CAMBRIA

July 31, 2001

~~Susan Hugo~~ Don Hwang
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RO#121

AUG 02 2001

Re: **Second Quarter 2001 Monitoring and Well Survey Report**
Shell-branded Service Station
999 San Pablo Avenue
Albany, California
Incident #98995143
Cambria Project #243-0366-002

Dear Ms. Hugo:

On behalf of Equiva Services LLC, Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

SECOND QUARTER 2001 ACTIVITIES

Groundwater Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California developed well S-5 on May 22, 2001, and returned to gauge and sample wells S-5 and S-7 on May 31, 2001. The sample for well S-5 was subsequently transferred to ARCO Products Company (ARCO) and the results will be submitted by ARCO under separate cover (see below). Blaine calculated groundwater elevations, and compiled the analytical data. Cambria prepared a groundwater elevation contour map (Figure 1). Blaine's report, presenting the laboratory report and supporting field documents, is included as Attachment A.

Well S-5 Ownership Transfer: Cambria's *Third Quarter 1998 Monitoring Report* included a discussion of monitoring well S-5, located immediately adjacent to the ARCO-branded station at 1001 San Pablo Avenue, across Marin Avenue south of the Shell-branded station. Well S-5 has historically contained separate-phase hydrocarbons (SPH) while wells S-3 and S-6, located along the southern property boundary of the Shell-branded station, have never contained SPH or aqueous-phase hydrocarbon concentrations indicative of SPH. Based on this information, it was concluded that the SPH detected in well S-5 originated from the Arco-branded station immediately adjacent to well S-5, and not the Shell-branded station. Cambria discontinued monitoring of well S-5 at that time and requested permission to either abandon the well or

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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transfer ownership to the owner of the Arco station. An October 26, 2000 letter and a May 29, 2001 letter from the Alameda County Health Care Services Agency (ACHCSA) required that ARCO take over the sampling and remediation of well S-5. As stated above, Blaine developed and sampled well S-5 during the second quarter 2001 and subsequently transferred the samples to Sequoia Analytical Laboratories, an ARCO contracted laboratory. In a June 15, 2001 letter, ARCO informed the ACHCSA that results of this sampling event would be forthcoming. The ownership of well S-5 is currently in the process of being transferred to ARCO for future sampling and remediation.

Recovery Well Discussion: In a June 28, 2001 letter, the ACHCSA requested information regarding the construction of recovery wells RW-1, RW-2 and RW-3. As stated in Cambria's October 3, 1997 *Underground Storage Tank Removal and Soil Sampling Report*, the wells were installed by Paradiso Mechanical in the former tank excavation during backfilling activities. The excavation was backfilled with imported pea gravel and clean pea gravel to 8 feet below grade (fbg) and with clean pea gravel and native soil to grade. The wells were constructed of 4-inch diameter PVC with 0.020-inch slotted screened casing from approximately 8 to 14 fbg. Because the wells were installed during excavation activities, soil cuttings were not produced. A copy of the October 3, 1997 report without the appendices is included as Attachment B.

The ACHCSA also requested information on the suitability of using recovery wells RW-1, RW-2 and RW-3 for groundwater monitoring. Based on the well construction details and the historic depth-to-water measurements in nearby wells S-1 and S-2, the screened portion of the recovery wells is often submerged, which is undesirable for sampling. Additionally, with the removal of the underground storage tanks (USTs) and the over-excavation activities conducted, the source of hydrocarbons in the area of the recovery wells was substantially removed, and the recovery wells screen clean, imported pea gravel. Currently, two crossgradient wells (S-1 and S-2) and one downgradient well (S-7) monitor the former UST area. Benzene and methyl tertiary butyl ether (MTBE) concentrations in crossgradient wells S-1 and S-2 are low and show stable to decreasing concentrations trends, and benzene. MTBE concentrations in downgradient well S-7 have been near or below method reporting limits since monitoring began in 1991. With semi-annual monitoring of wells S-1 and S-2 and quarterly monitoring of well S-7, we believe the former UST area is adequately monitored. Therefore, since the recovery wells are not suitable for monitoring and the area is adequately monitored by the current well network, it is unnecessary to monitor the recovery wells.

Well Survey: To locate records of municipal and private wells in the site vicinity, well information for a ½-mile radius of the site was requested from the California Department of Water Resources (DWR). The DWR provided well documentation for 22 monitoring or test wells, 2 wells of unknown use, 1 cathodic protection well, 1 destroyed well and 6 vapor

extraction wells within the ½-mile radius (see Table 1 and Attachment C). The locations of these wells are shown on Figure 2.

ANTICIPATED THIRD QUARTER 2001 ACTIVITIES

Groundwater Monitoring: Blaine will gauge and sample selected site wells and tabulate the data. Cambria will prepare a monitoring report.

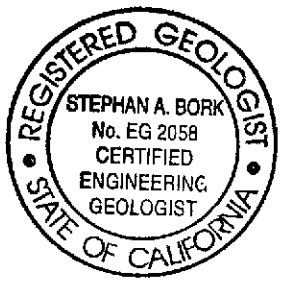
CLOSING

We appreciate the opportunity to work with you on this project. Please call Jacquelyn Jones at (510) 420-3316 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc

Jacquelyn L. Jones
Project Geologist

Stephan A. Bork, C.E.G., C.HG.
Associate Hydrogeologist



Figures: 1 - Groundwater Elevation Contour Map
2 - Area Well Survey

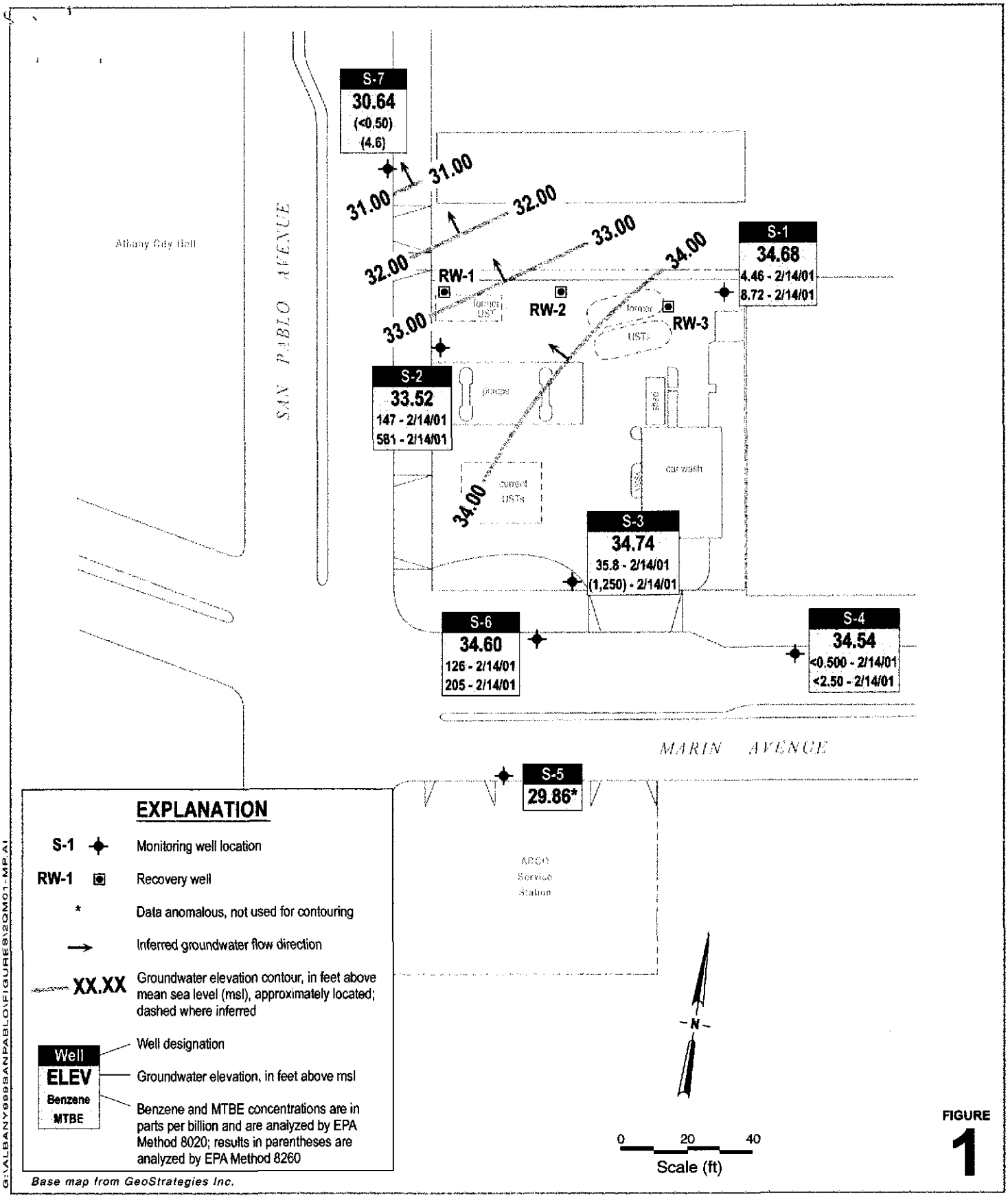
Table: 1 - Well Survey

Attachments: A - Blaine Groundwater Monitoring Report and Field Notes
B - October 3, 1997 Underground Storage Tank Removal and Soil Sampling Report
C - Well Driller's Report Forms

cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91510-7869

G:\Albany 999 San Pablo\QM\2q01qm with Agency Response and WS.doc

07/25/01



EXPLANATION

- S-1 ✦ Monitoring well location
- RW-1 ▣ Recovery well
- * Data anomalous, not used for contouring
- → Inferred groundwater flow direction
- XX.XX Groundwater elevation contour, in feet above mean sea level (msl), approximately located; dashed where inferred

Well
ELEV
Benzene
MTBE

- Well designation
- Groundwater elevation, in feet above msl
- Benzene and MTBE concentrations are in parts per billion and are analyzed by EPA Method 8020; results in parentheses are analyzed by EPA Method 8260

Base map from GeoStrategies Inc.

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FIGURE
1

Shell-branded Service Station
999 San Pablo Avenue
Albany, California
Incident #98995143

CAMBRIA

Groundwater Elevation Contour Map

May 31, 2001

05/15/00

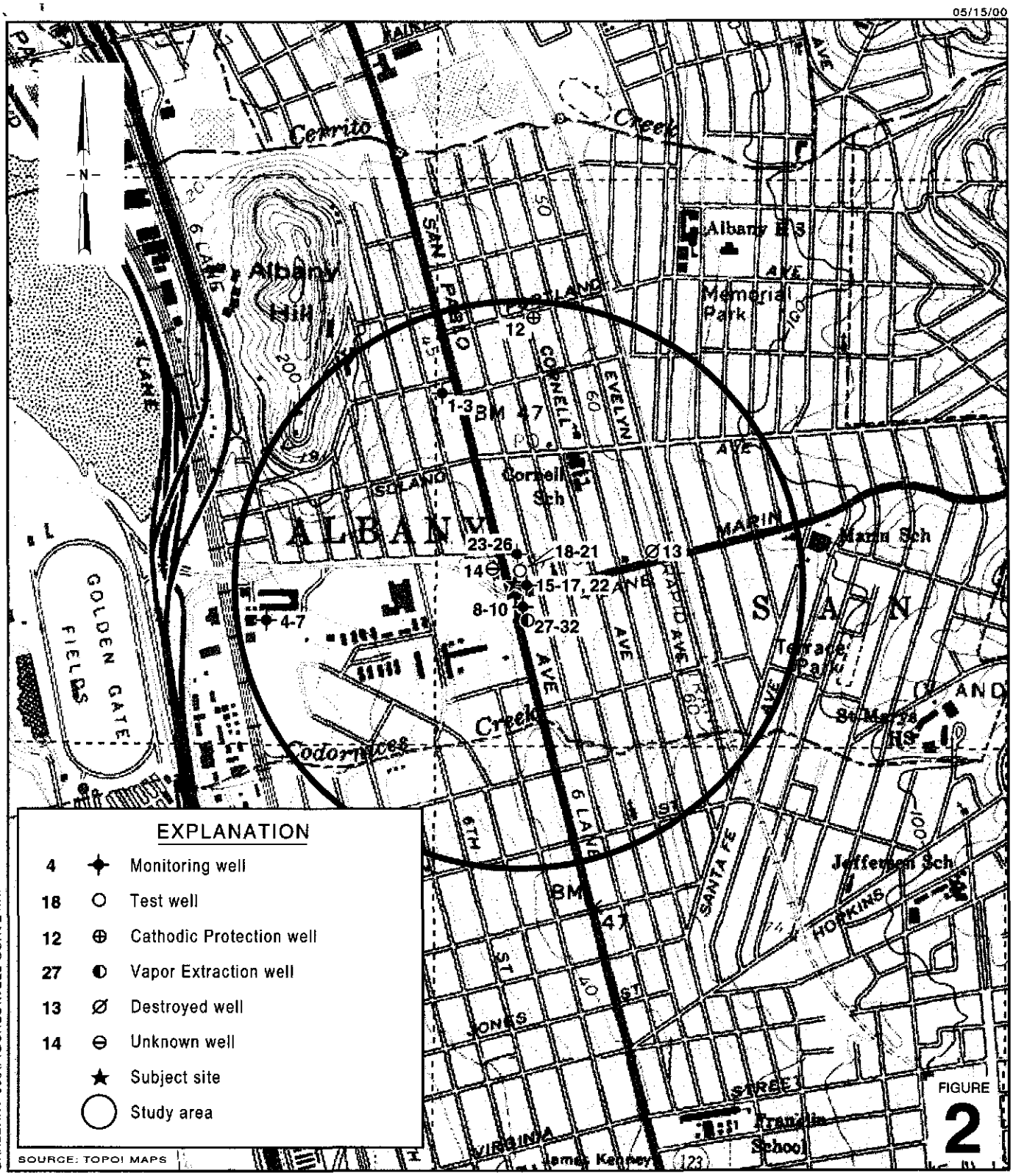

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FIGURE 2

Shell-branded Service Station
999 San Pablo Avenue
Albany, California
Incident #98995143

CAMBRIA

Area Well Survey
(1/2-Mile Radius)

Table 1. Well Survey - Shell-branded Service Station - Incident# 98995752, 999 San Pablo Ave., Albany, California

Well #	Well ID (Soil Boring ID)	Installation Date	Owner	Use	Completed Depth (fbg)	Screened Interval (fbg)	Sealed Interval (fbg)
1	1N/4W-33H1	07/24/91	Dibble/Foley	MON	30	10-20	0-10
2	1N/4W-33H2	07/24/91	Dibble/Foley	MON	28	8-28	0-8
3	1N/4W-33H3	07/25/91	Dibble/Foley	MON	27	7-27	0-7
4	01N04W-33K04	09/14/92	USDA	MON	20	5-20	0-5
5	01N04W-33K05	09/14/92	USDA	MON	20	5-20	0-5
6	01N04W-33K06	09/15/92	USDA	MON	20	5-20	0-5
7	01N04W-33K07	09/15/92	USDA	MON	19	4-19	0-4
8	01N04W-34M17	11/24/92	Arco	MON	25.5	8.5-25.5	0-5.5
9	01N04W-34M18	11/24/92	Arco	MON	25.5	8.5-25.5	0-5.5
10	01N04W-34M19	11/25/92	Arco	MON	25	8-25	0-5
11	1N4E-34B	03/05/76	P, G, & E	UNK	75	UNK	0-75
12	1N4E-34D1	03/23/76	P, G, & E	CATH	120	95-120	0-95
13	1N/4W-34L 1	9/4/1992*	City of Albany	DEST	33	UNK	0-22
14	1N/4W-34M 1	07/22/77	Exxon Oil Co.	UNK	50	None	0-21
15	1N/4W-34M 2	01/30/90	Shell Oil Company	MON	14	5-11.5	0-5
16	1N/4W-34M 3	01/30/90	Shell Oil Company	MON	12	6-12	0-6
17	1N/4W-34M 4	01/30/90	Shell Oil Company	MON	20.5	6-11.5	0-6.5
18	1N/4W-34M 5	04/16/90	Shell Oil Company	TEST	16	6-16	0-6
19	1N/4W-34M 6	04/16/90	Shell Oil Company	TEST	14	5-14	0-5
20	1N/4W-34M 7	08/15/90	Shell Oil Company	TEST	15	5.5-15	0-5.5
21	1N/4W-34M 8	08/15/90	Shell Oil Company	TEST	15	5.5-15	0-5.5
22	1N/4W-34M	01/30/90	Shell Oil Company	MON	15.5	7-11.5	0-7
23	1N/4W-34M 9	09/21/90	Firestone	MON	14.5	7.5-12.5	0-7.5
24	1N/4W-34M 10	09/21/90	Firestone	MON	14.5	9.5-14.5	0-9.5
25	1N/4W-34M 11	09/21/90	Firestone	MON	14.5	9.5-14.5	0-9.5

Table 1. Well Survey - Shell-branded Service Station - Incident# 98995752, 999 San Pablo Ave., Albany, California

Well #	Well ID (Soil Boring ID)	Installation Date	Owner	Use	Completed Depth (fbg)	Screened Interval (fbg)	Sealed Interval (fbg)
26	1N/4W-34M 12	09/21/90	Firestone	MON	15	10-15	0-10
27	01N04W-34M20	08/20/92	Arco	VAP	17	7-17	0-7
28	01N04W-34M21	08/19/92	Arco	VAP	17	7-17	0-7
29	01N04W-34M22	08/19/92	Arco	VAP	9.5	4.5-9.5	0-4.5
30	01N04W-34M23	08/20/92	Arco	VAP	17	7-17	0-7
31	01N04W-34M24	08/21/92	Arco	VAP	14.5	4.5-14.5	0-4.5
32	01N04W-34M25	08/21/92	Arco	VAP	12.5	5-12.5	0-5

Abbreviations:

MON = Monitoring well
UNK = Unknown/not provided
DEST = Destroyed well
TEST = Test well
CATH = Cathodic protection
VAP = Vapor extraction
fbg =feet below grade
* = Well destruction date

Notes:

All well data was provided by the California Department of Water Resources
Well 11 is not located on the half-mile well vicinity map

ATTACHMENT A

Blaine Groundwater Monitoring Report and Field Notes

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE
CONTRACTOR'S LICENSE #746684
www.blainetech.com

June 28, 2001

Karen Petryna
Equiva Services LLC
P.O. Box 7869
Burbank, CA 91510-7869

Second Quarter 2001 Groundwater Monitoring at
Shell-branded Service Station
999 San Pablo Avenue
Albany, CA

Monitoring performed on May 31, 2001

Groundwater Monitoring Report **010531-U-1**

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Nick Sudano
Project Coordinator

NS/jt

attachments: Cumulative Table of WELL CONCENTRATIONS
Certified Analytical Report
Field Data Sheets

cc: Anni Kreml
Cambria Environmental Technology, Inc.
1144 65th Street, Suite C
Oakland, CA 94608-2411

WELL CONCENTRATIONS
Shell-branded Service Station
999 San Pablo Avenue
Albany, CA
Wic #204-0079-0109

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-1	5/13/91	1,500	20	2.6	86	74	NA	NA	42.73	8.24	34.49	NA	NA
S-1	8/23/91	2,900	27	<2.5	75	18	NA	NA	42.73	8.37	34.36	NA	NA
S-1	11/7/91	2,900	8	2.5	46	26	NA	NA	42.73	8.30	34.43	NA	NA
S-1	1/28/92	2,000	11	<2.5	60	20	NA	NA	42.73	7.84	34.89	NA	NA
S-1	5/6/92	1,200	5.5	<2.5	80	36	NA	NA	42.73	7.95	34.78	NA	NA
S-1	8/26/92	2,000	9.4	<2.5	130	<2.5	NA	NA	42.73	8.24	34.49	NA	NA
S-1	10/28/92	1,300	27	3.2	72	13	NA	NA	42.73	8.52	34.21	NA	NA
S-1	1/19/93	1,500	13	3	29	31	NA	NA	42.73	6.54	36.19	NA	NA
S-1	4/29/93	2,000	15	<2.5	82	<65	NA	NA	42.73	7.93	34.80	NA	NA
S-1	7/22/93	620	1.1	4.2	3.5	13	NA	NA	42.73	8.09	34.64	NA	NA
S-1	10/21/93	1,200	34	25	15	9.5	NA	NA	42.73	9.43	33.30	NA	NA
S-1	1/4/94	860	<2.5	<2.5	5.7	5.3	NA	NA	42.73	8.25	34.48	NA	NA
S-1	4/13/94	NA	NA	NA	NA	NA	NA	NA	42.73	8.02	34.71	NA	NA
S-1	7/25/94	1,200	8.3	7.4	15	20	NA	NA	42.73	8.22	34.51	NA	NA
S-1	10/10/94	NA	NA	NA	NA	NA	NA	NA	42.73	8.29	34.44	NA	NA
S-1	1/26/95	1,000	12	0.6	12	420	NA	NA	42.73	6.88	35.85	NA	NA
S-1	4/21/95	NA	NA	NA	NA	NA	NA	NA	42.73	7.65	35.08	NA	NA
S-1	7/28/95	660	7.2	1	11	8.9	NA	NA	42.73	7.90	34.83	NA	4
S-1	10/31/95	NA	NA	NA	NA	NA	NA	NA	42.73	7.72	35.01	NA	NA
S-1	1/10/96	1,100	3.5	7	5.1	9.4	NA	NA	42.73	8.24	34.49	NA	7.4
S-1	4/25/96	NA	NA	NA	NA	NA	NA	NA	42.73	7.74	34.99	NA	NA
S-1	7/23/96	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	42.73	7.92	34.81	NA	2.7
S-1	12/10/96	NA	NA	NA	NA	NA	NA	NA	42.73	7.56	35.17	NA	0.6
S-1	2/20/97	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	42.73	7.95	34.78	NA	3
S-1	5/22/97	NA	NA	NA	NA	NA	NA	NA	42.73	8.11	34.62	NA	0.5
S-1	8/22/97	810	18	<2.0	5.1	4.4	18	NA	42.73	7.86	34.87	NA	3

WELL CONCENTRATIONS
Shell-branded Service Station
999 San Pablo Avenue
Albany, CA
Wic #204-0079-0109

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-1	11/3/97	NA	NA	NA	NA	NA	NA	NA	42.73	8.35	34.38	NA	1.1
S-1	2/20/98	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	42.73	6.09	36.64	NA	2.9
S-1	5/18/98	NA	NA	NA	NA	NA	NA	NA	42.73	7.69	35.04	NA	1.1
S-1	8/20/98	390	6.7	<0.50	0.64	<0.50	14	NA	42.73	8.20	34.53	NA	1.9
S-1	11/6/98	NA	NA	NA	NA	NA	NA	NA	42.73	8.23	34.50	NA	NA
S-1	2/16/99	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	42.73	7.47	35.26	NA	1.5
S-1	5/28/99	NA	NA	NA	NA	NA	NA	NA	42.73	7.60	35.13	NA	1.3
S-1	8/24/99	72.4	<0.500	<0.500	<0.500	<0.500	<2.50	NA	42.73	7.95	34.78	NA	1.4
S-1	11/16/99	NA	NA	NA	NA	NA	NA	NA	42.73	7.87	34.86	NA	1.3
S-1	2/2/00	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	42.73	7.26	35.47	NA	1.4
S-1	5/9/00	NA	NA	NA	NA	NA	NA	NA	42.73	8.13	34.60	NA	1.0
S-1	8/3/00	209	6.42	<0.500	<0.500	<0.500	<2.50	NA	42.73	8.12	34.61	NA	1.4
S-1	11/15/00	NA	NA	NA	NA	NA	NA	NA	42.73	8.06	34.67	NA	1.0
S-1	2/14/01	179	4.46	<0.500	<0.500	<0.500	8.72	NA	42.73	8.08	34.65	NA	1.1
S-1	**5/31/01**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**42.73**	**8.05**	**34.68**	**NA**	**1.0**
S-2	5/13/91	23,000	3,900	230	1,100	3,200	NA	NA	40.73	8.50	32.23	NA	NA
S-2	8/23/91	23,000	4,400	260	1,900	2,400	NA	NA	40.73	8.80	31.93	NA	NA
S-2	11/7/91	40,000	4,000	160	1,020	3,400	NA	NA	40.73	8.61	32.12	NA	NA
S-2	1/28/92	22,000	1,600	70	420	1,700	NA	NA	40.73	7.80	32.93	NA	NA
S-2	5/6/92	20,000	2,600	110	860	1,900	NA	NA	40.73	8.10	32.63	NA	NA
S-2	8/26/92	42,000	5,000	160	1,100	3,500	NA	NA	40.73	8.37	32.36	NA	NA
S-2	10/28/92	34,000	4,800	330	1,600	2,900	NA	NA	40.73	8.64	32.09	NA	NA
S-2	1/19/93	20,000	2,300	370	660	1,300	NA	NA	40.73	5.82	34.91	NA	NA
S-2	4/29/93	40,000	2,000	67	900	1,900	NA	NA	40.73	7.70	33.03	NA	NA
S-2	7/22/93	22,000	3,000	120	1,000	1,600	NA	NA	40.73	8.38	32.35	NA	NA

WELL CONCENTRATIONS
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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-2 (D)	7/22/93	17,000	3,000	110	1,000	1,500	NA	NA	40.73	8.38	32.35	NA	NA
S-2	10/21/93	14,000	2,800	74	870	1,100	NA	NA	40.73	8.58	32.15	NA	NA
S-2 (D)	10/21/93	13,000	3,200	53	960	820	NA	NA	40.73	8.58	32.15	NA	NA
S-2	1/4/94	21,000	2,100	67	990	770	NA	NA	40.73	7.70	33.03	NA	NA
S-2 (D)	1/4/94	22,000	2,000	64	910	750	NA	NA	40.73	7.70	33.03	NA	NA
S-2	4/13/94	NA	NA	NA	NA	NA	NA	NA	40.73	7.62	33.11	NA	NA
S-2	7/25/94	43,000	2,600	490	990	1,300	NA	NA	40.73	7.86	32.87	NA	NA
S-2	10/10/94	NA	NA	NA	NA	NA	NA	NA	40.73	8.12	32.61	NA	NA
S-2	1/26/95	21,000	790	12	290	570	NA	NA	40.73	6.38	34.35	NA	5.5
S-2	4/21/95	NA	NA	NA	NA	NA	NA	NA	40.73	7.01	33.72	NA	NA
S-2	7/28/95	14,000	2,400	360	960	370	NA	NA	40.73	7.82	32.91	NA	4
S-2	10/31/95	NA	NA	NA	NA	NA	NA	NA	40.73	7.57	33.16	NA	NA
S-2	1/10/96	17,000	1,400	<50	480	170	NA	NA	40.73	8.13	32.60	NA	7.2
S-2	4/25/96	NA	NA	NA	NA	NA	NA	NA	40.73	7.72	33.01	NA	NA
S-2	7/23/96	16,000	2,700	69	1,100	110	9,500	NA	40.73	8.10	32.63	NA	2.2
S-2 (D)	7/23/96	11,000	2,600	68	1,000	96	10,000	11,000	40.73	8.10	32.63	NA	2.2
S-2	12/10/96	NA	NA	NA	NA	NA	NA	NA	40.73	8.57	32.16	NA	0.5
S-2	2/20/97	10,000	500	<10	90	130	6,400	NA	40.73	8.15	32.58	NA	4
S-2	5/22/97	NA	NA	NA	NA	NA	NA	NA	40.73	8.79	31.94	NA	1.1
S-2	8/22/97	23,000	1,300	65	740	290	4,500	NA	40.73	8.05	32.68	NA	3.2
S-2 (D)	8/22/97	20,000	1,200	<100	630	250	3,900	NA	40.73	8.05	32.68	NA	3.2
S-2	11/3/97	NA	NA	NA	NA	NA	NA	NA	40.73	8.75	31.98	NA	1.2
S-2	2/20/98	450	28	1.3	7.4	12	35	NA	40.73	6.34	34.39	NA	0.4
S-2	5/18/98	NA	NA	NA	NA	NA	NA	NA	40.73	7.95	32.78	NA	0.8
S-2	8/20/98	22,000	290	44	420	410	7,300	NA	40.73	7.73	33.00	NA	1.9
S-2	11/6/98	NA	NA	NA	NA	NA	NA	NA	40.73	8.47	32.26	NA	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-2	2/16/99	27,000	200	<200	770	840	5,400	NA	40.73	7.24	33.49	NA	1.4
S-2	5/28/99	NA	NA	NA	NA	NA	NA	NA	40.73	7.82	32.91	NA	1.3
S-2	8/24/99	13,400	196	<25.0	439	113	597	NA	40.73	8.61	32.12	NA	1.2
S-2	11/16/99	NA	NA	NA	NA	NA	NA	NA	40.73	8.17	32.56	NA	1.1
S-2	2/2/00	7,850	176	88.0	134	111	540	NA	40.73	7.57	33.16	NA	1.2
S-2	5/9/00	NA	NA	NA	NA	NA	NA	NA	40.73	7.94	32.79	NA	1.3
S-2	8/3/00	35,000	255	122	842	224	905	726e	40.73	8.07	32.66	NA	1.1
S-2	11/15/00	NA	NA	NA	NA	NA	NA	NA	40.73	8.13	32.60	NA	1.3
S-2	2/14/01	13,000	147	<25.0	309	54.4	581	NA	40.73	6.39	34.34	NA	1.4
S-2	**5/31/01**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**40.73**	**7.21**	**33.52**	**NA**	**1.5**
S-3	5/13/91	3,300	30	3.6	26	13	NA	NA	41.46	7.90	33.56	NA	NA
S-3	8/23/91	2,000	25	4	9.3	4.5	NA	NA	41.46	8.14	33.32	NA	NA
S-3	11/7/91	4,000	20	3.9	5	4.9	NA	NA	41.46	7.91	33.55	NA	NA
S-3	1/28/92	2,100	21	7.6	6.7	15	NA	NA	41.46	7.53	33.93	NA	NA
S-3 (D)	1/28/92	2,100	18	6.1	7.1	14	NA	NA	41.46	7.53	33.93	NA	NA
S-3	5/6/92	6,600	38	51	45	65	NA	NA	41.46	7.55	33.91	NA	NA
S-3	8/26/92	5,800	18	12	29	60	NA	NA	41.46	7.53	33.93	NA	NA
S-3	10/28/92	3,000	55	11	16	32	NA	NA	41.46	7.95	33.51	NA	NA
S-3	1/19/93	3,100	<5	5.1	11	16	NA	NA	41.46	6.12	35.34	NA	NA
S-3	4/29/93	3,000	31	22	<5	14	NA	NA	41.46	7.27	34.19	NA	NA
S-3	7/22/93	2,600	3.1	43	23	53	NA	NA	41.46	7.62	33.84	NA	NA
S-3	10/21/93	2,500	73	14	16	32	NA	NA	41.46	7.81	33.65	NA	NA
S-3	1/4/94	4,800	13	21	<12.5	33	NA	NA	41.46	7.49	33.97	NA	NA
S-3	4/13/94	NA	NA	NA	NA	NA	NA	NA	41.46	7.32	34.14	NA	NA
S-3	7/25/94	2,600	6.1	4	3.8	12	NA	NA	41.46	7.66	33.80	NA	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-3	10/10/94	NA	NA	NA	NA	NA	NA	NA	41.46	7.49	33.97	NA	NA
S-3	1/26/95	3,600	30	6.8	5.6	19	NA	NA	41.46	6.50	34.96	NA	NA
S-3 (D)	1/26/95	2,200	9.9	15	14	22	NA	NA	41.46	6.50	34.96	NA	NA
S-3	4/21/95	NA	NA	NA	NA	NA	NA	NA	41.46	6.79	34.67	NA	NA
S-3	7/28/95	3,700	27	9.3	20	34	NA	NA	41.46	7.28	34.18	NA	4
S-3	10/31/95	NA	NA	NA	NA	NA	NA	NA	41.46	6.74	34.72	NA	NA
S-3	1/10/96	4,000	10	<0.5	13	28	NA	NA	41.46	7.48	33.98	NA	6.1
S-3	4/25/96	NA	NA	NA	NA	NA	NA	NA	41.46	6.90	34.56	NA	NA
S-3	7/23/96	2,100	20	<0.5	<0.5	<0.5	<25	NA	41.46	7.04	34.42	NA	2.1
S-3	12/10/96	NA	NA	NA	NA	NA	NA	NA	41.46	7.96	33.50	NA	0.7
S-3	2/20/97	3,500	83	<5.0	18	16	130	NA	41.46	7.44	34.02	NA	3
S-3 (D)	2/20/97	3,000	69	<5.0	14	12	70	NA	41.46	7.44	34.02	NA	3
S-3	5/22/97	NA	NA	NA	NA	NA	NA	NA	41.46	7.13	34.33	NA	0.6
S-3	8/22/97	4,700	60	12	19	21	40	NA	41.46	6.81	34.65	NA	2.9
S-3	11/3/97	NA	NA	NA	NA	NA	NA	NA	41.46	7.40	34.06	NA	0.9
S-3	2/20/98	3,400	<10	<10	14	18	85	NA	41.46	6.55	34.91	NA	0.8
S-3 (D)	2/20/98	3,100	8.6	7.8	12	16	57	NA	41.46	6.55	34.91	NA	0.8
S-3	5/18/98	NA	NA	NA	NA	NA	NA	NA	41.46	6.81	34.65	NA	0.7
S-3	8/20/98	4,400	67	23	9.8	22	240	NA	41.46	6.98	34.48	NA	2.2
S-3	11/6/98	NA	NA	NA	NA	NA	NA	NA	41.46	6.96	34.50	NA	NA
S-3	2/16/99	2,000	6.9	6.2	3.7	4.8	47	NA	41.46	6.93	34.53	NA	2.0
S-3	5/28/99	NA	NA	NA	NA	NA	NA	NA	41.46	6.74	34.72	NA	1.8
S-3	8/24/99	4,170	54.8	14.2	6.65	13.7	43.4	NA	41.46	9.05	32.41	NA	1.9
S-3	11/16/99	NA	NA	NA	NA	NA	NA	NA	41.46	7.09	34.37	NA	1.6
S-3	2/2/00	2,410	133	112	24.9	104	46.0	NA	41.46	6.59	34.87	NA	1.9
S-3	5/9/00	NA	NA	NA	NA	NA	NA	NA	41.46	7.13	34.33	NA	1.9

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-3	8/3/00	3,890	17.2	21.9	<10.0	<10.0	166	NA	41.46	6.82	34.64	NA	1.8
S-3	11/15/00	NA	NA	NA	NA	NA	NA	NA	41.46	6.98	34.48	NA	1.6
S-3	2/14/01	2,800	35.8	5.57	3.83	2.94	1,070	1,250	41.46	6.57	34.89	NA	1.1
S-3	**5/31/01**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**41.46**	**6.72**	**34.74**	**NA**	**1.6**
S-4	5/13/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	7.44	33.66	NA	NA
S-4	8/23/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	8.32	32.78	NA	NA
S-4	11/7/91	260	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	8.32	32.78	NA	NA
S-4	1/28/92	110c	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	7.40	33.70	NA	NA
S-4	5/6/92	54	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	7.21	33.89	NA	NA
S-4	8/26/92	67	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	8.13	32.97	NA	NA
S-4	10/28/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	8.73	32.37	NA	NA
S-4	1/19/93	86	1.2	0.7	2.7	15	NA	NA	41.10	5.86	35.24	NA	NA
S-4	4/29/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	7.02	34.08	NA	NA
S-4 (D)	4/29/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	7.02	34.08	NA	NA
S-4	7/22/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	7.76	33.34	NA	NA
S-4	10/21/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	8.53	32.57	NA	NA
S-4	1/4/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	7.92	33.18	NA	NA
S-4	4/13/94	NA	NA	NA	NA	NA	NA	NA	41.10	7.71	33.39	NA	NA
S-4	7/25/94	NA	NA	NA	NA	NA	NA	NA	41.10	7.82	33.28	NA	NA
S-4	10/10/94	NA	NA	NA	NA	NA	NA	NA	41.10	8.15	32.95	NA	NA
S-4	1/26/95	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	41.10	5.73	35.37	NA	NA
S-4	4/21/95	NA	NA	NA	NA	NA	NA	NA	41.10	6.26	34.84	NA	NA
S-4	7/28/95	NA	NA	NA	NA	NA	NA	NA	41.10	7.80	33.30	NA	NA
S-4	10/31/95	NA	NA	NA	NA	NA	NA	NA	41.10	8.45	32.65	NA	NA
S-4	1/10/96	<50	1	2.8	<0.5	2.1	NA	NA	41.10	8.26	32.84	NA	2.8

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-4	4/25/96	NA	NA	NA	NA	NA	NA	NA	41.10	7.14	33.96	NA	NA
S-4	7/23/96	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	41.10	8.18	32.92	NA	3.8
S-4	12/10/96	NA	NA	NA	NA	NA	NA	NA	41.10	7.04	34.06	NA	3.9
S-4	2/20/97	<50	<0.50	<0.50	<0.50	<0.50	6.7	NA	41.10	7.07	34.03	NA	5
S-4	5/22/97	NA	NA	NA	NA	NA	NA	NA	41.10	6.63	34.47	NA	0.8
S-4	8/22/97	NA	NA	NA	NA	NA	NA	NA	41.10	7.69	33.41	NA	3.7
S-4	11/3/97	NA	NA	NA	NA	NA	NA	NA	41.10	8.26	32.84	NA	1.3
S-4	2/20/98	130	6.9	4.6	5.2	17	2.8	NA	41.10	5.57	35.53	NA	1.8
S-4	5/18/98	NA	NA	NA	NA	NA	NA	NA	41.10	7.13	33.97	NA	1.4
S-4	8/20/98	NA	NA	NA	NA	NA	NA	NA	41.10	7.77	33.33	NA	4.0
S-4	11/6/98	NA	NA	NA	NA	NA	NA	NA	41.10	7.85	33.25	NA	NA
S-4	2/16/99	<50	<0.50	<0.50	<0.50	<0.50	23	NA	41.10	6.51	34.59	NA	3.6
S-4	5/28/99	NA	NA	NA	NA	NA	NA	NA	41.10	7.00	34.10	NA	3.2
S-4	8/24/99	NA	NA	NA	NA	NA	NA	NA	41.10	9.13	31.97	NA	1.9
S-4	11/16/99	NA	NA	NA	NA	NA	NA	NA	41.10	7.79	33.31	NA	1.7
S-4	2/2/00	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	41.10	7.19	33.91	NA	1.9
S-4	5/9/00	NA	NA	NA	NA	NA	NA	NA	41.10	7.51	33.59	NA	1.8
S-4	8/3/00	NA	NA	NA	NA	NA	NA	NA	41.10	7.83	33.27	NA	1.9
S-4	11/15/00	NA	NA	NA	NA	NA	NA	NA	41.10	7.69	33.41	NA	1.5
S-4	2/14/01	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	41.10	6.20	34.90	NA	1.6
S-4	**5/31/01**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**41.10**	**6.56**	**34.54**	**NA**	**1.6**
S-5	5/13/91	NA	NA	NA	NA	NA	NA	NA	39.99	14.60	30.57	6.48	NA
S-5	8/23/91	NA	NA	NA	NA	NA	NA	NA	39.99	15.14	29.25	5.50	NA
S-5	11/7/91	NA	NA	NA	NA	NA	NA	NA	39.99	15.10	29.17	5.35	NA
S-5	1/28/92	NA	NA	NA	NA	NA	NA	NA	39.99	14.05	29.86	4.90	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-5	5/6/92	NA	NA	NA	NA	NA	NA	NA	39.99	14.31	30.21	5.66	NA
S-5	8/26/92	NA	NA	NA	NA	NA	NA	NA	39.99	14.26	28.77	3.80	NA
S-5	10/28/92	NA	NA	NA	NA	NA	NA	NA	39.99	14.22	28.82	3.81	NA
S-5	1/19/93	NA	NA	NA	NA	NA	NA	NA	39.99	12.36	30.80	3.96	NA
S-5	4/29/93	NA	NA	NA	NA	NA	NA	NA	39.99	9.64	31.07	0.90	NA
S-5	7/22/93	NA	NA	NA	NA	NA	NA	NA	39.99	9.55	31.16	0.90	NA
S-5	10/21/93	NA	NA	NA	NA	NA	NA	NA	39.99	11.23	29.34	0.73	NA
S-5	1/4/94	NA	NA	NA	NA	NA	NA	NA	39.99	11.69	29.82	1.90	NA
S-5	4/13/94	NA	NA	NA	NA	NA	NA	NA	39.99	11.42	29.87	1.62	NA
S-5	7/25/94	NA	NA	NA	NA	NA	NA	NA	39.99	12.01	29.41	1.79	NA
S-5	10/10/94	NA	NA	NA	NA	NA	NA	NA	39.99	12.05	29.38	1.80	NA
S-5	1/26/95	NA	NA	NA	NA	NA	NA	NA	39.99	8.42	32.95	1.72	NA
S-5	4/21/95	NA	NA	NA	NA	NA	NA	NA	39.99	10.03	30.90	1.17	NA
S-5	7/28/95	NA	NA	NA	NA	NA	NA	NA	39.99	11.42	30.07	1.87	NA
S-5	10/31/95	NA	NA	NA	NA	NA	NA	NA	39.99	13.21	27.21	0.54	NA
S-5	1/10/96	NA	NA	NA	NA	NA	NA	NA	39.99	12.05	28.04	0.13	NA
S-5	4/25/96	NA	NA	NA	NA	NA	NA	NA	39.99	9.68	30.33	0.03	NA
S-5	7/23/96	NA	NA	NA	NA	NA	NA	NA	39.99	9.82	30.20	0.04	NA
S-5	12/10/96	270,000	8,800	29,000	5,200	37,000	<2,500	NA	39.99	9.10	30.91	0.03	NA
S-5 (D)	12/10/96	400,000	9,200	32,000	7,200	50,000	<2,500	NA	39.99	9.10	30.91	0.03	NA
S-5	2/20/97	88,000	2,000	11,000	1,600	19,000	<500	NA	39.99	8.93	31.06	NA	5
S-5	5/22/97	NA	NA	NA	NA	NA	NA	NA	39.99	10.07	29.94	0.02	NA
S-5	8/22/97	NA	NA	NA	NA	NA	NA	NA	39.99	10.24	29.77	0.02	NA
S-5	11/3/97	NA	NA	NA	NA	NA	NA	NA	39.99	10.91	29.10	0.02	NA
S-5	2/20/98	NA	NA	NA	NA	NA	NA	NA	39.99	7.81	32.20	0.03	NA
S-5	5/18/98	NA	NA	NA	NA	NA	NA	NA	39.99	9.64	30.37	0.02	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-5 f	**5/31/01**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**39.99**	**10.13**	**29.86**	**NA**	**NA**
S-6	5/13/91	13,000	600	140	210	310	NA	NA	40.12	7.82	32.30	NA	NA
S-6	8/23/91	9,800	480	80	120	150	NA	NA	40.12	9.58	30.54	NA	NA
S-6	11/7/91	6,200	240	23	25	27	NA	NA	40.12	10.86	29.26	NA	NA
S-6	1/28/92	5,600	250	15	41	36	NA	NA	40.12	8.97	31.15	NA	NA
S-6	5/6/92	7,100	330	29	110	210	NA	NA	40.12	8.27	31.85	NA	NA
S-6	8/26/92	13,000	240	<50	56	780	NA	NA	40.12	9.57	31.55	NA	NA
S-6	10/28/92	10,000	470	210	67	170	NA	NA	40.12	8.90	32.22	NA	NA
S-6	1/19/93	4,800	100	26	27	45	NA	NA	40.12	4.84	35.28	NA	NA
S-6	4/29/93	7,000	430	20	<12.5	42	NA	NA	40.12	5.61	34.51	NA	NA
S-6	7/22/93	5,800	260	120	65	150	NA	NA	40.12	6.56	33.56	NA	NA
S-6	10/21/93	5,500	270	69	120	140	NA	NA	40.12	8.73	31.39	NA	NA
S-6	1/4/94	7,100	180	58	63	62	NA	NA	40.12	7.14	32.98	NA	NA
S-6	4/13/94	NA	NA	NA	NA	NA	NA	NA	40.12	7.21	32.91	NA	NA
S-6	7/25/94	12,000	190	52	30	39	NA	NA	40.12	6.85	33.27	NA	NA
S-6 (D)	7/25/94	7,200	170	32	31	34	NA	NA	40.12	6.85	33.27	NA	NA
S-6	10/10/94	NA	NA	NA	NA	NA	NA	NA	40.12	6.20	33.92	NA	NA
S-6	1/26/95	5,800	120	23	24	44	NA	NA	40.12	4.89	35.23	NA	NA
S-6	4/21/95	NA	NA	NA	NA	NA	NA	NA	40.12	5.61	34.51	NA	NA
S-6	7/28/95	4,400	210	23	34	60	NA	NA	40.12	5.30	34.82	NA	3
S-6 (D)	7/28/95	6,100	230	20	38	59	NA	NA	40.12	5.30	34.82	NA	3
S-6	10/31/95	NA	NA	NA	NA	NA	NA	NA	40.12	4.98	35.14	NA	NA
S-6	1/10/96	6,800	170	87	35	105	NA	NA	40.12	5.67	34.45	NA	2.2
S-6 (D)	1/10/96	7,800	230	120	50	210	NA	NA	40.12	5.67	34.45	NA	2.2
S-6	4/25/96	NA	NA	NA	NA	NA	NA	NA	40.12	5.23	34.89	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
999 San Pablo Avenue
Albany, CA
Wic #204-0079-0109

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-6	7/23/96	2,600	170	<0.5	<0.5	8.5	<25	NA	40.12	5.40	34.72	NA	1.4
S-6	12/10/96	NA	NA	NA	NA	NA	NA	NA	40.12	6.68	33.44	NA	0.7
S-6	2/20/97	6,300	160	7.7	14	31	77	NA	40.12	5.70	34.42	NA	2
S-6	5/22/97	NA	NA	NA	NA	NA	NA	NA	40.12	5.49	34.63	NA	0.9
S-6	8/22/97	6,200	160	26	15	27	49	NA	40.12	5.71	34.41	NA	2.8
S-6	11/3/97	NA	NA	NA	NA	NA	NA	NA	40.12	6.15	33.97	NA	1.4
S-6	2/20/98	4,100	150	<10	<10	15	55	NA	40.12	5.25	34.87	NA	0.4
S-6	5/18/98	NA	NA	NA	NA	NA	NA	NA	40.12	5.69	34.43	NA	0.4
S-6	8/20/98	7,800	240	38	16	39	110	NA	40.12	6.04	34.08	NA	1.5
S-6 (D) b	8/20/98	8,400	270	30	19	31	130	NA	40.12	6.04	34.08	NA	1.5
S-6	11/6/98	NA	NA	NA	NA	NA	NA	NA	40.12	6.10	34.02	NA	NA
S-6	2/16/99	6,000	190	19	14	20	<2.5	NA	40.12	5.84	34.28	NA	1.7
S-6	5/28/99	NA	NA	NA	NA	NA	NA	NA	40.12	9.51	30.61	NA	1.9
S-6	8/24/99	6,870	193	32.1	18.8	36.4	<25.0	NA	40.12	8.29	31.83	NA	2.7
S-6	11/16/99	NA	NA	NA	NA	NA	NA	NA	40.12	5.93	34.19	NA	2.6
S-6	2/2/00	2,310	164	122	28.6	133	63.1	NA	40.12	5.33	34.79	NA	2.6
S-6	5/9/00	NA	NA	NA	NA	NA	NA	NA	40.12	6.41	33.71	NA	2.4
S-6	8/3/00	5,600	188	27.4	<10.0	25.2	174	NA	40.12	5.84	34.28	NA	2.7
S-6	11/15/00	NA	NA	NA	NA	NA	NA	NA	40.12	5.58	34.54	NA	2.3
S-6	2/14/01	6,140	126	13.2	8.01	18.0	205	NA	40.12	5.50	34.62	NA	1.3
S-6	**5/31/01**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**40.12**	**5.52**	**34.60**	**NA**	**1.2**
S-7	5/13/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.56	29.54	NA	NA
S-7	8/23/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	11.16	28.94	NA	NA
S-7	11/7/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	11.48	28.62	NA	NA
S-7	1/28/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.72	29.38	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
999 San Pablo Avenue
Albany, CA
Wic #204-0079-0109

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-7	5/6/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.34	29.76	NA	NA
S-7	8/26/92	160	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	11.13	28.97	NA	NA
S-7	10/28/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	11.52	28.58	NA	NA
S-7	1/19/93	50	1.1	0.6	1.9	9.2	NA	NA	40.10	8.68	31.42	NA	NA
S-7	4/29/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	9.90	30.20	NA	NA
S-7	7/22/93	Well inaccessible		NA	NA	NA	NA	NA	40.10	NA	NA	NA	NA
S-7	10/21/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	11.10	29.00	NA	NA
S-7	1/4/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.40	29.70	NA	NA
S-7	4/13/94	<50	1.4	0.61	<0.5	0.64	NA	NA	40.10	10.20	29.90	NA	NA
S-7 (D)	4/13/94	<50	1.4	0.61	<0.5	0.66	NA	NA	40.10	10.20	29.90	NA	NA
S-7	7/25/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.48	29.62	NA	NA
S-7 a	10/10/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.64	29.46	NA	NA
S-7	1/26/95	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	7.75	32.35	NA	4.6
S-7	4/21/95	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	8.51	31.59	NA	NA
S-7	7/28/95	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.20	29.90	NA	3
S-7	10/31/95	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	40.10	10.86	29.24	NA	4.9
S-7	1/10/96	<50	<0.5	2	<0.5	2.6	NA	NA	40.10	10.33	29.77	NA	7.6
S-7	4/25/96	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	40.10	9.13	30.97	NA	6.2
S-7	7/23/96	<50	<0.5	<0.5	<0.5	<0.5	14	NA	40.10	10.18	29.92	NA	3.7
S-7	12/10/96	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	40.10	9.04	31.06	NA	4.6
S-7	2/20/97	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	40.10	9.60	30.50	NA	5
S-7	5/22/97	<50	1.3	<0.50	<0.50	<0.50	5.5	NA	40.10	10.63	29.47	NA	0.8
S-7	8/22/97	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	40.10	10.95	29.15	NA	2.6
S-7	11/3/97	<50	2.2	1.7	0.58	3.4	<2.5	NA	40.10	11.29	28.81	NA	2.6
S-7	2/20/98	350	23	13	14	42	3.8	NA	40.10	7.73	32.37	NA	4.6
S-7	5/18/98	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	40.10	10.29	29.81	NA	4.4

WELL CONCENTRATIONS
Shell-branded Service Station
999 San Pablo Avenue
Albany, CA
Wic #204-0079-0109

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
S-7	8/20/98	Well inaccessible		NA	NA	NA	NA	NA	40.10	11.00	29.10	NA	5.4
S-7	11/6/98	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	40.10	11.19	28.91	NA	5.2
S-7	2/16/99	Well inaccessible		NA	NA	NA	NA	NA	40.10	NA	NA	NA	NA
S-7	5/28/99	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	40.10	9.76	30.34	NA	2.7
S-7	8/24/99	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	40.10	10.61	29.49	NA	2.1
S-7	11/16/99	<50.0	<0.500	<0.500	<0.500	<0.500	3.68	NA	40.10	10.90	29.20	NA	2.3
S-7	2/2/00	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	40.10	10.30	29.80	NA	2.1
S-7	5/9/00	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	40.10	10.25	29.85	NA	2.7
S-7	8/3/00	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	40.10	10.65	29.45	NA	2.5
S-7	11/15/00	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	40.10	10.53	29.57	NA	4.6
S-7	2/14/01	Well inaccessible		NA	NA	NA	NA	NA	40.10	NA	NA	NA	NA
S-7	**5/31/01**	**<50**	**<0.50**	**<0.50**	**<0.50**	**0.77**	**NA**	**4.6**	**40.10**	**9.46**	**30.64**	**NA**	**2.1**

WELL CONCENTRATIONS
Shell-branded Service Station
999 San Pablo Avenue
Albany, CA
Wic #204-0079-0109

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

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by modified EPA Method 8260B; prior to May 31, 2001 analyzed by EPA Method 8015
BTEX = benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to May 31, 2001, analyzed by EPA Method 8020
MTBE = methyl-tertiary-butyl ether
TOB = Top of Wellbox Elevation
SPH = Separate-Phase Hydrocarbons
GW = Groundwater
DO = Dissolved Oxygen
ug/L = parts per billion
msl = Mean sea level
ft = Feet
ppm = parts per million
<n = Below detection limit
D = Duplicate sample
NA = Not applicable

Notes:
a = Sample analyzed for total dissolved solids (450 mg/L)
b = Surrogate recovery outside QC limits due to matrix effect.
c = Chromatogram pattern indicated an unidentified hydrocarbon.
d = This sample analyzed outside of EPA recommended hold time.
e = Concentration is an estimate value above the linear quantitation range.
f = Ownership of well S-5 is being transferred to Arco.
When separate-phase hydrocarbons are present, ground water elevation is adjusted using the relation:
Corrected ground water elevation = Top-of-casing elevation - depth to water + (0.8 x hydrocarbon thickness).

KIFF ANALYTICAL LLC

Report Number : 20534
Date : 6/13/2001

Nick Sudano
Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112-1105

Subject : 1 Water Sample
Project Name : 999 San Pablo Avenue, Albany
Project Number : 010531U1
P.O. Number : 98995143

Dear Mr. Sudano,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 20534
Date : 6/13/2001

Project Name : **999 San Pablo Avenue, Albany**
Project Number : **010531U1**

Sample : **S-7** Matrix : Water Lab Number : 20534-01
Sample Date :5/31/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	6/12/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	6/12/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	6/12/2001
Total Xylenes	**0.77**	0.50	ug/L	EPA 8260B	6/12/2001
Methyl-t-butyl ether (MTBE)	**4.6**	0.50	ug/L	EPA 8260B	6/12/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	6/12/2001
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	6/12/2001
4-Bromofluorobenzene (Surr)	112		% Recovery	EPA 8260B	6/12/2001

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 20534

Date : 6/13/2001

Project Name : **999 San Pablo Avenue,**

Project Number : **010531U1**

20534 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	6/9/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	6/9/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	6/9/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	6/9/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	6/9/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	6/9/2001
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/9/2001
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	6/9/2001

Approved By: Joel Kiff

Report Number : 20534

Date : 6/13/2001

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **999 San Pablo Avenue,**

Project Number : **010531U1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Spike Recovery Data														
Benzene	20555-03	<0.50	24.9	24.8	24.9	24.8	ug/L	EPA 8260B	6/9/2001	99.7	99.9	0.200	70-130	25
Toluene	20555-03	<0.50	24.9	24.8	24.5	24.5	ug/L	EPA 8260B	6/9/2001	98.2	98.6	0.366	70-130	25
Tert-Butanol	20555-03	<5.0	24.9	24.8	23.9	23.2	ug/L	EPA 8260B	6/9/2001	96.0	93.4	2.74	70-130	25
Methyl-t-Butyl Ether	20555-03	64	24.9	24.8	87.8	80.2	ug/L	EPA 8260B	6/9/2001	95.4	65.0	37.8	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 20534

QC Report : Laboratory Control Sample (LCS)

Date : 6/13/2001

Project Name : **999 San Pablo Avenue,**

Project Number : **010531U1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	6/9/2001	96.4	70-130
Toluene	20.0	ug/L	EPA 8260B	6/9/2001	97.5	70-130
Tert-Butanol	100	ug/L	EPA 8260B	6/9/2001	96.2	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	6/9/2001	106	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

LAB: KIFF

EQUIVA Services LLC Chain Of Custody Record

20534

Lab Identification (if necessary):

Address:

City, State, Zip:

Equiva Project Manager to be Invoiced:

☑ ENGR. & PROCESSING ☐ TECHNICAL SERVICES ☐ CMT. MGMT/OPS

Karen Petryna

SHORT NAME / CHART NUMBER (TSC ONLY): 9 8 9 9 5 1 4 3

SHIP or CHART NUMBER (TSC ONLY):

PAGE: 1 of 1

CONSULTANT COMPANY: Blaine Tech Services

ADDRESS: 1680 Rogers Avenue

CITY: San Jose, CA 95112

TELEPHONE: 408-573-0555 FAX: 408-573-7771 E-MAIL: nsudano@blainetech.com

SITE ADDRESS (Street and City): 999 San Pablo Avenue, Albany

PROJECT CONTACT (Report to): Nick Sudano

CONSULTANT PROJECT NO.: BTS # 010531 01

SAMPLER NAME(S) (Print): Tommy

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

GC/MS MTBE CONFIRMATION: HIGHEST X HIGHEST per BORING ALL

SPECIAL INSTRUCTIONS OR NOTES:

TEMPERATURE ON RECEIPT C°:

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable (8015m)	BTEX (8021B)	MTBE (8021B)	MTBE (8260B)	TPH - Diesel, Extractable (8015m)	Oxygenates (5) by 8260	Ethanol, Methanol (8015B)		MTBE (8260B) Confirmation, See Note											FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
	S-5	5/31	945	W	3	X	X	X						X											
	S-7	5/31	955	W	3	X	X	X						X											

Relinquished by: (Signature) Received by: (Signature) Date: Time:

Relinquished by: (Signature) Received by: (Signature) Date: Time:

Relinquished by: (Signature) Received by: (Signature) Harold Brown Date: 06/01/01 Time: 1215

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.

10/18/00 Revision

CoC Graphic (714) 895-5702

Thanks 0800 1000 06-01

Kiff Analytical Change Order Form

SRG: 20534

Order :

Nick from Blaine Tech requested that we return sample "S-5" to him (060501) when we p/u samples from him tomorrow. He said another lab is going to be testing it. sso 060401 1634

WELL GAUGING DATA

Project # 010531V1 Date 5-31-01 Client EQUIVA

Site 999 SAN PABLO ALBANY

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	PRE D.O. READING
S-1	3					8.05	11.77		1.0
S-2	3					7.21	12.10		1.5
S-3	3					6.72	12.15		1.6
S-4	3					6.56	14.06		1.6
S S-5	3					10.13	16.16		4.2
S-6	3					5.52	14.77		1.2
S S-7	3					9.46	14.82		2.1

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010531 U1	Site: 98995143
Sampler: TA.	Date: 5-31-01
Well I.D.: S-5	Well Diameter: 2 (3) 4 6 8 ___
Total Well Depth: 16.16	Depth to Water: 10.13
Depth to Free Product: Ø	Thickness of Free Product (feet): Ø
Referenced to: PVC (Grade)	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- Disposable Bailer
- ✕ Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other ___

Sampling Method: ✕ Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: ___

2.2 (Gals.) X 3 = 6.6 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
939	22.4	6.4	651	>200	2.25	ODOR/GREY
940	20.6	6.5	386	>200	4.5	BLACK FLOATIES ~~FLOATS~~
941	WELL DEWATERED DTW = 14.98				~~6.75~~	SHEEN

Did well dewater? (Yes) No — Gallons actually evacuated: 4.5

Sampling Time: 945 — Sampling Date: 5-31-01

Sample I.D.: S-5 — Laboratory: Sequoia Columbia Other KIFF

Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D Other:

EB I.D. (if applicable): @ Time — Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	4.2 mg/L	Post-purge:		mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010531 U1	Site: 98995143
Sampler: TA.	Date: 5-31-01
Well I.D.: S-7	Well Diameter: 2 (3) 4 6 8 ___
Total Well Depth: 14.82	Depth to Water: 9.46
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC (Grade)	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- Disposable Bailer
- Middleburg
- (X) Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- (X) Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

1.9 (Gals.) X 3 = 5.9 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
910	19.3	6.1	777	>200	2	
911	WELL DEWATERED DTW=12.78				~~4~~ 2.5	
					6	

Did well dewater? (Yes) No		Gallons actually evacuated: 2.5	
Sampling Time: 955		Sampling Date: 5-31-01	
Sample I.D.: S-7		Laboratory: Sequoia Columbia Other KIFF	
Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D		Other:	
EB I.D. (if applicable):	@ Time	Duplicate I.D. (if applicable):	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd): Pre-purge:	2.1 mg/L	Post-purge:	mg/L
O.R.P. (if req'd): Pre-purge:	mV	Post-purge:	mV

WELL DEVELOPMENT DATA SHEET

Project #: 010572.02	Client: EQUIVA
Developer: TOMMY	Date Developed: 5-22-01
Well I.D. S-5	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth:	Depth to Water:
Before 15.68 After 16.16	Before 9.39 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):
(12 x (d^2/4) x π) /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

2.3 (1 Case Volume) X ~~8~~ 10 (Specified Volumes) = 23.2 gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☑ Suction Pump ☐

Type of Installed Pump
Other equipment used 3" Sub

TIME	TEMP (F)	pH	COND.	TURBIDITY	VOLUME REMOVED:	NOTATIONS:
1445	START	SURGE				
1455	STOP	SURGE	DTW=	9.36		
1505	START	PURGE				
1508	72.8	7.5	557.6	>200	2.5	SEMI HARD BOTTOM
1510	72.0	7.6	561.4	>200	5	SHEEN/ODOR/FOAMY
1518	72.3	7.8	481.0	>200	7.5	HARD BOTTOM
1526	WELL	DEWATERED	DTW=	15.36		
1539	DTW	14.32				
1549	DTW	14.28				
1602	WELL	DEWATERED	DTW =	15.43		

Did Well Dewater? YES If yes, note above. Gallons Actually Evacuated: 7.5

ATTACHMENT B

October 3, 1997 Underground Storage Tank Removal and Soil Sampling Report

CAMBRIA

Site: 204-0079-0109
Proj.☐ Rem.☐ Rpt.☑ Bill☐
1☐ 2☐ 3☐ 4☐ 5☐ 6☐

October 3, 1997

Ms. Susan Hugo
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

FILE COPY

Re: **Underground Storage Tank Removal and Soil Sampling Report**
Shell Service Station
999 San Pablo Avenue
Albany, California
WIC #204-0079-0109
Cambria Project #240-366-6

Dear Ms. Hugo:

This report summarizes the underground storage tank removal activities and presents the results of the soil sampling performed by Cambria Environmental Technology, Inc. (Cambria) on behalf of Shell Oil Products Company (Shell) at the site referenced above. The sampling was conducted following removal of three underground storage tanks (USTs), five dispensers, and approximately 200 ft of associated piping. Two new USTs were installed into a new excavation, and some of the soil from the new excavation was used to backfill the old tank excavation. Three observation wells were also installed in the old tank excavation during the backfilling. Presented below is a summary of these activities, soil sampling, air sampling, and analytic results. Cambria's standard tank removal sampling procedures, complete sample analytical reports, and soil disposal confirmation documents are included as Attachments A through G.

BACKGROUND

The site is an active Shell service station located at the northeast corner of the intersection of San Pablo Avenue and Marin Avenue in Albany, California. The site is located in a commercial/residential area. An active Arco service station is immediately south of the site, across Marin Avenue.

The site has had a quarterly ground water monitoring program since May 1991. During monitoring, only well S-5, located adjacent to the ARCO station south of the Shell station, has contained separate phase hydrocarbons (SPH).

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

On July 31, 1996, Weiss Associates (Weiss) of Emeryville, California drilled 7 soil borings, labeled B-1 through B-7, at the site and collected soil samples to pre-characterize soil for disposal. The analytical results of the soil samples are summarized on Table 1 and included as Attachment B.

On October 21, 1996, Paradiso Mechanical of San Leandro, California removed three gasoline underground storage tanks, five product dispensers, and associated piping from the site. These improvements were replaced with two fiberglass gasoline USTs, new product dispensers, and new fiberglass piping. The locations of the former tanks and dispensers and the current tanks are shown on the attached figures.

Ground water was encountered in the former tank excavation during the tank removal and sampling activities. Separate phase hydrocarbons (SPHs) that were present on the ground water were removed from the excavation and disposed during the dewatering of the excavation. Soil types encountered during the excavation and sampling were clayey silts, sandy silts, and silty sand of low to high estimated permeability to the total depth explored of 15 ft.

EXCAVATION AND SAMPLING ACTIVITIES

Attendees:

Susan Hugo	Senior Hazardous Materials Specialist	Alameda County Department of Environmental Health (ACDEH)
Brian Crudo	Inspector	Albany Fire Department
Paul Waite	Project Engineer	Cambria Environmental Technology, Inc.
Mark Freitas	Site Supervisor	Paradiso Mechanical

Sampling Methods and Analyses: Soil samples were collected during activities at this site by driving brass tubes into soil either in situ or from a backhoe bucket. The tubes were driven into the soil either with a slide hammer or a mallet. Sequoia Analytical of Walnut Creek, California analyzed samples that Cambria collected from the site. Constituents analyzed included total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015; benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl-tert-butyl-ether (MTBE) by EPA Method 8020; and total lead by EPA Method 7420/7421.

Gasoline Tank Removal: On October 21, 1996, Paradiso Mechanical removed three gasoline underground storage tanks, five associated dispensers, and approximately 200 ft of associated piping using a backhoe. The tanks were labeled T-1, T-2, and T-3 and had capacities of 10,000-gallons each. Tanks T-1 and T-3 were constructed of fiberglass and tank T-2 was constructed of steel. Prior to removal, the tanks were triple-rinsed by Crosby and Overton of Oakland, California. Minor pitting was observed on the sides of the steel tank

and tanks T-1 and T-3 had numerous 6-inch diameter patches; however, no evidence of cracks, holes or other signs of structural failure was observed. The USTs were disposed at Erickson, Inc. of Richmond, California.

Former Gasoline Tank Excavation Sampling: On October 22, 1996, Cambria collected samples from the walls of the east end of the former gasoline tank excavation. The samples were collected above the standing ground water in the excavation. On November 1, 1996, Cambria collected similar samples from the west end of the former tank excavation. A total of 12 excavation samples were collected. Because there are monitoring wells at the site, Ms. Hugo did not require sampling of the ground water in the former tank excavation. Sample locations are shown on Figure 1 and analytic results are summarized on Table 3. Standard sampling procedures are presented in Attachment A and complete analytic reports are included as Attachment D.

Former Tank Excavation Pea Gravel Sampling and Reuse: On October 22, 1996, Cambria sampled the pea gravel excavated from the former tank excavation. Samples were analyzed for TPHg, BTEX, MTBE, and total lead as requested by Ms. Hugo. Based on the analytical results, Ms. Hugo allowed the pea gravel to be used as backfill in the former tank excavation. The excavation backfilling activities are described below. Complete analytical results are included as Attachment C.

Former Tank Excavation Dewatering: On October 23, 1996, Crosby & Overton used a vacuum truck to remove the ground water from the former tank excavation, as required by Ms. Hugo. The SPH was skimmed from the surface of the water prior to excavation dewatering. A total of 1,400 gallons of fluids were removed from the excavation and hauled by Crosby & Overton to the Shell refinery in Martinez, California for recycling.

Ambient Air Sampling: In response to Ms. Hugo's concerns about hydrocarbons volatilizing from the former tank excavation, Paul Waite of Cambria collected two ambient air samples at the east edge of the property near the former tank excavation on October 25, 1996. The air samples were collected in inert tedlar bags using a "bell jar" sampling device. Once collected, the samples were transported under chain-of-custody to Sequoia Analytical for analysis. The samples were analyzed for TPHg, BTEX, and MTBE. Complete analytical results are included as Attachment E.

Dispenser and Product Piping Sampling: On November 1, 1996, Cambria collected eleven soil samples from beneath the former product piping, vent lines, and dispensers. Sample locations are shown on Figure 1 and analytic results are summarized on Table 3. Complete analytical results are included as Attachment D.

New Tank Vault Sampling: A new tank vault was excavated at the southwest corner of the site to install two new double-walled fiberglass tanks. Weiss had sampled soil from borings in this area to pre-characterize the soil for disposal or for reuse at the site as backfill in the former tank excavation. However, after reviewing results, Ms. Hugo requested that additional samples be collected. On October 25, 1996, Paradiso Mechanical excavated two exploratory trenches along the north and south sides of the proposed new tank excavation. Cambria collected soil samples from the ends and middles of these trenches at discrete depths between 3 ft and 15 ft. The samples were analyzed for TPHg, BTEX, and MTBE. Sample locations are shown on Figure 2 and sample results are summarized on Table 2. Complete analytical results are included as Attachment F.

Based on the analytical results, Ms. Hugo allowed Shell to reuse the soil from the 0 ft to 4 ft and from 9 ft to 15 ft intervals as backfill in the former tank excavation. Because of the analytical results and visual observation of staining, the soil from 4 ft to 9 ft depth was not used as backfill. This soil, approximately 310 tons, was hauled offsite for disposal.

Former Tank Excavation Backfilling: The former tank excavation was backfilled in accordance with the October 24, 1996 *Excavation Work Plan* submitted to the ACDEH, which Ms. Hugo verbally approved at the site on October 25, 1996. Imported drain rock and pea gravel was installed in the bottom of the former tank excavation to a depth of approximately 8 ft below the final grade. The 80 cubic yds of pea gravel removed from the excavation was then placed above the imported pea gravel. A geofabric liner was then placed on top of the pea gravel. The soil removed from the new tank excavation at depths of 0 to 4 ft and 9 to 15 ft was placed on top of the fabric liner, in accordance with Ms. Hugo's approval.

Backfill Well Installation: Paradiso Mechanical installed three backfill wells, labeled RW-1, RW-2, and RW-3, in the former tank excavation during the backfilling activities. The wells were installed for potential future remediation in accordance with the October 24, 1996 *Excavation Work Plan* submitted to the ACDEH. They were constructed of 4-inch diameter PVC with 8 ft of solid casing and 6 ft of 0.020" slotted casing. The casings were secured with a cap and finished with vaults. The locations of the wells are shown on Figure 2.

Waste Disposal/Recycling: The USTs were disposed at Erickson, Inc. of Richmond, California. Excavated soil was either reused onsite as backfill or transported to Forward Landfill in Stockton, California by Manley & Sons Trucking (Manley) of Sacramento, California. On October 22, 1996, approximately 235 tons of soil removed from the tank excavation was hauled by Manley to Forward Landfill. On November 1, 1996, an additional 126 tons of soil from the bottom and sloughing sidewalls of the former tank excavation were

hauled to Forward Landfill by Manley. Forward Landfill's Disposal Confirmation form is included as Attachment G. Crosby & Overton arranged for the disposal of the tank rinsate at the Shell refinery.

ANALYTIC RESULTS

Pea Gravel Sampling: Four samples (labeled SG-1 through SG-4) of the pea gravel that was removed from the former tank excavation during the tank removal were collected and analyzed for TPHg, BTEX, MTBE, and total lead. The maximum constituent concentrations detected in the gravel were 35 parts per million (ppm) TPHg, 0.19 ppm benzene, and 19 ppm total lead. No MTBE was detected in any of the samples. Based on the analytical results, Ms. Hugo allowed the gravel to be reused as backfill within the former tank excavation.

Former Tank Excavation: Twelve samples (labeled E-1 through E-12) were collected from the sidewalls of the former tank excavation. Petroleum hydrocarbons and lead were detected in the samples. The maximum concentrations detected were 6,400 ppm TPHg, 44 ppm benzene, 30 ppm MTBE, and 30 ppm total lead.

Dispensers and Product Piping: Eleven samples were collected from beneath the former dispensers (samples D-1 through D-5), product piping (P-1 through P-4), and vent piping (V-1 and V-2). The maximum concentrations detected were 1,900 ppm TPHg, 1.4 ppm benzene, 10 ppm MTBE, and 21 ppm total lead.

Ambient Air Samples: Two air samples (Air-1 and Air-2) were collected at the site. No TPHg, BTEX, or MTBE were detected in the air samples analyzed.

New Tank Excavation: Twenty-two soil samples were collected from two trenches along the north and south sides of the new tank excavation before the area was fully excavated. Soil samples were labeled according to their location within the excavation (northwest, north-center, northeast, southwest, south-center, or southeast) and their depth. Three or four samples were collected from each of the six locations within the trenches, as shown on Figure 2. Based on the analytical results, Ms. Hugo allowed Shell to use the soil from the new excavation from 0 to 4 ft depth and from 9 to 15 ft depth to be used as backfill in the former tank excavation. The maximum hydrocarbon concentrations detected in the samples collected from these depth ranges were 58 ppm TPHg, 0.12 ppm benzene, and 0.10 ppm MTBE.

The maximum concentrations detected in the samples from between 4 ft and 9 ft were 1,500 ppm TPHg, 0.32 ppm benzene, and 8.9 ppm MTBE. Because of the analytical results and visual observation of staining, the soil from 4 to 9 ft depth removed from the new tank excavation was disposed of at Forward Landfill.

SUMMARY

On October 21, 1996, two fiberglass gasoline underground storage tanks, one steel gasoline UST, five product dispensers, and associated piping were removed from the site. These improvements were replaced with two fiberglass gasoline USTs, new product dispensers, and new fiberglass piping. The new USTs were installed into a new excavation. Some of the pea gravel excavated from the former tank excavation, along with some of the soil from the new tank excavation, was used as backfill in the former tank excavation. Ambient air samples collected in response to ACDEH concerns did not contain petroleum hydrocarbons. Cambria collected soil samples from the sidewalls of the former tank excavation and beneath the former piping and dispensers. Samples were collected from the new tank excavation to classify the soil for disposal or reuse.

Approximately 361 tons of soil excavated at the site was hauled offsite for disposal. Approximately 1,400 gallons of SPH and ground water that entered the former tank excavation was extracted and hauled to the Shell refinery for recycling.

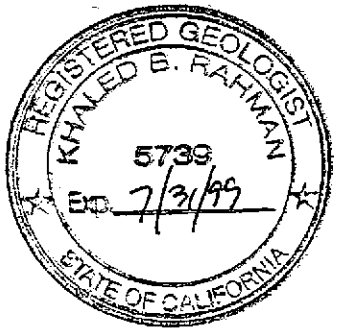
CLOSING

We appreciate your assistance with this project. Please call if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Paul D. Waite
Project Engineer

Khaled B. Rahman, R.G., C.H.G.
Senior Geologist



Figures:
1 - Former Tank Excavation and Piping Soil Sample Locations
2 - Recovery Well Locations and Trench Sample Locations

Tables:
1 - Soil Analytic Data - Weiss Associates Precharacterization Borings
2 - Soil Analytic Data - Trench Samples from New Tank Excavation
3 - Soil Analytic Data - Former Tank Pit Excavation, Piping, and Dispenser Samples

Attachments: A - Standard Tank Removal Sampling Procedures
B - Analytic Reports for Soil Samples - Weiss Associates Borings
C - Analytic Reports for Soil Samples - Pea Gravel
D - Analytic Reports for Soil Samples - Former Tank Excavation, Dispensers, and Piping
E - Analytic Reports for Air Samples
F - Analytic Reports for Soil Samples - New Tank Excavation
G - Soil Disposal Confirmation

cc: Mr. A. E. (Alex) Perez, Shell Oil Products Company, 501 Shell Avenue, Martinez, CA 94553
Mr. Brett Hovland, Shell Oil Products Company, 501 Shell Avenue, Martinez, CA 94553

F:\PROJECT\SHELL\ALB999\REPORTS\REPORT.WPD

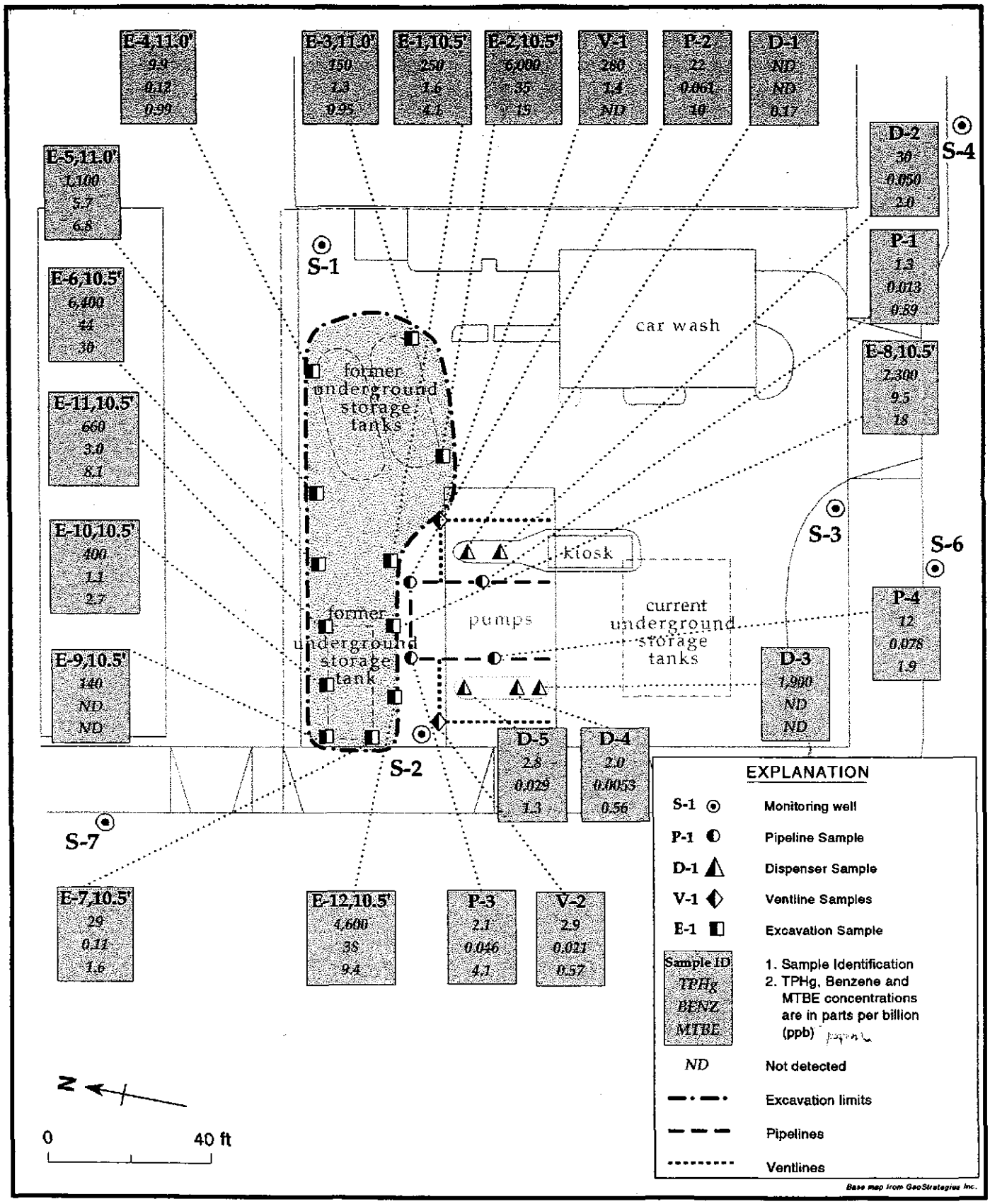


Figure 1. Former Tank Excavation and Piping Soil Sample Locations - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

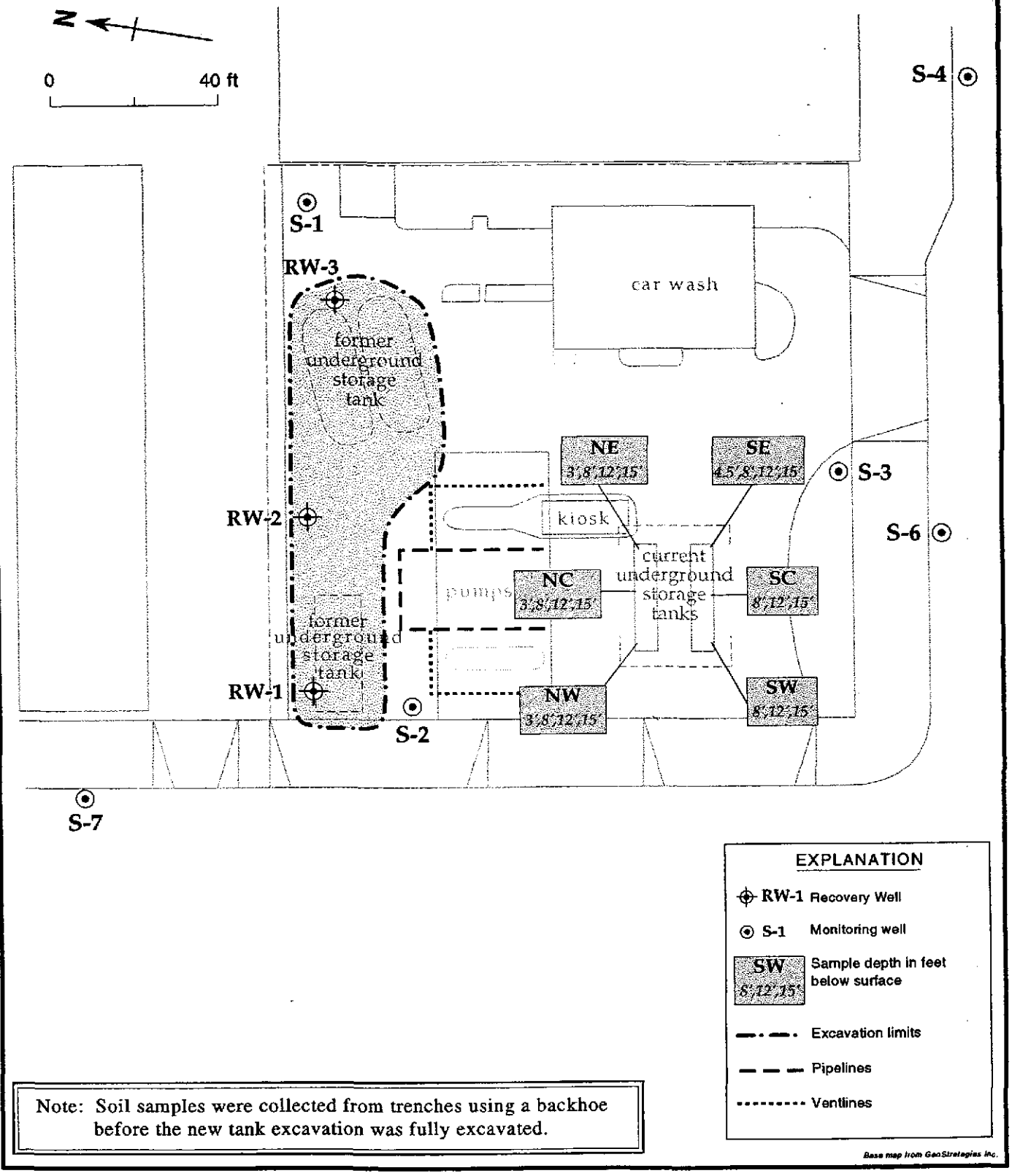


Figure 2. Recovery Well Locations and Trench Sample Locations - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

Table 1. Soil Analytic Data - Weiss Associates Pre-characterization Borings - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

Sample ID (Depth in Feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
		(All concentrations in parts per million)			
Samples Collected July 31, 1996 by Weiss Associates					
B1 (3.0, 8.0, 13.0, 17.0) Composite	2.4	0.015	< 0.0050	< 0.0050	< 0.0050
B1 (8.0)	110	< 0.10	0.43	1.1	3.1
B1 (13.0)	25	< 0.050	0.082	0.11	0.20
B1 (17.0)	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2 (3.0, 8.0, 13.0, 17.0) Composite	1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2 (8.0)	6.4	0.0056	0.035	0.021	0.063
B2 (13.0)	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B2 (17.0)	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B3 (3.0, 8.0, 13.0, 17.0) Composite	1.3	0.0064	< 0.0050	< 0.0050	< 0.0050
B3 (8.0)	1.5	0.0058	< 0.0050	< 0.0050	< 0.0050
B3 (13.0)	81	0.62	< 0.10	0.34	0.56
B3 (17.0)	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B4 (3.0, 8.0, 13.0, 17.0) Composite	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B4 (8.0)	2.2	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B4 (13.0)	3.2	0.048	< 0.0050	< 0.0050	< 0.0050
B4 (17.0)	1.3	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B5 (3.0, 8.0, 13.0) Composite	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B5 (8.0)	160	< 0.0050	0.48	0.45	0.63
B5 (13.0)	280	< 0.12	1.2	1.2	1.4
B6 (3.0, 8.0, 13.0, 17.0) Composite	2.4	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B6 (8.0)	81	< 0.050	0.39	0.27	0.57
B6 (13.0)	87	< 0.10	0.28	0.29	0.52
B6 (17.0)	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B7 (3.0, 8.0, 13.0, 17.0) Composite	< 1.0	0.012	0.0095	0.011	0.032
B7 (8.0)	22	< 0.025	< 0.025	0.086	0.18
B7 (13.0)	65	< 0.025	< 0.025	0.10	0.26
B7 (17.0)	20	< 0.012	0.089	0.071	0.13

Table 1. Soil Analytic Data - Weiss Associates Pre-characterization Borings - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

Sample ID (Depth in Feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
		(All concentrations in parts per million)			
B8 (3.0, 8.0, 13.0, 17.0) Composite	< 1.0	< 0.0050	0.0088	0.0056	0.018
B8 (8.0)	220	< 0.12	0.90	1.7	1.6
B8 (13.0)	< 1.0	0.0094	0.0086	0.01	0.038
B8 (17.0)	< 1.0	0.010	0.012	0.11	0.036

Abbreviations
TPHg = Total petroleum hydrocarbons as gasoline.
< *n* = Compound not detected at a detection limit of *n*.

Notes
TPHg analyzed by modified EPA Method 8015.
Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8020.

Table 2. Soil Analytic Data - Trench Samples from New Tank Excavation - Shell Service Station
WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

Sample ID - Depth in Feet	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
	(All concentrations in parts per million)					
Samples Collected October 25, 1996						
SW-8	260	< 0.50	< 0.10	0.53	0.36	1.3
SW-12	6.6	0.042	0.047	0.028	0.019	0.069
SW-15	4.9	< 0.025	0.0055	0.012	0.011	0.036
SC-8	58	< 0.25	< 0.050	0.14	0.071	0.26
SC-12	< 1.0	< 0.025	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SC-15	1.9	0.025	0.027	0.077	0.036	0.13
SE-4.5	7.2	< 0.025	0.062	0.0090	0.0071	0.017
SE-8	< 1.0	< 0.025	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SE-12	< 1.0	< 0.025	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SE-15	58	< 0.25	< 0.050	< 0.050	0.32	0.11
NW-3	3.0	< 0.025	< 0.0050	< 0.0050	< 0.0050	0.0058
NW-8	34	0.37	0.32	0.086	0.15	0.20
NW-12	< 1.0	0.056	0.017	< 0.0050	0.018	0.014
NW-15	< 1.0	0.10	0.035	< 0.0050	0.036	0.013
NC-3	< 1.0	< 0.025	< 0.0050	< 0.0050	< 0.0050	< 0.0050
NC-8	1,500	8.9	< 1.0	< 1.0	24	130
NC-12	< 1.0	< 0.025	< 0.0050	< 0.0050	0.0059	0.0070
NC-15	4.1	0.042	0.037	0.032	0.15	0.34
NE-3	< 1.0	< 0.025	< 0.0050	< 0.0050	< 0.0050	< 0.0050
NE-8	620	3.6	< 0.25	< 0.25	5.0	23
NE-12	3.4	0.032	0.041	0.014	0.064	0.21
NE-15	< 1.0	< 0.025	0.12	< 0.0050	0.021	0.0072

Abbreviations
TPHg = Total petroleum hydrocarbons as gasoline.
< *n* = Compound not detected at a detection limit of *n*.

Notes
TPHg analyzed by modified EPA Method 8015.
Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8020.
Sample ID indicates location of sample along edge of new excavation (southeast corner, south center, southwest corner, etc.) and sample depth.

Table 3. Soil Analytic Data - Former Tank Pit Excavation, Piping, and Dispenser Samples - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

Sample ID, Depth in Feet	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	Total Lead
			(All concentrations in parts per million)				
Former Tank Pit Sidewall Samples							
Samples Collected October 22, 1996							
E-1, 10.5	250	4.1	1.6	<0.12	0.18	1.9	NA
E-2, 10.5	6,000	15	35	3.2	2.9	340	NA
E-3, 11	150	0.95	1.3	<0.025	0.071	4.1	NA
E-4, 11	9.9	0.99	0.12	0.020	<0.0050	0.22	NA
E-5, 11	1,100	6.8	5.7	0.91	<0.50	44	NA
E-6, 10.5	6,400	30	44	41	60	450	NA
Samples Collected November 1, 1996							
E-7, 10.5	29	1.6	0.11	<0.025	0.23	0.43	12
E-8, 10.5	2,300	18	9.5	2.9	42	70	9.9
E-9, 10.5	140	<1.2	<0.25	<0.25	0.25	0.80	9.4
E-10, 10.5	400	2.7	1.1	0.79	1.6	4.9	10
E-11, 10.5	660	8.1	3.0	2.8	11	53	6.8
E-12, 10.5	4,600	9.4	38	18	76	39	30
Dispenser, Piping, and Vent Line Samples							
Samples Collected November 1, 1996							
D-1	<1.0	0.17	<0.0050	<0.0050	<0.0050	<0.0050	11
D-2	30	2.0	0.050	0.13	0.28	0.31	8.2
D-3	1,900	<6.2	<1.2	2.7	11	29	21
D-4	2.0	0.56	0.0053	<0.0050	<0.0050	0.023	5.7
D-5	2.8	1.3	0.029	0.0088	0.0098	0.022	7.1
P-1	1.3	0.89	0.013	<0.0050	0.0061	0.017	8.3
P-2	22	10	0.061	<0.025	0.24	0.12	8.7
P-3	2.1	4.1	0.046	<0.0050	0.0087	0.024	8.7
P-4	12	1.9	0.078	0.027	0.066	0.97	6.7
V-1	280	<1.2	1.4	1.1	0.75	2.6	6.9
V-2	2.9	0.57	0.021	0.014	<0.0050	<0.0050	6.9

Abbreviations
TPHg = Total petroleum hydrocarbons as gasoline.
<*n* =Compound not detected at a detection limit of *n*.
NA = Not Analyzed

Notes
TPHg analyzed by modified EPA Method 8015.
Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8020.

ATTACHMENT C

Well Driller's Report Forms

STATE OF CALIFORNIA - THE RESOURCES AGENCY
GRAY DAVIS, *Governor*

DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT
3251 S STREET
SACRAMENTO, CA 95816-7017

Site: ALB 999
Proj. ☐ Rem. ☐ Rpt. ☐ Bill ☐
1☐ 2☐ 3☐ 4☐ 5☐ 6☐

FEB 3 2000

Mr. Mathew Gaffney
Cambria Environmental Technology
1144 – 65th Street
Oakland, California 94608

Dear Mr. Gaffney:

In response to your request, enclosed is the well location information for the sites in the following area:

A one-quarter mile radius of 999 San Pablo Avenue, Albany
Township 01 North, Range 04 West, Section 33-H, J, K, and R
Township 01 North, Range 04 West, Section 34-E, L, M, and N

Your data request required one hour of staff time for researching and photocopying. The total charge for staff time is $50. Your remittance should be made payable to the Department of Water Resources, General Accounting Office, Post Office Box 942836, Sacramento, California 94236-0001. Please include the enclosed copy of this letter with your remittance.

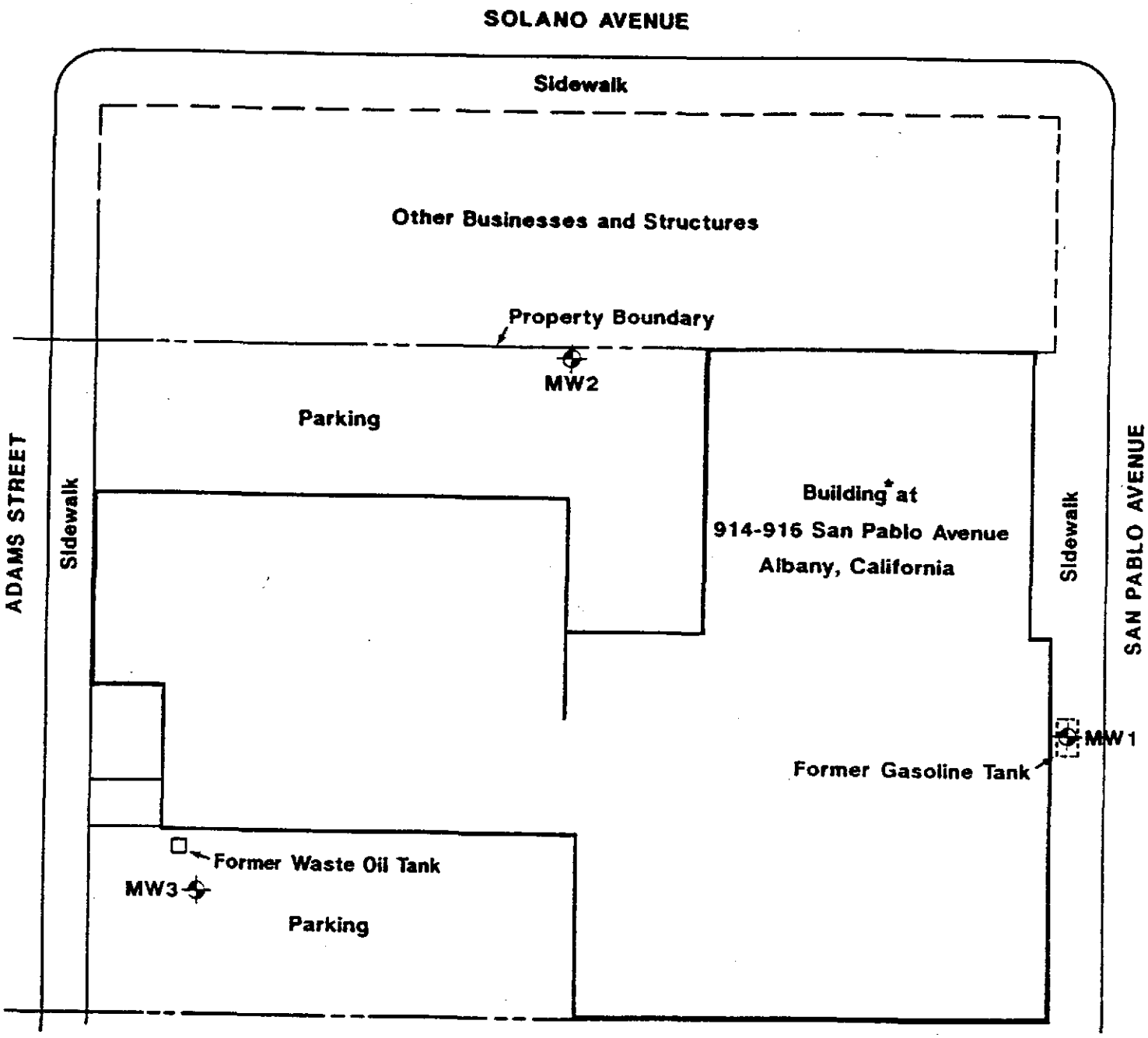
If you need additional information or have any questions, please call Anne Roth at (916) 227-7632 or fax (916) 227-7600.

Sincerely,

for Robert L. Niblack, Chief
Geology and Groundwater Section

Enclosures

01-505P-R 1N/4W-33H1-3



Site Plan

ATT Aqua Terra Technologies Consulting Engineers & Scientists

J. Dibble		PLATE
JOB NUMBER	DATE	2
9124	9/91	

01-505P
1N/4W-33H1

ATT

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dibble/Foley Job No.: 9124

Location: 914-916 San Pablo Ave., Albany, CA Date: 7/24/91

Boring No.: MW1 Driller: Gregg Drilling Page 1 of 2

Logged by: BB Proj. Mgr. WEM Surface Elev. :

Penetration (Blows/ 6")	Depth (feet)	U.S.C.S. Soil Class.	Field Description	Remarks
	0	Backfill	0'-7' Sand backfill material	
	1			
	2			
	3			
	4			
	5			
	6			
	7	CL	7'-13' Sandy clay; light olive brown (2.5Y 5/4); 10% to 30% very fine to fine sand; minor rust staining; minor blue-green aged hydrocarbon discoloring (horizonal streaks); very stiff; damp (no hydrocarbon discoloring below 13')	
	8			
	9			
	10			10' sample, slight hydrocarbon odor (no odor below 13', below 10' sampler was driven for lithologic description only)
9,13,15	11			
	12		13'-30' Sandy clay to clayey sand; yellowish brown (10YR 5/4); 10% to 70% very fine to fine sand in a clay matrix with occasional thin lenses (<6-inches) of clean fine sand; minor component of fine to medium gravel (quartz, white, dark colors, angular); little or no iron staining below 18'; damp to moist.	
	13	CL-SC		
	14			
	15			
5,7,12	16			
	17			

9124/DK2/LOG-MW1

phone: 510-934 4884
PERMIT: 91366
C57 485165

01-505P
1N/4W-33H1

ATT

AQUA TERRA TECHNOLOGIES INC.

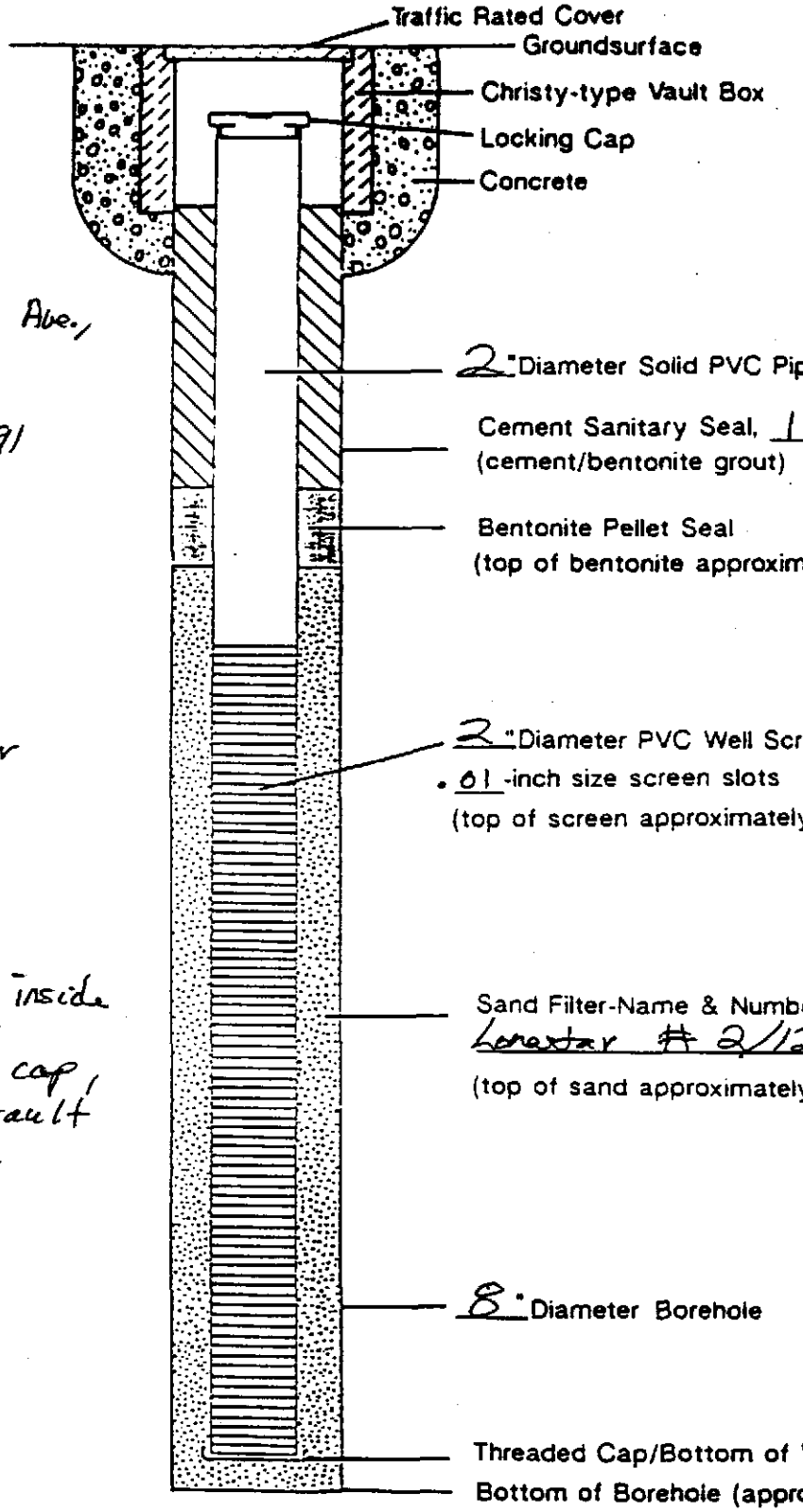
Field Drilling and Sampling Log

Job No: 9124

Penetration (Blows/ 6")	Depth (feet)	U.S.C.S. Soil Class.	MW1 Field Description	Remarks
	17			
	18			
	19	CL-		
	20	SC		
4,7,11	21			
	22			
	23			23' First water (very slow producing)
	24			
	25			
4,11,11	26			25' Material slipped out of sampler, saturated, not recovered
	27			
	28			
	29			
	30		B.O.H. @ 30'	
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			

MW1
Well Designation:

01-5054
1N/4W-33



Site Location:
914-916 San Pablo Ave., Albany, CA.

Date Installed: 7-24-91

Drilling Company:
Gregg Drilling

Driller: Chris

Drilling Method:
Hollow-stem auger

Logged By: BB

Notes:
locking steel cover inside vault box, secures access to locking cap, steel cover and vault box are set in concrete.

Not to Scale

Groundwater Monitoring Well Construction Details

ATT Aqua Terra Technologies Consulting Engineers & Scientists

Dibble/Foley

JOB NUMBER 9124

DATE

PLATE

01-5058
1N/4W-35H2

ATT

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dibble/Foley Job No.: 9124

Location: 914-916 San Pablo Ave., Albany, CA Date: 7/24/91

Boring No.: MW2 Driller: Gregg Drilling Page 1 of 2

Logged by: BB Proj. Mgr. WEM Surface Elev. :

Penetration (Blows/ 6")	Depth (feet)	U.S.C.S. Soil Class.	Field Description	Remarks
	0	Asphalt Fill	0'-0.5' Asphalt and gravel base 0.5'-1.5' Fill, black silty clay 1.5'-8' Sandy Clay; olive brown (2.5Y 4/4); 10% to 30% very fine sand; stiff to very stiff; damp	
	1			
	2			
	3			
	4			
	5	CL		
	6			
	7			
	8		8'-28' Sandy clay to clayey sand; yellowish brown (10YR 5/4); 10% to 60% very fine to fine sand in a clay matrix with occasional thin lenses (<6-inch) of clean fine to medium sand; major iron staining; damp to moist	
	9			
	10			
7,8,17				10' Sample (below 10', sampler was driven for lithologic description only)
	11	CL-SC		
	12			
	13			
	14			
	15			
	16			
4,5,11	17			

01-505Q
1N/4W-33H2

ATT

AQUA TERRA TECHNOLOGIES INC.

Field Drilling and Sampling Log

Job No: 9124

Page 2 of 2

Penetration (Blows/ 6")	Depth (feet)	U.S.C.S. Soil Class.	MW2 Field Description	Remarks
	17			
	18			
	19			19' First water
	20			
4,7,14	21	CL-SC		
	22			
	23			
	24			
	25			
	26			
	27			
	28		B.O.H. @ 28'	
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			

01-505@

MW2
Well Designation:

1N/4W-33H

Site Location:
914-916 San Pablo Ave., Albany, CA.

Date Installed: 7-24-91

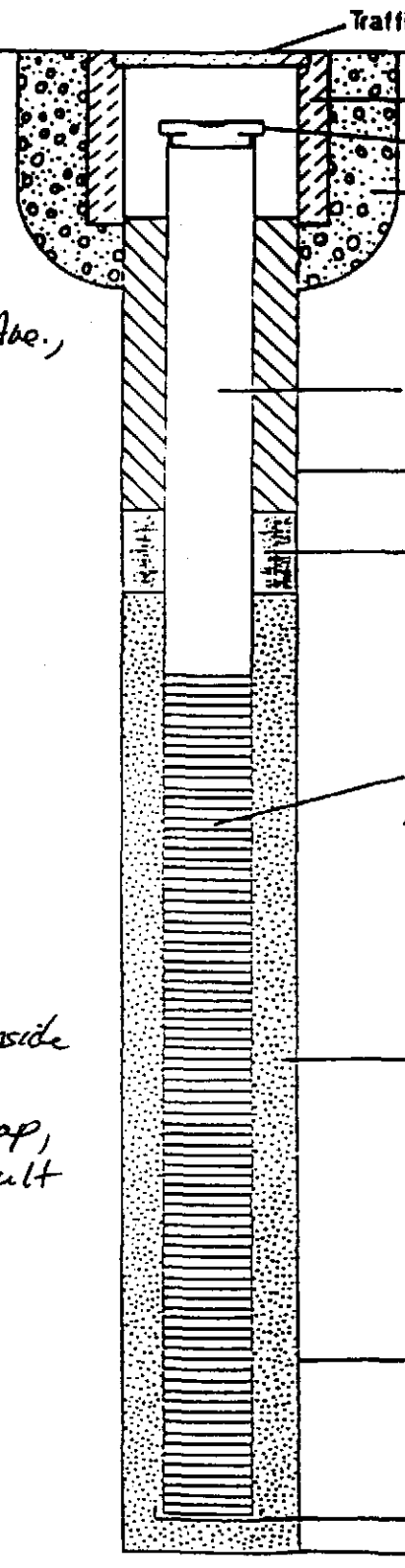
Drilling Company:
Gregg Drilling

Driller: Chris

Drilling Method:
Hollow-stem auger

Logged By: BB

Notes:
locking steel cover inside vault box, secures access to locking cap, steel cover and vault box are set in concrete



Not to Scale

Groundwater Monitoring Well Construction Details

ATT Aqua Terra Technologies Consulting Engineers & Scientists

Dibble/Foley

JOB NUMBER 9124

DATE

PLATE

01-505R
IN/MW-33H3

ATT

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dibble/Foley Job No.: 9124

Location: 914-916 San Pablo Ave., Albany, CA Date: 7/25/91

Boring No.: MW3 Driller: Gregg Drilling Page 1 of 2

Logged by: BB Proj. Mgr. WEM Surface Elev. :

Penetration (Blows/6")	Depth (feet)	U.S.C.S. Soil Class.	Field Description	Remarks
	0	Fill	0'-8' Backfill material; native soil, engineered gravel, plastic sheeting, debris (probably tank backfill)	
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8	CL	8'-14' Sandy clay; light olive brown (2.5Y 5/4); 10% to 30% very fine to fine sand; very stiff; minor iron staining (gradational increase in iron staining); damp.	
	9			
	10			10' Sample (below 10', sampler was driven for lithologic description only)
11,23,24	11			
	12			
	13			
	14	CL-SC	14'-27' Sandy clay to clayey sand; pale olive (5Y 6/3); 10% to 60% very fine to fine sand in a clay matrix with occasional thin lenses (<6-inch) of clean fine to medium sand (lenses moist to saturated);	
	15			15' First water
5,8,12	16			
	17			

01-505R
1N/4W-33H3

ATT

AQUA TERRA TECHNOLOGIES INC.

Field Drilling and Sampling Log

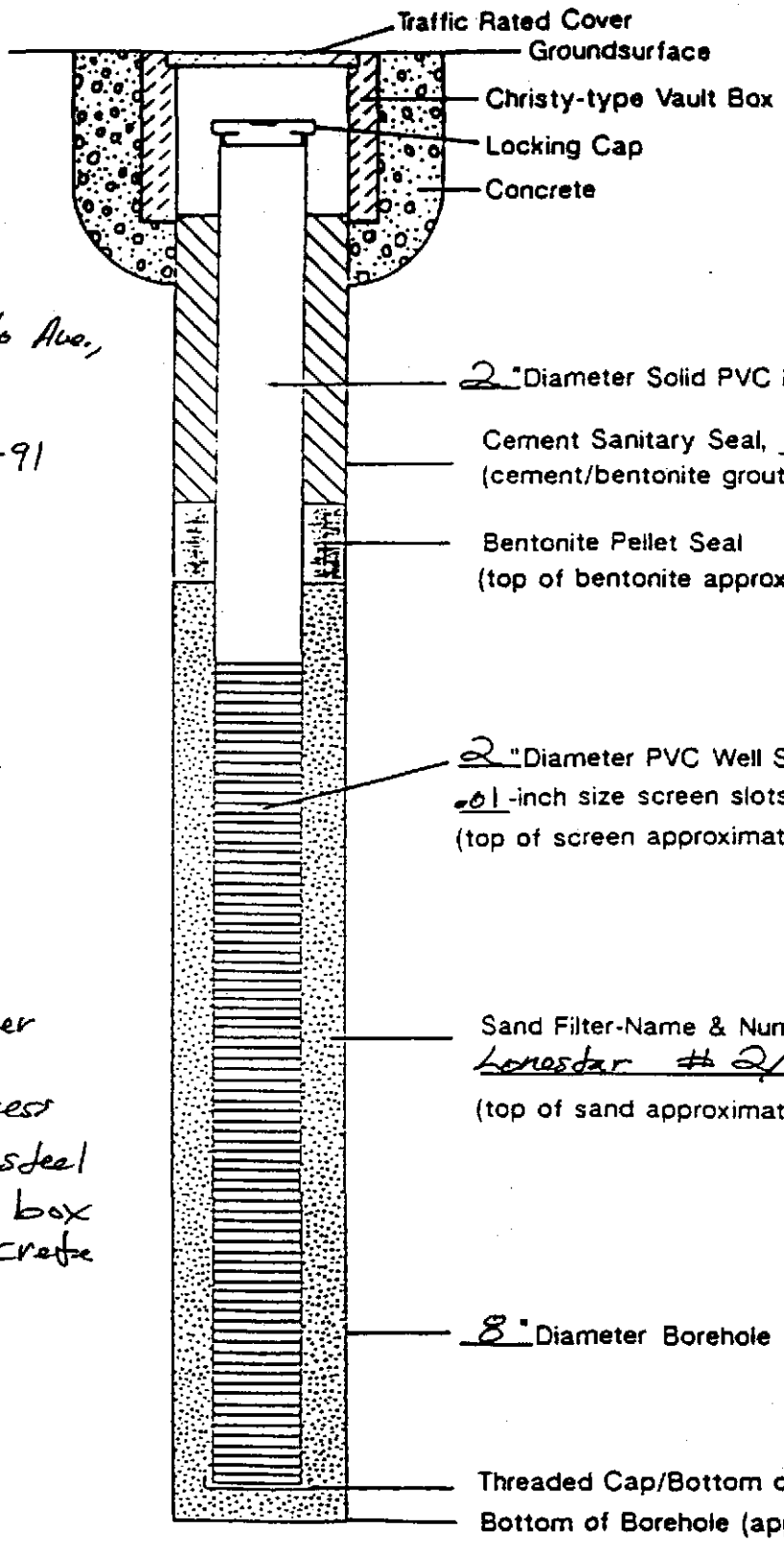
Job No: 9124

Penetration (Blows/ 6")	Depth (feet)	U.S.C.S. Soil Class.	MW3 Field Description	Remarks
	17			
	18	CL-SC	iron staining; minor component of fine gravel (varying composition, poorly graded); moist	
	19			
	20			
8,12,14	21			
	22			
	23			
	24			
	25			
	26			
	27		B.O.H. @ 27'	
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			

01505R

1N/4W-33

MW3
Well Designation:



Site Location:
914-916 San Pablo Ave.,
Albany, CA.

Date Installed: 7-25-91

Drilling Company:
Gregg Drilling

Driller: Chris

Drilling Method:
Hollow-stem auger

Logged By: B.B.

Notes:
locking steel cover inside vault box, ~~SCCCS~~ secures access to locking cap, steel cover and vault box are set in concrete

Not to Scale

Groundwater Monitoring Well Construction Details

ATT Aqua Terra Technologies
Consulting Engineers
& Scientists

Dibble / Foley

JOB NUMBER 9124

DATE

PLATE

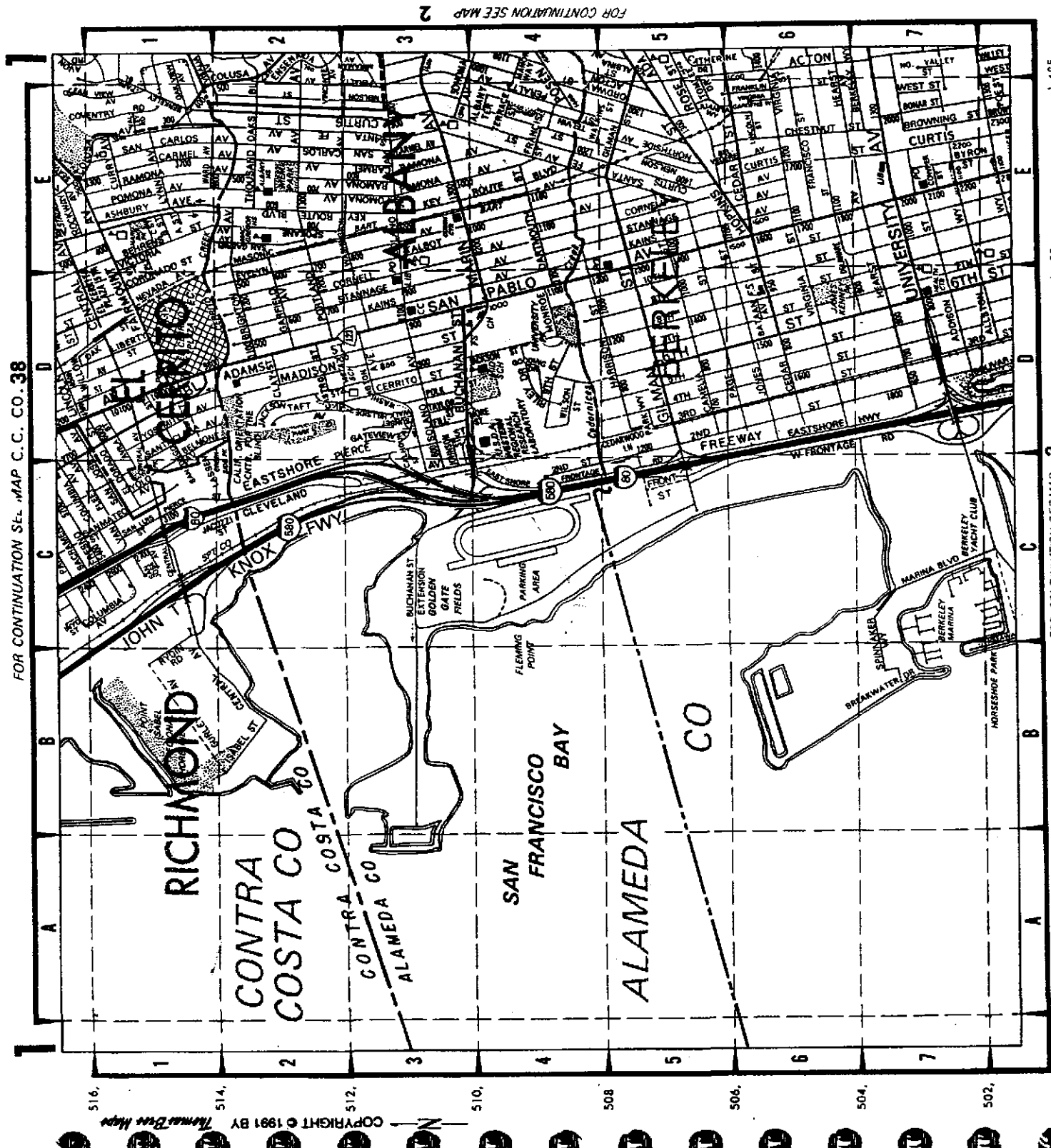
CONFIDENTIAL

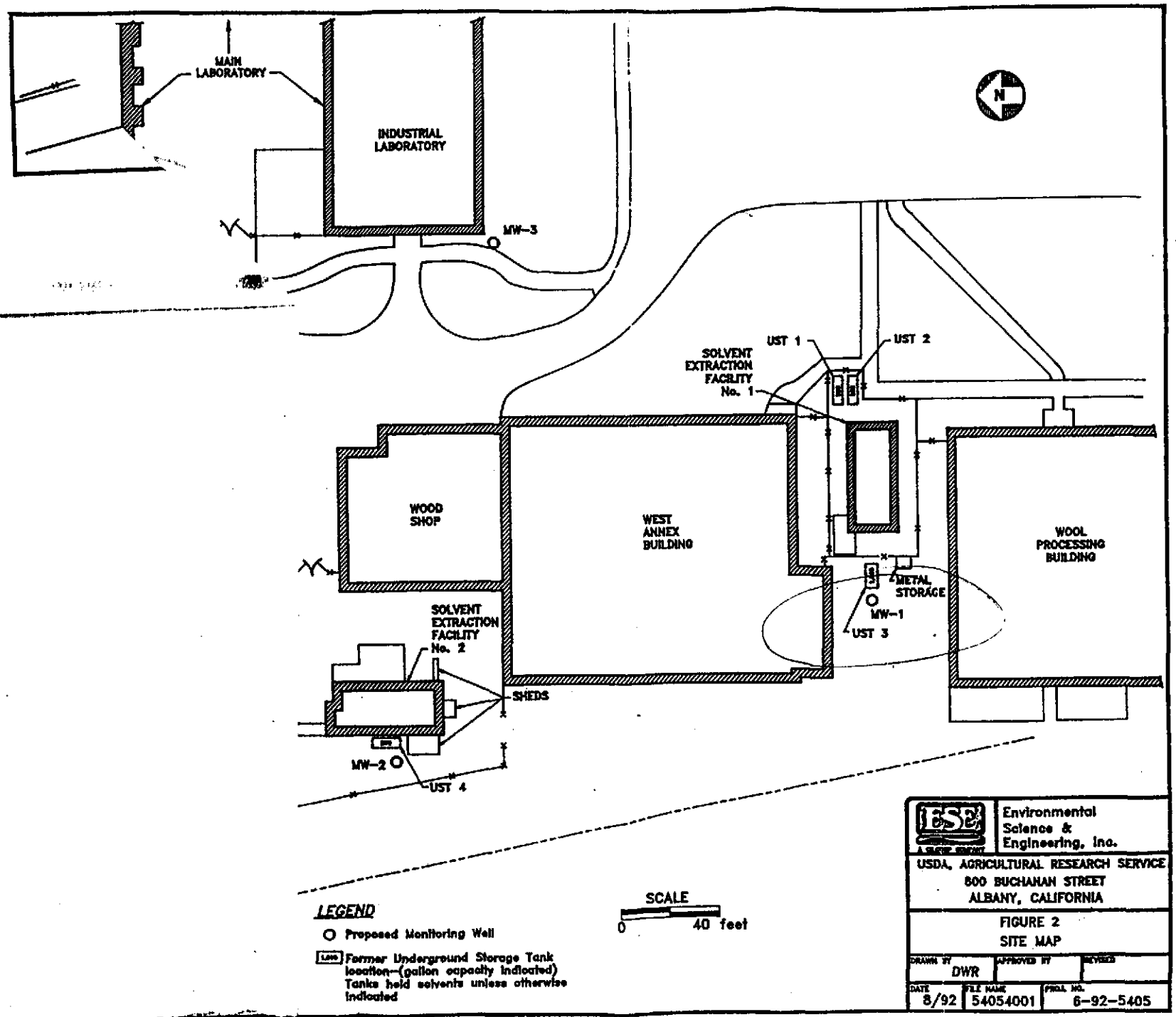
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

ALAMEDA CO. 27P 427891 01N04W33K04

DETAIL





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427891

01/No 4W33K04

474 #27891 01N04W33K04

Environmental Science & Engineering, Inc. PERMIT 92394

BORING LOG AND WELL COMPLETION SUMMARY

MW-1

Page 1 of 1

WELL COMPLETION

Completion Depth:

Size/Type	From	To
Casing: 2 inch Diam. Blank/PVC	0.3	5
Screen: 2 inch Diam. /0.02 inch slot	5	20
Filter: #3 Monterey Sand	4	20
Seal: Bentonite Pellets	3	4
Grout	0.5	3

Well Cap or Box: Flush Mounted Traffic-Rated Emco-Wheaton

Project Name: USDA Project No: 6-92-5405

Location: 800 Buchanan Street
Albany, Alameda County
California.

Driller: Soils Exploration Services, Inc.
Method: Hollow-Stem Auger
Hole Diameter: 8" O.D. Total Depth: 20 FEET
Ref. Elevations: N/A
Logged By: Bart Miller

Dates:
Start: 9-14-92
Finish: 9-14-92

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks (Water, drilling/completion, summary, sample type)	TIME
0	Asphalt Surface - 1 inch thick							1345
	BAYMUD							
	CLAY; mottled brown and grey, slightly sandy, dry, moderate plasticity, no odor.	CL					* 6 inch thick wet zone associated with water migrating from tankpit along piping runs.	
5	CLAY; brown, dry, sandy, moderate plasticity, no odor.	CL	5, 8, 11			6	COLLECT SAMPLE	1355
10	CLAY; brown and grey mottled, both gravelly and sandy, moist, moderate plasticity, no odor.	CL	4, 8, 6			12	COLLECT SAMPLE Groundwater found at 11 feet deep while drilling.	1405
15	CLAY; brown, dry, sandy, moderate plasticity, no odor.	CL	3, 5, 8			10	COLLECT SAMPLE	1415
20	CLAY; as above.						Total Completed Well Depth: 20 feet. Water level observed to rise to 8 feet below grade after installation.	
25								
30								
35								

ph · 415 - 4057

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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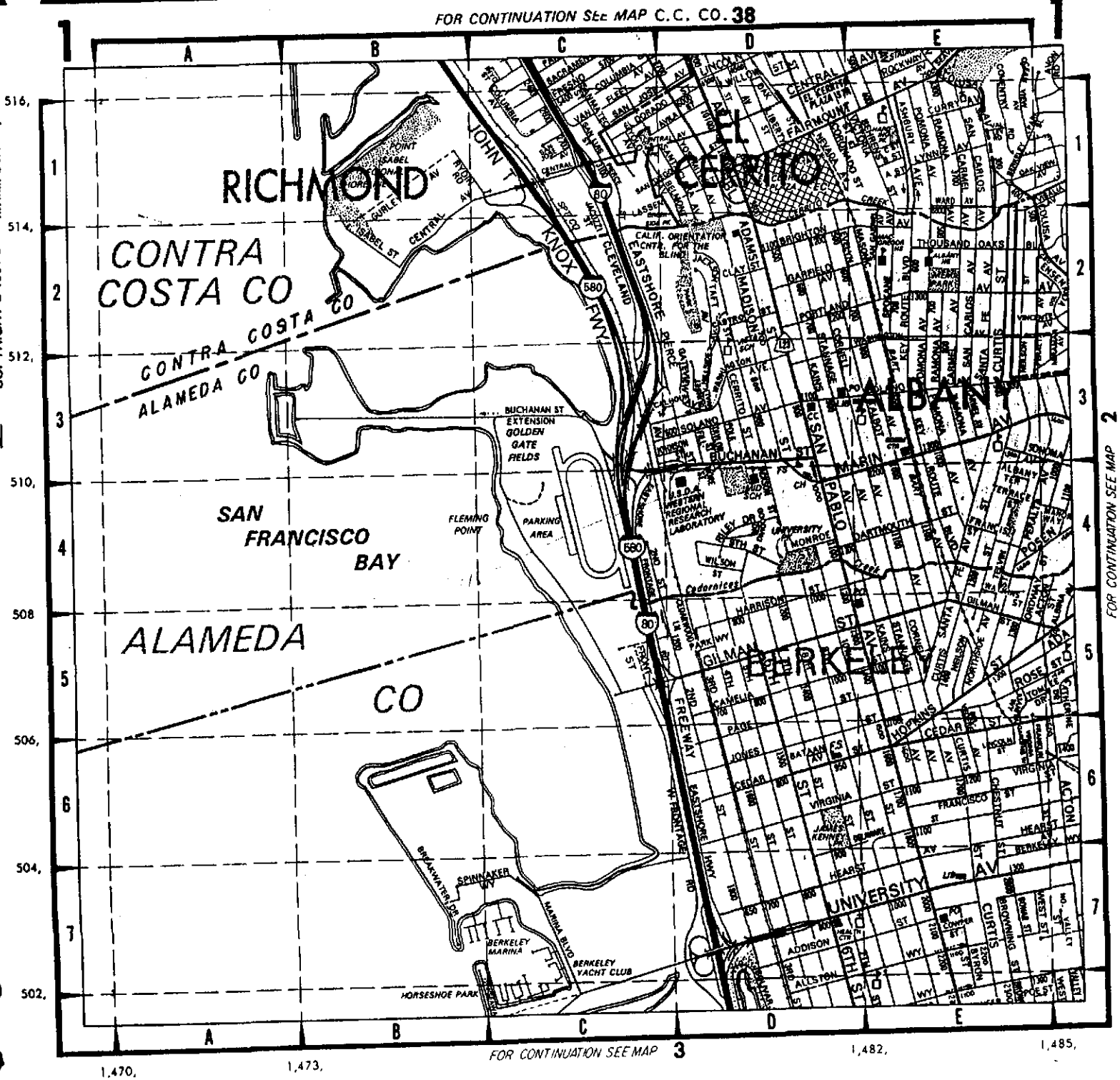
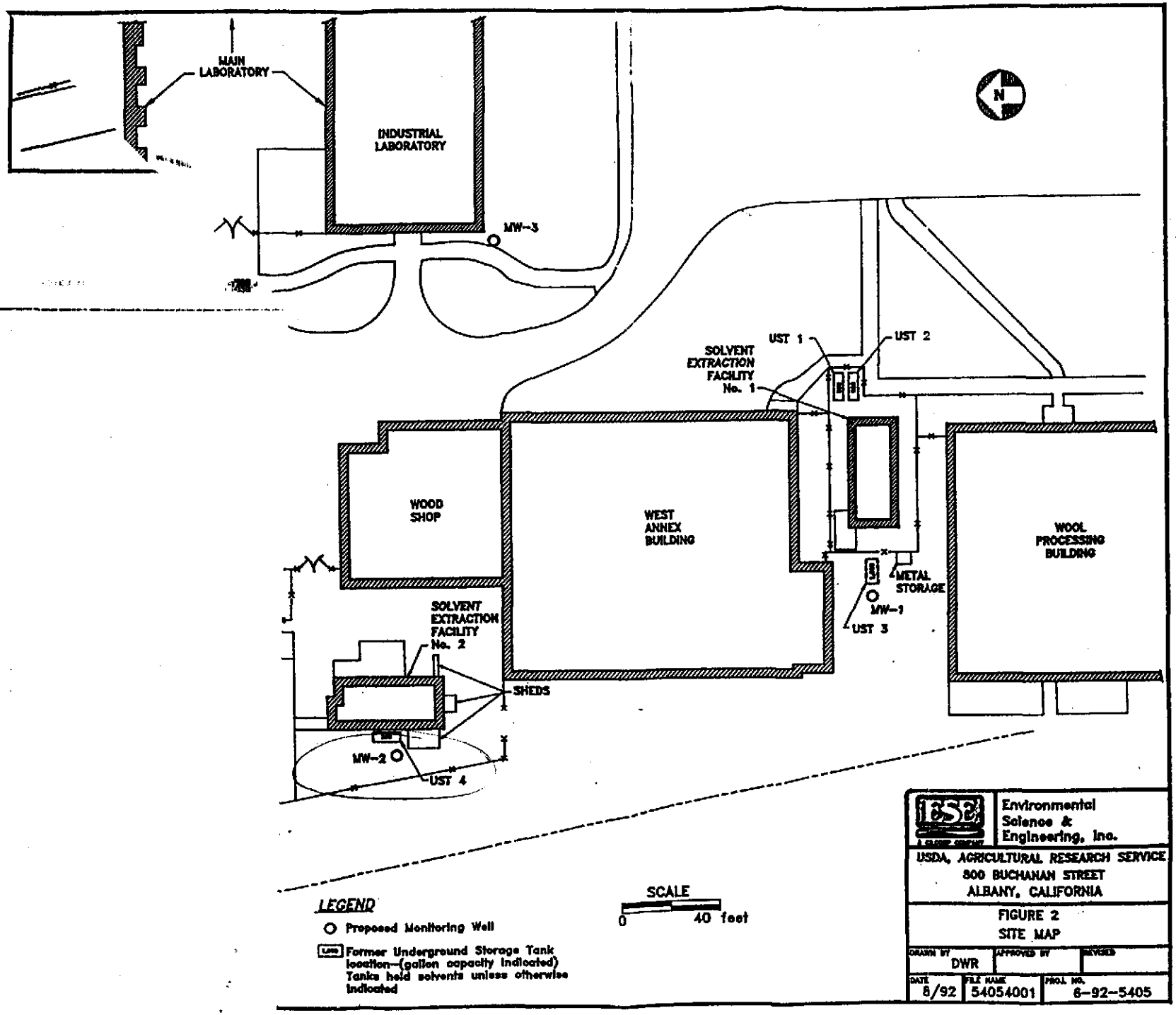


ALAMEDA CO. 294

427889

DETAIL

01N 04W 33K05



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Environmental Science & Engineering, Inc.
A CH2M HILL Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-2

Page 1 of 1

WELL COMPLETION

Completion Depth:

Size/Type	From	To
Casing: 2 inch Diam. Blank/PVC	0.3	5
Screen: 2 inch Diam. /0.02 inch slot	5	20
Filter: #3 Monterey Sand	4	20
Seal: Bentonite Pellets	3	4
Grout	0.5	3

Well Cap or Box: Flush Mounted Traffic-Rated Emco-Wheaton

Project Name: USOA Project No: 6-92-5405
Location: 800 Buchanan Street
Albany, Alameda County
California.

Driller: Soils Exploration Services, Inc.
Method: Hollow-Stem Auger
Hole Diameter: 8" O.D. Total Depth: 20 FEET
Ref. Elevations: N/A
Logged By: Bart Miller

Dates:
Start: 9-14-92
Finish: 9-14-92

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks (Water, drilling/completion, summary, sample type)	TIME
0	Asphalt Surface - 2 inch thickness							
	BAYMUD					4	Boring continuously sampled with five foot core barrel and 16" core barrel	945
	CLAY; green, moderate plasticity, dry, no odor.	CL						
	* one-foot layer of gravelly, black, bituminous asphalt material.							
5	CLAY; brown, dry, sandy, moderate plasticity, no odor.	CL				7	COLLECT SAMPLE	1000
10	CLAY; mottled grey and brown, becoming gravelly, grading from dry to moist at 13.0 to 13.5 feet moderate plasticity, no odor.	CL				5	COLLECT SAMPLE FOR ANALYSIS	1025
						4.5	Groundwater found at 13 feet deep while drilling.	
15	CLAY; sandy, brown, decreasing gravel content, dry, moderate plasticity, no odor.	CL				2.0		
20	CLAY; as above except no gravel.						Total Completed Well Depth: 20 feet. Water level observed to rise to 7.5 feet below grade after installation.	
25								
30								
35								

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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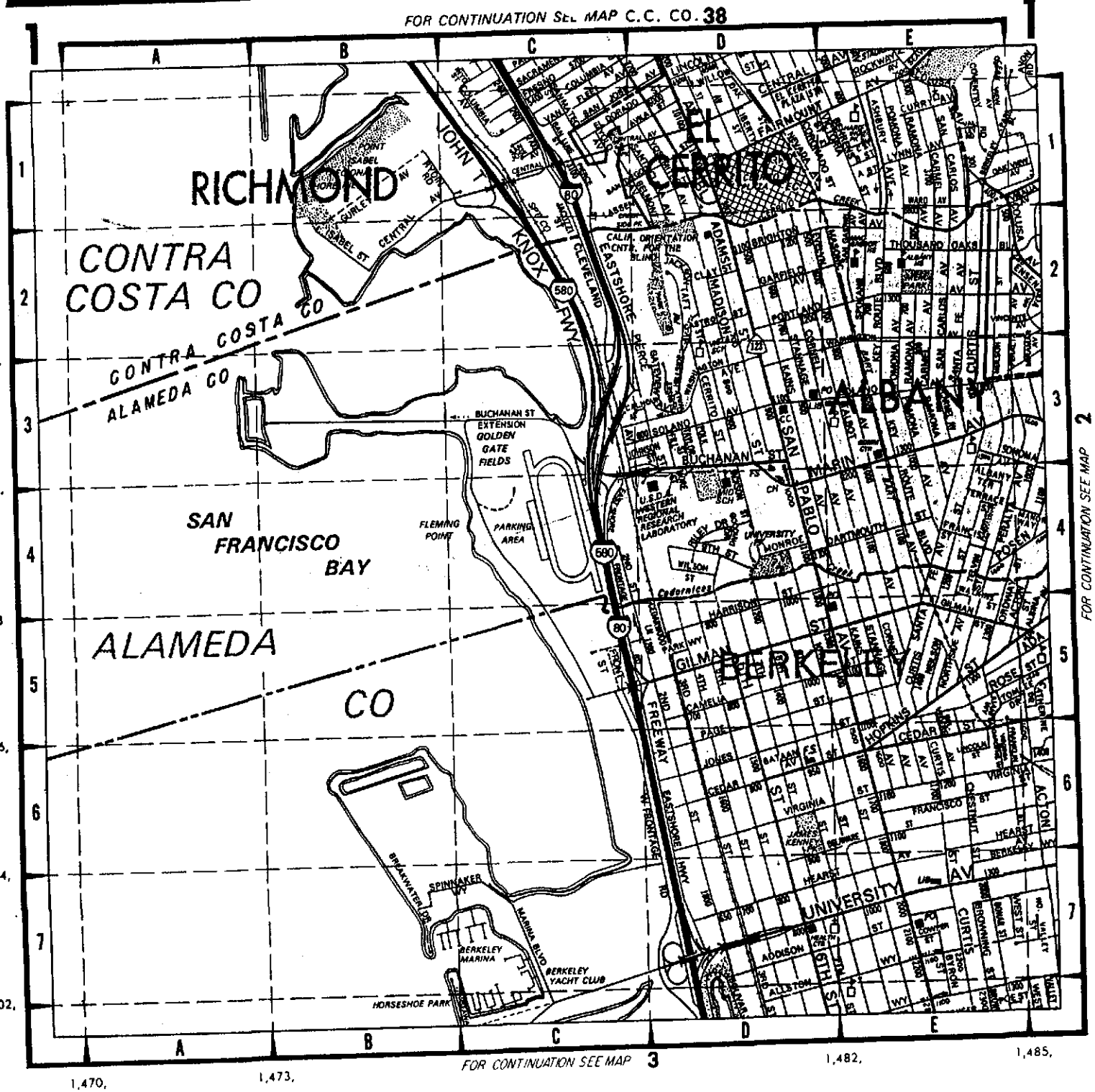
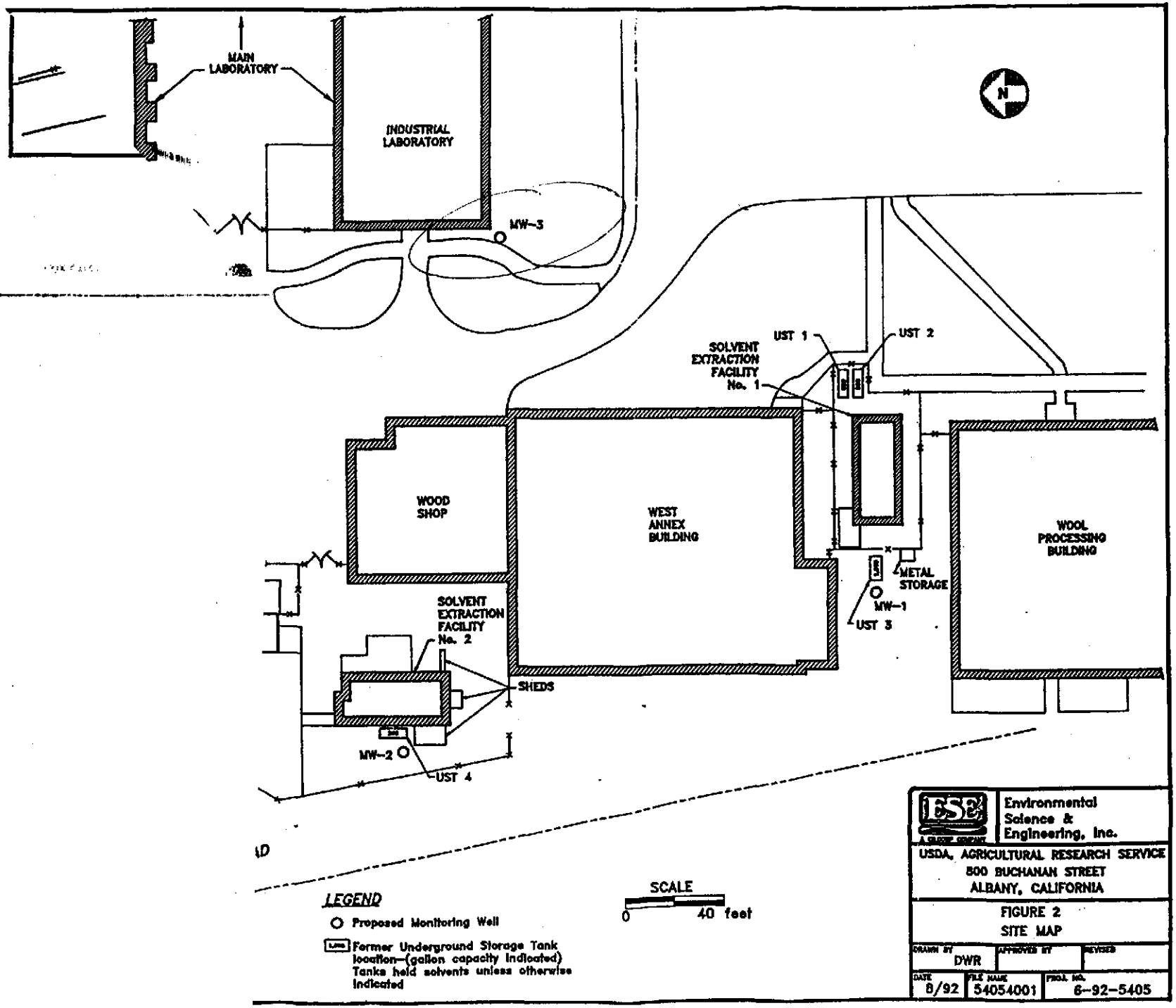


ALAMEDA CO.

DETAIL

294

01N04W33K06



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01N04W33K06

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Environmental Science & Engineering, Inc.
A CH2M HILL Company

BORING LOG AND WELL COMPLETION SUMMARY

MW-3

Page 1 of 1

WELL COMPLETION

Completion Depth:

Size/Type	From	To
Casing: 2 inch Diam. Blank/PVC	3.5 AGS	0
Screen: 2 inch Diam. /0.02 inch slot	5	20
Filter: #3 Monterey Sand	4	20
Seal: Bentonite Pellets	3	4
Grout	0	3
Well Cap or Box: Monument	3.5 AGS	0

Project Name: USDA Project No: 6-92-5405
Location: 800 Buchanan Street
Albany, Alameda County
California.

Driller: Solis Exploration Services, Inc.
Method: Hollow-Stem Auger
Hole Diameter: 8" O.D. Total Depth: 20 FEET
Ref. Elevations: N/A
Logged By: Bart Miller

Dates:
Start: 9-15-92
Finish: 9-15-92

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks (Water, drilling/completion, summary, sample type)
0	BAYMUD TOPSOIL; brown; significant organic content, dry, no odor.						
	CLAY; brown, gravelly, moderate plasticity, no odor, dry.	CL					Fragmented concrete from 2.0 -2.5 feet
5			2 2 5				COLLECT SAMPLE 1055
10	SAND; brown, gravelly, lesser clay, poorly graded, unconsolidated, wet, no odor.	SP	9 12 12				COLLECT SAMPLE 1103 Ground water found at 11 feet deep while drilling.
15	CLAY; brown, sandy, little gravel, moderate plasticity; dry, no odor.	CL	4 7 9				COLLECT SAMPLE 1115
20							Total Completed Well Depth: 20 feet.
25							
30							
35							

INV / Add 88487 01-417N-Q

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		LTR	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravels or gravel sand mixtures, little or no fines.
		GP	Poorly-graded gravels or gravel sand mixture, little or no fines.
		GM	Silty gravels, gravel-sand-clay mixtures.
		GC	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	SW	Well-graded sands or gravelly sands, little or no fines.
		SP	Poorly-graded sands or gravelly sands, little or no fines.
		SM	Silty sands, sand-silt mixtures.
		SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS LL<50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silt-clays of low plasticity
	SILTS AND CLAYS LL>50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays.
		OH	Organic clays of medium to high plasticity.
HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils.

Standard Penetration Split Spoon Sampler

Modified California Sampler

Shelby Tube Sampler

Water level first observed in boring

Water level observed in boring following drilling

NFWE — No Free Water Encountered

NOTE: Blow count represents the number of blows of a 140-pound hammer falling 30 inches per blow required to drive a sampler through the last 12 inches of an 18-inch penetration.

NOTE: The line separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No Warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

SITE: DANIEL, MANN
Johnson & MENDENHALL
800 Buchanan Street,
Albany

KLEINFELDER

PROJECT NO. 11-1957-01

Western Regional Research Center
Albany, California

BORING LOG LEGEND

PLATE A-1

01-417N 01N 04W 33K

Date Completed: 9/26/88

Logged By: Stan Kline

Total Depth: 12.5 ft

Sampler: Modified California Sampler - 2.5 in. O.D. 2.0 in. I.D., Standard Split Spoon Sampler - 2.0 in. O.D. 1.4 in. I.D.

Hammer Wt: 150 lbs. Drop:27 in.

Depth, ft	FIELD: Sample	FIELD: Blows/ft	LABORATORY: Dry Density pcf	LABORATORY: Moisture Content %	LABORATORY: Compress. Strength tsf	LABORATORY: Other Tests	Pen, tsf	DESCRIPTION
								Surface Elevation: Approximately 17 ft
		10	102	14			3.5	SILTY CLAY (CL) - stiff, dark brown to black, low to medium plasticity, trace of gravel, very moist
							2.3	SANDY CLAY (CH) - blue-gray to olive brown, medium to high plasticity, very moist
5		50					3.5	
		50	111	18	3.9		3.3	SANDY CLAY (CL) - very stiff to hard, light brown, medium plasticity, moist - moisture increases below 5 ft
		60/6"					4.5+	SANDSTONE - very dense, orange-tan, moist
10		50/4"						
		20/0"						NFWE
15								
20								
25								
30								
35								

KLEINFELDER

PROJECT NO. 11-1957-01

Western Regional Research Center
Albany, California

LOG OF BORING NO. B-1

PLATE A-2

01-4170 01N 04W 38K

Date Completed: 9/26/88
Logged By: Stan Kline
Total Depth: 21.5 ft

Sampler: Modified California Sampler - 2.5 in. O.D. 2.0 in. I.D.
Hammer Wt: 150 lbs. Drop:27 in.

Depth, ft	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests	Pen, tsf	DESCRIPTION
								Surface Elevation: Approximately 16 ft
		16	99	25		LL = 54 PI = 37	2.3	**SILTY CLAY (CL)** - stiff, dark brown to black, low to medium plasticity, some gravel, very moist
5		84					4.5	**SANDY CLAY (CH)** - stiff to very stiff, orange-brown, medium to high plasticity, very moist
		30	116	14	2.2	LL = 38 PI = 22	3.0	
		16	98	25	1.3		1.3	**SANDY CLAY (CL)** - very stiff, light brown, medium plasticity, moist - moisture increases below 4.5 ft - orange-brown below 6 ft
10		48						**SANDY CLAY (CL)** - stiff to very stiff, orange-brown and white, medium plasticity, moist to very moist, (highly weathered bedrock formation) - very hard, 10 to 14 ft - easier drilling, stiff to very stiff, 14 to 18 ft
15		18					1.5	- harder drilling, very hard below 18 ft
20		54						
25								
30								
35								

KLEINFELDER

PROJECT NO. 11-1957-01

Western Regional Research Center
Albany, California

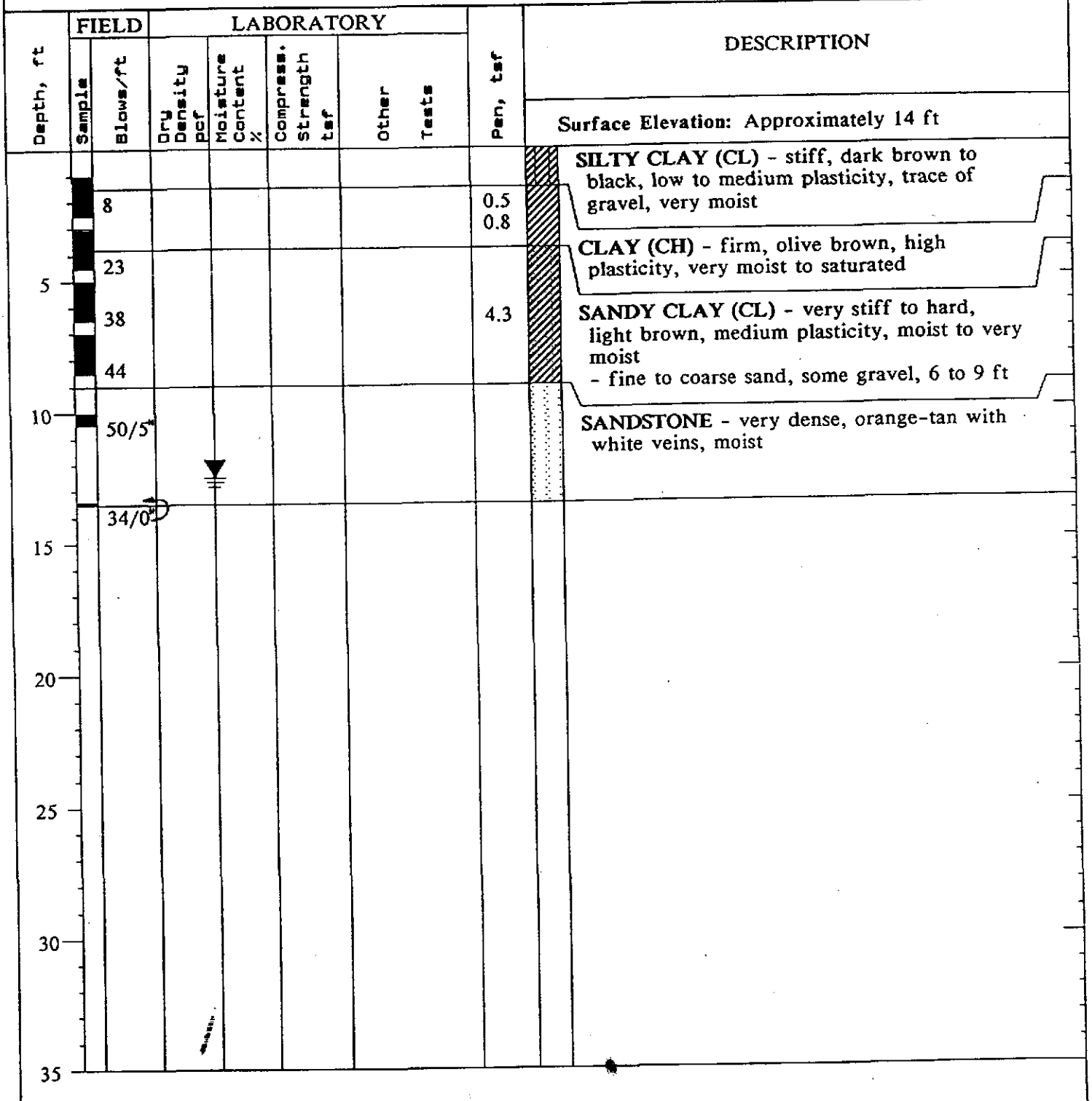
LOG OF BORING NO. B-2

PLATE A-3

01-417P 01N 04W 33K

Date Completed: 9/26/88
Logged By: Stan Kline
Total Depth: 13.5 ft

Sampler: Modified California Sampler - 2.5 in. O.D. 2.0 in. I.D.
Hammer Wt: 150 lbs. Drop:27 in.



KLEINFELDER

PROJECT NO. 11-1957-01

Western Regional Research Center
Albany, California

LOG OF BORING NO. B-3

PLATE A-4

01-417Q 01N 04W 38K

Date Completed: 9/26/88

Logged By: Stan Kline

Total Depth: 13.5 ft

Sampler: Modified California Sampler - 2.5 in. O.D. 2.0 in. I.D., Standard Split Spoon Sampler - 2.0 in. O.D. 1.4 in. I.D.

Hammer Wt: 150 lbs. Drop:27 in.

Depth, ft	FIELD: Sample	FIELD: Blows/ft	LABORATORY: Dry Density pcf	LABORATORY: Moisture Content %	LABORATORY: Compress. Strength tsf	LABORATORY: Other Tests	Pen, tsf	DESCRIPTION
								Surface Elevation: Approximately 13 ft
		6	95	28		TV=0.4 tsf TV=0.2 tsf		**SILTY CLAY (CL)** - stiff, dark brown to black, low to medium plasticity, trace of gravel, very moist
		26					2.5	**CLAY (CH)** - soft to firm, dark brown to blue-gray, high plasticity, very moist to saturated
5		32	109	20		-#200=33%	1.5	**SANDY CLAY (CL)** - very stiff, light brown, medium plasticity, moist to very moist - sand content increases with depth below about 4 ft transitioning to clayey sand near *sandstone contact* - orange-brown below 4.5 ft
10		56/6"						**SANDSTONE** - very dense, orange-brown, moist - dry below 13 ft
		30/0"						NFWE
15								
20								
25								
30								
35								

KLEINFELDER

PROJECT NO. 11-1957-01

Western Regional Research Center
Albany, California

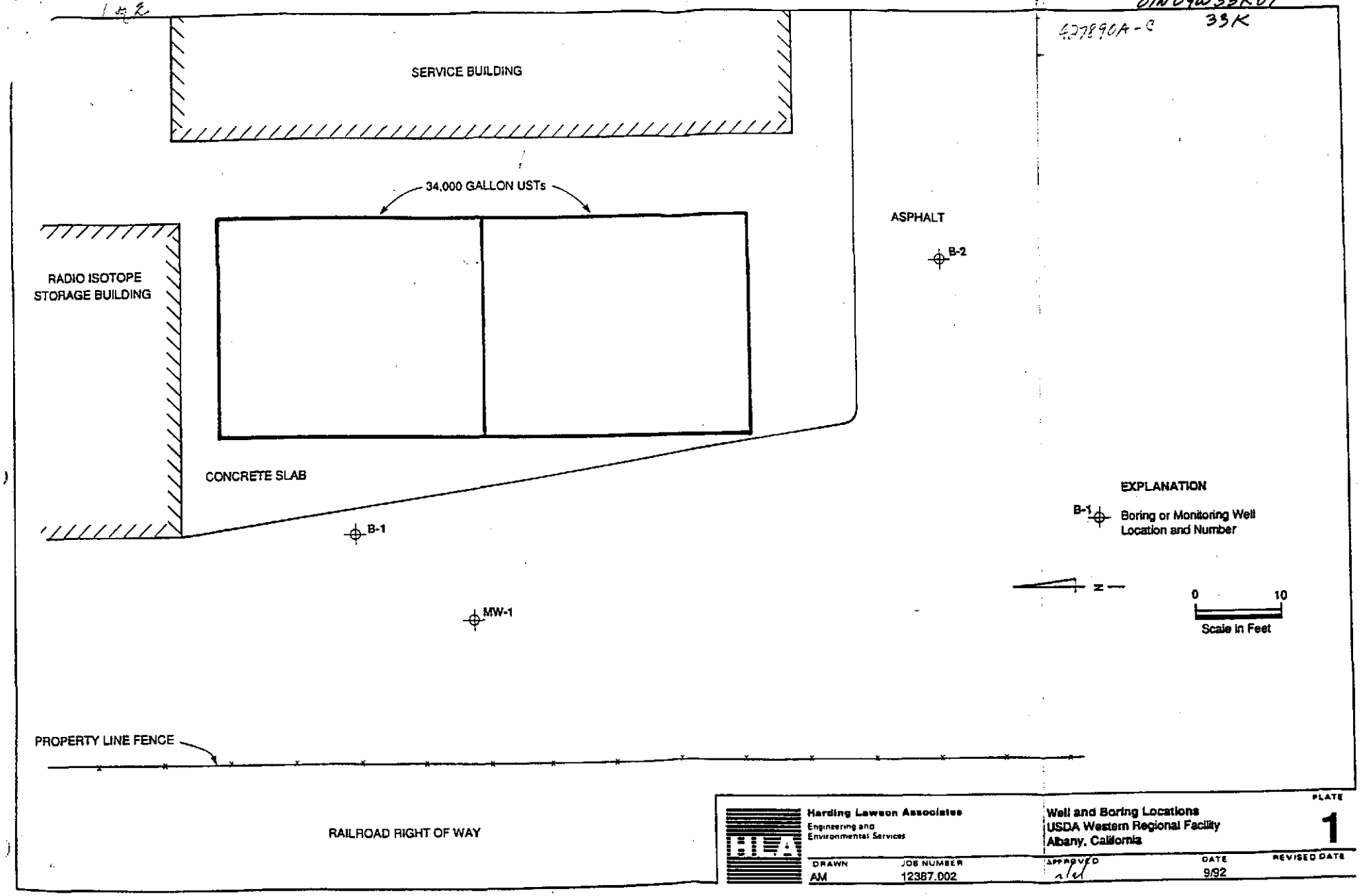
LOG OF BORING NO. B-4

PLATE A-5

1 & 2

01N04W33K07

427890A-C 33K



Harding Lawson Associates
Engineering and
Environmental Services

Well and Boring Locations
USDA Western Regional Facility
Albany, California

PLATE 1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
AM	12387.002		9/92	

232 42789B 01N04W33K

Equipment CME 45 8" HSA

Elevation -- Date 09/15/92

Odor (ppm)	OVA Reading (ppm)	Blows/foot	Depth (ft)	Sample
			0	
None	0	48	5	
None	0	45		
None	0	25		
			10	
None	0	29		
			15	
			20	
			25	
			30	
			35	
			40	

3" ASPHALT CONCRETE

BROWN SILTY SAND (SM)
dense, dry,
clay content increases at 2.0 feet

MOTTLED YELLOW-BROWN-GREEN SANDY CLAY (CL)
very stiff, dry

YELLOW-BROWN CLAYEY SAND (SC)
medium dense, moist

BROWN SAND WITH GRAVEL (SP)
medium dense, saturated
groundwater encountered

MOTTLED ORANGE-BROWN-GREEN SANDY CLAY (SC)
medium stiff, moist

Boring was terminated at 12.5 feet.
Groundwater was encountered at 7.5 feet.

Harding Lawson Associates
Engineering and
Environmental Services

Log of Boring B-1
U.S.D.A.
Albany

(Sheet 1 of 1)

PLATE 3

DRAWN	JOB NUMBER	APPROVED	FILE	DATE	REVISED DATE
	12387-002	DD	15895G23		

292 427890C 01N04W33K

Equipment CME 45 8" HSA

Elevation -- Date 09/15/92

Odor	OVA Reading (ppm)	Blows/foot	Depth (ft)	Sample
			0	
None	0	35	5	
None	0	25	10	
			15	
			20	
			25	
			30	
			35	
			40	

3" ASPHALT CONCRETE
YELLOW-BROWN SILTY SAND (SM)
medium dense, dry
YELLOW-BROWN
CLAYEY SAND WITH GRAVEL (SC)
dense, dry

MOTTLED ORANGE-BROWN
SANDY CLAY (CL)
stiff, wet

Boring was terminated at 13.5 feet.
The groundwater interface could not be determined.

Harding Lawson Associates
Engineering and
Environmental Services

Log of Boring B-2
U.S.D.A.
Albany

(Sheet 1 of 1)

DRAWN	JOB NUMBER	APPROVED	FILE	DATE	REVISED
	12387-002	DD	15895G23		

2 of 2 427890A 01N04W33K07

Equipment CME 45 8" HSA

Elevation -- Date 09/15/92

Depth (ft)	Sample	Blows/foot	Odor	OVA Reading (ppm)
0				
5		51	None	0
10		18	None	0
15				
20				
25				
30				
35				
40				

TRAFFIC COVER
8" dia. BOREHOLE
2" dia. UNSLOTTED PVC CASING
from 0 to 4 feet
CEMENT SAND GROUT
from 1 to 2 feet
BENTONITE PELLET SEAL
from 2 to 3 feet
FILTER SAND (No. 3 Lonestar)
from 3 to 19 feet
2" dia. SLOTTED PVC CASING
(0.020" Slots)
at 4 to 19 feet
BOTTOM CAP at 19 feet

3" ASPHALT CONCRETE
DARK BROWN SILTY SAND (SM)
medium dense, dry
YELLOW-BROWN SANDY CLAY (CL)
very stiff, dry

groundwater was encountered

Bedrock encountered at 19.0 feet and the boring was terminated.
Groundwater was encountered at 9.0 feet.

Harding Lawson Associates
Engineering and Environmental Services

Log of Monitoring Well MW-1
U.S.D.A.
Albany

(Sheet 1 of 1)

PLATE 2

DRAWN	JOB NUMBER	APPROVED	FILE	DATE	REVISED DATE
	12387-002	DD	15895G23		

01-543 D-F
01-543 G-I

U3S2W-1N 2E-27
01N04W34M17-19

RESNA
Working To Restore Nature

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
FAX: (408) 264-2435

January 25, 1993
0121whon
69036.07/60029.08

Mr. Wyman Hong
Alameda County Flood Control and
Water Conservation District, Zone 7
5997 Parkside Drive
Pleasanton, CA 94566

Subject: Well Construction Reports for ARCO Station 2035, 1001 San Pablo Avenue, Albany, California, Permit Number 92604, and ARCO Station 1319, 365 Jackson Street, Hayward, California, Permit Number 92631.

Mr. Hong:

As requested by Alameda County Flood Control and Water Conservation District, Zone 7 requirements, this are the Well Construction Reports for work performed at ARCO Station 1319 located at 365 Jackson Street in Hayward, California, and ARCO Station 2035, 1001 San Pablo Avenue, Albany, California.

RESNA Industries Inc. (RESNA) performed an Additional Environmental Investigation at ARCO Station 2035, 1001 San Pablo Avenue, Albany, California (Site Vicinity Map, Plate 1A). The locations of three recently installed wells (MW-4 through MW-6), proposed well MW-7, and other pertinent site features are shown on the Generalized Site Plan, Plate 2A. The drilling work was completed on November 24 and 25, 1992, and the drilling company was Bayland Drilling Inc. of Menlo Park, California (Lic. # 374152). Attached are the boring logs for the new monitoring wells and symbol key (Plates 3A through 9A). Proposed groundwater monitoring well MW-7 will be drilled after obtaining a street encroachment permit from the City of Albany.

RESNA performed an Additional Onsite Subsurface Investigation at ARCO Station 1319, 365 Jackson Street, Hayward, California (Site Vicinity Map, Plate 1B). The locations of three recently installed two vapor extraction wells (VW-4 and VW-5) and one recovery well (RW-1), and other pertinent site features are shown on the Generalized Site Plan, Plate 2B. The drilling work was completed on December 17 and 18, 1992, and the drilling company was Exploration

01-543 D-F
01-543 G-I

3S/2W-21A 22-24

RESNA
Working To Restore Nature

Well Construction Report
ARCO Station 2035 and ARCO Station 1319

January 25, 1993
69036.07/60029.08

Geoservices of San Jose, California (Lic. # 484288). Attached are the boring logs for the new wells and symbol key (Plates 3B through 10B).

If you have any questions regarding this letter, please call us at (408) 264-7723.

Sincerely,
RESNA Industries Inc.

Barbara Sieminski

Barbara Sieminski
Assistant Project Geologist

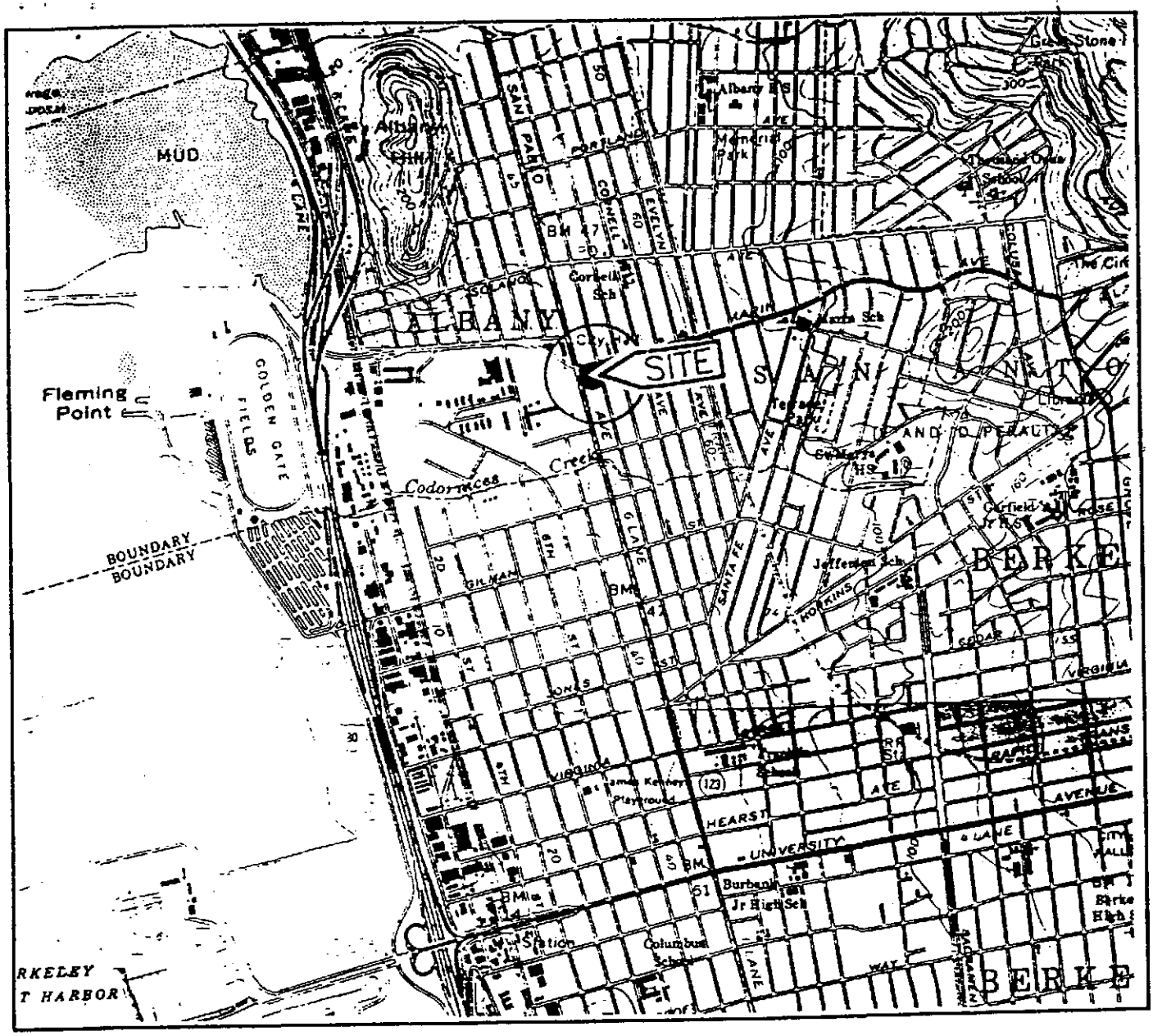
01-543 D-F

Attachments: ARCO 2035; Site Vicinity Map, Plate 1A
Generalized Site Plan, Plate 2A
Unified Soil Classification System and Symbol Key, Plate 3A
Log of Boring B-20/MW-4, Plates 4A and 5A
Log of Boring B-21/MW-5, Plates 6A and 7A
Log of Boring B-22/MW-6, Plates 8A and 9A

01-543 G-I

ARCO 1319; Site Vicinity Map, Plate 1B
Generalized Site Plan, Plate 2B
Unified Soil Classification System and Symbol Key, Plate 3B
Log of Boring B-24/RW-1, Plates 4B through 6B
Log of Boring B-25/VW-4, Plates 7B and 8B
Log of Boring B-26/VW-5, Plates 9B and 10B

01-543D-F 01N04W34M17-34M1



Base: U.S. Geological Survey
7.5-Minute Quadrangles
Richmond/Oakland West, California.
Photorevised 1980

N

LEGEND

⊙ = Site Location

Approximate Scale

2000 1000 0 2000 4000

feet

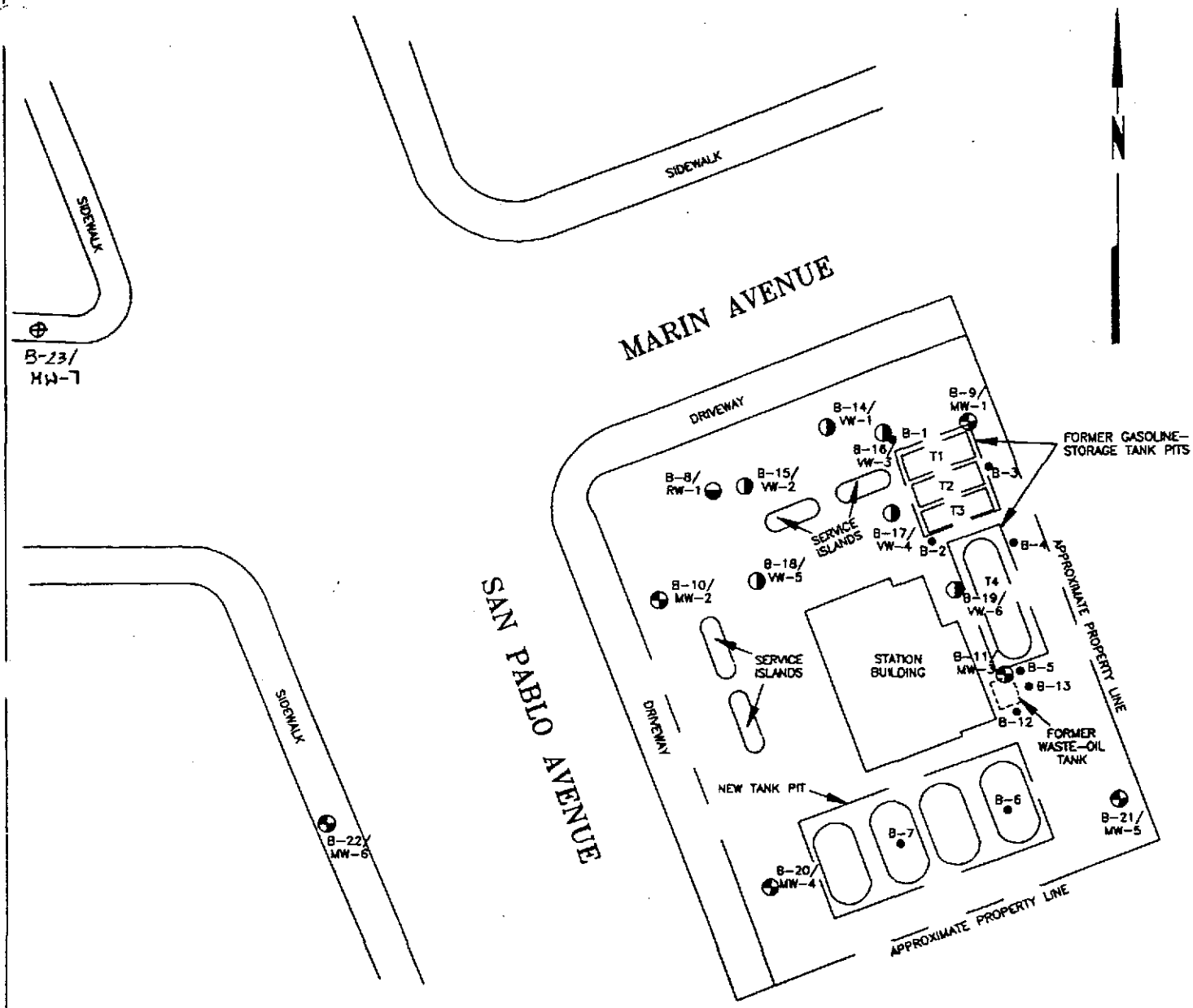
RESNA
Working to Restore Nature

PROJECT 69036.05

SITE VICINITY MAP
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
1A

01-543 D-F ON 3 M17-3 4 M19



EXPLANATION

B-19/ VW-6 = Vapor extraction well (RESNA, Aug. 1992)

B-8/ RW-1 = Recovery well (RESNA, October 1991)

B-22/ MW-6 = Monitoring well (RESNA, October 1991 and November 1992)

B-13 = Soil boring (RESNA, Aug. 1989, June 1991, and Aug. 1992)

Approximate Scale

40 20 0 40 80

feet

Source: Surveyed by John E. Koch, Land Surveyor.

RESNA
Working to Restore Nature

PROJECT 69036.07

PROPOSED BORING/ WELL LOCATION
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 2A

01-543D-F 01N34M17-34M19

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISION		LTR	DESCRIPTION
COARSE-GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravels or gravel-sand mixtures, little or no fines.
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines.
		GM	Silty gravels, grave-sand-silt mixtures.
		GC	Cloyey gravel, gravel-sand -clay mixtures.
	SAND AND SANDY SOILS	SW	Well-graded sand or gravelly sands, little or no fines.
		SP	Poorly-graded sands or gravelly sands, little or no fines.
		SM	Silty sands, sand-silt mixtures.
		SC	Cloyey sands, sand-clay mixtures.

MAJOR DIVISION		LTR	DESCRIPTION
FINE-GRAINED SOILS	SILTS AND CLAYS LL<50	ML	Inorganic silts and very fine sands, rock flour, silty or cloyey fine sands, or clayey silts with slight plasticity.
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty cloys, lean cloys.
		OL	Organic silts and organic silt-clays of low plasticity.
	SILTS AND CLAYS LL>50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH	Inorganic cloys of high plasticity, fat clays.
		OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils.

Depth through which sampler is driven

Relatively undisturbed sample

No sample recovered

Static water level observed in well/boring

Initial water level observed in boring

S-10 Sample number

Sand pack

Bentonite

Neat cement

Caved native soil

Blank PVC

Machine-slotted PVC

P.I.D. Photoionization detector

Stratigraphic contact

Gradational contact

Inferred contact

BLOWS REPRESENT THE NUMBER OF BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES TO DRIVE THE SAMPLER THROUGH EACH 6 INCHES OF AN 18-INCH PENETRATION.

GRADATIONAL AND INFERRED CONTACT LINES SEPARATING UNITS ON THE LOG REPRESENT APPROXIMATE BOUNDARIES ONLY. ACTUAL BOUNDARIES MAY BE GRADUAL. LOGS REPRESENT SUBSURFACE CONDITIONS AT THE BORING LOCATION AT THE TIME OF DRILLING ONLY.

RESNA
Working to Restore Nature

PROJECT 69036.07

UNIFIED SOIL CLASSIFICATION SYSTEM AND SYMBOL KEY
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 3A

01-543D 01N04W34M17

Depth of boring: 29 feet Diameter of boring: 10 inches Date drilled: 11/24/92

Well depth: 25-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 8-1/2 to 25-1/2 feet Filter pack: #3 Sand Slot size: 0.020-inch

Drilling Company: Bayland Drilling Driller: John and Tom

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt-covered surface.	
0				GC	Asphalt (4 inches).	
					Clayey gravel, brown, damp, dense: baserock.	
2				ML	Sandy silt with clay, dark brown, damp, low plasticity, stiff.	
4				CL	Sandy clay, brown, damp, medium plasticity, very stiff.	
6	S-5.5	5 8 11	0	SC	Clayey sand, fine- to medium-grained, trace fine gravel, brown, damp, medium dense.	
8						
10	S-9.5	11 12 14	0		Increasing gravel.	
	S-11	3 8 8	0	GC	Clayey gravel with sand, brown mottled orange and black, moist, medium dense.	
12						
14				SP-SC	Gravelly sand with clay, medium- to coarse-grained sand, brown, very moist to wet, medium dense.	
16	S-15.5	5 8 10	0			
18	S-18.5	6 9 10	0	SM/ML	Silty sand, fine-grained, light gray mottled orange, wet, medium dense; interbedded with sandy silt and clay, light gray mottled orange, moist to wet, low plasticity, very stiff.	
20						

(Section continues downward)

RESNA
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PROJECT 69036.07

LOG OF BORING B-20/MW-4
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
4A

01-543D

01N 04W 34M17

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SM/ML	Silty sand, fine-grained, light gray mottled orange, wet medium dense; interbedded with sandy silt and clay, light gray mottled orange, moist to wet, low plasticity, very stiff.	
24	S-24.5	10 11 12	0		Increasing silt, moist.	
26	S-26.5	8 15 25	0			
28	S-28	10 25 50/6"	0	SP	Gravelly sand, fine- to medium-grained sand, orange-brown, damp, dense.	
30					Total depth = 29 feet.	
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

RESNA
Working to Restore Nature

PROJECT 69036.07

LOG OF BORING B-20/MW-4
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
5A

01-543E 01N04W34M18

Depth of boring: 26-1/2 feet Diameter of boring: 10 inches Date drilled: 11/24/92

Well depth: 25 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 8-1/2 to 25 feet Filter pack: #3 Sand Slot size: 0.020-inch

Drilling Company: Bayland Drilling Driller: John and Tom

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt-covered surface.	
0				GP	Asphalt (4 inches).	
					Sandy gravel, gray, damp, dense: baserock.	
2				CL	Sandy clay, dark brown, damp, medium plasticity, stiff.	
					Color change to brown	
4						
6	S-5.5	4 6 9	0			
				GC	Clayey gravel with sand, brown with black and orange mottling, damp, medium dense.	
8						
10	S-10.5	9 10 14	0			
12						
				SP-SC	Gravelly sand with clay, fine- to medium-grained sand, orange-brown, very moist to wet, medium dense.	
14						
16	S-15.5	6 9 11	0			
18						
20	S-20.5	15 25 30	0			

(Section continues downward)

RESNA Working to Restore Nature

PROJECT 69036.07

LOG OF BORING B-21/MW-5

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 6A

01-543E 01N 04W 34M18

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SP-SC	Gravelly sand with clay, fine- to medium-grained sand, orange-brown, very moist to wet, medium dense.	
24				SM/ML	Silty sand, fine-grained, light gray mottled orange, moist, medium dense; interbedded with sandy silt and clay, light gray mottled orange, damp, low plasticity, very stiff.	
26	S-26	8 11 12	0			
					Total depth = 26-1/2 feet.	
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

RESNA
Working to Restore Nature

PROJECT 69036.07

LOG OF BORING B-21/MW-5
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
7A

01-543F 01N04W34M18

Depth of boring: 26-1/2 feet Diameter of boring: 8 inches Date drilled: 11/25/92

Well depth: 25 feet Material type: Sch 40 PVC Casing diameter: 2 inches

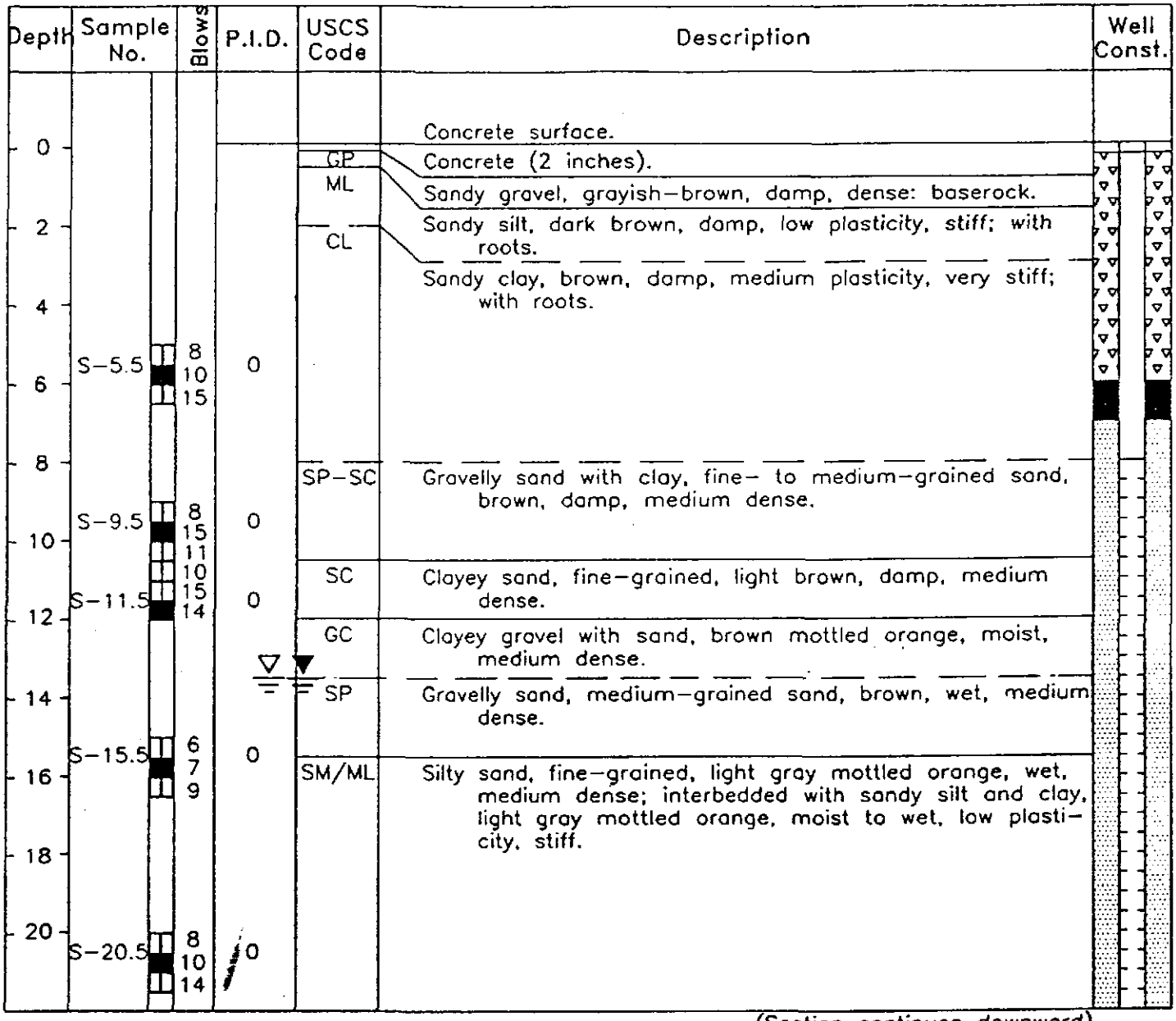
Screen interval: 8 to 25 feet Filter pack: #3 Sand Slot size: 0.020-inch

Drilling Company: Bayland Drilling Driller: John and Tom

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA



(Section continues downward)

RESNA
Working to Restore Nature

PROJECT 69036.07

LOG OF BORING B-22/MW-6

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 8A

01-543 F

01N04W-34M1

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SM/ML	Silty sand, fine-grained, light gray mottled orange, wet, medium dense; interbedded with sandy silt and clay, light gray mottled orange, moist to wet, low plasticity, stiff. With gravel.	
24						
26	S-26	5 6 7	0		Increasing silt; moist to damp	
					Total depth = 26-1/2 feet.	
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

RESNA
Working to Restore Nature

PROJECT 69036.07

LOG OF BORING B-22/MW-6
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
9A

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

01-444X IN/7W 34M'L

Field location of boring: (See Plate 2)	Project No.: 7666	Date: 01/30/90	Boring No: S-1
	Client: Shell Oil Company		
	Location: 999 San Pablo Avenue		
	City: Albany, California		Sheet 1 of 1
	Logged by: M.J.J.	Driller: Bayland	
	Casing installation data:		
Drilling method: Hollow-Stem Auger			
Hole diameter: 8-Inches	Top of Box Elevation: 41.48		Datum: MSL
	Water Level: 9.5'		
	Time: 10:00		
	Date: 01/30/90		

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
								PAVEMENT SECTION - 0.5 feet
				1				
								FILL - Clay (CL) - black (5Y 2.5/1)
				2				
				3				
				4				
	100	S&H						SILTY CLAY (CL/ML) - dark greenish grey (5GY 4/1),
1.0	100	push	S-1-5	5				medium stiff, damp; 70% clay; 30% silt; 10% fine sand;
	200							no chemical odor.
				6				
				7				
				8				
				9				
	100	S&H						SAND with GRAVEL (SP-SM) - olive (5Y 4/3), dense,
91	150	push	S-1-10	10		▽		saturated; 60% medium to coarse sand; 25% fine gravel;
	350-500							10% silt; moderate chemical odor.
				11				
								Softer drilling at 11.5 feet.
				12				
	3			13				SILT (ML) - yellowish brown (10YR 5/6), stiff, damp; 85%
0.0	6	S&H	S-1-14					silt; 15% fine sand; trace clay; no chemical odor.
	11			14				
								Bottom of boring at 14.0 feet.
				15				Bottom of sample at 14.0 feet.
								01/30/90
				16				
				17				
				18				
				19				
				20				

Remarks: OVM Readings taken 02/06/90.

GSI GeoStrategies Inc.

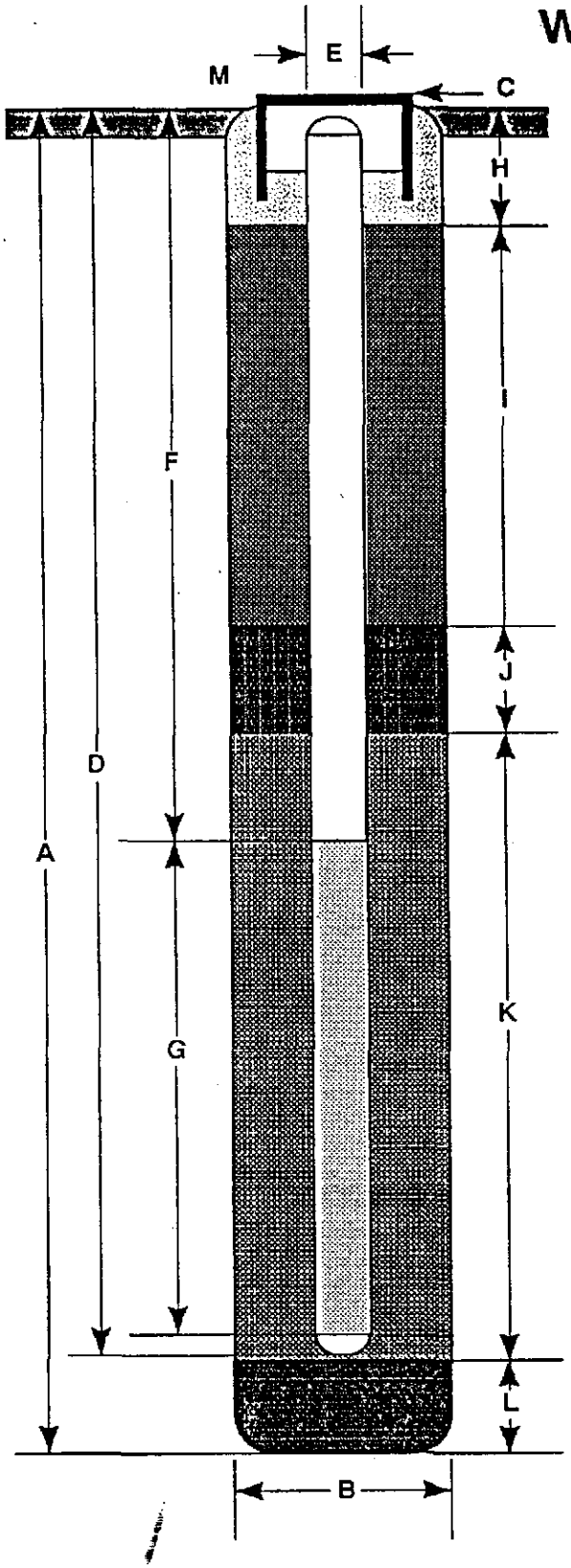
Log of Boring

BORING NO. S-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CWP 06/12/92	02/90		

01-444A 1N/4W 34M1 C

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 14.0 ft.

B Diameter of Boring 8 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 41.48 ft.
[X] Referenced to Mean Sea Level
[ ] Referenced to Project Datum

D Casing Length 11.5 ft.
Material Schedule 40 PVC

E Casing Diameter 3.0 in.

F Depth to Top Perforations 6.0 ft.

G Perforated Length 5.0 ft.
Perforated Interval from 6.0 to 11.0 ft.
Perforation Type Machine Slot
Perforation Size 0.020 in.

H Surface Seal from 0.5 to 1.0 ft.
Seal Material Concrete

I Backfill from 1.0 to 4.0 ft.
Backfill Material Cement Grout

J Seal from 4.0 to 5.0 ft.
Seal Material Bentonite

K Gravel Pack from 5.0 to 11.5 ft.
Pack Material #2/12 Lonestar sand

L Bottom Seal 3.5 ft.
Seal Material Bentonite

M

Note: Depths measured from initial ground surface.

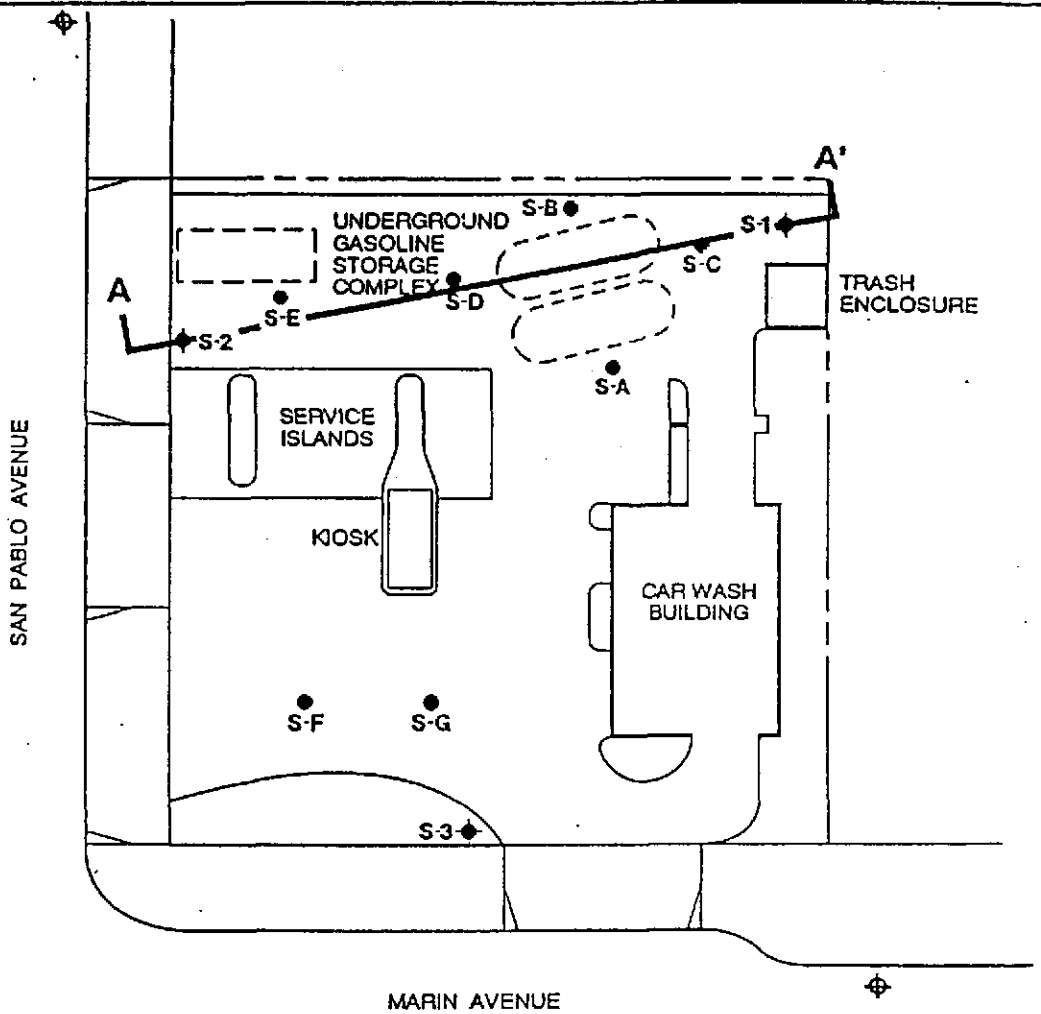
GSI GeoStrategies Inc.

Well Construction Detail

WELL NO. S-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CMP CEG 12/92	3/90		

01-444X 1N/4W 34M 2,3,4



EXPLANATION

- ✦ S-1 — Ground-water monitoring well location
- ● S-A — Soil boring location
- ⌖ — Proposed ground-water monitoring well location
- A ⌐ — Cross-section

N

0 40 80

Scale in Feet

GeoStrategies Inc.

Site Plan
Shell Service Station
999 San Pablo Avenue
Albany, California

PLATE 2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CMP CEG 1762	3/90		

Lic # CST 374 152

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

D1-444Y 1N/4W 34M3

Field location of boring: (See Plate 2)

Project No.: 7666	Date: 01/30/90	Boring No: S-2	
Client: Shell Oil Company			
Location: 999 San Pablo Avenue			
City: Albany, California		Sheet 1 of 1	
Logged by: M.J.J.	Driller: Bayland		
Casing installation data:			
Drilling method: Hollow-Stem Auger			
Hole diameter: 8-Inches	Top of Box Elevation: 40.73	Datum: MSL	

Water Level	9.5'			
Time	13:00			
Date	01/30/90			

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				PAVEMENT SECTION - 0.5 feet
								FILL - Clay (CL) - black (5Y 2.5/1), damp, medium stiff; no chemical odor.
				2				
				3				FILL - Gravel with Sand (GP) - grey (10YR 5/1), moist, loose; 75% coarse gravel; 20% coarse sand; trace silt; trace clay; strong chemical odor.
				4				SILTY CLAY (CL-ML) - olive brown (2.5Y 4/4), damp, stiff; 70% clay; 30% silt; medium plasticity; no chemical odor.
	100	S&H						
1.0	100	push	S-2-5	5				
	150			6				
				7				
				8				Driller noted change at 8.5 feet.
				9				
	100	S&H						SAND with SILT and SAND (SP-SM) - olive grey (5Y 4/2), dense, saturated; 75% medium to coarse sand; 10% silt; strong chemical odor. (interbeds of Silty Clay - 5 inches thick)
134	100-500	push	S-2-10	10				
	100-50			11				
				12				SILTY SAND with GRAVEL (SM) - yellowish brown (10YR 5/6), medium dense, damp; 50% medium to coarse sand; 30% silt; 20% fine sand; no chemical odor.
				13				
	10			14				
0.0	12	S&H	S-2-15	15				SILT (ML) - yellowish brown (10YR 5/6), stiff, damp; 85% silt; 15% fine sand; trace clay; no chemical odor.
	15			16				Bottom of boring at 15.0 feet.
				17				Bottom of sample at 15.0 feet.
				18				01/30/90
				19				
				20				

Remarks: Backfilled with bentonite to 11.5 feet.
OVM Readings taken 02/06/90.

Log of Boring

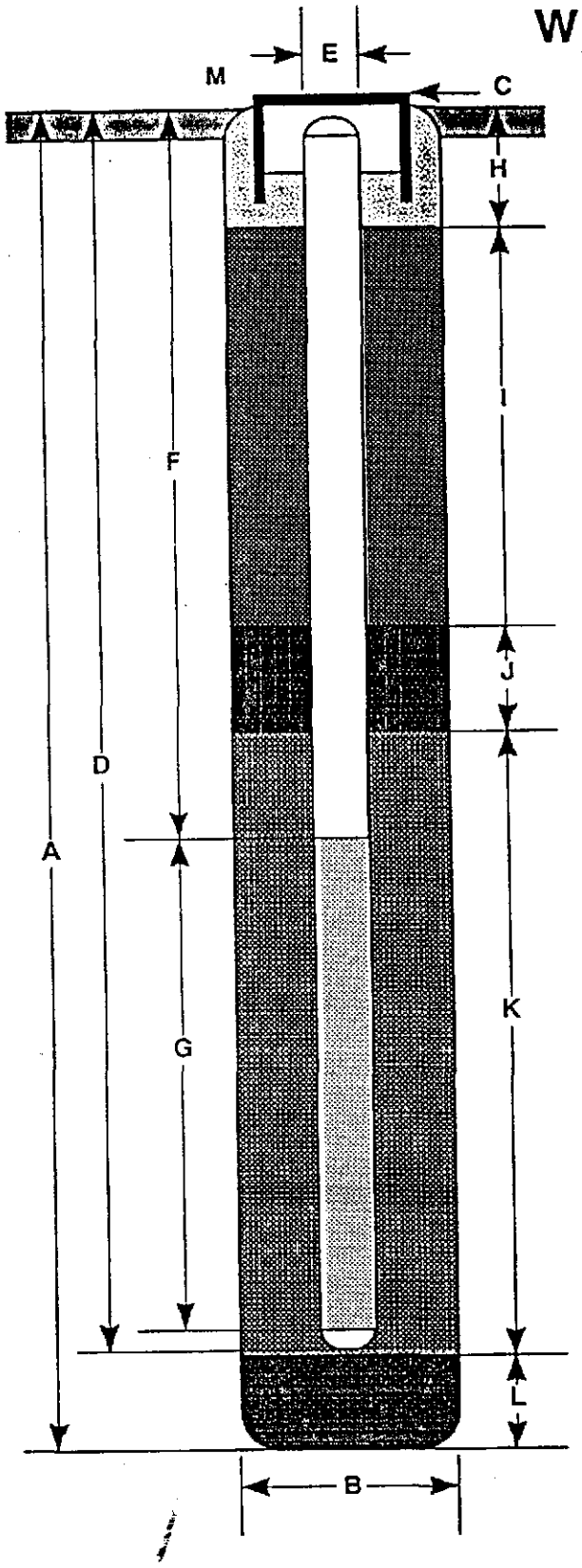
BORING NO. S-2

GSI GeoStrategies Inc.

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CEG 12/92	02/90		

01-4447

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 15.0 ft.

B Diameter of Boring 8 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 40.73 ft.
[X] Referenced to Mean Sea Level
[ ] Referenced to Project Datum

D Casing Length 12.0 ft.
Material Schedule 40 PVC

E Casing Diameter 3.0 in.

F Depth to Top Perforations 6.0 ft.

G Perforated Length 5.5 ft.
Perforated Interval from 6.0 to 11.5 ft.
Perforation Type Machine Slot
Perforation Size 0.020 in.

H Surface Seal from 0.5 to 1.0 ft.
Seal Material Concrete

I Backfill from 1.0 to 4.0 ft.
Backfill Material Cement Grout

J Seal from 4.0 to 5.0 ft.
Seal Material Bentonite

K Gravel Pack from 5.0 to 12.0 ft.
Pack Material #2/12 Lonestar sand

L Bottom Seal 3.0 ft.
Seal Material Bentonite

M

Note: Depths measured from initial ground surface.

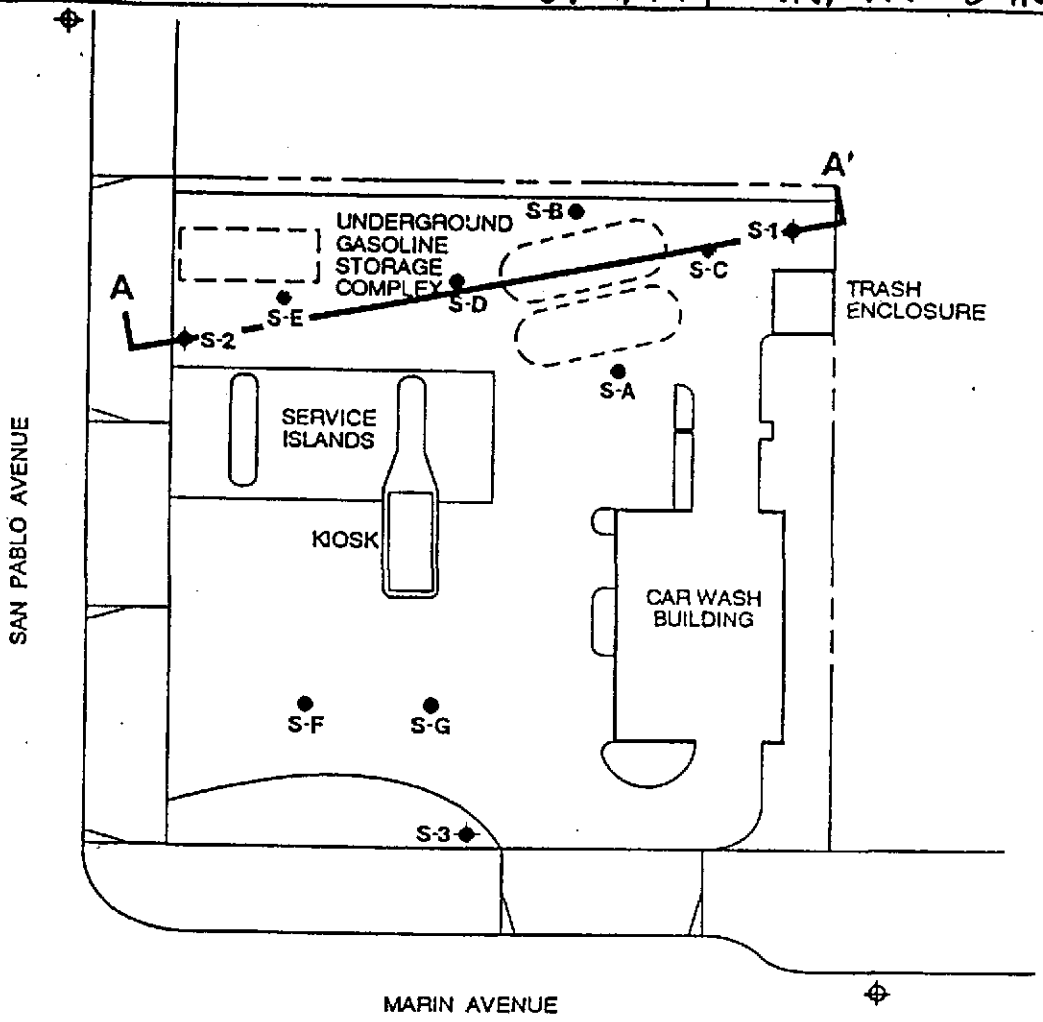
GSI GeoStrategies Inc.

Well Construction Detail

WELL NO. S-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	Dmp CEG 1262	3/90		

01-4444 1N/4W 34M 2,3,4



EXPLANATION

- S-1 — Ground-water monitoring well location
- S-A — Soil boring location
- Proposed ground-water monitoring well location
- A — Cross-section

N

0 40 80

Scale in Feet

GeoStrategies Inc.

Site Plan
Shell Service Station
999 San Pablo Avenue
Albany, California

PLATE 2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CWP CEG 1262	3/90		

Lic # CST 374 152

01-444 E 1N/4W 34MH

Field location of boring: (See Plate 2)	Project No.: 7666	Date: 01/30/90	Boring No: S-3
	Client: Shell Oil Company		
	Location: 999 San Pablo Avenue		
	City: Albany, California		Sheet 1 of 2
	Logged by: M.J.J.	Driller: Bayland	
Drilling method: Hollow-Stem Auger	Casing installation data:		
Hole diameter: 8-Inches	Top of Box Elevation: 42.72	Datum: MSL	
	Water Level: 9.75'		
	Time: 9:40		
	Date: 01/30/90		

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				0				TOPSOIL - Peat and Clay
				1				
				2				FILL - Silty Clay (CL-ML) - black (5Y 2.5/1), medium stiff,
				3				damp; 90% rust stained pockets (0.25 inch diameter); no
				4				chemical odor.
				5				SILTY CLAY (CL-ML) - olive grey (5Y 4/2), soft, damp;
	100	S&H	S-3-	6				15% clay; 35% silt; medium plasticity; no chemical odor.
2.0	150	push	6.5					COLOR CHANGE to olive (5Y 4/3) at 5.0 feet.
	300	S&H		7				SAND with SILT (SW-SM) olive (5Y 4/4), dense, moist;
2.0	150	push						65% fine to coarse sand; 25% silt; 10% fine gravel; 10%
	500		S-3-8	8				silt; weak chemical odor.
								increasing gravel at 8.0 feet; saturated.
				9				
	100							
38	150		S-3-	10		▽ ▼		moderate chemical odor.
	450	S&H	10.5					
	10			11				
	12							SILTY SAND with GRAVEL (SM) - yellowish brown (10YR
0.0	19		S-3-12	12				5/8), very stiff, damp; 50% medium to coarse sand; 30%
				13				silt; 20% fine to coarse gravel; 5% clay; moderate to
								weak chemical odor.
				14				
	10							
0.0	17	S&H	S-3-	15				decreasing gravel at 15.0 feet.
	28		15.5					
				16				
				17				
				18				Softer at 18.0 feet.

Remarks: OVM Readings taken on 02/06/90.

GSI GeoStrategies Inc.

Log of Boring

BORING NO. S-3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CMP CEG 1262	02/90		

01-4427 1N/4W 34M4

Field location of boring: (See Plate 2)	Project No.: 7666	Date: 01/30/90	Boring No.: S-3
	Client: Shell Oil Company		
	Location: 999 San Pablo Avenue		
	City: Albany, California		Sheet 2 of 2
	Logged by: M.J.J.	Driller: Bayland	
	Casing installation data:		
Drilling method: Hollow-Stem Auger			
Hole diameter: 8-Inches	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
	8	S&H	S-3-	19				
0.0	12		19.5					no chemical odor.
	26			20				Bottom of boring at 20.5 feet.
								Bottom of sample at 20.5 feet.
				21				01/30/90
				22				
				23				
				24				
				25				
				26				
				27				
				28				
				29				
				30				
				31				
				32				
				33				
				34				
				35				
				36				
				37				
				38				

Remarks:

GeoStrategies Inc.

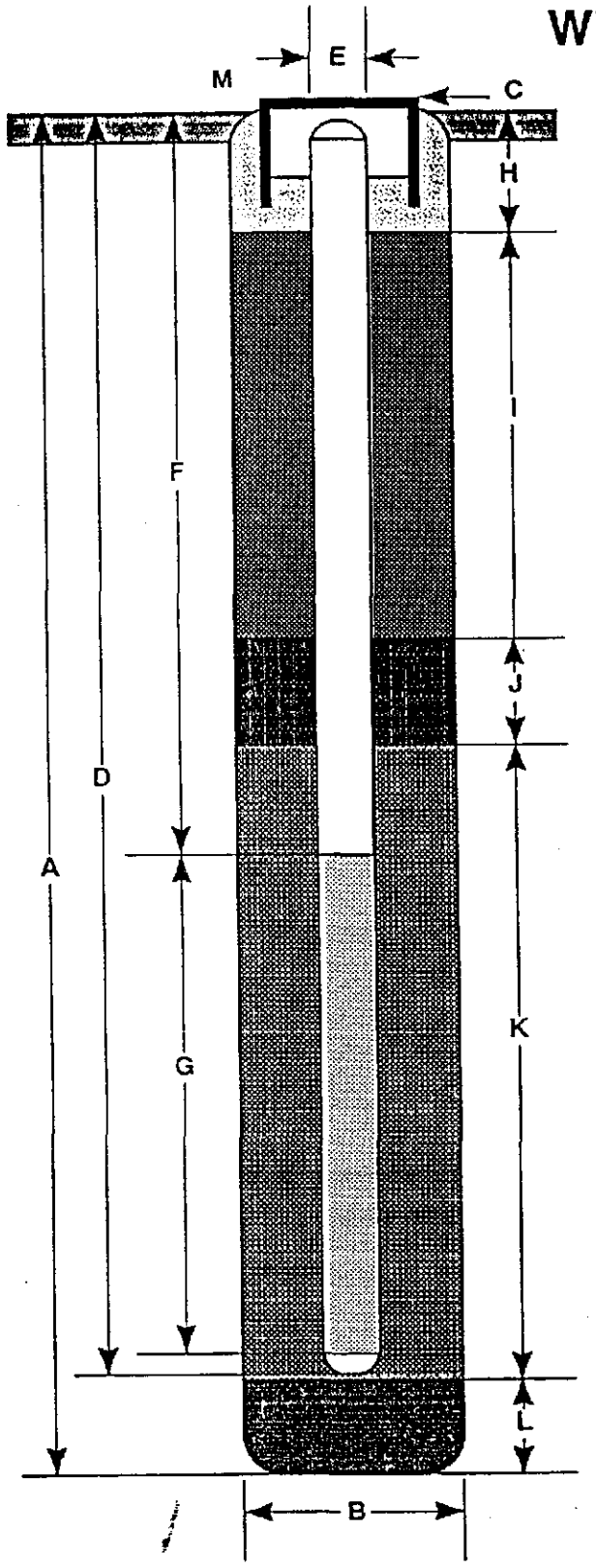
Log of Boring

BORING NO. S-3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CMP eeg 1262	02/90		

01-444Z 1N/4W 34M4

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 20.5 ft.

B Diameter of Boring 8 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 42.72 ft.
[X] Referenced to Mean Sea Level
[ ] Referenced to Project Datum

D Casing Length 12.0 ft.
Material Schedule 40 PVC

E Casing Diameter 3.0 in.

F Depth to Top Perforations 6.0 ft.

G Perforated Length 5.5 ft.
Perforated Interval from 6.0 to 11.5 ft.
Perforation Type Machine Slot
Perforation Size 0.020 in.

H Surface Seal from 0.5 to 1.0 ft.
Seal Material concrete

I Backfill from 1.0 to 4.0 ft.
Backfill Material Cement Grout

J Seal from 4.0 to 5.0 ft.
Seal Material Bentonite

K Gravel Pack from 5.0 to 12.0 ft.
Pack Material #2/12 Lonestar sand

L Bottom Seal 8.5 ft.
Seal Material Bentonite

M

Note: Depths measured from initial ground surface.

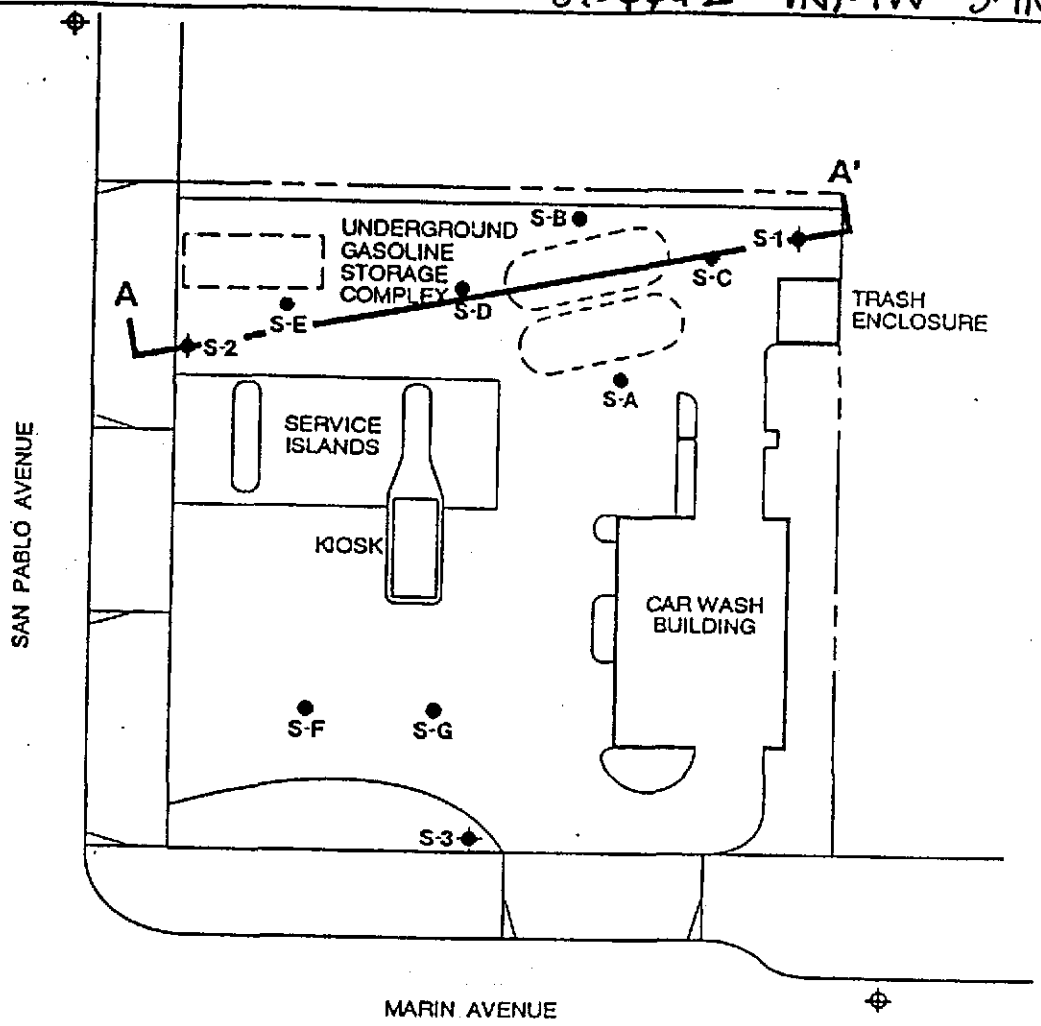
GeoStrategies Inc.

Well Construction Detail

WELL NO. S-3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	RMP CEG 4/92	3/90		

01-4447 1N/4W 34M 2,3,4



EXPLANATION

- ✦ S-1 — Ground-water monitoring well location
- ● S-A — Soil boring location
- ⌖ — Proposed ground-water monitoring well location
- A — Cross-section

N

0 40 80

Scale in Feet

GSI GeoStrategies Inc.

Site Plan
Shell Service Station
999 San Pablo Avenue
Albany, California

PLATE 2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7666	CMP CEG 1262	3/90		

Lic # CST 374 152

15

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED