Shell Oil Products US

April 9, 2003

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

Subject: **Shell-branded Service Station**
3790 Hopyard Road
Pleasanton, California

Dear Mr. Seery:

Attached for your review and comment is a copy of the *Agency Response and Extension Request* for the above referenced site. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

As always, please feel free to contact me directly at (559) 645-9306 with any questions or concerns.

Sincerely,

Shell Oil Products US

Karen Petryna

Karen Petryna
Sr. Environmental Engineer

P.O. Box 7869 Burbank, CA 91510-7869 Phone (559) 645-9306 Facsimile (559) 645-5643

CAMBRIA

April 9, 2003

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

Re: **Agency Response and Extension Request**
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 *Agency Response and Extension Request* 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 an extension request.

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: Depth to groundwater in site monitoring wells has ranged from 11.74 to 19.59 feet below grade (fbg) 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.

Cambria Environmental Technology, Inc.

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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: Two groundwater monitoring wells (S-8 and S-9) were installed on February 24, 1989 by Woodward-Clyde. Soil samples collected from the borings were analyzed for gasoline and BTEX. None of the analytes were 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.

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 methyl tertiary butyl ether (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 400 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 in April 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 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

In responding to the ACHCSA's February 27, 2003 letter, Cambria would like to begin by clarifying the site investigation history and several issues raised at the February 13, 2003 meeting. Shell and Cambria believe that Shell has acted proactively in response to environmental concerns at the site. Shell has voluntarily initiated several phases of investigation as well as remediation, and has attempted to expedite the site investigation on several occasions. Shell voluntarily conducted several mobile GWE events beginning in May 2001 to remove and control dissolved MTBE in groundwater without an agency directive. In April 2002, Shell voluntarily directed Cambria to conduct a sensitive receptor and utility survey for the site, which brought to the attention of the ACHCSA the presence of active municipal wells in the site vicinity. Based on the proximity to the municipal wells and the MTBE concentrations detected in groundwater at the site, Shell voluntarily began regular twice-monthly GWE at the site in April 2002, prior to any request from the ACHCSA.

In May 2002, Shell and Cambria met with ACHCSA and Zone 7 representatives to determine an appropriate course of action for the site. Based on this meeting, Cambria submitted an investigation work plan for the site in June 2002, which proposed two off-site shallow monitoring wells, and two CPT borings as a preliminary step prior to installation of deep groundwater monitoring wells. Cambria installed the first of two proposed CPT borings (CPT-1) in July 2002. Cambria installed an additional offsite well (S-11) between the site and the nearest municipal well in August 2002. Additionally in August 2002, Shell voluntarily directed Cambria to submit an

interim remediation work plan for the design and installation of a fixed GWE system at the site. To ensure rapid project implementation, Cambria began permitting for the proposed GWE system before work plan approval was received in a September 9, 2002 ACHCSA letter.

In September 2002, Cambria installed an additional offsite well (S-12) on the northern bank of the Arroyo Mocho Canal. At that time, Cambria contacted Mr. Scott Seery of the ACHCSA to recommend proceeding with deep well installation in lieu of the additional CPT boring installation. Cambria believed that sufficient information was gained from CPT-1 to appropriately screen deep monitoring wells. Cambria felt that the timely determination of whether deep groundwater has been impacted by MTBE concentrations in shallow groundwater at the site was appropriate. During a September 23, 2002 telephone conversation between Mr. Seery and Ms. Jacquelyn Jones of Cambria, Mr. Seery requested that preliminary investigation (CPT-1) results be submitted and that a meeting between Shell, Cambria, Zone 7 and the ACHCSA be held prior to determining whether to install the second CPT boring or whether to install a deep well.

Cambria submitted preliminary investigation (CPT-1) results to Mr. Seery in October 2002. In November 2002, Cambria reiterated the request to proceed with deep well installation and requested a meeting to discuss the site. In response, Mr. Seery requested that Cambria install the second CPT boring and prepare cross-section diagrams. Cambria installed boring CPT-2 later that month. In January 2003, Shell and Cambria requested a specific meeting date to review the investigation data collected, which was set for February 13, 2003. On February 5, 2003, Cambria submitted to Mr. Seery a complete data package of investigation results along with the cross-section diagrams, as requested.

Based on conversations between Ms. Jones of Cambria, Mr. Seery of the ACHSA and Ms. Karen Petryna of Shell, both Shell and Cambria believed that the meeting agenda would be to discuss the data collected during recent site investigation and to agree upon an appropriate screen interval and location for deep well installation at the site. While it was Cambria's understanding that the ACHCSA was essentially in agreement with the recommendation to install deep monitoring wells, during the February 13 meeting and as detailed in the subsequent ACHCSA letter, the ACHCSA has expressed that deep well installation is not appropriate at this time.

Shell and Cambria would like to clarify Shell's three-fold objectives for the site. Shell's objectives are to protect the groundwater quality of the active municipal wells, to prevent leakage from the USTs and to remove dissolved MTBE currently in groundwater. Shell and Cambria would like to ensure that each step taken at the site moves toward these objectives.

The February 23, 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

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: One abandoned irrigation well was identified during Cambria's 2001 sensitive receptor survey completed for the site. This well is marked on topographic maps of the area (Figure 1). The DWR well data sheet for the abandoned irrigation well is included as Attachment A. As noted in a February 11, 2003 electronic transmittal to Mr. Seery and as discussed during the February 13, 2003 meeting, Cambria has taken several steps toward finding the abandoned irrigation well in the site vicinity. **Following the May 2002 meeting, Zone 7 provided Cambria with a well location map showing one irrigation well marked "2S/1E 7Q1", which matches the state well number as identified on the DWR report for the abandoned irrigation well (Attachment A).** The map provided by Zone 7 also shows several monitoring wells in the site vicinity; it should be noted that the marked locations of the site monitoring wells are significantly inaccurate. Zone 7 also provided their best available, yet admittedly imprecise, coordinate data for the abandoned well. As noted by Mr. Matthew Katen of Zone 7 during the February 13 meeting, the coordinates provided are not likely to be the most accurate way of locating the abandoned irrigation well.

Cambria contracted Virgil Chavez Land Surveying (Virgil Chavez) of Vallejo, California to locate the coordinates provided, and, using a metal-detector, to attempt to locate the abandoned well. Based on the survey coordinates and on the detection of an underground metal object, **Virgil Chavez marked a potential location for the well behind the station building.** On February 21, 2003, **Paradiso, under the supervision of Paul Rasmussen of Cambria, excavated two areas behind the station to approximately 6 fbg, concentrating on the area marked by Virgil Chavez and on areas indicated by additional metal detector readings (see** Figure 2). The excavation extents were limited by the proximity to site structures. In the area where Virgil Chavez marked, Cambria found a piece of sheet metal, which was the likely cause of the metal detector readings. Cambria found additional pieces of metal debris in both excavation locations. **No sign of any abandoned well was noted.**

During the February 13, 2003 meeting, Mr. Katen expressed that Zone 7 believes that the location information provided on the DWR report for the well is much more likely to be accurate than the

coordinates Zone 7 provided previously. **According to the DWR report, the well was installed in 1949 and was located 150 feet west of Hopyard Road and 100 feet north of the canal crossing.** The service station property is located over 250 feet north of the edge of the Arroyo Mocho Canal, and the location marked by Virgil Chavez using the Zone 7 coordinates is located approximately 350 feet north of the edge of the Arroyo Mocho Canal. **This data confirms that the coordinates provided by Zone 7 are not accurate, and that the well is not likely to be located onsite.**

Also noted on the DWR report, the well was installed in close proximity to two above ground storage tanks (ASTs) north of the Arroyo Mocho Canal (Attachment A). Cambria completed a historical aerial photograph review of the area and compared them to the drawing on the DWR report for the abandoned well. The earliest aerial photograph available for the region was from 1954. Cambria reviewed this photo and noted that the area land use was largely agricultural and that an anomaly was present in the field in the same general vicinity as the illustration of the ASTs on the DWR report. Cambria obtained and reviewed a 1957 aerial photograph which was similar to the 1954 photograph. **Cambria also obtained a 1992 aerial photograph which showed the site vicinity in approximately the same configuration as it is currently. Cambria electronically scanned the 1957 photograph, which is the same scale as the 1992 photograph, marked the anomaly location, and overlaid the photograph on an electronically scanned version of the 1992 photograph. Using this overlay, Cambria marked the anomaly location on the 1992 photograph, and determined it to be beneath a commercial building located at 3730 Hopyard Road.** Figure 4 presents a portion of the 1957 photograph with the anomaly marked and a portion of the 1992 photograph with the anomaly location marked. As shown, the anomaly appears to be in the same location as the building located at 3730 Hopyard Road.

In an attempt to get more accurate location information for the ASTs shown on the DWR report for the abandoned well, Cambria completed a search for Sanborn Maps, which typically show the locations of ASTs and USTs. **No Sanborn Maps were available for the site vicinity.**

Additionally, during completion of the recently revised conduit study, Cambria obtained a copy of a City of Pleasanton 1969 engineering map which detailed several utilities in the site vicinity. Also marked on this map is a note reading "existing 6" steel well casing with padlock." A copy of a portion of the map is included as Attachment C. During a February 12, 2003 telephone conversation with Ms. Jones, Ms. Jayasree Santhosh of the City of Pleasanton indicated that the information used to mark that location and notation was obtained from Zone 7 when the map was drawn in 1969. **The location of this marking closely approximates the location determined by Cambria from the aerial photograph review. By** superimposing appropriately scaled copies of the 1992 aerial photograph and the 1969 Pleasanton engineering map, the plotted well location falls

within the existing building's outline. Figure 5 shows a portion of the engineering map adjacent to a portion of the 1992 aerial photograph with the location of the notation marked on each.

Based on the data collected, Cambria believes that the abandoned irrigation well is located beneath the building located at 3730 Hopyard Road. No additional wells, abandoned or otherwise, were identified during the 2001 sensitive receptor survey; nor are any additional wells marked on the USGS topographic map of the area, the Zone 7 map or the City of Pleasanton engineering map. Therefore, Cambria does not believe that another abandoned well is located either on the site or in the immediate site vicinity.

The February 27, 2003 ACHCSA letter refers to Section 3.3.2.4 of the American Petroleum Institute's Publication No. 4699, dated February 2000 entitled *Strategies for Characterizing Subsurface Releases of Gasoline Containing MtBE* in reference to locating abandoned wells. The referenced section of this document indicates that abandoned well locations can 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. 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 will review historical groundwater contour maps for the site dating back to at least 1991 to determine if a convergence pattern is noted near wells S-8 and S-9.** However, if such convergence were occurring, it is unlikely to be detected by only two, distant monitoring wells. Based on our review, we will make a recommendation about the value and likely efficacy of completing a geophysical survey. A summary of our review and recommendations will be presented in the requested soil and groundwater investigation work plan, as discussed below.

SCM, Contaminant Plume Definition and CAP

As requested, Cambria will prepare an SCM to be submitted with the requested work plan. Following completion of the investigation stage and contaminant plume definition, Cambria will submit a CAP.

EXTENSION REQUEST

The February 27, 2003 ACHCSA letter set an April 14, 2003 due date for submittal of an SCM and soil and groundwater investigation work plan. Cambria respectfully requests an extension to May 30, 2003 to allow for complete SCM development, review of site data by Shell's technical team, and review of archived files for compilation of site data.

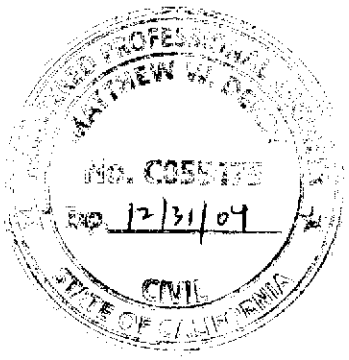
CLOSING

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 - AST Location Comparison
5 - Well Location Comparison

Table:
1 - Historical Soil Analytical Data

Attachments:
A - DWR Report for the Abandoned Irrigation Well
B - Zone 7 Well Location Map
C - Copy of 1969 City of Pleasanton Map

cc: Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank CA 91510-7869
Chuck Headlee, RWQCB, 1515 Clay Street, Suite 1400, Oakland, CA 94612
Danielle Stefani, Livermore-Pleasanton Fire Department, 3560 Nevada Street, Pleasanton, CA 94566
Matthew W. Katen, Zone 7 Water Agency, 5997 Parkside Drive, Pleasanton, CA 94588-5127
Victor Arcayena, Colliers International, 1850 Mt. Diablo Blvd., Suite 200, Walnut Creek, CA 94596
Tri-Valley Management, 3730 Hopyard Road, Pleasanton CA 94588

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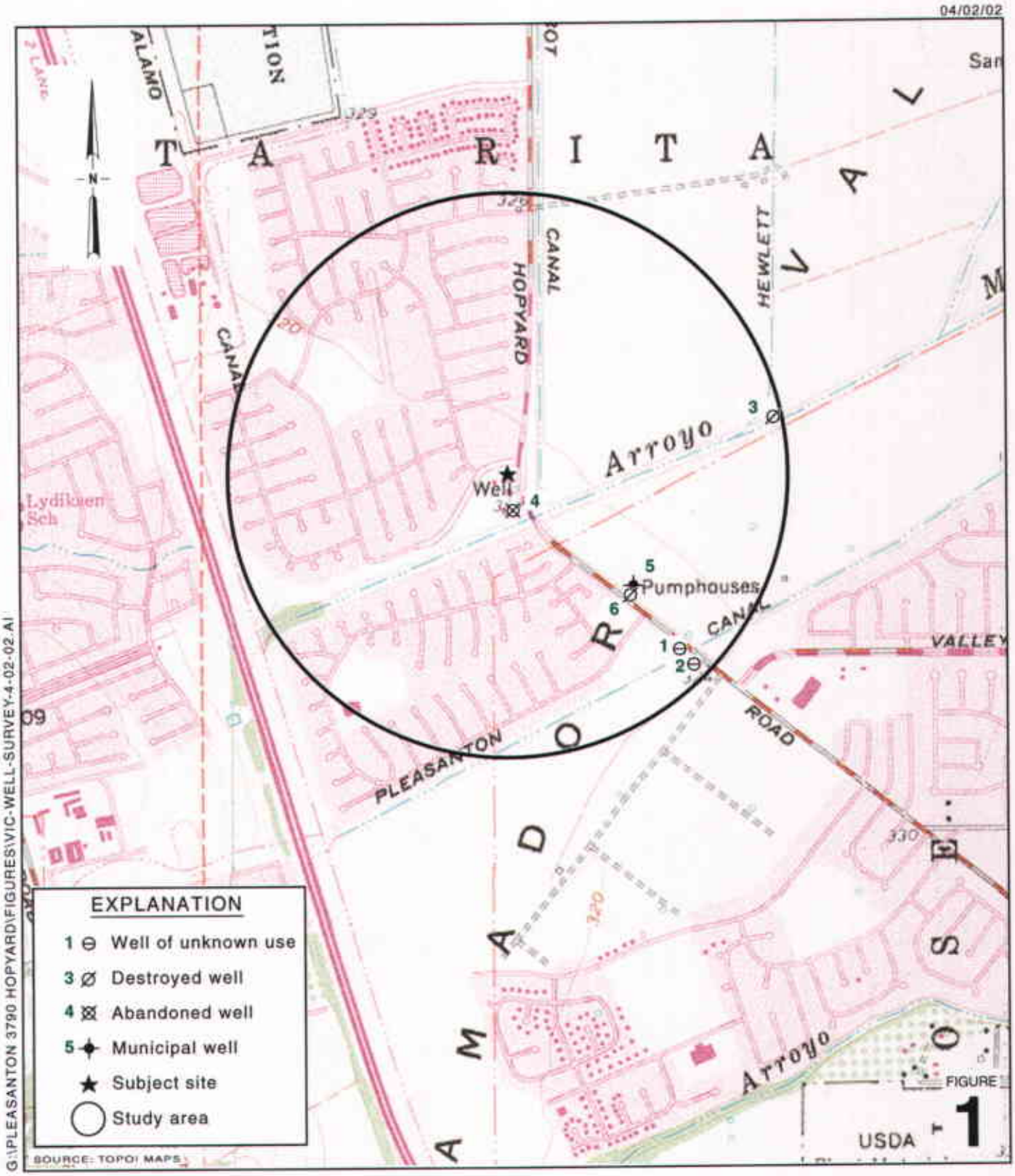

Shell-branded Service Station
3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

Vicinity/Area Well Survey Map

1/2 Mile Radius

03/31/03

Site Plan

EXPLANATION

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

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

SD 24"ϕ

19.2 fbg

W 16"ϕ

T

planter
walkway
planter

E

S-10

SD 42"ϕ

11.3 fbg

S-11

W 20"ϕ 9 fbg

S-6

G 6"ϕ

S-7

SD 12"ϕ ~4 fbg

W 16"ϕ, ~6.5 fbg

G 6"ϕ (high pressure)

W 14"ϕ 9 fbg

A5,
A10,
A15

T-2

SR-2

D-2

T-1

P-3

P-2

D-1

C1

S-C

C2

T-4

S-1

T-3

P-1

D-4

ST-2

S-B

B2

D-3

B1

ST-1

SR-3

S-E

A1

S-D

A2

S-2

S-4

fire hydrant

PG&E vault

S-5

SR-1

S-9

7-Eleven
3760 Hopyard

Shell-branded
Service Station
3790 Hopyard

Business Center
3730 Hopyard

S-3

CPT-1

S-A

S-8

DMV
6280 Las Positas

SS 8"ϕ

FL 317.65

SS 6"ϕ

SS 8"ϕ

T, 6 - 4"ϕ ducts

G, ~5 fbg

bike path

fence

CPT-2

S-12

invert elevation = 315'

Storm Drain
culvert flows
to creek

creek bridge

fence

creek bridge

fence

fence

0 30 60 120
SCALE 1:60 FEET

FIGURE
2

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

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

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04/02/03

EXPLANATION

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

CHABOT CANAL

ARROYO MOCHO CANAL

LAS POSITAS BLVD.

Site

Hopyard 6

Hopyard 1

PARKSIDE DRIVE

HOPYARD ROAD

Hopyard 9

Pleas 7

Valero Station
(Formerly Exxon)

N

0 250 500 1,000

Scale (ft)

FIGURE

3

Municipal Well Location Map

Shell-branded Service Station

3790 Hopyard Road
Pleasanton, California
Incident #98995842

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

04/09/03

AST Location Comparison

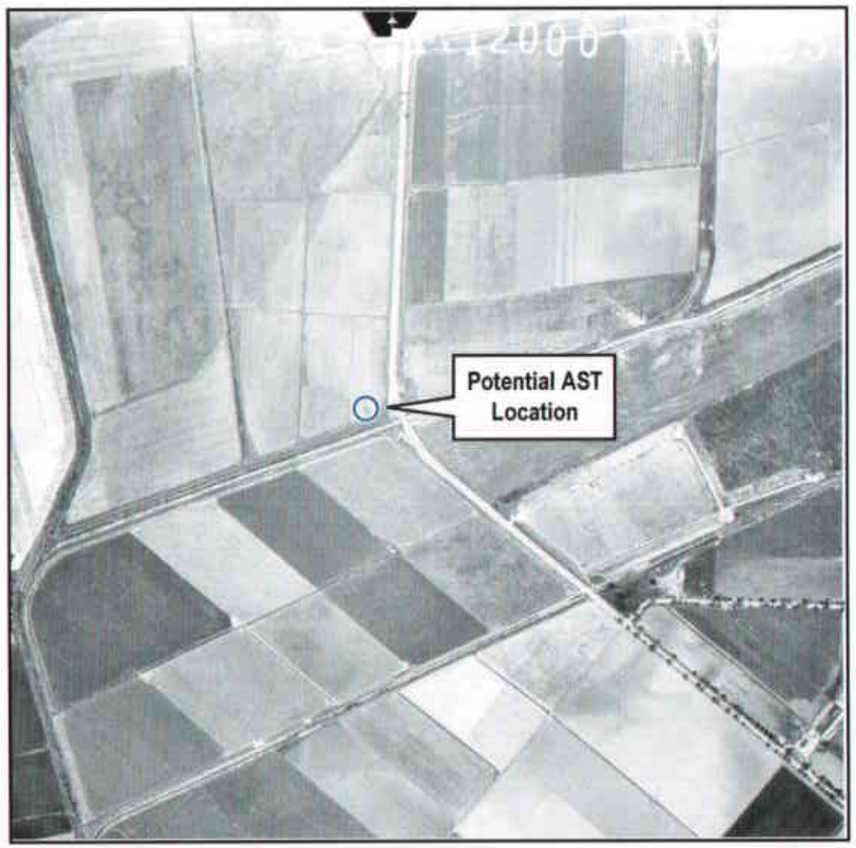

Photo 1. (1957)

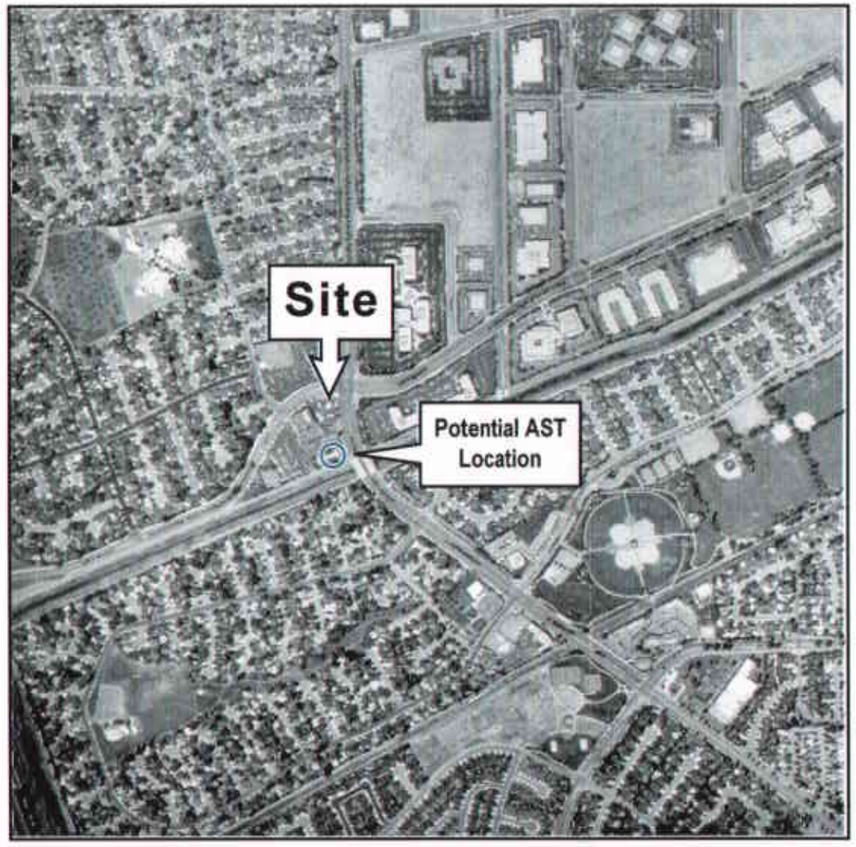

Photo 2. (1992)

N

0 6,000 12,000 24,000

APPROXIMATE SCALE IN FEET

FIGURE

4

Shell-branded Service Station

3790 Hopyard Road
Pleasanton, California
Incident #98995842

CAMBRIA

G:\PLEASANTON\3790HQ\YARDFIGURES\AERIAL.AI

Picture A. 1969 City of Pleasanton Public Works Map

Picture B. 1992 Aerial Photograph.

N

0 100 200 400

APPROXIMATE SCALE IN FEET

FIGURE
5

Well Location Comparison

Shell-branded Service Station

3790 Hopyard Road
Pleasanton, California

CAMBRIA

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	01/22/86	4 - 5.5	30	---	---	---	---	---
S-B	01/22/86	8 - 9.5	74	---	---	---	---	---
S-B	01/22/86	11.5 - 13	79	---	---	---	---	---
S-C	01/22/86	4 - 5.5	2	---	---	---	---	---
S-C	01/22/86	7 - 8.5	5,100	---	---	---	---	---
S-C	01/22/86	11.5 - 13	420	---	---	---	---	---
S-D	01/22/86	4 - 5.5	2	---	---	---	---	---
S-D	01/22/86	7 - 8.5	10	---	---	---	---	---
S-D	01/22/86	11.5 - 13	110	---	---	---	---	---
S-E	01/22/86	4 - 5.5	ND	---	---	---	---	---
S-E	01/22/86	7 - 8.5	6	---	---	---	---	---
S-E	01/22/86	11.5 - 13	6	---	---	---	---	---
ST-1	10/28/87	13.0 - 14.5	13	---	2.7	0.3	---	1.4
ST-2	10/28/87	13.0 - 14.5	23	---	0.22	0.7	---	4.3
S-1	10/28/87	14.0 - 15.5	57	---	5.3	0.3	---	6.8
S-1	10/28/87	19.0 - 20.5	9	---	0.43	0.1	---	0.8
S-1	10/28/87	33.5 - 35.0	<5	---	<0.05	<0.1	---	<0.4
S-2	10/28/87	14.0 - 15.5	53	---	6.7	0.1	---	8
S-2	10/28/87	19.0 - 20.5	5	---	0.07	<0.1	---	0.4
S-2	10/28/87	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	01/26/88	19.0 - 20.5	<5	---	<0.05	<0.1	---	<0.4
S-4	01/26/88	19.0 - 20.5	41	---	6.2	<0.1	---	5.9
S-5	01/26/88	19.0 - 20.5	4,700	---	50	170	---	900
A1	08/03/88	14	1300	---	13	110	45	230
A1X	08/03/88	20	<1.0	---	<0.1	<0.1	<0.1	<0.1
A2	08/03/88	14	2100	---	11	32	72	350
A2X	08/03/88	20.5	80	---	1.3	2.6	3.4	16
B-1	08/03/88	14	11	---	0.2	<0.1	<0.1	<0.1
B-2	08/03/88	14	120	---	5.9	5.8	3.7	19
B2X	08/03/88	20.5	1.5	---	<0.1	<0.1	<0.1	<0.1
C-1	08/03/88	14	110	---	2.8	0.4	7.8	31
C-1X	08/03/88	16	9.1	---	0.8	<0.1	1.1	0.6
C-2	08/03/88	14	52	---	4.8	0.1	4.4	3.9
Comp A	08/03/88	---	<1	---	<0.1	<0.1	<0.1	<0.1
Comp B	08/03/88	---	8.7	---	<0.1	0.2	0.1	0.6
Comp C	08/03/88	---	35	---	0.5	2.1	1.9	11
Comp D	08/03/88	---	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	08/05/88	5	3.0	---	1.3	<0.1	<0.1	<0.1
A10	08/05/88	10	3.5	---	0.5	<0.1	0.2	0.2
A15	08/05/88	15	4.4	---	0.7	<0.1	0.5	0.3
S-6-2A	10/04/88	9 - 10.5	<5	---	0.05	<0.1	<0.1	<0.3
S-6-3A	10/04/88	14 - 15.5	9	---	<0.05	<0.1	<0.1	<0.3
S-6-4A	10/04/88	19 - 20.5	6	---	0.05	<0.1	0.1	<0.3
S-6-5A	10/04/88	24 - 25.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-2A	10/04/88	9 - 10.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-3A	10/04/88	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-7-4A	10/04/88	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-8-3A	02/24/89	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-8-4A	02/24/89	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-9-3A	02/24/89	14 - 15.5	<5	---	<0.05	<0.1	<0.1	<0.3
S-9-4A	02/24/89	19 - 20.5	<5	---	<0.05	<0.1	<0.1	<0.3
SR-1-15	08/09/89	15	<5	---	<0.1	<0.1	<0.1	<0.3
SR-1-20	08/09/89	20	40	---	5.4	<0.1	2.5	2.7
S-10-15	08/09/89	15	<5	---	<0.05	<0.1	<0.1	<0.3
S-10-20	08/09/89	20	<5	---	<0.05	<0.1	<0.1	<0.3

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Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
SR-3-10	09/19/89	10	<5.0	---	0.98	<0.1	<0.1	<0.3
SR-3-15	09/19/89	15	54	---	3.9	<0.2	4.2	2.7
SR-3-20	09/19/89	20	<5.0	---	<0.05	<0.1	0.2	<0.3
SR-2-10	09/20/89	10	<5.0	---	0.05	<0.1	<0.1	<0.3
SR-2-15	09/20/89	15	67	---	0.11	0.1	0.1	<0.3
SR-2-20	09/20/89	20	8.4	---	<0.05	<0.1	1.0	<0.3
D-1	07/26/02	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
D-2	07/26/02	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
D-3	07/26/02	3.5	**4.0**	<0.5	<0.005	<0.005	**0.012**	**0.011**
D-4	07/26/02	3.5	**1.8**	<0.5	<0.005	<0.005	**0.053**	**0.018**
P-1	07/26/02	3.5	**260**	<0.5	**0.079**	**0.072**	**0.48**	**1.1**
P-2	07/26/02	3.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
P-3	07/26/02	3.5	**10**	<0.5	**0.0083**	<0.005	**0.26**	<0.005
S-11-5.5	08/26/02	5.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-10.5	08/26/02	10.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-15.5	08/26/02	15.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-20.5	08/26/02	20.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-11-24.5	08/26/02	24.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005

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Sample ID	Date	Depth (fbg)	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			← (ppm) →					
S-12-5.5	09/19/02	5.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-10.5	09/19/02	10.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-15.5	09/19/02	15.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-20.5	09/19/02	20.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
S-12-24.5	09/19/02	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:\PLEASA~3\2002IN~1\Report\[3790 Pleasanton soil grab gw Tbls 9-02.xls]Grab Groundwater

ATTACHMENT A

DWR Report for the Abandoned Irrigation Well

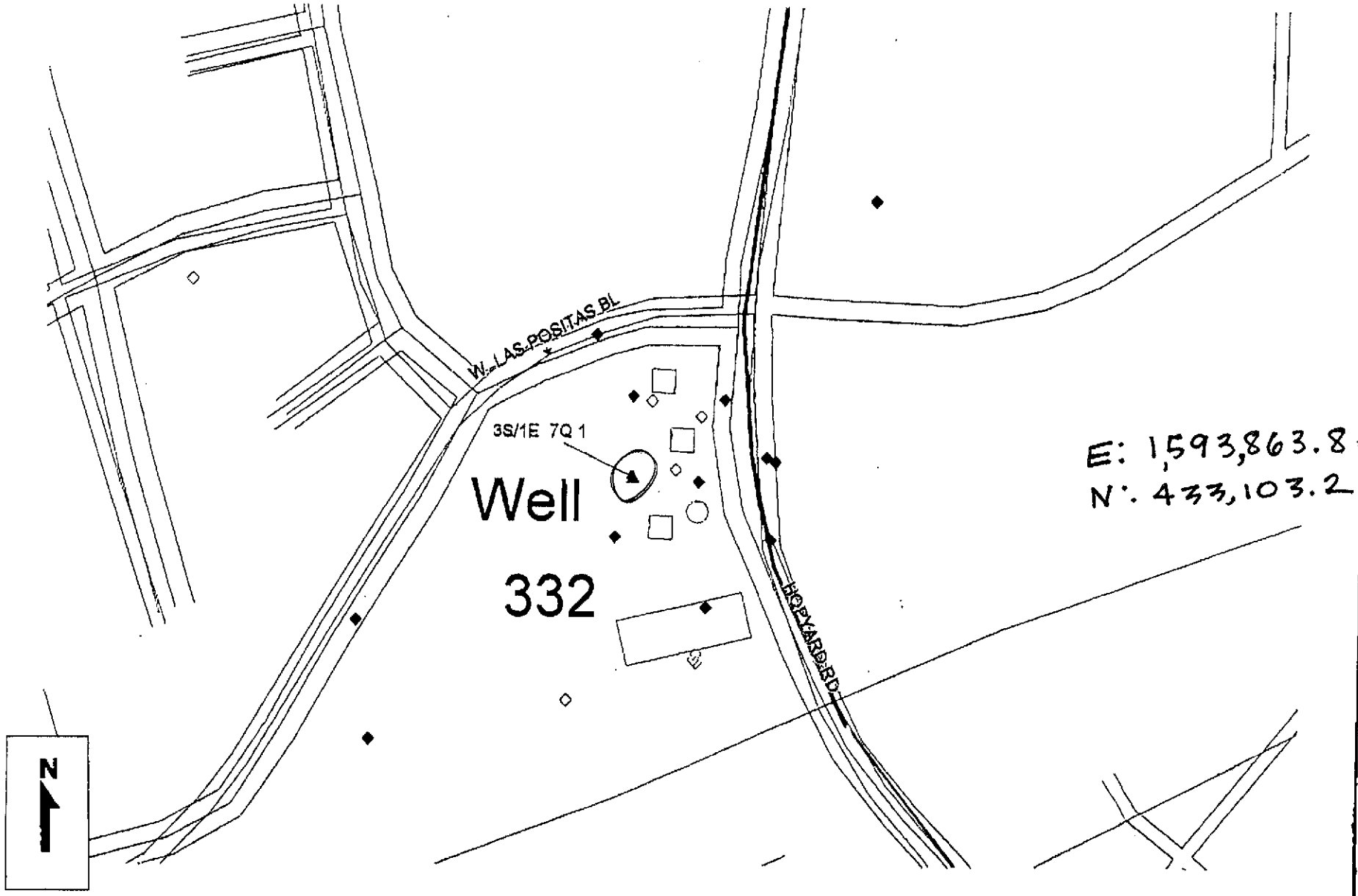
CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

ATTACHMENT B

Zone 7 Well Location Map



ZONE 7 WATER AGENCY
5997 PARKSIDE DRIVE
PLEASANTON, CA 94588

WELL LOCATION MAP

SCALE: 1"= 200 ft

DATE: 5/1/02

FILE NO.: 3S/1E 7Q 1
H:\FLOODWRI\REFERALL\REFERALL3.WOR

ATTACHMENT C

Copy of 1969 City of Pleasanton Map

1969 Map from Public Works