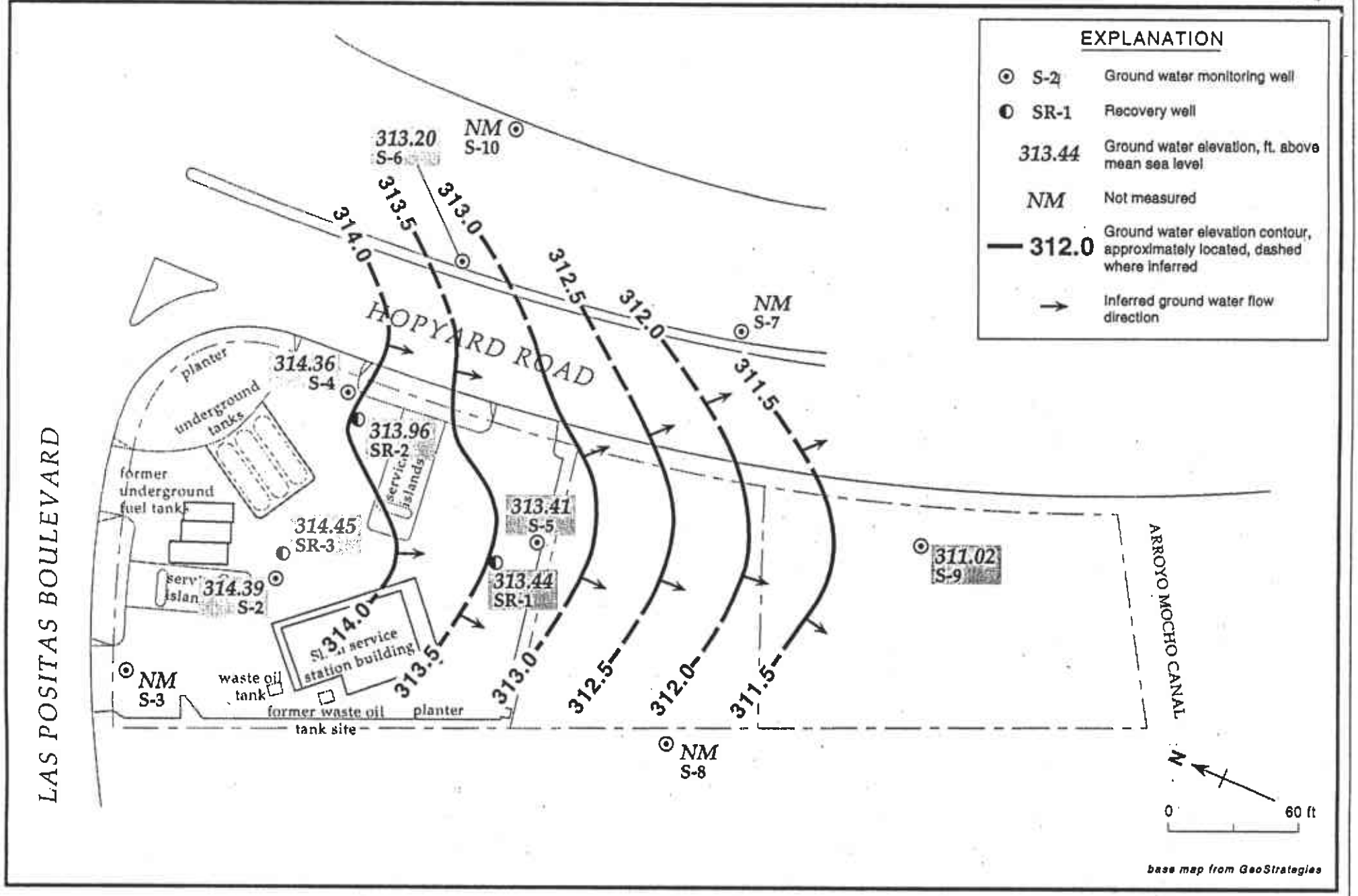


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - March 4, 1994 - Shell Service Station WIC# 204-6138-0501
3790 Hopyard Road, Pleasanton, California

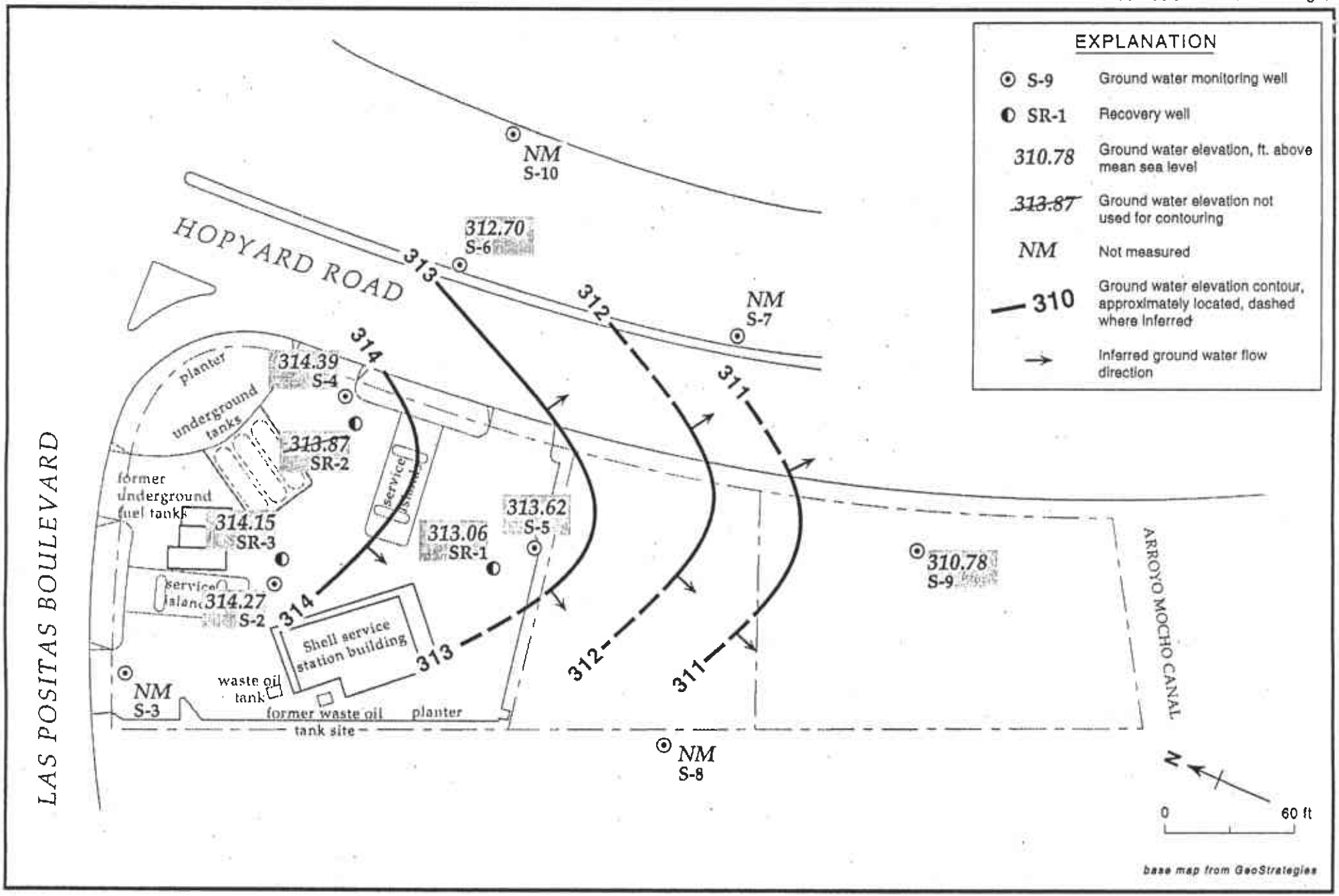


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - June 16, 1994 - Shell Service Station WIC# 204-6138-0501
3790 Hopyard Road, Pleasanton, California

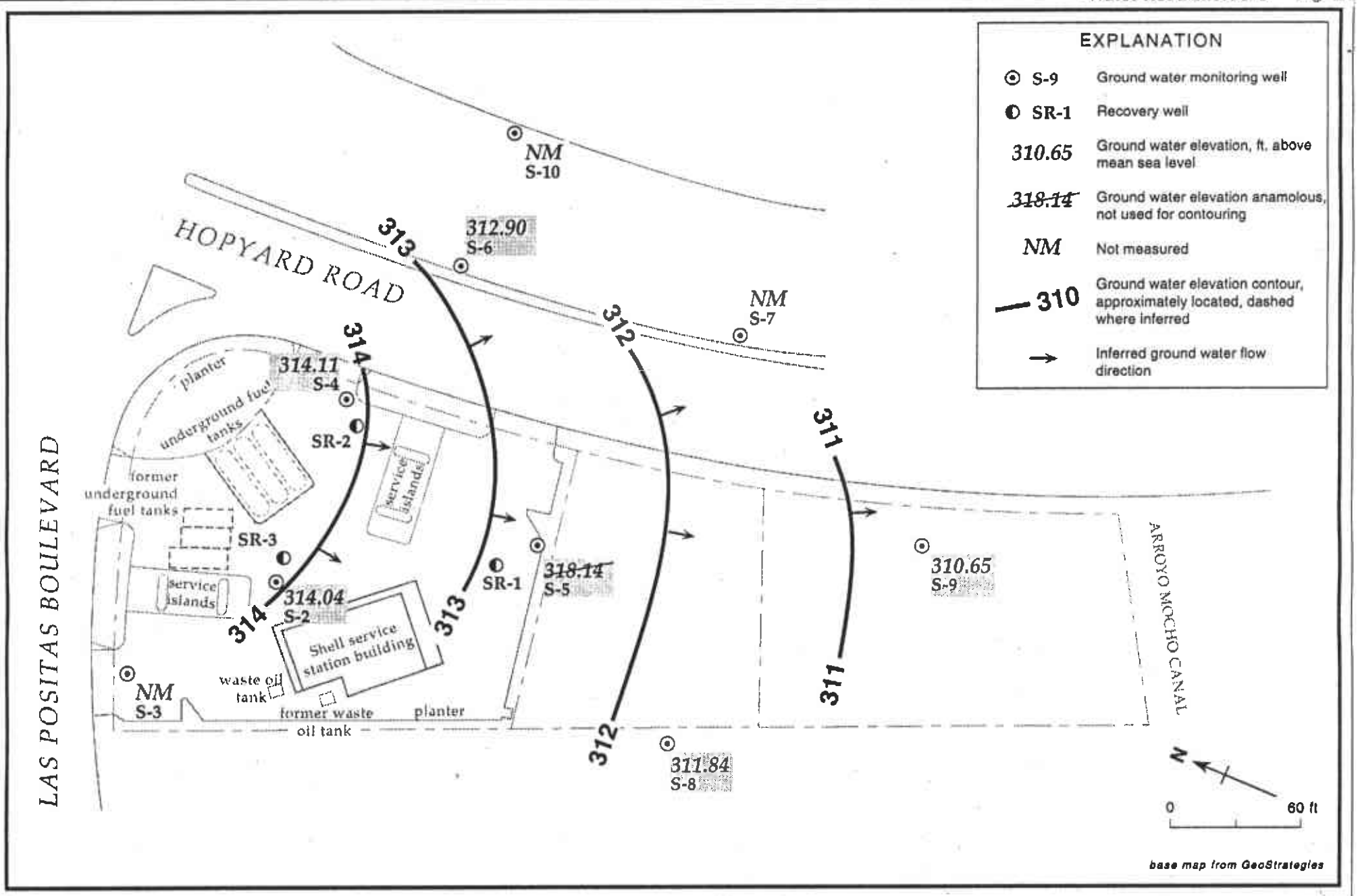


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours -September 13, 1994 - Shell Service Station WIC# 204-6138-0501
3790 Hopyard Road, Pleasanton, California

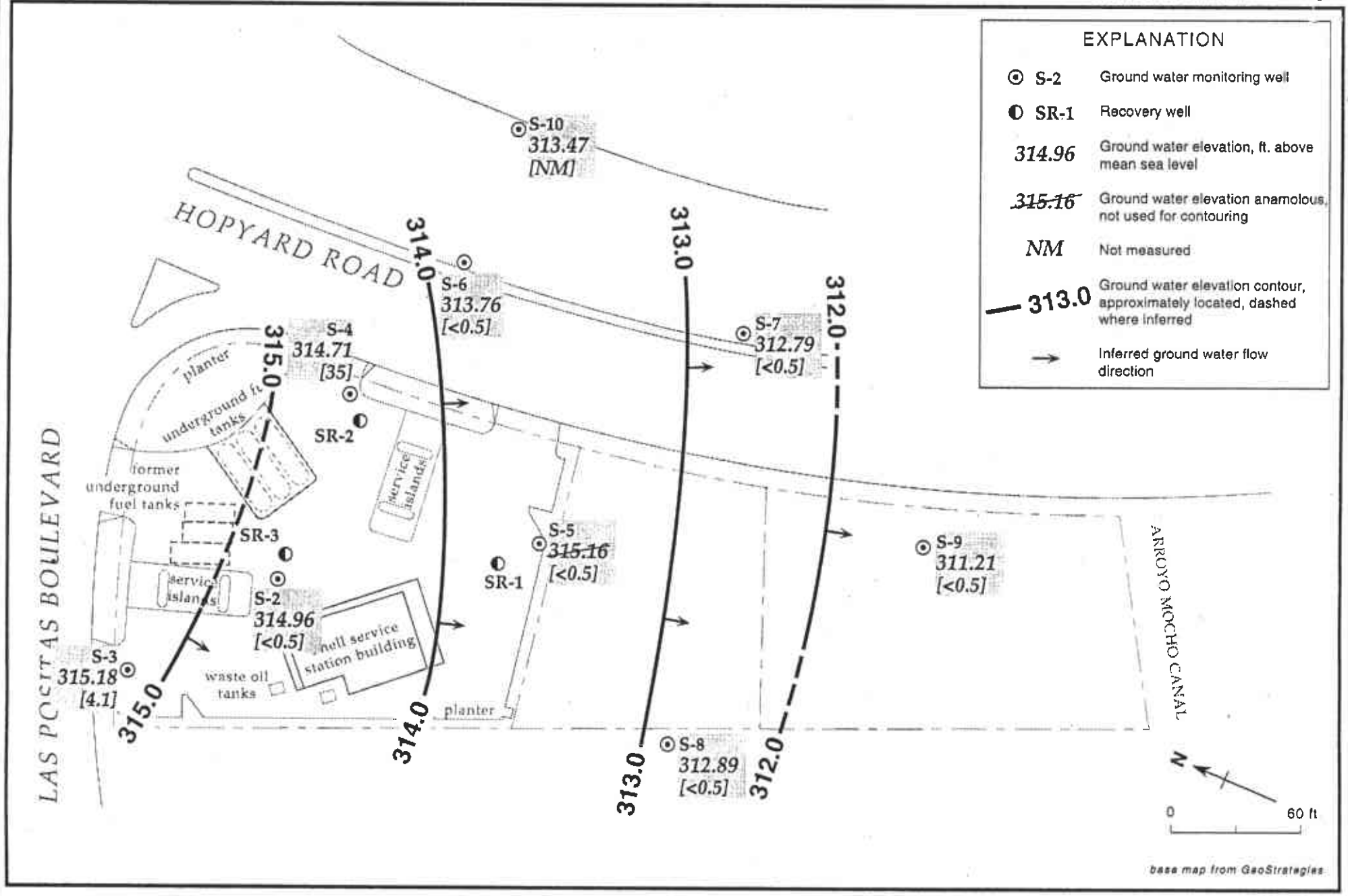


Figure 2. Monitoring Well Locations, Ground Water Elevation Contours, and Benzene Concentrations in Ground Water -June 21, 1995 - Shell Service Station WIC# 204-6138-0501 3790 Hopyard Road, Pleasanton, California

5795-006.ai

08/01/95

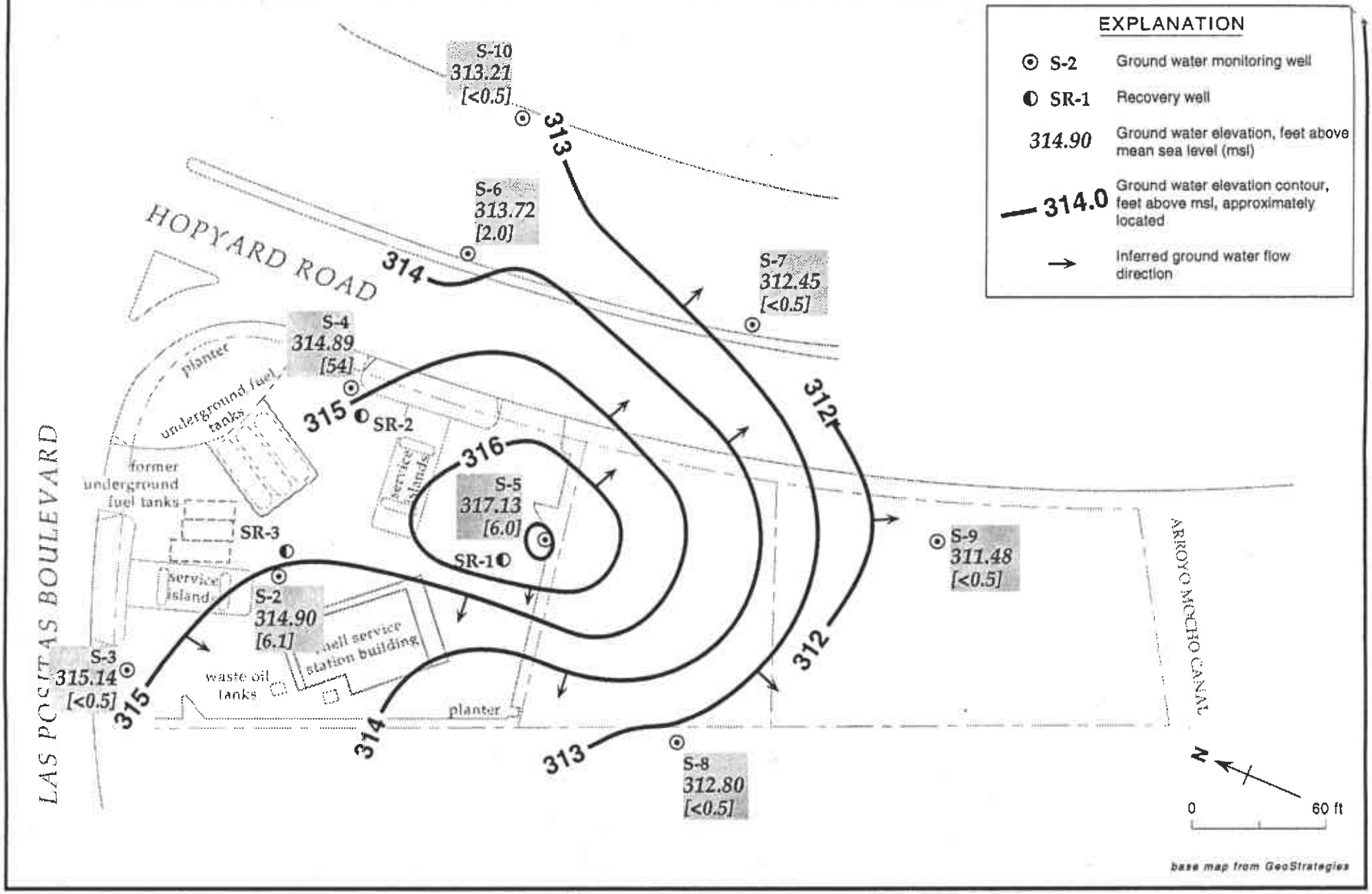


Figure 2. Monitoring Well Locations, Ground Water Elevation Contours, and Benzene Concentrations in Ground Water - May 31, 1996 - Shell Service Station WIC# 204-6138-0501 3790 Hopyard Road, Pleasanton, California

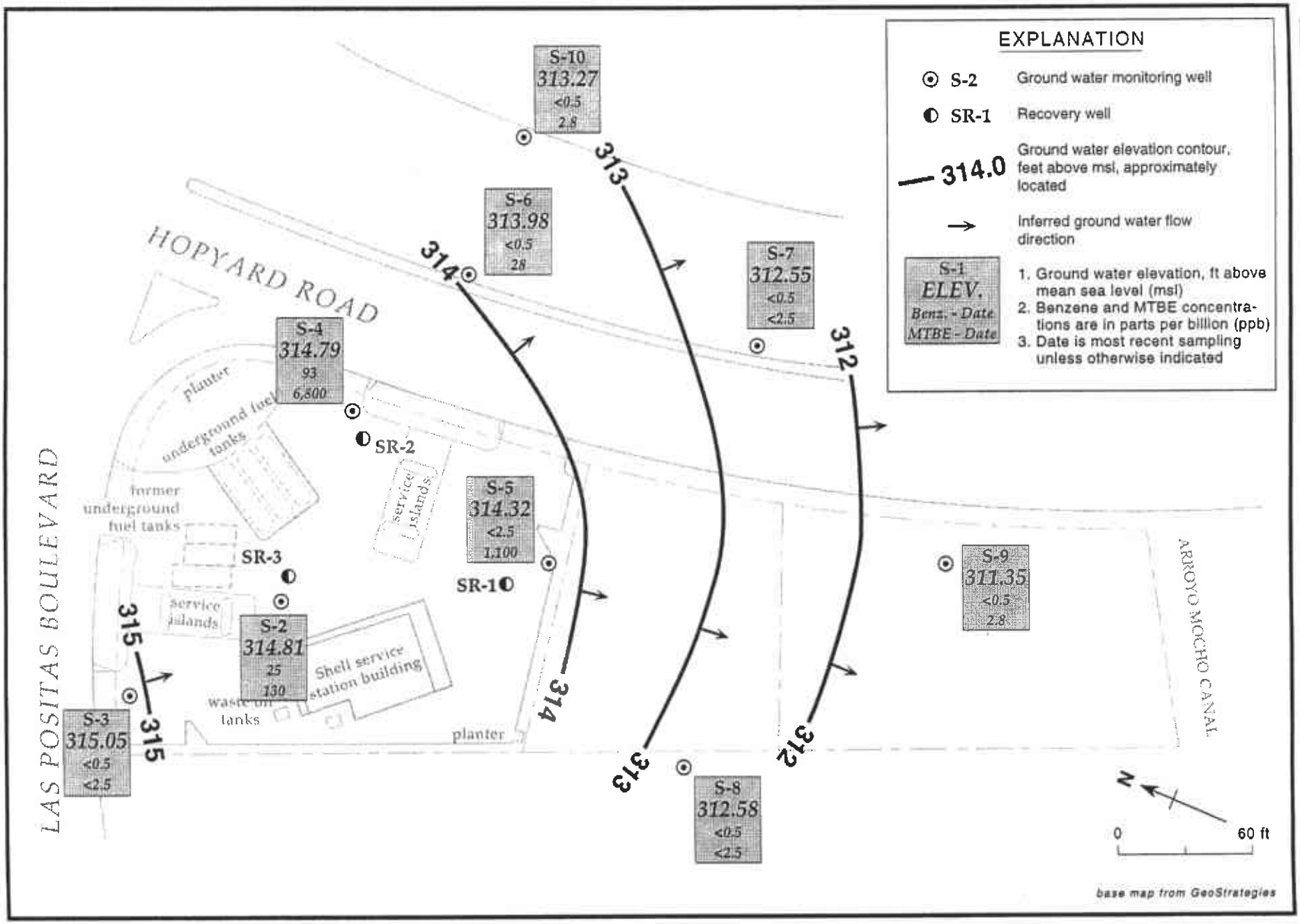


Figure 1. Ground Water Elevation Contours - June 25, 1997 - Shell Service Station WIC# 204-6138-0501, 3790 Hopyard Road, Pleasanton, California

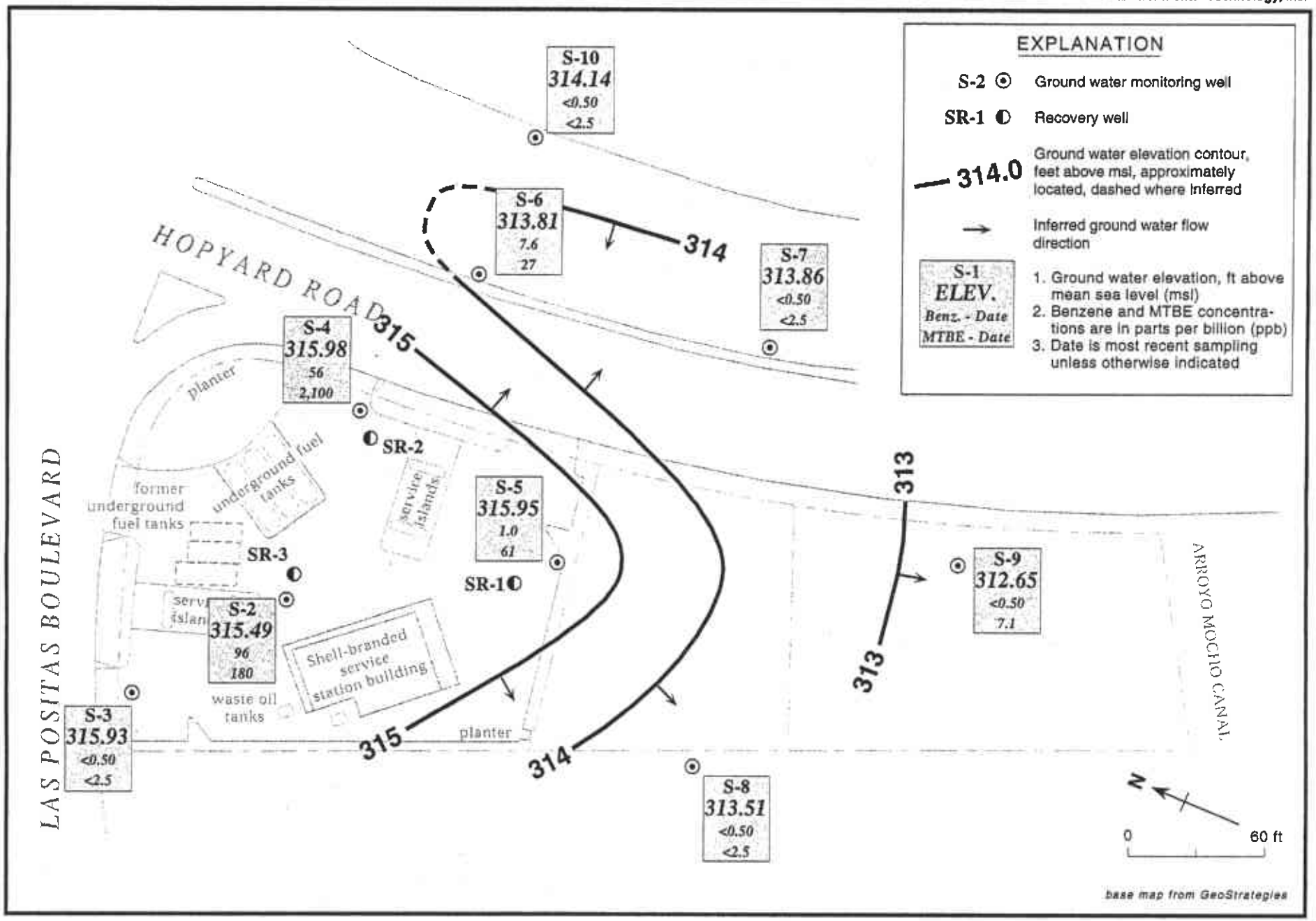
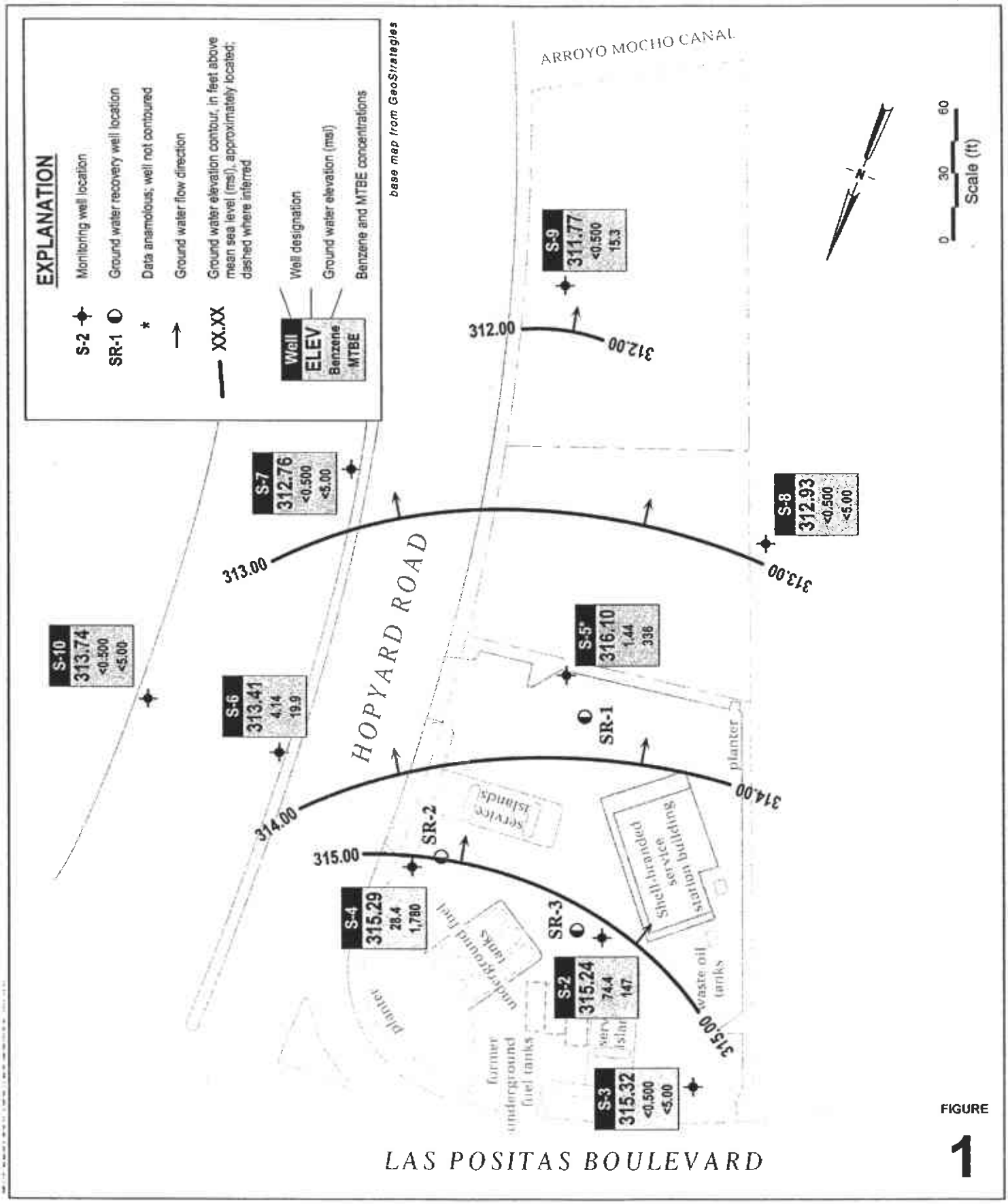


Figure 1. Ground Water Elevation Contours - June 19, 1998 - Shell-branded Service Station WIC# 204-6138-0501, 3790 Hopyard Road, Pleasanton, California

2q99

08/23/99



FIGURE

1

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Ground Water Elevation Contours
June 17, 1999

G:\PLEASANTON\3790HOPYARD\FIGURES\2QM00-MP.AI

FIGURE **1**

Groundwater Elevation Contour Map

June 15, 2000

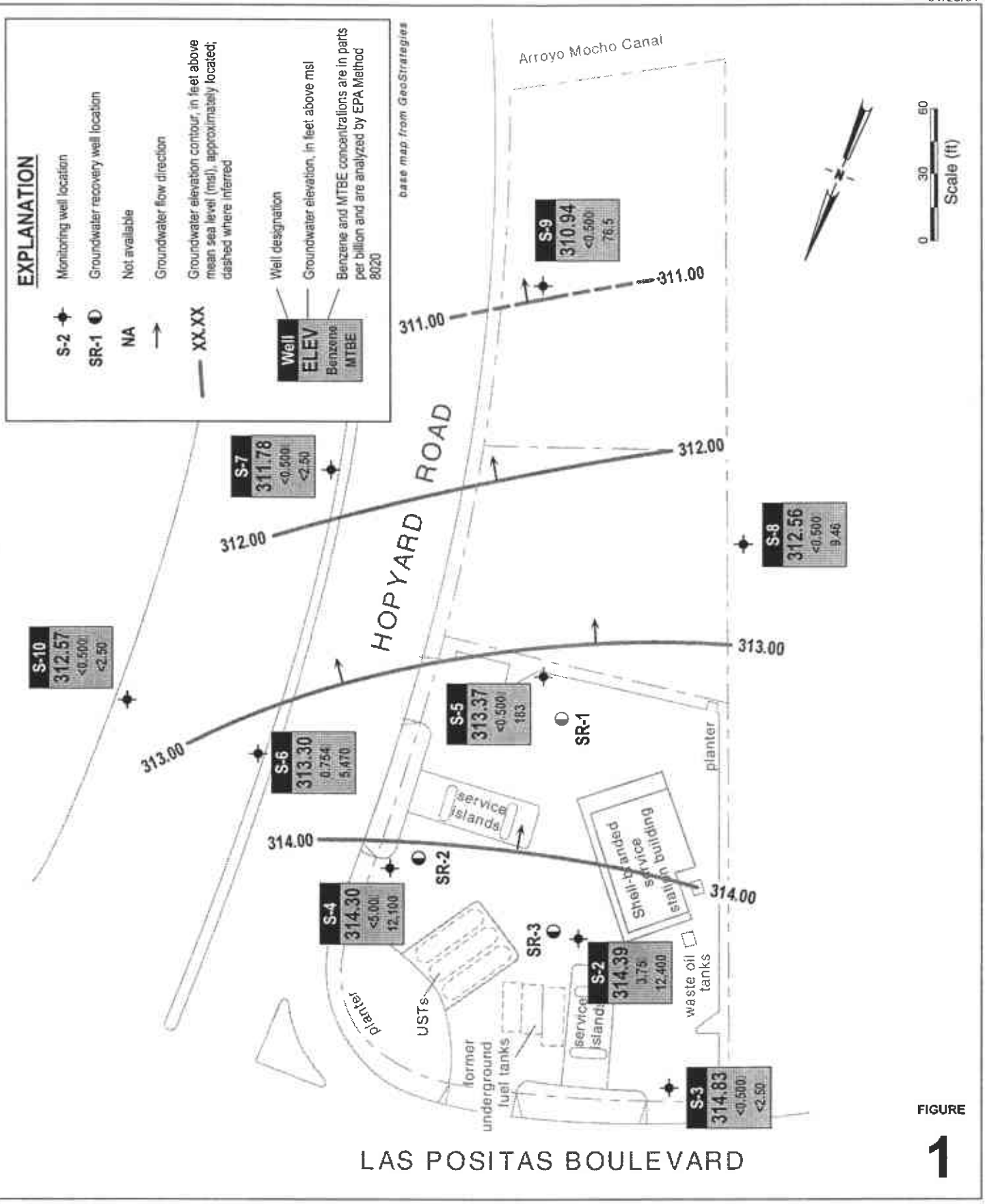
C A M B R I A

Shell-branded Service Station

3790 Hopyard Road

Pleasanton, California

Incident #98995842



FIGURE

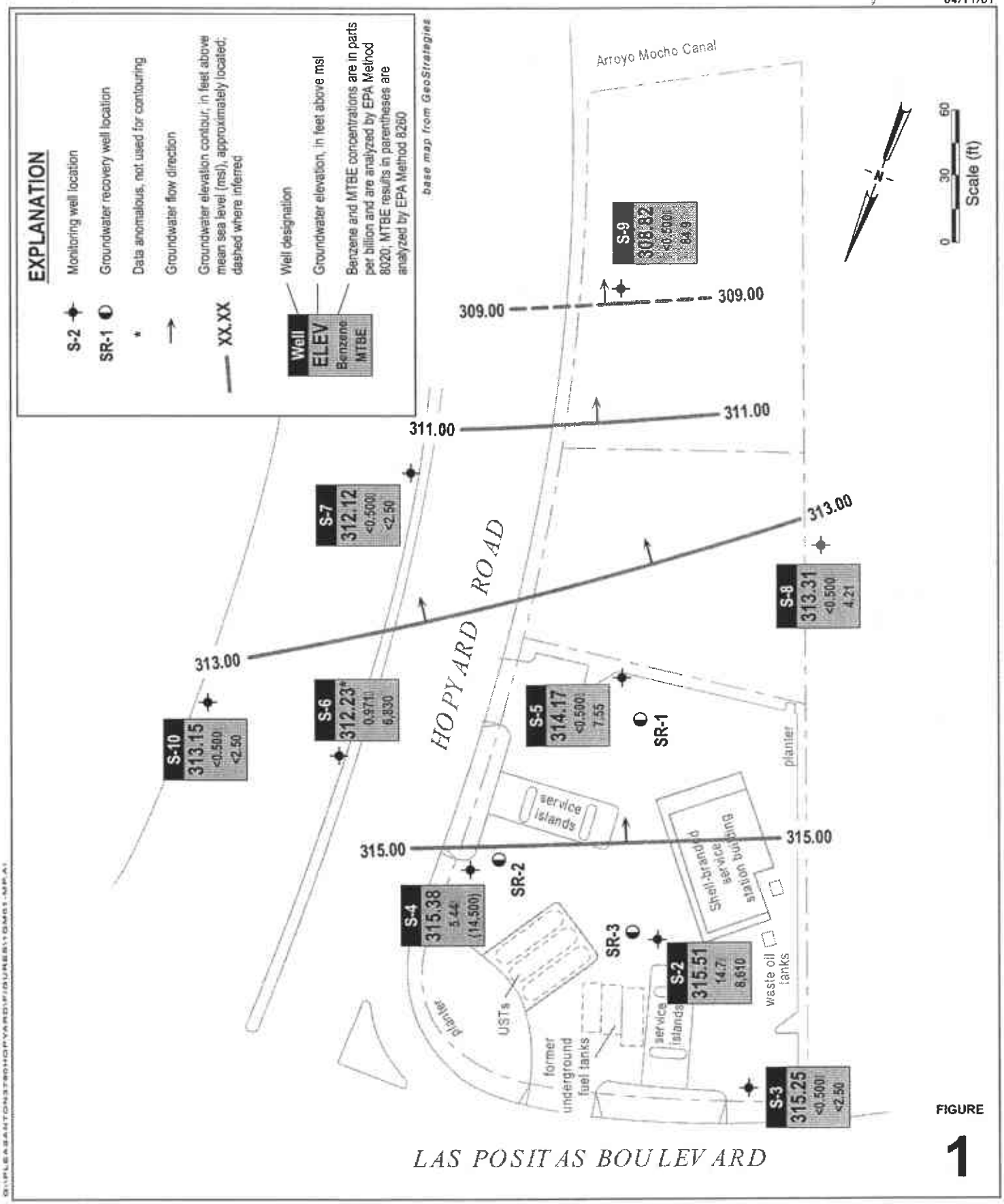
1

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Groundwater Elevation Contour Map
November 19, 2000

04/11/01



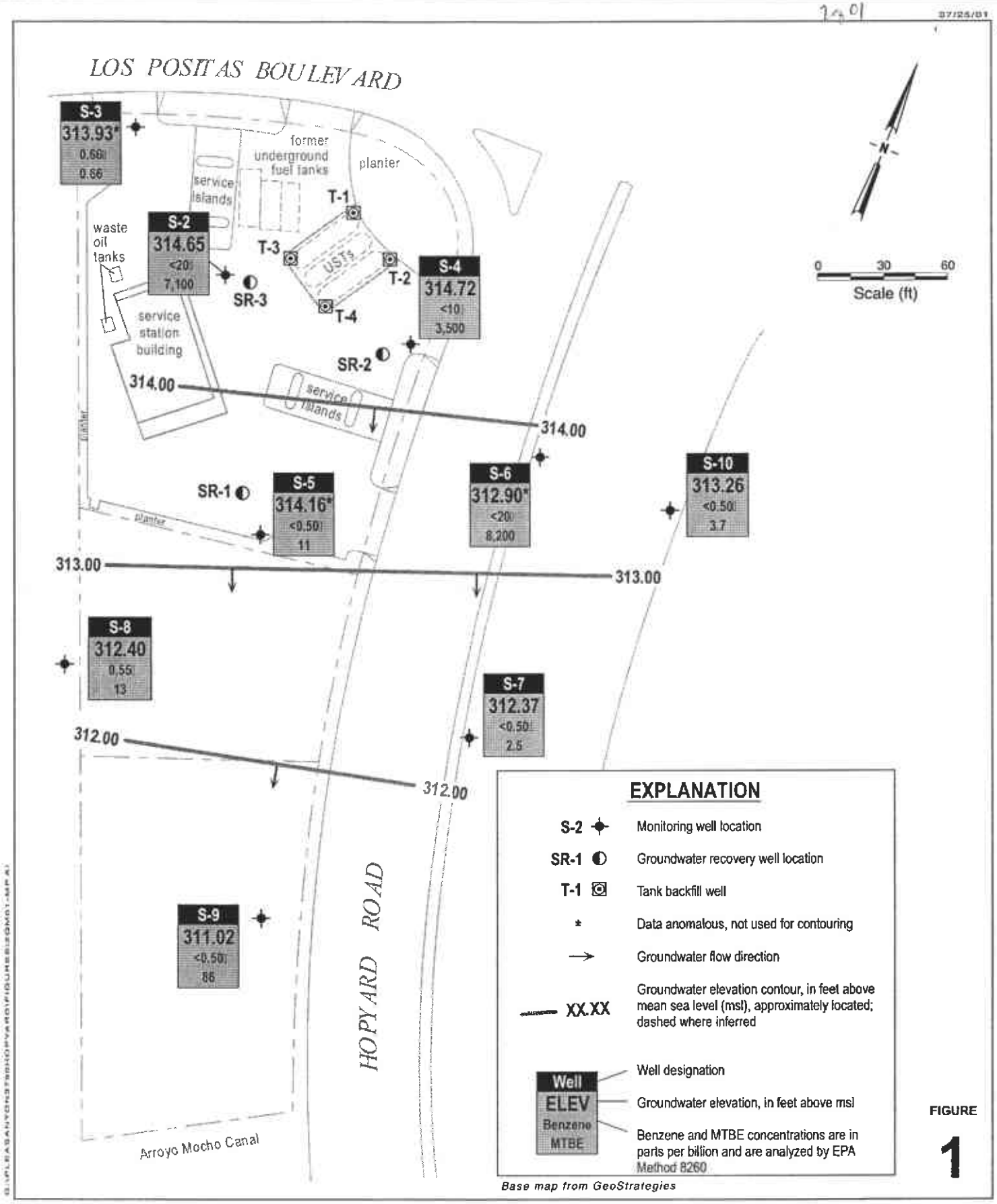
FIGURE

1

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Groundwater Elevation Contour Map
March 7, 2001



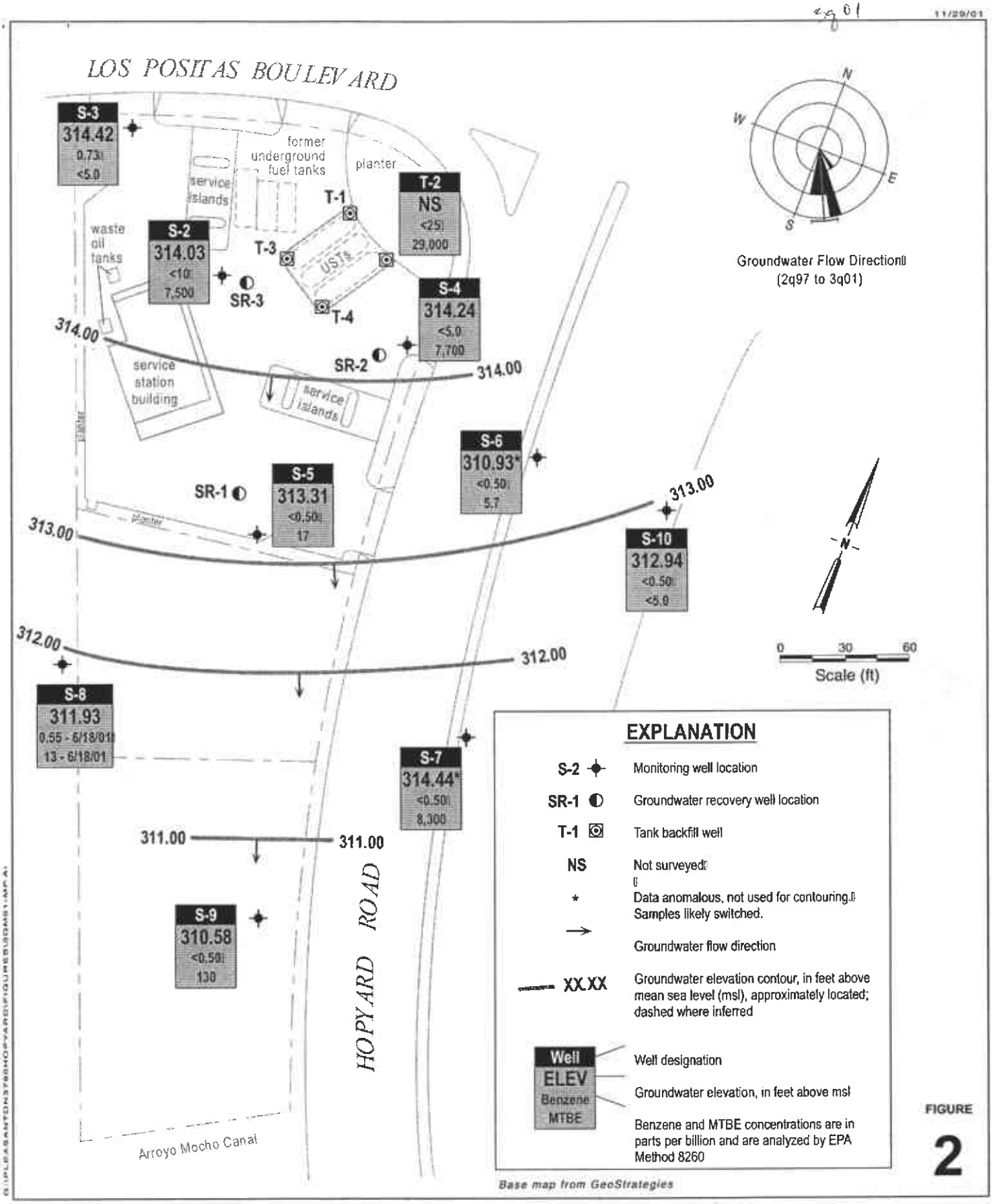
Base map from GeoStrategies

FIGURE 1

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Groundwater Elevation Contour Map
June 18, 2001



Base map from GeoStrategies

FIGURE
2

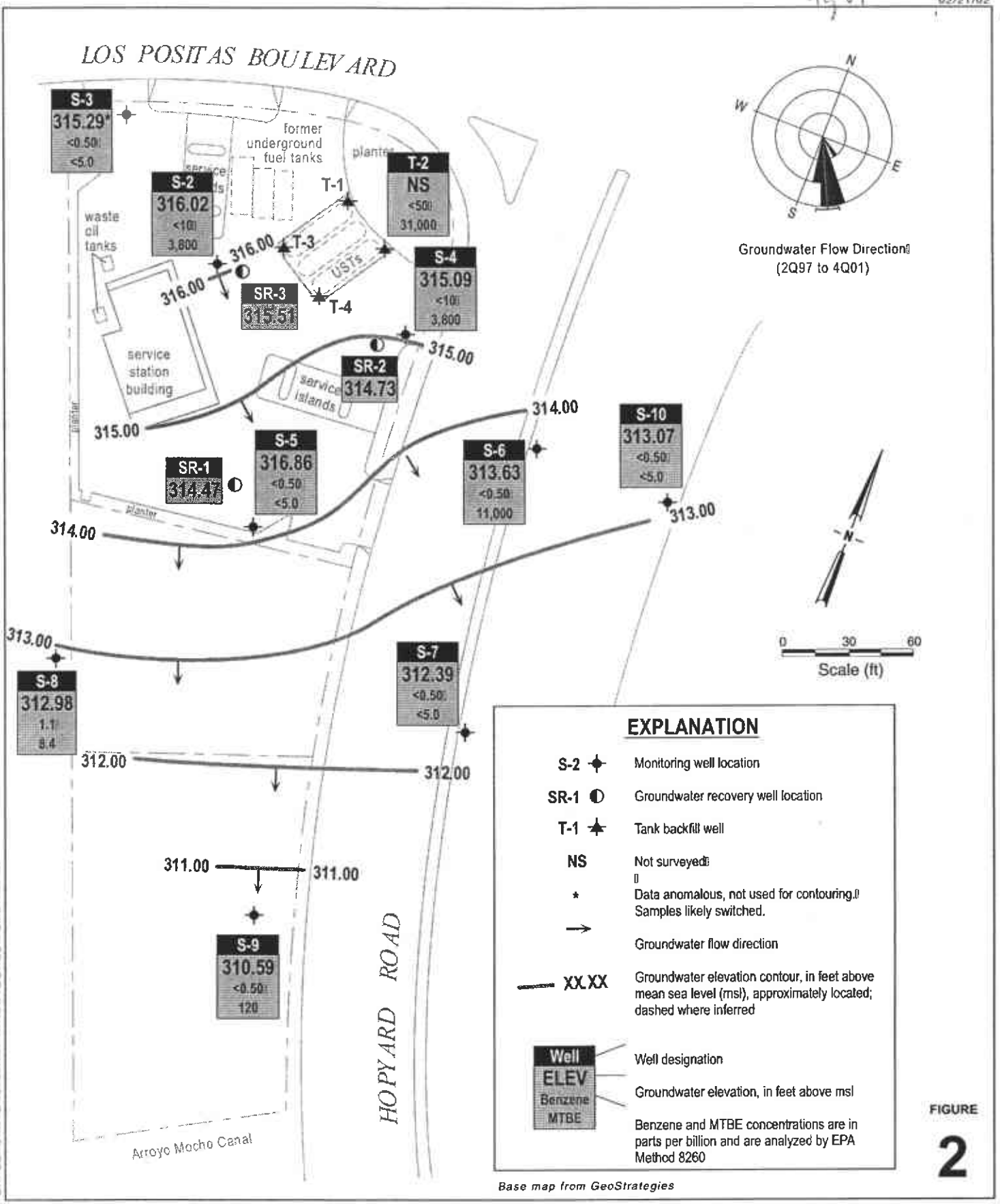
Shell-branded Service Station

3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Groundwater Elevation Contour Map

September 17, 2001



Base map from GeoStrategies

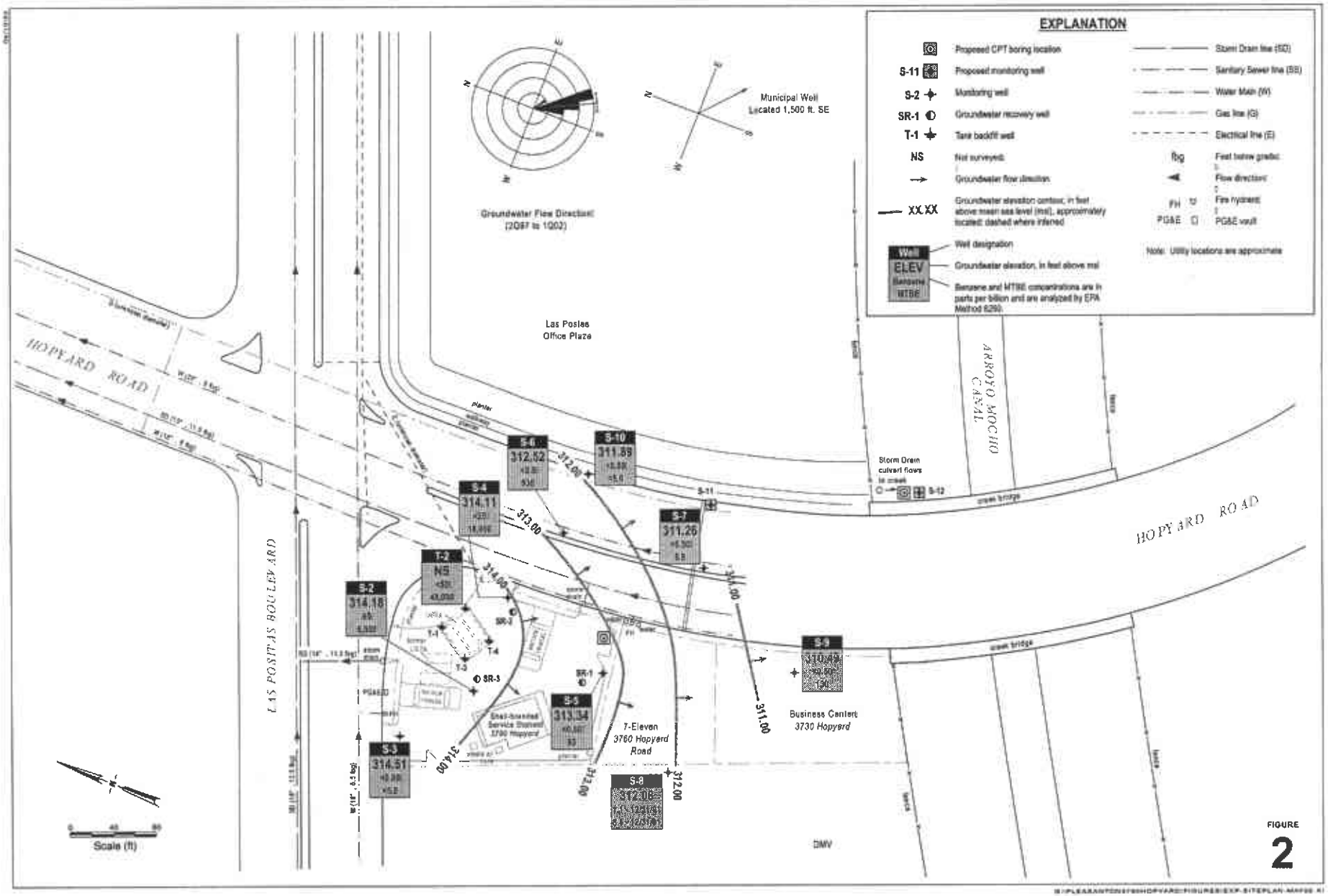
FIGURE 2

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Groundwater Elevation Contour Map
December 31, 2001

1Q02



Groundwater Elevation Contour Map
March 13, 2002

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #99995842

CAMBRIA

FIGURE
2

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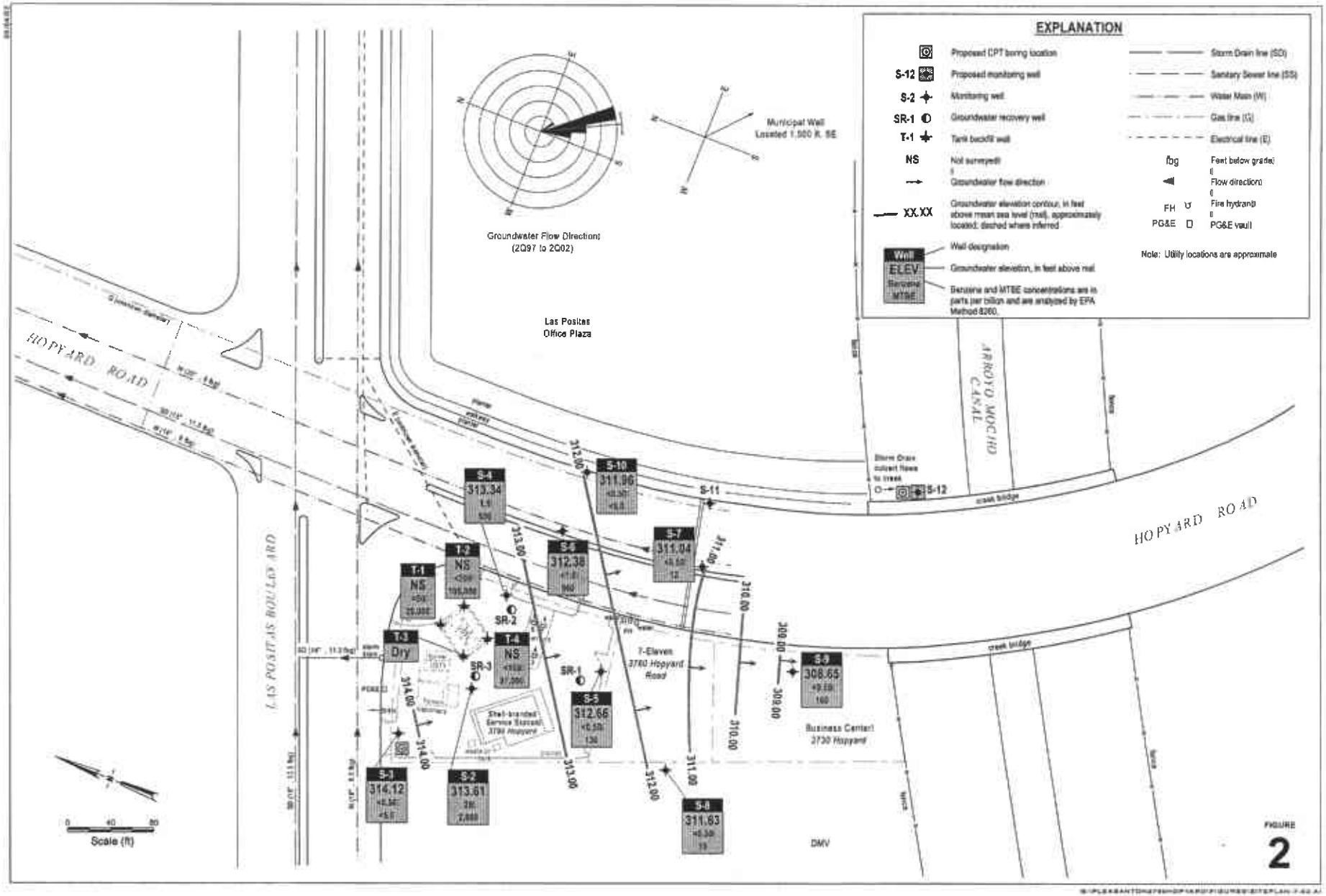
2Q02



Groundwater Elevation Contour Map
June 18, 2002

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

FIGURE
2

3Q02

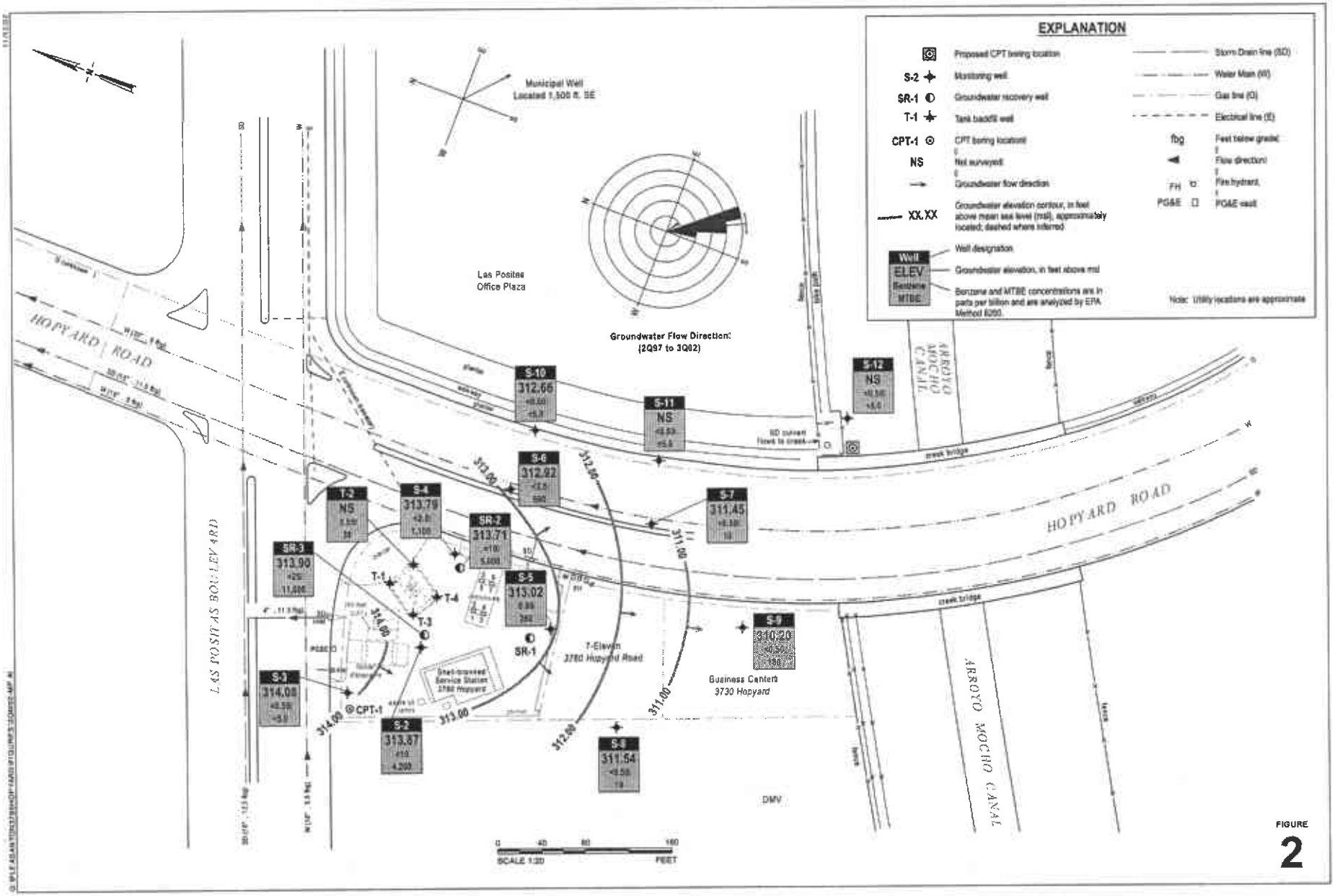


FIGURE
2

Groundwater Elevation Contour Map
September 27, 2002

CAMBRIA

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

4Q02

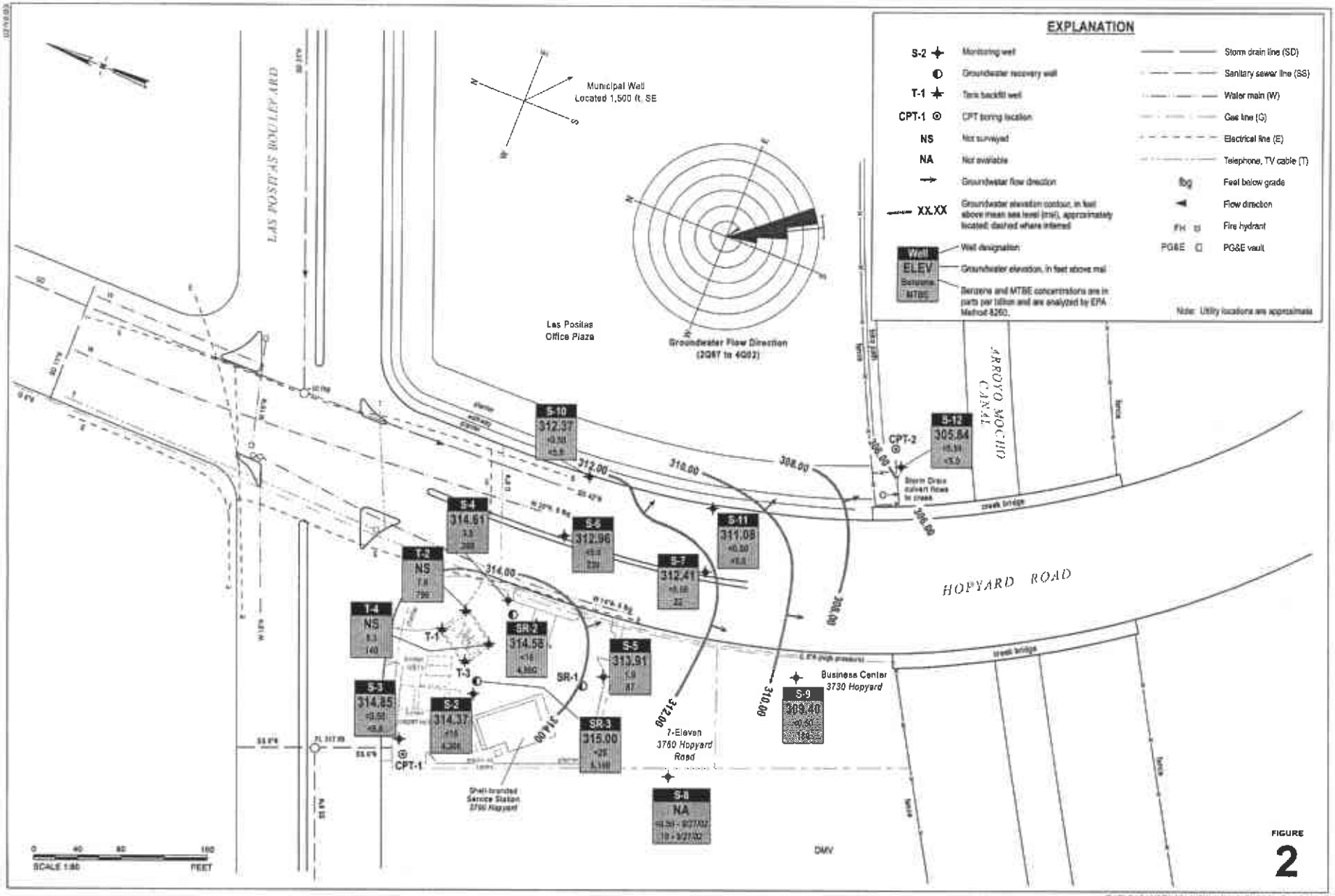


FIGURE
2

Groundwater Elevation Contour Map
December 27, 2002

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

ATTACHMENT B

Site Conceptual Model

SITE CONCEPTUAL MODEL
April 2003
Cambria Environmental Technology, Inc.

Site Address:	3790 Hopyard Road	**Incident Number:**	98995842
City:	Pleasanton, CA	**Regulator:**	Alameda County Health Care Services Agency

Item	Evaluation Criteria	Comments/Discussion
1	**Hydrocarbon Source**	
1.1	Identify/Describe Release Source and Volume (if known)	Release source and volume is unknown. Contamination has been detected in the vicinity of the former underground storage tanks (USTs), and near the former and current dispensers and piping.
1.2	Discuss Steps Taken to Stop Release	The previous USTs at the site were removed and replaced in 1988. In July 2002, Shell voluntarily initiated upgrades at the service station. Paradiso Mechanical of San Leandro upgraded the fuel dispensers and the product, vapor and vent lines. In addition, Paradiso added dispenser pans under the new dispensers and replaced the UST fuel fill port sumps and all associated piping in the tank pit areas above the USTs. MTBE-containing gasoline is no longer dispensed at the station, effective 1/1/03.
2	**Site Characterization**	
2.1	Current Site Use/Status	The site is an active Shell-branded service station located at the southwest corner of the intersection of Hopyard Road and Las Positas Boulevard in Pleasanton, California. The service station layout includes a station building, two dispenser islands on the eastern side of the property, a waste oil UST and three gasoline USTs. The surrounding property use is primarily commercial and residential property.

Item	Evaluation Criteria	Comments/Discussion
2.2	Soil Definition Status	Prior to 2002, no soil samples collected from the site were analyzed for MTBE. Soil contamination is defined in the upgradient direction by non-detection of TPHg and BTEX in soil samples from well S-3. Soil contamination is defined in the cross- and downgradient directions by non-detection of TPHg and BTEX in wells S-7, S-8, S-9 and S-10, and by non-detection of TPHg, BTEX and MTBE in wells S-11 and S-12. TPHg and benzene was detected at concentrations of up to 80 ppm and 4.8 ppm, respectively, in soil samples collected from the former UST pit following tank removal and over excavation. Up to 260 ppm TPHg, 0.079 ppm benzene and no MTBE were detected beneath the dispensers and piping during 2002 upgrades at the site. Vertical extent is defined down to the groundwater table.
2.3	Separate-Phase Hydrocarbon Definition Status	No SPH has been detected at the site.
2.4	Groundwater Definition Status (BTEX)	Groundwater monitoring has been conducted at the site since 1987. The downgradient extent of BTEX is defined by non-detect results in monitoring wells S-6, S-7, S-8, S-9, S-10, S-11 and S-12. The vertical extent of BTEX in groundwater has not been defined other than in borings CPT-1 and CPT-2. Depth discrete groundwater samples collected at depths ranging from 26 fbg to 88 fbg during CPT-1 and CPT-2 boring installation did not contain any TPHg, benzene or MTBE (analyzed by EPA Method 8260).
2.5	BTEX Plume Stability and Concentration Trends	Currently, BTEX concentrations exhibit a decreasing trend in site wells.
2.6	Groundwater Definition Status (MTBE)	The southeastern downgradient extent of MTBE in groundwater is defined by non-detection in monitoring wells S-10, S-11 and S-12. The downgradient extent of MTBE in groundwater has not been defined south-southeast or southeast of monitoring wells S-8 and S-9. The vertical extent of MTBE in groundwater has not been defined other than in borings CPT-1 and CPT-2. Depth discrete groundwater samples collected at depths ranging from 26 fbg to 88 fbg during CPT-1 and CPT-2 boring installation did not contain any TPHg, benzene or MTBE (analyzed by EPA Method 8260).
2.7	MTBE Plume Stability and Concentration Trends	MTBE concentrations in all site wells currently show a stable to decreasing trend since 2001. MTBE concentrations in the tank backfill have decreased up to 3 orders of magnitude since June 2002.

Item	Evaluation Criteria	Comments/Discussion
2.8	Groundwater Flow Direction, Depth Trends and Gradient Trends	Groundwater flow at the site has ranged from southeast to south-southeast since monitoring began in 1987. Depth to water in site monitoring wells has ranged from 11.59 to 19.59 feet below grade (fbg) since 1991.
2.9	Stratigraphy and Hydrogeology	The site subsurface consists of a relatively low permeability zone underlain by a relatively higher permeability zone, underlain by another low permeability zone. The uppermost low permeability zone consists of interbedded layers of sandy clay, clayey sand, silty clay and clay from the surface to approximately 43 to 53 fbg. The higher permeability zone consists of silt and sand interbeds to approximately 75 fbg. The lowermost low permeability zone consists of silts and clays to approximately the total explored depth of 120 fbg. A sandy layer was encountered at approximately 117 fbg in one boring installed downgradient of the site.
2.10	Preferential Pathways Analysis	Identified utilities downgradient of the site include water, electrical and gas lines, as well as storm drain lines. The majority of the lines in the downgradient direction from the site run approximately north to south, which approximates the natural groundwater flow direction at the site. The invert elevations of the storm drains in the site vicinity range from 315.81 to 315.29 feet above mean sea level (msl). The deepest identified point of the water lines in the site vicinity is 9 fbg, and the gas line was identified to be approximately 5 fbg. While exact depths to the electrical lines could not be determined, they are typically buried between 3 and 8 fbg. Measured depths-to-groundwater at the site have ranged from approximately 11.52 fbg to 19.59 fbg, which corresponds to a range of elevations of 318.14 to 308.65 feet above msl. Based on the information that the utilities in the site vicinity parallel natural groundwater flow and are more shallow than historical groundwater table, the identified utilities are not able to serve as preferential pathways for chemical migration in groundwater.
2.11	Other Pertinent Issues	preferential flow through higher-K sediments
3	Remediation Status	

Item	Evaluation Criteria	Comments/Discussion
3.1	Remedial Actions Taken	Following tank removal in 1988, the former UST pit was over-excavated to approximately 20 fbg. The fuel-related equipment at the service station was upgraded in July 2002, including the addition of secondary containment to the dispensers, and the replacement of fuel fillport sumps and all associated piping above the USTs. Weekly groundwater extraction (GWE) from monitoring wells S-1 and S-4 and tank backfill well T-2 was conducted during May 2001 and August 2001. Twice-monthly GWE from either wells S-4, T-2 or T-4 was conducted at the site between April 2002 and March 2003. A fixed GWE system is currently under construction at the site and anticipated to begin operation during the second quarter 2003.
3.2	Area Remediated	Remediation at the site has concentrated on the current and former tank pit complexes and in the downgradient direction from both the current and former UST pits.
3.3	Remediation Effectiveness	Over 71,500 gallons of groundwater have been extracted at the site, and an estimated 0.96 pounds of TPHg, 0.01 pounds of benzene, and 9.3 pounds of MTBE have been removed by GWE. MTBE concentrations in well S-2 decreased from 10,700 ppb in November 2000 to 4,300 ppb in December 2002. MTBE concentrations in well S-4 decreased from 14,500 ppm in March 2001 to 390 ppb in December 2002. MTBE concentrations in tank backfill well T-2 decreased from 100,000 ppb in June 2002 to 790 ppb in December 2002.
4	**Well and Sensitive Receptor Survey**	
4.1	Designated Beneficial Groundwater Use	The San Francisco Bay Region RWQCB Basin Plan identifies the following existing beneficial uses for groundwater in this region: Municipal and domestic water supply, Industrial process water supply, Industrial service water supply, and Agricultural water supply.
4.2	Shallow Groundwater Use	No pumping wells that draw from shallow groundwater were identified within a half-mile radius of the site.
4.3	Deep Groundwater Use	An active municipal well (Hop-6) is located approximately 1,500 feet southeast of the site. This well is screened from 215 to 235 fbg, 275 to 305 fbg, 355 to 375 fbg, and 400 to 490 fbg.

Item	Evaluation Criteria	Comments/Discussion
4.4	Well Survey Results	An April 2002 well survey conducted by Cambria identified six wells within a 1/2-mile radius, including one active municipal well (Hop-6, noted above), one destroyed municipal well (Hop-1), one abandoned irrigation well located between the site and the Arroyo Mocho Canal, one destroyed irrigation well and two wells of unknown use located in the former military yard southeast of the site. Based on a review of the Department of Water Resources Well Driller's Report form for the identified abandoned irrigation well, as well as a review of aerial photographs and historical utility maps, the abandoned irrigation well is likely located beneath the commercial building at 3730 Hopyard Road south of the site.
4.5	Likelihood of Impact to Wells	Impact to the municipal well is unlikely considering the low estimated permeability of the subsurface soils, and the distance to the well of 1,500 feet. Potential impact to the abandoned irrigation well depends on the screened interval of the well and its location, which has not yet been accurately determined, and the existence of downward vertical groundwater gradients.
4.6	Likelihood of Impact to Surface Water	Based on a review of the USGS topographic maps of the site vicinity and site reconnaissance, the nearest survey water body to the site is the Arroyo Mocho Canal located approximately 400 feet south of the site. The Arroyo Mocho Canal is an unlined, gaining canal. Well S-12 is located downgradient of the site on the northern bank of the Arroyo Mocho Canal, and groundwater samples collected from well S-12 have not contained MTBE since installation in September 2002. Based on this information, impact to the Arroyo Mocho Canal is not likely.
5	Risk Assessment	
5.1	Site Conceptual Exposure Model (current and future uses)	Onsite land use is commercial. There is an operating Shell-branded service station with an enclosed station building onsite. Offsite land use in the immediate vicinity is commercial. Residential use land is located southwest of the site south of the Arroyo Mocho Canal.
5.2	Exposure Pathways	Soil and/or groundwater volatilization to outdoor and/or indoor air, commercial exposure.
5.3	Risk Assessment Status	No formal risk assessment has been performed.
5.4	Identified Human Exceedances	No exceedances have been identified or evaluated.

Item	Evaluation Criteria	Comments/Discussion
5.5	Identified Ecological Exceedances	No exceedances have been identified or evaluated.
6	**Additional Recommended Data or Tasks**	
6.1		

Attached:
List of environmental documents
Quarterly groundwater monitoring map (4Q02) showing historic sampling locations and utilities
Quarterly groundwater monitoring table (4Q02)
Historical soil analytical tables
Well and boring logs
Cross section diagrams
2002 well survey map and table
Municipal well location map

G:\Pleasanton 3790 Hopyard\2003 Agency Response - Work Plan\SCM and Work Plan\[3790 SCM 4-03.xls]SCM

Environmental Documents Available to Cambria Environmental		
Date	Title/Subject	Company
03/21/86	Investigation report	Emcon Associates
12/04/87	Investigation report	Kaprealian Engineering Inc.
01/25/88	Request for remedial action	Zone 7
03/10/88	Investigation report	Kaprealian Engineering Inc.
03/25/88	Work Plan	Shell Oil Company
08/11/88	Soil Sampling Report	Kaprealian Engineering Inc.
01/18/89	Environmental Assessment Report	Woodward-Clyde Consultants
05/11/89	Phase II Environmental Assessment	Woodward-Clyde Consultants
07/18/89	Work Plan	Geostrategies Inc.
09/19/89	Addendum to Work Plan	Geostrategies Inc.
11/06/89	Groundwater Sampling Report	Gettler-Ryan Inc.
12/04/89	Quarterly Report - July to September 1989	Geostrategies Inc.
03/01/90	Quarterly Report - October to December 1989	Geostrategies Inc.
03/25/90	Aquifer Test Report	Geostrategies Inc.
08/16/90	Site Update	Geostrategies Inc.
12/07/90	Site Update	Geostrategies Inc.
02/15/91	Site Update	Geostrategies Inc.
05/16/91	Site Update	Geostrategies Inc.
08/12/91	Site Update	Geostrategies Inc.
11/08/01	Site Update	Geostrategies Inc.
02/07/92	Site Update	Geostrategies Inc.
05/08/92	Quarterly Report	Geostrategies Inc.
08/04/92	Quarterly Report	Geostrategies Inc.
11/06/92	Quarterly Report	Geostrategies Inc.
11/08/93	Quarterly Report	Geostrategies Inc.
05/07/93	Quarterly Report	Geostrategies Inc.
09/22/93	Quarterly Report	Geostrategies Inc.
10/30/93	Quarterly Report	Geostrategies Inc.
02/08/94	Fourth Quarter 1993 Groundwater Sampling	Hydro Environmental Technologies, Inc.
05/20/94	First Quarter 1994 Activities	Weiss Associates
08/22/94	Second Quarter 1994 Activities	Weiss Associates
11/17/94	Third Quarter 1994 Activities	Weiss Associates
07/31/95	Second Quarter 1995	Weiss Associates
06/18/96	Second Quarter 1996	Weiss Associates
07/31/96	Letter requesting interpretation of historical GW data	ACHCSA
01/15/97	Response to 7/31/96 ACHCSA letter	Cambria Environmental
08/14/97	Second Quarter 1997 Monitoring Report	Cambria Environmental
09/01/98	Second Quarter 1998 Monitoring Report	Cambria Environmental
09/22/98	1998 Upgrade Site Inspection Report	Cambria Environmental
09/15/99	Second Quarter 1999 Monitoring Report	Cambria Environmental

Environmental Documents Available to Cambria Environmental		
Date	Title/Subject	Company
08/24/00	Second Quarter 2000 Monitoring Report	Cambria Environmental
09/14/00	Request for quarterly monitoring schedule	ACHCSA
02/05/01	Fourth Quarter 2000 Monitoring Report	Cambria Environmental
04/09/02	Sensitive Receptor Survey Report	Cambria Environmental
04/30/01	First Quarter 2001 Monitoring Report	Cambria Environmental
06/12/02	Subsurface Investigation Work Plan	Cambria Environmental
07/22/02	Work plan addendum submitted via e-mail to ACHCSA	Cambria Environmental
07/31/01	Second Quarter 2001 Monitoring Report	Cambria Environmental
11/30/01	Third Quarter 2001 Monitoring Report	Cambria Environmental
03/25/02	Fourth Quarter 2001 Monitoring Report	Cambria Environmental
06/11/02	First Quarter 2002 Monitoring Report	Cambria Environmental
07/25/02	Second Quarter 2002 Monitoring Report	Cambria Environmental
08/28/02	Interim Remediation Work Plan	Cambria Environmental
09/09/02	Interim Remediation Work Plan Approval	ACHCSA
10/22/02	Request for Total Fuel Oxygenate Analysis	ACHCSA
11/12/02	Third Quarter 2002 Monitoring Report	Cambria Environmental
01/21/03	Dispenser and Piping Upgrade Soil Sampling Report	Cambria Environmental
02/27/03	SWI, SCM and CAP request letter	ACHCSA
03/28/03	Subsurface Investigation Report	Cambria Environmental
04/09/03	Agency Response and Extension Request	Cambria Environmental
04/29/03	Fourth Quarter 2002 Monitoring Report	Cambria Environmental

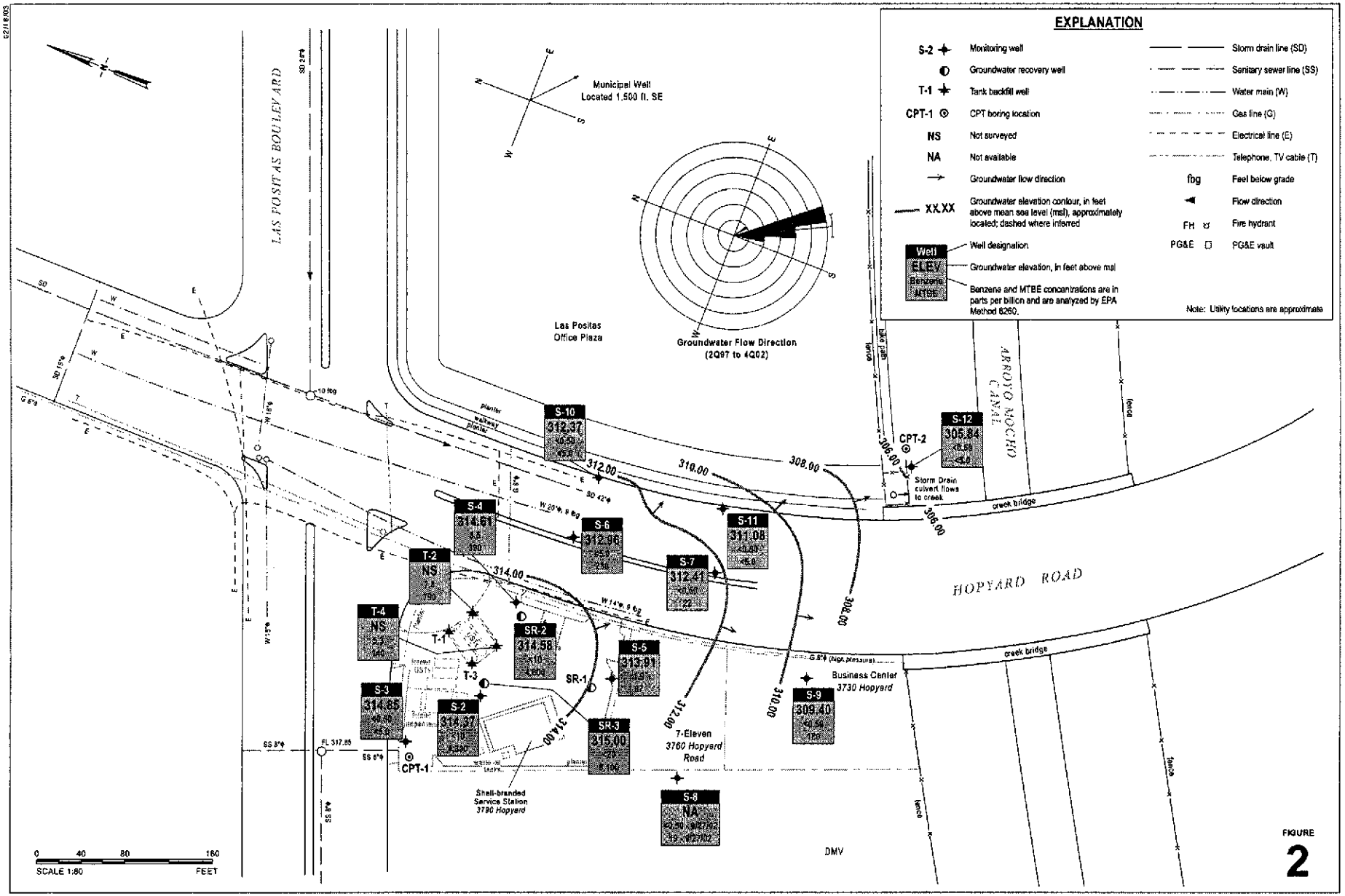


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FIGURE
2

Groundwater Elevation Contour Map
December 27, 2002

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

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TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	E.B. (PPM)	XYLENES (PPM)
11-Oct-89	SR-1	0.20	0.10	<0.001	0.010	0.010
14-Dec-89	SR-1	0.5	0.21	<0.0005	0.016	0.016
05-Mar-90	SR-1	0.064	0.020	<0.0005	0.0015	0.004
14-Jun-90	SR-1	0.06	0.017	<0.0005	0.0019	0.001
02-Oct-90	SR-1	<0.05	0.0050	<0.0005	<0.0005	<0.0005
18-Dec-90	SR-1	<0.05	0.028	0.0055	0.0045	0.0045
11-Oct-89	SR-2	0.88	<0.01	0.001	0.029	0.033
14-Dec-89	SR-2	1.1	0.017	<0.0005	0.10	0.067
05-Mar-90	SR-2	0.14	0.0030	<0.0005	0.012	0.007
14-Jun-90	SR-2	<0.05	<0.0005	<0.0005	0.0026	<0.001
02-Oct-90	SR-2	<0.05	<0.0005	<0.0005	0.0005	<0.0005
18-Dec-90	SR-2	<0.05	0.0016	0.0014	0.0016	0.0027
11-Oct-89	SR-3	0.50	0.092	0.010	0.043	0.10
14-Dec-89	SR-3	2.4	0.31	0.027	0.17	0.34
05-Mar-90	SR-3	0.070	0.015	0.0008	0.0058	0.010
14-Jun-90	SR-3	0.47	0.059	0.0023	0.035	0.05
02-Oct-90	SR-3	1.7	0.091	0.0062	0.0070	0.10
18-Dec-90	SR-3	0.14	0.010	0.0008	0.0075	0.014
06-Nov-87	S-1	0.92	0.230	<0.005	0.150	0.150
14-Feb-88	S-1	3.5	1.3	<0.04	0.5	0.5
06-Nov-87	S-2	16.0	0.87	0.10	2.7	2.7
14-Feb-88	S-2	1.8	0.44	<0.01	0.14	0.14
13-Oct-88	S-2	0.55	0.11	0.001	0.045	0.015
31-Jan-89	S-2	0.62	0.17	0.002	0.062	0.014
07-Mar-89	S-2	1.90	0.26	0.27	0.13	0.26
26-Jun-89	S-2	0.32	0.088	0.001	0.032	0.010
08-Sep-89	S-2	0.23	0.08	0.001	0.030	0.015
14-Dec-89	S-2	0.16	0.056	0.0005	0.021	0.003
05-Mar-90	S-2	0.71	0.057	<0.0005	<0.0005	0.088
14-Jun-90	S-2	0.11	0.039	0.0005	0.011	0.002
02-Oct-90	S-2	0.29	0.084	0.0017	0.16	0.0081
18-Dec-90	S-2	0.061	0.018	0.0014	0.0022	0.0024
14-Feb-88	S-3	<0.05	<0.0005	<0.001	<0.004	<0.004
13-Oct-88	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
31-Jan-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
07-Mar-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
14-Dec-89	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.001

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	E.B. (PPM)	XYLENES (PPM)
05-Mar-90	S-3	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-3	<0.5	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-3	<0.05	<0.0005	<0.0005	<0.0005	0.0010
18-Dec-90	S-3	<0.05	<0.0005	0.0016	<0.0005	0.0020
14-Feb-88	S-4	5.1	0.16	0.008	0.73	0.73
13-Oct-88	S-4	0.53	0.024	0.001	0.025	0.016
31-Jan-89	S-4	1.1	0.033	0.002	0.020	0.024
07-Mar-89	S-4	0.65	0.037	0.001	0.035	0.027
26-Jun-89	S-4	0.67	0.11	<0.001	0.085	0.071
08-Sep-89	S-4	0.38	0.032	<0.001	0.036	0.026
14-Dec-89	S-4	0.21	0.021	<0.0005	0.030	0.023
05-Mar-90	S-4	0.35	0.043	<0.0005	0.024	0.047
14-Jun-90	S-4	0.43	0.074	<0.0005	0.071	0.046
02-Oct-90	S-4	0.70	0.074	0.0022	0.10	0.055
18-Dec-90	S-4	1.4	0.18	0.0029	0.28	0.23
14-Feb-88	S-5	1.0	0.04	0.086	0.180	0.180
13-Oct-88	S-5	0.56	0.066	0.020	0.018	0.036
31-Jan-89	S-5	0.18	0.027	0.008	0.009	0.013
07-Mar-89	S-5	3.8	0.52	0.53	0.26	0.57
26-Jun-89	S-5	<0.05	0.0038	<0.001	0.002	<0.003
08-Sep-89	S-5	0.11	0.025	0.002	0.002	0.012
14-Dec-89	S-5	1.7	0.30	0.086	0.067	0.14
05-Mar-90	S-5	1.1	0.10	0.11	0.079	0.24
14-Jun-90	S-5	0.6	0.094	0.036	0.04	0.062
02-Oct-90	S-5	4.5	1.4	0.16	0.26	0.30
20-Nov-90	S-5	16.	4.6	0.72	0.79	1.0
18-Dec-90	S-5	25.	7.6	1.1	1.3	2.3
13-Oct-88	S-6	1.1	0.0130	0.001	0.042	0.033
31-Jan-89	S-6	0.34	0.0038	<0.001	0.008	0.003
07-Mar-89	S-6	0.19	0.0038	<0.001	0.007	0.003
26-Jun-89	S-6	0.48	0.015	<0.001	0.006	<0.003
08-Sep-89	S-6	0.27	0.0013	0.001	0.007	<0.003
15-Dec-89	S-6	0.32	0.0010	<0.0005	0.0026	<0.001
06-Mar-90	S-6	0.42	0.0031	<0.0005	0.014	<0.001
14-Jun-90	S-6	0.37	0.0037	0.0009	0.0048	0.003
02-Oct-90	S-6	0.19	0.0066	0.0016	0.0019	0.0028
18-Dec-90	S-6	0.43	0.010	0.0007	0.0016	0.0015
13-Oct-88	S-7	<0.05	0.0006	0.001	<0.001	<0.003
31-Jan-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	E.B. (PPM)	XYLENES (PPM)
07-Mar-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
15-Dec-89	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-7	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-7	<0.05	<0.0005	0.0006	<0.0005	0.0009
18-Dec-90	S-7	<0.05	0.0005	<0.0005	<0.0005	0.00086
07-Mar-89	S-8	<0.05	0.0012	0.001	<0.001	<0.003
26-Jun-89	S-8	<0.05	0.0008	0.001	<0.001	<0.003
08-Sep-89	S-8	<0.05	<0.0005	<0.001	<0.001	<0.003
14-Dec-89	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.001
05-Mar-90	S-8	<0.050	<0.0005	0.0005	<0.0005	<0.001
14-Jun-90	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
18-Dec-90	S-8	<0.05	0.0029	0.0070	0.0010	0.0064
07-Mar-89	S-9	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-9	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-9	<0.05	0.0017	0.002	<0.001	<0.003
15-Dec-89	S-9	<0.05	0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-9	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
18-Dec-90	S-9	<0.05	0.020	0.027	0.0071	0.035
11-Aug-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003
15-Dec-89	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-10	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	0.0010
18-Dec-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	0.0014

TPH-G = Total Petroleum Hydrocarbons as Gasoline
PPM = Parts per million
E.B. = Ethylbenzene
---- = Not analyzed
NOTE: 1. All data shown as <X are reported as ND (none detected)
2. Ethylbenzene and Xylenes were combined prior to October 1988

WELL CONCENTRATIONS
Shell-branded Service Station
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Pleasanton, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-2	03/20/1991	110	NA	30	2.2	10	7	NA	NA	329.21	NA	NA	NA
S-2	06/26/1991	50a	NA	6.3	<0.5	3.3	1.3	NA	NA	329.21	NA	NA	NA
S-2	09/05/1991	90	NA	12	3.2	2.5	2.3	NA	NA	329.21	NA	NA	NA
S-2	12/13/1991	<50	NA	12	<0.5	<0.5	<0.5	NA	NA	329.21	15.85	313.36	NA
S-2	03/11/1992	<30	NA	<0.3	<0.3	<0.3	<0.3	NA	NA	329.21	14.94	314.27	NA
S-2	06/24/1992	<50	NA	0.9	<0.5	<0.5	<0.5	NA	NA	329.21	15.78	313.43	NA
S-2	09/17/1992	78	NA	2.6	1.3	1.3	0.9	NA	NA	329.21	15.03	314.18	NA
S-2	12/11/1992	<50	NA	0.8	<0.5	<0.5	<0.5	NA	NA	329.21	14.81	314.40	NA
S-2	02/04/1993	55	NA	1.3	0.7	0.7	<0.5	NA	NA	329.21	NA	NA	NA
S-2	06/03/1993	<50	NA	0.7	<0.5	<0.5	<0.5	NA	NA	329.21	NA	NA	NA
S-2	09/15/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.21	14.63	314.58	NA
S-2	12/09/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.21	14.70	314.51	NA
S-2	06/16/1994	<50	NA	0.8	<0.5	0.7	<0.5	NA	NA	329.21	14.94	314.27	NA
S-2	09/13/1994	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.21	15.17	314.04	NA
S-2	06/21/1995	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.21	14.25	314.96	NA
S-2	06/12/1996	<50	NA	6.1	<0.5	<0.5	<0.5	48	NA	329.21	14.31	314.90	NA
S-2	06/25/1997	120	NA	25	0.59	2.4	8.7	130	NA	329.21	14.40	314.81	4.4
S-2	06/19/1998	450	NA	96	<2.5	4	19	180	NA	329.21	13.72	315.49	2.8
S-2	06/17/1999	312	NA	74.4	2.04	1.02	<1.00	147	NA	329.21	13.97	315.24	3.7
S-2	06/15/2000	1,050	NA	261	<5.00	7.54	11.4	13,500	9,850b	329.21	14.25	314.96	3.3
S-2	11/29/2000	<250	NA	3.75	<2.50	<2.50	<2.50	12,400	10,700b	329.21	14.82	314.39	2.2
S-2	03/07/2001	<500	NA	14.7	<5.00	<5.00	<5.00	8,610	NA	329.21	13.70	315.51	2.3
S-2	06/18/2001	<2,000	NA	<20	<20	<20	<20	NA	7,100	329.21	14.56	314.65	NA
S-2	09/17/2001	<2,000	NA	<10	<10	<10	<10	NA	7,500	329.21	15.18	314.03	NA
S-2	12/31/2001	<1,000	NA	<10	<10	<10	<10	NA	3,800	329.21	13.19	316.02	NA
S-2	03/13/2002	<1,000	NA	65	<10	13	<10	NA	6,500	329.21	15.03	314.18	NA
S-2	06/18/2002	520	NA	28	<5.0	<5.0	<5.0	NA	2,800	329.21	15.60	313.61	NA

WELL CONCENTRATIONS
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Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-2	09/27/2002	<1,000	NA	<10	<10	<10	<10	NA	4,200	328.77	14.90	313.87	NA
S-2	**12/27/2002**	**<1,000**	**NA**	**<10**	**<10**	**<10**	**<10**	**NA**	**4,300**	**328.77**	**14.40**	**314.37**	**NA**
S-3	03/20/1991	70	NA	2.3	8.9	4	23	NA	NA	327.67	NA	NA	NA
S-3	06/26/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	NA	NA	NA
S-3	09/05/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	NA	NA	NA
S-3	12/13/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	13.87	313.80	NA
S-3	03/11/1992	<30	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	13.05	314.62	NA
S-3	06/24/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	13.86	313.81	NA
S-3	09/17/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	13.01	314.66	NA
S-3	12/11/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	13.00	314.67	NA
S-3	02/04/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	NA	NA	NA
S-3	06/03/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.67	NA	NA	NA
S-3	09/15/1993	NA	NA	NA	NA	NA	NA	NA	NA	327.67	13.02	314.65	NA
S-3	12/09/1993	NA	NA	NA	NA	NA	NA	NA	NA	327.67	NA	NA	NA
S-3	09/13/1994	NA	NA	NA	NA	NA	NA	NA	NA	327.67	15.17	312.50	NA
S-3	06/21/1995	50	NA	4.1	<0.5	20	1.2	NA	NA	327.67	12.49	315.18	NA
S-3	06/12/1996	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.5	NA	327.67	12.53	315.14	NA
S-3	06/25/1997	<50	NA	<0.50	<0.50	<0.50	<0.50	<2.5	NA	327.67	12.64	315.03	1.8
S-3	06/19/1998	<50	NA	<0.50	<0.50	<0.50	<0.50	<2.5	NA	327.67	11.74	315.93	4.1
S-3	06/17/1999	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<5.00	NA	327.67	12.35	315.32	2.8
S-3	06/15/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	327.67	12.51	315.16	3.2
S-3	11/29/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	327.67	12.84	314.83	1.0
S-3	03/07/2001	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	327.67	12.42	315.25	2.8
S-3	06/18/2001	<50	NA	0.66	1.1	<0.50	0.51	NA	0.66	327.67	13.74	313.93	NA
S-3	09/17/2001	<50	NA	0.73	0.96	<0.50	0.61	NA	<5.0	327.67	13.25	314.42	NA
S-3	12/31/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	327.67	12.38	315.29	NA

WELL CONCENTRATIONS
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Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-3	03/13/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	327.67	13.16	314.51	NA
S-3	06/18/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	327.67	13.55	314.12	NA
S-3	09/27/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	327.40	13.32	314.08	NA
S-3	**12/27/2002**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**327.40**	**12.55**	**314.85**	**NA**
S-4	03/20/1991	1,200	NA	100	<2.0	210	130	NA	NA	328.53	NA	NA	NA
S-4	06/26/1991	220	NA	14	<0.5	34	17	NA	NA	328.53	NA	NA	NA
S-4	09/05/1991	580	NA	31	0.8	53	26	NA	NA	328.53	NA	NA	NA
S-4	12/13/1991	370	NA	24	0.9	1.3	46	NA	NA	328.53	15.20	313.33	NA
S-4	03/11/1992	1,600	NA	23	1.2	12	20	NA	NA	328.53	14.37	314.16	NA
S-4	06/24/1992	480	NA	48	<1.0	95	22	NA	NA	328.53	15.30	313.23	NA
S-4	09/17/1992	260	NA	35	1.2	51	7.8	NA	NA	328.53	14.17	314.36	NA
S-4	12/11/1992	270	NA	34	0.8	28	4.5	NA	NA	328.53	14.18	314.35	NA
S-4	02/04/1993	1,100	NA	12	<5.0	89	100	NA	NA	328.53	NA	NA	NA
S-4	06/03/1993	210	NA	48	1.1	42	4	NA	NA	328.53	NA	NA	NA
S-4	09/15/1993	700	NA	21	<1.0	110	91	NA	NA	328.53	13.86	314.67	NA
S-4	12/09/1993	250	NA	39	<0.5	3.8	2.6	NA	NA	328.53	14.16	314.37	NA
S-4	03/04/1994	150	NA	25	1.4	6.8	2.8	NA	NA	328.53	14.17	314.36	NA
S-4 (D)	03/04/1994	140	NA	28	0.8	7.9	3.2	NA	NA	328.53	14.17	314.36	NA
S-4	06/16/1994	90	NA	12	<0.5	1.8	2.4	NA	NA	328.53	14.14	314.39	NA
S-4 (D)	06/16/1994	80	NA	5.9	<0.5	1.5	0.9	NA	NA	328.53	14.14	314.39	NA
S-4	09/13/1994	<50	NA	23	<0.5	4.9	2.4	NA	NA	328.53	14.42	314.11	NA
S-4 (D)	09/13/1994	<50	NA	23	<0.5	4	2.3	NA	NA	328.53	14.42	314.11	NA
S-4	06/21/1995	270	NA	34	1.4	25	7.6	NA	NA	328.53	13.82	314.71	NA
S-4 (D)	06/21/1995	280	NA	35	2.1	26	8.4	NA	NA	328.53	13.82	314.71	NA
S-4	06/12/1996	360	NA	52	<0.5	<0.5	<0.5	92	NA	328.53	13.64	314.89	NA
S-4 (D)	06/12/1996	430	NA	54	<1.2	72	21	96	NA	328.53	13.64	314.89	NA

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Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-4	06/25/1997	6,700	NA	93	1,200	240	1,300	6,900	6,800	328.53	13.74	314.79	0.6
S-4	06/19/1998	3,500	NA	56	15	140	670	2,100	NA	328.53	12.55	315.98	0.8
S-4 (D)	06/19/1998	3,000	NA	51	14	110	530	2,000	NA	328.53	12.55	315.98	0.8
S-4	06/17/1999	1,510	NA	28.4	9.84	176	132	1,780	NA	328.53	13.24	315.29	4.8
S-4	06/15/2000	<500	NA	12.0	<5.00	31.0	22.8	12,200	NA	328.53	13.65	314.88	2.1
S-4	11/29/2000	<500	NA	<5.00	<5.00	<5.00	<5.00	12,100	NA	328.53	14.23	314.30	1.8
S-4	03/07/2001	<500	NA	5.44	<5.00	6.49	<5.00	11,400	14,500	328.53	13.15	315.38	2.4
S-4	06/18/2001	<1,000	NA	<10	<10	<10	<10	NA	3,500	328.53	13.81	314.72	NA
S-4	09/17/2001	<500	NA	<5.0	<5.0	<5.0	<5.0	NA	7,700	328.53	14.29	314.24	NA
S-4	12/31/2001	<1,000	NA	<10	<10	<10	<10	NA	3,800	328.53	13.44	315.09	NA
S-4	03/13/2002	<2,500	NA	<25	<25	<25	<25	NA	18,000	328.53	14.42	314.11	NA
S-4	06/18/2002	<100	NA	1.1	<1.0	<1.0	<1.0	NA	530	328.53	15.19	313.34	NA
S-4	09/27/2002	<200	NA	<2.0	<2.0	<2.0	<2.0	NA	1,100	328.11	14.32	313.79	NA
S-4	**12/27/2002**	**280**	**NA**	**3.5**	**<2.5**	**17**	**4.7**	**NA**	**390**	**328.11**	**13.50**	**314.61**	**NA**
S-5	03/20/1991	310	NA	39	12	18	30	NA	NA	329.66	NA	NA	NA
S-5	06/26/1991	1,300	NA	250	62	120	180	NA	NA	329.66	NA	NA	NA
S-5	09/05/1991	4,700	NA	660	150	170	280	NA	NA	329.66	NA	NA	NA
S-5	12/13/1991	1,400	NA	580	19	110	80	NA	NA	329.66	17.48	312.18	NA
S-5	03/11/1992	<30	NA	<0.3	<0.3	<0.3	<0.3	NA	NA	329.66	16.22	313.44	NA
S-5	06/24/1992	1,800	NA	380	52	120	180	NA	NA	329.66	17.47	312.19	NA
S-5	09/17/1992	2,200	NA	750	91	170	170	NA	NA	329.66	16.84	312.82	NA
S-5	12/11/1992	8,700	NA	1,600	66	48	340	NA	NA	329.66	16.37	313.29	NA
S-5	02/04/1993	150	NA	156	0.7	4.7	4	NA	NA	329.66	NA	NA	NA
S-5	06/03/1993	480	NA	140	3.4	17	14	NA	NA	329.66	NA	NA	NA
S-5	09/15/1993	80	NA	2.4	0.5	1.4	2.9	NA	NA	329.66	16.20	313.46	NA
S-5	12/09/1993	120	NA	0.56	<0.5	2.2	1.2	NA	NA	329.66	16.26	313.40	NA

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S-5	03/04/1994	70	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.66	16.25	313.41	NA
S-5	06/16/1994	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.66	16.04	313.62	NA
S-5	09/13/1994	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.66	11.52	318.14	NA
S-5	06/21/1995	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	329.66	14.50	315.16	NA
S-5	06/12/1996	<500	NA	6	<5.0	<5.0	<5.0	1,400	NA	329.66	12.53	317.13	NA
S-5	06/25/1997	<250	NA	<2.5	<2.5	<2.5	<2.5	1,100	NA	329.66	15.34	314.32	1.1
S-5	06/19/1998	<50	NA	1	<0.50	<0.50	<0.50	61	NA	329.66	13.71	315.95	3.6
S-5	06/17/1999	<50.0	NA	1.44	<0.500	<0.500	<0.500	336	NA	329.66	13.56	316.10	1.4
S-5	06/15/2000	<50.0	NA	0.820	<0.500	<0.500	<0.500	221	NA	329.66	15.00	314.66	2.7
S-5	11/29/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	183	NA	329.66	16.29	313.37	0.7
S-5	03/07/2001	<50.0	NA	<0.500	<0.500	<0.500	<0.500	7.55	NA	329.66	15.49	314.17	2.5
S-5	06/18/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	11	329.66	15.50	314.16	NA
S-5	09/17/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	17	329.66	16.35	313.31	NA
S-5	12/31/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	329.66	12.80	316.86	NA
S-5	03/13/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	93	329.66	16.32	313.34	NA
S-5	06/18/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	130	329.66	17.00	312.66	NA
S-5	09/27/2002	<50	NA	0.88	<0.50	<0.50	<0.50	NA	280	329.36	16.34	313.02	NA
S-5	**12/27/2002**	**<50**	**NA**	**1.9**	**<0.50**	**<0.50**	**<0.50**	**NA**	**87**	**329.36**	**15.45**	**313.91**	**NA**
S-6	03/20/1991	130a	NA	606	0.6	0.7	3	NA	NA	327.62	NA	NA	NA
S-6	06/26/1991	120a	NA	3.8	0.8	<0.5	1.7	NA	NA	327.62	NA	NA	NA
S-6	09/05/1991	60	NA	<0.5	0.8	<0.5	0.5	NA	NA	327.62	NA	NA	NA
S-6	12/13/1991	150	NA	2.3	<0.5	<0.5	150	NA	NA	327.62	15.11	312.51	NA
S-6	03/11/1992	<30	NA	<0.3	<0.3	<0.5	<0.3	NA	NA	327.62	16.35	311.27	NA
S-6	06/24/1992	170	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.62	16.51	311.11	NA
S-6	09/17/1992	190	NA	<0.5	1.6	<0.5	1.2	NA	NA	327.62	14.33	313.29	NA
S-6	12/11/1992	180	NA	<0.5	0.8	<0.5	0.7	NA	NA	327.62	14.48	313.14	NA

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S-6	02/04/1993	290	NA	<0.5	<0.5	<0.5	0.7	NA	NA	327.62	NA	NA	NA
S-6	06/03/1993	100	NA	1.2	<0.5	<0.5	<0.5	NA	NA	327.62	NA	NA	NA
S-6	09/15/1993	160	NA	1.4	<0.5	0.9	2	NA	NA	327.62	14.16	313.46	NA
S-6	12/09/1993	130	NA	2.3	2.6	5.1	6.2	NA	NA	327.62	14.68	312.94	NA
S-6	03/04/1994	220	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.62	14.42	313.20	NA
S-6	06/16/1994	60	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.62	14.92	312.70	NA
S-6	09/13/1994	<50	NA	<0.5	6	<0.5	<0.5	NA	NA	327.62	14.72	312.90	NA
S-6	06/21/1995	270	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.62	13.86	313.76	NA
S-6	06/12/1996	200	NA	2	<0.5	<0.5	<0.5	12	NA	327.62	13.90	313.72	NA
S-6	06/25/1997	180	NA	<0.50	0.61	<0.50	0.77	28	NA	327.62	13.64	313.98	1.8
S-6 (D)	06/25/1997	130	NA	<0.50	<0.50	<0.50	<0.50	21	NA	327.62	13.64	313.98	1.8
S-6	06/19/1998	100	NA	7.6	<0.50	<0.50	<0.50	27	NA	327.62	13.81	313.81	1.7
S-6	06/17/1999	114	NA	4.14	<0.500	<0.500	<0.500	19.9	NA	327.62	14.21	313.41	1.6
S-6	06/15/2000	367	NA	17.5	<0.500	<0.500	<0.500	1,050	NA	327.62	14.51	313.11	1.8
S-6	11/29/2000	154	NA	0.754	16.4	<0.500	1.05	5,470	NA	327.62	14.32	313.30	2.1
S-6	03/07/2001	183	NA	0.971	25.1	0.636	0.996	6,830	NA	327.62	15.39	312.23	1.7
S-6	06/18/2001	<2,000	NA	<20	<20	<20	<20	NA	8,200	327.62	14.72	312.90	NA
S-6	09/17/2001 c	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	5.7	327.62	16.69	310.93	NA
S-6	12/31/2001	260	NA	<0.50	<0.50	<0.50	<0.50	NA	11,000	327.62	13.99	313.63	NA
S-6	03/13/2002	440	NA	<2.5	<2.5	<2.5	<2.5	NA	930	327.62	15.10	312.52	NA
S-6	06/18/2002	340	NA	<1.0	<1.0	<1.0	<1.0	NA	560	327.62	15.24	312.38	NA
S-6	09/27/2002	<250	NA	<2.5	<2.5	<2.5	<2.5	NA	580	327.26	14.34	312.92	NA
S-6	**12/27/2002**	**<500**	**NA**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**NA**	**230**	**327.26**	**14.30**	**312.96**	**NA**
S-7	03/20/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.67	NA	NA	NA
S-7	06/26/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.67	NA	NA	NA
S-7	09/05/1991	<50	NA	<0.5	0.6	<0.5	<0.5	NA	NA	328.67	NA	NA	NA

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S-7	12/13/1991	<50	NA	<0.6	<0.5	<0.5	<0.5	NA	NA	328.67	17.70	310.97	NA
S-7	03/11/1992	<50	NA	<0.3	<0.3	<0.3	<0.3	NA	NA	328.67	17.06	311.61	NA
S-7	06/24/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.67	17.80	310.87	NA
S-7	09/17/1992	<50	NA	0.6	0.6	<0.5	<0.5	NA	NA	328.67	17.00	311.67	NA
S-7	12/11/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.67	17.35	311.32	NA
S-7	02/04/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.67	NA	NA	NA
S-7	06/03/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.67	NA	NA	NA
S-7	09/15/1993	NA	NA	NA	NA	NA	NA	NA	NA	328.67	16.65	312.02	NA
S-7	12/09/1993	NA	NA	NA	NA	NA	NA	NA	NA	328.67	NA	NA	NA
S-7	09/13/1994	NA	NA	NA	NA	NA	NA	NA	NA	328.67	16.83	311.84	NA
S-7	06/21/1995	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.67	15.88	312.79	NA
S-7	06/12/1996	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.5	NA	328.67	16.22	312.45	NA
S-7	06/25/1997	<50	NA	<0.50	<0.50	<0.50	<0.50	<2.5	NA	328.67	16.12	312.55	3
S-7	06/19/1998	<50	NA	<0.50	<.050	<0.50	<0.50	<2.5	NA	328.67	14.81	313.86	2.6
S-7	06/17/1999	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<5.00	NA	328.67	15.91	312.76	5.1
S-7	06/15/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	7.32	NA	328.67	16.14	312.53	2.0
S-7	11/29/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	328.67	16.89	311.78	3.6
S-7	03/07/2001	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	328.67	16.55	312.12	2.1
S-7	06/18/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	2.5	328.67	16.30	312.37	NA
S-7	09/17/2001 c	150	NA	<0.50	55	<0.50	<0.50	NA	8,300	328.67	14.23	314.44	NA
S-7	12/31/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	328.67	16.28	312.39	NA
S-7	03/13/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	5.9	328.67	17.41	311.26	NA
S-7	06/18/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	12	328.67	17.63	311.04	NA
S-7	09/27/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	10	328.41	16.96	311.45	NA
S-7	**12/27/2002**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**22**	**328.41**	**16.00**	**312.41**	**NA**
S-8	03/20/1991	<50a	NA	0.8	1.8	2.6	5.2	NA	NA	327.00	NA	NA	NA

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S-8	06/26/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	NA	NA	NA
S-8	09/05/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	NA	NA	NA
S-8	12/13/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	15.73	311.27	NA
S-8	03/11/1992	<30	NA	<0.3	<0.3	<0.3	<0.3	NA	NA	327.00	14.64	312.36	NA
S-8	06/24/1992	<50	NA	1.4	1.9	<0.5	<0.5	NA	NA	327.00	15.77	311.23	NA
S-8	09/17/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	15.37	311.63	NA
S-8	12/11/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	14.94	312.06	NA
S-8	02/04/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	NA	NA	NA
S-8	06/03/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	NA	NA	NA
S-8	09/15/1993	NA	NA	NA	NA	NA	NA	NA	NA	327.00	14.91	312.09	NA
S-8	12/09/1993	NA	NA	NA	NA	NA	NA	NA	NA	327.00	NA	NA	NA
S-8	09/13/1994	NA	NA	NA	NA	NA	NA	NA	NA	327.00	15.16	313.08	NA
S-8	06/21/1995	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	327.00	14.11	312.89	NA
S-8	06/12/1996	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.5	NA	327.00	14.20	312.80	NA
S-8	06/25/1997	170	NA	<0.50	<0.50	<0.50	<0.50	<2.5	NA	327.00	14.42	312.58	0.5
S-8	06/19/1998	<50	NA	<0.50	<0.50	<0.50	<0.50	<2.5	NA	327.00	13.49	313.51	2.2
S-8	06/17/1999	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<5.00	NA	327.00	14.07	312.93	0.9
S-8	06/15/2000	Well inaccessible		NA	NA	NA	NA	NA	NA	327.00	NA	NA	NA
S-8	06/21/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	21.0	NA	327.00	14.43	312.57	NA
S-8	11/29/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	9.46	NA	327.00	14.44	312.56	2.2
S-8	03/07/2001	<50.0	NA	<0.500	<0.500	<0.500	<0.500	4.21	NA	327.00	13.69	313.31	2.1
S-8	06/18/2001	<50	NA	0.55	0.92	<0.50	0.51	NA	13	327.00	14.60	312.40	NA
S-8	09/17/2001	Unable to sample		NA	NA	NA	NA	NA	NA	327.00	15.07	311.93	NA
S-8	09/18/2001	Unable to sample		NA	NA	NA	NA	NA	NA	327.00	NA	NA	NA
S-8	12/31/2001	<50	NA	1.1	1.4	<0.50	<0.50	NA	8.4	327.00	14.02	312.98	NA
S-8	03/13/2002	Unable to sample		NA	NA	NA	NA	NA	NA	327.00	14.92	312.08	NA
S-8	06/18/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	19	327.00	15.37	311.63	NA

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S-8	09/27/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	19	326.14	14.60	311.54	NA
S-8	**12/27/2002**	**Well inaccessible**		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**326.14**	**NA**	**NA**	**NA**
S-8	**01/07/2003**	**Well inaccessible**		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**326.14**	**NA**	**NA**	**NA**
S-9	03/20/1991	70a	NA	0.7	0.7	<0.5	1	NA	NA	328.24	NA	NA	NA
S-9	06/26/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	NA	NA	NA
S-9	09/05/1991	<50	NA	<0.5	0.8	<0.5	<0.5	NA	NA	328.24	NA	NA	NA
S-9	12/13/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	18.18	310.06	NA
S-9	03/11/1992	<30	NA	<0.3	<0.3	<0.3	<0.3	NA	NA	328.24	17.37	310.87	NA
S-9	06/24/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	18.45	309.79	NA
S-9	09/17/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	17.88	310.36	NA
S-9	12/11/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	17.34	310.90	NA
S-9	02/04/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	NA	NA	NA
S-9	06/03/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	NA	NA	NA
S-9	09/15/1993	NA	NA	NA	NA	NA	NA	NA	NA	328.24	17.42	310.82	NA
S-9	12/09/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	16.89	311.35	NA
S-9	03/04/1994	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	17.22	311.02	NA
S-9	06/16/1994	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	17.46	310.78	NA
S-9	09/13/1994	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	17.59	310.65	NA
S-9	06/21/1995	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	328.24	17.03	311.21	NA
S-9	06/12/1996	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.5	NA	328.24	16.76	311.48	NA
S-9	06/25/1997	<50	NA	<0.50	<0.50	<0.50	<0.50	2.8	NA	328.24	16.89	311.35	1
S-9	06/19/1998	<50	NA	<0.50	<0.50	<0.50	<0.50	7.1	NA	328.24	15.59	312.65	3.8
S-9	06/17/1999	<50.0	NA	<0.500	<0.500	<0.500	<0.500	15.3	NA	328.24	16.47	311.77	1.9
S-9	06/15/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	57.2	NA	328.24	16.11	312.13	1.1
S-9	11/29/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	76.5	NA	328.24	17.30	310.94	1.1
S-9	03/07/2001	<50.0	NA	<0.500	<0.500	<0.500	<0.500	84.9	NA	328.24	19.42	308.82	1.1

WELL CONCENTRATIONS
Shell-branded Service Station
3790 Hopyard Road
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-9	06/18/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	86	328.24	17.22	311.02	NA
S-9	09/17/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	130	328.24	17.66	310.58	NA
S-9	12/31/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	120	328.24	17.65	310.59	NA
S-9	03/13/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	130	328.24	17.75	310.49	NA
S-9	06/18/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	160	328.24	19.59	308.65	NA
S-9	09/27/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	180	327.85	17.65	310.20	NA
S-9	**12/27/2002**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**180**	**327.85**	**18.45**	**309.40**	**NA**
S-10	03/20/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	NA	NA	NA
S-10	06/26/1991	50	NA	1.8	5.8	1.9	13	NA	NA	326.55	NA	NA	NA
S-10	09/05/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	NA	NA	NA
S-10	12/13/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	14.77	311.78	NA
S-10	03/11/1992	<30	NA	<0.3	<0.3	<0.3	<0.3	NA	NA	326.55	14.16	312.39	NA
S-10	06/24/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	14.83	311.72	NA
S-10	09/17/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	13.85	312.70	NA
S-10	12/11/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	13.90	312.65	NA
S-10	02/04/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	NA	NA	NA
S-10	06/03/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	326.55	NA	NA	NA
S-10	09/15/1993	NA	NA	NA	NA	NA	NA	NA	NA	326.55	13.66	312.89	NA
S-10	12/09/1993	NA	NA	NA	NA	NA	NA	NA	NA	326.55	NA	NA	NA
S-10	09/13/1994	NA	NA	NA	NA	NA	NA	NA	NA	326.55	13.84	312.71	NA
S-10	06/21/1995	NA	NA	NA	NA	NA	NA	NA	NA	326.55	13.08	313.47	NA
S-10	06/12/1996	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.5	NA	326.55	13.34	313.21	NA
S-10	06/25/1997	<50	NA	<0.50	<0.50	<0.50	<0.50	2.8	NA	326.55	13.28	313.27	2.4
S-10	06/19/1998	<50	NA	<0.50	<0.50	<0.50	<0.50	<2.5	NA	326.55	12.41	314.14	1.8
S-10	06/17/1999	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<5.00	NA	326.55	12.81	313.74	2.0
S-10	06/15/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	326.55	13.27	313.28	2.1

WELL CONCENTRATIONS
Shell-branded Service Station
3790 Hopyard Road
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-10	11/29/2000	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	326.55	13.98	312.57	2.4
S-10	03/07/2001	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	326.55	13.40	313.15	2.5
S-10	06/18/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	3.7	326.55	13.29	313.26	NA
S-10	09/17/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	326.55	13.61	312.94	NA
S-10	12/31/2001	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	326.55	13.48	313.07	NA
S-10	03/13/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	326.55	14.66	311.89	NA
S-10	06/18/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	326.55	14.59	311.96	NA
S-10	09/27/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	325.87	13.21	312.66	NA
S-10	**12/27/2002**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**325.87**	**13.50**	**312.37**	**NA**
S-11	09/23/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.93	NA	NA
S-11	09/27/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	16.95	NA	NA
S-11	**12/27/2002**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**327.48**	**16.40**	**311.08**	**NA**
S-12	09/23/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.74	NA	NA
S-12	09/27/2002	<50	NA	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	17.95	NA	NA
S-12	**12/27/2002**	**<50**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**322.76**	**16.92**	**305.84**	**NA**
SR-1	03/04/1994	NA	NA	NA	NA	NA	NA	NA	NA	329.78	16.34	313.44	NA
SR-1	06/16/1994	NA	NA	NA	NA	NA	NA	NA	NA	329.78	16.72	313.06	NA
SR-1	12/31/2001	NA	NA	NA	NA	NA	NA	NA	NA	329.78	15.31	314.47	NA
SR-1	03/11/2002 d	NA	NA	NA	NA	NA	NA	NA	NA	329.13	NA	NA	NA
SR-2	03/04/1994	NA	NA	NA	NA	NA	NA	NA	NA	328.35	14.39	313.96	NA
SR-2	06/16/1994	NA	NA	NA	NA	NA	NA	NA	NA	328.35	14.48	313.87	NA
SR-2	12/31/2001	NA	NA	NA	NA	NA	NA	NA	NA	328.35	13.62	314.73	NA
SR-2	09/27/2002	<1,000	NA	<10	<10	<10	<10	NA	5,000	327.91	14.20	313.71	NA

WELL CONCENTRATIONS
Shell-branded Service Station
3790 Hopyard Road
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
SR-2	**12/27/2002**	**<1,000**	**NA**	**<10**	**<10**	**<10**	**<10**	**NA**	**4,800**	**327.91**	**13.33**	**314.58**	**NA**
SR-3	03/04/1994	NA	NA	NA	NA	NA	NA	NA	NA	329.11	14.66	314.45	NA
SR-3	06/16/1994	NA	NA	NA	NA	NA	NA	NA	NA	329.11	14.96	314.15	NA
SR-3	12/31/2001	NA	NA	NA	NA	NA	NA	NA	NA	329.11	13.60	315.51	NA
SR-3	09/27/2002	<2,500	NA	<25	<25	<25	<25	NA	11,000	328.65	14.75	313.90	NA
SR-3	**12/27/2002**	**<2,000**	**NA**	**<20**	**<20**	**<20**	**<20**	**NA**	**5,100**	**328.65**	**13.65**	**315.00**	**NA**
T-1	06/18/2002	<5,000	NA	<50	<50	<50	<50	NA	20,000	NA	12.31	NA	NA
T-2	09/17/2001	<5,000	NA	<25	<25	<25	<25	NA	29,000	NA	11.48	NA	NA
T-2	12/31/2001	<5,000	NA	<50	<50	<50	<50	NA	31,000	NA	4.96	NA	NA
T-2	03/13/2002	<5,000	NA	<50	<50	<50	<50	NA	48,000	NA	9.76	NA	NA
T-2	06/18/2002	<20,000	NA	<200	<200	<200	<200	NA	100,000	NA	12.58	NA	NA
T-2	09/27/2002	240	NA	0.55	2.8	1.8	2.6	NA	39	NA	8.15	NA	NA
T-2	**12/27/2002**	**2,100**	**NA**	**7.8**	**17**	**<0.50**	**11**	**NA**	**790**	**NA**	**6.75**	**NA**	**NA**
T-3	06/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry	NA	NA
T-4	06/18/2002	<10,000	NA	<100	<100	<100	<200	NA	97,000	NA	13.50	NA	NA
T-4	**12/27/2002**	**550**	**NA**	**5.3**	**16**	**0.60**	**39**	**NA**	**140**	**NA**	**7.65**	**NA**	**NA**

WELL CONCENTRATIONS
Shell-branded Service Station
3790 Hopyard Road
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 18, 2001, analyzed by EPA Method 8015.
BTEX = benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 18, 2001, analyzed by EPA Method 8020.
MTBE = Methyl-tertiary-butyl ether
TOB = Top of Wellbox Elevation
TOC = Top of Casing Elevation
SPH = Separate-Phase Hydrocarbons
GW = Groundwater
DO = Dissolved Oxygen
ppm = Parts per million
ug/L = Parts per billion
MSL = Mean sea level
ft = Feet
<n = Below detection limit
D = Duplicate sample

Notes:
a = Compounds detected within the chromatographic range of gasoline but not characteristic of the standard gasoline pattern
b = This sample was analyzed outside of the EPA recommended holding time.
c = Samples for wells S-6 and S-7 may have been switched.
d = Survey date only.
Well T-2 is a backfill well.
Beginning September 23, 2002, depth to water referenced to Top of Casing.
All wells except S-11, S-12, and T-1 through T-4 surveyed March 11, 2002, by Virgil Chavez Land Surveying of Vallejo, California.
Survey data for wells S-11 and S-12 provided by Cambria Environmental Technology, Inc.

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
S-B	01/21/82	4 - 5.5	30	---	---	---	---	---
S-B	01/21/82	8 - 9.5	74	---	---	---	---	---
S-B	01/21/82	11.5 - 13	79	---	---	---	---	---
S-C	01/21/82	4 - 5.5	2	---	---	---	---	---
S-C	01/21/82	7 - 8.5	5,100	---	---	---	---	---
S-C	01/21/82	11.5 - 13	420	---	---	---	---	---
S-D	01/21/82	4 - 5.5	2	---	---	---	---	---
S-D	01/21/82	7 - 8.5	10	---	---	---	---	---
S-D	01/21/82	11.5 - 13	110	---	---	---	---	---
S-E	01/21/82	4 - 5.5	ND	---	---	---	---	---
S-E	01/21/82	7 - 8.5	6	---	---	---	---	---
S-E	01/21/82	11.5 - 13	6	---	---	---	---	---
ST-1	10/27/83	13.0 - 14.5	13	---	2.7	0.3	---	1.4
ST-2	10/27/83	13.0 - 14.5	23	---	0.22	0.7	---	4.3
S-1	10/27/83	14.0 - 15.5	57	---	5.3	0.3	---	6.8
S-1	10/27/83	19.0 - 20.5	9	---	0.43	0.1	---	0.8
S-1	10/27/83	33.5 - 35.0	<5	---	<0.05	<0.1	---	<0.4
S-2	10/27/83	14.0 - 15.5	53	---	6.7	0.1	---	8
S-2	10/27/83	19.0 - 20.5	5	---	0.07	<0.1	---	0.4
S-2	10/27/83	33.5 - 35.0	<5	---	<0.05	<0.1	---	<0.4

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
S-3	01/25/84	19.0 - 20.5	<5	---	<0.05	<0.1	---	<0.4
S-4	01/25/84	19.0 - 20.5	41	---	6.2	<0.1	---	5.9
S-5	01/25/84	19.0 - 20.5	4,700	---	50	170	---	900
A1	08/02/84	14	1300	---	13	110	45	230
A1X	08/02/84	20	<1.0	---	<0.1	<0.1	<0.1	<0.1
A2	08/02/84	14	2100	---	11	32	72	350
A2X	08/02/84	20.5	80	---	1.3	2.6	3.4	16
B-1	08/02/84	14	11	---	0.2	<0.1	<0.1	<0.1
B-2	08/02/84	14	120	---	5.9	5.8	3.7	19
B2X	08/02/84	20.5	1.5	---	<0.1	<0.1	<0.1	<0.1
C-1	08/02/84	14	110	---	2.8	0.4	7.8	31
C-1X	08/02/84	16	9.1	---	0.8	<0.1	1.1	0.6
C-2	08/02/84	14	52	---	4.8	0.1	4.4	3.9
Comp A	08/02/84	---	<1	---	<0.1	<0.1	<0.1	<0.1
Comp B	08/02/84	---	8.7	---	<0.1	0.2	0.1	0.6
Comp C	08/02/84	---	35	---	0.5	2.1	1.9	11
Comp D	08/02/84	---	32	---	0.3	0.1	0.1	5.9

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
A5	08/04/84	5	3.0	---	1.3	<0.1	<0.1	<0.1
A10	08/04/84	10	3.5	---	0.5	<0.1	0.2	0.2
A15	08/04/84	15	4.4	---	0.7	<0.1	0.5	0.3
S-6-2A	10/03/84	9 - 10.5	<5	---	0.05	<0.1	<0.1	<0.3
S-6-3A	10/03/84	14 - 15.5	9	---	<0.05	<0.1	<0.1	<0.3
S-6-4A	10/03/84	19 - 20.5	6	---	0.05	<0.1	0.1	<0.3
S-6-5A	10/03/84	24 - 25.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-2A	10/03/84	9 - 10.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-3A	10/03/84	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-4A	10/03/84	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-8-3A	02/23/85	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-8-4A	02/23/85	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-9-3A	02/23/85	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-9-4A	02/23/85	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
SR-1-15	08/08/85	15	<5	---	<0.1	<0.1	<0.1	<0.3
SR-1-20	08/08/85	20	40	---	5.4	<0.1	2.5	2.7
S-10-15	08/08/85	15	<5	---	<0.05	<0.1	<0.1	<0.3
S-10-20	08/08/85	20	<5	---	<0.05	<0.1	<0.1	<0.3

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
SR-3-10	09/18/85	10	<5.0	---	0.98	<0.1	<0.1	<0.3
SR-3-15	09/18/85	15	54	---	3.9	<0.2	4.2	2.7
SR-3-20	09/18/85	20	<5.0	---	<0.05	<0.1	0.2	<0.3
SR-2-10	09/19/85	10	<5.0	---	0.05	<0.1	<0.1	<0.3
SR-2-15	09/19/85	15	67	---	0.11	0.1	0.1	<0.3
SR-2-20	09/19/85	20	8.4	---	<0.05	<0.1	1.0	<0.3
D-1	07/25/98	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
D-2	07/25/98	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
D-3	07/25/98	3.5	**4.0**	<0.5	<0.005	<0.005	**0.012**	**0.011**
D-4	07/25/98	3.5	**1.8**	<0.5	<0.005	<0.005	**0.053**	**0.018**
P-1	07/25/98	3.5	**260**	<0.5	**0.079**	**0.072**	**0.48**	**1.1**
P-2	07/25/98	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
P-3	07/25/98	3.5	**10**	<0.5	**0.0083**	<0.005	**0.26**	<0.005
S-11-5.5	08/25/98	5.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-10.5	08/25/98	10.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-15.5	08/25/98	15.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-20.5	08/25/98	20.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-24.5	08/25/98	24.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005

Table 1. Historical Soil Analytical Data - Shell-branded Service Station - 3790 Hopyard Road, Pleasanton, California - Incident # 98995842

Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
S-12-5.5	09/18/98	5.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-10.5	09/18/98	10.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-15.5	09/18/98	15.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-20.5	09/18/98	20.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-24.5	09/18/98	24.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005

Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8015; analyzed by EPA Method 8260B starting August 26, 2002

MTBE = Methyl tert-butyl ether, analyzed by EPA Method 8260B

Benzene, ethylbenzene, toluene, xylenes, analyzed by EPA Method 8020; analyzed by EPA Method 8260B starting August 26, 2002

fbg = feet below grade

ppm = parts per million

--- = Not analyzed

ND = None Detected

<X = Below laboratory detection limit of X

G:\Pleasanton 3790 Hopyard\[3790 Pleasanton Historical Soil Table.xls]Historical Soil

LOG OF EXPLORATORY BORING

PROJECT NUMBER 800-02.01 BORING NO. S-A

PROJECT NAME Gettler-Ryan, Shell, W. Las Positas Ave. and Hopyard Rd., Pleasanton PAGE 1 OF 1

BY JDB DATE 1/22/86 SURFACE ELEV. 320±

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0		CL	ASPHALT and GRAVEL - FILL.
							CLAY; very dark grayish brown (2.5Y, 3/2); 5-10% fine to coarse sand; slightly silty; stiff; very moist; no product odor.
				5			@4': dark gray (5Y, 4/1); 10-15% fine to coarse gravel; very stiff; moist; slight product odor.
	2.5	21	▽		1		@7': very stiff; moist to wet; no product odor.
				10			
	3.0	24		15	2		@14': wet; no product odor.
	1.25	16			3		@18½': stiff; wet; no product odor.
				20			BOTTOM OF BORING AT 20 FEET.

REMARKS Drilled by 5-inch solid-stem auger; samples collected with 2-inch California modified split-spoon sampler. Borehole backfilled with soil cuttings to ½ foot; concrete to surface.

EMCON ASSOCIATES

DRAFT

PLATE A

LOG OF EXPLORATORY BORING

PROJECT NUMBER 800-02.01 BORING NO. S-B

PROJECT NAME Gettler-Ryan, Shell, W. Las Positas Ave. and Hopyard Rd., Pleasanton PAGE 1 OF 1

BY JDB DATE 1/22/86 SURFACE ELEV. 320±

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0			CONCRETE and GRAVEL - FILL.
					SW		SAND; dark olive-gray (5Y, 3/2); fine-to coarse-grained; dense; moist.
					SC		CLAYEY SAND - FILL; gray (5Y, 5/1); 15-25% fines; fine to coarse sand; 20-30% fine to medium gravel; moist; very slight gasoline odor.
	1.75	16	▽	5	CL		CLAY; dark gray (5Y, 4/1); slightly silty; stiff; moist to wet; no gasoline odor.
					1		
				10			@11½': stiff; wet; no gasoline odor
	1.0	10			2		@13': no gasoline odor.
							BOTTOM OF BORING AT 13 FEET.
				15			
				20			

REMARKS Drilled by 8-inch continuous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Borehole backfilled with soil cuttings to ½ foot; concrete to surface.

EMCON ASSOCIATES

PLATE B

DRAFT

LOG OF EXPLORATORY BORING

PROJECT NUMBER 800-02.01 BORING NO. S-C

PROJECT NAME Gettler-Ryan, Shell, W. Las Positas Ave. and Hopyard Rd., Pleasanton PAGE 1 OF 1

BY JDB DATE 1/22/86 SURFACE ELEV. 320±

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0		SW	CONCRETE and GRAVEL - FILL. SAND - FILL; dark gray (5Y, 4/1); fine to coarse sand; 20-30% coarse gravel; loose; moist; no gasoline odor.
		9		5	1		
		12	▽		2		@7': medium dense; wet; strong gasoline odor.
				10		CL	CLAY; dark gray (5Y, 4/1); slightly silty; stiff; wet; no gasoline odor.
	2.0	7			3		BOTTOM OF BORING AT 13 FEET.
				15			
				20			

REMARKS Drilled by 8-inch continuous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler; Borehole converted to 2-inch monitoring well as detailed on Plate D.

emcon ASSOCIATES

DRAFT

PLATE C

WELL DETAILS

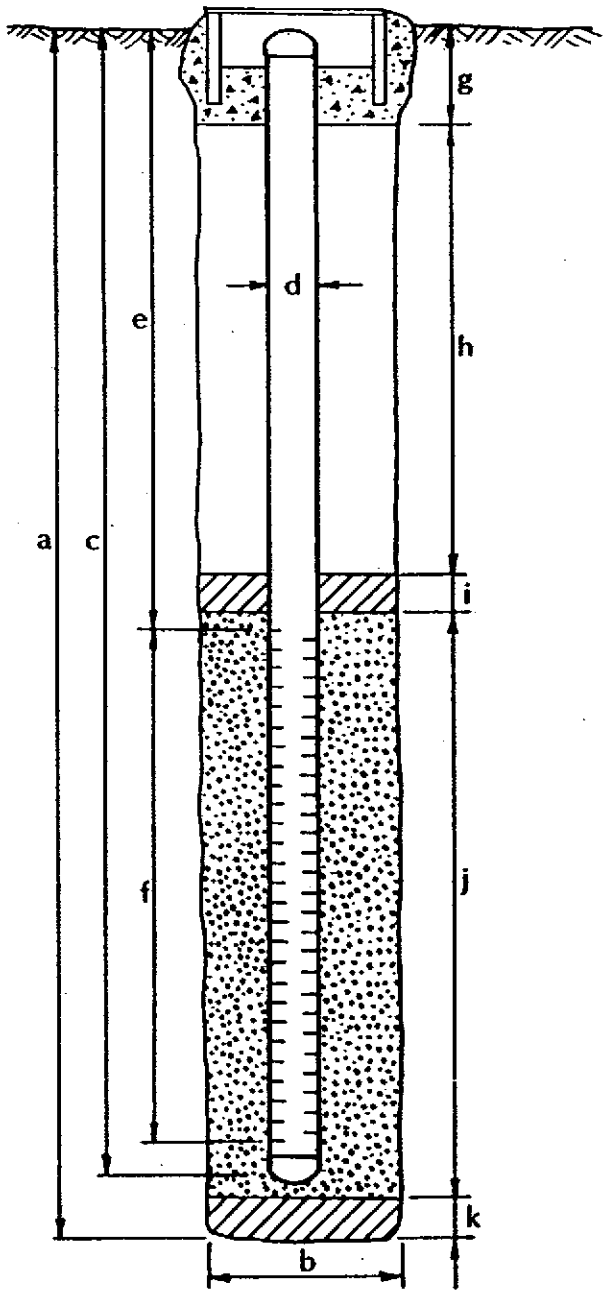
PROJECT NUMBER 800-02.01 BORING / WELL NO. S-C

PROJECT NAME Shell, W. Las Positas Ave. and Hopyard Rd., Pleasanton TOP OF CASING ELEV. _____

COUNTY Alameda GROUND SURFACE ELEV. 320±

WELL PERMIT NO. _____ DATUM _____

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 13 ft.

b. Diameter 5 in.

Drilling method Hollow-Stem Auger

WELL CONSTRUCTION

c. Casing length 12½ ft.

Material Schedule 40 PVC

d. Diameter 2 in.

e. Depth to top perforations 0 ft.

f. Perforated length 12½ ft.

Perforated interval from 12½ to 0 ft.

Perforation type Machined Slot

Perforation size 0.020 inch

g. Surface seal 1 ft.

Seal material Concrete

h. Backfill – ft.

Backfill material –

i. Seal – ft.

Seal material –

j. Gravel pack 12 ft.

Pack material Sand Cuttings

k. Bottom seal – ft.

Seal material –

DRAFT

PLATE D

LOG OF EXPLORATORY BORING

PROJECT NUMBER 800-02.01 BORING NO. S-D

PROJECT NAME Gettler-Ryan, Shell, W. Las Positas Ave. and Hopyard Rd., Pleasanton PAGE 1 OF 1

BY JDB DATE 1/23/86 SURFACE ELEV. 320±

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0			CONCRETE and GRAVEL - FILL.
						SW	SAND - FILL; dark gray (5Y, 4/1); fine-to coarse-grained; loose; moist; no gasoline odor.
		8		5	1		
							@7': moderate gasoline odor.
		14	▽		2		
				10			@9': medium dense; wet; moderate gasoline odor.
							@11½': slight gasoline odor.
							BOTTOM OF BORING AT 13 FEET.
				15			
				20			

REMARKS Drilled by 5-inch continuous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler; Borehole backfilled with soil cuttings to ½ foot; concrete to surface.

EMCON ASSOCIATES

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PLATE E

LOG OF EXPLORATORY BORING

PROJECT NUMBER 800-02.01

BORING NO. S-E

PROJECT NAME Gettler-Ryan, Shell, W. Las Positas Ave. and Hopyard Rd., Pleasanton

PAGE 1 OF 1

BY JDB DATE 1/23/86

SURFACE ELEV. 320±

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				0			CONCRETE and GRAVEL - FILL.
						SW	SAND - FILL; dark gray (5Y, 4/1); fine to coarse sand; 10-20% fine to coarse gravel; loose; moist; no gasoline odor.
				5	1		
					2		@7': slight gasoline odor.
		6	▽			CL	CLAY; dark gray (5Y, 4/1); slightly silty; stiff; wet; no gasoline odor.
				10			
	1.5	12			3		@11½': no gasoline odor.
							BOTTOM OF BORING AT 13 FEET.
				15			
				20			

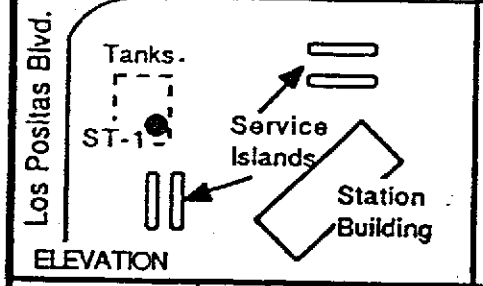
REMARKS Drilled by 5-inch continuous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Borehole backfilled with soil cuttings to ½ foot; concrete to surface.

EMCON ASSOCIATES

DRAFT

PLATE F

LOCATION MAP Hopyard Rd.



PACIFIC ENVIRONMENTAL GROUP, INC.

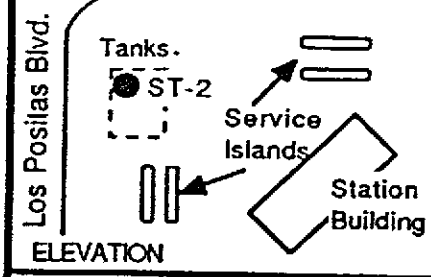
WELL / BORING NO. ST-1
PAGE 1 OF 1

PROJECT NO. 101-08.01
LOGGED BY: E.L.
DRILLING METHOD: HSA
SAMPLING METHOD: CAL. MOD.
CASING TYPE: SHC. #40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: 12 X 20 SAND

CLIENT: G-R/SHELL
DATE DRILLED: 10/28/87
LOCATION: Hopyard & Los Positas
HOLE DIAMETER: 8"
HOLE DEPTH: 14.5'
WELL DEPTH: 14.5'
WELL DIAMETER: 3"

WELL COMPLETION	MOISTURE CONTENT	TIP	PENETRATION RESISTANCE (BLOW/FT)	DEPTH (feet)	SAMPLE	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Concrete Over Bentonite; Pea Gravel								CONCRETE FILL
	Dp			2			SW	SAND FILL; gray; 5-10% fines; fine to coarse grained; 20-30% fine gravel; no product odor.
				4	☒			
				6				
	Dp			8				
				10	☒			@ 10'; as above; 5-10% fine gravel; strong product odor; product sheen in sample.
				12				
	Mst	120	5	14	■		CL	CLAY; black; moderate plasticity; trace organics; rootlets; soft; faint product odor.
				16				BOTTOM OF BORING AT 14.5 FEET
				18				
				20				
				22				
				24				
				26				
				28				
				30				
				32				
				34				
				36				
				38				
				40				
				42				
				44				

LOCATION MAP Hopyard Rd.



PACIFIC ENVIRONMENTAL GROUP, INC.

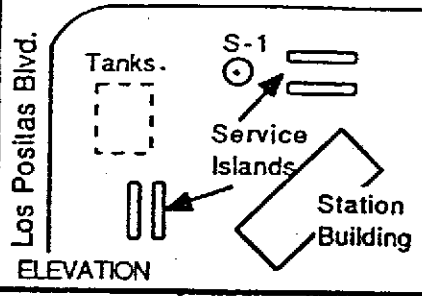
WELL / BORING NO. ST-2
PAGE 1 OF 1

PROJECT NO. 101-08.01
LOGGED BY: E.L.
DRILLING METHOD: HSA
SAMPLING METHOD: CAL. MOD.
CASING TYPE: SHC. #40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: 12 X 20 SAND

CLIENT: G-R/SHELL
DATE DRILLED: 10/28/87
LOCATION: Hopyard & Los Positas
HOLE DIAMETER: 8"
HOLE DEPTH: 14.5'
WELL DEPTH: 14.5'
WELL DIAMETER: 3"

WELL COMPLETION	MOISTURE CONTENT	TIP	PENETRATION RESISTANCE (BLOW/FT)	DEPTH (feet)	SAMPLE	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Concrete Seal / Pea Gravel	Mst			2, 4, 6, 8	⊠		SC	CONCRETE & FILL CLAYEY SAND FILL; gray; 15-20% low plasticity fines; fine to coarse grained; 10-20% fine gravel; faint product odor.
	Mst			10	⊠			@ 10'; as above; faint product odor.
	Mst	1789	7	12, 14			CL	CLAY; black mottled gray; moderate plasticity; 5-10% organics; faint hydrogen sulfide odor; rootlets; medium stiff; faint product odor. BOTTOM OF BORING AT 14.5 FEET
				16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44				

LOCATION MAP Hopyard Rd.



PACIFIC ENVIRONMENTAL GROUP, INC.

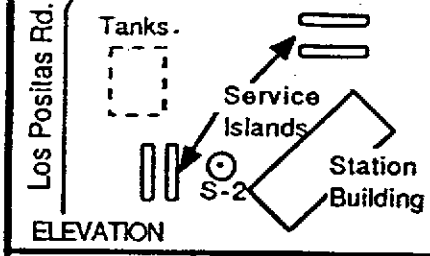
WELL / BORING NO. S-1
PAGE 1 OF 1

PROJECT NO. 101-08.01
LOGGED BY: E.L.
DRILLING METHOD: HSA
SAMPLING METHOD: CAL. MOD.
CASING TYPE: SHC. #40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: 12 X 20 SAND

CLIENT: G-R/SHELL
DATE DRILLED: 10/28/87
LOCATION: Hopyard & Los Positas
HOLE DIAMETER: 8"
HOLE DEPTH: 35'
WELL DEPTH: 35'
WELL DIAMETER: 3"

WELL COMPLETION	MOISTURE CONTENT	TIP	PENETRATION RESISTANCE (BLOW/FT)	DEPTH (feet)	SAMPLE	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Concrete				2			CL	ASPHALT & BASEROCK FILL CLAY; gray; trace silt; moderate plasticity; 5-10% fine sand; trace medium sand to fine gravel; faint product odor.
	Dp	31.5	P	4				@ 5'; as above; thin (1") interbed of fine sand; gravel saturated with black product; strong product odor.
				6				
				8			CH	
	Dp	85.0	27	10				CLAY; black; high plasticity; trace fine sand; very stiff; faint product odor.
12 X 20 Sand				12				
	Dp	454	6	14			CL	CLAY; black; moderate plasticity; trace silt; 5-10% organics; hydrogen sulfide odor; rootlets; medium stiff; faint product odor.
				16				
				18				
	Wt	597	9	20				@ 19'; as above; stiff; no product odor.
				22				
	Wt	2.0	9	24				@ 24'; as above; occasional 1"-2" thick peaty clay interbeds; hydrogen sulfide odor; stiff; no product odor.
				26				
				28				
Caved	Wt	64.5	11	30				@ 29'; as above; peat absent; stiff; no product odor.
				32				
	Wt	4.0	9	34				@ 33.5'; as above; trace fine to medium sand; 5-10% coarse sand to fine gravel; stiff; no product odor.
				36				BOTTOM OF BORING AT 35 FEET
				38				
				40				
				42				
				44				

LOCATION MAP Hopyard Rd.



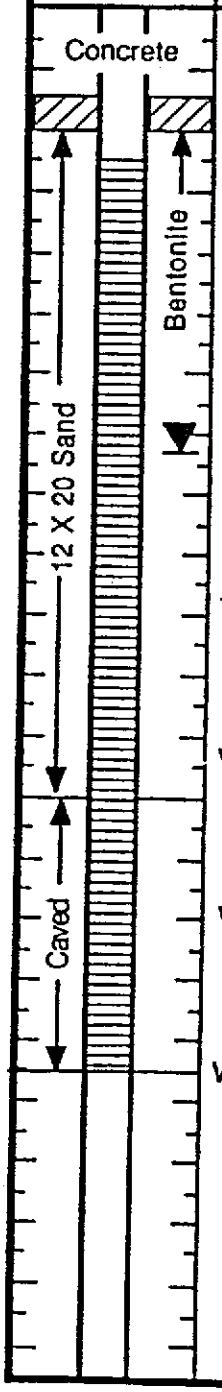
ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

WELL / BORING NO. S-2
PAGE 1 OF 1

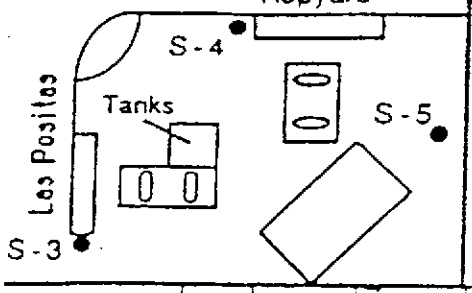
PROJECT NO. 101-08.01
LOGGED BY: E.L.
DRILLING METHOD: HSA
SAMPLING METHOD: CAL. MOD.
CASING TYPE: SHC. #40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: 12 X 20 SAND

CLIENT: G-R/SHELL
DATE DRILLED: 10/28/87
LOCATION: Hopyard & Los Positas
HOLE DIAMETER: 8"
HOLE DEPTH: 35'
WELL DEPTH: 35'
WELL DIAMETER: 3"



MOISTURE CONTENT	TIP	PENETRATION RESISTANCE (BLOW/FT)	DEPTH (feet)	SAMPLE	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
			0				ASPHALT & BASEROCK FILL
			2			CL	CLAY; gray; moderate plasticity; silty; trace fine to coarse sand; faint product odor.
Dp	4.5	P	4				@3.5'; as above; 5-10% coarse sand to fine gravel; moderate product odor.
			6				
			8				
Dp	83.5	11	10			CH	CLAY; gray; high plasticity; trace coarse gravel; rootholes; stiff; faint product odor.
			12				
Dp	314	6	14			CL	CLAY; gray; moderate plasticity; trace fine sand; roots; occasional peaty interbeds; 5-15% organics; hydrogen sulfide odor; medium stiff; faint product odor.
			16				
			18				
Wt	333	3	20				@ 19'; as above; soft; no product odor.
			22				
Wt	20.5	7	24				@ 24'; as above; peat absent; medium stiff; no product odor.
			26				
			28				
Wt	5.5	10	30				@29'; as above; no product odor.
			32				
Wt	11.5	12	34			CH	CLAY; gray; high plasticity; trace silt; stiff; no product odor.
			36				BOTTOM OF BORING AT 35 FEET
			38				
			40				
			42				
			44				

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

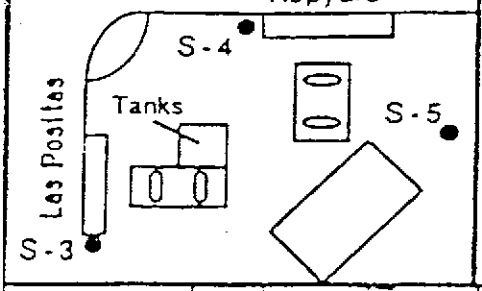
WELL / S-3
BORING NO.
PAGE 1 OF 1

PROJECT NO. 101-08.02
LOGGED BY: C.P.
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: 12 X 20 SAND

CLIENT: G.R. Shell
DATE DRILLED: 1-26-88
LOCATION: Hopyard & Las Positas
HOLE DIAMETER: 8"
HOLE DEPTH: 36'
WELL DEPTH: 36'
WELL DIAMETER: 3"

WELL COMPLETION	MOISTURE CONTENT	H-NU READING	PENETRATION RESISTANCE (BLOWS/FT)	DEPTH (FEET)	SAMPLE	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
CONCRETE				2			CL	ASPHALT & BASEROCK - FILL CLAY; dark olive gray; moderate plasticity; trace coarse sand; roots; firm; no product odor.
BENTONITE	Dp	0.6	PUSH	4				
				6				
				8				
	Dp	3.0	13	10				@9'; as above; ; stiff; no product odor.
				12				
	Dp	2.0	4	14				@14'; as above; medium olive gray; rootholes; soft; no product odor.
				16				
				18				
	Mst	0.0	5	20			CH	CLAY; mottled olive and gray; high plasticity; trace-5% organics; soft; no product odor.
				22				
	Mst	4.0	7	24				@24'; as above; mottled olive gray and black; trace organics; iron oxide staining; firm; no product odor.
				26				
				28				
	Mst	0.3	10	30			CL	CLAY; low plasticity; mottled olive and gray; 10-15% coarse sand; stiff; no product odor.
				32				
	Mst	0.0	11	34				@34'; as above; olive; trace organics; no sand; no product odor.
12 X 20 SAND				36				BOTTOM OF BORING AT 36'
				38				
				40				
				42				
				44				

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

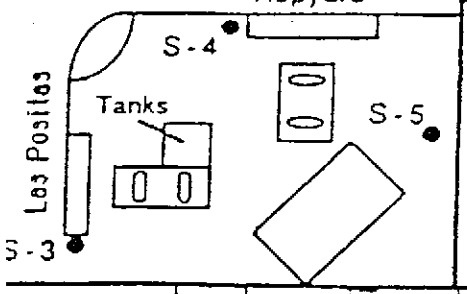
WELL / S-4
BORING NO.
PAGE 1 OF 1

PROJECT NO. 101-08.02
LOGGED BY: C.P.
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: 12 X 20 SAND

CLIENT: G.R. Shell
DATE DRILLED: 1-26-88
LOCATION: Hopyard & Las Positas
HOLE DIAMETER: 8"
HOLE DEPTH: 36'
WELL DEPTH: 36'
WELL DIAMETER: 3"

WELL COMPLETION	MOISTURE CONTENT	H-NU READING	PENETRATION RESISTANCE (BLOWS/FT)	DEPTH (FEET)	SAMPLE	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
CONCRETE; BENTONITE; 12 X 20 SAND								ASPHALT, GRAVEL & BRICK.
				2			CL	CLAY; olive gray; low plasticity; trace coarse sand; trace organics; trace coarse gravel; firm; no product odor.
	Dp	12.2	PUSH	4				
				6				
				8				
	Dp	20	14	10				@9'; as above; moderate plasticity; no gravel; stiff; no product odor.
				12				
	Dp	78	5	14				@14'; as above; mottled medium brown and olive; low plasticity; trace medium sand; iron oxide staining; charcoal; roots; low plasticity; firm; no product odor; peat lens @14 1/2'.
				16				
				18				
	Dp	188	8	20				@19'; as above; mottled green & olive; 5-10% silt; rootholes; firm; moderate product odor.
				22				
	Mst	110	12	24				@24'; as above; black; moderate plasticity; stiff; no product odor.
				26				
				28				
	Mst	22	14	30			CH	CLAY; dark gray; trace fine gravel; trace fine sand; no product odor.
				32				
				34				@34'; as above; olive; high plasticity; rootholes; trace organics; stiff; no prodcut odor.
	Mst	2.2	10	36				BOTTOM OF BORING AT 36'
				38				
				40				
				42				
				44				

LOCATION MAP



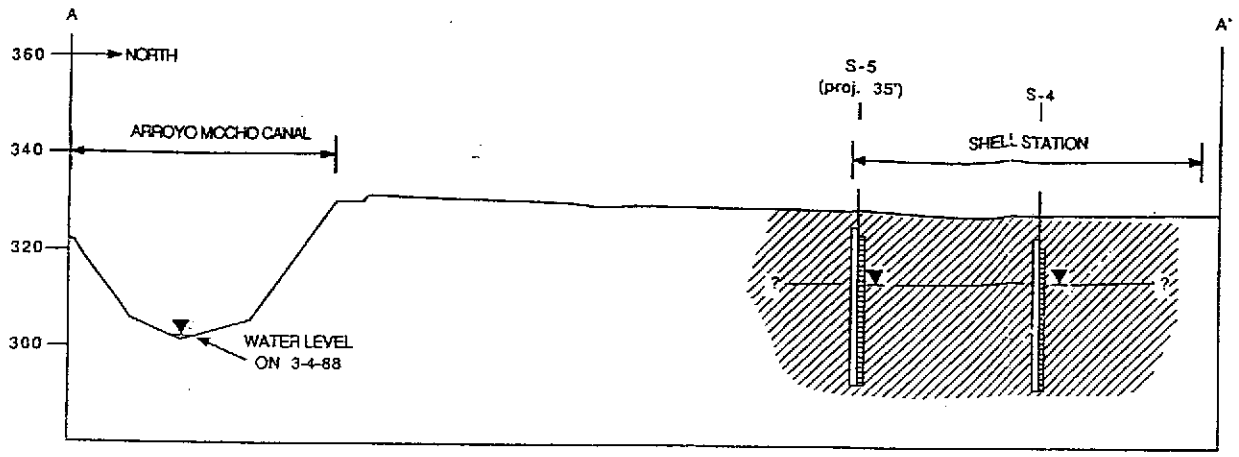
PACIFIC ENVIRONMENTAL GROUP, INC.

WELL / S-5
BORING NO.
PAGE 1 OF 1

PROJECT NO. 101-08.02
LOGGED BY: C.P.
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: 12 X 20 SAND

CLIENT: G.R. Shell
DATE DRILLED: 1-26-88
LOCATION: Hopyard & Las Positas
HOLE DIAMETER: 8"
HOLE DEPTH: 36'
WELL DEPTH: 35 1/2'
WELL DIAMETER: 3"

WELL COMPLETION	MOISTURE CONTENT	H-NU READING	PENETRATION RESISTANCE (BLOWS/FT)	DEPTH (FEET)	SAMPLE	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
								ASPHALT & BASEROCK/GRAVEL
CONCRETE				2			CL	CLAY; dark olive gray; 10-15% fine gravel; medium plasticity; trace organics; trace medium sand; firm; no product odor.
	Dp	5.9	PUSH	4				
BENTONITE				6				
				8				
	Dp	42	14	10				@9'; as above; dark olive silty; no gravel; trace medium to coarse sand; clay sheared through center of sampler; stiff; faint product odor.
				12				
				14				
	Dp	35	8	16			CH	CLAY; dark bluish gray; medium to high plasticity; trace coarse sand; peaty; 10-15% organics; stiff; moderate product odor (oil).
				16				
	Dp	254	9	20			CL	CLAY; medium brownish gray; moderate plasticity; trace-5% organics; iron oxide staining; rootholes; stiff; visible product sheen; strong product odor.
				22				
	Dp	50	7	24				@24'; as above; mottled gray and olive brown; firm; moderate product odor.
				26				
				28				
	Dp	56	8	30				@29'; as above; dark olive; trace organics; trace medium sand; firm; faint product odor.
				32				@30.5; silt lens.
				34				
	Dp	8.0	10	36				@34'; as above; medium olive gray; firm; thin lens of silty clay; no product odor.
12 X 20 SAND				38				BOTTOM OF BORING AT 36'
				40				
				42				
				44				



LEGEND

GROUNDWATER MONITORING WELL

SCREENDED INTERVAL

GRAVEL PACK

WATER LEVEL (2/14/88)

CLAY DEPOSITS (CL, CH)

NOTE: REFER TO FIGURE 3 FOR CROSS-SECTION LOCATION.

HORIZONTAL SCALE

0 50 100

PROJECT NUMBER

DRAWN BY DATE/NUMBER

REVISIONS

PACIFIC ENVIRONMENTAL GROUP, INC.

SHELL SERVICE STATION
Hopyard Road and West Las Positas Boulevard
Pleasanton, California

CROSS-SECTION A-A'

FIGURE: 4

PROJECT: 101-08.02

Woodward-Clyde Consultants

PROJECT NAME GETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION	Los Positas and Hopyard, Pleasanton, CA (S-6)	ELEVATION AND DATUM	
DRILLING AGENCY	Bay Land Drilling Co. / DRILLER Kurt	DATE STARTED / DATE FINISHED	10/4/88
DRILLING EQUIPMENT	Truck mounted CME - 75	COMPLETION DEPTH 35	SAMPLER Modified California
DRILLING METHOD	8" Hollow stem augers / DRILL BIT	NO. OF SAMPLES DIST. 7	UNDIST.
SIZE AND TYPE OF CASING	3" PVC Threaded / FROM 35 TO 0 FT.	WATER LEVEL FIRST	COMPL. 12' 24 HRS.
TYPE OF PERFORATION	0.020" Slot / FROM 35 TO 10 FT.	LOGGED BY: K. Stevens	CHECKED BY: M. Bonowski
SIZE AND TYPE OF PACK	2/12 Lonestar Sand / FROM 35 TO 8 FT.		
TYPE OF SEAL NO. 1	Bentonite / FROM 8 TO 6.5 FT.		
TYPE OF SEAL NO. 2	Concrete / FROM 6.5 TO 0 FT.		

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphalt and Gravel Base			
5	1		SILTY SAND silty sand with some gravel, base, poorly sorted, dry	H.Nu = 0.5 ppm No Hydrocarbon odor	SM	
10	2	3 4 7	CLAY dark gray clay, trace silt, very stiff, plastic	H.Nu = 5.5 ppm No Hydrocarbon odor	CL	
15	3"	5 7 9	dark gray with trace gravel, very stiff, plastic, dry to damp	H.Nu = 6 ppm No Hydrocarbon odor	CL	
20	4"	7 9 9	dark gray with layer fine silt, medium stiff, damp	H.Nu = 130 ppm Hydrocarbon odor	CL	
25	5"	5 5 7	mottled brown, black, gray clay with occasional gravel, stiff, plastic, damp	H.Nu = 4 ppm No Hydrocarbon odor	CL	
30	6	4 4 5	dark gray clay, very stiff, plastic		CL	
			GRAVEL layer coarse gravel and some coarse sand, poorly sorted, wet	H.Nu = 4.5 ppm No Hydrocarbon odor	GP	
35						

PROJECT NAME GETTLER-RYAN NO. 8820011A

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Well Completion
35	7		CLAY dark gray clay with trace gravel, soft, plastic, wet H.N.U. = 1.5 ppm No Hydrocarbon odor	CL	
			Total Depth = 35.5 feet * = Lab Sample		
40					
45					
50					
55					
60					
65					
70					
75					
80					

LOG OF MONITORING WELL NO. S-6 SHEET 2 OF 2

Woodward-Clyde Consultants

PROJECT NAME GETTLER-RYAN NO. 8820011A

MONITORING WELL LOCATION	Los Positas and Hopyard, Pleasanton, CA (S-7)						ELEVATION AND DATUM		
DRILLING AGENCY	Bay Land Drilling Co.	DRILLER	Kurt				DATE STARTED / DATE FINISHED	10/4/88	
DRILLING EQUIPMENT	Truck mounted CME - 75						COMPLETION DEPTH	35'	SAMPLER Modified California
DRILLING METHOD	8" Hollow stem augers	DRILL BIT					NO. OF SAMPLES	DIST. 7	UNDIST.
SIZE AND TYPE OF CASING	3" PVC Threaded	FROM	35	TO	0	FT.	WATER LEVEL	FIRST	COMPL. 15.8 / 24 HRS.
TYPE OF PERFORATION	0.020" Slot	FROM	35	TO	10	FT.	LOGGED BY: K. Stevens		CHECKED BY: M. Bonowski
SIZE AND TYPE OF PACK	2/12 Lonestar Sand	FROM	35	TO	8	FT.			
TYPE OF SEAL NO. 1	Bentonite	FROM	8	TO	6.5	FT.			
TYPE OF SEAL NO. 2	Concrete	FROM	6.5	TO	0	FT.			

Depth (feet)	Sample	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphalt and Gravel Base			
5	1		SAND silty sand with some gravel, loose, poorly sorted, dry	H.Nu = 0 ppm No Hydrocarbon odor	SM	
10	2		CLAY dark gray clay with some gravel, stiff, plastic, damp	H.Nu = 0 ppm No Hydrocarbon odor	CL	
15	3	2 2 3	CLAYEY SAND clayey sand with little gravel, loose, poorly sorted, moist	H.Nu = 0 ppm No Hydrocarbon odor	SC	
			CLAY dark gray clay with black motting, trace sand and gravel, medium stiff, low plasticity		CL	
20	4	2 3 6	PEAT peat with trace clay, root material, moist	H.Nu = 0 ppm No Hydrocarbon odor	PT	
			CLAY dark gray clay, trace roots and root impressions, stiff, plastic		CL	
25	5	2 4 7	dark gray clay	H.Nu = 0 ppm No Hydrocarbon odor		
30	6	4 6 7	mottled brown, black, gray clay with occasional gravel, moist to wet, soft, with occasional streaks of white	H.Nu = 0 ppm No Hydrocarbon odor		
35						

PROJECT NAME GETTLER-RYAN NO. 8820011A

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Well Construction
35	7		dark green clay with trace gravel, soft, plastic, moist to wet H.N.U. = 0 ppm No Hydrocarbon odor	CL	

Total Depth = 35.5 feet

* = Lab Sample

40 45 50 55 60 65 70 75 80

Woodward-Clyde Consultants

PROJECT NAME GETTLER - RYAN NO. 8820011A/0118

MONITORING WELL LOCATION 3790 Hopyard Rd. Pleasanton, CA (S-8)			ELEVATION AND DATUM 100.00' site datum
DRILLING AGENCY Baylands	DRILLER K. Voss		DATE STARTED 2/24/89 DATE FINISHED 2/24/89
DRILLING EQUIPMENT Truck-mounted CME-75			COMPLETION DEPTH 35' / SAMPLER Modified California
DRILLING METHOD 8" hollow stem auger	DRILL BIT CME Carbide		NO. OF SAMPLES / DIST. ____ / UNDIST. 7
SIZE AND TYPE OF CASING 3" PVC	FROM 34.5 TO 0.5 FT.		WATER LEVEL / FIRST 16' Approx. / COMPL. ____ / 24 HRS. ____
TYPE OF PERFORATION 020 slotted	FROM 34.5 TO 9.5 FT.		LOGGED BY: C. Parten / CHECKED BY: M. Bonkowski
SIZE AND TYPE OF PACK 8 X 16	FROM 35.0 TO 7.5 FT.		
TYPE OF SEAL NO. 1 Bentonite	FROM 7.5 TO 6.5 FT.		
NO. 2 Grout	FROM 6.5 TO surface FT.		

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Well Construction
			3" Asphalt; base, gray brown SANDY CLAY with SAND		
5	1	50 psi push	SILTY CLAY grayish brown, damp, medium firm, some roots	CL	
10	2	4 5 7	SILTY CLAY gray brown mottled, medium firm HNu = 0 ppm	CL	
15	3	3 4 6	SILTY CLAY as above HNu = 0 ppm	CL	
20	4	3 4 5	SILTY CLAY gray and brown mottling, orange speckles (look like brick), roots, damp, medium firm HNu = 0 ppm	CL	
25	5	3 5 5	SILTY CLAY gray and brown mottling, damp, medium firm HNu = 0 ppm	CL	
30	6	3 4 5	SILTY CLAY as above HNu = 0 ppm	CL	
35	7	3 5 6	SILTY CLAY gray and brown mottling, damp to moist, medium firm	CL	

Total Depth = 35.0 feet

LOG OF MONITORING WELL NO. S-8 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME GETTLER - RYAN NO. 8820011A/0118

MONITORING WELL LOCATION	3790 Hopyard Rd. Pleasanton, CA (S-9)	ELEVATION AND DATUM	101.24' site datum
DRILLING AGENCY	Baylands	DRILLER K. Voss	DATE STARTED 2/24/89 DATE FINISHED 2/24/89
DRILLING EQUIPMENT	Truck-mounted CME-75	COMPLETION DEPTH	35.0'
SAMPLER	California Modified		
DRILLING METHOD	8" Hollow-stem auger	DRILL BIT CME Carbide	NO. OF SAMPLES DIST. — UNDIST. 7
SIZE AND TYPE OF CASING	3" PVC	FROM 34.5 TO 0.5 FT.	WATER LEVEL FIRST — COMPL. — 24 HRS. —
TYPE OF PERFORATION	020 slotted	FROM 34.5 TO 9.5 FT.	LOGGED BY: C. Parten
CHECKED BY:	M. Bonkowski		
SIZE AND TYPE OF PACK	8 X 16	FROM 35 TO 7.5 FT.	
TYPE OF SEAL	NO. 1 Bentonite pellets	FROM 7.5 TO 6.5 FT.	
	NO. 2 Grout	FROM 6.5 TO surface FT.	

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Well Construction
			Asphalt (3" thick), base, silty clay fill			
5	1	150 Push 250	SILTY CLAY with GRAVEL gray brown, medium firm, damp, gravel to 1/2" sandy in upper portion of sample	HNu = 0 ppm	CL	
10	2	4 4 7	SILTY CLAY to SANDY CLAY gray brown to greenish brown, medium firm, damp	HNu = 0 ppm	CL	
15	3	2 2 3	SILTY CLAY gray brown with black mottling, soft, moist, some charcoal	HNu = 0 ppm	CL	
20	4		SILTY CLAY gray brown mottling, soft, brick fragments and roots	HNu = 0 ppm	CL	
25	5		SILTY CLAY gray brown mottling, medium firm, damp	HNu = 0 ppm		
30	6		SANDY CLAY to CLAYEY SAND silty clay at bottom of sampler	HNu = 0 ppm	CL-SC	
35	7	6 6 7	SILTY CLAY gray brown mottled, medium firm, damp	HNu = 0 ppm	CL	

Total Depth = 35.0 feet

LOG OF MONITORING WELL NO. S-9 SHEET 1 OF 1

Field location of boring:

(See Plate 2)

Project No.: 7632	Date: 08/09/89	Boring No: S-10	
Client: Shell Oil Company			
Location: 3790 Hopyard Road			
City: Pleasanton, California		Sheet 1 of 2	
Logged by: J. Vargas	Driller: Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 8-inches

Casing installation data: See Well Construction Detail

Top of Box Elevation: Datum:

Water Level	12.93			
Time				
Date	08/11/89			

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				0				
				1				PAVEMENT SECTION - 2 feet
				2				
				3				GRAVEL with SAND (GP) - olive gray (5Y 4/2), loose, damp; 60% gravel; 30-40% sand; 5% clay.
				4				
	250	S&H		5				
	150	push						
NS	150			6				
				7				CLAY with SILT (CL) - very dark gray (5Y 3/1), medium stiff, damp; 70% clay; 20% silt; 10% sand; medium plasticity; no chemical odor.
				8				
				9				
	150	S&H		10				gravel and sand stringers; no chemical odor.
	150	push						
NS	150			11				
				12				
				13				
				14				
	2	S&H		15				stiff; roots; black organics; mottled brown; no chemical odor.
	3							
0	5		S-10-15	16				
				17				
				18				
				19				

Remarks: NS = no sample

GSI GeoStrategies Inc.

Log of Boring

BORING NO. S-10

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CMP CEG 1262	08/89		

Field location of boring:

(See Plate 2)

Project No.: 7632	Date: 08/09/89	Boring No: S-10	
Client: Shell Oil Company			
Location: 3790 Hopyard Road			
City: Pleasanton, California		Sheet 2 of 2	
Logged by: J. Vargas	Driller: Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 8-inches

Casing installation data:

See Well Construction Detail

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	2	S&H		20				
	4							
0	7		S-10-20					
				21				
				22				
				23				
				24		▽		saturated at 24 feet; interbedded lamina of fine sand; trace coarse sand; no chemical odor.
	3	S&H						
	5			25				
0	8		S-10-25					
				26				
				27				
				28				
				29				
	4	S&H						damp; no chemical odor.
	5			30				
0	7		S-10-30					
				31				
				32				
				33				CLAY with SILT (CL) - dark gray (5Y 4/1), stiff, damp; 80% clay; 20% silt; high plasticity; brown oxidation stains; no chemical odor.
				34				
	5	S&H						
	5			35				
0	7		S-10-35					
				36				Bottom of boring at 35.5 feet. Bottom of sample at 35.5 feet. 08/09/89
				37				
				38				
				39				

Remarks:

GSI GeoStrategies Inc.

Log of Boring

BORING NO. S-10

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CWD CEG 1262	08/89		

(See Plate 2)

Project No.: 7632	Date: 08/09/89	Boring No:	
Client: Shell Oil Company		SR-1	
Location: 3790 Hopyard Road			
City: Pleasanton, California		Sheet 1 of 2	
Logged by: J. Vargas	Driller: Bayland		

Drilling method: Hollow-Stem Auger
Hole diameter: 12-inches
Casing installation data: See Well Construction Detail
Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				0				
				1				PAVEMENT SECTION - 1.0 foot
				2				CLAY with SILT (CL) - dark olive gray (5Y 3/2), stiff, damp; medium plasticity; 20% silt; 10-15% fine to coarse sand; trace organics, trace fine gravel, mottled brown; green staining; no chemical odor.
				3				
				4				
	250	S&H		5				COLOR CHANGE to black (5Y 2.5/1) at 4.5 feet.
	250	push						
0	400		SR-1-5					CLAYEY SAND (SC) - dark gray (5Y 4/1), medium dense, damp; 60% fine sand; 40% clay; no chemical odor.
				6				CLAY with SILT (CL) - black (5Y 2.5/1), very stiff, damp; medium plasticity; 80% clay; 20% silt; no chemical odor.
				7				
				8				
				9				COLOR CHANGE to olive (5Y 4/4) at 9.0 feet.
	400	S&H	SR-1-9					COLOR CHANGE to black (5Y 2.5) at 9.5 feet; no chemical odor.
	400	push		10				
NS	450							
				11				
				12				
				13				
				14				
	3	S&H						
	5			15				stiff; no chemical odor.
0	10		SR-1-15					
				16				
				17				
				18				

Remarks: Drilled with 8-inch Hollow-Stem Augers on 08/09/89.
Completed on 9/20/89 with 12-inch Hollow-Stem Augers.

GSI GeoStrategies Inc.

Log of Boring

BORING NO. SR-1

JOB NUMBER	REVIEWED BY PG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CWD CEG 12/92	08/89		

Field location of boring:

(See Plate 2)

Project No.: 7632	Date: 08/09/89	Boring No: SR-1	
Client: Shell Oil Company			
Location: 3790 Hopyard Road			
City: Pleasanton, California		Sheet 2 of 2	
Logged by: J. Vargas	Driller: Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 12-inches

Casing installation data:

See Well Construction Detail

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	3	S&H		20				SANDY CLAY (CL) - olive gray (5Y 4/2), stiff, saturated;
	5							
13.6	8		SR-1-20					medium plasticity; 60% clay; 40% sand; brown-gray
				21				mottling; roots; moderate chemical odor.
				22				
				23				
				24				
	0	S&H						
	1			25				
0	4		SR-1-25					CLAY with SILT (CL) - black (5Y 2.5/1), soft, damp,
				26				medium plasticity; 10-20% silt; trace organics; roots;
				27				burrows; no chemical odor.
				28				moist clay to sand interbed at 24 feet.
				29				
	4	S&H						
	4			30				
0	6		SR-1-30					stiff; saturated sandy lamina at 29.5 feet. Increased
				31				sand, mottled; no chemical odor.
				32				
				33				
				34				
	3	S&H						
	5			35				
0	7		SR-1-35					saturated at 34.5 to 35 feet; no chemical odor.
				36				
				37				Bottom of boring at 35.5 feet.
				38				Bottom of sample at 35.5 feet.
				39				09/20/89

Remarks:

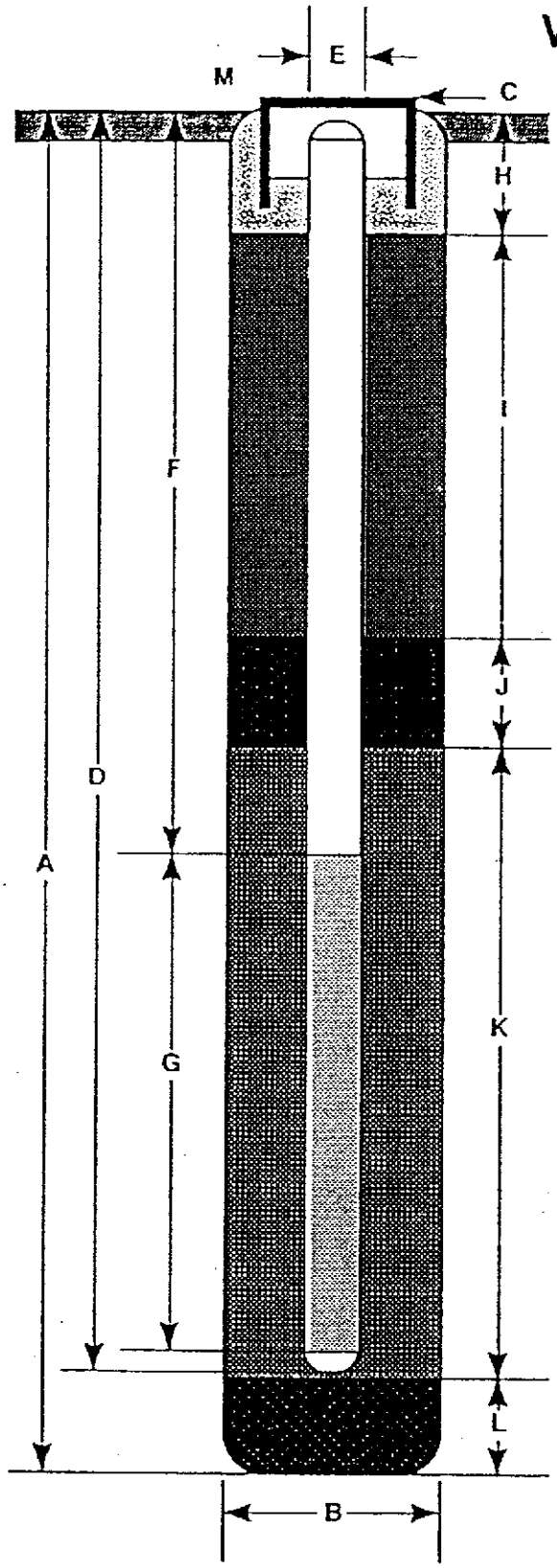
GSI GeoStrategies Inc.

Log of Boring

BORING NO. SR-1

JOB NUMBER	REVIEWED BY PG/CEG	DATE	REVISED DATE	REVISED DATE
32	CEG 1262	08/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 35.5 ft.

B Diameter of Boring 12 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 329.78 ft.
[X] Referenced to Mean Sea Level
[ ] Referenced to Project Datum

D Casing Length 34.5 ft.
Material Schedule 40 PVC

E Casing Diameter 4 in.

F Depth to Top Perforations 10 ft.

G Perforated Length 25 ft.
Perforated Interval from 10 to 35 ft.
Perforation Type Machine Slot
Perforation Size 0.020 in.

H Surface Seal from 0 to 1 ft.
Seal Material Concrete

I Backfill from 1 to 6 ft.
Backfill Material Concrete

J Seal from 6 to 8 ft.
Seal Material Bentonite Pellets

K Gravel Pack from 8 to 35.5 ft.
Pack Material 2/12 Lonestar Sand

L Bottom Seal ft.
Seal Material

M Christy Box with locking well cap and lock

Note: Depths measured from initial ground surface.

GeoStrategies Inc.

Well Construction Detail

WELL NO.

SR-1

JOB NUMBER	REVIEWED BY PG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CMP CEG 1262	10/89		

Field location of boring:

(See Plate 2)

Project No.: 7632	Date: 09/20/89	Boring No: SR-2	
Client: Shell Oil Company			
Location: 3970 Hopyard Road			
City: Pleasanton, California		Sheet 1 of 2	
Logged by: D. Ferreira	Driller: Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 12-inches

Casing installation data: See Well Construction Detail

Top of Box Elevation: Datum:

Water Level					
Time					
Date					

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				0				
				1				PAVEMENT SECTION - 0.6 feet
				2				
				3				CLAY with GRAVEL (CL) - brown (10YR 5/4), stiff, damp, low plasticity; 15% gravel; 10% sand; no chemical odor.
				4				SANDY CLAY (CL) - dark gray (5Y 4/1), stiff, damp, low plasticity; increasing sand to 30%; no chemical odor.
	100	S&H		5				
	100	push						
0	100		SR-2-5	6				CLAY (CL) - very dark gray (5Y 3/1), medium stiff, damp, low plasticity; 5% fine sand; 5% silt; trace organics; trace pebbles; roots; weak chemical odor.
				7				
				8				
				9				
	150	S&H		10				
	150	push						
5	150		SR-2-10	11				COLOR CHANGE to dark gray (5Y 4/1); medium plasticity; no chemical odor.
				12				
				13				
				14				
	0	S&H		15				
	2							COLOR CHANGE to very dark gray (5Y 3/1), low plasticity; 10% silt; weak chemical odor.
12	4		SR-2-15	16				
				17				
				18				
				19	▽			

Remarks: Boring drilled with 8-inch Hollow-Stem Augers 09/20/89.
Completed 09/20/89 with 12-inch Hollow-Stem Augers.

GSI GeoStrategies Inc.

Log of Boring

BORING NO. SR-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CMP CEG 12/62	08/89		

Field location of boring:

(See Plate 2)

Project No.: 7632	Date: 09/20/89	Boring No: SR-2	
Client: Shell Oil Company			
Location: 3970 Hopyard Road			
City: Pleasanton, California		Sheet 2 of 2	
Logged by: D. Ferreira	Driller: Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 12-inches

Casing installation data: See Well Construction Detail

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	3	S&H		20				COLOR CHANGE to dark gray (2.5Y N4/), stiff, saturated, low plasticity; trace very fine sand; trace silt; trace organics; weak sulfur odor.
	4							
81	5		SR-2-20					
				21				
				22				
				23				
				24				COLOR CHANGE to very dark gray (5Y 3/1), moist, low plasticity; trace very fine sand; trace silt; trace organics; trace wood fragments; rootholes filled with silty clay; weak sulfer odor
	2	S&H						
	5			25				
73	6		SR-2-25					
				26				
				27				
				28				
				29				CLAY (CH) - dark gray (5Y4/1) - stiff, moist, high plasticity; trace very fine to fine sand; trace silt; trace organics; oxidation filling rootholes; moderate sulfur odor.
	3	S&H						
	6			30				
45	9		SR-2-30					
				31				
				32				
				33				
				34				
	6	S&H						moderate to high plasticity.
	6			35				
4	9		SR-2-35					Bottom of boring at 35.5 feet.
				36				Bottom of sample at 35.5 feet.
								09/20/89
				37				
				38				
				39				

Remarks:

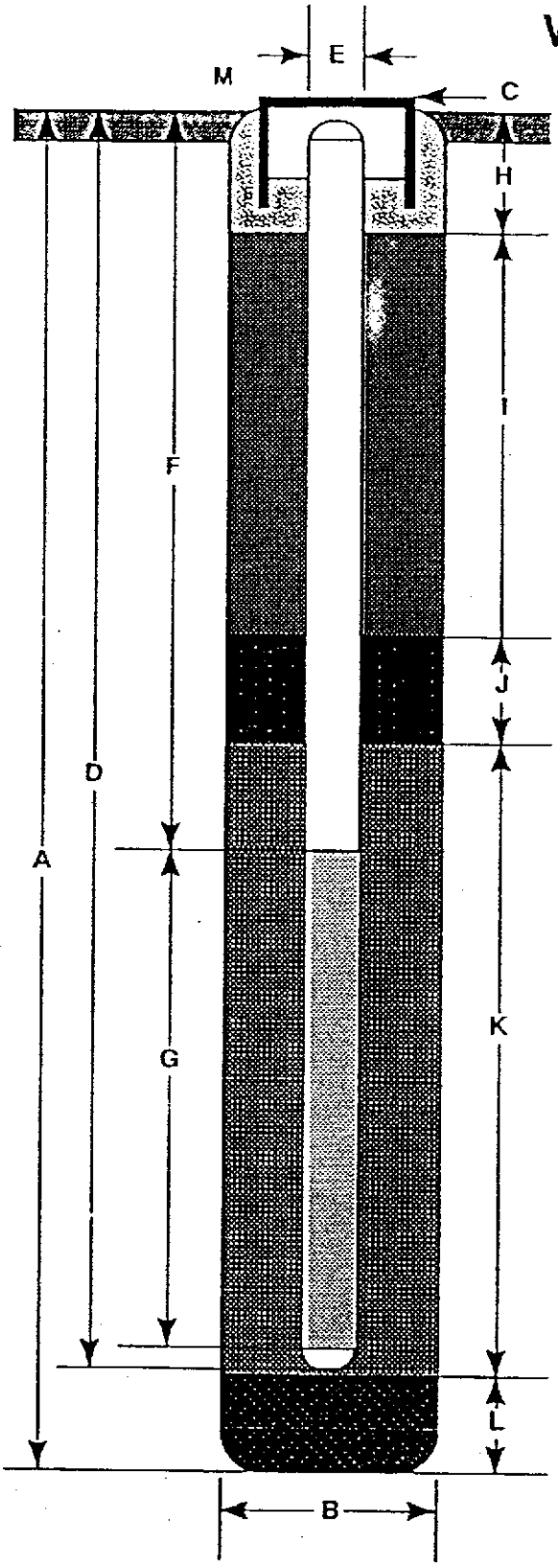
GeoStrategies Inc.

Log of Boring

BORING NO. SR-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	Cmp CEG 1262	09/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 35.5 ft.

B Diameter of Boring 12 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 328.35 ft.
[X] Referenced to Mean Sea Level
[ ] Referenced to Project Datum

D Casing Length 34.5 ft.
Material Schedule 40 PVC

E Casing Diameter 4 in.

F Depth to Top Perforations 10 ft.

G Perforated Length 25 ft.
Perforated Interval from 10 to 35 ft.
Perforation Type Machine Slot
Perforation Size 0.020 in.

H Surface Seal from 0 to 1 ft.
Seal Material Concrete

I Backfill from 1 to 6 ft.
Backfill Material Concrete

J Seal from 6 to 8 ft.
Seal Material Bentonite Pellets

K Gravel Pack from 8 to 35.5 ft.
Pack Material 2/12 Lonestar Sand

L Bottom Seal ft.
Seal Material

M Christy Box with locking well cap and lock

Note: Depths measured from initial ground surface.

GeoStrategies Inc.

Well Construction Detail

WELL NO.
SR-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CWP CEG 1262	10/89		

Field location of boring:

(See Plate 2)

Project No.: 7632	Date: 09/19/89	Boring No: SR-3	
Client: Shell Oil Company			
Location: 3970 Hopyard Road			
City: Pleasanton, California		Sheet 1 of 2	
Logged by: D. Ferreira	Driller: Bayland		

Drilling method: Hollow-Stem Auger

Hole diameter: 12-inches

Casing installation data: See Well Construction Detail

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				0				PAVEMENT SECTION - 0.8 feet
				1				FILL - Clay (CL) - very dark gray (2.5Y N3/), stiff, damp, medium to high plasticity; no chemical odor.
				2				10% gravel; cobbles at 2 feet; trace sand; oxidation stains at 2.5 feet in rootholes.
				3				
				4				
	150	S&H		5				FILL - Gravel (GP) - dark gray (2.5Y N4/), medium dense, saturated (perched zone); asphalt fragments; asphalt odor.
	250	push						
50	150		SR-3-10	6				
				7				
				8				
				9				
	100	S&H		10				CLAY (CL) - very dark gray (5Y 3/1), medium stiff, damp, medium plasticity; trace silt; weak chemical odor.
	100	push						
50	150		SR-3-10					
				11				
				12				
				13				
				14				
	2	S&H		15				CLAY (CL-CH) - black (2.5Y N2/), stiff, moist, medium to high plasticity; trace silt; slightly mottled; rootholes; moderate H_2S odor.
	3							
220	6		SR-3-15					
				16				
				17				
				18				
				19	▽			

Remarks: Boring drilled 09/19/89 with 8-inch Hollow-Stem Augers.
Completed on 09/19/89 with 12-inch Hollow-Stem Augers.

GSI GeoStrategies Inc.

Log of Boring

BORING NO. SR-3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CEG 1262	08/89		

Field location of boring: (See Plate 2)

Project No.: 7632	Date: 09/19/89	Boring No: SR-3	
Client: Shell Oil Company			
Location: 3970 Hopyard Road			
City: Pleasanton, California		Sheet 2	
Logged by: D. Ferreira	Driller: Bayland	of 2	

Drilling method: Hollow-Stem Auger
Hole diameter: 12-inches
Casing installation data: See Well Construction Detail
Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	0	S&H		20				COLOR CHANGE to dark gray (5Y 4/1), medium stiff, saturated; trace fossils; trace calcium nodules; no chemical odor.
	2							
235	5		SR3-20					
				21				
				22				
				23				
				24				
	6	S&H		25				stiff, moist, medium plasticity; trace silt; trace organics; weak H_2S odor.
	5							
284	7		SR3-25	26				
				27				
				28				
				29				
	3	S&H		30				COLOR CHANGE to gray (10YR 5/1), damp, medium to high plasticity, saturated rootholes; small mollusk fossils; red oxidation at 30 feet; no chemical odor.
	6							
115	6		SR3-30	31				
				32				
				33				
				34				
	4	S&H						
	5			35				CLAY (CH) - dark gray (10YR 4/1), stiff, moist, high plasticity; saturated rootholes; 10% organic matter; trace sand; trace silt; trace cobbles; no chemical odor.
135	7		SR-3-35					
				36				Bottom of sample at 35.5 feet.
								Bottom of boring at 35.5 feet.
				37				09/19/89
				38				
				39				

Remarks:

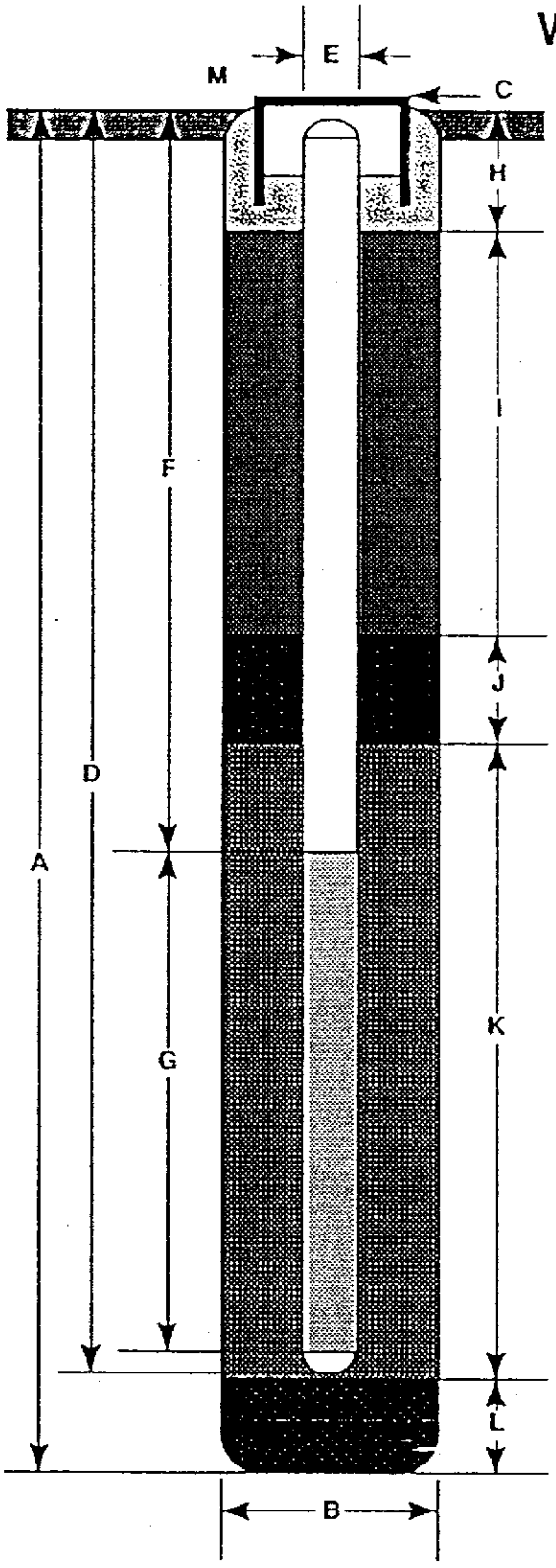
GSI GeoStrategies Inc.

Log of Boring

BORING NO. SR-3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CMP CEG 1262	9/89		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 35.5 ft.

B Diameter of Boring 12 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 329.11 ft.
[X] Referenced to Mean Sea Level
[ ] Referenced to Project Datum

D Casing Length 34.5 ft.
Material Schedule 40 PVC

E Casing Diameter 4 in.

F Depth to Top Perforations 10 ft.

G Perforated Length 25 ft.
Perforated Interval from 10 to 35 ft.
Perforation Type Machine Slot
Perforation Size 0.020 in.

H Surface Seal from 0 to 1 ft.
Seal Material Concrete

I Backfill from 1 to 6 ft.
Backfill Material Concrete

J Seal from 6 to 8 ft.
Seal Material Bentonite Pellets

K Gravel Pack from 8 to 35.5 ft.
Pack Material 2/12 Lonestar Sand

L Bottom Seal ft.
Seal Material

M Christy Box with locking well cap and lock

Note: Depths measured from initial ground surface.

GeoStrategies Inc.

Well Construction Detail

WELL NO.
SR-3

JOB NUMBER	REVIEWED BY PG/CEG	DATE	REVISED DATE	REVISED DATE
7632	CWP CEG 12/21	10/89		

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	S-11
JOB/SITE NAME	Shell-branded service station	**DRILLING STARTED**	26-Aug-02
LOCATION	3790 Hopyard Road, Pleasanton, California	**DRILLING COMPLETED**	26-Aug-02
PROJECT NUMBER	244-0497	**WELL DEVELOPMENT DATE (YIELD)**	23-Sep-02
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	8"	**SCREENED INTERVAL**	10 to 25 ft bgs
LOGGED BY	S. Dalie	**DEPTH TO WATER (First Encountered)**	25.0 ft (26-Aug-02) ▽
REVIEWED BY	M. Derby, PE# 55475	**DEPTH TO WATER (Static)**	16.93ft (23-Sep-02) ▼
REMARKS	Hand augered to 5' bgs. Located in East side of Hopyard Road, south of well S-10.		

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
							ASPHALT	0.5
							FILL; Sandy GRAVEL; gray; moist.	
				5				5.0
<1.0		S-11-5.5					**CLAY**; (CL); black; dry; 95% clay, 5% silt; high plasticity.	
							@ 6.0 fbg - olive gray; 80% clay, 5% silt, 5% sand, 10% gravel; medium plasticity.	
				10				
<1.0		S-11-10.5					@ 10.0 fbg - dark gray; damp; 80% clay, 20% silt.	
				15	CL			
<1.0		S-11-15.5					@ 15.0 fbg - black; 90% clay, 10% silt. ▼	
				20				
<1.0		S-11-20.5						
<1.0		S-11-24.5		25			▽	25.0

WELL DIAGRAM:
- Portland Type I/II
- Bentonite Seal
- Monterey Sand #2/12
- 2"-diam., 0.010" Slotted Schedule 40 PVC
- Bottom of Boring @ 25 ft

WELL LOG (TPH-G) G:\PLEASANTON 3790 HOPYARD\GINT\PLE3790.GPJ DEFAULT.GDT 2/11/03

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	S-12
JOB/SITE NAME	Shell-branded service station	**DRILLING STARTED**	19-Sep-02
LOCATION	3790 Hopyard Road, Pleasanton, California	**DRILLING COMPLETED**	19-Sep-02
PROJECT NUMBER	244-0497	**WELL DEVELOPMENT DATE (YIELD)**	23-Sep-02
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	8"	**SCREENED INTERVAL**	10 to 25 ft bgs
LOGGED BY	J.Gerke	**DEPTH TO WATER (First Encountered)**	23.0 ft (19-Sep-02)
REVIEWED BY	M. Derby, PE# 55475	**DEPTH TO WATER (Static)**	14.74ft (23-Sep-02)

REMARKS Hand augered to 5' bgs. Located in north side of the Arroyo Mocho Canal Creek bank, east of Hopyard Road.

TPHg (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
							FILL: Sandy CLAY with gravel; light brown; damp.	1.0
							Silty CLAY: (CL); brown; damp; 55% clay, 35% silt, 10% fine grained sand, high plasticity.	
<1.0		S-12-5.5		5			@ 5.0 fbg - dark brown; 75% clay, 25% silt.	
<1.0		S-12-10.5		10	CL		@ 10.0 fbg - 65% clay, 35% silt; medium plasticity.	
<1.0		S-12-15.5		15			@ 15.0 fbg - olive gray; 75% clay, 25% silt.	
<1.0		S-12-20.5		20			@ 20.0 fbg - 80% clay, 20% silt.	
<1.0		S-12-24.5		25				25.0

WELL DIAGRAM

- Portland Type I/II
- Bentonite Seal
- Monterey Sand #2/12
- 2"-diam., 0.010" Slotted Schedule 40 PVC
- Bottom of Boring @ 25 ft

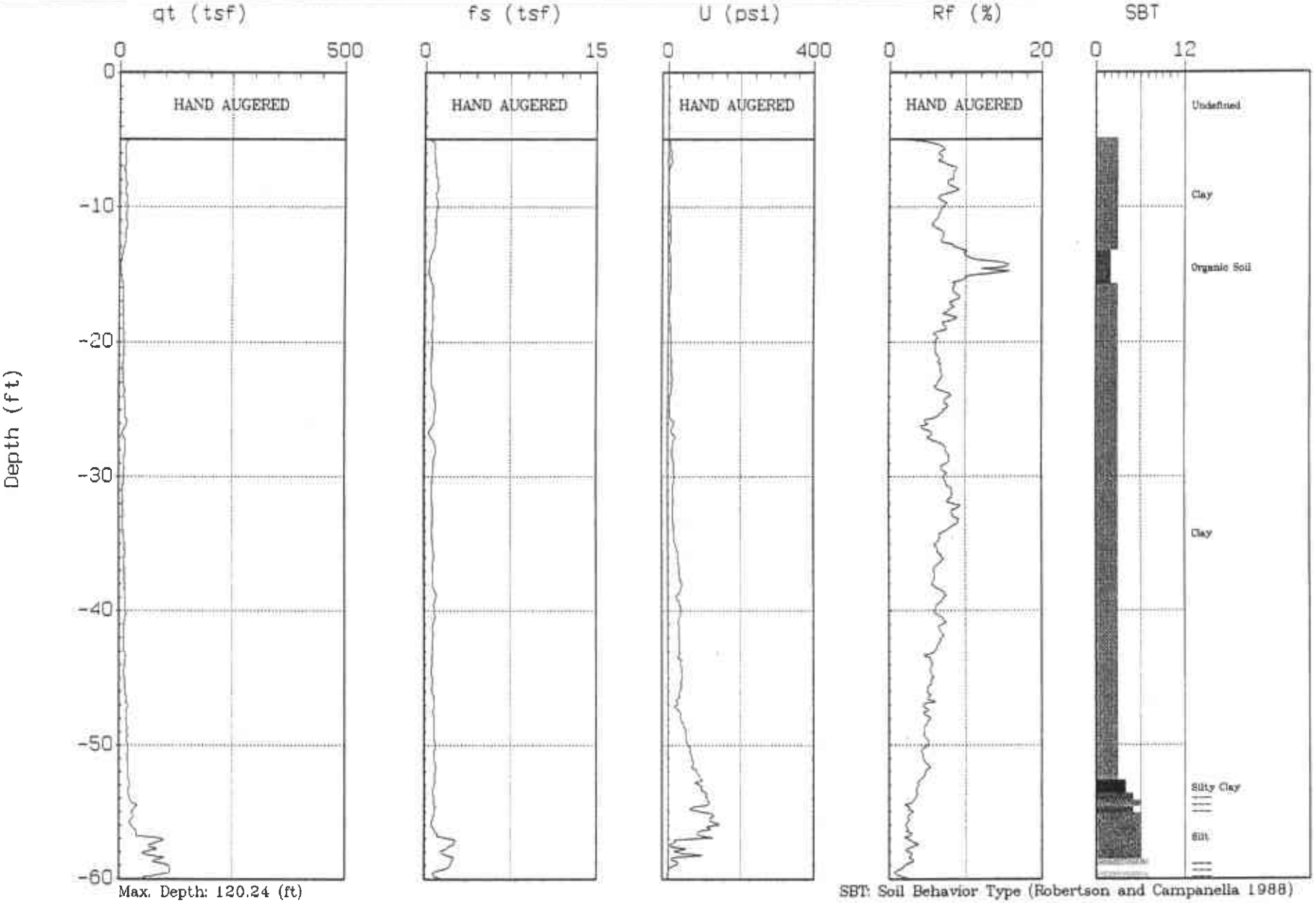
WELL LOG (TPH-G) G:\PLEASANTON 3790 HOPYARD\GINTPLE3790.GPJ DEFAULT.GDT 2/11/03

GREGG

CAMBRIA

Site : SHELL
Location : CPT-01

Geologist : J. GERKE
Date : 07:26:02 09:03



Max. Depth: 120.24 (ft)

Depth Inc.: 0.164 (ft)

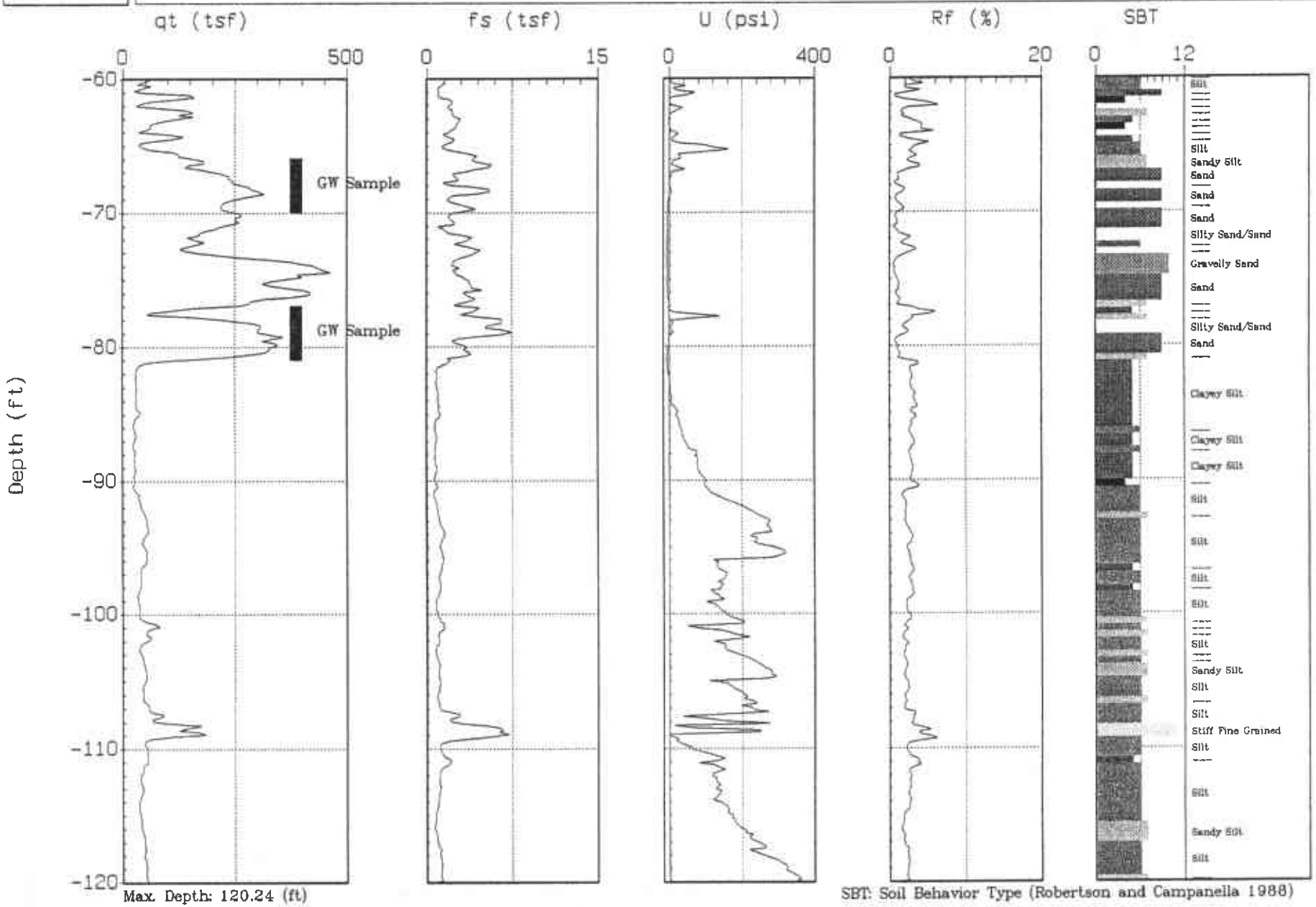
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

CAMBRIA

Site : SHELL
Location : CPT-01

Geologist : J. GERKE
Date : 07:26:02 09:03



Max. Depth: 120.24 (ft)

Depth Inc.: 0.164 (ft)

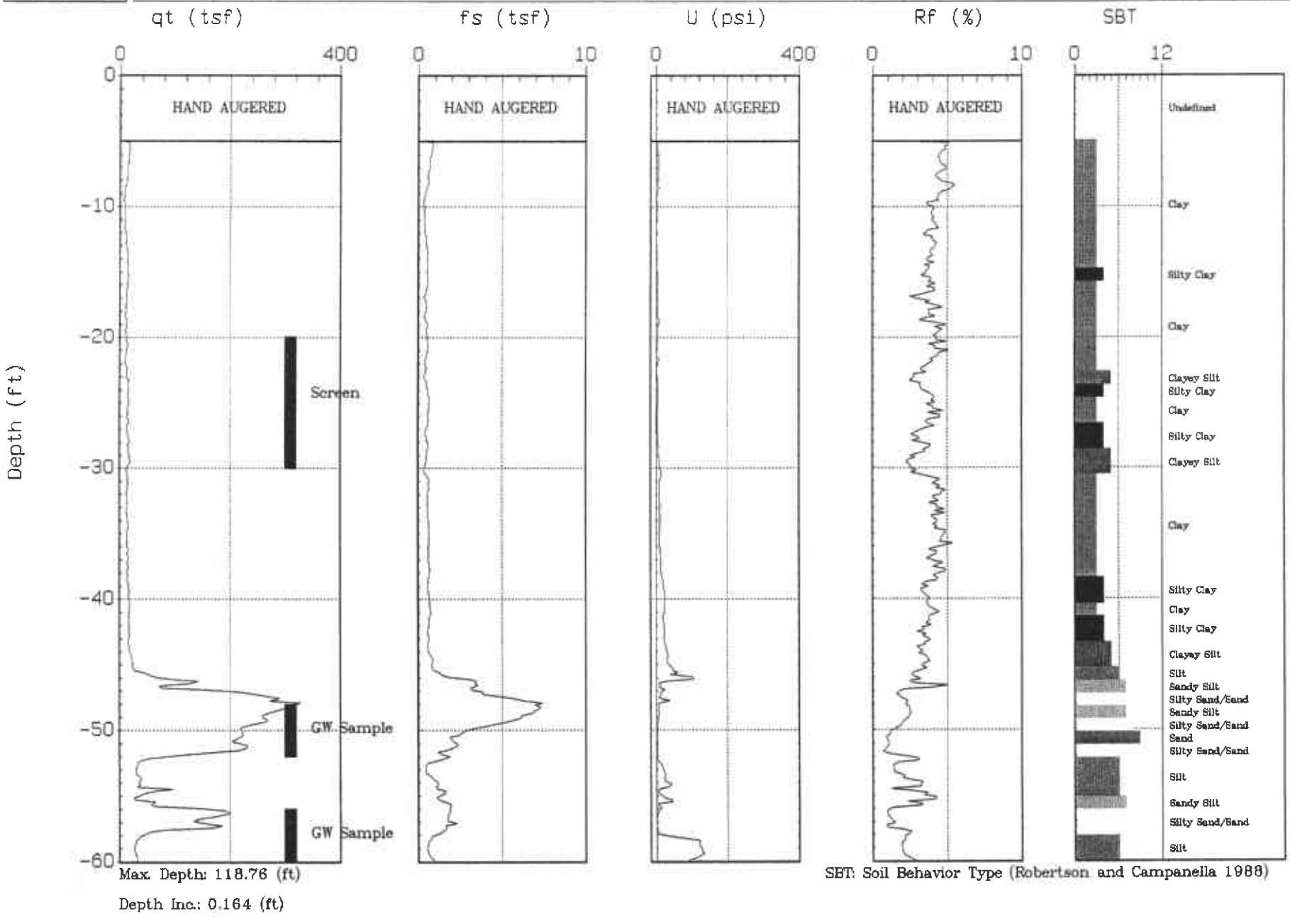
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

CAMBRIA

Site : 3790 HOPYARD
Location : CPT-02

Geologist : S. DALIE
Date : 11:25:02 09:47



Max. Depth: 118.76 (ft)

Depth Inc.: 0.164 (ft)

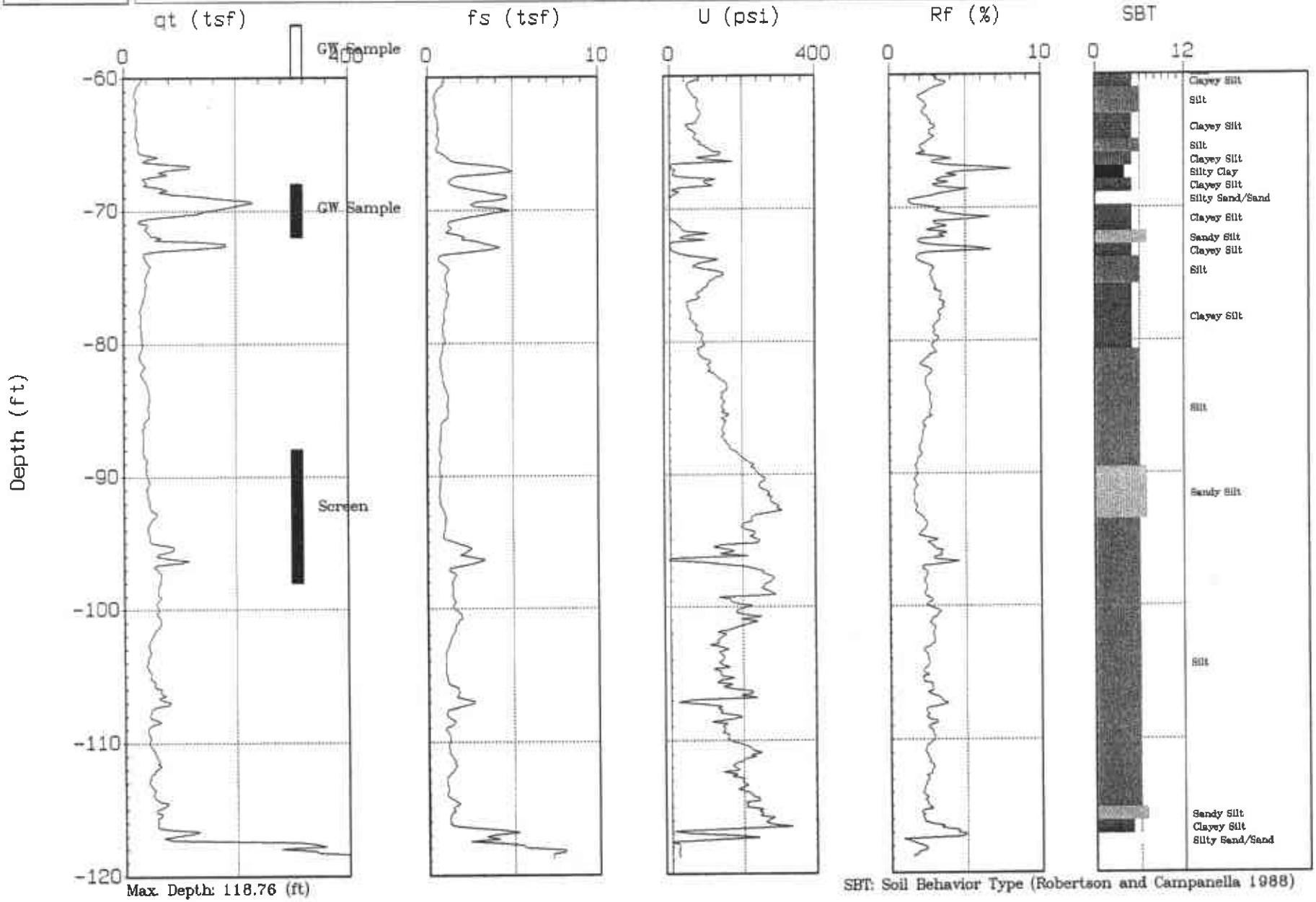
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

CAMBRIA

Site : 3790 HOPYARD
Location : CPT-02

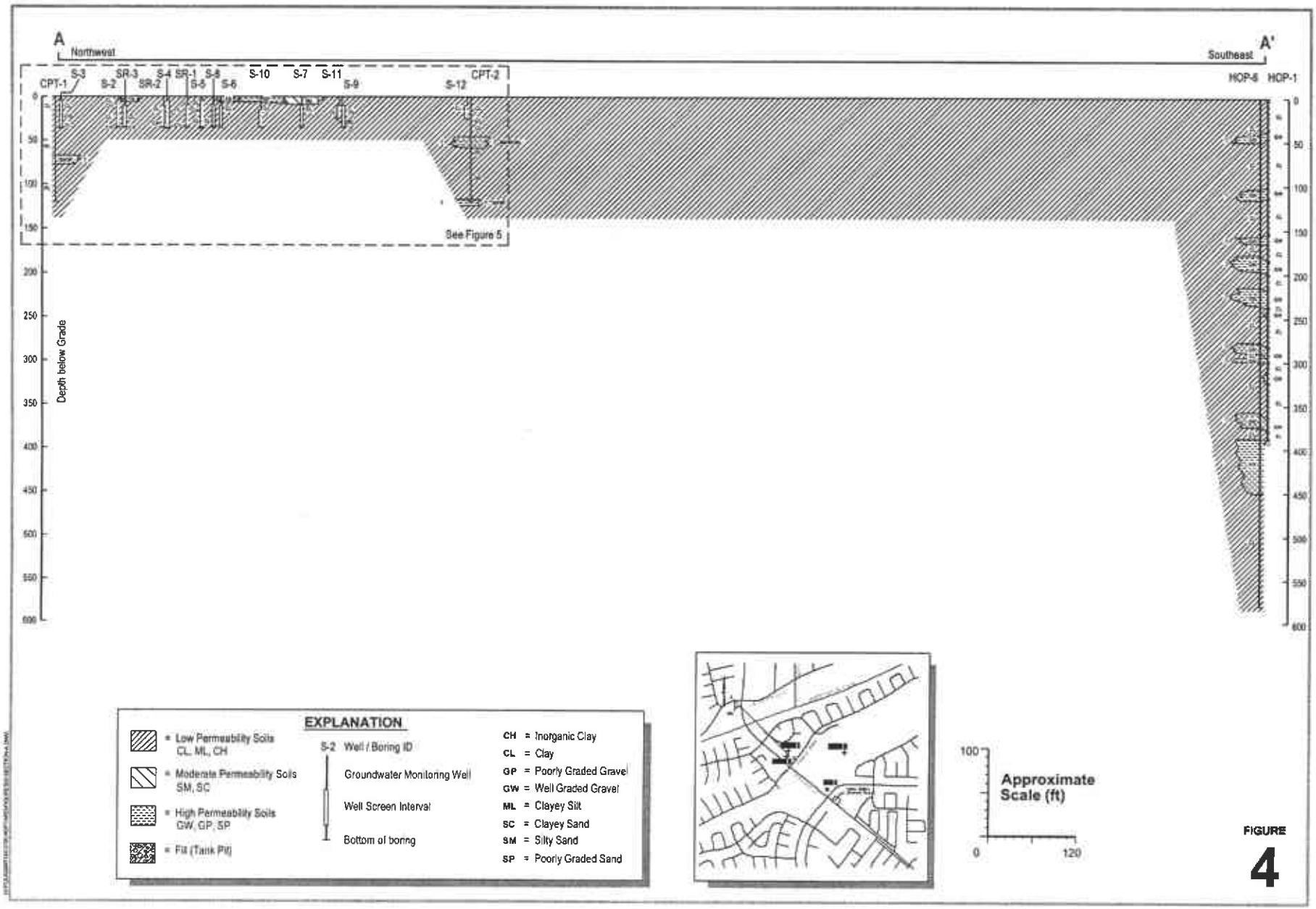
Geologist : S. DALIE
Date : 11:25:02 09:47



Max. Depth: 118.76 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

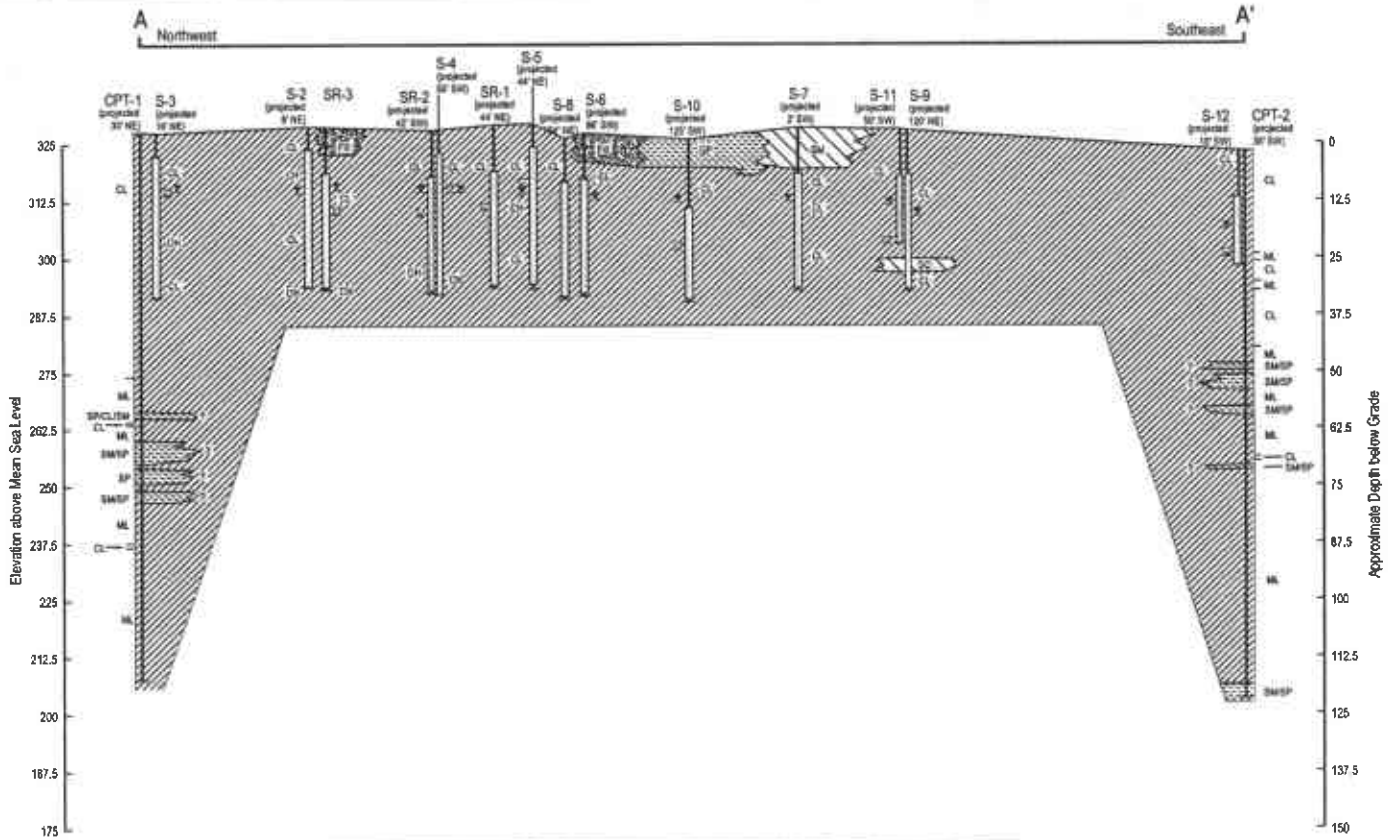


Geologic Cross Section A - A'

CAMBRIA

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

FIGURE
4



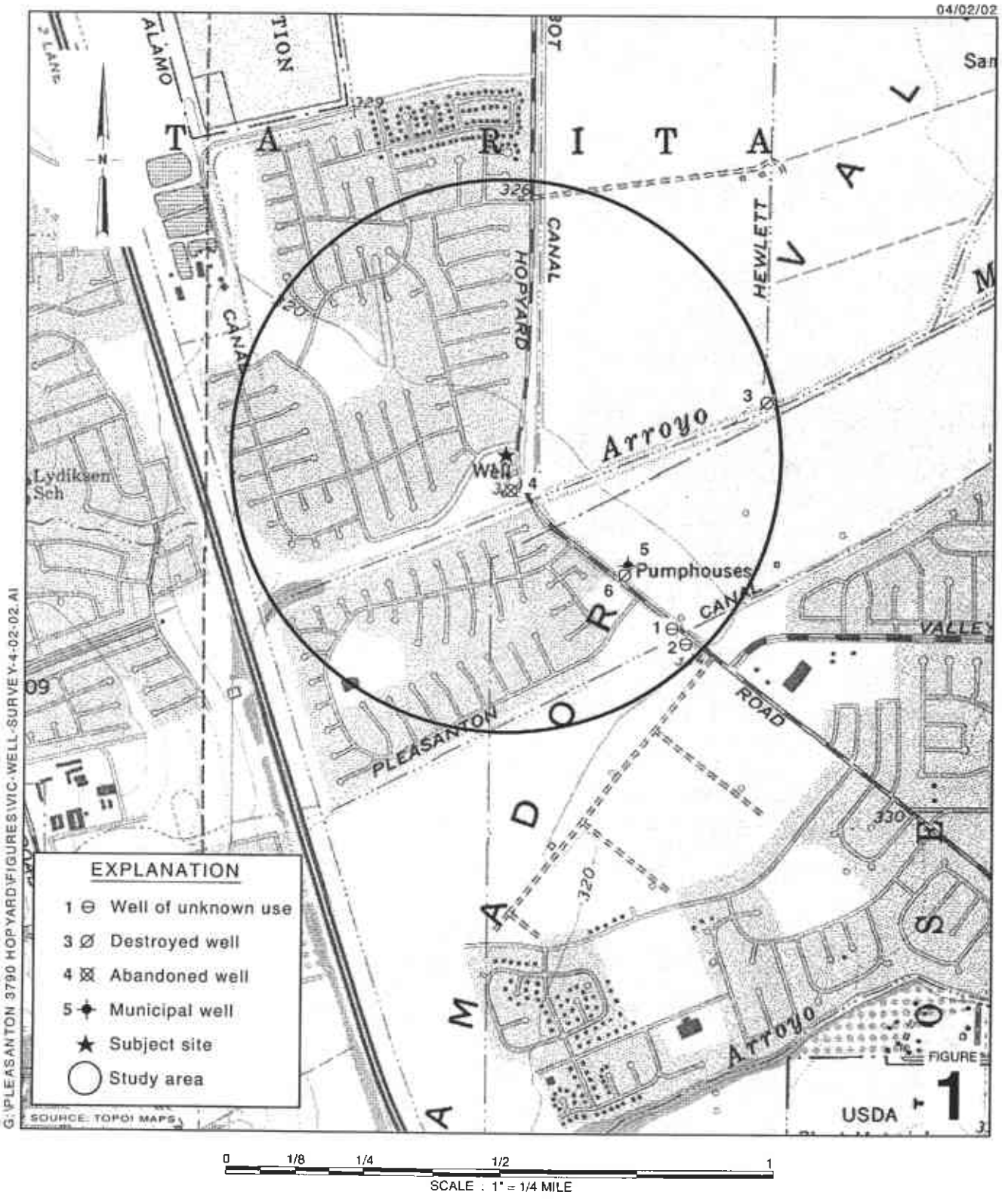
FIGURE

5

Onsite Detail of Geological Cross Section A - A'

CAMBRIA

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842



Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Vicinity/Area Well Survey Map

1/2 Mile Radius

Table 1. Well Survey Results - Shell-branded Service Station, 3790 Hopyard Road, Pleasanton, California. Incident # 98995842

Number	Well ID	Installation Date	Location	Use	Depth (ft bgs)	Screened Interval (ft bgs)	Sealed Interval (ft bgs)
1	3S/1E-7R2	Sept. 1943	On NW corner of Hopyard Rd. and Pleasanton Canal intersection	UNK	205.0	96-104, 108-122, 140-148, 167-184	UNK
2	3S/1E-71	Aug. 10, 1949	On SW corner of Hopyard Rd. and Pleasanton Canal intersection	UNK	205.0	95-103, 106-120, 139-147, 166-183	UNK
3	3S/1E-7R1	March 10, 1962	0.4 mi from Hopyard Rd. along Arroyo Mocho	DEST IRR	324.0	Formerly 143-158, 192-208, 240-309	DEST
4	3S/1E-7Q1	unknown	--	ABD	172.0	--	--
5	3S/1E-18A6	February 1943	Parkside and Hopyard Rd.	MUN	--	215-235, 275-305, 355-375, 400-490	--
6	3S/1E-18A1	October 1943	Parkside and Hopyard Rd.	DEST MUN	--	Formerly 101-114, 154-166, 186-199	DEST

Notes and Abbreviations:

Number = Column number refers to map location on Figure 2.
Well ID = California State well identification number as recorded by the Department of Water Resources in Sacramento, California.
UNK = Unknown.
IRR = Irrigation
DEST= Destroyed
ABD = Abandoned
MUN = Municipal

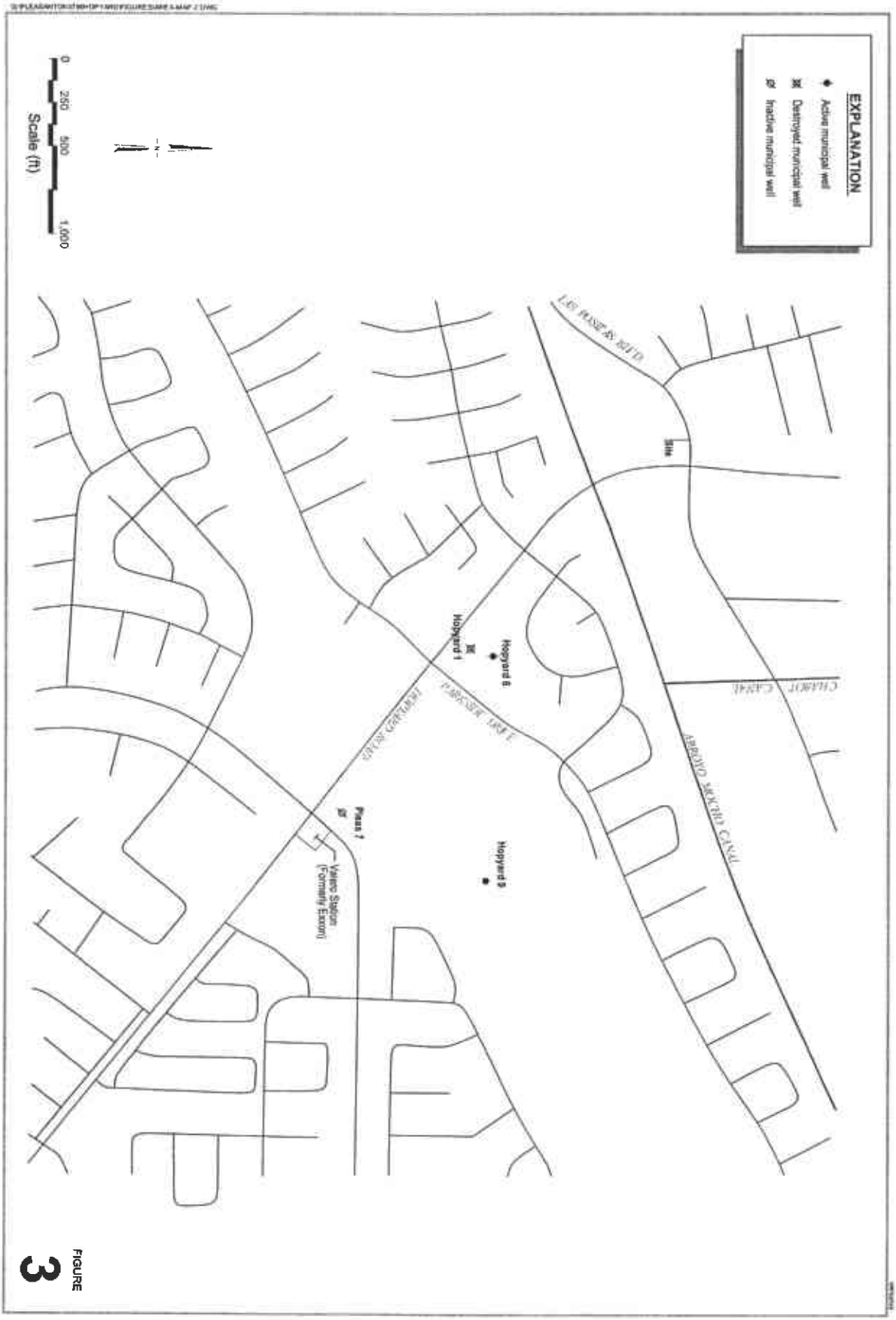


FIGURE 3

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Municipal Well Location Map

ATTACHMENT C

Standard Field Procedures for Cone Penetrometer Testing

STANDARD FIELD PROCEDURES FOR CONE PENETROMETER TESTING AND SAMPLING

This document describes Cambria Environmental Technology's standard field methods for Cone Penetrometer Testing (CPT) and direct-push soil and groundwater sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines.

Use of CPT for logging and soil and groundwater sampling requires separate borings. Typically an initial boring is advanced to estimate soil and groundwater characteristics as described below. To collect soil samples a separate boring must be advanced using a soil sampling device. If groundwater samples are collected, another separate boring must be advanced using a groundwater sampling device. Specific field procedures are summarized below.

Cone Penetrometer Testing (CPT)

Cone Penetrometer Testing is performed by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). Cone Penetrometer Tests (CPT) are carried out by pushing an integrated electronic piezocone into the subsurface. The piezocone is pushed using a specially designed CPT rig with a force capacity of 20 to 25 tons. The piezocones are capable of recording the following parameters:

Tip Resistance (Qc)
Sleeve Friction (Fs)
Pore Water Pressure (U)
Bulk Soil Resistivity (rho) - with an added module

A compression cone is used for each CPT sounding. Piezocones with rated load capacities of 5, 10 or 20 tons are used depending on soil conditions. The 5 and 10 ton cones have a tip area of 10 sq. cm. and a friction sleeve area of 150 sq. cm. The 20 ton cones have a tip area of 15 sq. cm. and a friction sleeve area of 250 sq. cm. A pore water pressure filter is located directly behind the cone tip. Each of the filters is saturated in glycerin under vacuum pressure prior to penetration. Pore Pressure Dissipation Tests (PPDT) are recorded at 5 second intervals during pauses in penetration. The equilibrium pore water pressure from the dissipation test can be used to identify the depth to groundwater.

The measured parameters are printed simultaneously on a printer and stored on a computer disk for future analysis. All CPTs are carried out in accordance with ASTM D-3441. A complete set of baseline readings is taken prior to each sounding to determine any zero load offsets.

The inferred stratigraphic profile at each CPT location is included on the plotted CPT logs. The stratigraphic interpretations are based on relationships between cone bearing (Qc) and friction ratio (Rf). The friction ratio is a calculated parameter (Fs/Qc) used in conjunction with the cone bearing to identify the soil type. Generally, soft cohesive soils have low cone bearing pressures and high friction ratios. Cohesionless soils (sands) have high cone bearing pressures and low friction ratios. The classification of soils is based on correlations developed by Robertson et al (1986). It is not always possible to clearly identify a soil type based on Qc and Rf alone. Correlation with existing soils information and analysis of pore water pressure measurements should also be used in determining soil type.

CPT and sampling equipment are steam-cleaned or washed prior to work and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent. Groundwater samples are decanted into appropriate containers supplied

by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

After the CPT probes are removed, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate groundwater depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or separate-phase hydrocarbon saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

Soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon® tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Grab Groundwater Sampling

Groundwater samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting groundwater using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.