bp

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STID
780

December 14, 2000

Mr. Amir K. Gholami
Alameda Country Health Care Services
Agency
1131 Harbor Bay Parkway, STE 250
Alameda, CA 94502-6577

RE: Former BP Oil Site No. 11107
18501 Hesperian Boulevard
San Lorenzo, CA

Direct: 425/251-0689
Cell: 206/919-5029
hootonst@bp.com
www.bp.com

Dear Mr. Gholami:

This transmits the *Subsurface Investigation Report* prepared on behalf of BP by Cambria Environmental Technology, Inc.

Please contact me at (425) 251-0689 if you have questions.

Sincerely,

Scott Hooton

attachment

cc: site file
David Camille - Tosco (w/attachment)

CAMBRIA

SUBSURFACE INVESTIGATION REPORT

BP Oil Site No. 11107
18501 Hesperian Boulevard
San Lorenzo, California
Cambria Project No. 852-1512-8

November 28, 2000

Prepared for:

BP Oil Company
Environmental Resources Management
295 S.W. 41st Street
Building 13, Suite N
Renton, Washington 98055

Prepared by:

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CAMBRIA

SUBSURFACE INVESTIGATION REPORT

BP Oil Site No. 11107
18501 Hesperian Boulevard
San Lorenzo, California
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November 28, 2000

INTRODUCTION

Cambria Environmental Technology, Inc. (Cambria) has prepared this *Subsurface Investigation Report* for the above-referenced former BP Oil Company (BP) site. The scope of work for the sampling activities was described in the *Investigation Work Plan* dated May 21, 1999, which was approved by the Alameda County Health Services Agency (ACHSA) in an August 10, 1999 letter. The purpose of the investigation was to further evaluate the distribution of petroleum hydrocarbons and methyl tert-butyl ether (MTBE) in soil and groundwater near the site. The following presents the site background, historical review, surface water body and water well survey, utility survey, sampling activities, fate and transport model, and conclusions and recommendations.

SITE BACKGROUND

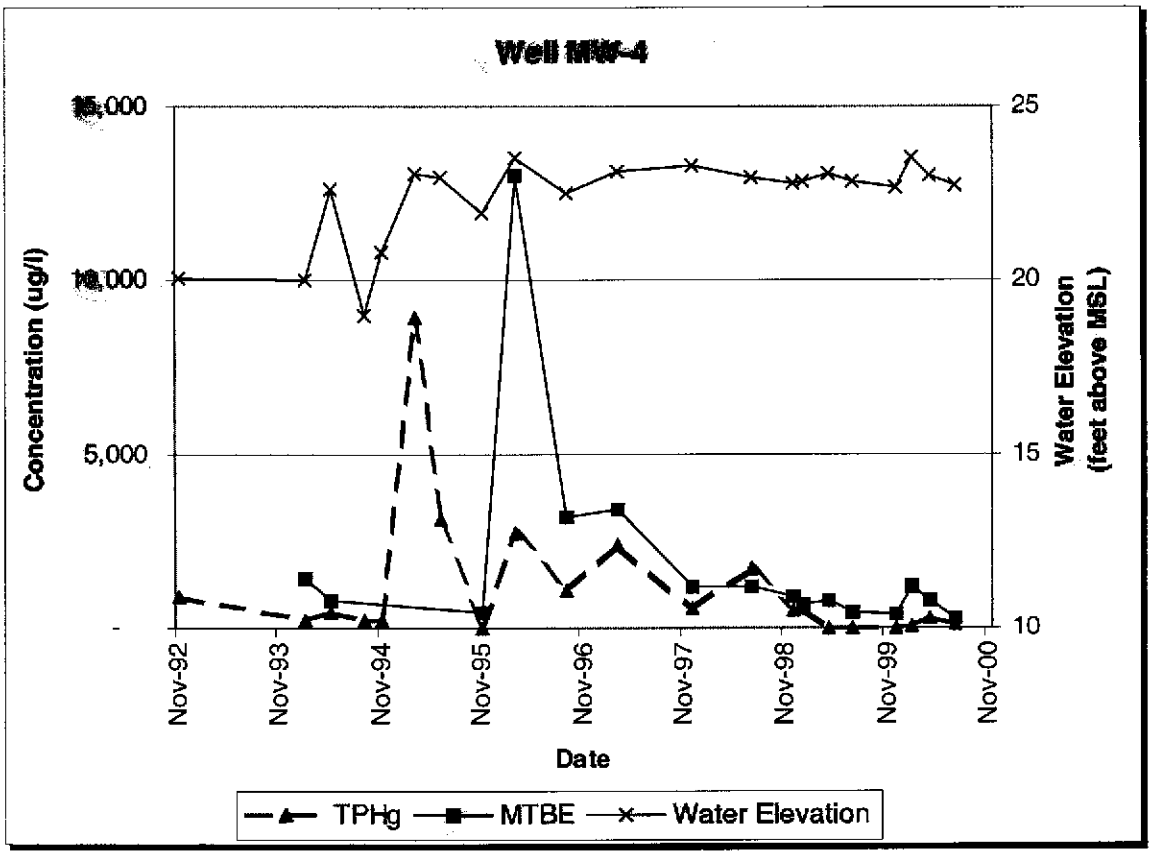
Site Description

The site is an active 76-branded gasoline retail outlet located at the southwest corner of Hesperian Boulevard and Bockman Road in San Lorenzo, California (see Figure 1). BP acquired the property from Mobil Oil Corporation in 1989. In 1994, BP transferred the property to TOSCO Marketing Company and has not operated the facility since that time.

The site vicinity is mixed commercial and residential. A bank is located north of the site and a dry cleaner is located west of the site. The site consists of a service station building, three gasoline underground storage tanks with associated piping and dispensers, and one used oil underground storage tank. Currently, seven monitoring wells exist at the site (see Figure 2).

Groundwater Monitoring

Based on the August 25, 2000 groundwater monitoring report, site wells have been sampled since November 1992 (see Appendix A). Total petroleum hydrocarbons as gasoline (TPHg) and MTBE have been reported in the wells located north of the underground storage tanks (onsite well MW-4 and MW-7 and offsite wells MW-5 and MW-6). As shown on the graph below, the MTBE concentrations in well MW-4 shows a decreasing trend since 13,000 micrograms per liter (µg/L) was reported in March 1996. Except for a few anomalies, no TPHg or MTBE were reported in samples collected from wells MW-1, MW-2 or MW-3, which are located south of the underground storage tanks. In addition, except for two detections in well MW-4 and one in well MW-7, less than 1.0 µg/L of benzene, toluene, ethylbenzene and xylenes (BTEX) have been reported in the site wells since 1997 (see Appendix A).



Site Hydrogeology

The site subsurface soils typically consist of up to 3 feet of fill material which is underlain by silts, silty sands, and sands to the total depth explored of 30 feet below ground surface (bgs). The depth to water at the site has ranged from 15 to 22 feet bgs. Based on the last eight quarterly monitoring events, groundwater typically flows toward the northwest at a horizontal hydraulic gradient of 0.003 to 0.006. Slug tests performed on the site wells indicate that the hydraulic conductivity ranged from 7.5×10^{-4} to 1.9×10^{-3} centimeters per second (cm/sec) (0.65 to 1.63 meters per day) with a geometric mean of 1.2×10^{-3} cm/sec (1.0 meters per day).

HISTORICAL REVIEW

Sanborn Map Review

Sanborn fire insurance maps covering the subject site and the surrounding area were requested from Environmental Data Resources, Inc. to identify land use in the area of the subject site (see Appendix B). Maps for the years 1957 and 1962 were provided. The Sanborn maps are divided in two, with the right half showing only the area between Bockman Road and Hacienda Avenue (formerly Hathaway Avenue) and immediately along Hesperian Boulevard, and the left half showing a section of Hesperian Boulevard located approximately 1,500 feet or more north of Hacienda Avenue. A street map has been included in Appendix B for reference.

1957 - This Sanborn map does not include the subject site; therefore, the historical use of the site can not be determined. A building located north of the site on the northwest corner of Bockman Road and Hesperian Boulevard, notes the use of gas and oil. The area on the west side of Hesperian Boulevard is undeveloped, except for the gas and oil facility, an apparently commercial building directly north of the oil and gas facility, and two small vacant buildings (marked "VAC") which are located approximately halfway between Bockman and Hathaway Avenue. The area on the east side of Hesperian Boulevard between Bockman Road and Hathaway Avenue is commercially developed. A small residential section is located south of Paseo Grande along Paseo Largavista, which is two blocks west of Hesperian Boulevard. A building marked "San Lorenzo Village Public School" is located northwest of Paseo Grande and approximately 2,000 feet from the subject site. No other municipal facilities or wells or other potential receptors were identified.

1962 – This Sanborn map has the same configuration as the 1957 map of the subject area. The commercial building and the vacant buildings noted in the 1957 map are not present. A new facility is located on the southwest corner of Hacienda Avenue (formerly Hathaway Avenue) which uses gas and oil. No additional municipal facilities or wells or other potential receptors were identified.

Aerial Photograph Review

Aerial photographs for the site vicinity were reviewed at Pacific Aerial Survey in Oakland, California. Photographs for the years of 1947, 1953, 1959, 1968, 1971, 1975, 1979, 1983, 1988, and 1996 were reviewed. The earliest photograph available for review was 1947. General land-use in the site vicinity is typically consistent with the findings of the Sanborn Map review and is noted in the following sections.

03/24/47 – The area appears to be either residential or agricultural. The only exceptions are the airport runway, and a small commercial district at the corner of Hesperian Boulevard and Paseo Grande. The Nimitz Freeway (Interstate 880) had not yet been built. The site appears to be an agricultural field. Due to the poor resolution of the photograph, a more detailed description of the property cannot be provided.

10/02/53 – The area west of the site across Via Arriba and along Bockman Road is residential except for the school yard which is present to date. Another school yard is shown on the southeast corner of Hacienda Avenue and Bengal Avenue. The area west of Hesperian Boulevard is largely residential. The area east of Hesperian Boulevard is a mixture of residential and agricultural, with commercial development north of the subject site. The site appears to be gasoline station. There appear to be service stations at the northwest corner of Bockman Road and Hesperian Boulevard, as well as at the northwest corner of Hacienda Avenue and Hesperian Boulevard. Other than the service station, the area along the west side of Hesperian Boulevard between Bockman Road and Hacienda Avenue is an open field.

07/07/59 – The area east of Hesperian Boulevard is more residential than in the 1953 photograph. There is a new school yard on the southeast corner of Bartlett Avenue and Royal Avenue. The site still appears to be a service station. No other significant changes to the surrounding area were noted.

07/05/68 – The Skywest Golf Course and the Airport Park are shown south of the site. The area east of Hesperian Boulevard is mostly residential. The east side of Hesperian Boulevard between Hacienda Avenue and Bartlett Avenue and some of the west side of Hesperian Boulevard near Hacienda Avenue are commercially developed. The service station on the northwest corner of Hacienda Avenue and Hesperian Boulevard is still present; however, the station across Bockman Road from the site (northwest corner of Bockman Road and Hesperian Boulevard) is an open field. The site still appears to be a service station.

05/19/71 – The building located immediately adjacent to the site along Bockman Road, which is currently a dry cleaner, is present. No other significant changes to the surrounding area were noted.

05/19/75 – The area along the west side of Hesperian Boulevard is commercially developed, except for a small area on the northwest corner of Bockman Road and Hesperian Boulevard. No other significant changes to the surrounding area were noted.

09/14/79 - No significant changes to the site and surrounding area were noted.

06/21/83 - No significant changes to the site and surrounding area were noted.

03/30/88 - No significant changes to the site and surrounding area were noted.

10/08/96 – The last of the vacant sections west of Hesperian Boulevard have been residentially or commercially developed. The only apparent service stations are at the site and on the southwest corner of Hacienda Avenue and Hesperian Boulevard.

Parcel Map Review

Parcel maps and property owner information were acquired from the Alameda County Assessor's office. Included in Appendix C is a table summarizing the assessor's parcel number, parcel use code, parcel address information, parcel owner name and parcel owner's mailing address for the parcels near the site. Also included is a summary of use codes and the assessor's parcel maps.

The information reviewed indicates that the north side of Bockman Road is underlain by a sanitary sewer, a telephone line, and a gas main. The gas main crosses Bockman Road and connects to a line under the west side of Hesperian Boulevard. The telephone line crosses Bockman Road and connects to an overhead utility line. A water main is located beneath the south side of Bockman Road which connects to a water main under the west side of Hesperian Boulevard. Onsite electrical lines were identified between the station building, the underground storage tanks, the dispenser islands, several light poles and the station sign. Another onsite electrical line connects a utility pole to the station building. Onsite water, telephone and sanitary sewer lines run beneath the northwest portion of the property. Depths of these utilities were not determined based on the available information.

SAMPLING ACTIVITIES

Sampling Procedures

Personnel Present: Jacquelyn Jones, Cambria Geologist, working under the supervision of Khaled Rahman, California Registered Geologist. Sampling procedures are summarized in Appendix E.

Permits: Alameda County Public Works Agency (ACPWA) Permit No. 99WR482. ACPWA Roadway Encroachment Permit No. ROO-LD1440 (see Appendix F).

Drilling Company: V&W Drilling of Rio Vista, California (C-57 License No. 720904).

Drilling Date: November 8, 1999.

Boring Locations: Four of the borings (CB-1 through CB-4) were located in the sidewalk along the north side of Bockman Road, between Via Arriba and Hesperian Boulevard. The fifth boring (CB-5) was located in the parking lane of the north side of Bockman Road at the corner of Via Arriba. Each of these borings were concrete cored to reduce potential sidewalk damage. Boring locations are shown on Figure 2.

Drilling Method: Direct push Geoprobe™ rig.

Sampling Methods: Soil was continuously cored using Geoprobe™ sampling equipment. Groundwater was siphoned from the open borehole using plastic tubing.

Boring Depths: Each boring was advanced to 24 feet bgs.

Groundwater Depths: Groundwater was first-encountered at approximately 16 feet bgs in borings CB-1 through CB-5.

Soil Types Encountered: Subsurface soils encountered during this investigation reported sandy silts, gravelly sandy silts, clayey silts, silty sands, silty gravelly sands, sands and gravelly sands to an explored depth of 24 feet bgs (see Appendix G).

Chemical Analysis: Selected soil and grab water samples were analyzed for gasoline range [redacted] (GRO [redacted]) using modified EPA Method 8015, and BTEX and MTBE using EPA Method 8260 by Pace Analytical Services of Long Beach, California. In addition, selected soil samples were analyzed for total organic carbon (TOC). The analytical results are summarized on Tables 2 and 3. Analytical reports are presented in Appendix H.

Backfill Method: Borings were backfilled with cement grout to match the existing grade.

Sampling Results

The soil types encountered at the five boring locations were consistent with the previous investigations. Groundwater was first encountered at 15 to 16 feet bgs. No benzene, GRO and MTBE were reported in the analyzed soil samples. Grab water samples from borings CB-1 through CB-5 reported GRO concentrations ranging from 670 µg/L to 1,800 µg/L (see Table 3). No benzene or MTBE were reported in groundwater samples from the five borings. Based on these results, the extent of benzene and MTBE has been defined in soil and groundwater.

FATE AND TRANSPORT MODEL

Fate and transport modeling was performed to evaluate the potential for MTBE migration beneath the site and vicinity. BTEX constituents have not been consistently reported at the site and were not modeled. The AT123D model modified for input of source concentrations rather than mass loading was used. The primary assumptions of the model include: (1) the aquifer thickness is homogeneous, isotropic, and comprised of a single, horizontal layer of uniform thickness, and (2) the hydraulic gradient is uniform and constant within the model domain.

Input parameters were estimated from the previous hydraulic testing, groundwater monitoring and other available data. These parameters are summarized below on Table A and presented in Appendix I.

Table A – Model Input Parameters

Parameter	Model A	Model B	Average	Comment
Hydraulic conductivity (meters per day)	0.65	1.63	1.0	Range and geometric mean of hydraulic testing results
Hydraulic gradient	0.003	0.006	0.004	Range and average over last 8 monitoring events
Effective porosity	0.30	0.30	0.30	Typical of silty sand
Bulk density (grams per milliliter)	1.7	1.7	1.7	Typical of silty sand
Fraction of organic carbon	0.00016	0.00016	0.00016	Analytical result below method reporting limit; half of limit used (see Table 2, boring CB-3)
MTBE Concentration (µg/L)	13,000	13,000	13,000	Maximum historical tabulated in August 25, 2000 monitoring report
Calculated distance to 5.0 µg/L MTBE (meters/feet)	*110/360 11/36*	*225/740 13/43*	*155/510 12/39*	*Downgradient Crossgradient*

The release of MTBE was simulated in the model by introducing a steady concentration over a fixed time interval and source area. A source duration of 1 year was used based on the duration of the peak MTBE concentrations. The source area was assumed to encompass the entire tank complex with dimensions of 1 meter thick by 10 meters long by 10 meters wide. The model simulated migration through shallow water (upper 15 feet of water-bearing zone) over 100 years, calculated dispersivity values, and assumed no degradation of MTBE.

Under the assumed conditions, the fate and transport modeling results indicate that MTBE will not exceed 5.0 µg/L beyond approximately 360 to 740 feet downgradient of the source area and 36 to 43 feet crossgradient of the source area (see Appendix I). No [illegible] identified within this area. These results should be reviewed if monitoring results indicate MTBE concentrations above the historic site maximum of 13,000 µg/L, groundwater flow direction fluctuates from northwestward, or other site conditions change.

CONCLUSIONS AND RECOMMENDATIONS

The site has been a gasoline retail since at least the early 1950s, and is located in a mixed commercial and residential area. The bank property, located across Bockman Road from the site, was a gasoline station between about 1953 and 1968 based on review of aerial photographs. Well survey results identified 27 domestic or irrigation wells located with ½-mile of the site.

Hydrocarbons and MTBE have been reported in soil and groundwater beneath the site. Groundwater monitoring results indicate that these constituents are attenuating with time. Based on their absence in soil and water samples collected from borings located across Bockman Road from the site, the extent of benzene and MTBE is limited. None of the identified water wells are located within the area anticipated to contain more than 5.0 µg/L of MTBE based on fate and transport modeling results.

An additional year of quarterly groundwater monitoring is recommended to evaluate site conditions including hydrocarbon and MTBE concentration trends, and groundwater flow direction and gradient. During each event, the seven site wells will be gauged and wells MW-4, MW-5, MW-6 and MW-7 will be sampled for TPHg, BTEX and MTBE. If hydrocarbon and MTBE concentration trends are stable to decreasing, and the flow direction and gradient are consistent with previous monitoring events, the final groundwater monitoring event will be conducted during fourth quarter 2001 and no further action/case closure will be requested. Upon ACHSA concurrence with no further action/case closure, the wells will either be destroyed or transferred to TOSCO.

ATTACHMENTS

Figure 1 – Vicinity Map
Figure 2 – Soil Boring Location Map
Figure 3 – Well Survey Map
Figure 4 – Utility Survey Map

Table 1 – Well Survey Data
Table 2 – Soil Analytical Data
Table 3 – Groundwater Analytical Data

Appendix A – Background Data
Appendix B – Sanborn Maps
Appendix C – Parcel Data
Appendix D – Well Survey Data
Appendix E – Standard Field Procedures for Geoprobe™ Sampling
Appendix F – Drilling Permits
Appendix G – Boring Logs
Appendix H – Analytical Laboratory Reports
Appendix I – Fate and Transport Modeling Output

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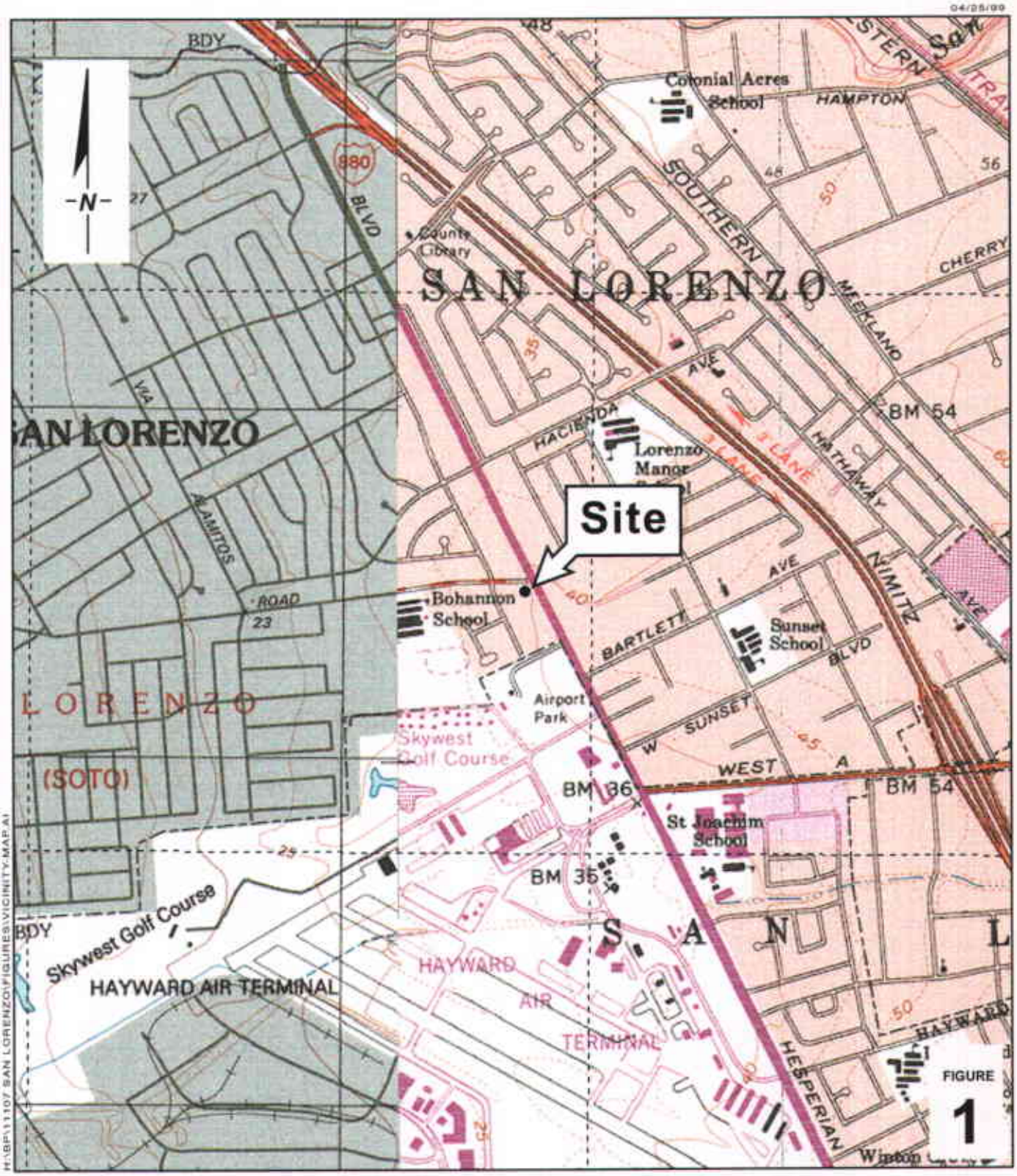
FIGURES



BP Site No. 11107

18501 Hesperian Boulevard

San Lorenzo, California

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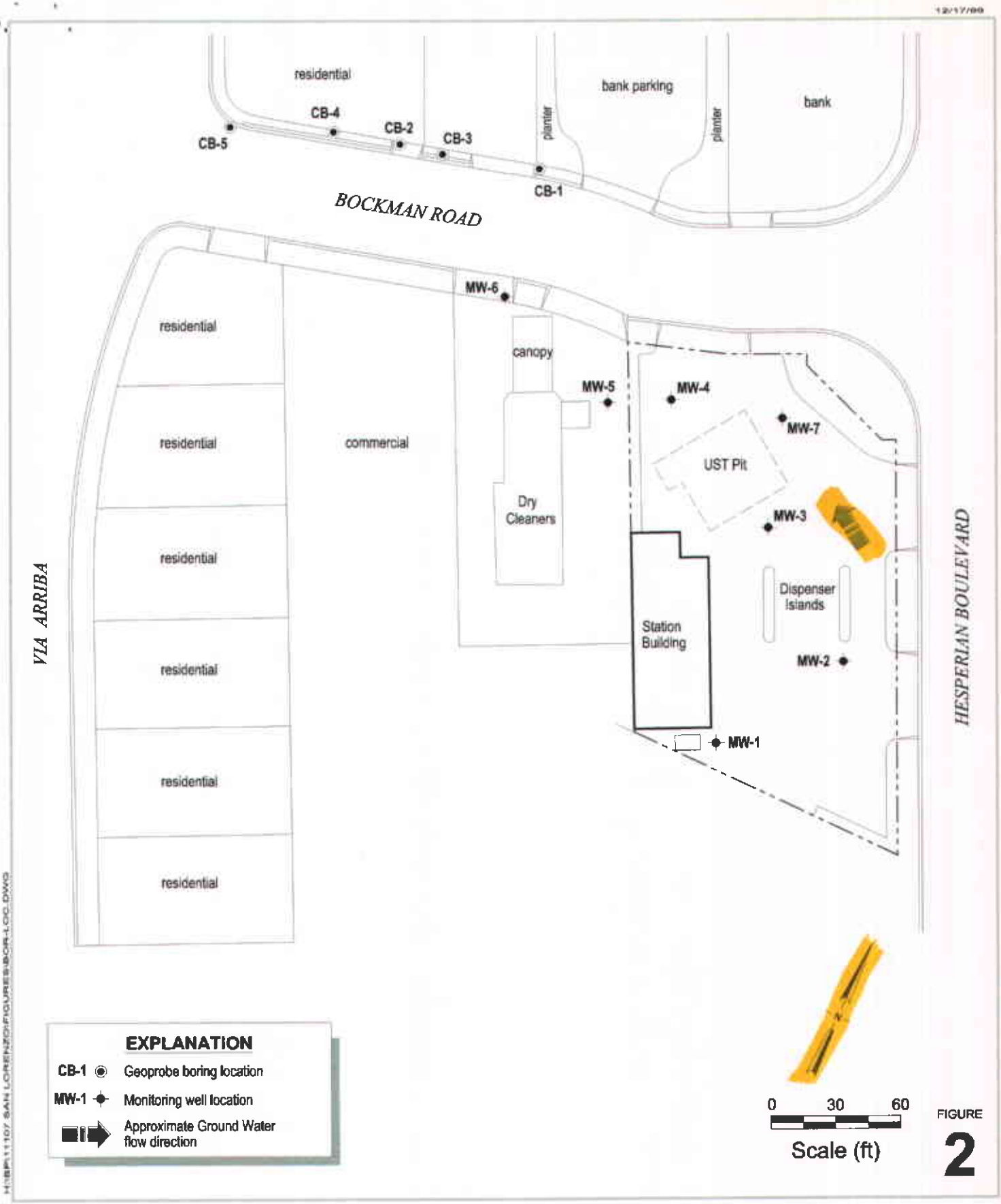
Vicinity Map



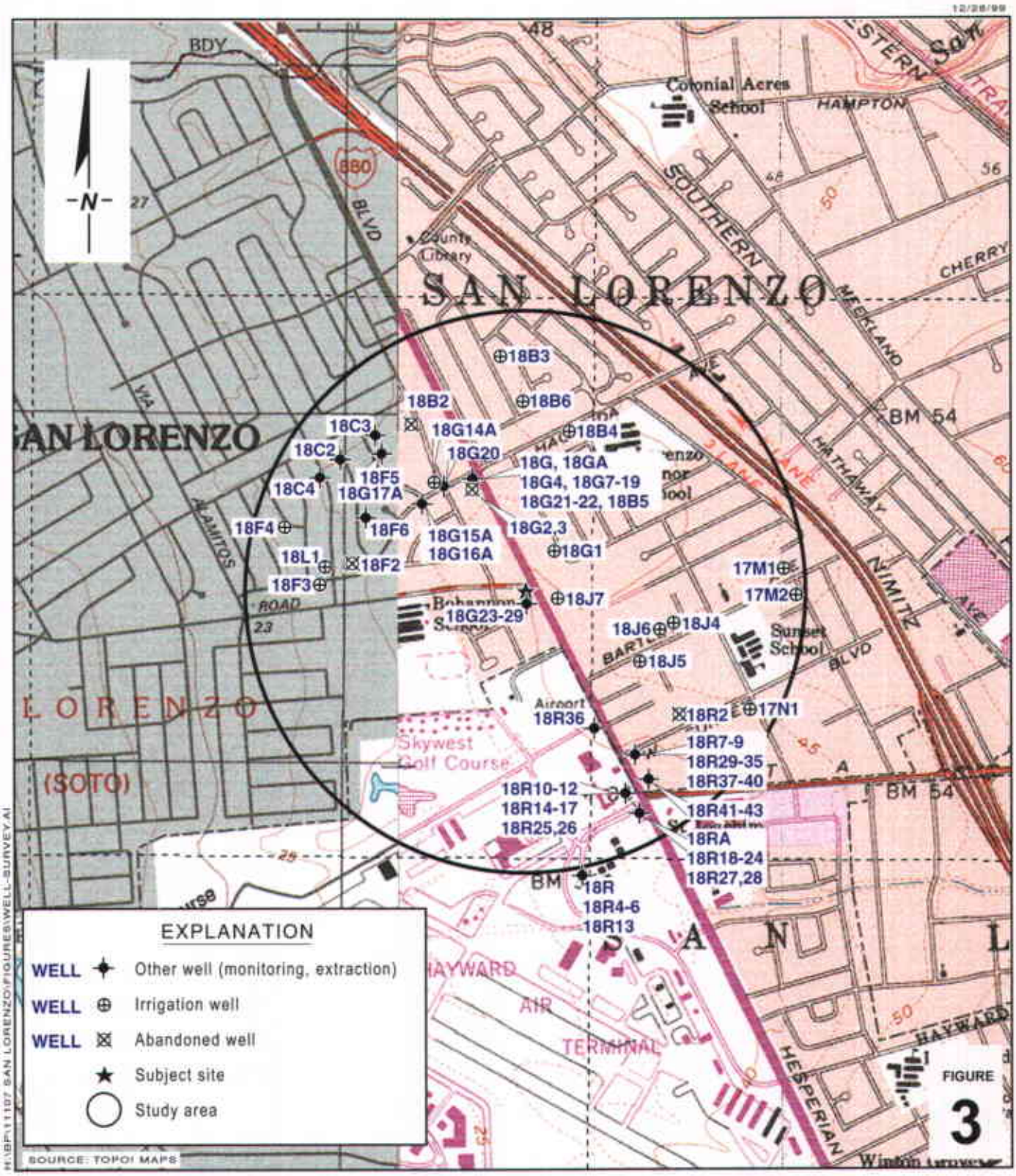
BP Site No. 11107

18501 Hesperian Boulevard

San Lorenzo, California

CAMBRIA

Soil Boring Location Map



BP Site No. 11107

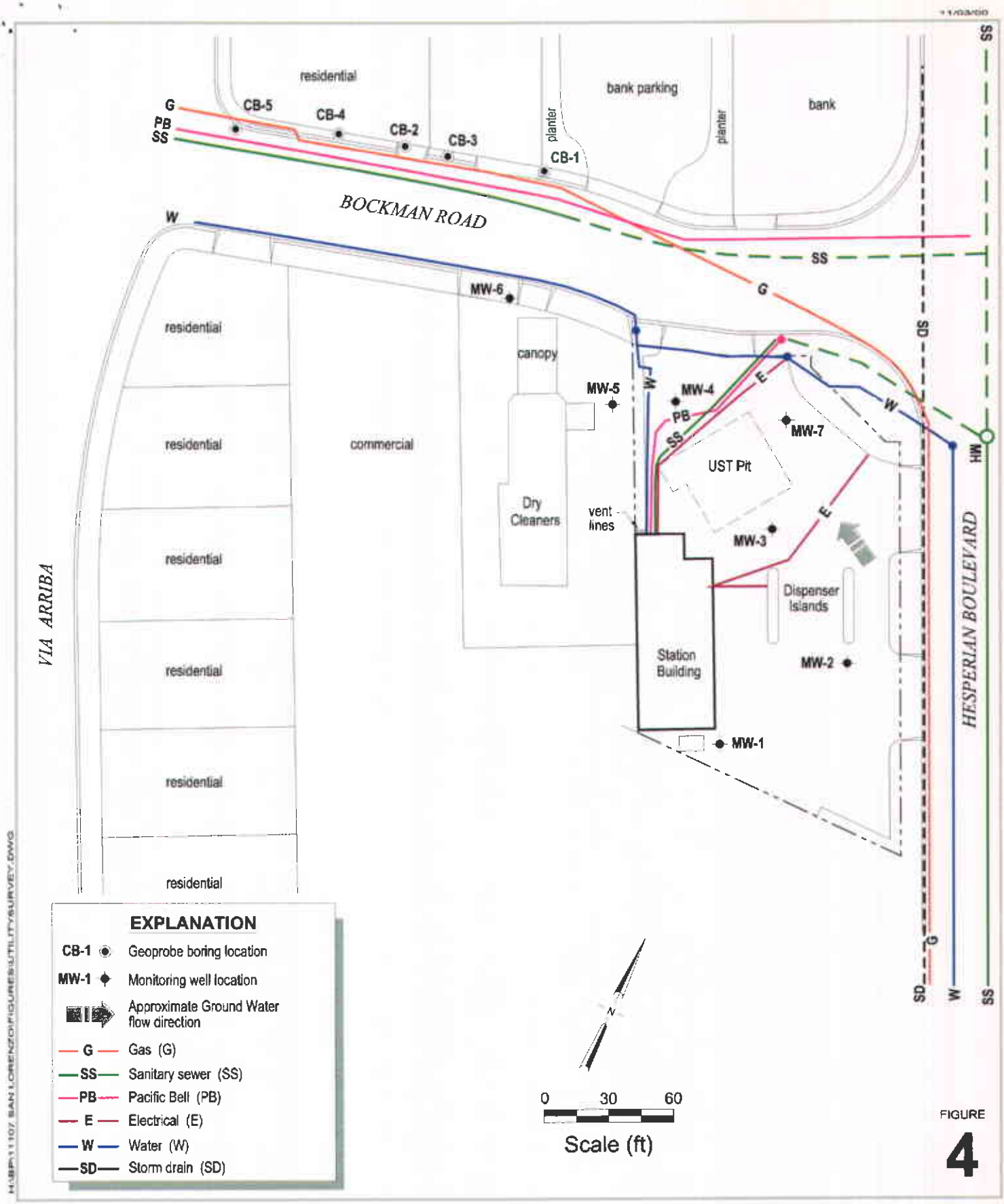
18501 Hesperian Boulevard

San Lorenzo, California

CAMBRIA

Well Survey Map

1/2 Mile Radius



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BP Site No. 11107

18501 Hesperian Boulevard

San Lorenzo, California

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Utility Survey Map

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TABLES

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Table 1. Well Survey Data - BP Oil Site No. 11107,
18501 Hesperian Boulevard, San Lorenzo, California

Map Code	Map ID	T/R Section	Owner	Address	City	Use	Drill Date	Total Depth
NM	---	3S/2W 17D	Ghiglione	24 Via Hermosa	Hayward	IRR	00/53	50
NM	---	3S/2W 17D	Ledbetter	19288 Medford Court	Hayward	IRR	00/55	45
NM	---	3S/2W 17D	R.P. King	---	Hayward	IRR	10/47	180
NM	---	3S/2W 17E	Tom Cawata	---	Hayward	UNK	04/49	104
NM	---	3S/2W 17E	Donald H. Rude	1330 Solano Street	San Lorenzo	DOM	04/53	61
NM	---	3S/2W 17E	Alex Farkas	1338 Solano Street	San Leandro	DOM	04/53	61
M	17M1	3S/2W 17M	Leymura	421 Bartlett Street	Hayward	DOM	00/48	60
M	17M2	3S/2W 17M	Fernandes	20555 Garden Avenue	Hayward	IRR	00/53	72
NM	---	3S/2W 17N	Mohawk Gas Station	3257 A Street	Hayward	IRR	00/28	85
M	17N1	3S/2W 17N	Manuel George	20859 Royal Avenue	Hayward	DOM	07/46	255
M	18B2	3S/2W 18B	---	575 Quigley	San Lorenzo	DES	---	44
M	18B3	3S/2W 18B	Edward Vieira	17162 Via Primero	San Lorenzo	IRR	02/78	40
M	18B4	3S/2W 18B	Robert Reeder	396 Hacienda Avenue	San Lorenzo	IRR	11/77	31
M	18B5	3S/2W 18B	ARCO Petroleum Products	17601 Hesperian Boulevard	San Lorenzo	MON	01/88	29
M	18B6	3S/2W 18B	Andres Glassow	17578 Via Primero	San Leandro	DOM	06/89	30
NM	---	3S/2W 18C	East Bay Discharge	Hesperian Boulevard	Hayward	MON	07/82	44
M	18C2	3S/2W 18C	ARCO	17105 Via Magdalena	San Lorenzo	MON	10/91	22
M	18C3	3S/2W 18C	ARCO	649 Potrero	San Lorenzo	MON	10/91	22
M	18C4	3S/2W 18C	ARCO	17127 Via Flores	San Lorenzo	MON	10/91	22
NM	---	3S/2W 18F	Green	620 Quigley Street	San Lorenzo	DOM	00/46	52
NM	---	3S/2W 18F	ARCO	17347 Via Media	San Lorenzo	MON	10/91	22
M	18F2	3S/2W 18F	---	775 Hacienda Avenue	San Leandro	ABN	---	31
M	18F3	3S/2W 18F	P.F. Neal	840 Hacienda Avenue	Hayward	IRR	07/77	29
M	18F4	3S/2W 18F	Wallace Leroy	17061 Via Perdido	San Leandro	IRR	05/89	25
M	18F5	3S/2W 18F	ARCO	17200 Via Magdalena	San Lorenzo	MON	10/91	22
M	18F6	3S/2W 18F	ARCO	17238 Via Flores	San Lorenzo	MON	10/91	22
M	18G1	3S/2W 18G	Lewis Barton	18451 Robscott	Hayward	IRR	05/77	26
M	18G	3S/2W 18G	ARCO Station	Hesperian & Hacienda	Hayward	BOR	10/85	16

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Table 1. Well Survey Data - BP Oil Site No. 11107,
18501 Hesperian Boulevard, San Lorenzo, California

Map Code	Map ID	T/R Section	Owner	Address	City	Use	Drill Date	Total Depth
M	18G2	3S/2W 18G	ARCO Petroleum Co.	17601 Hesperian Boulevard	San Lorenzo	DES	07/88	24
M	18G3	3S/2W 18G	ARCO Petroleum Co.	17601 Hesperian Boulevard	San Lorenzo	DES	07/88	29
M	18G4	3S/2W 18G	ARCO Petroleum Products	17601 Hesperian Boulevard	San Lorenzo	MON	01/88	14
M	18G7	3S/2W 18G	ARCO Petroleum Products	17601 Hesperian Boulevard	San Lorenzo	MON	05/90	24
M	18G8	3S/2W 18G	ARCO Petroleum Products	17601 Hesperian Boulevard	San Lorenzo	MON	03/90	22
M	18G9	3S/2W 18G	ARCO Petroleum Products	17601 Hesperian Boulevard	San Lorenzo	MON	03/90	22
M	18G10	3S/2W 18G	ARCO Petroleum Products	17601 Hesperian Boulevard	San Lorenzo	MON	04/90	22
M	18G11	3S/2W 18G	ARCO Petroleum Products	17601 Hesperian Boulevard	San Lorenzo	MON	04/90	26
M	18G12	3S/2W 18G	ARCO	17601 Hesperian Boulevard	San Lorenzo	MON	08/90	14
M	18G13	3S/2W 18G	ARCO Products	17601 Hesperian Boulevard	San Lorenzo	MON	08/91	26
M	18G13	3S/2W 18G	ARCO	17601 Hesperian	San Lorenzo	DES	07/91	220
M	18G14	3S/2W 18G	ARCO Products	17601 Hesperian Boulevard	San Lorenzo	MON	08/91	25
M	18G14A	3S/2W 18G	ARCO	Via Arriba & Hacienda	San Lorenzo	IRR	07/91	595
M	18G15	3S/2W 18G	ARCO Products	17601 Hesperian Boulevard	San Lorenzo	MON	08/91	25
M	18G15A	3S/2W 18G	ARCO	Via Magdalena & Hacienda	San Lorenzo	MON	06/91	23
M	18G16	3S/2W 18G	ARCO Products	17601 Hesperian Boulevard	San Lorenzo	MON	08/91	25
M	18G16A	3S/2W 18G	ARCO	Via Magdalena & Hacienda	San Lorenzo	MON	06/91	23
M	18G17	3S/2W 18G	ARCO Products	17601 Hesperian Boulevard	San Lorenzo	MON	08/91	25
NM	18G17A	3S/2W 18G	ARCO	17200 Via Magdalena	San Lorenzo	MON	06/91	23
M	18GA	3S/2W 18G	ARCO	17601 Hesperian Boulevard	San Lorenzo	BOR	03/93	15
M	18G18	3S/2W 18G	ARCO MW-24	17601 Hesperian Boulevard	San Lorenzo	MON	03/93	21
M	18G19	3S/2W 18G	ARCO	17601 Hesperian Boulevard	San Lorenzo	EXT	03/93	21
M	18G20	3S/2W 18G	ARCO	Via Arriba & Hacienda Avenue	San Lorenzo	EXT	03/93	19
M	18G21	3S/2W 18G	ARCO	17601 Hesperian Boulevard	San Lorenzo	MON	03/93	21
M	18G22	3S/2W 18G	ARCO	17601 Hesperian Boulevard	San Lorenzo	MON	03/93	21
SS	18G23	3S/2W 18G	BP Oil Co. MW-1	185601 Hesperian Boulevard	San Lorenzo	MON	10/92	31
SS	18G24	3S/2W 18G	BP Oil Co. MW-2	185601 Hesperian Boulevard	San Lorenzo	MON	10/92	26
SS	18G25	3S/2W 18G	BP Oil Co. MW-3	185601 Hesperian Boulevard	San Lorenzo	MON	10/92	26

CAMBRIA

Table 1. Well Survey Data - BP Oil Site No. 11107,
18501 Hesperian Boulevard, San Lorenzo, California

Map Code	Map ID	T/R Section	Owner	Address	City	Use	Drill Date	Total Depth
SS	18G26	3S/2W 18G	BP Oil Co. MW-4	185601 Hesperian Boulevard	San Lorenzo	MON	10/92	26
SS	18G27	3S/2W 18G	BP Oil	18501 Hesperian Boulevard	Hayward	MON	02/95	25
SS	18G28	3S/2W 18G	BP Oil	18501 Hesperian Boulevard	Hayward	MON	02/95	25
SS	18G29	3S/2W 18G	BP Oil	18501 Hesperian Boulevard	Hayward	MON	02/95	25
NM	---	3S/2W 18J	Fred Lourie	1238 Bartlett Avenue	San Lorenzo	DOM	00/53	202
NM	---	3S/2W 18J	Frank Del Rio	1266 Bartlett Avenue	Hayward	DOM	0'5/51	75
NM	---	3S/2W 18J	Minami	21626 Hesperian Boulevard	San Lorenzo	IRR	00/41	91
NM	---	3S/2W 18J	Kaufman & Broad	600 Shirley	Hayward	DES	01/89	85
M	18J4	3S/2W 18J	Kawabata Nursery	657 Bartlett Avenue	Hayward	IRR	00/18	90
M	18J5	3S/2W 18J	Genovesio	704 Bartlett Avenue	Hayward	DOM	00/39	55
M	18J6	3S/2W 18J	Brusseau	713 Bartlett Avenue	Hayward	IRR	00/46	95
M	18J7	3S/2W 18J	Hatakeda	18600 Hesperian Boulevard	Hayward	IRR	00/29	65
NM	---	3S/2W 18K	Hard	Hesperian Boulevard	Hayward	DOM	00/50	108
NM	---	3S/2W 18K	Hard	Hesperian Boulevard	Hayward	IRR	03/78	155
M	18L1	3S/2W 18L	J. Jackson	17125 Via Media	San Leandro	IRR	---	---
NM	---	3S/2W 18R	City of Hayward	Airport	Hayward	ABN	---	---
M	18R	3S/2W 18R	Flightcraft Inc.	19990 Skywest Drive	Hayward	BOR	11/88	11
M	18R2	3S/2W 18R	Stan Felson	813 W. Sunset Boulevard	Hayward	DES	07/88	22
M	18R4	3S/2W 18R	Beechkarft West AU	19990 Skycrest Drive	Hayward	MON	06/85	26
M	18R5	3S/2W 18R	Beechkarft West AU	19990 Skywest Drive	Hayward	MON	06/85	26
M	18R6	3S/2W 18R	Beechkarft West AU	19990 Skywest Drive	Hayward	MON	06/85	15
M	18R7	3S/2W 18R	ARCO Petroleum	20200 Hesperian Boulevard	Hayward	TES	06/86	30
M	18R8	3S/2W 18R	ARCO Petroleum	20200 Hesperian Boulevard	Hayward	TES	08/86	30
M	18R9	3S/2W 18R	ARCO Petroleum	20200 Hesperian Boulevard	Hayward	TES	08/86	30
M	18R10	3S/2W 18R	Texaco Station	20499 Hesperian Boulevard	Hayward	MON	06/88	20
M	18R11	3S/2W 18R	Texaco Station	20499 Hesperian Boulevard	Hayward	MON	06/88	20
M	18R12	3S/2W 18R	Texaco Station	20499 Hesperian Boulevard	Hayward	MON	06/88	20
M	18R13	3S/2W 18R	Flightcraft Inc.	19990 Skywest Drive	Hayward	MON	08/89	26

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Table 1. Well Survey Data - BP Oil Site No. 11107,
18501 Hesperian Boulevard, San Lorenzo, California

Map Code	Map ID	T/R Section	Owner	Address	City	Use	Drill Date	Total Depth
M	18R14	3S/2W 18R	Texaco Refining	20499 Hesperian	Hayward	MON	06/89	21
M	18R15	3S/2W 18R	Texaco Refining	20499 Hesperian	Hayward	MON	06/89	20
M	18R16	3S/2W 18R	Texaco Refining	20499 Hesperian	Hayward	MON	06/89	20
M	18R17	3S/2W 18R	Texaco Refining & Marketing	20499 Hesperian Boulevard	Hayward	MON	11/89	19
M	18RA	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	BOR	11/89	16
M	18R18	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	MON	02/90	24
M	18R19	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	MON	02/90	22
M	18R20	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	MON	02/90	23
M	18R21	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	MON	02/90	23
M	18R22	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	MON	02/90	23
M	18R23	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	MON	02/90	24
M	18R24	3S/2W 18R	Unocal Corporation	20501 Hesperian Boulevard	Hayward	MON	02/90	24
M	18R25	3S/2W 18R	Texaco Refining & Mrktg	20499 Hesperian Boulevard	Hayward	MON	03/90	20
M	18R26	3S/2W 18R	Texaco Refining & Mrktg	20499 Hesperian Boulevard	Hayward	MON	03/90	20
M	18R27	3S/2W 18R	Unocal Corp	20501 Hesperian Boulevard	Hayward	MON	04/92	24
M	18R28	3S/2W 18R	Former Unocal 5590	20501 Hesperian Boulevard	Hayward	MON	04/92	24
M	18R29	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	12/91	35
M	18R30	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	10/91	35
M	18R31	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	10/91	32
M	18R32	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	10/91	35
M	18R33	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	03/93	35
M	18R34	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	03/93	30
M	18R35	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	03/93	35
M	18R36	3S/2W 18R	ARCO Products Co.	19901 Hesperian Boulevard	Hayward	MON	11/92	35
M	18R37	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	08/92	35
M	18R38	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	08/92	34
M	18R39	3S/2W 18R	ARCO Products Co.	20200 Hesperian Boulevard	Hayward	MON	08/92	35
M	18R40	3S/2W 18R	ARCO Products (AS-1)	20200 Hesperian Boulevard	Hawyard	MON	03/93	16

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Table 1. Well Survey Data - BP Oil Site No. 11107,
18501 Hesperian Boulevard, San Lorenzo, California

Map Code	Map ID	T/R Section	Owner	Address	City	Use	Drill Date	Total Depth
M	18R41	3S/2W 18R	Airport Alliance	20450 Hesperian Boulevard	Hayward	MON	08/93	25
M	18R42	3S/2W 18R	Airport Alliance	20450 Hesperian Boulevard	Hayward	MON	08/93	25
M	18R43	3S/2W 18R	Airport Alliance	20450 Hesperian Boulevard	Hayward	MON	08/93	25

Abbreviations:
M = Well location shown on map
NM = Not mapped, unable to determine location
SS = Well located on subject site
MON = Monitoring well
DOM = Domestic well
IRR = Irrigation well
DES = Destroyed well
ABN = Abandoned well
BOR = Boring
TES = Test well
EXT = Extraction well
UNK = Unknown

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Table 2. **Soil Analytical Data** - BP Oil Site No. 11107,
18501 Hesperian Boulevard, San Lorenzo, California

Sample ID (Depth - feet bgs)	Soil Type	Date Sampled	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	TOC (% w/w)
		EPA Method:	8015m	8260	8260	8260	8260	8260	Walkley-Black
CB-1@15.5	clayey silt	11/8/99	<0.47	<0.005	<0.005	<0.005	<0.005	<0.005	-
CB-2@15.5	silty sand	11/8/99	<0.47	<0.005	<0.005	<0.005	<0.005	<0.005	-
CB-3@7.5	silty sand	11/8/99	-	-	-	-	-	-	<0.318
CB-3@15.5	clayey silt	11/8/99	<0.47	<0.005	<0.005	<0.005	<0.005	<0.005	-
CB-3@19.5	silty sand	11/8/99	-	-	-	-	-	-	<0.318
CB-4@15.0	clayey sandy silt	11/8/99	<0.46	<0.005	<0.005	<0.005	<0.005	<0.005	-
CB-5@15.5	sandy silt	11/8/99	<0.43	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	-

Abbreviations and Notes:

bgs = Below ground surface
GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether
TOC = Total organic carbon
bgs = Below ground surface
mg/kg = Milligrams per kilogram
<n = Below detection limit of n mg/kg

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Table 3. **Grab Groundwater Analytical Data** - BP Oil Site No. 11107, 18501 Hesperian Boulevard, San Lorenzo, California

Sample ID	Date Sampled	Sample Interval (ft bgs)	GRO (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)
	EPA Method:		**8015m**	**8260**	**8260**	**8260**	**8260**	**8260**
CB1W	11/8/99	16-17	**1,800**	<5.0	<5.0	**16**	**44**	<5.0
CB2W	11/8/99	16-17	**400**	<5.0	<5.0	<5.0	<5.0	<5.0
CB3W	11/8/99	16-17	**370**	<5.0	<5.0	<5.0	<5.0	<5.0
CB4W	11/8/99	16-17	<200	<5.0	<5.0	<5.0	<5.0	<5.0
CB5W	11/8/99	16-17	<200	<5.0	<5.0	<5.0	<5.0	<5.0

Abbreviations and Notes:

GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether
bgs = Below ground surface
ug/l = Micrograms per liter
<n = Below detection limit of n ug/l

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APPENDIX A

BACKGROUND DATA

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-1	11/04/92	41.07	20.78	20.29	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	2.8	ND	---	PACE
QC-1	(c) 11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-1	02/24/94	41.07	20.70	20.37	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	1.5	0.9	---	PACE
MW-1	05/12/94	41.07	18.12	22.95	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	1.0	ND<0.5	7	PACE
MW-1	09/09/94	41.07	21.74	19.33	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND<0.5	ND<0.5	2.3	PACE
MW-1	11/03/94	41.07	20.01	21.06	ND<50	50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND<0.5	ND<0.5	4.3	PACE
MW-1	03/01/95	41.07	17.44	23.63	ND<50	ND<500	ND<50	ND<0.50	ND<0.50	ND<1.0	---	420	0.54	0.3	2.3	ATI
MW-1	06/06/95	41.07	17.55	23.52	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	09/01/95	41.07	18.19	22.88	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	60	---	---	8.8	ATI
MW-1	11/29/95	41.07	18.84	22.23	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	03/23/96	41.07	16.97	24.10	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	9.6	SPL
MW-1	09/05/96	41.07	17.74	23.33	110	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.6	SPL
MW-1	03/11/97	41.07	17.62	23.45	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	5.2	SPL
MW-1	12/08/97	41.07	16.30	24.77	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---
MW-1	07/08/98	41.07	16.66	24.41	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	12/07/98	41.07	17.80	23.27	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	01/19/99	41.07	17.18	23.89	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	04/23/99	41.07	17.40	23.67	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	07/20/99	41.07	17.76	23.31	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	02/29/00	41.07	17.17	23.90	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	04/14/00	41.07	17.22	23.85	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	07/24/00	41.07	17.61	23.46	---	---	---	---	---	---	---	---	---	---	---	---

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-2	11/04/92	40.56	20.16	20.40	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-2	02/24/94	40.56	20.12	20.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-2	05/12/94	40.56	17.49	23.07	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	7.4	PACE
MW-2	09/09/94	40.56	21.12	19.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2.1	PACE
MW-2	11/03/94	40.56	19.36	21.20	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	4.2	PACE
MW-2	03/01/95	40.56	16.83	23.73	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	2.2	ATI
MW-2	06/06/95	40.56	16.96	23.60	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	09/01/95	40.56	17.54	23.02	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	7.9	ATI
MW-2	11/29/95	40.56	18.19	22.37	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	03/23/96	40.56	16.35	24.21	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	8.5	SPL
MW-2	09/05/96	40.56	17.55	23.01	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.2	SPL
MW-2	03/11/97	40.56	16.95	23.61	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	2.9	SPL
MW-2	12/08/97	40.56	16.01	24.55	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.0	SPL
MW-2	07/08/98	40.56	16.41	24.15	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/07/98	40.56	17.15	23.41	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	01/19/99	40.56	17.15	23.41	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	04/23/99	40.56	16.89	23.67	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	07/20/99	40.56	17.25	23.31	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/30/99	40.56	17.44	23.12	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/29/00	40.56	16.13	24.43	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	04/14/00	40.56	16.88	23.68	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	07/24/00	40.56	17.11	23.45	---	---	---	---	---	---	---	---	---	---	---	---

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-3	11/04/92	40.45	20.23	20.22	760	---	3.7	15	1.9	57	---	---	---	---	---	PACE
MW-3	02/24/94	40.45	20.24	20.21	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-3	05/12/94	40.45	17.61	22.84	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-3	09/09/94	40.45	21.22	19.23	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	7.3	PACE
MW-3	11/03/94	40.45	19.48	20.97	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2	PACE
MW-3	03/01/95	40.45	17.08	23.37	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	3.6	PACE
MW-3	06/06/95	40.45	17.21	23.24	---	---	---	---	---	---	---	---	---	---	1.9	ATI
MW-3	09/01/95	40.45	17.69	22.76	200	---	2.7	33	7.2	43	ND<5.0	---	---	---	7.8	ATI
MW-3	09/01/95	40.45	18.29	22.16	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/23/96	40.45	16.59	23.86	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	7.3	SPL
MW-3	09/05/96	40.45	17.71	22.74	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.2	SPL
MW-3	03/11/97	40.45	17.17	23.28	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	1.5	SPL
MW-3	12/08/97	40.45	16.12	24.33	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	1.9	SPL
MW-3	07/08/98	40.45	16.40	24.05	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/07/98	40.45	17.32	23.13	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	01/19/99	40.45	17.30	23.15	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	04/23/99	40.45	17.07	23.38	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	07/20/99	40.45	17.47	22.98	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/30/99	40.45	17.60	22.85	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/29/00	40.45	16.43	24.02	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	04/14/00	40.45	17.09	23.36	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	07/24/00	40.45	17.44	23.01	---	---	---	---	---	---	---	---	---	---	---	---

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-4	11/04/92	39.24	19.18	20.06	900	---	150	4.1	0.8	53	---	---	---	---	---	PACE
MW-4	02/24/94	39.24	19.22	20.02	240	---	110	3.8	1.8	11	1400 (d)	---	---	---	---	PACE
QC-1	(c) 02/24/94	---	---	---	310	---	95	5.3	2.2	17	1500 (d)	---	---	---	---	PACE
MW-4	05/12/94	39.24	16.62	22.62	ND<50	---	2.2	1.0	ND<0.5	ND<0.5	860 (d)	---	---	---	7.3	PACE
QC-1	(c) 05/12/94	---	---	---	430	---	2.6	1.3	ND<0.5	ND<0.5	780 (d)	---	---	---	---	PACE
MW-4	09/09/94	39.24	20.27	18.97	240	---	9.1	1.3	0.6	2.5	---	---	---	---	2.2	PACE
QC-1	(c) 09/09/94	---	---	---	57	---	1.7	ND<0.5	ND<0.5	0.5	---	---	---	---	---	PACE
MW-4	11/03/94	39.24	18.46	20.78	250	---	3.1	2.8	1.0	3.3	---	---	---	---	3.2	PACE
QC-1	(c) 11/03/94	---	---	---	110	---	2.4	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-4	03/01/95	39.24	16.15	23.09	8900	---	1800	26	450	400	---	---	---	---	2.0	ATI
QC-1	(c) 03/01/95	---	---	---	7600	---	1700	25	410	370	---	---	---	---	---	ATI
MW-4	06/06/95	39.24	16.28	22.96	3100	--- (e)	530	25	170	85	---	---	---	---	---	ATI
QC-1	(c) 06/06/95	---	---	---	3000	---	530	27	170	92	---	---	---	---	---	ATI
MW-4	(f) 09/01/95	39.24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	11/29/95	39.24	17.31	21.93	ND<50	---	1.8	ND<0.50	ND<0.50	ND<1.0	440	---	---	---	3.2	ATI
QC-1	(c) 11/29/95	---	---	---	ND<50	---	1.5	ND<0.50	ND<0.50	ND<1.0	490	---	---	---	---	ATI
MW-4	03/23/96	39.24	15.74	23.50	2700	---	480	ND<25	180	176	13000	---	---	---	7.8	SPL
MW-4	09/05/96	39.24	16.75	22.49	1100	---	ND<12	ND<25	ND<25	ND<25	3200	---	---	---	4.0	SPL
MW-4	03/11/97	39.24	16.10	23.14	2400	---	46	ND<10	66	106	3400	---	---	---	4.0	SPL
MW-4	12/08/97	39.24	15.96	23.28	590	---	11	ND<1.0	ND<1.0	ND<1.0	1200	---	---	---	4.4	SPL
QC-1	(c) 12/08/97	---	---	---	620	---	11	ND<1.0	ND<1.0	ND<1.0	1100	---	---	---	---	SPL
MW-4	07/08/98	39.24	16.28	22.96	1700	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	1200	---	---	---	3.9	SPL
QC-1	(c) 07/08/98	---	---	---	1600	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	1100	---	---	---	---	SPL
MW-4	12/07/98	39.24	16.47	22.77	530	---	ND<2.5	ND<5.0	ND<5.0	ND<5.0	680/910 (h)	---	---	---	---	SPL
MW-4	01/19/99	39.24	16.40	22.84	570	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	660	---	---	---	---	SPL
MW-4	04/23/99	39.24	16.17	23.07	ND<50	---	ND<1.0	ND<1.0	1.8	1.3	1100/810 (h)	---	---	---	---	SPL
MW-4	07/20/99	39.24	16.39	22.85	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	480	---	---	---	---	SPL
MW-4	12/30/99	39.24	16.56	22.68	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	410	---	---	---	---	PACE
MW-4	02/29/00	39.24	15.69	23.55	78 (i)	---	2.0	ND<0.5	0.77	2.8	1200	---	---	---	---	PACE
MW-4	04/14/00	39.24	16.21	23.03	300	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	800	---	---	---	---	PACE
MW-4	07/24/00	39.24	16.50	22.74	130	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	270	---	---	---	---	PACE

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-5	06/06/95	39.07	16.16	22.91	1100	---	(e) 42	ND<2.5	15	4.0	---	---	---	---	---	ATI
MW-5	09/01/95	39.07	16.63	22.44	1600	---	55	ND<2.5	15	8.0	1200	---	---	---	7.4	ATI
QC-1	(c) 09/01/95	---	---	---	1200	---	64	ND<2.5	14	3.1	---	---	---	---	---	ATI
MW-5	11/29/95	39.07	17.19	21.88	2300	---	140	4.0	36	11	1500	---	---	---	4.1	ATI
MW-5	03/23/96	39.07	15.54	23.53	90	---	2.8	ND<1	ND<1	ND<1	1500	---	---	---	7.5	SPL
MW-5	09/05/96	39.07	16.72	22.35	2300	---	5.1	ND<1.0	ND<1.0	ND<1.0	3300	---	---	---	3.2	SPL
QC-1	(c) 09/05/96	---	---	---	2000	---	4.9	ND<1.0	ND<1.0	ND<1.0	2900	---	---	---	---	SPL
MW-5	03/11/97	39.07	16.12	22.95	470	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	580	---	---	---	3.0	SPL
QC-1	(c) 03/11/97	---	---	---	460	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	540	---	---	---	---	SPL
MW-5	12/08/97	39.07	15.85	23.22	370	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	840	---	---	---	3.0	SPL
MW-5	07/08/98	39.07	16.11	22.96	430	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	330	---	---	---	2.5	SPL
MW-5	12/07/98	39.07	16.27	22.80	220	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	290/410 (h)	---	---	---	---	SPL
MW-5	01/19/99	39.07	16.31	22.76	490	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	490/440 (h)	---	---	---	---	SPL
MW-5	04/23/99	39.07	16.00	23.07	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	310/210 (h)	---	---	---	---	SPL
MW-5	07/20/99	39.07	16.36	22.71	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	470	---	---	---	---	SPL
MW-5	12/30/99	39.07	16.53	22.54	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	550	---	---	---	---	PACE
MW-5	02/29/00	39.07	15.45	23.62	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	280	---	---	---	---	PACE
MW-5	04/14/00	39.07	16.10	22.97	81	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	240	---	---	---	---	PACE
MW-5	07/24/00	39.07	16.50	22.57	250	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	570	---	---	---	---	PACE
MW-6	03/01/95	38.46	15.66	22.80	270	---	11	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	1.6	ATI
MW-6	06/06/95	38.46	15.82	22.64	220	---	(e) 2.3	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
MW-6	09/01/95	38.46	16.25	22.21	780	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2800	---	---	---	7.5	ATI
MW-6	11/29/95	38.46	16.80	21.66	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1100	---	---	---	3.9	ATI
MW-6	03/23/96	38.46	15.27	23.19	50	---	ND<0.5	ND<1	ND<1	ND<1	910	---	---	---	8.0	SPL
MW-6	09/05/96	38.46	16.30	22.16	4400	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	7400	---	---	---	3.0	SPL
MW-6	03/11/97	38.46	15.75	22.71	1100	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	2000	---	---	---	3.1	SPL
MW-6	12/08/97	38.46	15.51	22.95	150	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	140	---	---	---	3.4	SPL
MW-6	07/08/98	38.46	15.78	22.68	370	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	250	---	---	---	3.6	SPL
MW-6	12/07/98	38.46	15.95	22.51	440	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	630/820 (h)	---	---	---	---	---
MW-6	01/19/99	38.46	15.97	22.49	950	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	950/810 (h)	---	---	---	---	SPL
MW-6	04/23/99	38.46	15.74	22.72	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	310/220 (h)	---	---	---	---	SPL
MW 6	07/20/99	38.46	16.12	22.34	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1300	---	---	---	---	SPL
MW-6	12/30/99	38.46	16.16	22.30	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	360	---	---	---	---	PACE
MW-6	02/29/00	38.46	15.08	23.38	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	340	---	---	---	---	PACE
MW-6	04/14/00	38.46	15.82	22.64	90	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	220	---	---	---	---	PACE
MW-6	07/24/00	38.46	16.03	22.43	240	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	540	---	---	---	---	PACE

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-7	03/01/95	39.50	16.21	23.29	1400	---	14	ND<1.0	14	27	---	---	---	---	1.8	ATI
MW-7	06/06/95	39.50	16.34	23.16	540	---	(e) 5.5	ND<0.50	15	1.1	---	---	---	---	---	ATI
MW-7	09/01/95	39.50	16.74	22.76	190	---	2.8	ND<0.50	5.0	ND<1.0	10	---	---	---	7.5	ATI
MW-7	11/29/95	39.50	17.33	22.17	230	---	31	ND<0.50	3.8	1.9	ND<5.0	---	---	---	4.6	ATI
MW-7	03/23/96	39.50	15.86	23.64	ND<50	---	5.0	ND<1	ND<1	ND<1	330	---	---	---	7.2	SPL
QC-1	(c) 03/23/96	---	---	---	60	---	7.6	ND<1	ND<1	ND<1	360	---	---	---	---	SPL
MW-7	09/05/96	39.50	16.80	22.70	200	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	430	---	---	---	3.1	SPL
MW-7	03/11/97	39.50	18.32	21.18	120	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	140	---	---	---	4.7	SPL
MW-7	12/08/97	39.50	16.02	23.48	240	---	0.8	ND<1.0	ND<1.0	ND<1.0	200	---	---	---	5.2	SPL
MW-7	07/08/98	39.50	16.32	23.18	270	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	170	---	---	---	4.8	SPL
MW-7	12/07/98	39.50	16.43	23.07	100	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	120	---	---	---	---	SPL
MW-7	01/19/99	39.50	16.41	23.09	80	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	80	---	---	---	---	SPL
MW-7	04/23/99	39.50	16.21	23.29	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	20	---	---	---	---	SPL
MW-7	07/20/99	39.50	16.54	22.96	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	24	---	---	---	---	SPL
MW-7	12/30/99	39.50	16.65	22.85	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	12	---	---	---	---	PACE
MW-7	02/29/00	39.50	15.71	23.79	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.0	---	---	---	---	PACE
MW-7	04/14/00	39.50	16.25	23.25	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.0	---	---	---	---	PACE
MW-7	07/24/00	39.50	16.63	22.87	ND<50	---	1.1	0.5	ND<0.5	ND<0.5	3.1	---	---	---	---	PACE
QC-2	(g) 11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2	(g) 11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2	(g) 03/01/95	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1.0	---	---	---	---	---	PACE
QC-2	(g) 05/12/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2	(g) 09/09/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2	(g) 11/03/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2	(g) 06/06/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
QC-2	(g) 09/01/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	ATI
QC-2	(g) 11/29/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	ATI
QC-2	(g) 03/23/96	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	---	SPL

ADDITIONAL ANALYSES

WELL ID	DATE OF SAMPLING/ MONITORING	1,2-DCA by 8010 (ug/l)	EDB by 8010 (ug/l)	1,2-DCA by 8260 (ug/l)	EDB by 8260 (ug/l)	MTBE by 8260 (ug/l)	DIPE by 8260 (ug/l)	ETBE by 8260 (ug/l)	TBA by 8260 (ug/l)	TAME by 8260 (ug/l)
MW-4	07/20/99	ND<1.0	ND<1.0	ND<1.0	ND<1.0	590	ND<10	ND<5.0	ND<500	ND<5.0
MW-4	12/30/99	---	---	ND<5.0	ND<5.0	280	ND<5.0	ND<5.0	---	ND<5.0
MW-4	02/29/00	---	---	ND<20	ND<20	870	ND<20	ND<20	---	ND<20
MW-4	04/14/00	---	---	ND<10	ND<10	730	ND<10	ND<10	---	ND<10
MW-4	07/24/00	---	---	ND<1.0	ND<1.0	390	ND<5.0	ND<5.0	ND<50	ND<5.0
MW-5	07/20/99	---	---	---	---	490	ND<10	ND<10	ND<500	ND<10
MW-5	12/30/99	---	---	---	---	470	ND<10	ND<10	---	ND<10
MW-5	02/29/00	---	---	ND<5.0	ND<5.0	190	ND<5.0	ND<5.0	---	ND<5.0
MW-5	04/14/00	---	---	---	---	200	ND<5.0	ND<5.0	---	ND<5.0
MW-5	07/24/00	---	---	---	---	630	ND<5.0	ND<5.0	ND<50	ND<5.0
MW-6	07/20/99	---	---	---	---	1400	ND<10	ND<10	ND<500	ND<10
MW-6	12/30/99	---	---	---	---	300	ND<5.0	ND<5.0	---	ND<5.0
MW-6	02/29/00	---	---	ND<5.0	ND<5.0	240	ND<5.0	ND<5.0	---	ND<5.0
MW-6	04/14/00	---	---	---	---	200	ND<5.0	ND<5.0	---	ND<5.0
MW-6	07/24/00	---	---	---	---	600	ND<5.0	ND<5.0	62	ND<5.0

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl tert butyl ether
TOG	Total oil and grease
1,1,1-TCA	1,1,1-Trichloroethane
PCE	Tetrachloroethene
1,2-DCA	1,2-Dichloroethane
EDB	1,2-Bibromoethane
DIPE	Di-isopropyl Ether
ETBE	tert-Butyl Ethyl Ether
TBA	t-Butyl Alcohol
TAME	tert-Amyl Methyl Ether
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
ND	Not detected above reported detection limit
---	Not measured/analyzed/applicable
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.
SPL	Southern Petroleum Laboratories

NOTES:

(a) Top of casing elevations surveyed relative to an established benchmark with an elevation of 39.95 feet above mean sea level.

(b) Groundwater elevations in feet above mean sea level.

(c) Blind duplicate.

(d) A copy of the documentation for this data is included in Appendix C of Alisto report 10-060-07-001.

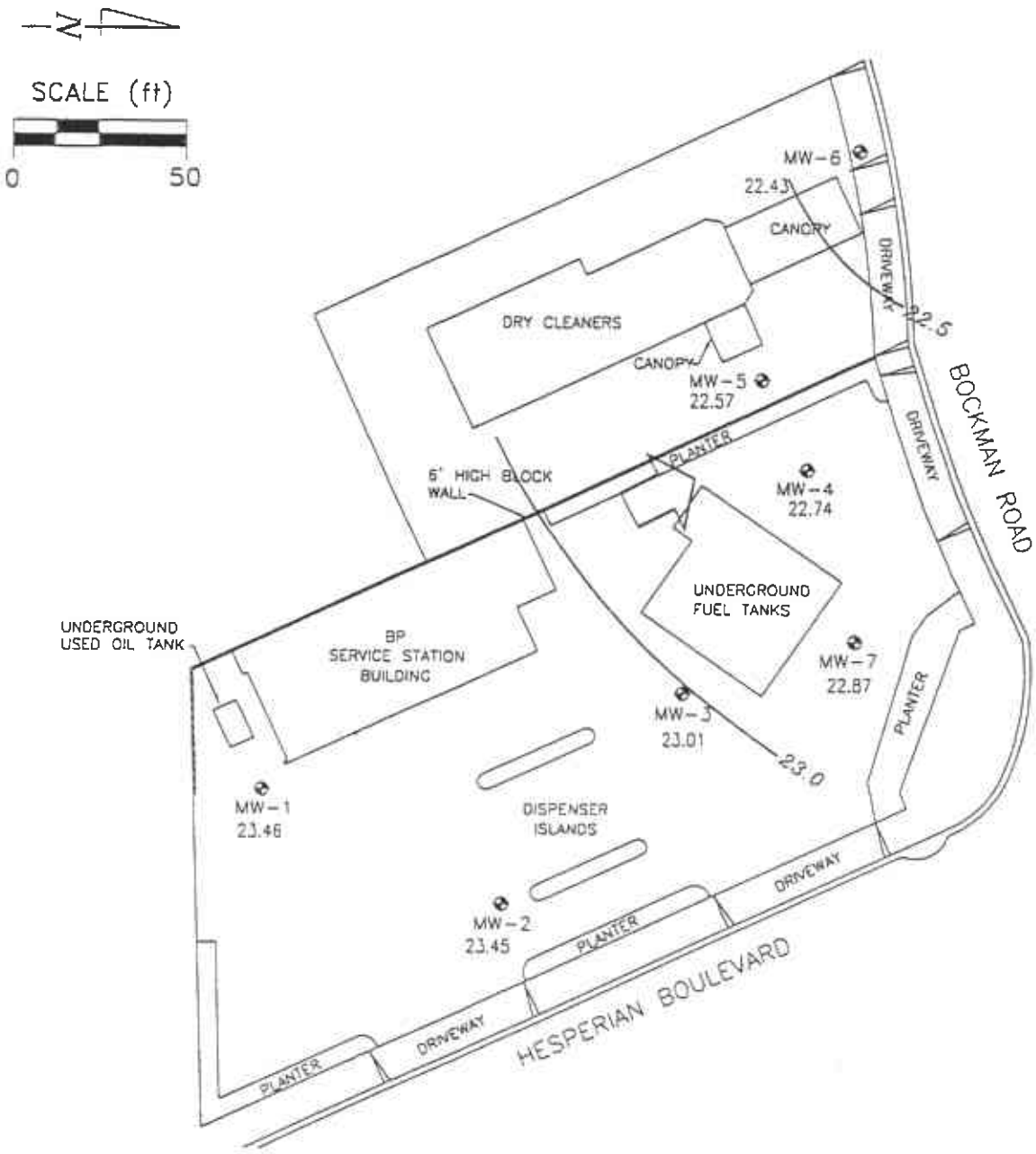
(e) MTBE peak present. See documentation in Appendix C of Alisto report 10-060-07-001.

(f) Well inaccessible.

(g) Travel blank.

(h) MTBE by 8020/8260

(i) Gasoline does not include MTBE.



EXPLANATION

- GROUNDWATER MONITORING WELL
- 23.45 GROUNDWATER ELEVATION (FT. MSL)
- 22.5 GROUNDWATER ELEVATION CONTOUR (FT. MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.004

REGISTERED GEOLOGIST
STEVEN E. KRCIK
No 4975
7-00
STATE OF CALIFORNIA

Ref. 111107bm.dwg
Basemap from Alisto Engineering Group

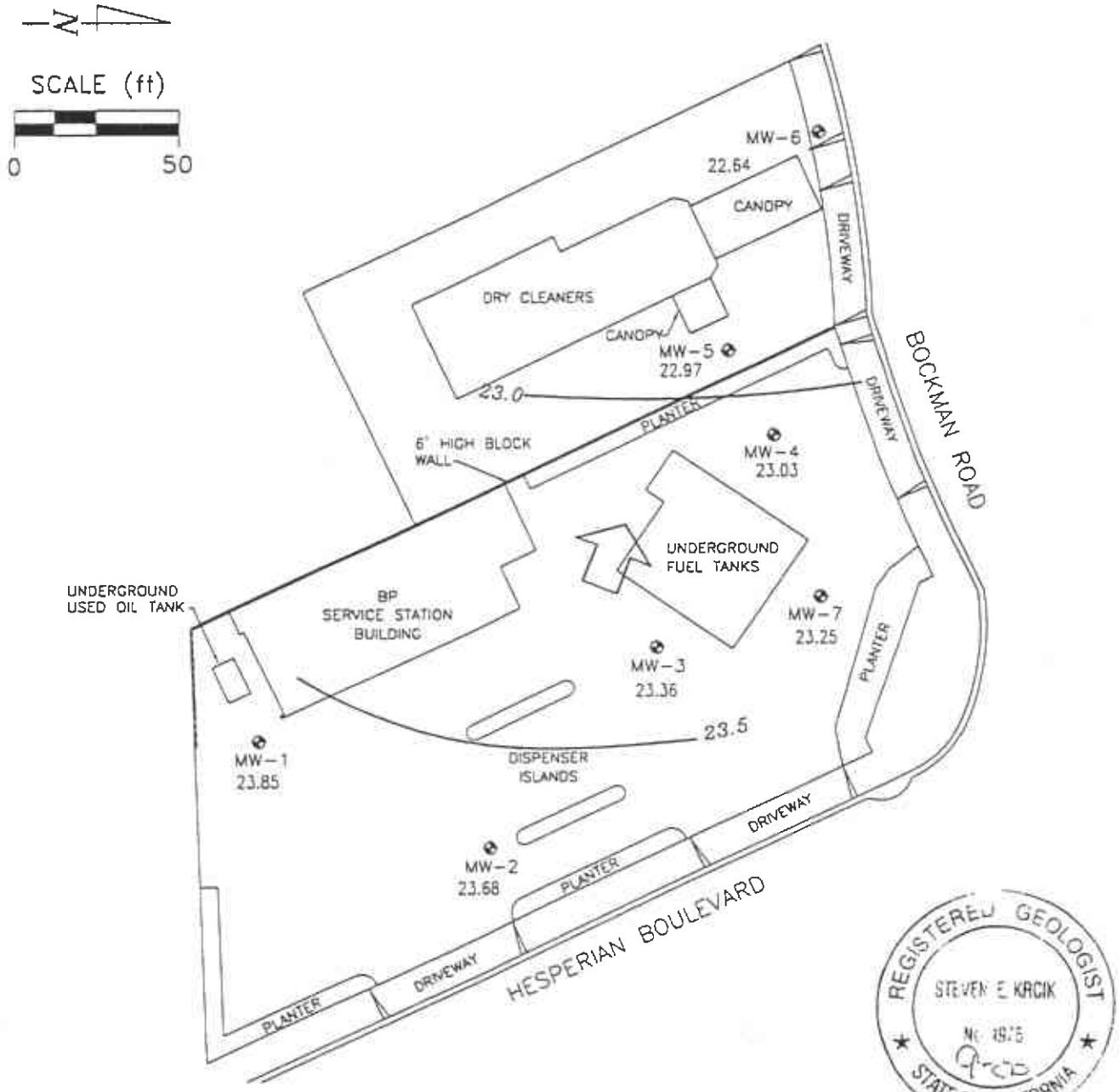
PREPARED BY
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP, JULY 24, 2000

FIGURE: 1

PROJECT: DAC04



REGISTERED GEOLOGIST
STEVEN E KROIK
No. 4575
STATE OF CALIFORNIA

EXPLANATION

- ⊕ GROUNDWATER MONITORING WELL
- 23.68 GROUNDWATER ELEVATION (FT, MSL)
- 23.5 — GROUNDWATER ELEVATION CONTOUR (FT, MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.004

Ref. 111107bm.dwg
Basemap from Alisto Engineering Group

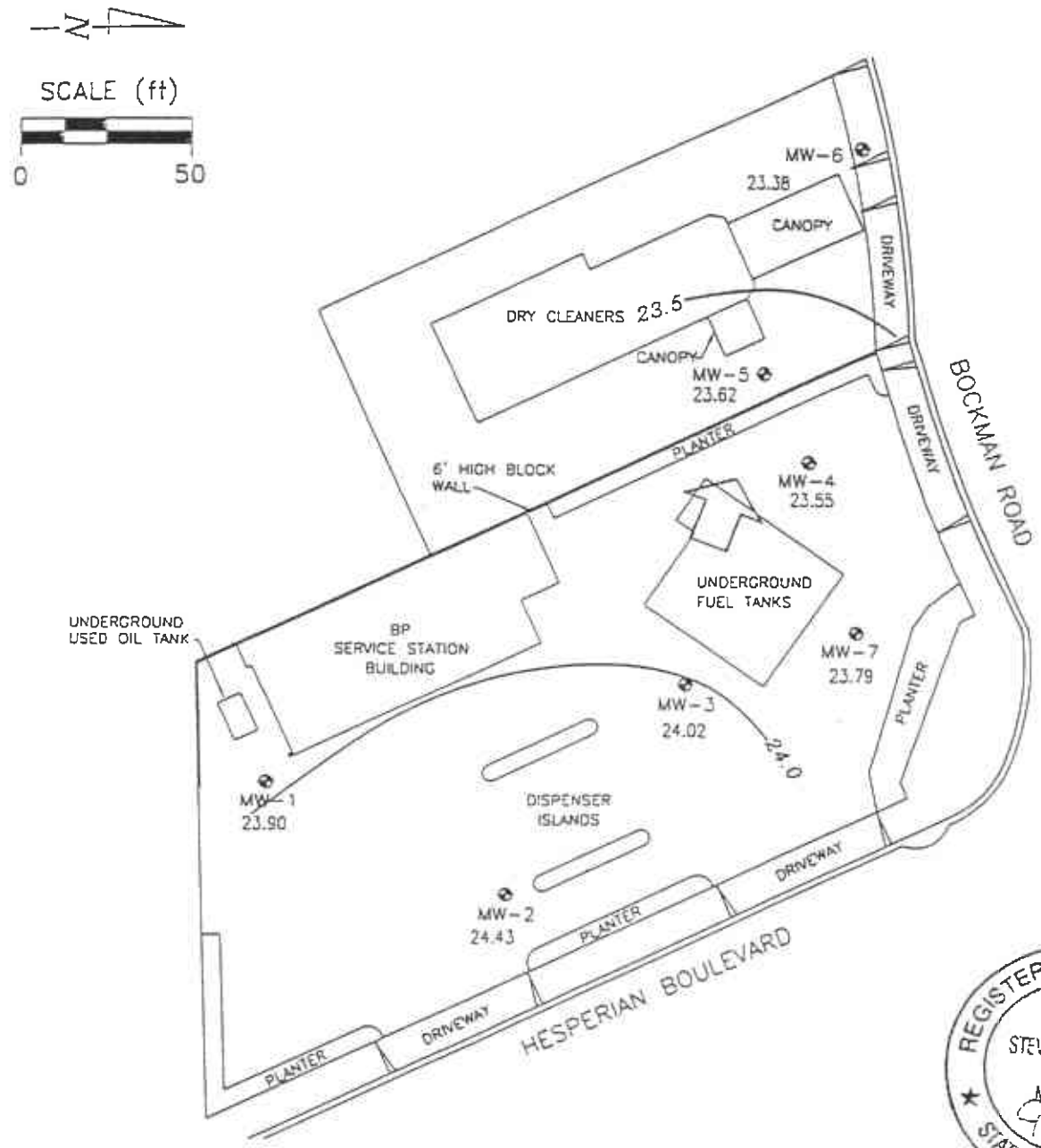
PREPARED BY
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP, APRIL 14, 2000

FIGURE: 1

PROJECT: DAC04



REGISTERED GEOLOGIST
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EXPLANATION

- GROUNDWATER MONITORING WELL
- 24.43 GROUNDWATER ELEVATION (FT. MSL)
- 23.5 — GROUNDWATER ELEVATION CONTOUR (FT. MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.006

Ref. 111107bm.dwg
Basemap from Alisto Engineering Group

PREPARED BY
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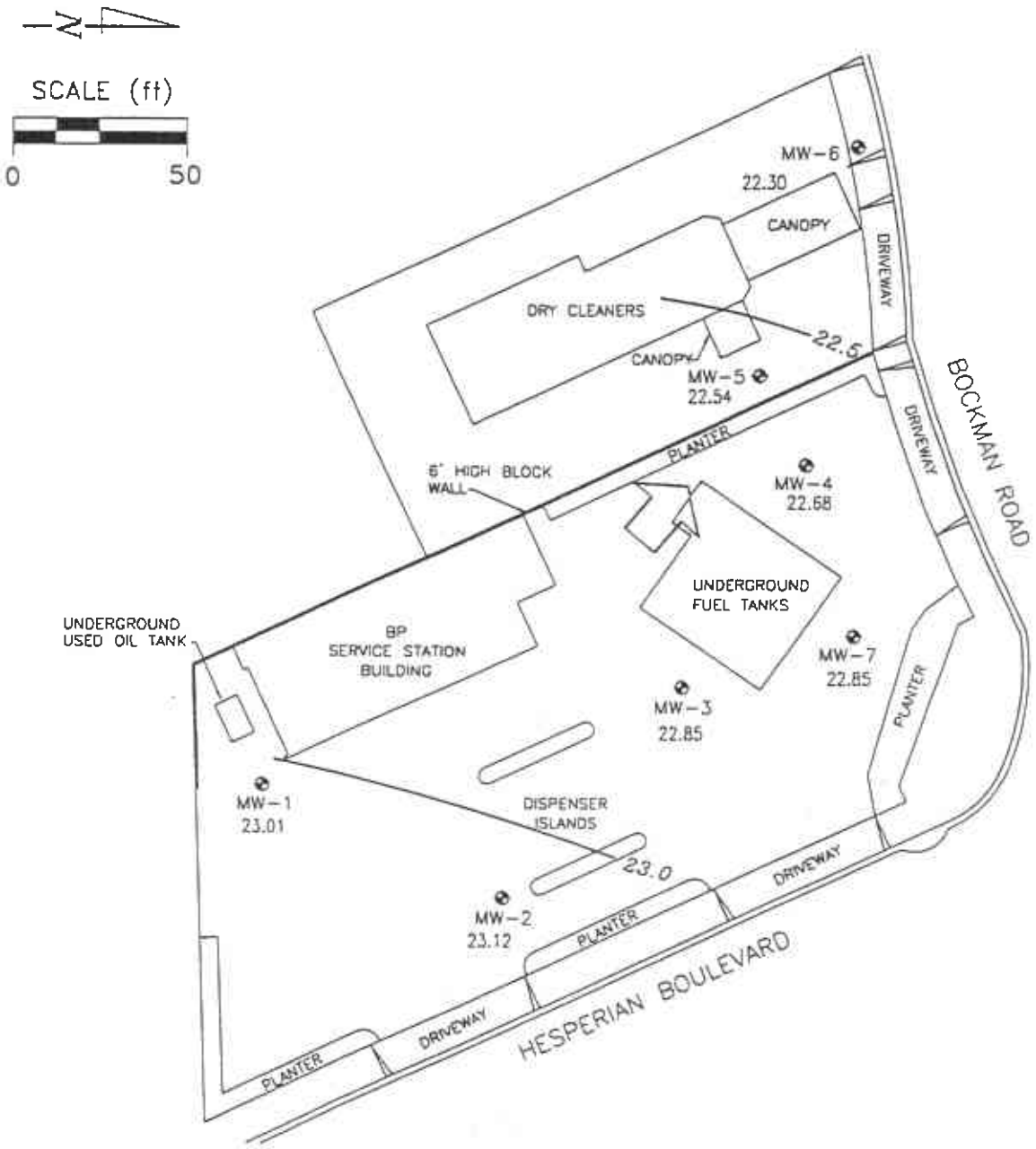
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP, FEBRUARY 29, 2000

FIGURE: 1
PROJECT: DAC04



EXPLANATION

- ⊕ GROUNDWATER MONITORING WELL
- 23.12 GROUNDWATER ELEVATION (FT. MSL)
- 22.5 — GROUNDWATER ELEVATION CONTOUR (FT. MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.003

REGISTERED GEOLOGIST
STEVEN E KRCIK
No. 1976
STATE OF CALIFORNIA

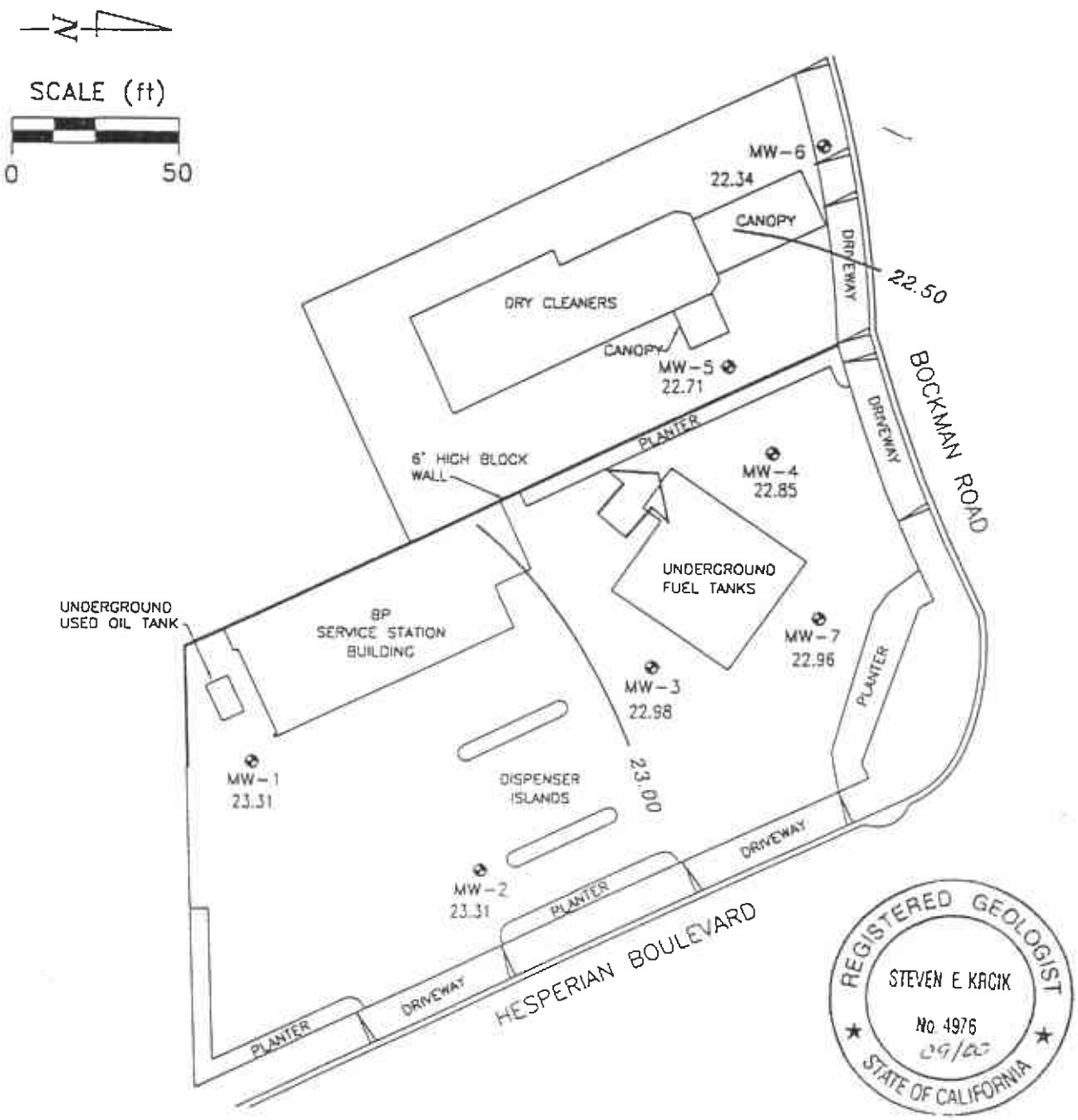
Ref: 111107bm.dwg
Basemap from Alisto Engineering Group

PREPARED BY
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP, DECEMBER 30, 1999

FIGURE: 1
PROJECT: DAC04



EXPLANATION

- GROUNDWATER MONITORING WELL
- 23.31 GROUNDWATER ELEVATION (FT, MSL)
- 22.50 — GROUNDWATER ELEVATION CONTOUR (FT, MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.004

Ref: 111107bm.dwg
Basemap from Alisto Engineering Group

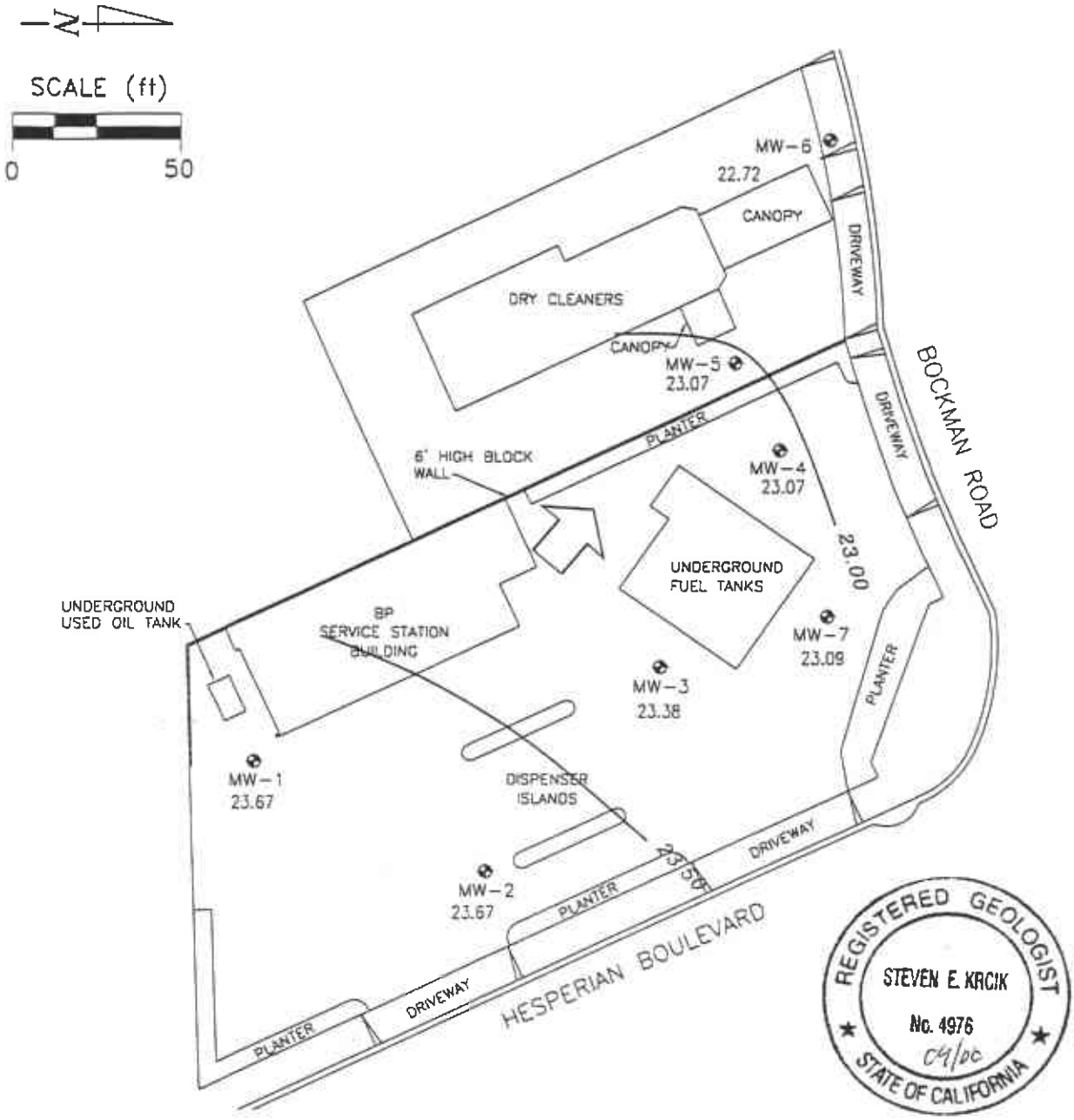
PREPARED BY
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP, JULY 20, 1999

FIGURE: 1

PROJECT: DAC04



EXPLANATION

- GROUNDWATER MONITORING WELL
- 23.67 GROUNDWATER ELEVATION (FT. MSL)
- 23.50 — GROUNDWATER ELEVATION CONTOUR (FT. MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.003

Ref. 111107bm.dwg
Basemap from Alisto Engineering Group

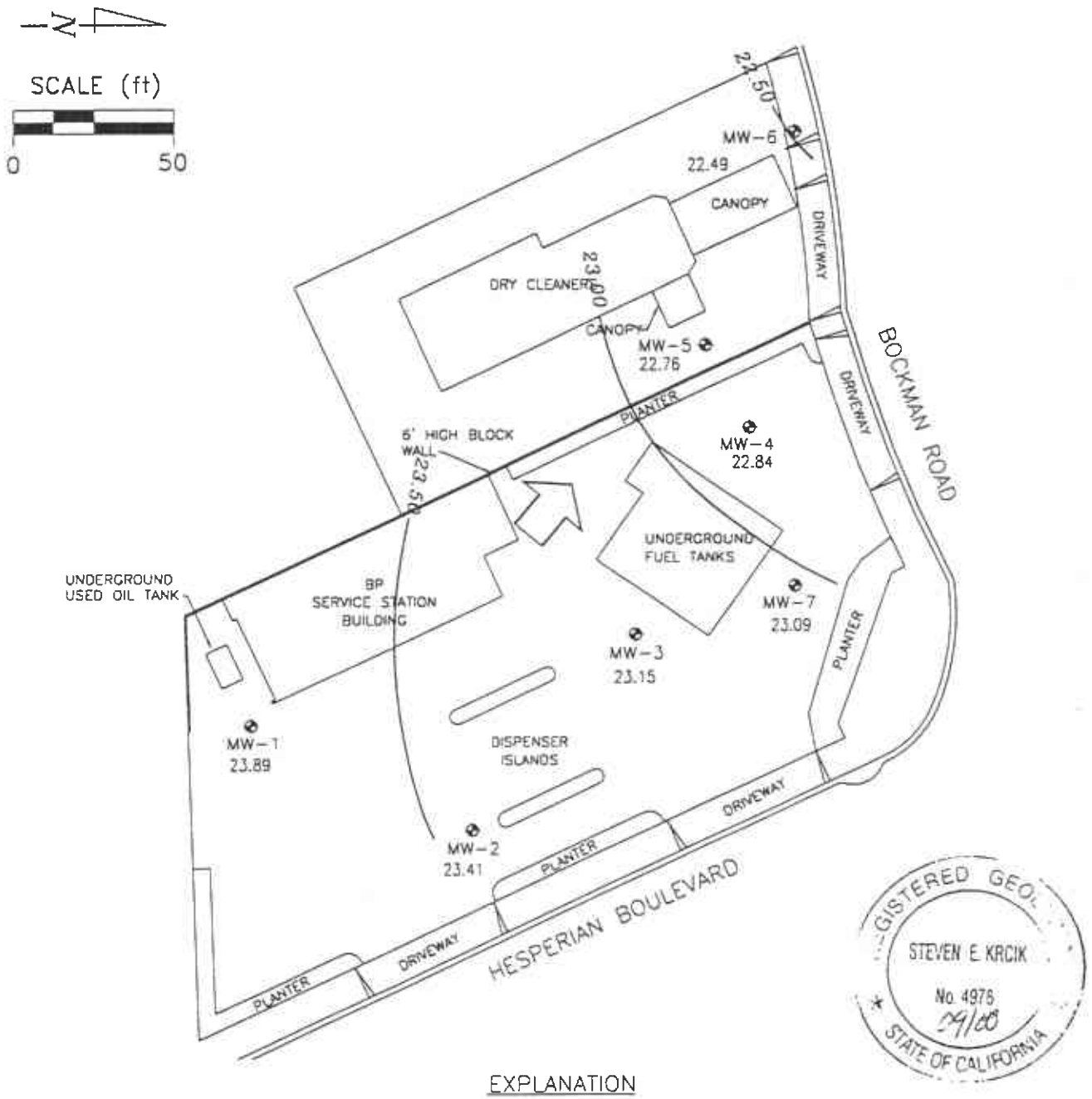
PREPARED BY
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP, APRIL 23, 1999

FIGURE: 1

PROJECT: DAC04



REGISTERED GEOLOGIST
STEVEN E. KRCIK
No. 4975
7/1/00
STATE OF CALIFORNIA

EXPLANATION

- GROUNDWATER MONITORING WELL
- 23.89 GROUNDWATER ELEVATION (FT. MSL)
- 23.00 — GROUNDWATER ELEVATION CONTOUR (FT. MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.005

Ref. 111107bm.dwg
Basemap from Alisto Engineering Group

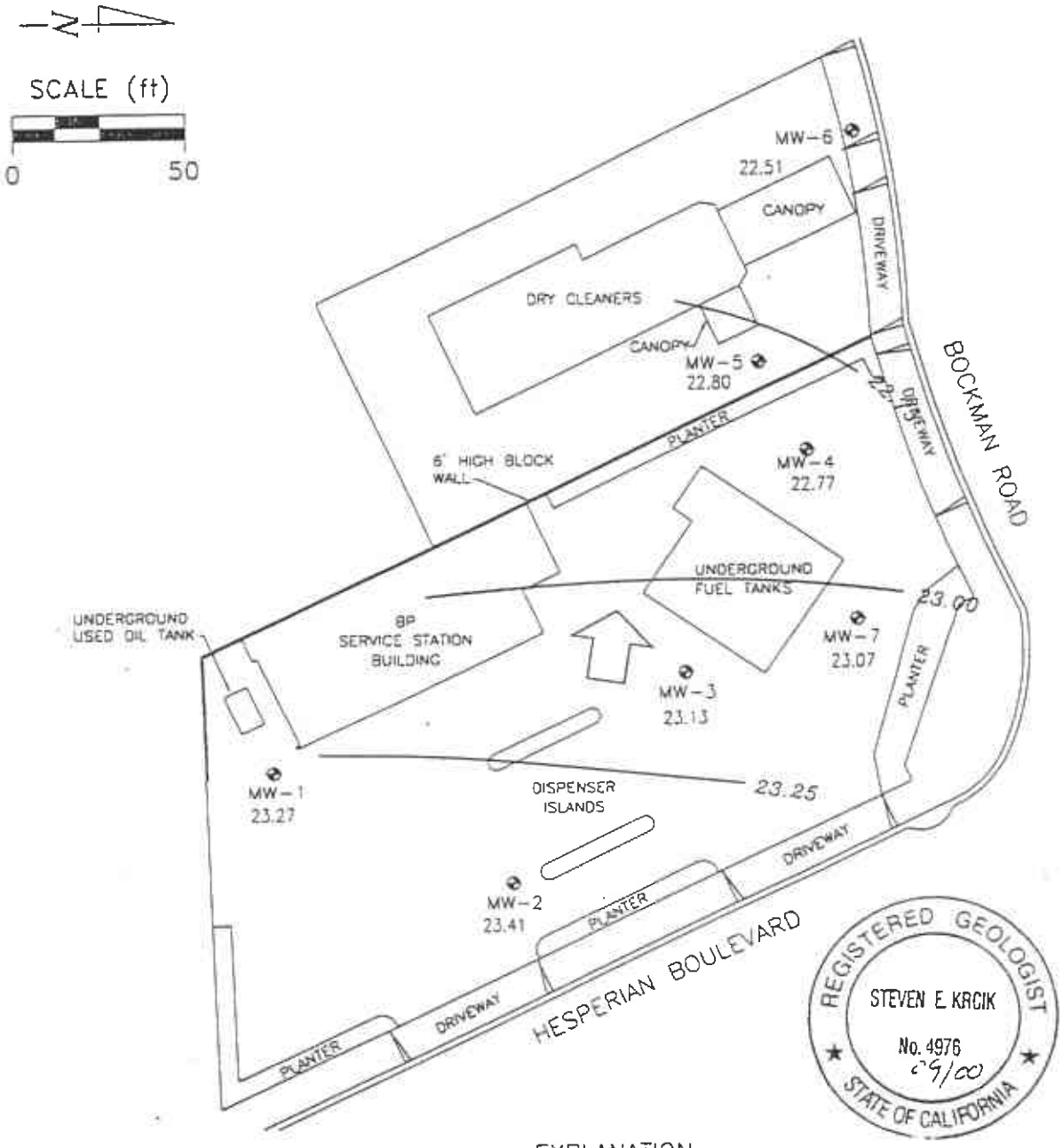
PREPARED BY
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP, JANUARY 19, 1999

FIGURE: 1

PROJECT: DAC04



EXPLANATION

- GROUNDWATER MONITORING WELL
- 23.27 GROUNDWATER ELEVATION (FT. MSL)
- 22.75 GROUNDWATER ELEVATION CONTOUR (FT. MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.005

Ref. 111107bm.dwg
Basemap from Alisto Engineering Group

PREPARED BY
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

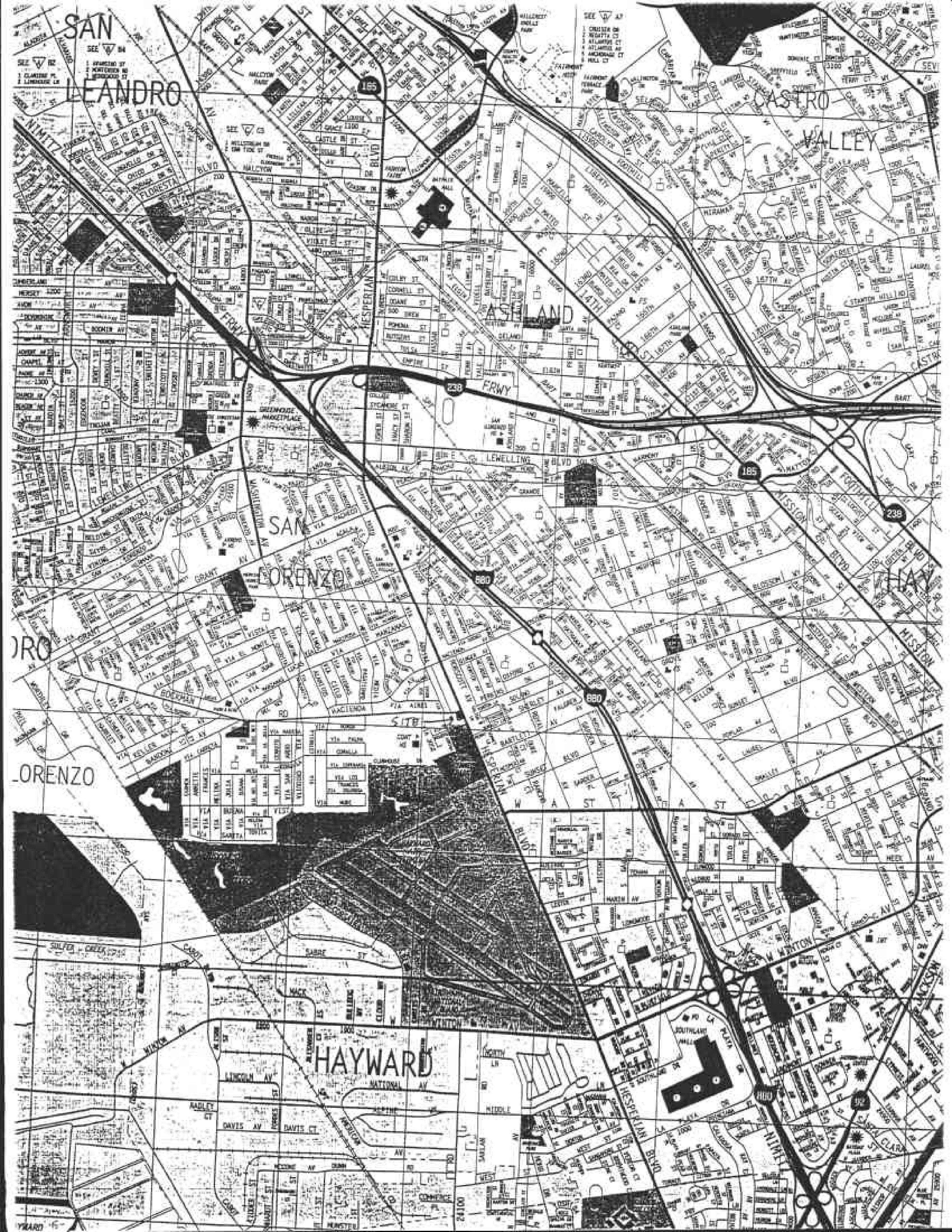
GROUNDWATER ELEVATION CONTOUR MAP, DECEMBER 7, 1998

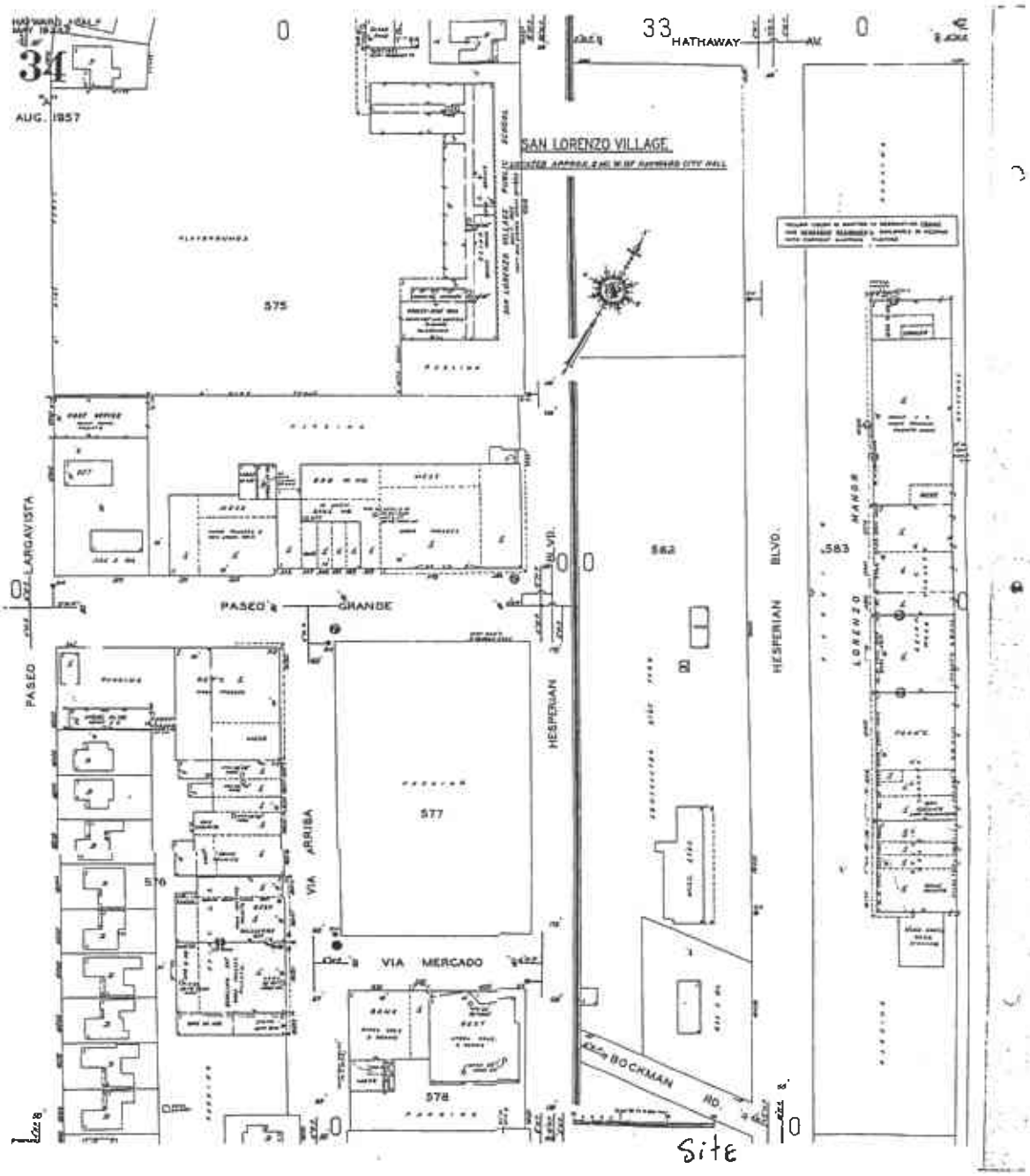
FIGURE: 1
PROJECT: DAC04

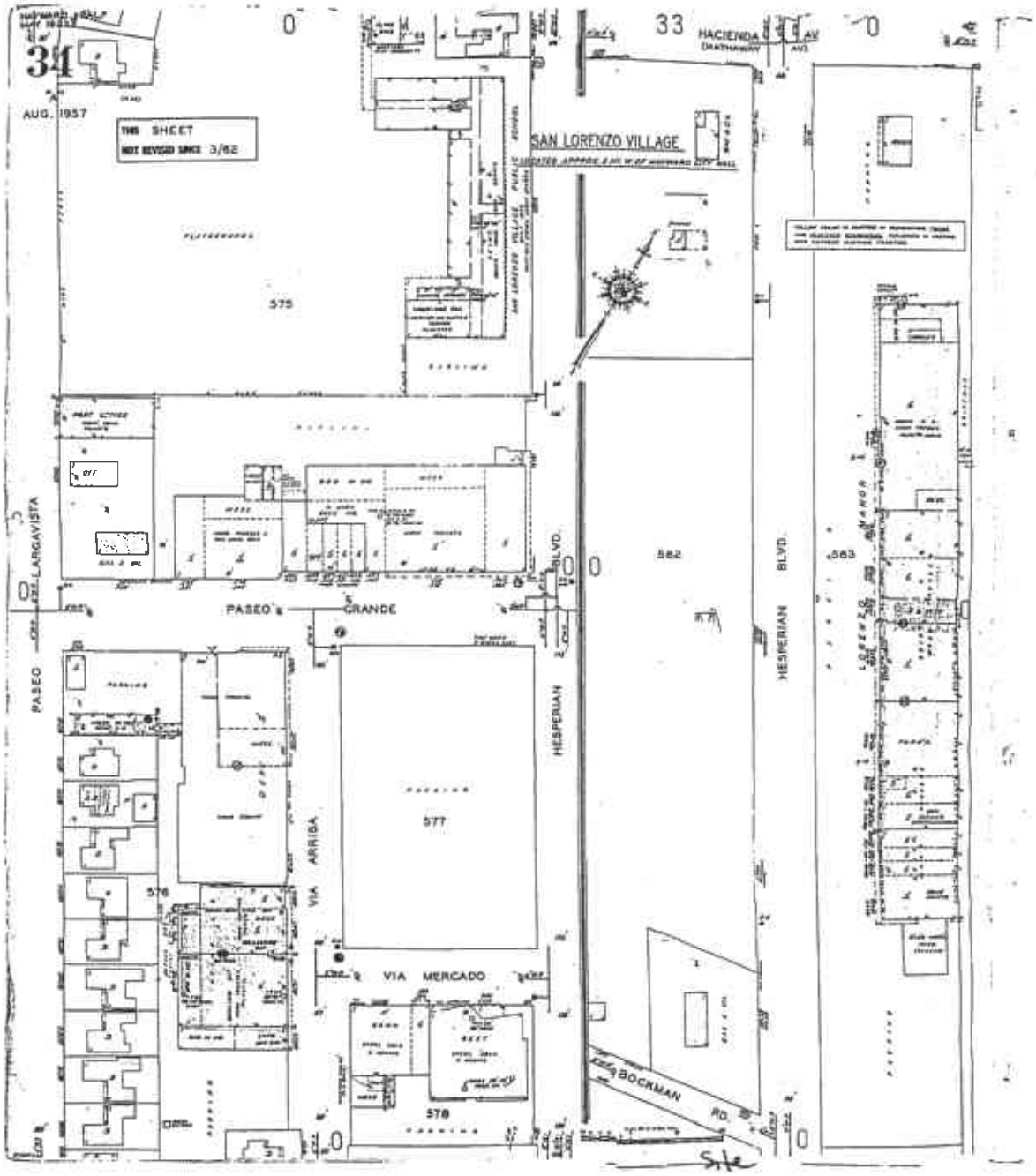
CAMBRIA

APPENDIX B

SANBORN MAPS


SAN
LEANDRO
CASTRO
VALLEY
ASHLAND
SAN
LORENZO
LORENZO
HAYWARD
HAY
NIMITZ
FRWY
HESPERIAN
BLVD
LEWELLING
BLVD
MISSION
FOOTHILL
185
238
880
92
GREENHOUSE MARKETPLACE
EMPIRE
ELGIN
GRANT
AV
HALCYON
SABRE
ST
LINCOLN
AV
NATIONAL
AV
DAVIS
AV
DAVIS CT
MIDDLE
W
A
ST
A
ST
W WINTON
JACKSON
SOUTHLAND MALL
14TH
LIBERTY
MIRAMAR
BLOSSOM
GROVE
SUNSET
HACIENDA
BOEDMAN
DUNN
COMMERCE





SANBORN MAP LEGEND

CODING OF FIRE–RESISTIVE STRUCTURAL UNITS FOR FIREPROOF AND NON–COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers
C	Protected Steel Frame
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame
H.	Unprotected Steel Joists, Columns, Beams, Trusses,Arches.
O.	Masonry Bearing Walls only

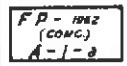
FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete, Reinforced Concrete with Masonry Units, Pre–cast Concrete or Gypsum Slabs or Planks.
2.	Concrete or Metal Lath, Incombustible Form Boards, Paper–backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

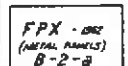
ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete, Reinforced Concrete with Masonry Units, Reinforced Gypsum Concrete,Pre–cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper–backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
c or w	Incombustible Composition Boards with without Insulation, Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

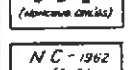
The coding to the left, for framing, floor and roof structural units is used in describing the construction of fie–resistive buildings. In addition, reports for fire–resistive buildings will show the date built, wall construction other than brick, and ceilings.



A fireproof building built in 1962 with concrete walls and reinforced concrete frame, floors and roof.



A fireproof building built in 1962 with metal panel walls, reinforced concrete columns and beams, concrete walls on metal lath and gypsum slab roof, noncombustible ceilings.



A non combustible building built in 1962 with concrete block walls; unprotected steel columns, beams and joists; concrete floors on metal lath and steel deck roof.

MASONRY CONSTRUCTION

Important interior and all exterior masonry walls of all non–residential buildings and residential buildings of five or more dwelling units are shown with weighted (——) lines.

Masonry walls of residential buildings of four dwelling units or less are shown in a standard line and the construction is noted on all buildings diagramed after July, 1963.

WALLS


8" Brick


12" Concrete


18" & 20" Stone


12" & 8" Hollow Tile Wall Thicknesses Placed Relative to Respective Floors


Cinder, Concrete or Cement Brick


Hollow Cinder or Concrete Blocks, Pilastered


Mixed Construction of Concrete Blocks, Brick Faced


Mixed Construction of Concrete Blocks and Brick


Masonry Walls, Metal Faced


Adobe


Hollow Cinder or Concrete Block Interior Wall Basement to Roof

Tile Interior Wall Basement to Roof

Cement Brick End Wall

PARTITIONS


Frame

Tile from Foundation to Top Ceiling only

Concrete First Floor only

Hollow Cinder or Concrete Block 1st Floor only

Brick 2nd Floor only

Tile 1st & 3rd Floor only

OPENINGS

(Interior)


Wall with No Openings

Wall with Double Standard Fire Doors 1st Floor

Wall with Standard Fire Door Basement

Wall with Substandard Fire Doors 1st & 3rd Floors

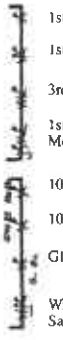
Wall with Metal & Wired Glass Fire Doors all Floors

Wall with Substandard Fire Doors 1st, 2nd & 3rd Floors & Unprotected Opening 4th Floor

Wall with Small Unprotected Openings only

Wall with Unprotected Openings all Floors

(Exterior)


1st Floor

1st & 2nd Floors

3rd Floor

1st & 4th Fl. with Metal Shutter 1st

10th& 22nd only

10th & 22nd Fl.

Glass Block

Wired Glass in Metal Sash 2nd & 3rd Fl.

NON–MASONRY CONSTRUCTION

Non–masonry walls are shown with fine(——) lines
(Walls construction other than wood and stucco on wood frame is noted)


Wood & Stucco & Cement Plaster, Etc. on Wood Frame


Brick Veneered on Wood Frame (Other Types of Veneered on Wood Frame Specifically Noted)


Mixed Masonry & Non–Masonry(Type of Masonry Specifically Noted)


Wood, Brick Lined, Br. Filled & Brick Nogged


Wood & Sash Glass


Metal & Sash Glass


Metal Clad on Wood Frame


Iron Building


Iron Building with Wood Roof. (Location of Extensive Wood Areas Specifically noted)


Asbestos Clad on Wood Frame. Noted in Non-Residential Structures only.


Mixed Wall--(9' of CB with Metal Sash Above


Metal Panels


Apron Walls with wood Sash and Glass


Stucco, Cement Plaster, Etc. on Steel Frame


Gunite on Steel Frame


Asphalt and/or Asbestos Protected Metal on Steel Frame


Asphalt and/or Asbestos Protected Metal on Wood Frame


Glass Panels

FIRE PROTECTION


Fire Department Connection


Automatic Sprinklers throughout contiguous sections of single risk


Automatic Sprinklers all floors of building


Automatic Sprinklers in part of building only (Note under Symbol indicates protected portion of building)


Not Sprinklered


Automatic Chemical Sprinklers


Chemical Sprinklers in part of building only (Note under Symbol indicated protected portion of building)


Vertical Pipe or Stand Pipe


Automatic Fire Alarm


Water Tank


Outside Vertical Pipe on fire Escape


Fire Alarm Box Noted "HPFS" on High Pressure Fire Service


Single Hydrant


Double Hydrant


Triple Hydrant


Quadruple Hydrant of the High Pressure Service


Water Pipes of the High Pressure Service


Water Pipes of the High Pressure Service as shown on Key Map


Public Water Service


Private Water Service

VERTICAL OPENINGS


Skylight lighting top story only


Skylight lighting 3 stories


Skylight with Wired Glass in Metal Sash


Open Elevator

Frame Enclosed Elevator

Frame Enclosed Elevator with Traps


Frame Enclosed Elevator with Self Closing Traps


Concrete Block Enclosed Elevator with Traps


Tile Enclosed Elevator with self closing Traps


Brick Enclosed Elevator with wired Glass Door


Open Hoist


Hoist with Traps


Open Hoist Basement to 1st


Stairs

MISCELLANEOUS


Number of stories, Height in Feet Composition Roof Covering


Parapet 6" above Roof Frame Cornice Parapet 12" above Roof

Parapet 24" above Roof Occupied by Warehouse Metal, Slate, Tile or Asbestos Shingle Roof Covering Parapet 48" above Roof


2 Stories & Basement
1st Floor Occupied by Store
2 Residential Units above 1st
Auto in Basement
Drive or Passageway
Wood Shingle Roof.


Iron Chimney


Iron Chimney (with spark arrestor)


Vertical Steam Boiler


Horizontal Steam Boiler


Width of Street between Block Lines, not Curb Lines


Ground Elevation


House numbers nearest to Buildings are Official or Actually up on Buildings. Old house numbers are farthest from Buildings


Reference Adjoining Page


Fire Department as shown on Key Map

Vac. or V. – Vacant
Vac. & Op. or V.-O. – Vacant & Open


Brick Chimney


Gasoline Tank


Fire Pump


Block Number

GLOSSARY

A-B Lines An arbitrary boundary between adjoining sheets.
A Private garage
ABV Above
A.E.A. Equipped with fire detecting devices which automatically signal a central fire department.
AIR COND Air cooling system employing ducts through floors
APRON WALL A masonry wall extending 5' or less above foundation
ASSOC RISK Risk not underwritten by stock Fire Ins Companies
BASEMENT A story having its floor below ground and it's ceiling at least 4' above ground. Cook County Ill.. A floor of a building next below the first floor. Shown by the symbol B following story height. Sub–basements or sub–cellars, (stories below the first basement), are shown by the symbol SB following basement symbol.
CHIMNEYS (Applicable to maps in Rocky Mountain & Pacific Coast States.)
BC. Brick, stone, concrete brick & concrete chimneys.
C. BL. C. Concrete Block chimney
C.C. Non standard concrete chimney
T.C. Tile Chimney
P.C. Patent chimney
IR. CH. Iron chimneys
S.P. Stove pipe
S.P.V. Stove pipe with patent ventilator.

RESIDENTIAL OCCUPANCY SYMBOLS
D Single family unit or as qualified by a numeral
F. APTS A multi–family residential building corresponding with local Rating Bureau definition in family units per floor, story height, & separation of entrance.
ROOM G A residential Building normally occupied by a single family but with 10 or more rooms rented for lodging purposes.
EXCEPTIONS: 6 rooms in Arizona, California, Nevada, Utah & Montana; 5 rooms in Oregon & Washington; 4 rooms in Idaho & Hawaii.

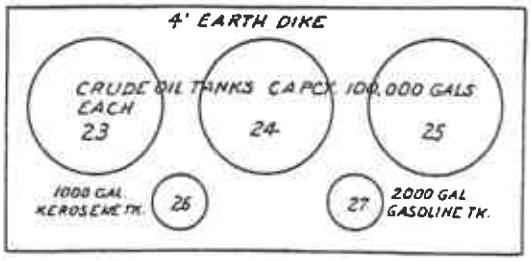
FIRE RESISTIVE CONSTRUCTION SYMBOLS
F.P. Approved masonry walls, floors & roof, interior supports of approved masonry, concrete and/or protected steel.
F.P.X. F.P. qualifications except inferior or sub–standard walls.
N.C. Fire resistive with unprotected structural steel units
HOLLOW WALL A bonded masonry wall having a continuous air space within.
I.E.P. Independent Electric Plant.
IMPASSABLE Not traversable due to condition of terrain
LEDGED WALL A masonry bearing wall with extended edges to support floors.
LOFT Tenanted by industrial occupancies.
M.L. & P. Concrete or plaster applied to metal lath on wood studdings.
M.S. & G. Metal sash & glass.
NOT OPEN Streets appearing on records but not open on ground.
O.L. Windows overlooking the roof above the corresponding floor of an adjoining building.
O.U. Open between ground and first floor.
PILAST'D. Masonry reinforcing columns in walls.
SKYTS. Skylights.
SL. CL. Slate attached to wood siding.
SM. HO Smoke House
STABLE Shown by crossing or diagonal lines on diagram.
SUSP'D Suspended Ceilings below floor and/or roof beams.
SYST. System.
TRANSF. Transformer
WD. Wood.

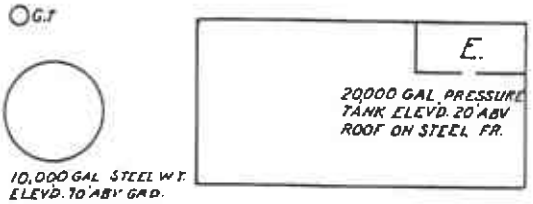
LAND USE APPLICABLE TO CHANGES DIAGRAMMED AFTER 1909

R	RESIDENTIAL	M	MANUFACTURING
RT	RESIDENTIAL TRANSIENT	P	PUBLIC OR INSTITUTIONAL
C	COMMERCIAL	U	UTILITY
W	WAREHOUSE	T	TRANSPORTATION

NUMERICAL PREFIX INDICATES THE NUMBER OF ESTABLISHMENTS IN EACH CATEGORY

TANKS G.T. Gasoline Tank





FUEL OIL LINE

Fire Cistern

CISTERN

CODING OF STRUCTURAL UNITS FOR FIREPROOF AND NON–COMBUSTIBLE BUILDINGS

FRAMING

CODE	STRUCTURAL UNIT
A.	Reinforced Concrete Frame.
B.	Reinforced Concrete Joists, Columns, Beams, Trusses, Arches, Masonry Piers.
C.	Protected Steel Frame.
D.	Individually Protected Steel Joists, Columns, Beams, Trusses, Arches.
E.	Indirectly Protected Steel Frame.
F.	Indirectly Protected Steel Joists, Columns, Beams, Trusses, Arches.
G.	Unprotected Steel Frame.
H.	Unprotected Steel Joists, Columns, Beams, Trusses, Arches.
O.	Masonry Bearing Walls.

FLOORS

CODE	STRUCTURAL UNIT
1.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Pre–cast Concrete or Gypsum Slabs or Planks.
2.	Concrete or Metal Lath, Incombustible Form Boards, Paper–backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
3.	Open Steel Deck or Grating.

LAND USE APPLICABLE TO CHANGES DIAGRAMMED AFTER 5/69

R	RESIDENTIAL	M	MANUFACTURING
RT	RESIDENTIAL-TRANSIENT	P	PUBLIC OR INSTITUTIONAL
C	COMMERCIAL	U	UTILITY
W	WAREHOUSE	T	TRANSPORTATION

NUMERICAL PREFIX INDICATES THE NUMBER OF ESTABLISHMENTS IN EACH CATEGORY

ROOF

CODE	STRUCTURAL UNIT
a.	Reinforced Concrete. Reinforced Concrete with Masonry Units. Reinforced Gypsum Concrete. Pre–cast Concrete or Gypsum Slabs or Planks.
b.	Concrete or Gypsum on Metal Lath, Incombustible Form Boards, Paper–backed Wire Fabric, Steel Deck, and Cellular, Ribbed or Corrugated Steel Units.
c.	Incombustible Composition Boards with or without Insulation. Masonry or Metal Tiles.
d.	Steel Deck, Corrugated Metal or Asbestos Protected Metal with or without Insulation.

The coding for framing, floor and roof structural units as shown above is used in describing the construction of fire–resistive buildings. In addition, reports for fire resistive buildings will show the date built and wall construction other than brick.

F P Buildings have masonry floors and roof, concrete and/or directly or indirectly protected steel framing; and clay brick, stone or poured concrete walls.

F P X buildings are F P buildings with inferior walls such as concrete block, cement brick, metal or glass panels, etc.

N C buildings have unprotected steel framing and fire–resistive but non–masonry floors and roof.

FP–1962 (CONC) A-1-a — A fire–resistive building built in 1962 with concrete walls and reinforced concrete frame, floors, and roof.

FPX–1962 (METAL PANELS) A-2-b — A fire–resistive building built in 1962 with metal panel walls, indirectly protected steel frame, concrete floors and roof on metal lath, noncombustible ceilings.

NC–1962 (C.B.) N-2-d — A noncombustible building built in 1962 with concrete block walls; unprotected steel columns and beams; concrete floors on metal lath and steel deck roof.

CAMBRIA

APPENDIX C

PARCEL DATA

	A P N	Use Code	Situs Address	Situs City	Owner Name	Mailing Address
1	412 -0071-002-03	85	17601 HESPERIAN BL	SAN LORENZO	WEBSTER ROBERT L TR	60 HILLSDALE MALL, SAN MATEO CA 94403-3407C/O ROBERT L WEBST
2	412 -0071-003-29	83	18401 HESPERIAN BL	SAN LORENZO	BOHANNON O E TR	60 HILLSDALE MALL, SAN MATEO CA 94403-3407
3	412 -0071-003-35	36	18401 HESPERIAN BL	SAN LORENZO	BOHANNAN O E TR	18401 HESPERIAN BL, SAN LORENZO CA 94580-3027
4	412 -0071-004-03	92	18499 HESPERIAN BL	SAN LORENZO	BOHANNON O E TR	60 HILLSDALE MALL, SAN MATEO CA 94403-3407
5	412 -0071-005-02	11	17980 VIA ARRIBA	SAN LORENZO	THAYER C O & ELIZABETH	17980 VIA ARRIBA, SAN LORENZO CA 94580-3022
6	412 -0071-006-00	11	17964 VIA ARRIBA	SAN LORENZO	PAIVA FRANK & ALZIRA	17964 VIA ARRIBA, SAN LORENZO CA 94580-3022
7	412 -0071-007-00	11	17948 VIA ARRIBA	SAN LORENZO	ALBRIGHT DONALD J & HEATHER R	17948 VIA ARRIBA, SAN LORENZO CA 94580-3022
8	412 -0071-008-00	11	17932 VIA ARRIBA	SAN LORENZO	BLOCK RICHARD A & DENEEN	17932 VIA ARRIBA, SAN LORENZO CA 94580-3022
9	412 -0071-009-00	11	17916 VIA ARRIBA	SAN LORENZO	WOODARD LOUISE E TR	17916 VIA ARRIBA, SAN LORENZO CA 94580-3022
10	412 -0074-063-00	11	630 VIA AIRES	SAN LORENZO	STOKESBERRY JAMES C	PO BOX 245, BREMERTON WA 98337
11	412 -0074-064-00	11	17949 VIA ARRIBA	SAN LORENZO	MOWBRAY ALICE	17949 VIA ARRIBA, SAN LORENZO CA 94580-3023
12	412 -0074-065-00	11	17981 VIA ARRIBA	SAN LORENZO	STEVENS JOHN	17981 VIA ARRIBA, SAN LORENZO CA 94580-3023
13	412 -0074-066-00	11	715 BOCKMAN RD	SAN LORENZO	CECIL ROBERT T & ROBIN A	715 BOCKMAN RD, SAN LORENZO CA 94580-2903
14	412 -0074-067-00	11	723 BOCKMAN RD	SAN LORENZO	ROSE JUANITA J	723 BOCKMAN RD, SAN LORENZO CA 94580-2903
15	412 -0074-117-00	11	636 VIA AIRES	SAN LORENZO	RASMUSSEN ROBERT R & ELOISE R TRS	925 FREEDOM BL, WATSONVILLE CA 95076-3804
16	412 -0085-002-02	03	18701 HESPERIAN BL	SAN LORENZO	HAYWARD AREA RECREATION & DISTRIC	P.O. BOX 5000, HAYWARD CA 94540-0001
17	412 -0085-003-03	85	18501 HESPERIAN BL	SAN LORENZO	FIRST INTERSTATE BANK OF CALIFORNIA T	PO BOS 52085, PHOENIX AZ 85072C/O PROP TAX DEPT DC-17
18	412 -0085-005-06	31	664 BOCKMAN RD	SAN LORENZO	GEHRKE L C & RONALD	21000 MISSION BL #104, HAYWARD CA 94541-1821C/O KWIK MI LADY CL
19	412 -0085-006-03	31	676 BOCKMAN RD	SAN LORENZO	REED THOMAS B & PATRICIA M TRS	2916 DOLORES WY, BURLINGAME CA 94010-5719
20	412 -0085-007-00	11	688 BOCKMAN RD	SAN LORENZO	MANAFY MICHAEL & MAXINE	688 BOCKMAN RD, SAN LORENZO CA 94580-3005
21	412 -0085-008-00	11	18200 VIA ARRIBA	SAN LORENZO	DARREGAUCHE EMILE	18200 VIA ARRIBA, SAN LORENZO CA 94580-3051
22	412 -0085-009-00	11	18250 VIA ARRIBA	SAN LORENZO	FOGEL BRIAN D & PAMELA J	18250 VIA ARRIBA, SAN LORENZO CA 94580-3051
23	412 -0085-010-00	11	18300 VIA ARRIBA	SAN LORENZO	FERNANDEZ FREDERICK W JR & N L	18300 VIA ARRIBA, SAN LORENZO CA 94580-3050
24	412 -0085-011-00	11	18350 VIA ARRIBA	SAN LORENZO	CHOY STEPHEN	7856 PINEVILLE CR, CASTRO VALLEY CA 94552-5354
25	412 -0085-012-00	11	18400 VIA ARRIBA	SAN LORENZO	CESPEDES PATROCINIO G & CENTA G	18400 VIA ARRIBA, SAN LORENZO CA 94580-3049
26	412 -0085-057-00	11	18151 VIA ARRIBA	SAN LORENZO	DAGUE ROY E & EARLENE H TRS	18151 VIA ARRIBA, SAN LORENZO CA 94580-3058
27	412 -0085-058-00	11	702 BOCKMAN RD	SAN LORENZO	FORSBERG JEROME V & JUDITH E	PO BOX 4658, HAYWARD CA 94540-4658
28	412 -0085-059-00	11	710 BOCKMAN RD	SAN LORENZO	DILALLO J A & LARUE	710 BOCKMAN RD, SAN LORENZO CA 94580-2904

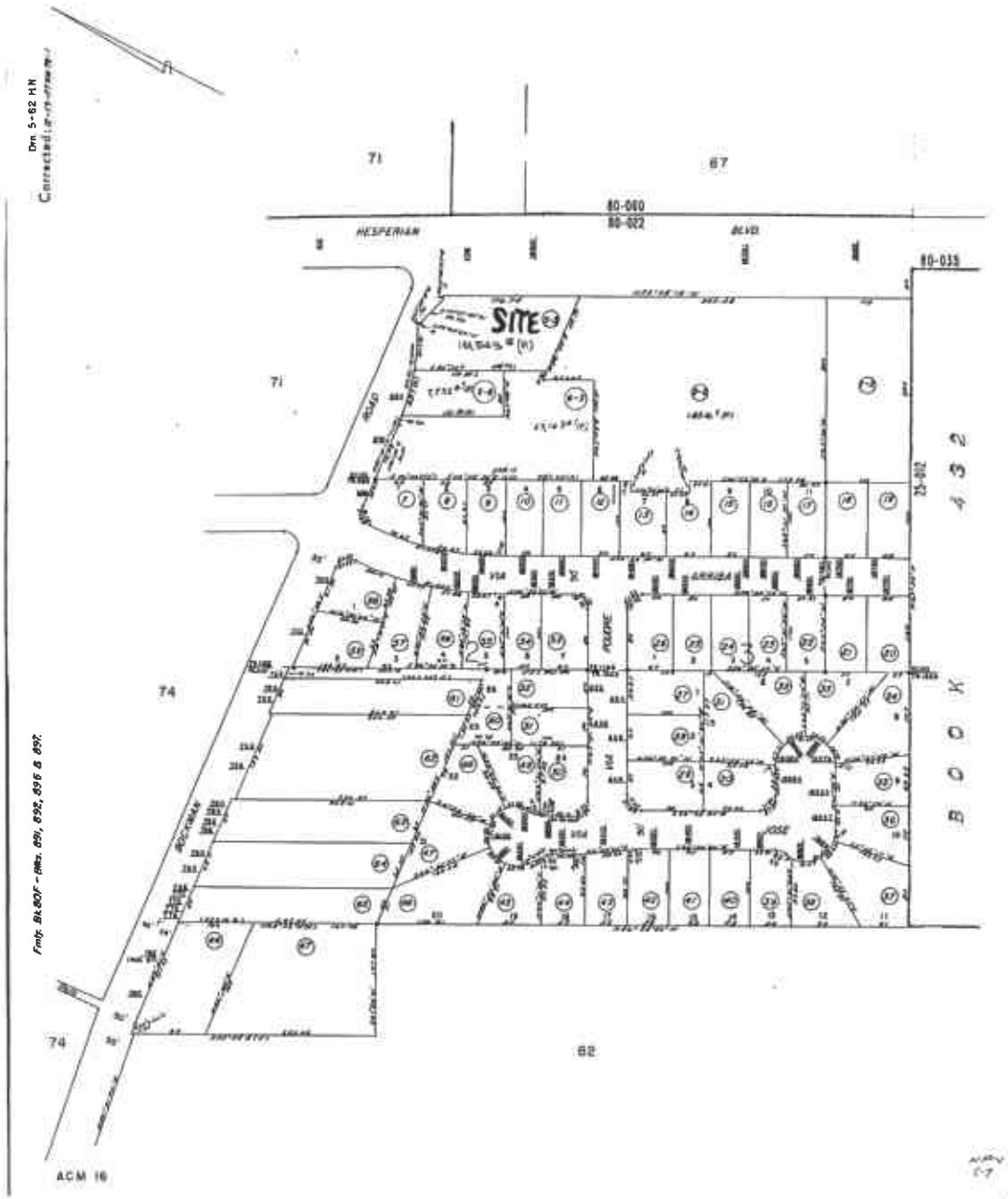
ASSESSOR'S MAP 412

Code Area Nos. 80-002

85 Scale-1"=100'

No. Por. De Soto Rancho (Bk Dds. "W" Pg 768)

TRACT 1185 (Bk 33 Pg 57) TRACT 1323 (Bk 34 Pg 17)



ASSESSOR'S MAP 412

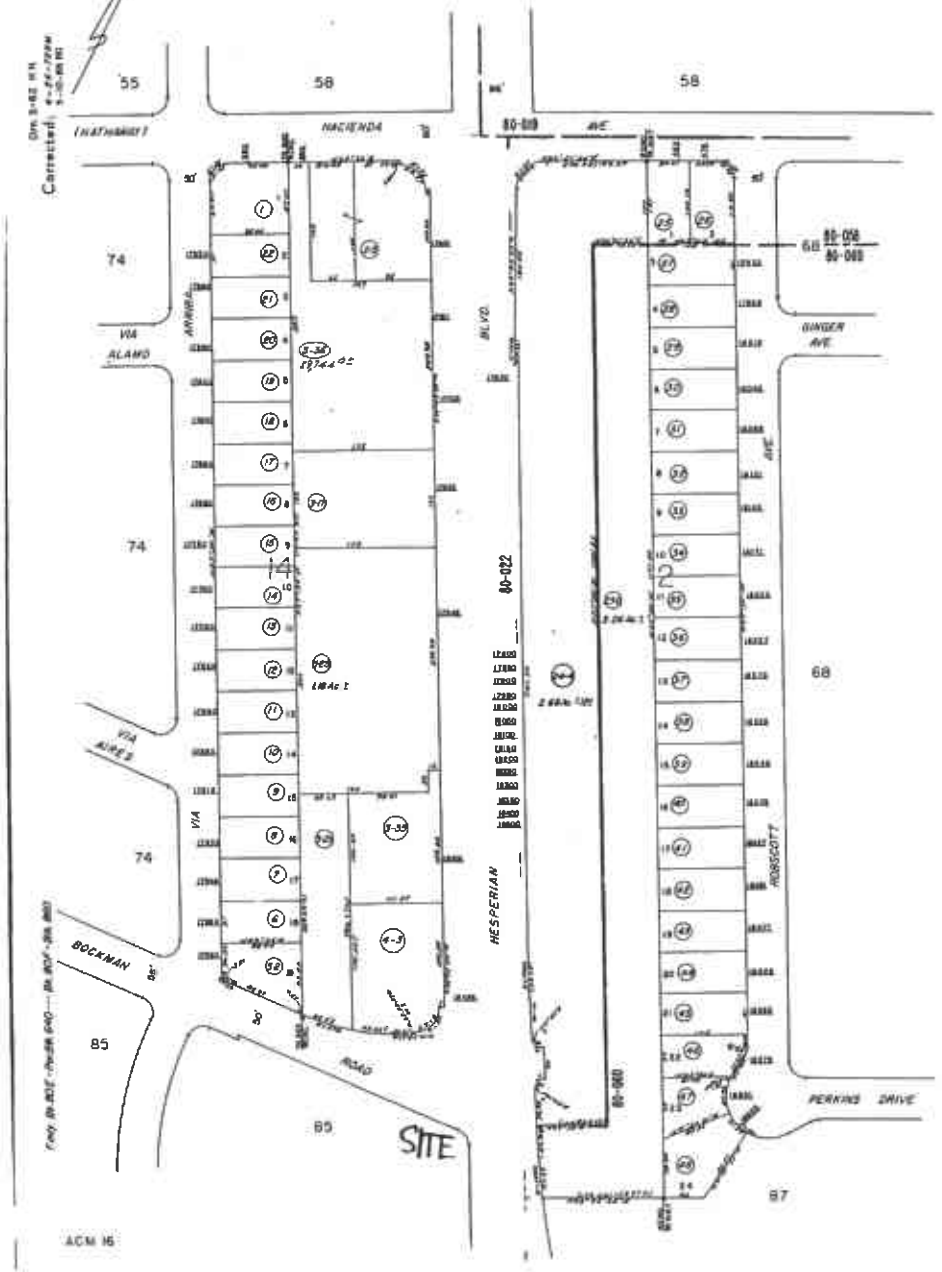
Code Area Nos. 80-022
80-058
80-060

71

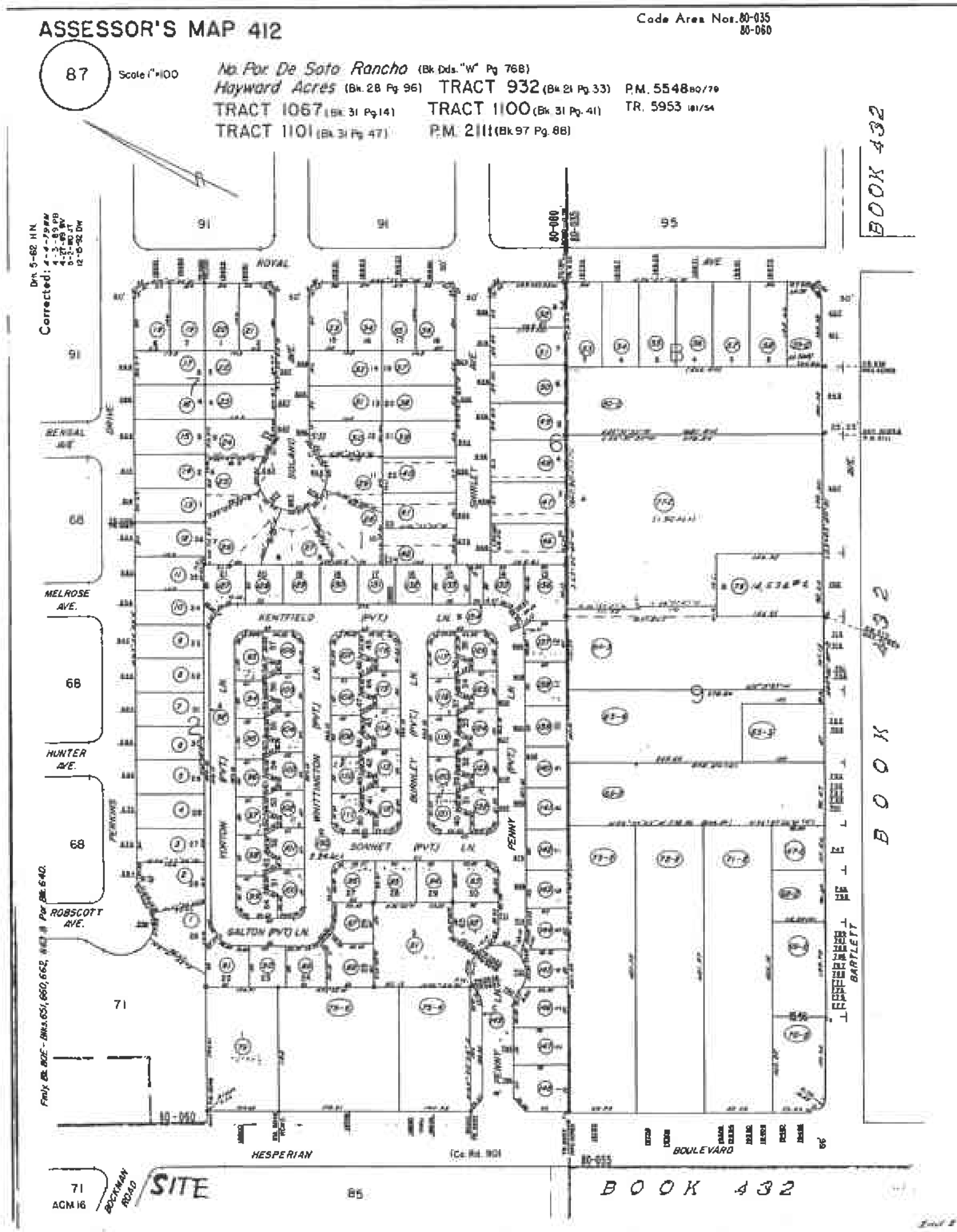
Scale 1"=100'

No. Por De Soto Rancho (Bk. Dbl. "M" Pg. 7581)

TRACT 802 (Bk. 12 Pg. 58) TRACT 1067 (Bk. 31 Pg. 14)




ASSESSOR'S MAP 412
Code Area Nos. 80-022
74
Scale 1"=100'
TRACT 802 (Bk 12 Pg 58)
71
58
AVE.
55
VIA
ARRIBA
85
VIA MAGDALENA
VIA ENCINAS
13
10
12
55
55
65
82
VIA FLORES
52
52
49
77
BOCKMAN
ROAD
ACM 16


ASSESSOR'S MAP 412
Code Area Nos. 80-035
80-060
87
Scale 1"=100
No. Por. De Soto Rancho (Bk Dds. "W" Pg 768)
Hayward Acres (Bk. 28 Pg 96)
TRACT 932 (Bk 21 Pg 33)
P.M. 5548
TRACT 1067 (Bk 31 Pg 14)
TRACT 1100 (Bk 31 Pg 41)
TR. 5953
TRACT 1101 (Bk 31 Pg 47)
P.M. 2111 (Bk 97 Pg 88)
BOOK 432
ROYAL
AVE
BENGAL AVE
DRIVE
MELROSE AVE.
HUNTER AVE.
ROBSCOTT AVE.
PERKINS
KENTFIELD (PVT) LN.
WHITTINGTON
BURNLEY
PENNY
FORTON
SONNET (PVT) LN.
SALTON PVT LN.
BARTLETT
HESPERIAN
(Co. Rd. 901)
BOULEVARD
SITE
BOCKMAN ROAD
ACM 16
91
95
68
71
85
80-060
80-035

ALAMEDA COUNTY ASSESSOR'S OFFICE USE CODES

FOR PUBLIC USE

FIRST and SECOND DIGIT CODES

0xxx - Series - Exempt, Not Assessed by County, Mobile Homes and Tracts

00,01,02 Use code not assigned at this time
03 Exempt public agencies
04 Property leased by a public utility
05 Property owned by a public utility
06 Use code not assigned at this time
07 Mobile home in mobile home park
08 Vacant residential tract lot
09 Partially complete residential tract home

1xxx Series - Single Family Residential

10 Vacant residential land zoned for four units or less
11 Single family residential homes used as such
12 Single family res home with a non-economic 2nd living unit
13 Single family residential home with a slight com'l use
14 Single family residential home with a slight indus. use
15 Planned development (townhouse type)
159 Planned development (townhouse type) Common area
16 Single family residential land with or subject to communal improvements
17 Single family residential home converted to boarding or rooming house use with shared kitchens and/or baths
18 Planned development (tract type) with commonly owned area
189 Planned development (tract type) Common area
19 Mobile home on single family residential land

2xxx Series - Multiple Residential, 2-4 Units and Mobile Homes

20 Use code not assigned at this time
21 Two, three or four single family homes
22 Double or duplex
23 Triplex; double or duplex together with a single family home
24 Four living units, eg. fourplex or triplex together with a single family residential home; two doubles or duplexes.
25 Residential property of two living units either or both of which are lesser quality than code 22
26 Residential property of three living units either or both of which are lesser quality than code 23
27 Residential property of four living units either or both of which are lesser quality than code 24
28 Residential property with two, three or four identifiable living units together with rooming or boarding use
29 More than one mobile home, or one mobile home in addition to other residential living units, on res. land

3xxx Series - Commercial (See also 8X & 9X Series)

30 Vacant commercial land (may include misc. imps)
31 One-story store
32 Store on 1st floor with offices or apts/lofts on 2nd or 3rd
33 Miscellaneous commercial (improved)
34 Department store
35 Discount store
36 Restaurant
37 Shopping Center
38 Supermarket
39 Commercial or industrial condominium prior to sale of one unit. Regular use code used on all but common area after sale of one unit

4xxx Series - Industrial

40 Vacant industrial land (may include misc. imps)
41 Warehouse
42 Light industrial
43 Heavy industrial
44 Misc. industrial (improved), not qualifying for any other industrial code
45 Nurseries
46 Quarries, sand & gravel
47 Salt ponds
48 Terminals, trucking and distribution
49 Wrecking yards

5xxx Series - Rural

50 Vacant rural-residential homesites (may include misc. imps)
51 Rural-residential homesites (improved)
52 One or more mobile homes on rural home sites
53 Rural property with significant com'l use
54 Rural property with significant indust. use
55 Rural property used for agriculture (more than 10 acres)
56 Rural property in transition to a higher use
57 Vac. rural land not usable for even agricultural
585 Improved rural land under non-renewal of Williamson Act contract
595 Vacant rural land under non-renewal of Williamson Act contract

CAMBRIA

APPENDIX D

WELL SURVEY DATA

Permit	Tr	Section	Address	Longcity	Owner	Update	Xcoord	Ycoord	Matchlevel	Tsrqq	Rec_code
	3S/2W	18F 1	620 QUIGLEY ST	San Lorenzo	GREEN	08/08/1984	122,124,152	37,674,712	2	3S/2W 18F	4,661
	3S/2W	18F 2	775 HACIENDA AV	San Leandro		08/08/1984	122,126,857	37,672,293	9	3S/2W 18F	4,662
	3S/2W	18F 3	840 HACIENDA AVE	Hayward	P.F. NEAL	08/08/1984	122,126,857	37,672,293	9	3S/2W 18F	4,663
	3S/2W	18F 4	17061 VIA PERDIDO	San Leandro	WALLACE LEROY	01/22/1990	122,126,857	37,672,293	9	3S/2W 18F	4,664
	3S/2W	18G	HESPERIAN & HACIEND	Hayward	ARCO STATION	03/14/1988	122,122,412	37,672,293	9	3S/2W 18C	4,665
	3S/2W	18G 1	18451 ROBSCOTT	Hayward	LEWIS BARTON	08/08/1984	122,122,412	37,672,293	9	3S/2W 18C	4,666
	3S/2W	18G 2	17601 HESPERIAN BLV	San Lorenzo	ARCO PETROLEUM CO	08/04/1988	122,122,298	37,673,711	0	3S/2W 18C	4,667
	3S/2W	18G 3	17601 HESPERIAN BLV	San Lorenzo	ARCO PETROLEUM CO	08/04/1988	122,122,298	37,673,711	0	3S/2W 18C	4,668
	3S/2W	18G 4	17601 HESPERIAN BLV	San Lorenzo	ARCO PETROLEUM PRO	06/10/1988	122,122,298	37,673,711	0	3S/2W 18C	4,669
	3S/2W	18L 1	17125 VIA MEDIA	San Leandro	J. JACKSON	08/08/1984	122,126,857	37,668,823	9	3S/2W 18L	4,680
	3S/2W	18F 5	17200 Via Magdalena	San Lorenzo	ARCO	03/05/1992	122,125,451	37,673,940	1	3S/2W 18F	7,302
	3S/2W	18C 2	17105 Via Magdalena	San Lorenzo	ARCO	03/05/1992	122,125,718	37,674,309	1	3S/2W 18C	7,303
	3S/2W	18C 3	649 Potrero	San Lorenzo	ARCO	03/05/1992	122,125,335	37,675,055	1	3S/2W 18C	7,304
	3S/2W	18C 4	17127 Via Flores	San Lorenzo	ARCO	03/05/1992	122,126,943	37,674,158	1	3S/2W 18C	7,305
	3S/2W	18F 6	17238 Via Flores	San Lorenzo	ARCO	03/05/1992	122,126,480	37,672,653	1	3S/2W 18F	7,306
	3S/2W	18F 7	17347 Via Media	San Lorenzo	ARCO	03/05/1992	122,125,357	37,673,085	1	3S/2W 18F	7,307
	3S/2W	18G13	17601 Hesperian Blvd	San Lorenzo	ARCO Products MV	08/21/1992	122,122,298	37,673,711	1	3S/2W 18C	7,729
	3S/2W	18G14	17601 Hesperian Blvd	San Lorenzo	ARCO Products MV	08/21/1992	122,122,678	37,674,464	1	3S/2W 18C	7,730
	3S/2W	18G15	17601 Hesperian Blvd	San Lorenzo	ARCO Products MV	08/21/1992	122,124,300	37,673,500	1	3S/2W 18C	7,731
	3S/2W	18G16	17601 Hesperian Blvd	San Lorenzo	ARCO Products MV	08/21/1992	122,124,781	37,673,683	1	3S/2W 18C	7,732
	3S/2W	18G17	17601 Hesperian Blvd	San Lorenzo	ARCO Products MV	08/21/1992	122,124,546	37,673,938	1	3S/2W 18C	7,733
	3S/2W	18G18	17601 Hesperian Blvd.	San Lorenzo	Arco MW-24	07/13/1993	122,122,555	37,673,969	1	3S/2W 18C	0
	3S/2W	18G19	17601 Hesperian Blvd.	San Lorenzo	Arco SP-1/V-1	07/13/1993	122,122,555	37,673,969	1	3S/2W 18C	0
	3S/2W	18G20	Via Arriba & Hacienda A	San Lorenzo	Arco SP-2/V-5	07/13/1993	122,123,496	37,673,790	1	3S/2W 18C	0
	3S/2W	18G21	17601 Hesperian Blvd.	San Lorenzo	Arco MW-25	07/13/1993	122,122,555	37,673,969	1	3S/2W 18C	0
	3S/2W	18G22	17601 Hesperian Blvd.	San Lorenzo	Arco MW-26	07/13/1993	122,122,555	37,673,969	1	3S/2W 18C	0
	3S/2W	18G	17601 Hesperian Blvd.	San Lorenzo	Arco #608	07/19/1993	122,122,552	37,673,969	1	3S/2W 18C	0
	3S/2W	18B 2	575 QUIGLEY	San Lorenzo		12/12/1984	122,123,762	37,675,082	2	3S/2W 18E	4,653
	3S/2W	18B 3	17162 VIA PRIMERO	San Lorenzo	EDWARD VIEIRA	08/08/1984	122,121,820	37,676,826	0	3S/2W 18E	4,654
	3S/2W	18B 5	17601 HESPERIAN BLV	San Lorenzo	ARCO PETROLEUM PRO	06/01/1988	122,122,298	37,673,711	0	3S/2W 18E	4,656
	3S/2W	18B 6	17578 VIA PRIMERO	San Leandro	ANDRES GLASSOW	01/22/1990	122,122,412	37,676,003	9	3S/2W 18E	4,657
	3S/2W	18G29	18501 Hesperian Blvd	Hayward	BP Oil	09/11/1997	122,120,473	37,670,933	1	3S/2W 18C	0
	3S/2W	18J 1	1238 BARTLETT AV	San Lorenzo	FRED LOURIE	08/08/1984	122,117,970	37,668,823	9	3S/2W 18J	4,670
	3S/2W	18J 4	657 BARTLETT AV	Hayward	KAWABATA NURSERY	08/08/1984	122,115,982	37,670,094	0	3S/2W 18J	4,672
	3S/2W	18J 5	704 BARTLETT AV	Hayward	GENOVESIO	08/08/1984	122,116,987	37,669,498	0	3S/2W 18J	4,673
	3S/2W	18J 6	713 BARTLETT AV	Hayward	BRUSSEAU	08/08/1984	122,117,172	37,669,640	0	3S/2W 18J	4,674
	3S/2W	18J 7	18600 HESPERIAN BLV	Hayward	HATAKEDA	08/08/1984	122,117,970	37,668,823	9	3S/2W 18J	4,675
	3S/2W	18J 8	1266 BARTLETT	Hayward	FRANK DEL RIO	08/08/1984	122,117,970	37,668,823	9	3S/2W 18J	4,676
	3S/2W	18J 2	21626 HESPERIAN BLV	San Lorenzo	MINAMI	08/08/1984	122,117,970	37,668,823	9	3S/2W 18J	6,716
	3S/2W	18J 2	600 SHIRLEY	Hayward	KAUFMAN & BROAD SC	06/15/1989	122,117,970	37,668,823	9	3S/2W 18J	6,717
	3S/2W	18G23	185601 Hesperian Blvd.	San Lorenzo	BP Oil Co. MW-1	07/23/1993	122,120,480	37,670,956	1	3S/2W 18C	0
	3S/2W	18G24	185601 Hesperian Blvd.	San Lorenzo	BP Oil Co. MW-2	07/23/1993	122,120,480	37,670,956	1	3S/2W 18C	0

Phone	City	Drilldate	Elevation	Totaldepth	Waterdepth	Diameter	Use	Log	W	Wi	Yield	Dtwcalc	Old_dbase
0	SLZ	/46	33	52	0	6	DOM	?	0	0	0	0	L
0	SLE	?	0	31	13	6	ABN	?	0	0	0	0	L
0	HAY	7/77	0	29	0	4	IRR	D	0	0	0	0	L
0	SLE	05/89	0	25	9	4	IRR	D	0	0	0	0	L
0	HAY	10/85	0	16	0	0	BOR	G	0	0	0	0	L
0	HAY	5/77	0	26	10	4	IRR	D	0	0	0	0	L
0	SLZ	07/88	0	24	0	3	DES	G	0	0	0	0	L
0	SLZ	07/88	0	29	10	2	DES	D	0	0	0	0	L
0	SLZ	01/88	0	14	11	4	MON	D	0	0	0	0	L
0	SLE	?	30	0	0	0	IRR	?	0	0	0	1	L
0	SLZ	10/91	0	22	14	3	MON	G	0	0	0	0	D
0	SLZ	10/91	0	22	14	3	MON	G	0	0	0	0	D
0	SLZ	10/91	0	22	14	3	MON	G	0	0	0	0	D
0	SLZ	10/91	0	22	14	3	MON	G	0	0	0	0	D
0	SLZ	10/91	0	22	13	3	MON	G	0	0	0	0	D
0	SLZ	10/91	0	22	14	3	MON	G	0	0	0	0	D
0	SLZ	8/91	0	26	12	3	MON	D	0	0	0	0	D
0	SLZ	8/91	0	25	11	3	MON	D	0	0	0	0	D
0	SLZ	8/91	0	25	13	3	MON	D	0	0	0	0	D
0	SLZ	8/91	0	25	11	2	MON	D	0	0	0	0	D
0	SLZ	8/91	0	25	13	2	MON	D	0	0	0	0	D
0	SLZ	3/93	0	21	11	2	MON	G	0	0	0	0	D
0	SLZ	3/93	0	21	14	2	EXT	G	0	0	0	0	D
0	SLZ	3/93	0	19	9	2	EXT	G	0	0	0	0	D
0	SLZ	3/93	0	21	11	2	MON	G	0	0	0	0	D
0	SLZ	3/93	0	21	12	2	MON	G	0	0	0	0	D
0	SLZ	3/93	0	15	10	0	BOR	G	0	0	0	0	D
0	SLZ	?	0	44	0	7	DES	?	0	0	0	0	L
0	SLZ	2/78	0	40	16	6	IRR	?	0	0	3	0	L
0	SLZ	01/88	0	29	10	2	MON	D	0	0	0	0	L
0	SLE	06/89	0	30	12	4	DOM	?	0	0	0	0	L
0	HAY	2/95	0	25	15	2	MON	D	0	0	0	0	D
0	SLZ	/53	45	202	55	8	DOM	D	1	0	20	-10	L
0	HAY	/18	45	90	0	8	IRR	?	0	0	0	0	L
0	HAY	/39	45	55	0	6	DOM	?	0	0	0	0	L
0	HAY	/46	45	95	0	6	IRR	?	0	0	0	0	L
0	HAY	/29	40	65	0	8	IRR	?	0	+	100	0	L
0	HAY	5/51	0	75	18	6	DOM	D	0	0	12	0	L
0	SLZ	/41	43	91	0	6	IRR	D	0	0	0	0	L
0	HAY	01/89	0	85	35	0	DES	D	0	0	0	0	L
0	SLZ	10/92	41	31	21	2	MON	G	0	0	0	20	D
0	SLZ	10/92	41	26	21	2	MON	G	0	0	0	20	D

Permit	Tr	Section	Address	Longcity	Owner	Update	Xcoord	Ycoord	Matchlevel	Tsrqq	Rec_code
	3S/2W	18G25	185601 Hesperian Blvd.	San Lorenzo	BP Oil Co. MW-3	07/23/1993	122,120,480	37,670,956	1	3S/2W 18C	0
	3S/2W	18G28	18501 Hesperian Blvd	Hayward	BP Oil	09/11/1997	122,120,473	37,670,933	1	3S/2W 18C	0
	3S/2W	18R40	20200 Hesperian Blvd	Hawyard	ARCO Products (AS-1)	01/06/1994	122,117,564	37,666,508	1	3S/2W 18F	0
	3S/2W	18G26	185601 Hesperian Blvd.	San Lorenzo	BP Oil Co. MW-4	07/23/1993	122,120,480	37,670,956	1	3S/2W 18C	0
	3S/2W	17D 1	24 VIA HERMOSA	Hayward	GHIGLIONE	07/30/1984	122,114,105	37,676,239	9	3S/2W 17D	4,601
	3S/2W	17D 2	19288 MEDFORD CT	Hayward	LEDBETTER	07/30/1984	122,114,105	37,676,239	9	3S/2W 17D	4,602
	3S/2W	17D 3	?	Hayward	R.P. KING	08/03/1984	122,114,105	37,676,239	9	3S/2W 17D	4,603
	3S/2W	17E 3	?	Hayward	TOM CAWATA	08/03/1984	122,114,102	37,672,550	9	3S/2W 17E	4,605
	3S/2W	17E80	1330 SOLANO ST	San Lorenzo	DONALD H. RUDE	08/03/1984	122,114,102	37,672,550	9	3S/2W 17E	4,606
	3S/2W	17E81	1338 SOLANO ST	San Leandro	ALEX FARKAS	08/03/1984	122,114,102	37,672,550	9	3S/2W 17E	4,607
	3S/2W	18B 4	396 HACIENDA AVE	San Lorenzo	ROBERT REEDER	08/08/1984	122,119,892	37,675,043	0	3S/2W 18E	4,655
	3S/2W	17M 1	421 BARTLETT ST	Hayward	LEYMURA	08/08/1984	122,114,099	37,669,080	9	3S/2W 17M	4,626
	3S/2W	17N 1	20859 ROYAL AV	Hayward	MANUEL GEORGE	08/08/1984	122,113,043	37,667,385	0	3S/2W 17N	4,628
	3S/2W	17N 2	3257 A ST	Hayward	MOHAWK GAS STATIO	08/08/1984	122,114,097	37,665,481	9	3S/2W 17N	4,629
	3S/2W	17M 2	20555 GARDEN AV	Hayward	FERNANDES	08/08/1984	122,111,789	37,670,689	0	3S/2W 17M	4,627
	3S/2W	18R41	20450 Hesperian Blvd	Hayward	Airport Alliance	08/20/1997	122,117,259	37,666,159	1	3S/2W 18F	0
	3S/2W	18R42	20450 Hesperian Blvd	Hayward	Airport Alliance	08/20/1997	122,117,259	37,666,159	1	3S/2W 18F	0
	3S/2W	18R43	20450 Hesperian Blvd	Hayward	Airport Alliance	08/20/1997	122,117,259	37,666,159	1	3S/2W 18F	0
	3S/2W	18G27	18501 Hesperian Blvd	Hayward	BP Oil	09/11/1997	122,120,473	37,670,933	1	3S/2W 18C	0
	3S/2W	18R25	20499 Hesperian Blvd	Hayward	Texaco Refining & Mrkt(	07/31/1990	122,117,383	37,665,974	0	3S/2W 18F	813
	3S/2W	18R26	20499 Hesperian Blvd	Hayward	Texaco Refining & Mrkt(	07/31/1990	122,117,383	37,665,974	0	3S/2W 18F	814
	4S/2W	4C 3	HESPERIAN BLVD	Hayward	GRINSGHAW'S NURSEF	08/17/1984	122,117,050	37,665,750	2	4S/2W 4C	6,440
	4S/2W	4C 4	HESPERIAN BLVD	Hayward	GRIMSHAW'S NURSERY	08/17/1984	122,117,050	37,665,750	2	4S/2W 4C	6,441
	4S/2W	4D 3	HESPERIAN BLVD	Hayward	CITY OF HAYWARD	08/17/1984	122,117,050	37,665,750	2	4S/2W 4D	6,448
	4S/2W	4Q 4	HESPERIAN BLVD	Hayward	CITY OF HAYWARD	09/25/1989	122,117,050	37,665,750	2	4S/2W 4Q	6,455
	3S/2W	18R	19990 SKYWEST DRIVE	Hayward	FLIGHTCRAFT INC.	11/03/1989	122,117,967	37,665,319	9	3S/2W 18F	6,718
	3S/2W	18R 2	813 W. SUNSET BLVD	Hayward	STAN FELSON	12/14/1988	122,115,956	37,667,629	0	3S/2W 18F	6,720
	3S/2W	18R27	20501 Hesperian Blvd	Hayward	Unocal Corp	07/31/1992	122,117,050	37,665,750	1	3S/2W 18F	7,514
	3S/2W	18R28	20501 Hesperian Blvd	Hayward	Former Unocal 5590 M	09/21/1992	122,117,050	37,665,750	1	3S/2W 18F	7,898
	3S/2W	18R29	20200 Hesperian Blvd	Hayward	ARCO Prod Co A-	09/26/1992	122,117,521	37,666,474	1	3S/2W 18F	8,107
	3S/2W	18R30	20200 Hesperian Blvd	Hayward	ARCO Prod Co A-	10/01/1992	122,117,521	37,666,474	1	3S/2W 18F	8,311
	3S/2W	18R31	20200 Hesperian Blvd	Hayward	ARCO Prod Co A-	10/01/1992	122,117,521	37,666,474	1	3S/2W 18F	8,312
	3S/2W	18R32	20200 Hesperian Blvd	Hayward	ARCO Prod Co A-	10/01/1992	122,117,521	37,666,474	1	3S/2W 18F	8,313
	3S/2W	18R33	20200 Hesperian Blvd	Hayward	ARCO Prod Co AR-1	07/12/1993	122,117,521	37,666,490	1	3S/2W 18F	0
	3S/2W	18R34	20200 Hesperian Blvd	Hayward	ARCO Prod Co AR-2	07/12/1993	122,117,521	37,666,490	1	3S/2W 18F	0
	3S/2W	18R36	19901 Hesperian Blvd.	Hayward	Arco Products Co. A-1C	07/26/1993	122,118,063	37,666,976	1	3S/2W 18F	0
	3S/2W	18R37	20200 Hesperian Blvd.	Hayward	ARCO Prod.	07/29/1993	122,117,521	37,666,474	1	3S/2W 18F	0
	3S/2W	18R38	20200 Hesperian Blvd.	Hayward	ARCO Prod. A-9	07/29/1993	122,117,521	37,666,474	1	3S/2W 18F	0
	3S/2W	18R39	20200 Hesperian Blvd.	Hayward	ARCO Prod. A-8	07/29/1993	122,117,521	37,666,474	1	3S/2W 18F	0
	3S/2W	18R35	20200 Hesperian Blvd	Hayward	ARCO Prod Co AR-3	07/12/1993	122,117,521	37,666,490	1	3S/2W 18F	0
	4S/2W	4Q 3	HESPERIAN BLVD	Hayward	LOIVER BROS.	08/17/1984	122,117,050	37,665,750	2	4S/2W 4Q	6,810
	4S/2W	4C 8	HESPERIAN BLVD	Hayward	FRANK MARTIN	08/17/1984	122,117,050	37,665,750	2	4S/2W 4C	6,445

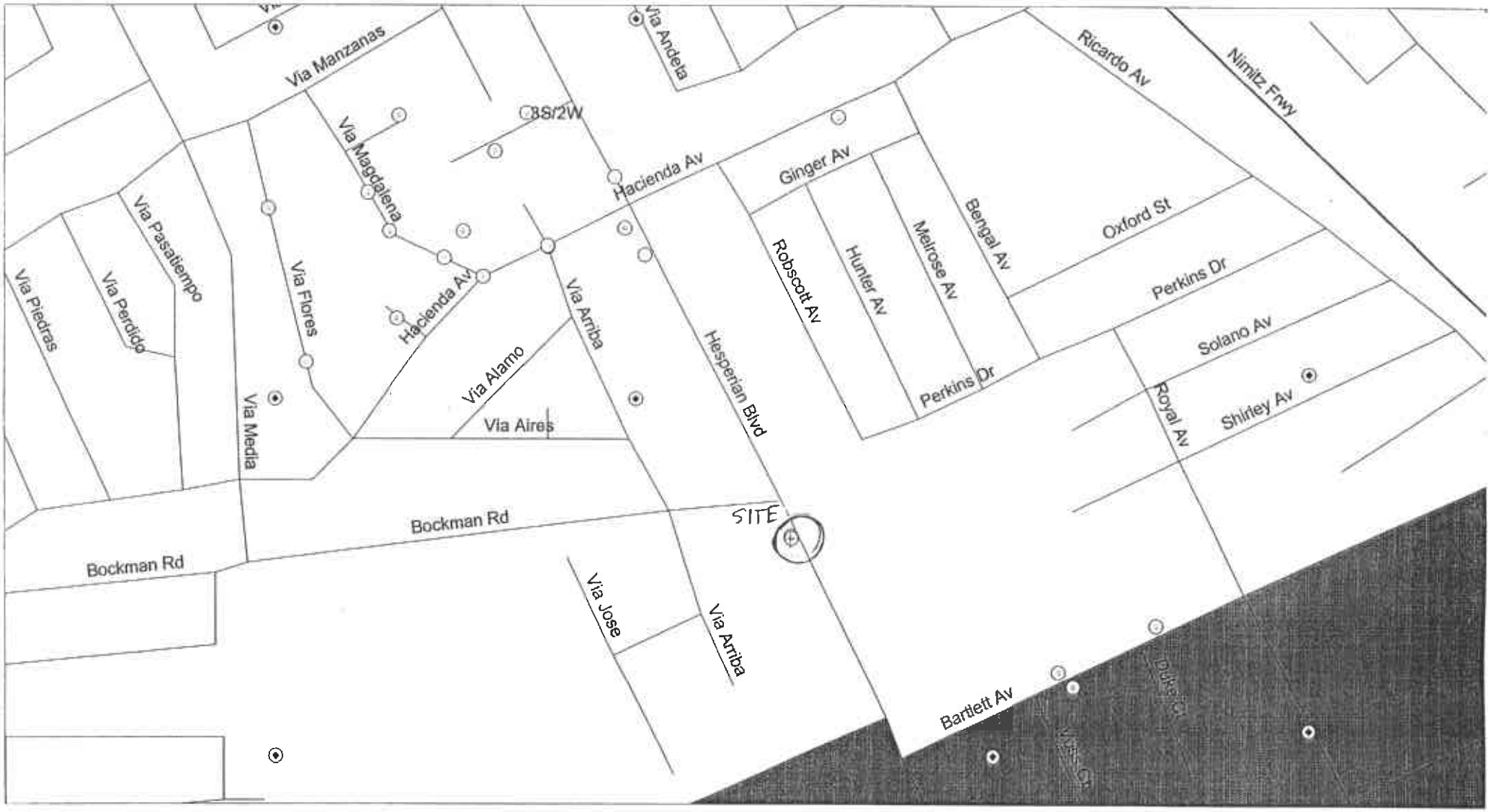
Phone	City	Drilldate	Elevation	Totaldepth	Waterdepth	Diameter	Use	Log	W	Wl	Yield	Dtwcalc	Old_dbase
0	SLZ	10/92	41	26	20	2	MON	G	0	0	0	21	D
0	HAY	2/95	0	25	15	2	MON	D	0	0	0	0	D
0	HAY	3/93	0	16	12	2	MON	D	0	0	0	0	D
0	SLZ	10/92	39	26	20	2	MON	G	0	0	0	19	D
0	HAY	/53	45	50	0	10	IRR	?	0	0	0	0	L
0	HAY	/55	52	45	0	6	IRR	?	0	0	0	0	L
0	HAY	10/47	46	180	0	12	IRR	D	0	0	0	0	L
0	HAY	4/49	0	104	0	0	?	D	0	0	0	0	L
0	SLZ	4/53	0	61	18	0	DOM	D	0	0	0	0	L
0	SLE	4/53	40	61	11	4	DOM	D	0	0	0	50	L
0	SLZ	11/77	0	31	15	6	IRR	D	0	0	60	0	L
0	HAY	/48	46	60	0	8	DOM	?	0	0	0	0	L
0	HAY	7/46	45	255	0	10	DOM	D	0	0	0	0	L
0	HAY	/28	44	85	0	8	IRR	?	0	0	0	0	L
0	HAY	/53	49	72	30	6	IRR	D	0	0	0	19	L
0	HAY	8/93	0	25	18	2	MON	D	0	0	0	0	D
0	HAY	8/93	0	25	18	2	MON	D	0	0	0	0	D
0	HAY	8/93	0	25	18	2	MON	D	0	0	0	0	D
0	HAY	2/95	0	25	15	2	MON	D	0	0	0	0	D
0	HAY	03/90	0	20	14	2	MON	D	0	0	0	0	D
0	HAY	03/90	0	20	14	2	MON	D	0	0	0	0	D
0	HAY	/54	6	60	0	0	IRR	?	0	0	0	0	L
0	HAY	?	10	0	0	0	IRR	?	0	0	0	0	L
0	HAY	/36	6	500	0	14	ABN	?	0	0	9	0	L
0	HAY	6/82	0	301	0	0	CAT	D	0	0	0	0	L
0	HAY	11/88	0	11	0	0	BOR	G	0	0	0	0	L
0	HAY	07/88	0	22	0	0	DES	D	0	0	0	0	L
0	HAY	4/92	0	24	17	2	MON	D	0	0	0	0	D
0	HAY	4/92	0	24	17	2	MON	G	0	0	0	0	D
0	HAY	12/91	0	35	18	3	MON	D	0	0	0	0	D
0	HAY	10/91	0	35	17	3	MON	D	0	0	0	0	D
0	HAY	10/91	0	32	17	3	MON	D	0	0	0	0	D
0	HAY	10/91	0	35	17	3	MON	D	0	0	0	0	D
0	HAY	3/93	0	35	12	1	MON	D	0	0	0	0	D
0	HAY	3/93	0	30	14	1	MON	D	0	0	0	0	D
0	HAY	11/92	0	35	17	2	MON	D	0	0	0	0	D
0	HAY	8/92	0	35	15	6	MON	D	0	0	0	0	D
0	HAY	8/92	0	34	16	2	MON	D	0	0	0	0	D
0	HAY	8/92	0	35	14	2	MON	D	0	0	0	0	D
0	HAY	3/93	0	35	14	6	MON	D	0	0	0	0	D
0	HAY		0	0	0	0					0	0	A
0	HAY	?	7	500	0	14	DOM	?	0	0	0	0	L

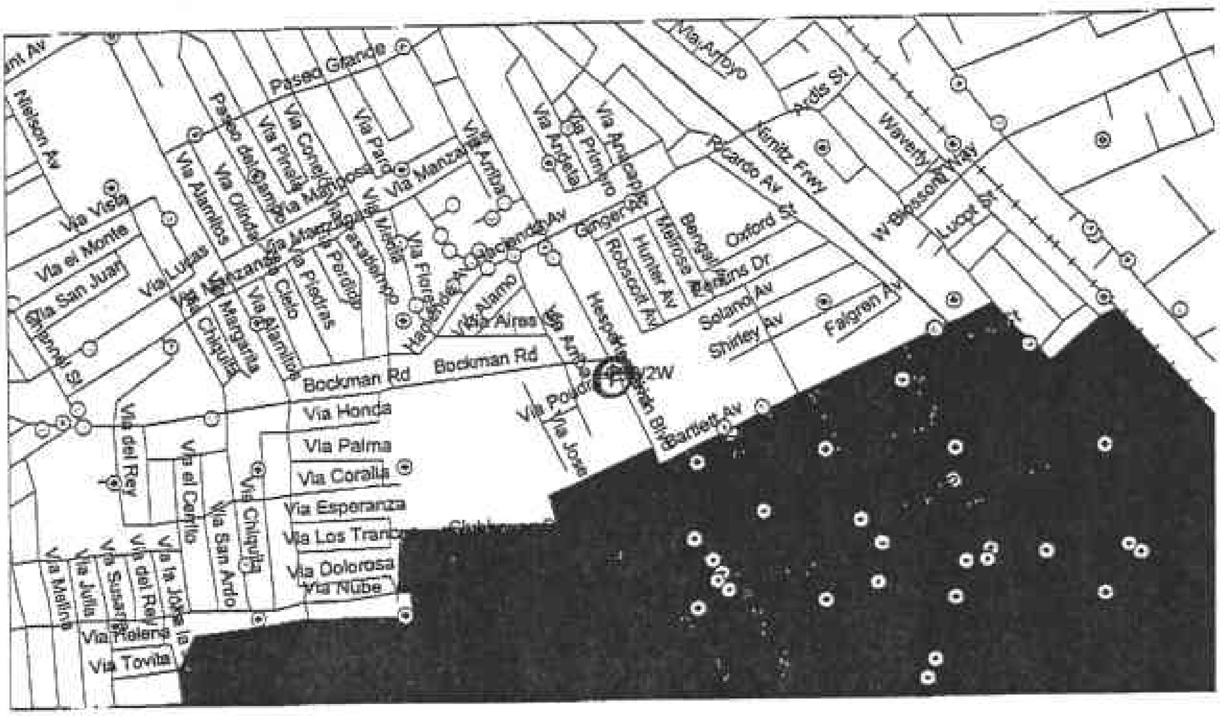
Permit	Tr	Section	Address	Longcity	Owner	Update	Xcoord	Ycoord	Matchlevel	Tsrqq	Rec_code
	3S/2W	18R 3	AIRPORT	Hayward	CITY OF HAYWARD	08/08/1984	122,117,967	37,665,319	9	3S/2W 18F	4,690
	3S/2W	18K 1	HESPERIAN BLVD	Hayward	HARD	08/08/1984	122,117,050	37,665,750	2	3S/2W 18K	4,677
	3S/2W	18K 3	HESPERIAN BLVD	Hayward	HARD	08/08/1984	122,117,050	37,665,750	2	3S/2W 18K	4,679
	3S/2W	18Q 2	HESPERIAN BLVD	Hayward	EAST BAY DISCHARGE	08/08/1984	122,117,050	37,665,750	2	3S/2W 18C	4,688
	3S/2W	18R 4	19990 SKYCREST DR	Hayward	BEECHKARFT WEST AU	07/23/1985	122,117,967	37,665,319	9	3S/2W 18F	4,691
	3S/2W	18R 5	19990 SKYWEST DR	Hayward	BEECHKARFT WEST AU	07/23/1985	122,117,967	37,665,319	9	3S/2W 18F	4,692
	3S/2W	18R 6	19990 SKYWEST DR	Hayward	BEECHKARFT WEST AU	07/23/1985	122,117,967	37,665,319	9	3S/2W 18F	4,693
	3S/2W	18R 7	20200 HESPERIAN BLV	Hayward	ARCO PETROLEUM	10/06/1986	122,117,521	37,666,474	0	3S/2W 18F	4,694
	3S/2W	18R 8	20200 HESPERIAN BLV	Hayward	ARCO PETROLEUM	10/06/1986	122,117,521	37,666,474	0	3S/2W 18F	4,695
	3S/2W	18R 9	20200 HESPERIAN BLV	Hayward	ARCO PETROLEUM	10/06/1986	122,117,521	37,666,474	0	3S/2W 18F	4,696
	3S/2W	18R10	20499 HESPERIAN BLV	Hayward	TEXACO STA. #62488(	12/14/1988	122,117,383	37,665,974	0	3S/2W 18F	4,697
	3S/2W	18R11	20499 HESPERIAN BLV	Hayward	TEXACO STA. #62488(	12/14/1988	122,117,383	37,665,974	0	3S/2W 18F	4,698
	3S/2W	18R12	20499 HESPERIAN BLV	Hayward	TEXACO STA. #62488(	12/14/1988	122,117,383	37,665,974	0	3S/2W 18F	4,699
	3S/2W	18R13	19990 SKYWEST DRIVI	Hayward	FLIGHTCRAFT INC.	11/03/1989	122,117,967	37,665,319	9	3S/2W 18F	4,700
	3S/2W	18R14	20499 HESPERIAN	Hayward	TEXACO REFINING	01/12/1990	122,117,967	37,665,319	9	3S/2W 18F	4,701
	3S/2W	18R15	20499 HESPERIAN	Hayward	TEXACO REFINING	01/12/1990	122,117,967	37,665,319	9	3S/2W 18F	4,702
	3S/2W	18R16	20499 HESPERIAN	Hayward	TEXACO REFINING	01/12/1990	122,117,967	37,665,319	9	3S/2W 18F	4,703
	3S/2W	29C 2	HESPERIAN BLVD	Hayward	HAYWARD SCHOOL DI	08/10/1984	122,117,050	37,665,750	2	3S/2W 29C	5,133
	3S/2W	29F 1	HESPERIAN BLVD	Hayward	J.R. FRY	08/10/1984	122,117,050	37,665,750	2	3S/2W 29F	5,140
	3S/2W	29F 2	HESPERIAN BLVD	Hayward	J.R. FRY	08/10/1984	122,117,050	37,665,750	2	3S/2W 29F	5,141
	3S/2W	29G 1	HESPERIAN BLVD	Hayward	PALMA CEIA	08/10/1984	122,117,050	37,665,750	2	3S/2W 29C	5,147
	3S/2W	29J 1	HESPERIAN BLVD	Hayward	JERYL FRY	08/10/1984	122,117,050	37,665,750	2	3S/2W 29J	5,158
	3S/2W	29R 1	HESPERIAN BLVD	Hayward	PALMA CEIA VILLAGE	08/10/1984	122,117,050	37,665,750	2	3S/2W 29F	5,178
	4S/2W	4C 1	HESPERIAN BLVD	Hayward	PALMA CEIA	08/17/1984	122,117,050	37,665,750	2	4S/2W 4C	6,438
	4S/2W	4C 2	HESPERIAN BLVD	Hayward	GRIMASHAW NURSERY	08/17/1984	122,117,050	37,665,750	2	4S/2W 4C	6,439
	3S/2W	32H 2	HESPERIAN BLVD	Hayward	OLIVER BROTHERS	08/10/1984	122,117,050	37,665,750	2	3S/2W 32H	5,448
	3S/2W	18R17	20499 Hesperian Blvd	Hayward	Texaco Refining & Mark	05/30/1990	122,117,383	37,665,974	0	3S/2W 18F	41
	3S/2W	18R18	20501 Hesperian Blvd.	Hayward	Unocal Corporation	06/08/1990	122,117,967	37,665,319	9	3S/2W 18F	239
	3S/2W	18R19	20501 Hesperian Blvd.	Hayward	Unocal Corporation	06/08/1990	122,117,967	37,665,319	9	3S/2W 18F	240
	3S/2W	18R20	20501 Hesperian Blvd.	Hayward	Unocal Corporation	06/08/1990	122,117,967	37,665,319	9	3S/2W 18F	241
	3S/2W	18R21	20501 Hesperian Blvd.	Hayward	Unocal Corporation	06/08/1990	122,117,967	37,665,319	9	3S/2W 18F	242
	3S/2W	18R22	20501 Hesperian Blvd.	Hayward	Unocal Corporation	06/08/1990	122,117,967	37,665,319	9	3S/2W 18F	243
	3S/2W	18R23	20501 Hesperian Blvd.	Hayward	Unocal Corporation	06/08/1990	122,117,967	37,665,319	9	3S/2W 18F	244
	3S/2W	18R24	20501 Hesperian Blvd.	Hayward	Unocal Corporation	06/08/1990	122,117,967	37,665,319	9	3S/2W 18F	245
	3S/2W	18R	20501 Hesperian Blvd.	Hayward	Unocal Corporation	07/03/1990	122,117,967	37,665,319	9	3S/2W 18F	424
	3S/2W	18G 7	17601 Hesperian Blvd	San Lorenzo	Arco Petroleum Product	09/11/1990	122,122,298	37,673,711	0	3S/2W 18C	885
	3S/2W	18G 8	17601 Hesperian Blvd	San Lorenzo	Arco Petroleum Product	09/11/1990	122,122,298	37,673,711	0	3S/2W 18C	886
	3S/2W	18G 9	17601 Hesperian Blvd	San Lorenzo	Arco Petroleum Product	09/11/1990	122,122,298	37,673,711	0	3S/2W 18C	887
	3S/2W	18G10	17601 Hesperian Blvd	San Lorenzo	Arco Petroleum Product	09/11/1990	122,122,298	37,673,711	0	3S/2W 18C	888
	3S/2W	18G11	17601 Hesperian Blvd	San Lorenzo	Arco Petroleum Product	09/11/1990	122,122,298	37,673,711	0	3S/2W 18C	889
	3S/2W	18G12	17601 Hesperian Blvd	San Lorenzo	ARCO	03/27/1991	122,122,298	37,673,711	0	3S/2W 18C	1,480
	3S/2W	18G13	17601 Hesperian	San Lorenzo	ARCO	11/18/1991	122,122,298	37,673,711	2	3S/2W 18C	2,022

Phone	City	Drilldate	Elevation	Totaldepth	Waterdepth	Diameter	Use	Log	W	Wi	Yield	Dtwcalc	Old_dbase
0	HAY	?	0	0	0	8	ABN	?	0	0	0	0	L
0	HAY	/50	37	108	0	10	DOM	?	0	0	0	0	L
0	HAY	3/78	0	155	16	8	IRR	D	0	0	165	0	L
0	HAY	7/82	0	44	3	4	MON	D	0	0	0	0	L
0	HAY	6/85	0	26	5	2	MON	G	0	0	0	0	L
0	HAY	6/85	0	26	5	2	MON	G	0	0	0	0	L
0	HAY	6/85	0	15	5	2	MON	G	0	0	0	0	L
0	HAY	08/86	0	30	12	2	TES	D	0	0	0	0	L
0	HAY	08/86	0	30	12	2	TES	D	0	0	0	0	L
0	HAY	08/86	0	30	12	2	TES	D	0	0	0	0	L
0	HAY	06/88	98	20	12	2	MON	G	0	0	0	0	L
0	HAY	06/88	0	20	12	2	MON	G	0	0	0	0	L
0	HAY	06/88	99	20	13	2	MON	G	0	0	0	0	L
0	HAY	08/89	0	26	12	8	MON	G	0	0	0	0	L
0	HAY	06/89	0	21	12	4	MON	D	0	0	0	0	L
0	HAY	06/89	0	20	12	4	MON	D	0	0	0	0	L
0	HAY	06/89	0	20	12	4	MON	D	0	0	0	0	L
0	HAY	?	42	0	0	0	IRR	?	0	0	0	0	L
0	HAY	9/32	42	541	0	12	ABN	D	0	0	0	0	L
0	HAY	?	44	0	0	10	ABN	?	0	0	0	0	L
0	HAY	?	46	0	0	0	ABN	?	0	0	0	0	L
0	HAY	/56	0	47	136	8	ABN	?	0	0	0	0	L
0	HAY	?	35	19	0	4	IRR	?	0	0	0	0	L
0	HAY	?	10	535	0	0	MUN		0		0	0	L
0	HAY	?	7	60	0	0	IRR	?	0	0	0	0	L
0	HAY	10/56	25	547	125	12	IRR	D	0	0	800	-100	L
0	HAY	11/89	0	19	14	4	MON	D	0	0	0	0	D
0	HAY	2/90	0	24	15	2	MON	G	3	1	0	0	D
0	HAY	2/90	0	22	14	2	MON	G	2	1	0	0	D
0	HAY	2/90	0	23	19	2	MON	G	2	1	0	0	D
0	HAY	2/90	0	23	15	2	MON	G	2	1	0	0	D
0	HAY	2/90	0	23	15	2	MON	G	2	1	0	0	D
0	HAY	2/90	0	24	15	2	MON	G	2	1	0	0	D
0	HAY	2/90	0	24	15	2	MON	G	2	1	0	0	D
0	HAY	11/89	0	16	0	2	BOR	G	1	0	0	0	D
0	SLZ	05/90	0	24	19	4	MON	D	0	0	0	0	D
0	SLZ	03/90	34	22	12	3	MON	D	0	0	0	0	D
0	SLZ	03/90	33	22	15	3	MON	D	0	0	0	0	D
0	SLZ	04/90	32	22	9	3	MON	D	0	0	0	0	D
0	SLZ	04/90	32	26	11	3	MON	D	0	0	0	0	D
0	SLZ	8/90	0	14	5	2	MON	D	0	0	0	0	D
0	SLZ	7/91	0	220	0	0	DES	D	0	0	0	0	D

Permit	Tr	Section	Address	Longcity	Owner	Update	Xcoord	Ycoord	Matchlevel	Tsrqq	Rec_code
	3S/2W	18G14	Via Arriba & Hacienda	San Lorenzo	ARCO	11/18/1991	122,123,500	37,673,800	0	3S/2W 18C	2,023
	3S/2W	18G15	Via Magdalena & Hacier	San Lorenzo	ARCO	11/18/1991	122,124,300	37,673,500	0	3S/2W 18C	2,024
	3S/2W	18G16	Via Magdalena & Hacier	San Lorenzo	ARCO	11/18/1991	122,124,300	37,673,500	0	3S/2W 18C	2,025
	3S/2W	18G17	17200 Via Magdalena	San Lorenzo	ARCO	11/18/1991	122,125,548	37,674,264	0	3S/2W 18C	2,026

Phone	City	Drilldate	Elevation	Totaldepth	Waterdepth	Diameter	Use	Log	W	Wl	Yield	Dtwcalc	Old_dbase
0	SLZ	7/91	0	595	52	11	IRR	D	0	0	350	0	D
0	SLZ	6/91	0	23	12	3	MON	G	0	0	0	0	D
0	SLZ	6/91	0	23	11	3	MON	G	0	0	0	0	D
0	SLZ	6/91	0	23	13	3	MON	G	0	0	0	0	D


Via Manzanas
Via Andela
Ricardo Av
Nimitz Fnwy
3S/2W
Via Magdalena
Hacienda Av
Ginger Av
Via Pasatiempo
Via Perdido
Via Piedras
Via Flores
Hacienda Av
Via Arriba
Robscott Av
Hunter Av
Melrose Av
Bengal Av
Oxford St
Perkins Dr
Solano Av
Shirley Av
Royal Av
Via Alamo
Via Aires
Via Media
Hesperian Blvd
Bockman Rd
Bockman Rd
SITE
Via Jose
Via Arriba
Bartlett Av


Paseo Grande
Nielson Av
Via Vista
Via el Monte
Via San Juan
Via Lucas
Via Alamitos
Via Pinelo
Via Manzanas
Via Arriba
Via Angela
Via Primero
Ricardo Av
Oxford St
Hunter Av
Robscott Av
Solano Av
Shirley Av
Falgren Av
Via Aires
Bockman Rd
Via Honda
Via Palma
Via Coralla
Via Esperanza
Via Dolorosa
Via Nube
Via del Rey
Via el Cerrito
Via San Ardo
Via Chiquita
Via Margarita
Via Julia
Via Susana
Via Tovita
Via Mañana
Via Jose
Via Poudre
Bartlett Av
Ardis St
Waverly Way
W Blossom Way
Lucot St
Nimitz Frwy
Via Arroyo
Gingerwood
Via Perdido
Cielo
Via Piedras

CAMBRIA

APPENDIX E

STANDARD FIELD PROCEDURES FOR GEOPROBE™ SAMPLING

APPENDIX E

STANDARD FIELD PROCEDURES FOR GEOPROBE SAMPLING

This document describes Cambria Environmental Technology's standard field methods for GeoProbe® soil and groundwater sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

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

Soil Classification/Logging

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

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

Soil Sampling

GeoProbe® soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a

datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

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

Sample Storage, Handling and Transport

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

Field Screening

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

Grab Groundwater Sampling

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

Grouting

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

CAMBRIA

APPENDIX F

DRILLING PERMITS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY · FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

WATER RESOURCES SECTION
GROUNDWATER PROTECTION ORDINANCE
For Monitoring Well at Clean or Contaminated Site

Destruction Requirements:

1. Drill out the well so that the casing, seal, and gravel pack are removed to the bottom of the well.
2. Sound the well as deeply as practicable and record for your report.
3. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
4. After the seal has set, backfill the remaining hole with compacted material.

Work Order (WO)* Number: 8000144
*This WO is ___ / is not ✓ open for charges.

Permit Number: P00-LD1440
Permit Issuance Date: 10/12/99
Permit Expiration Date: 10/12/00

COUNTY OF ALAMEDA PUBLIC WORKS AGENCY

399 Elmhurst St., Hayward, CA 94544 - Phone: (510)670-5429 - Fax: (510)293-0960

ROADWAY ENCROACHMENT PERMIT

This Permit is issued in accordance with Chapter 12.08 of the Alameda County Ordinance Code

Name & Address of Property Owner:
Cambria Environmental
1144 65th St. Ste B
Oakland, CA 94608
Phone Number: 420-3315

Job Site Address:
Backmans Rd., W/ of Hesperian

(This statement to be completed by the Agency)
This permit is issued to the owner ___ / contractor ✓; if "owner" is checked, he/she is ___ / is not ___ exempt from the requirement that work in the roadway be performed by a licensed contractor.

Name & Address of Contractor:

Phone Number:

The Applicant intends to perform the following work scope:

Boring in sidewalk area.

Licensed Contractor Declaration:

I hereby affirm, under penalty of perjury, that I hold the following contractor's license, which is in full force and effect, under the applicable provisions of the State Business and Professions Code.

License Class and No.

Contractor's Signature: n/a JK

Worker's Compensation Insurance Declaration:

I hereby affirm, under penalty of perjury, that I will, during the performance of any and all work authorized by this permit, satisfy the requirements of the State Labor Code with regard to Worker's Compensation Insurance, as declared below:

___ I will maintain a certificate of consent to self-insure.

___ I will maintain the following insurance policy:

Carrier's Name and Policy No.:

___ I will not employ any person in any manner so as to become subject to the worker's compensation laws of the State.

Owner's/Contractor's Signature: n/a JK

All work and/or access shall be performed in accordance with the requirements of Chapter 12.08 and, unless otherwise specified below, shall be fully compliant with each of the terms and conditions of the attached General Provisions:

Bond Information:

BY: JK Rogers, Alameda County

Insp. Fee ✓ or Deposit ___:
$125

Work Completed (Date): _____

Inspector:

I certify that the information that I have entered into this permit application is correct, and I agree to comply with all of the terms and conditions and other requirements of the issued Permit.

See original.
Signature of Applicant

Date

The Permittee is responsible for notifying the Inspection Office listed on the back of this form.
THIS PERMIT IS INCOMPLETE WITHOUT THE ATTACHED GENERAL PROVISIONS

INSPECTION REQUIREMENTS

- All encroachments authorized by this Permit shall be subject to inspection by a County representative.
- The planned inspections will be performed by the County office(s) designated below; unless otherwise indicated, it shall be the Permittee's responsibility to notify the designated office(s) prior to the start of the encroachment.

called 11/4/99

✓ Case 1:- The work described in this Permit must be inspected and accepted by the County. Contact the Permit Inspection Office at 670-6601 at least 24 hours in advance to arrange for the required tests and inspections.

___ Case 2:- The work described in this Permit must be inspected and accepted by the County. Contact Traffic Engineering at 670-6571 or 670-6469 at least 24 hours in advance to arrange for the required tests and inspections.

___ Case 3:- Some or all of the work described in this Permit must be inspected by the following representative of the County:

___ Case 4:- Notification of the County is not required.

- If the face of this Permit is marked to indicate that the assigned County WO is open for charges, a job account will be opened and the assigned inspectors will charge the actual cost of all required tests and inspections against this account. All cost overruns must be resolved prior to close-out of this Permit. Any underruns will returned to the Permittee as soon as possible following the close-out.

CAUTION!

Most traffic signals and some streetlights are connected to their power sources with underground wiring. Many signals are also wired to traffic detector loops buried in the roadway. None of these County-owned wiring runs are included in the Underground Service Alert (USA) review and marking processes.

If you intend to excavate the roadway right-of-way within 500' of a traffic signal, or wherever the streetlight wiring is underground, you must contact the County traffic signal maintenance office for the necessary review and marking.

CALL ERIK DAYTON AT (510) 670-5537,
AT LEAST 48 HRS. IN ADVANCE OF YOUR PLANNED DIG.

WARNING!

If you fail to notify us – and dig through or damage our loops or wire runs – you will be charged for the cost of our emergency repairs ($200 - $500, or more)!

Revised 1/25/99

COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY

General Provisions for Roadway Encroachment Permits

CAUTION:
THE FOLLOWING PROVISIONS, UNLESS MODIFIED OR EXEMPTED ON THE FACE OF THIS PERMIT, ARE AN INTEGRAL PART OF EACH PERMIT - AND YOUR SIGNATURE ON THE FACE OF THIS PERMIT CERTIFIES THAT YOU HAVE READ AND UNDERSTOOD THE TERMS AND CONDITIONS OF THESE PROVISIONS AND ANY MODIFICATIONS THERETO.

The Agency reserves the right to suspend or cancel this Permit, without advance notice, if the Permittee fails to comply with the terms and conditions of these Provisions, or with any other terms and conditions of this Permit. In the event of such suspension or cancellation, the Permittee shall be held liable for all costs incurred by the County in securing and restoring the right-of-way.

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1. **PERMIT AUTHORITY:** This Encroachment Permit is issued in accordance with the provisions of Chapter 12.08 of the Alameda County General Ordinance Code.

2. **ACCEPTANCE OF PERMIT REQUIREMENTS:** It shall be understood that any entry onto the encroachment site by the Permittee, or agents of the Permittee, for the purpose of performing the work or obtaining the access described herein shall be considered as evidence of the acceptance by the Permittee of all the terms and conditions and other requirements of the said Chapter 12.08 and of this Permit.

3. **PERMIT AVAILABILITY:** This Permit, or a copy thereof, shall be kept available at the site of the authorized encroachment. It must be shown to any representative of the County or to any law enforcement officer, upon demand.

4. **PERMIT SCOPE:** With the following exceptions, the scope of this Permit shall be limited to the authorization of an encroachment upon the right-of-way of an existing public roadway that is under the jurisdiction of the County of Alameda:

   - When specifically noted on the face of this Permit, this Permit may authorize the Permittee to encroach upon other County-owned property.

   - When specifically noted on the face of this Permit, this Permit may be used to enable the inspection, by a representative of the County, of improvements that are located upon private property which will be dedicated to the County for use as a public roadway or upon a private roadway which will be maintained by the County and part of a County Service Area.

5. **PERMIT TERM:** Unless otherwise specified on the face of this Permit, the Permittee shall initiate the encroachment described herein within ninety (90) days of the date of issuance of this Permit and shall attempt to complete the encroachment prior to the expiration date of this Permit. In the event that the Permittee fails to satisfactorily complete all of the required actions by the expiration date, the County shall retain the right to either keep the Permit open pending such completions - or suspend the Permit in accordance with Provision 19.

6. **CHANGES TO PERMIT:** No change to the location or character of the encroachment herein permitted shall be made without written authorization from the County. Contact the Permit Center, 399 Elmhurst Street, Hayward, CA 94544; (510) 670-5429.

7. **RELATIONSHIP TO EXISTING AGREEMENTS:** In the event that the encroachment authorized by this Permit is located within an area which is subject to an existing agreement or easement with or for the County, this Permit shall be regarded as a notice/record of work and as a means of establishing certain safety or inspection requirements specifically for the said encroachment; no new or different rights or obligations other than those written into this Permit are intended to be created, and all existing rights and obligations of the

agreement or easement are fully protected. In the case of conflict between an existing agreement/easement and these General Provisions, the terms and conditions of the agreement or easement shall prevail.

8. **DEDICATION OF PROPERTY TO THE COUNTY:** When specifically noted on the face of this Permit, the Permittee shall be required to prepare and submit a legal description and a plat map of property that will be dedicated to the County for use as a public roadway. This description and map must be accepted by the County before the close-out of this Permit.

9. **PERMIT TRANSFERABILITY:** This Permit is not transferable; no parties other than the named Permittee, or his/her agents, are authorized to have access or to do work under this Permit.

10. **INSPECTION AND APPROVAL:** All encroachments authorized by this Permit are subject to monitoring, inspection, testing, and final approval by a representative of the County. Unless otherwise specified on the back of this Permit, the Permittee shall be responsible for coordinating with an inspection office of the County. The assigned inspector will prescribe the required inspection and test points and define all of the other submittal or review requirements. The Permittee shall then be responsible for notifying the inspector at the appropriate times and for furnishing the required data or samples to the inspector in a timely manner.

CAUTION:
ALL OF THE COUNTY INSPECTION OFFICES OR OTHER REPRESENTATIVES OF THE COUNTY WILL REQUIRE 1-3 DAYS ADVANCE NOTICE TO ARRANGE A SITE INSPECTION OR OTHER REVIEW. CHECK WITH YOUR ASSIGNED INSPECTOR BEFORE YOU SCHEDULE A CONSTRUCTION OPERATION THAT REQUIRES INSPECTION BY THE COUNTY.

WARNING:
IF THE ENCROACHMENT IS COMPLETED WITHOUT THE NECESSARY INSPECTIONS OR TESTS, THE COUNTY RESERVES THE RIGHT TO REJECT THE WORK OUTRIGHT - OR TO REQUIRE THAT THE PERMITTEE ENTER INTO A MAINTENANCE AND REPAIR AGREEMENT WITH THE COUNTY.

11. **TESTING AND CERTIFICATION:** All materials and equipment intended for use within the right-of-way, along with certain construction operations, will be subject to verification through testing and/or certification; the specific requirements for such testing/certification should be established by consultation with the applicable County inspection office listed on the back of this Permit.

    Typical testing/certification requirements would include the quality and strength of concrete pours, the compaction of fill areas and trench backfills, the strength of reinforced concrete pipe, the quality and strength of fencing materials, and the operation of traffic signals and street lights. Manufacturer's certifications would also typically be required for precast structures and for any operating or safety equipment.

12. **START OF WORK:** The Permittee shall be responsible for notifying the County Inspection Office at (510) 670-6601, and/or the other designated County representative(s), prior to the start of work or access; see Provision 10. above.

13. **LIABILITY AND INDEMNIFICATION:** The County of Alameda and its officers, employees, agents, representatives, and/or successors shall not be liable for any death, injury, illness, or property damage claim which arises from the actions of the Permittee under this Permit, or which arises from the failure of the Permittee to properly maintain the site of the encroachment authorized by this Permit. If a claim does arise from the foregoing, the Permittee shall defend, indemnify, and hold harmless the County and its officers, employees, agents, representatives, and/or successors.

WARNING:
UNDER THE TERMS OF THIS PROVISION, YOU ARE AGREEING TO HOLD THE COUNTY HARMLESS FOR YOUR ACTIONS OR LACK OF ACTION.

14. **MAINTENANCE OF THE ENCROACHMENT AREA:** Upon initiation of the access or work authorized herein, the Permittee shall assume responsibility for the maintenance of the area of the encroachment and shall continue to hold this responsibility pending the close-out of this Permit.

Unless otherwise specified on the face of this Permit, the County will resume the responsibility for the maintenance of the modified encroachment area following acceptance of the improvements by the County.

When specifically noted on the face of this Permit, the Permittee will be required to enter into an agreement with the County concerning long-term maintenance of some or all of the improvements authorized herein. If required, such agreements must be executed prior to the close-out of this Permit.

15. **STANDARDS OF WORK:** All work authorized herein shall conform to those design guidelines and construction standards specified on the plans or in this Permit, subject to any field modifications directed by the County representative(s). The work shall be performed in a workmanlike, diligent, and expeditious manner – and shall be completed to the satisfaction of the Director of Public Works.

16. **PERMITS AND APPROVALS FROM OTHER AGENCIES:** This Permit may not be construed as allowing the Permittee to proceed without first obtaining all necessary approvals, permits, agreements, authorizations, or releases from all other public agencies having jurisdiction – nor may it be considered as relieving the Permittee from compliance with any of the restrictions imposed by such approvals, permits, agreements, authorizations, or releases.

17. **COORDINATION WITH UTILITIES AND OTHERS:** The Permittee shall be responsible for coordinating the access or work authorized by this Permit with those utility agencies/companies and others, including the County of Alameda, who own or maintain underground or overhead utility lines, equipment, and facilities in the vicinity of the encroachment.

CAUTION:
ALL EXCAVATIONS IN THE RIGHT-OF-WAY REQUIRE A PRIOR CLEARANCE FROM UNDERGROUND SERVICE ALERT (USA); CALL (800) 642-2444.

SEE ALSO PROVISION 18.

added 11/3/99

In the event that the Permittee encounters underground facilities or other obstructions not identified on the plans or by USA, such facilities or obstructions shall be secured and protected – as directed by the County Inspector; call (510) 670-6601.

18. **COORDINATION WITH THE COUNTY:** If the authorized encroachment includes excavation in the vicinity of a traffic signal or a street light which is connected to its power source by means of underground wiring, the Permittee shall be responsible for coordinating the said excavation with the County Signal Maintenance Office - since such signal/street light wiring runs or signal detector loops may not be included in the USA review described in Provision 17.

CAUTION:
ALL EXCAVATIONS WITHIN 500' OF A TRAFFIC SIGNAL, OR IN THE VICINITY OF THOSE STREETLIGHTS WHICH ARE POWERED BY MEANS OF UNDERGROUND WIRING, REQUIRE A PRIOR CLEARANCE FROM THE COUNTY SIGNAL OFFICE; CALL (510) 670-5537 AT LEAST 48 HOURS IN ADVANCE.

added 11/3/99

If the authorized encroachment involves the installation or modification of traffic signals or associated equipment, the inspection and acceptance of all such work will be performed by the County Signal Office; notify that Office at (510) 670-5537 at least 48 hours before the start of any work.

If the encroachment requires the installation or modification of traffic markers, traffic markings, signs, or street lights, the Permittee may be required to coordinate with other departments of the Agency - if so directed by the assigned County inspector.

If the encroachment requires testing by the County Materials Testing Laboratory, all such tests will be directed and coordinated by the County inspector.

19. **SUSPENSION OR CANCELLATION OF THIS PERMIT:** This Permit may be suspended or canceled, at the discretion of the Director of Public Works of the County of Alameda, whenever the Permittee is

performing in such a manner so as to threaten the safe usage of the right-of-way by the public or by the Permittee.

20. **PROTECTION OF VEHICULAR TRAFFIC:** The Permittee shall be fully responsible for the protection of the public traveling through the encroachment site, both during and after working hours. All signs, lights, safety devices, flagpersons, watchpersons, and other measures required for traffic safety shall conform to the requirements of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones. Unless otherwise specified in this Permit, traffic control measures for lane closures shall conform to the requirements of Caltrans Standard Plan T11, T12, or T13, as appropriate.

21. **PROTECTION OF PEDESTRIAN TRAFFIC:** Wherever sidewalks or walkways preexist within the right-of-way, the Permittee shall be responsible for the establishment and maintenance of a 4' wide passageway to allow safe pedestrian traffic in or around the encroachment site at all times. At no time shall pedestrian traffic be directed onto a travel lane of the roadway. At those locations where safe passageway cannot reasonably be provided, appropriate signs and barricades shall be installed at the nearest marked crosswalk or intersection so as to provide for a pedestrian detour around the encroachment site.

22. **ROADWAY CLOSURES:** All encroachments within the right-of-way shall be conducted so as to cause the least possible inconvenience to the traveling public or the adjacent property owners. Unless a roadway blockage is specifically authorized by resolution of the Board of Supervisors of the County, at least one travel lane shall remain open at all times – and unless specifically exempted on the face of this Permit, all travel lanes of the affected roadway shall be left open during both the morning (6-9 a.m.) and the evening (3:30-6 p.m.) rush hour periods.

WARNING:
EXCEPT FOR MINOR TRAFFIC FLAGGING CONTROL ASSOCIATED WITH NORMAL CONSTRUCTION ACTIVITIES, YOU ARE NOT AUTHORIZED TO BLOCK OR CAUSE A DETOUR OF A PUBLIC ROADWAY – WITHOUT THE SPECIFIC APPROVAL OF THE COUNTY BOARD OF SUPERVISORS.

23. **PASSAGE THROUGH THE ENCROACHMENT SITE:** Unless specifically exempted on the face of this Permit, the Permittee shall be responsible for providing reasonable access through the encroachment site to all those adjacent properties that were previously accessible from the right-of-way.

CAUTION:
YOU WILL BE RESPONSIBLE FOR ASSURING THAT EMERGENCY VEHICLES CAN PASS THROUGH OR AROUND THE ENCROACHMENT SITE AT ALL TIMES.

24. **STORAGE OF EQUIPMENT/MATERIALS IN THE RIGHT-OF-WAY:** No stockpiling of any materials or storage of any non-vehicular construction equipment shall be allowed within the roadway right-of-way, without the approval of the County inspector.

25. **DAILY CLEAN-UP OF THE RIGHT-OF-WAY:** At the end of each working day, the Permittee shall clear the roadway travel lanes and driveway entrances of all obstructions and debris, make all sidewalks and roadway shoulders safe, and either fill and pave or plate over any excavations in or adjacent to the roadway travel lanes. If plating is used, the plates and the installation methods shall conform to the latest "Steel Trench Plating Guidelines" of the State of California Department of Transportation.

26. **FINAL CLEAN-UP:** Upon completion of the authorized access or work, the Permittee shall promptly remove all construction materials and debris from the site of the encroachment. The affected right-of-way, including all gutters, ditches, inlets, and drain lines in or adjacent to the encroachment, shall be left in at least as presentable a condition as existed before the start of the encroachment.

27. **REPAIR OF DAMAGE:** The Permittee shall be fully responsible for the prompt restoration of any portion of the right-of-way which is damaged as either a direct or an indirect result of the access to, work on, or maintenance of the authorized encroachment. If a damaged right-of-way is not promptly or adequately restored, the County may elect to make the necessary repairs and bill the Permittee for the costs.

28. **REMOVAL OF MATERIALS/FACILITIES:** If this Permit authorizes removal of portions of the right-of-way, the affected facilities or materials shall be taken from the right-of-way and disposed of in a legal manner. The Permittee shall obtain all necessary disposal permits, agreements, licenses, or clearances – and shall furnish a copy of same to the County inspector, upon demand.

Notwithstanding the above, and unless otherwise specified in this Permit, all removed and recoverable inlet grates, manhole covers, manhole and inlet frames, signs, and other standard equipment items shall be cleaned and reused whenever possible. The County reserves the right to require that removed equipment which is not reused be returned to the County yard at 951 Turner Court, Hayward.

29. **DUST AND DIRT CONTROL:** If the work scope of this Permit includes excavation, filling, grading, rocking, graveling, or other activities that could cause contamination of the roadway pavement, the Permittee shall provide for regular cleaning of the encroachment site, including sweeping of the roadway pavement – throughout the period of construction. Hosing of the roadway is not allowed.

If specified on the plans or in this Permit, or if so directed by the County inspector, the Permittee shall be prepared to implement a formal Soil Erosion Control Plan, following approval of the Plan by the County.

30. **STORMWATER POLLUTION CONTROL:** Work scheduled during the rainy season (October 1 to April 15) may require the installation of sediment and erosion control devices to prevent the deposition of construction materials and/or loose soil into the local storm drainage system.

If specified on the plans or in this Permit, or if so directed by the County inspector, the Permittee shall be prepared to implement a formal Stormwater Pollution Prevention Plan, following approval of the Plan by the County.

31. **FUTURE ROADWAY RELOCATION/WIDENING:** In the event that a future improvement, widening, or relocation of the affected roadway necessitates the removal, modification, or relocation of any facility, structure, or equipment installed or modified by this Permit, said facility, structure, or equipment shall be so removed, modified, or relocated, at no cost to the County – if so requested and as directed by the County.

32. **MODIFICATION OF EXISTING ROADWAY FACILITIES:** Except for minor changes that can be made using County standard details, any modification of existing roadway facilities must be in accordance with plans that have been approved by the County.

If specified on the plans or in this Permit, or if so directed by the County representative, the Permittee shall submit detailed shop plans for approval, prior to construction, and/or record drawings following construction.

CAUTION:
IF YOU ARE PLANNING TO MODIFY EXISTING COUNTY-MAINTAINED STRUCTURES, FACILITIES, OR EQUIPMENT IN THE ROADWAY RIGHT-OF-WAY, YOU MUST COORDINATE ALL SUCH CHANGES WITH A COUNTY INSPECTOR; CALL (510) 670-6601.

33. **REPLACEMENT OF EXISTING ROADWAY FACILITIES:** Unless otherwise specified on the plans or in this Permit, roadway facilities, such as pavement, slabs, curbs and gutters, berms, sidewalks, driveway entrances, pavement stripes, pavement markers, pavement marking, traffic signs, survey monuments, street trees, traffic control equipment, street lights, drainage inlets and manholes, culverts, headwalls, swales, etc., that are to be removed as part of the encroachment authorized herein, shall be replaced in kind, or better, at no cost to the County and in conformance with the latest County of Alameda Design Guidelines or with other guidelines provided by the County, subject to field modifications directed by the County representative.

If specified on the plans or in this Permit, or if so directed by the County representative, the Permittee shall submit detailed shop plans for approval prior to construction and/or record drawings following construction.

CAUTION:
IF YOU ARE PLANNING TO REMOVE, RELOCATE, OR REPLACE EXISTING COUNTY-MAINTAINED STRUCTURES, FACILITIES, OR EQUIPMENT IN THE ROADWAY RIGHT-OF-WAY, YOU MUST COORDINATE ALL SUCH CHANGES WITH A COUNTY INSPECTOR; CALL (510) 670-6601.

34. **DRAINAGE:** Existing drainage facilities, such as inlets, culverts, ditches, swales, pumps, channels, etc., that provide for storm water collection and runoff from the encroachment site shall not be altered, blocked, or otherwise disturbed, except as authorized by this Permit for the purposes of erosion and sedimentation control, or as directed by a representative of the County.

35. **EXCAVATION:** Unless otherwise specified on the face of this Permit, all excavation within the roadway right-of-way shall be in accordance with standard County guidelines – as directed by the County inspector. Note that rock wheel excavators or trenchless technology may be used only if specifically authorized by this Permit.

    If specified on the plans or in this Permit, or if so directed by the County inspector, the Permittee shall submit detailed trenching and shoring plans for approval prior to construction.

    If specified on the plans or in this Permit, or if so directed by the County inspector, the Permittee shall erect and maintain project notification signs at the excavation site. Such signs shall include the name and address of the excavator and the name and phone number of the responsible contact person.

    The amount of excavation that can take place at any time within or adjacent to the travel lanes of the roadway shall be limited to that volume that can be filled or plated in accordance with the limitations of Provision 25 – but in no case shall the total length of open linear trenching within the right-of-way exceed 600 feet (180 meters).

36. **BACKFILLING:** Unless otherwise specified on the face of this Permit, all backfilling of trenches and other excavations shall be in accordance with standard County guidelines – as directed by the County inspector. All disturbed roadway surfaces shall be fully restored within fifteen (15) working days of the date of the original excavation.

37. **SECURITY DEPOSIT:** If so specified, the Permittee may be required to provide a security deposit as a condition of obtaining this Permit. The purpose of this security is to establish a funding source for the County in the event that emergency restoration of the right-of-way becomes necessary. The County reserves the right to require that the said security be kept in place for a reasonable period of time following the completion of the authorized work – or, in the case of certain types of equipment or facilities, held for the lifetime of the equipment or facilities. Any questions related to the return of a security deposit should be directed to the County Permit Center at 670-5429.

38. **CLOSING THE PERMIT:** It shall be the responsibility of the Permittee to notify the cognizant County representative(s) upon completion of the authorized access or work. Following such notification, the County will perform an inspection of the encroachment site to assure acceptability of the work and to verify restoration of the right-of-way per Provision 26. above. The County will continue to hold the Permittee responsible for maintenance of the encroachment, per Provision 14. above, and will retain any security deposits, pending the signoff of the Permit by the County representative(s).

39. **PERMIT PRECEDENCE:** This Permit is issued on the basis that there is no implied precedence established as to the need for, or the acceptability of, specific terms and conditions for future encroachments.

LAND DEVELOPMENT (510) 670-5429
ALAMEDA COUNTY PUBLIC WORKS AGENCY
399 Elmhurst Street, Hayward, CA 94544

RECEIPT NO. **LD- 1440**

Date: 10/12/99 Amount $ 150

Received From: Cambrian Environmental Cash/Credit

Address: 1144 65th St., Ste. C Warrant or Check No. 4709
Oakland, CA 94608

Bank No. 90-3801

MEMO: LDO Bondsman Phone

$ 25 20-509/2311

$ 125 20-509/6381-4001

SERVICE CHARGE OF $25 FOR FIRST CHECK RETURNED AND $35 FOR EACH SUBSEQUENT CHECK RETURNED. SECTION 1719, CIVIL CODE EFF. 1-1-97

DIRECTOR OF PUBLIC WORKS

By:

WHITE - Auditor CANARY - Engineer PINK - File GOLDENROD - Payee

266-300

CAMBRIA

APPENDIX G

BORING LOGS

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

BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	CB-1
JOB/SITE NAME	BP-11107	**DRILLING STARTED**	08-Nov-99
LOCATION	18501 Hesperian Boulevard, San Lorenzo, CA	**DRILLING COMPLETED**	08-Nov-99
PROJECT NUMBER	852-1512	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	V&W Drilling	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	J. Jones	**DEPTH TO WATER (First Encountered)**	16.5 ft (08-Nov-99)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	NA
REMARKS	Hand augered to 5' bgs; located across Bockman Road from well MW-6.		

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							CONCRETE.	0.5	
				5	SM		**Silty SAND**; (SM); light brown; moist; 5% clay, 30% silt, 60% sand, 5% gravel; low plasticity; moderate estimated permeability.		
		CB-1@ 7.5'						9.0	
				10	SM		**Silty SAND**; (SM); light brown mottled with dark brown; dry; 5% clay, 15% silt, 75% fine to medium grained sand, 5% gravel; no plasticity; moderate to high estimated permeability.		Portland Type I/II
		CB-1@ 11.5'						13.0	
				15	ML		**Clayey SILT**; (ML); brown; damp; 15% clay, 70% silt, 10% fine grained sand, 5% gravel; low plasticity; moderate estimated permeability.		
<0.47		CB-1@ 15.5'					▽	17.0	
					ML		**Sandy SILT**; (ML); brown; wet; 5% clay, 70% silt, 20% sand, 5% gravel; low plasticity; moderate estimated permeability.	19.0	
					ML		**Clayey SILT**; (ML); brown; wet; 35% clay, 60% silt, 5% sand; low to medium plasticity; low to moderate estimated permeability.	20.0	
		CB-1@ 19.5'		20	SP		**Gravelly SAND**; (SP); brown; wet; 15% silt, 60% fine to coarse grained sand, 25% gravel; moderate to high estimated permeability.	23.0	
					SM		**Silty SAND**; (SM); brown; wet; 15% silt, 85% sand; no plasticity; moderate to high estimated permeability.	24.0	Bottom of Boring @ 24 ft
		CB-1@ 23.5'					Grab groundwater sample collected from open borehole.		

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

BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	CB-2
JOB/SITE NAME	BP-11107	**DRILLING STARTED**	08-Nov-99
LOCATION	18501 Hesperian Boulevard, San Lorenzo, CA	**DRILLING COMPLETED**	08-Nov-99
PROJECT NUMBER	852-1512	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	V&W Drilling	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	J. Jones	**DEPTH TO WATER (First Encountered)**	16.4 ft (08-Nov-99) ▽
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 5' bgs; located in side driveway of 17980 Via Arriba.		

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							CONCRETE.	0.5	
					SP		**Gravelly SAND**; (SP); dark brown; dry; 10% clay, 10% silt, 65% sand, 15% gravel; high estimated permeability.		
				5				6.0	
		CB-2@ 7.5'			SM		**Silty SAND**; (SM); brown; dry; 5% clay, 15% silt, 75% fine to medium grained sand, 5% gravel; no plasticity; moderate to high estimated permeability.	8.5	
				10	SP		**SAND**; (SP); brown; dry; 5% clay, 10% silt, 85% fine to coarse grained sand; high estimated permeability.		◄ Portland Type I/II
		CB-2@ 11.5'						13.0	
<0.47		CB-2@ 15.5'		15	SM		**Silty SAND**; (SM); brown; moist; 5% clay, 25% silt, 70% fine to medium grained sand; low plasticity; moderate estimated permeability. ▽		
								18.0	
					ML		**Sandy SILT**; (ML); brown; wet; 10% clay, 75% silt, 15% fine grained sand; low plasticity; moderate estimated permeability.	20.0	
		CB-2@ 19.5'		20	GM		**Sandy Silty GRAVEL**; (GM); brown; wet; 45% silt, 25% sand, 30% gravel; no plasticity; high estimated permeability.	21.0	
					ML		**Sandy SILT**; (ML); brown; wet; 5% clay, 55% silt, 35% sand, 5% gravel; no plasticity; high estimated permeability.		
		CB-2@ 23.5'						24.0	Bottom of Boring @ 24 ft
							Grab groundwater sample collected from open borehole.		

WELL LOG (GRO) H:\BRITIS~1\11107~1\GINT\BP-11107.GPJ DEFAULT.GDT 11/3/00

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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	CB-3
JOB/SITE NAME	BP-11107	**DRILLING STARTED**	08-Nov-99
LOCATION	18501 Hesperian Boulevard, San Lorenzo, CA	**DRILLING COMPLETED**	08-Nov-99
PROJECT NUMBER	852-1512	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	V&W Drilling	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	J. Jones	**DEPTH TO WATER (First Encountered)**	16.2 ft (08-Nov-99) ▽
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 5' bgs; located on corner of bank property.		

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							CONCRETE.	0.5	
				5	SM		**Silty SAND**; (SM); brown; moist; 15% silt, 80% sand, 5% gravel; no plasticity; high estimated permeability.		
		CB-3@ 7.5'						9.0	
				10	SP		**SAND**; (SP); brown; moist; 10% silt, 90% sand; high estimated permeability.		Portland Type I/II
		CB-3@ 11.5'						14.0	
<0.47		CB-3@ 15.5'		15	ML		**Clayey SILT**; (ML); brown; moist; 15% clay, 75% silt, 10% fine grained sand; low plasticity; moderate estimated permeability. ▽	17.0	
					SM		**Silty SAND**; (SM); wet; 5% clay, 30% silt, 65% fine grained sand; low plasticity; moderate estimated permeability.		
		CB-3@ 19.5'		20				20.5	
					GM		**Sandy Silty GRAVEL**; (GM); saturated; 45% silt, 25% sand, 30% gravel; no plasticity; high estimated permeability.		
		CB-3@ 23.5'						24.0	Bottom of Boring @ 24 ft
							Grab groundwater sample collected from open borehole.		

WELL LOG (GRO) H:\BRITIS~1\11107~1\GINT\BP-11107.GPJ DEFAULT.GDT 11/3/00

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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	CB-4
JOB/SITE NAME	BP-11107	**DRILLING STARTED**	08-Nov-99
LOCATION	18501 Hesperian Boulevard, San Lorenzo, CA	**DRILLING COMPLETED**	08-Nov-99
PROJECT NUMBER	852-1512	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	V&W Drilling	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	J. Jones	**DEPTH TO WATER (First Encountered)**	16.1 ft (08-Nov-99)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	NA
REMARKS	Hand augered to 5' bgs; located ~20' toward Via Arriba from side driveway of 17980 Via Arriba.		

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							CONCRETE.	0.5	Portland Type I/II
					ML		**Sandy Gravelly SILT**; (ML); dark brown; dry; 5% clay, 60% silt, 20% sand, 15% gravel; low plasticity; moderate estimated permeability.	6.0	
		CB-4@ 7.5'		5					
				10	SM		**Silty SAND**; (SM); brown; dry; 15% silt, 85% fine to medium grained sand; no plasticity; high estimated permeability.		
		CB-4@ 11.5'					@ 11' - as above; 25% silt, 75% fine grained sand.		
<0.46		CB-4@ 15'		15	ML		**Clayey Sandy SILT**; (ML); brown; moist; 15% clay, 70% silt, 15% sand; low plasticity; medium estimated permeability. ▽	14.5	
		CB-4@ 16'			ML		**Sandy SILT**; (ML); brown mottled with grey; moist; 60% silt, 40% sand; low plasticity; moderate estimated permeability.	17.0	
		CB-4@ 19.5'		20			@ 19.5' - as above; 70% silt, 30% sand.	20.0	
					SM		**Silty SAND**; (SM); brown; wet; 15% silt, 85% fine to coarse grained sand; no plasticity; high estimated permeability. @ 22' - as above; 35% silt, 65% fine grained sand.		
								24.0	Bottom of Boring @ 24 ft
							Grab groundwater sample collected from open borehole.		

WELL LOG (GRO) H:\BRITIS-1\11107--1\GINT\BP-11107.GPJ DEFAULT.GDT 11/3/00

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BORING/WELL LOG

CLIENT NAME	BP Oil Company	**BORING/WELL NAME**	CB-5
JOB/SITE NAME	BP-11107	**DRILLING STARTED**	08-Nov-99
LOCATION	18501 Hesperian Boulevard, San Lorenzo, CA	**DRILLING COMPLETED**	08-Nov-99
PROJECT NUMBER	852-1512	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	V&W Drilling	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	J. Jones	**DEPTH TO WATER (First Encountered)**	15.6 ft (08-Nov-99)
REVIEWED BY	K. Rahman, RG	**DEPTH TO WATER (Static)**	NA
REMARKS	Hand augered to 5' bgs; located on corner of Via Arriba and Bockman Road.		

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT.	0.5	
							SAND; (FILL); brown; moist; 5% silt, 85% sand, 10% gravel; high estimated permeability.		
				5				6.0	
							Gravelly SAND; (FILL); brown; moist; 70% sand, 30% gravel; high estimated permeability.		
				10				11.0	
		CB5@1 1.5'			ML		**Sandy SILT**; (ML); brown; damp; 5% clay, 70% silt, 25% fine grained sand; low plasticity; moderate estimated permeability.		◄ Portland Type I/II
								14.0	
					SP		**Gravelly SAND**; (SP); damp; 80% fine to coarse grained sand, 20% gravel; high estimated permeability.	15.0	
				15					
<0.43		CB5@1 5.5'			ML		**Sandy SILT**; (ML); brown; wet; 5% clay, 70% silt, 25% fine grained sand; low plasticity; moderate estimated permeability.	17.5	
					SP		**Silty Gravelly SAND**; (SP); wet; 20% silt, 50% sand, 30% gravel; no plasticity; high estimated permeability.	18.5	
		CB5@1 9.5'		20	ML		**Sandy SILT**; (ML); brown; wet; 5% clay, 70% silt, 25% fine grained sand; low plasticity; moderate estimated permeability.	20.5	
					GP		**Silty Sandy GRAVEL**; (GP); wet; 35% silt, 20% sand, 45% gravel; no plasticity; high estimated permeability.	21.5	
					SM		**Silty Gravelly SAND**; (SM); wet; 35% silt, 45% fine grained sand, 20% gravel; no plasticity; high estimated permeability.	22.5	
					ML		**Sandy SILT**; (ML); brown; wet; 5% clay, 70% silt, 25% fine grained sand; low plasticity; moderate estimated permeability.	24.0	Bottom of Boring @ 24 ft
		CB5@2 3.5'					Grab groundwater sample collected from open borehole.		

WELL LOG (GRO) H:\BRITIS~1\11107~1\GINT\BP-11107.GPJ DEFAULT.GDT 11/3/00

CAMBRIA

APPENDIX H

ANALYTICAL LABORATORY REPORTS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

November 23, 1999

Mr. KHALED RAHMAN
CAMBRIA ENVIRONMENTAL
1144 65TH STREET
OAKLAND, CA 12345

RE: Pace Project Number: 6035926
Client Project ID: BP-11107

Dear Mr. RAHMAN:

Enclosed are the results of analyses for sample(s) received on November 10, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lily Bayati

Lily Bayati
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

DATE: 11/23/99
PAGE: 1

AMBRIA ENVIRONMENTAL
144 65TH STREET
AKLAND, CA 12345

Pace Project Number: 6035926
Client Project ID: BP-11107

ttn: Mr. KHALED RAHMAN
hone: 510-4200700

olid results are reported on a wet weight basis

ace Sample No: 603031097 Date Collected: 11/08/99 Matrix: Soil
.ient Sample ID: CB1@15.5' Date Received: 11/10/99

rameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
ng Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/kg	470	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	90	%		11/11/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	11/15/99	RG	71-43-2	
Toluene	ND	ug/kg	5	11/15/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	11/15/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	11/15/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	11/15/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/kg	5	11/15/99	RG	1634-04-4	
Dibromofluoromethane (S)	91	%		11/15/99	RG	1868-53-7	
Toluene-d8 (S)	100	%		11/15/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	124	%		11/15/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Long Beach, CA 90815
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Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

Pace Sample No: 603031113 Date Collected: 11/08/99 Matrix: Soil
Client Sample ID: CB2@15.5' Date Received: 11/10/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/kg	470	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	94	%		11/11/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	11/15/99	RG	71-43-2	
Toluene	ND	ug/kg	5	11/15/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	11/15/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	11/15/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	11/15/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/kg	5	11/15/99	RG	1634-04-4	
Dibromofluoromethane (S)	92	%		11/15/99	RG	1868-53-7	
Toluene-d8 (S)	98	%		11/15/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	123	%		11/15/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

ace Sample No: 603031139 Date Collected: 11/08/99 Matrix: Soil
.ient Sample ID: CB3@15.5' Date Received: 11/10/99

arameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
ong Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/kg	470	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	94	%		11/11/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	11/15/99	RG	71-43-2	
Toluene	ND	ug/kg	5	11/15/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	11/15/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	11/15/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	11/15/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/kg	5	11/15/99	RG	1634-04-4	
Dibromofluoromethane (S)	93	%		11/15/99	RG	1868-53-7	
Toluene-d8 (S)	97	%		11/15/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	126	%		11/15/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

Pace Sample No: 603031147 Date Collected: 11/08/99 Matrix: Soil
Client Sample ID: CB4@15' Date Received: 11/10/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/kg	460	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	94	%		11/11/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	11/15/99	RG	71-43-2	
Toluene	ND	ug/kg	5	11/15/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	11/15/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	11/15/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	11/15/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/kg	5	11/15/99	RG	1634-04-4	
Dibromofluoromethane (S)	93	%		11/15/99	RG	1868-53-7	
Toluene-d8 (S)	97	%		11/15/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	124	%		11/15/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

ace Sample No: 603031162 Date Collected: 11/08/99 Matrix: Soil
ient Sample ID: CB5@15.5' Date Received: 11/10/99

arameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
ong Beach Laboratory							
GAS BTEX, Soil by 8015		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/kg	430	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	88	%		11/11/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/kg	5	11/15/99	RG	71-43-2	
Toluene	ND	ug/kg	5	11/15/99	RG	108-88-3	
Ethylbenzene	ND	ug/kg	5	11/15/99	RG	100-41-4	
M&P-Xylene	ND	ug/kg	5	11/15/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5	11/15/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/kg	5	11/15/99	RG	1634-04-4	
Dibromofluoromethane (S)	92	%		11/15/99	RG	1868-53-7	
Toluene-d8 (S)	97	%		11/15/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	127	%		11/15/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

Pace Sample No: 603031204 Date Collected: 11/08/99 Matrix: Water
Client Sample ID: CB1W Date Received: 11/10/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water		Method: EPA 8015/8020 Modif					
Gasoline	1800	ug/l	200	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	239	%		11/11/99	VN	2164-17-2	1
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/l	5	11/16/99	RG	71-43-2	
Toluene	ND	ug/l	5	11/16/99	RG	108-88-3	
Ethylbenzene	16	ug/l	5	11/16/99	RG	100-41-4	
M&P-Xylene	10	ug/l	5	11/16/99	RG		
O-Xylene (1,2-Dimethylbenzene)	34	ug/l	5	11/16/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/l	5	11/16/99	RG	1634-04-4	
Dibromofluoromethane (S)	95	%		11/16/99	RG	1868-53-7	
Toluene-d8 (S)	94	%		11/16/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	125	%		11/16/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

ace Sample No: 603031311 Date Collected: 11/08/99 Matrix: Water
lient Sample ID: CB2W Date Received: 11/10/99

arameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
ong Beach Laboratory							
GAS BTEX by 8015, Water		Method: EPA 8015/8020 Modif					
Gasoline	400	ug/l	200	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	270	%		11/11/99	VN	2164-17-2	1
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/l	5	11/16/99	RG	71-43-2	
Toluene	ND	ug/l	5	11/16/99	RG	108-88-3	
Ethylbenzene	ND	ug/l	5	11/16/99	RG	100-41-4	
M&P-Xylene	ND	ug/l	5	11/16/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/l	5	11/16/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/l	5	11/16/99	RG	1634-04-4	
Dibromofluoromethane (S)	93	%		11/16/99	RG	1868-53-7	
Toluene-d8 (S)	95	%		11/16/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	131	%		11/16/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Long Beach, CA 90815
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Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

Pace Sample No: 603031337 Date Collected: 11/08/99 Matrix: Water
Client Sample ID: CB3W Date Received: 11/10/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water		Method: EPA 8015/8020 Modif					
Gasoline	370	ug/l	200	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	255	%		11/11/99	VN	2164-17-2	1
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/l	5	11/16/99	RG	71-43-2	
Toluene	ND	ug/l	5	11/16/99	RG	108-88-3	
Ethylbenzene	ND	ug/l	5	11/16/99	RG	100-41-4	
M&P-Xylene	ND	ug/l	5	11/16/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/l	5	11/16/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/l	5	11/16/99	RG	1634-04-4	
Dibromofluoromethane (S)	94	%		11/16/99	RG	1868-53-7	
Toluene-d8 (S)	93	%		11/16/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	129	%		11/16/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

'ace Sample No: 603031345 Date Collected: 11/08/99 Matrix: Water
:lient Sample ID: C84W Date Received: 11/10/99

arameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
ong Beach Laboratory							
GAS BTEX by 8015, Water		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/l	200	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	179	%		11/11/99	VN	2164-17-2	1
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/l	5	11/16/99	RG	71-43-2	
Toluene	ND	ug/l	5	11/16/99	RG	108-88-3	
Ethylbenzene	ND	ug/l	5	11/16/99	RG	100-41-4	
M&P-Xylene	ND	ug/l	5	11/16/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/l	5	11/16/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/l	5	11/16/99	RG	1634-04-4	
Dibromofluoromethane (S)	93	%		11/16/99	RG	1868-53-7	
Toluene-d8 (S)	92	%		11/16/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	131	%		11/16/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

Pace Sample No: 603031360 Date Collected: 11/08/99 Matrix: Water
Client Sample ID: CB5W Date Received: 11/10/99

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Long Beach Laboratory							
GAS BTEX by 8015, Water		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/l	200	11/11/99	VN		
a,a,a-Trifluorotoluene (S)	122	%		11/11/99	VN	2164-17-2	
GC/MS VOCs by 8260		Method: EPA 8260			Prep Method: EPA 8260		
Benzene	ND	ug/l	5	11/16/99	RG	71-43-2	
Toluene	ND	ug/l	5	11/16/99	RG	108-88-3	
Ethylbenzene	ND	ug/l	5	11/16/99	RG	100-41-4	
M&P-Xylene	ND	ug/l	5	11/16/99	RG		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/l	5	11/16/99	RG	95-47-6	
Methyl-tert-butyl Ether	ND	ug/l	5	11/16/99	RG	1634-04-4	
Dibromofluoromethane (S)	91	%		11/16/99	RG	1868-53-7	
Toluene-d8 (S)	93	%		11/16/99	RG	2037-26-5	
4-Bromofluorobenzene (S)	130	%		11/16/99	RG	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

ace Sample No: 603031410 Date Collected: 11/08/99 Matrix: Water
lient Sample ID: TB Date Received: 11/10/99

arameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
ong Beach Laboratory							
GAS BTEX by 8015, Water		Method: EPA 8015/8020 Modif					
Gasoline	ND	ug/l	200	11/11/99	VN		
Benzene	ND	ug/l	0.3	11/11/99	VN	71-43-2	
Toluene	ND	ug/l	0.3	11/11/99	VN	108-88-3	
Ethylbenzene	ND	ug/l	0.3	11/11/99	VN	100-41-4	
M&P-Xylene	ND	ug/l	0.6	11/11/99	VN		
O-Xylene (1,2-Dimethylbenzene)	ND	ug/l	0.3	11/11/99	VN	95-47-6	
Methyl-tert-butyl Ether	ND	ug/l	0.6	11/11/99	VN	1634-04-4	
a,a,a-Trifluorotoluene (S)	117	%		11/11/99	VN	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Matrix Effect

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

AMBRIA ENVIRONMENTAL
44 65TH STREET
AKLAND, CA 12345

Pace Project Number: 6035926
Client Project ID: BP-11107

ttn: Mr. KHALED RAHMAN
one: 510-4200700

Batch ID: 73318 QC Batch Method: EPA 8015M/8020
alysis Method: EPA 8015/8020 Modif Analysis Description: GAS BTEX, Soil by 8015
sociated Pace Samples: 603031097 603031113 603031139 603031147 603031162

THOD BLANK: 603030776
sociated Pace Samples:
603031097 603031113 603031139 603031147 603031162

rameter	Units	Method Blank Result	PRL	Footnotes
soline	ug/kg	ND	500	
a,a-Trifluorotoluene (S)	%	94		

TRIX SPIKE & MATRIX SPIKE DUPLICATE: 603030784 603030792

rameter	Units	603028051	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
soline	ug/kg	0	600	571.0	95.2	582.0	97.0	2	
a,a-Trifluorotoluene (S)					88		90		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
OAKLAND, CA 12345

Pace Project Number: 6035926
Client Project ID: BP-11107

Attn: Mr. KHALED RAHMAN
Phone: 510-4200700

QC Batch ID: 73520
Analysis Method: EPA 8260
QC Batch Method: EPA 8260
Analysis Description: GC/MS VOCs by 8260
Associated Pace Samples: 603031097 603031113 603031139 603031147 603031162

METHOD BLANK: 603040601
Associated Pace Samples:
603031097 603031113 603031139 603031147 603031162

Parameter	Units	Method Blank Result	PRL	Footnotes
Benzene	ug/kg	ND	5	
Toluene	ug/kg	ND	5	
Ethylbenzene	ug/kg	ND	5	
M&P-Xylene	ug/kg	ND	5	
O-Xylene (1,2-Dimethylbenzene)	ug/kg	ND	5	
Methyl-tert-butyl Ether	ug/kg	ND	5	
Dibromofluoromethane (S)	%	92		
Toluene-d8 (S)	%	100		
4-Bromofluorobenzene (S)	%	113		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603040619 603040627

Parameter	Units	603005356	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/kg	0	50	55.70	111	54.60	109	2	
Toluene	ug/kg	0	50	57.60	115	58.00	116	1	
Dibromofluoromethane (S)					93		93		
Toluene-d8 (S)					103		104		
4-Bromofluorobenzene (S)					109		113		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 6035926
Client Project ID: BP-11107

BORATORY CONTROL SAMPLE: 603040635

rameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
nzene	ug/kg	50	52.00	104	
luene	ug/kg	50	51.60	103	
bromofluoromethane (S)				96	
luene-d8 (S)				99	
Bromofluorobenzene (S)				105	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
OAKLAND, CA 12345

Pace Project Number: 6035926
Client Project ID: BP-11107

Attn: Mr. KHALED RAHMAN
Phone: 510-4200700

QC Batch ID: 73542
Analysis Method: TPH CA LUFT
Associated Pace Samples: 603031204 603031311 603031337 603031345 603031360 603031410

QC Batch Method: EPA 8015m/8020
Analysis Description: GAS BTEX by 8015, Water

METHOD BLANK: 603041203
Associated Pace Samples: 603031204 603031311 603031337 603031345 603031360 603031410

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/l	ND	200	
Benzene	ug/l	ND	0.3	
Toluene	ug/l	ND	0.3	
Ethylbenzene	ug/l	ND	0.3	
M&P-Xylene	ug/l	ND	0.6	
O-Xylene (1,2-Dimethylbenzene)	ug/l	ND	0.3	
Methyl-tert-butyl Ether	ug/l	ND	0.6	
a,a,a-Trifluorotoluene (S)	%	110		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603041237 603041245

Parameter	Units	603031345	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/l	0	40	49.90	125	49.00	122	2	
Benzene	ug/l	1.517	6.667	8.460	104	8.880	110	6	
Toluene	ug/l	3.048	6.667	8.400	80.3	8.940	88.4	10	
Ethylbenzene	ug/l	1.850	6.667	7.540	85.4	7.840	89.9	5	
M&P-Xylene	ug/l	1.250	13.33	12.20	82.1	12.69	85.8	4	
O-Xylene (1,2-Dimethylbenzene)	ug/l	2.080	6.667	7.880	87.0	7.960	88.2	1	
Methyl-tert-butyl Ether	ug/l	0	6.667	7.040	106	7.350	110	4	
a,a,a-Trifluorotoluene (S)					152		167		1,1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 6035926
Client Project ID: BP-11107

ABORATORY CONTROL SAMPLE & LCSD: 603041211 603041229

arameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
asoline	ug/l	40	43.00	108	44.80	112	4	
enzene	ug/l	6.667	6.160	92.4	6.730	101	9	
oluene	ug/l	6.667	6.380	95.7	6.830	102	6	
thylbenzene	ug/l	6.667	6.760	101	7.010	105	4	
&P-Xylene	ug/l	13.33	12.76	95.7	13.43	101	5	
-Xylene (1,2-Dimethylbenzene)	ug/l	6.667	6.870	103	7.290	109	6	
ethyl-tert-butyl Ether	ug/l	6.667	6.430	96.5	7.070	106	9	
,a,a-Trifluorotoluene (S)				94		99		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

CAMBRIA ENVIRONMENTAL
1144 65TH STREET
OAKLAND, CA 12345

Pace Project Number: 6035926
Client Project ID: BP-11107

Attn: Mr. KHALED RAHMAN
Phone: 510-4200700

QC Batch ID: 73593
Analysis Method: EPA 8260
QC Batch Method: EPA 8260
Analysis Description: GC/MS VOCs by 8260
Associated Pace Samples: 603031204 603031311 603031337 603031345 603031360

METHOD BLANK: 603042920
Associated Pace Samples:
603031204 603031311 603031337 603031345 603031360

Parameter	Units	Method Blank Result	PRL	Footnotes
Benzene	ug/l	ND	5	
Toluene	ug/l	ND	5	
Ethylbenzene	ug/l	ND	5	
M&P-Xylene	ug/l	ND	5	
O-Xylene (1,2-Dimethylbenzene)	ug/l	ND	5	
Methyl-tert-butyl Ether	ug/l	ND	5	
Dibromofluoromethane (S)	%	94		
Toluene-d8 (S)	%	98		
4-Bromofluorobenzene (S)	%	120		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 603042946 603042953

Parameter	Units	603027780	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/l	0	50	50.60	101	50.40	101	0	
Toluene	ug/l	0	50	46.00	92.0	45.40	90.8	1	
Dibromofluoromethane (S)					94		96		
Toluene-d8 (S)					96		96		
4-Bromofluorobenzene (S)					118		121		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 6035926
Client Project ID: BP-11107

LABORATORY CONTROL SAMPLE: 603042938

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Benzene	ug/l	50	49.30	98.6	
Toluene	ug/l	50	43.80	87.6	
Dibromofluoromethane (S)				95	
Toluene-d8 (S)				93	
4-Bromofluorobenzene (S)				120	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
3970 Gilman St.
Long Beach, CA 90815
Tel: 562-498-9515
Fax: 562-597-0786

Pace Analytical

Pace Project Number: 6035926
Client Project ID: BP-11107

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Matrix Effect

REPORT OF LABORATORY ANALYSIS

Pace® Analytical

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. 60 3592C

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Page: 1 of 3

To Be Completed by Pace Analytical and Client

Required Client Information: **Section A**

Company: Cambria Env. Tech.
Address: 1144 65th Street, Ste B. Oakland CA 94608
Phone: 510 420 3315 Fax: 510 420 9170

Required Client Information: **Section B**

Report To: Jacquelyn Jones
Invoice To: Scott Hooton / BP Oil Co
P.O.: 10076118
Project Name: BP-11107
Project Number:

Client Information (Check quote/contract):
Requested Due Date: TAT: Standard

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) In calender days.

Section C

Quote Reference: BP Contract
Project Manager: Khaled Rahman
Project #: 852-1512-006
Profile #:

Section D **Required Client Information:**

SAMPLE ID

One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

Requested Analysis: TPH-g 8015, BTEX, MTBE 8260

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Remarks / Lab ID
1	CB1@7.5'	SL	11/08/99	8:25a	1	X						hold
2	CB1@11.5'			8:30a								hold
3	CB1@15.5'			8:36a								X X
4	CB1@19.5'			8:42a								hold
5	CB1@23.5'			8:54a								hold
6	CB1W	WT		9:15a	4				X			X X
7	CB2@7.5'	SL		9:34a	1	X						hold
8	CB2@11.5'			9:37a								hold
9	CB2@15.5'			9:40a								X X
10	CB2@19.5'			9:48a								hold
11	CB2@23.5'			9:53a								hold
12	CB2W	WT		10:10a	4				X			X X

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:									
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jacquelyn Jones

SIGNATURE of SAMPLER:

DATE Signed (MM / DD / YY)

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489718 15557A

Page: 2 of 3

Section A Required Client Information:

- Company: Cambria
- Address: 1144 - 65th Street Ste B, Oakland CA 94608
- Phone: 510 420 3315
- Fax: 510 420 9170

Section B Required Client Information:

- Report To: Jacquelyn Jones
- Invoice To: Scott Hooton / BP Oil Co
- P.O.: J 076118
- Project Name: BP-11107
- Project Number:

Client Information (Check quote/contract):

Requested Due Date: | *TAT: Standard

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calender days.

Section C To Be Completed by Pace Analytical and Client

- Quote Reference: BP Contract
- Project Manager: Khaled Rahman
- Project #: 852-1572-6
- Profile #:

Section D Required Client Information:

SAMPLE ID — One character per box. (A–Z, 0–9 / .–) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — WATER WT; SOIL SL; OIL OL; WIPE WP; AIR AR; TISSUE TS; OTHER OT

Requested Analysis: TPHg 8015M; BTEX, MTBE 8260; Moisture Content; Porosity; Bulk Density (ASTM D854); Total Organic Carbon by Walkley Black

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED mm/dd/yy	TIME COLLECTED mm:hh a/p	# Containers	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	TPHg 8015M	BTEX, MTBE 8260	Moisture Content	Porosity	Bulk Density (ASTM D854)	Total Organic Carbon by Walkley Black	Remarks / Lab ID
1	CB3@7.5'	SL	11/08/99	1053a	1	X								X	X	X	X	
2	CB3@11.5'			1058a														hold
3	CB3@15.5'			11:00a								X	X					
4	CB3@19.5'			11:05a										X	X	X	X	
5	CB3@23.5'			11:15a														hold
6	CB3W	WT		11:24a	4				X			X	X					
7	CB4@7.5'	SL		12:00p	1	X												hold
8	CB4@11.5'			1202p														hold
9	CB4@15'			1207p								X	X					
10	CB4@16'			1215p														hold
11	CB4@19.5'			1216p														hold
12	CB4W	WT		1245p	4				X			X	X					

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:							[illegible signature] / PACE	11/10	8:40
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jacquelyn Jones

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY): 11/08/99

SEE REVERSE SIDE FOR INSTRUCTIONS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489719 15557 A

Page: 3 of 3

Required Client Information: Section A

Company: Cambria Env. Tech.
Address: 1144 65th Street, Ste B, Oakland CA 94608
Phone: 5104203315 Fax: 5104209170

Required Client Information: Section B

Report To: Jacquelyn Jones
Invoice To: Scott Hooton / BP Oil Co
P.O.: V076118
Project Name: BP-11107
Project Number:

Client Information (Check quote/contract):
Requested Due Date: *TAT: Standard

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

To Be Completed by Pace Analytical and Client: Section C

Quote Reference: BP Contract
Project Manager: Khaled Rahman
Project #: 852-1572-6
Profile #:

Section D Required Client Information:

SAMPLE ID

One character per box.
(A–Z, 0–9 / –)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

Requested Analysis: TPHg, 8015M, BTEX, 8260

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm : hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Remarks / Lab ID
1	CB5C11.5 1	SL	11/02/99	1:50p	1	X						hold
2	CB5C15.5 1	↓	↓	1:52p	1	X						X X
3	CB5C19.5 1			1:05p	1	X						hold
4	CB5C23.5 1			2:15p	1	X						hold
5	CB5W	WT	↓	2:23p	4				X			X X
6	TB (*)	WT	—	—	1				X			X X
7												
8												
9												
10												
11												
12												

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:							Natco / PACE	11/10	8.40
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

(*) only 1 VOA VIAL was used for TPHg 8015M. BTEX was reported with 8020. YB 11/23/99

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jacquelyn Jones
SIGNATURE of SAMPLER:
DATE Signed (MM / DD / YY): 11/08/99

McBride-Ratcliff and Associates, Inc.

TO: Ms. Lilly Bayati
Pace Analytical Services, Inc.
3970 Gilman
Long Beach , CA 90815

DATE OF REPORT: December 6, 1999
PROJECT NUMBER: 79395.701
PAGE 1 OF 1

TEST METHOD(s): ASTM D2216, *Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock*
Unit Weight calculated using weight/volume relationship of sample
Porosity calculated using weight/volume relationship and specific gravity of solids

NOTE: One soil sample was delivered to the MRA lab by Pace Analytical Services, Inc. The sample was contained in a sealed glass jar. The porosity of the sample was computed based on moisture content results and reasonable assumptions for the specific gravity of the materials.

RESULTS OF LABORATORY TESTS

Sample Identification	6035926 CB 7.5'
Date of Test	November 17, 1999
Moisture Content, % (cm^3/cm^3)	14.3 (0.14)
Unit Wet Weight, pcf (gm/cm^3)	124.9 (2.00)
Unit Dry Weight, pcf (gm/cm^3)	109.3 (1.75)
Porosity	0.28

By _____

McBride-Ratcliff and Associates, Inc.

TO: Ms. Lilly Bayati
Pace Analytical Services, Inc.
3970 Gilman
Long Beach , CA 90815

DATE OF REPORT: December 6, 1999
PROJECT NUMBER: 79395.701
PAGE 1 OF 1

TEST METHOD(s): ASTM D2216, *Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock*
Unit Weight calculated using weight/volume relationship of sample
Porosity calculated using weight/volume relationship and specific gravity of solids

NOTE: One soil sample was delivered to the MRA lab by Pace Analytical Services, Inc. The sample was contained in a sealed glass jar. The porosity of the sample was computed based on moisture content results and reasonable assumptions for the specific gravity of the materials.

RESULTS OF LABORATORY TESTS

Sample Identification	6035926 CB 19.5'
Date of Test	November 17, 1999
Moisture Content, % (cm^3/cm^3)	21.8 (0.22)
Unit Wet Weight, pcf (gm/cm^3)	125.4 (2.01)
Unit Dry Weight, pcf (gm/cm^3)	102.4 (1.65)
Porosity	0.37

By _____

Pace® Analytical To. McBride-Katclff

The Right Chemistry, The Right Solution®

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489783

Page: 1 of 1

Required Client Information: **Section A**

Company	
Address	
Phone (562) 498-9515	Fax

Required Client Information: **Section B**

Report To:	Lily Bayati
Invoice To:	
P.O.	
Project Name:	BP-11107
Project Number:	

Client Information (Check quote/contract):

Requested Due Date: | TAT: 7 days

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calender days.

To Be Completed by Pace Analytical and Client **Section C**

Quote Reference:	
Project Manager:	
Project #:	603596
Profile #:	

Requested Analysis: Moisture Content (ASTM D2216); Porosity; Bulk Density (ASTM D2937)

Section D Required Client Information:

Valid Matrix Codes: MATRIX / CODE — WATER WT; SOIL SL; OIL OL; WIPE WP; AIR AR; TISSUE TS; OTHER OT

ITEM #	SAMPLE ID (One character per box. (A–Z, 0–9 / .–) Sample IDs MUST BE UNIQUE)	MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED mm:hh a/p	# Containers	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Moisture Content	Porosity	Bulk Density	Remarks / Lab ID
1	CB@7.5'	SL	11/08/99		1							X	X	X	
2	CB3@19.5'	SL	↓		1							X	X	X	
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				Natasha	11/15	15:55			
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: | DATE Signed: (MM / DD / YY)

SEE REVERSE SIDE FOR INSTRUCTIONS

FLOWERS CHEMICAL LABORATORIES INCORPORATED

Received From:
Pace Analytical-Long Beach
3970 Gilman St.
Long Beach,CA 90815

Date Reported : Dec 2 1999
Project Number : AMBP-11107
PO Number : 6035926
FDHRSDW Number : 83139
NYSDOH Number : 11595
FDER COMQAPNum : 86-0008G
LDHH Number : 94-23
NCDEHNR Number : 296
SCDHEC Number : 96019

For: WB_TOC Moisture
Date Sampled:Nov 8 1999 Date Received:Nov22 1999 Lab Numbers: 5324-5325

REPORT OF ANALYSIS

Parameter	Unit	Practical Quantitative Limit	%ACC	%PRC	5324 CB375	5325 CB3195
Organic Carbon	%	0.318			<0.318	<0.318
%Moisture	%H2O	.00010	86.6	1.88	17.3	12.5

Data Release Authorization
Sample integrity certified prior to analysis.Deficiencies are in QA Report Sec.4
Methods of analysis in accordance with FCL QA and EPA approved methodology .
This Report may not be reproduced in part, results relate only to items tested.

Jefferson S. Flowers, Ph.d.
President/Technical Director

Section 1 of 5

481 NEWBURYPORT AVE.
ALTAMONTE SPRINGS.
FLORIDA 32701
P.O BOX 150597
ALTAMONTE SPRINGS.
FLORIDA 32715-0597
BUS (407) 339-5984
FAX (407) 260-6110
WEB www.flowerslabs.com

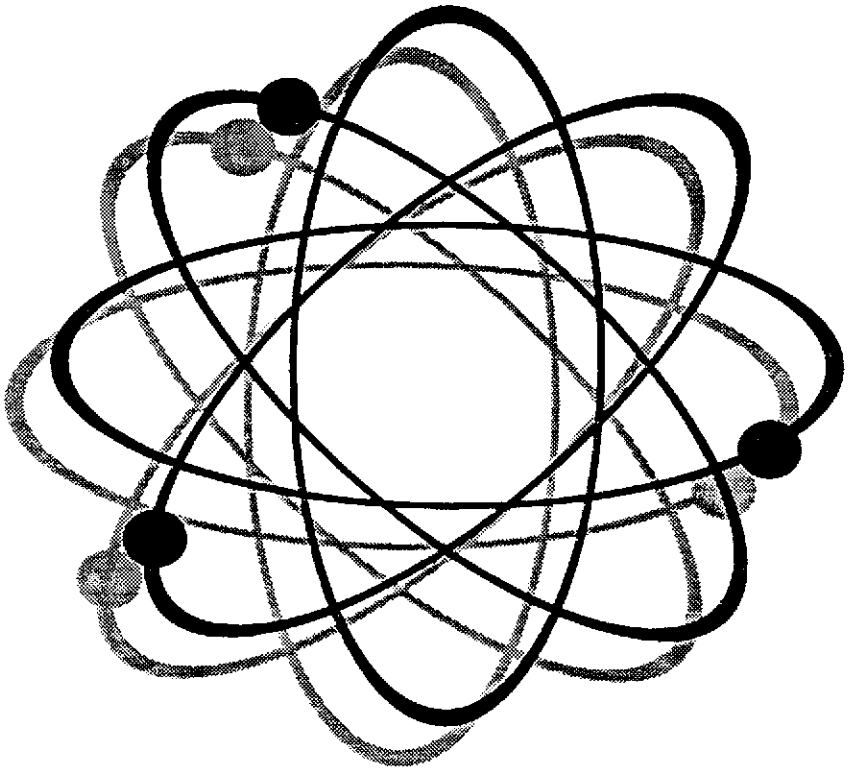
4657	1												FLOWERS CHEMICAL LABORATORIES ANALYTICAL RESULTS FORM					
													HRS Number B3139					
Dry Weight Basis			CB3(7.5')	CB3(19.5')									QA	Section				
Parameter	Symbol	Unit	5324	5325									Method	MDL	%RSD	%Rec	Analys	Date
Organic Carbon	*	%	<0.1U	<0.1U									Walkley-B	0.1			TRB	11-30-99
%Moisture	*	%H2O	17.3	12.5									ASTM	0.0001	1.8878882	86.613104	MAN	11-24-99
			Date Received:		11-22-99		Typed:		12-02-99	Sent:		12-02-99						

Project Number	AMBP-11107	
PO Number	6035926	
Date Sampled	1	11-08-99 *
Date Analyzed	0	
Compacted		
Format	NormRR	
Unit Cost	Exted	
WB_TOC	7500	2 *
Moisture	0	0 *

Quality Assurance Report

Prepared for: Pace Analytical-Long Beach
Project Number: AMBP-11107
Lab Numbers: 5324 - 5325

Report date: 2-Dec-99



FLOWERS CHEMICAL LABORATORIES

FLOWERS CHEMICAL LABORATORIES, INC.

QA SDG Narrative Summary

Client:	Pace Analytical-Long Beach
Project Number:	AMBP-11107
P.O. Number:	6035926
Date Sampled:	8-Nov-99
Lab Numbers:	5324 - 5325

Sample Handling

Sample handling and holding time criteria were met for all samples.

Samples Collected by Submitter. No unusual events occured during analysis.

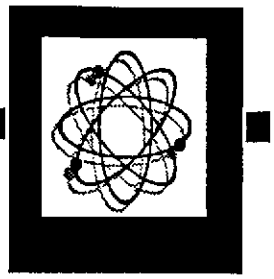
The requested analytes did not require surrogates.

Accuracy / Precision:

Standards Traceability:

FLOWERS

CHEMICAL
LABORATORIES
INCORPORATED



Internal Custody Record Lab Numbers: 5324 - 5325

This form was intentionally left blank.

Pace Analytical TO: FLOWERS

The Right Chemistry, The Right Solution®

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

489601

Page: 1 of 1

Required Client Information: **Section A**

Company	
Address	
Phone: (562) 498-9515	Fax: 562-597-0786

Required Client Information: **Section B**

Report To: LILY BAYATI	
Invoice To:	
P.O.	
Project Name: BP-11107	
Project Number:	

Client Information (Check quote/contract):

Requested Due Date: | *TAT:

* Under 14 day turnaround subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calender days.

To Be Completed by Pace Analytical and Client **Section C**

Quote Reference:	
Project Manager:	
Project #:	6035926
Profile #:	

Section D **Required Client Information:**

SAMPLE ID

One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (mm:hh a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Requested Analysis: TOC (By Walkley Black)	Remarks / Lab ID
1	CB3@7.5'	SL	11/8/99		1	X						X	5324
2	CB3@19.5'	SL	11/8/99		1	X						X	5325
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:				Nam To / PACE	11/17	14:30			
Received on ICE:	Y / N								
Sealed Cooler:	Y / N								
Samples Intact:	Y / N								

Additional Comments:

CS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: | DATE Signed: (MM / DD / YY)

SEE REVERSE SIDE FOR INSTRUCTIONS

CAMBRIA

APPENDIX I

FATE AND TRANSPORT MODELING OUTPUT

Saturated zone model (dissolved phase source)

Title: 11107 - San Lorenzo - Model A Downgradient

Simulation time (years)..... 100

Saturated Zone Model Source

Pulse Source:

Length of pulse (yr).....	1.00
Total thickness of source (m).....	1.00
Length of source (m).....	10.0
Width of source (m).....	10.0

Aquifer Properties

Effective porosity (cm3/cm3).....	.300
Fraction organic carbon (g oc/g soil)...	1.600E-03
Hydraulic conductivity (m/d).....	.650
Soil bulk density (g/cm3).....	1.70
Hydraulic gradient (m/m).....	3.000E-03
Longitudinal dispersivity (m).....	code calculated
Transverse dispersivity (m).....	code calculated
Vertical dispersivity (m).....	code calculated

Receptor Well Location

Distance downgradient (m).....	110.
Distance cross-gradient (m).....	.000
Depth to top of well screen (m).....	.000
Depth to bottom of well screen(m).....	4.40
Number of points used to calc. conc.....	2

CHEMICAL DATA INPUT: MTBE

Diffusion coeff. in air (cm2/s).....	7.100E-02
Diffusion coeff. in water (cm2/s)...	9.040E-06
Solubility (mg/l).....	4.800E+04
KOC (ml/g).....	12.0
Henry"s Law Coefficient (-).....	2.040E-02
Molecular Weight (g/mol).....	88.2
Density of chemical (g/cm3).....	.740
Degradation rate sat. zone (1/d)....	.000
Degradation rate unsat. zone (1/d)..	.000

Source Concentrations: MTBE

Source conc. for GW model (mg/l)..... 13.0

MODEL OUTPUT FOR: MTBE

Mass input rate for pulse source in GW (kg/d)... 2.54E-04

Calculated longitudinal dispersivity: 13.0
Calculated transverse dispersivity: 4.32
Calculated vertical dispersivity: .497E-01
Number of integration terms used: 10

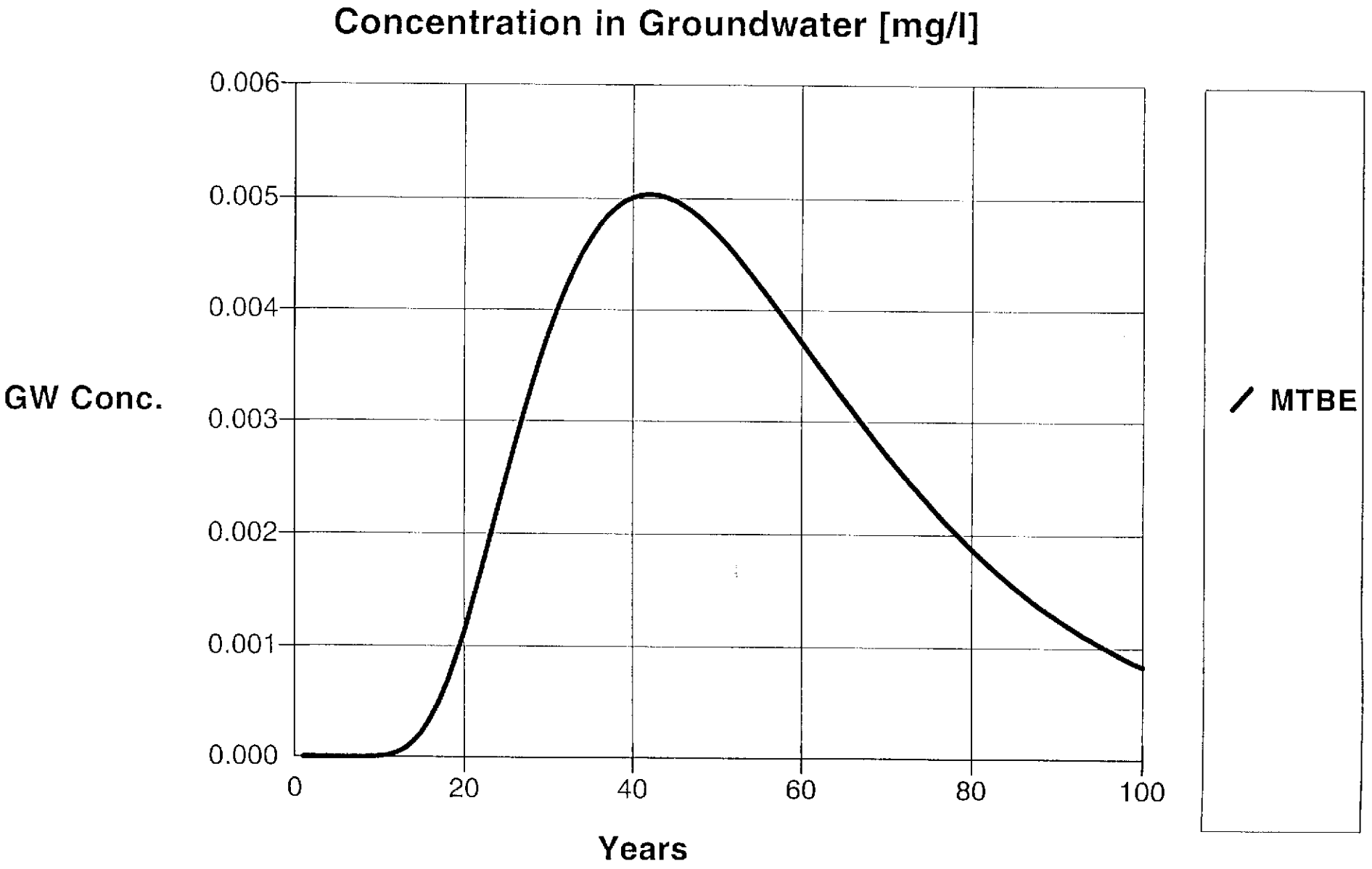
GROUNDWATER CONCENTRATION AT WELL (annual average)
MTBE

Time (yr)	Concentration at well (mg/l)
1.0	0.00E+00
2.0	0.00E+00
3.0	0.00E+00
4.0	3.82E-14
5.0	2.43E-11
6.0	1.52E-09
7.0	2.97E-08
8.0	2.72E-07
9.0	1.48E-06
10.0	5.58E-06
11.0	1.61E-05
12.0	3.81E-05
13.0	7.74E-05
14.0	1.40E-04
15.0	2.29E-04
16.0	3.50E-04
17.0	5.02E-04
18.0	6.85E-04
19.0	8.96E-04
20.0	1.13E-03
21.0	1.39E-03
22.0	1.66E-03
23.0	1.94E-03
24.0	2.22E-03
25.0	2.51E-03
26.0	2.79E-03
27.0	3.06E-03
28.0	3.32E-03
29.0	3.56E-03
30.0	3.79E-03
31.0	4.00E-03
32.0	4.19E-03
33.0	4.36E-03
34.0	4.51E-03
35.0	4.65E-03
36.0	4.76E-03
37.0	4.85E-03
38.0	4.92E-03
39.0	4.97E-03
40.0	5.01E-03
41.0	5.03E-03
42.0	5.04E-03
43.0	5.03E-03
44.0	5.01E-03
45.0	4.98E-03
46.0	4.94E-03
47.0	4.88E-03
48.0	4.82E-03
49.0	4.75E-03
50.0	4.68E-03
51.0	4.60E-03
52.0	4.51E-03
53.0	4.42E-03
54.0	4.33E-03
55.0	4.23E-03
56.0	4.13E-03
57.0	4.03E-03

58.0	3.92E-03
59.0	3.82E-03
60.0	3.72E-03
61.0	3.61E-03
62.0	3.51E-03
63.0	3.40E-03
64.0	3.30E-03
65.0	3.20E-03
66.0	3.10E-03
67.0	3.00E-03
68.0	2.90E-03
69.0	2.80E-03
70.0	2.71E-03
71.0	2.61E-03
72.0	2.52E-03
73.0	2.44E-03
74.0	2.35E-03
75.0	2.26E-03
76.0	2.18E-03
77.0	2.10E-03
78.0	2.03E-03
79.0	1.95E-03
80.0	1.88E-03
81.0	1.81E-03
82.0	1.74E-03
83.0	1.67E-03
84.0	1.61E-03
85.0	1.54E-03
86.0	1.48E-03
87.0	1.42E-03
88.0	1.37E-03
89.0	1.31E-03
90.0	1.26E-03
91.0	1.21E-03
92.0	1.16E-03
93.0	1.12E-03
94.0	1.07E-03
95.0	1.03E-03
96.0	9.84E-04
97.0	9.44E-04
98.0	9.05E-04
99.0	8.68E-04
100.0	8.32E-04

The maximum concentration occurred at the following time:

41.5	5.04E-03


Concentration in Groundwater [mg/l]
GW Conc.
0.006
0.005
0.004
0.003
0.002
0.001
0.000
0
20
40
60
80
100
Years
MTBE

Saturated zone model (dissolved phase source)

Title: 11107 - San Lorenzo - Model A Crossgradient

Simulation time (years)..... 100

Saturated Zone Model Source

Pulse Source:

Length of pulse (yr).....	1.00
Total thickness of source (m).....	1.00
Length of source (m).....	10.0
Width of source (m).....	10.0

Aquifer Properties

Effective porosity (cm3/cm3).....	.300
Fraction organic carbon (g oc/g soil)...	1.600E-03
Hydraulic conductivity (m/d).....	.650
Soil bulk density (g/cm3).....	1.70
Hydraulic gradient (m/m).....	3.000E-03
Longitudinal dispersivity (m).....	code calculated
Transverse dispersivity (m).....	code calculated
Vertical dispersivity (m).....	code calculated

Receptor Well Location

Distance downgradient (m).....	.100
Distance cross-gradient (m).....	11.0
Depth to top of well screen (m).....	.000
Depth to bottom of well screen(m).....	4.40
Number of points used to calc. conc.....	2

CHEMICAL DATA INPUT: MTBE

Diffusion coeff. in air (cm2/s).....	7.100E-02
Diffusion coeff. in water (cm2/s)...	9.040E-06
Solubility (mg/l).....	4.800E+04
KOC (ml/g).....	12.0
Henry"s Law Coefficient (-).....	2.040E-02
Molecular Weight (g/mol).....	88.2
Density of chemical (g/cm3).....	.740
Degradation rate sat. zone (1/d)....	.000
Degradation rate unsat. zone (1/d)..	.000

Source Concentrations: MTBE

Source conc. for GW model (mg/l)..... 13.0

MODEL OUTPUT FOR: MTBE

Mass input rate for pulse source in GW (kg/d)... 2.54E-04

Calculated longitudinal dispersivity: .827
Calculated transverse dispersivity: .276
Calculated vertical dispersivity: .317E-02
Number of integration terms used: 10

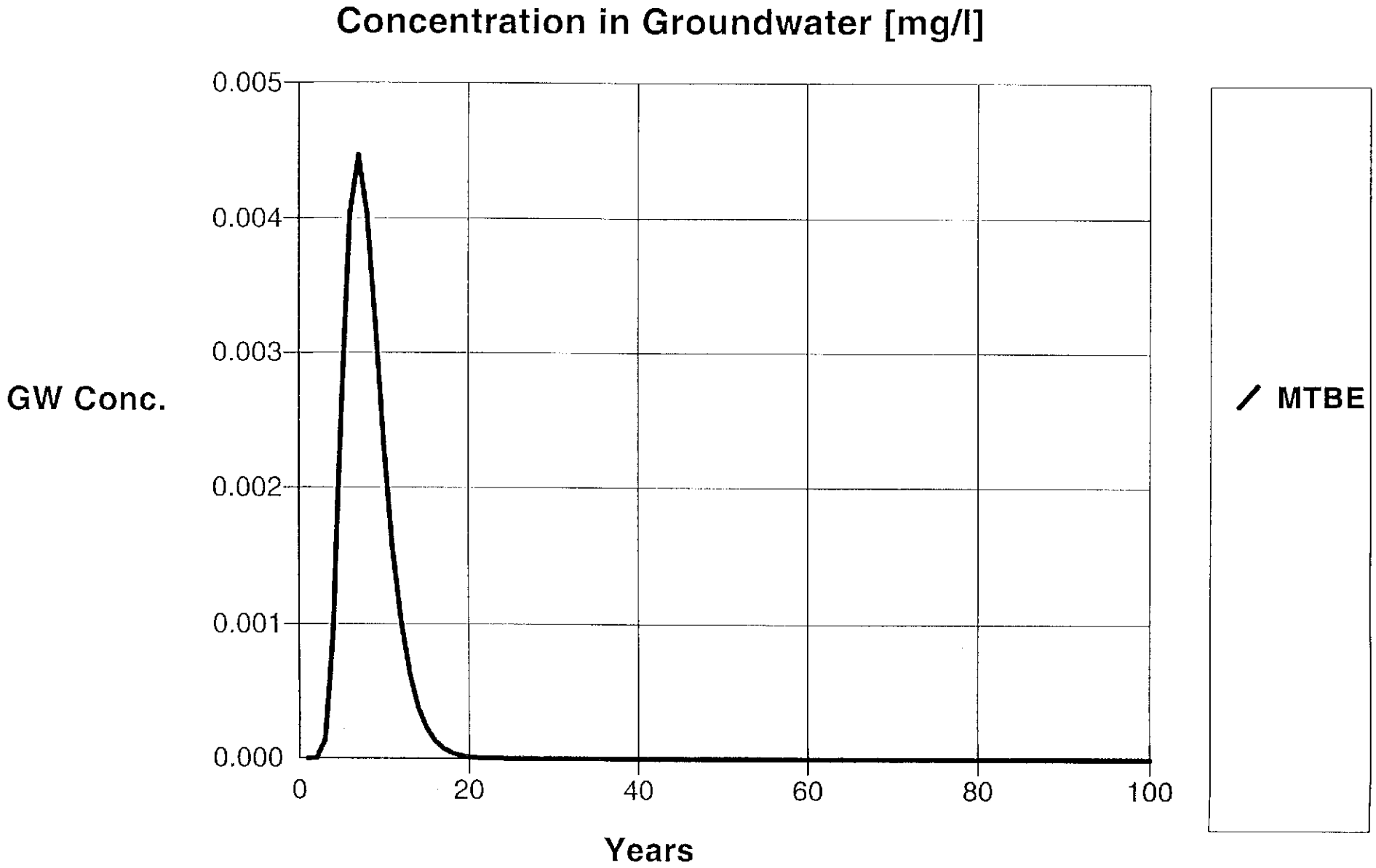
GROUNDWATER CONCENTRATION AT WELL (annual average)
MTBE

Time (yr)	Concentration at well (mg/l)
1.0	1.28E-10
2.0	2.75E-06
3.0	1.38E-04
4.0	9.89E-04
5.0	2.63E-03
6.0	4.04E-03
7.0	4.47E-03
8.0	4.04E-03
9.0	3.20E-03
10.0	2.31E-03
11.0	1.56E-03
12.0	1.01E-03
13.0	6.27E-04
14.0	3.78E-04
15.0	2.23E-04
16.0	1.30E-04
17.0	7.40E-05
18.0	4.18E-05
19.0	2.33E-05
20.0	1.29E-05
21.0	7.11E-06
22.0	3.89E-06
23.0	2.11E-06
24.0	1.14E-06
25.0	6.15E-07
26.0	3.30E-07
27.0	1.76E-07
28.0	9.41E-08
29.0	5.01E-08
30.0	2.66E-08
31.0	1.41E-08
32.0	7.45E-09
33.0	3.93E-09
34.0	2.07E-09
35.0	1.09E-09
36.0	5.74E-10
37.0	3.02E-10
38.0	1.58E-10
39.0	8.30E-11
40.0	4.36E-11
41.0	2.28E-11
42.0	1.19E-11
43.0	6.24E-12
44.0	3.26E-12
45.0	1.70E-12
46.0	8.89E-13
47.0	4.64E-13
48.0	2.27E-13
49.0	2.78E-14
50.0	0.00E+00
51.0	0.00E+00
52.0	0.00E+00
53.0	0.00E+00
54.0	0.00E+00
55.0	0.00E+00
56.0	0.00E+00
57.0	0.00E+00

58.0	0.00E+00
59.0	0.00E+00
60.0	0.00E+00
61.0	0.00E+00
62.0	0.00E+00
63.0	0.00E+00
64.0	0.00E+00
65.0	0.00E+00
66.0	0.00E+00
67.0	0.00E+00
68.0	0.00E+00
69.0	0.00E+00
70.0	0.00E+00
71.0	0.00E+00
72.0	0.00E+00
73.0	0.00E+00
74.0	0.00E+00
75.0	0.00E+00
76.0	0.00E+00
77.0	0.00E+00
78.0	0.00E+00
79.0	0.00E+00
80.0	0.00E+00
81.0	0.00E+00
82.0	0.00E+00
83.0	0.00E+00
84.0	0.00E+00
85.0	0.00E+00
86.0	0.00E+00
87.0	0.00E+00
88.0	0.00E+00
89.0	0.00E+00
90.0	0.00E+00
91.0	0.00E+00
92.0	0.00E+00
93.0	0.00E+00
94.0	0.00E+00
95.0	0.00E+00
96.0	0.00E+00
97.0	0.00E+00
98.0	0.00E+00
99.0	0.00E+00
100.0	0.00E+00

The maximum concentration occurred at the following time:

6.5	4.51E-03


Concentration in Groundwater [mg/l]
GW Conc.
0.005
0.004
0.003
0.002
0.001
0.000
0
20
40
60
80
100
Years
MTBE

Saturated zone model (dissolved phase source)

Title: 11107 - San Lorenzo - Model B Downgradient

Simulation time (years)..... 100

Saturated Zone Model Source

Pulse Source:

Length of pulse (yr).....	1.00
Total thickness of source (m).....	1.00
Length of source (m).....	10.0
Width of source (m).....	10.0

Aquifer Properties

Effective porosity (cm3/cm3).....	.300
Fraction organic carbon (g oc/g soil)...	1.600E-03
Hydraulic conductivity (m/d).....	1.63
Soil bulk density (g/cm3).....	1.70
Hydraulic gradient (m/m).....	6.000E-03
Longitudinal dispersivity (m).....	code calculated
Transverse dispersivity (m).....	code calculated
Vertical dispersivity (m).....	code calculated

Receptor Well Location

Distance downgradient (m).....	225.
Distance cross-gradient (m).....	.000
Depth to top of well screen (m).....	.000
Depth to bottom of well screen(m).....	4.40
Number of points used to calc. conc.....	2

CHEMICAL DATA INPUT: MTBE

Diffusion coeff. in air (cm2/s).....	7.100E-02
Diffusion coeff. in water (cm2/s)...	9.040E-06
Solubility (mg/l).....	4.800E+04
KOC (ml/g).....	12.0
Henry"s Law Coefficient (-).....	2.040E-02
Molecular Weight (g/mol).....	88.2
Density of chemical (g/cm3).....	.740
Degradation rate sat. zone (1/d)....	.000
Degradation rate unsat. zone (1/d)..	.000

Source Concentrations: MTBE

Source conc. for GW model (mg/l)..... 13.0

MODEL OUTPUT FOR: MTBE

Mass input rate for pulse source in GW (kg/d)... 1.27E-03

Calculated longitudinal dispersivity: 22.5
Calculated transverse dispersivity: 7.49
Calculated vertical dispersivity: .861E-01
Number of integration terms used: 10

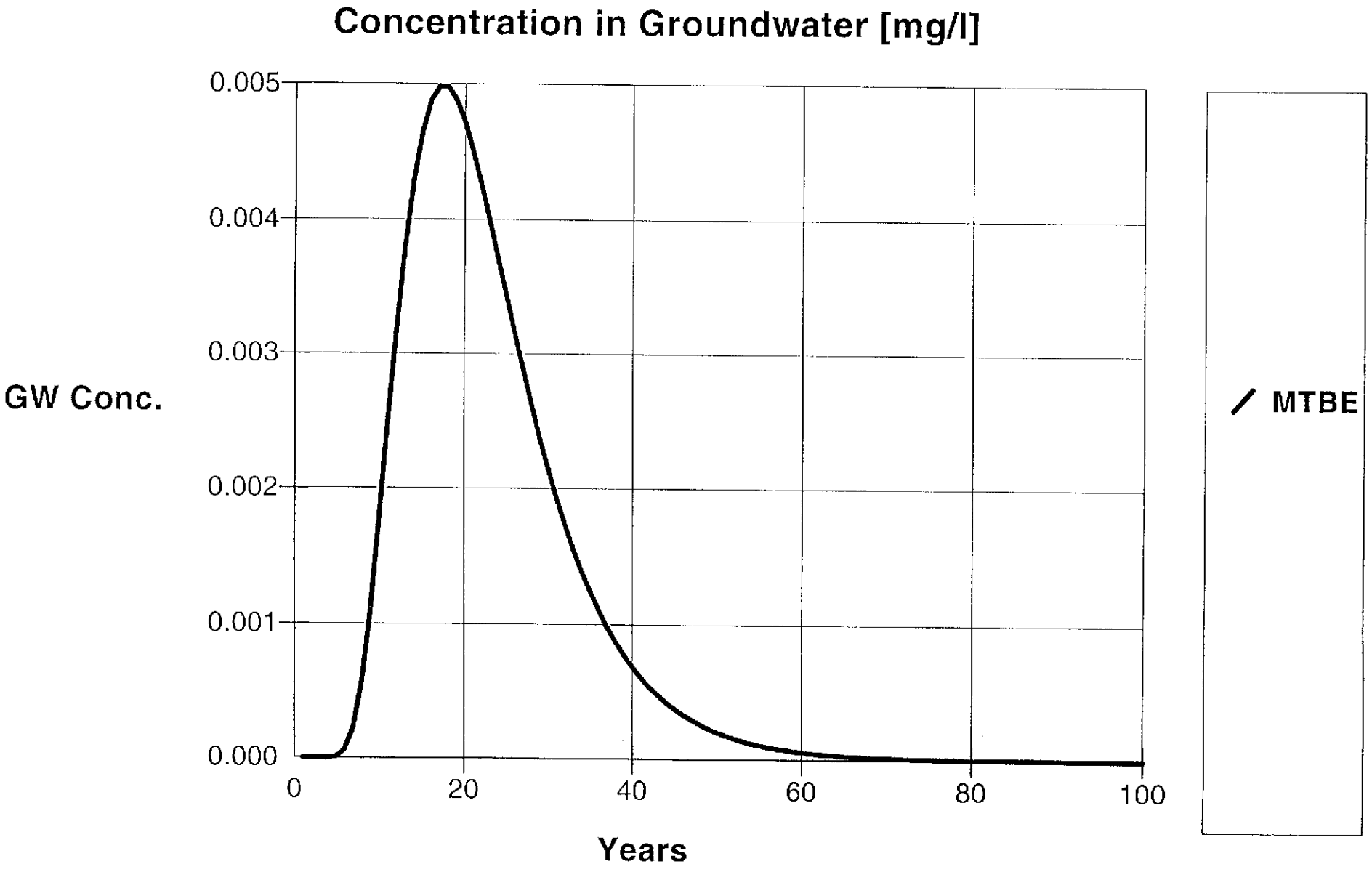
GROUNDWATER CONCENTRATION AT WELL (annual average)
MTBE

Time (yr)	Concentration at well (mg/l)
1.0	0.00E+00
2.0	1.52E-13
3.0	2.45E-09
4.0	3.79E-07
5.0	8.10E-06
6.0	5.90E-05
7.0	2.25E-04
8.0	5.68E-04
9.0	1.10E-03
10.0	1.76E-03
11.0	2.48E-03
12.0	3.18E-03
13.0	3.80E-03
14.0	4.30E-03
15.0	4.66E-03
16.0	4.88E-03
17.0	4.99E-03
18.0	4.98E-03
19.0	4.89E-03
20.0	4.72E-03
21.0	4.51E-03
22.0	4.26E-03
23.0	3.99E-03
24.0	3.71E-03
25.0	3.43E-03
26.0	3.15E-03
27.0	2.87E-03
28.0	2.62E-03
29.0	2.37E-03
30.0	2.14E-03
31.0	1.93E-03
32.0	1.73E-03
33.0	1.55E-03
34.0	1.39E-03
35.0	1.24E-03
36.0	1.11E-03
37.0	9.86E-04
38.0	8.77E-04
39.0	7.79E-04
40.0	6.91E-04
41.0	6.13E-04
42.0	5.43E-04
43.0	4.80E-04
44.0	4.25E-04
45.0	3.75E-04
46.0	3.32E-04
47.0	2.93E-04
48.0	2.58E-04
49.0	2.28E-04
50.0	2.01E-04
51.0	1.77E-04
52.0	1.56E-04
53.0	1.37E-04
54.0	1.21E-04
55.0	1.07E-04
56.0	9.38E-05
57.0	8.26E-05

58.0	7.27E-05
59.0	6.39E-05
60.0	5.62E-05
61.0	4.95E-05
62.0	4.35E-05
63.0	3.82E-05
64.0	3.36E-05
65.0	2.96E-05
66.0	2.60E-05
67.0	2.29E-05
68.0	2.01E-05
69.0	1.77E-05
70.0	1.55E-05
71.0	1.36E-05
72.0	1.20E-05
73.0	1.05E-05
74.0	9.26E-06
75.0	8.14E-06
76.0	7.15E-06
77.0	6.29E-06
78.0	5.53E-06
79.0	4.86E-06
80.0	4.27E-06
81.0	3.75E-06
82.0	3.30E-06
83.0	2.90E-06
84.0	2.55E-06
85.0	2.24E-06
86.0	1.97E-06
87.0	1.73E-06
88.0	1.52E-06
89.0	1.34E-06
90.0	1.17E-06
91.0	1.03E-06
92.0	9.07E-07
93.0	7.98E-07
94.0	7.01E-07
95.0	6.16E-07
96.0	5.42E-07
97.0	4.77E-07
98.0	4.19E-07
99.0	3.68E-07
100.0	3.24E-07

The maximum concentration occurred at the following time:

17.0	5.00E-03


Concentration in Groundwater [mg/l]
GW Conc.
0.005
0.004
0.003
0.002
0.001
0.000
0
20
40
60
80
100
Years
MTBE

Saturated zone model (dissolved phase source)

Title: 11107 - San Lorenzo - Model B Crossgradient

Simulation time (years)..... 100

Saturated Zone Model Source

Pulse Source:

Length of pulse (yr).....	1.00
Total thickness of source (m).....	1.00
Length of source (m).....	10.0
Width of source (m).....	10.0

Aquifer Properties

Effective porosity (cm3/cm3).....	.300
Fraction organic carbon (g oc/g soil)...	1.600E-03
Hydraulic conductivity (m/d).....	1.63
Soil bulk density (g/cm3).....	1.70
Hydraulic gradient (m/m).....	6.000E-03
Longitudinal dispersivity (m).....	code calculated
Transverse dispersivity (m).....	code calculated
Vertical dispersivity (m).....	code calculated

Receptor Well Location

Distance downgradient (m).....	.100
Distance cross-gradient (m).....	13.0
Depth to top of well screen (m).....	.000
Depth to bottom of well screen(m).....	4.40
Number of points used to calc. conc.....	2

CHEMICAL DATA INPUT: MTBE

Diffusion coeff. in air (cm2/s).....	7.100E-02
Diffusion coeff. in water (cm2/s)...	9.040E-06
Solubility (mg/l).....	4.800E+04
KOC (ml/g).....	12.0
Henry"s Law Coefficient (-).....	2.040E-02
Molecular Weight (g/mol).....	88.2
Density of chemical (g/cm3).....	.740
Degradation rate sat. zone (1/d)....	.000
Degradation rate unsat. zone (1/d)..	.000

Source Concentrations: MTBE

Source conc. for GW model (mg/l)..... 13.0

MODEL OUTPUT FOR: MTBE

Mass input rate for pulse source in GW (kg/d)... 1.27E-03

Calculated longitudinal dispersivity: .827
Calculated transverse dispersivity: .276
Calculated vertical dispersivity: .317E-02
Number of integration terms used: 10

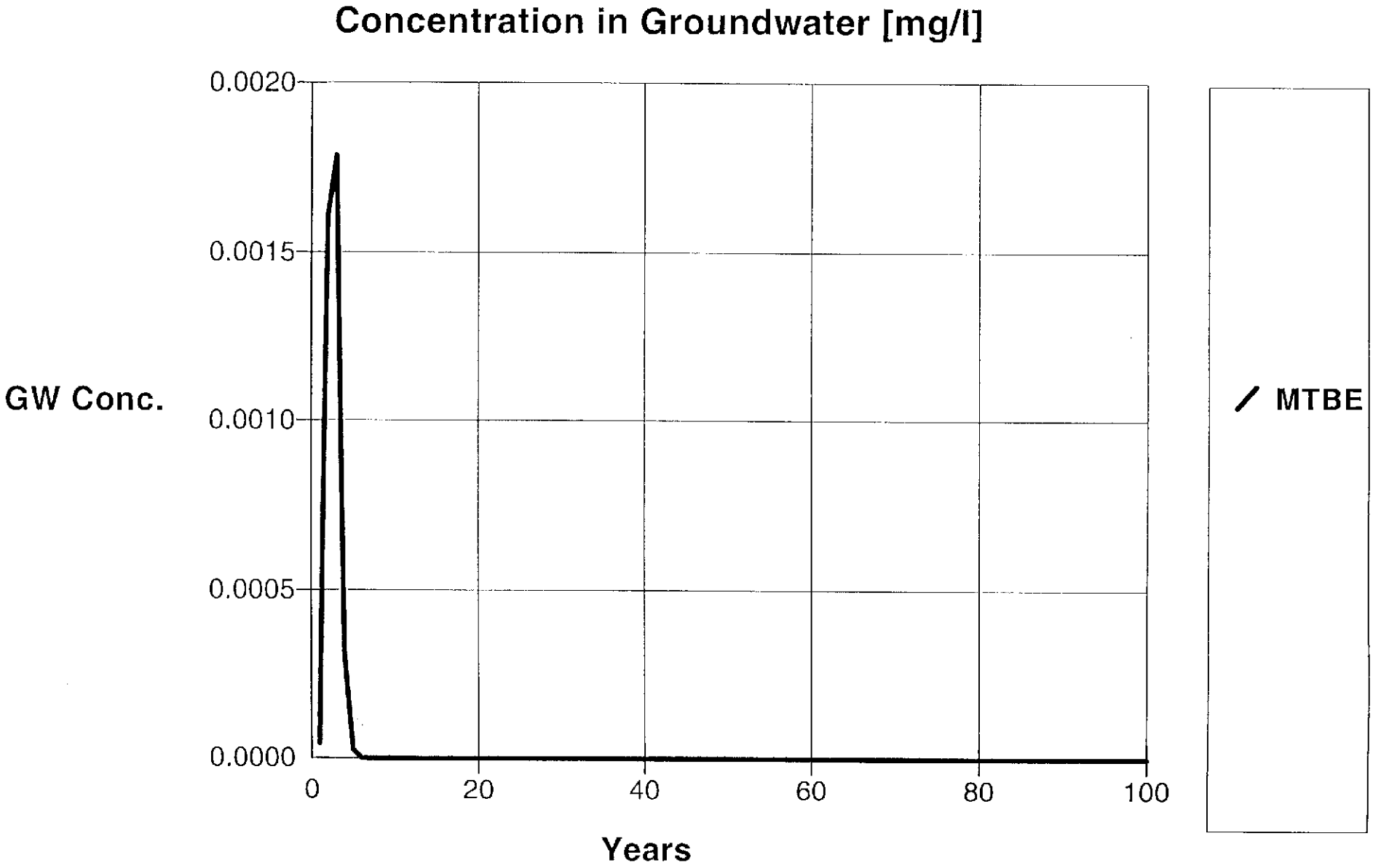
GROUNDWATER CONCENTRATION AT WELL (annual average)
MTBE

Time (yr)	Concentration at well (mg/l)
1.0	4.52E-05
2.0	1.61E-03
3.0	1.79E-03
4.0	3.16E-04
5.0	2.49E-05
6.0	1.41E-06
7.0	6.80E-08
8.0	3.01E-09
9.0	1.26E-10
10.0	5.09E-12
11.0	9.13E-14
12.0	0.00E+00
13.0	0.00E+00
14.0	0.00E+00
15.0	0.00E+00
16.0	0.00E+00
17.0	0.00E+00
18.0	0.00E+00
19.0	0.00E+00
20.0	0.00E+00
21.0	0.00E+00
22.0	0.00E+00
23.0	0.00E+00
24.0	0.00E+00
25.0	0.00E+00
26.0	0.00E+00
27.0	0.00E+00
28.0	0.00E+00
29.0	0.00E+00
30.0	0.00E+00
31.0	0.00E+00
32.0	0.00E+00
33.0	0.00E+00
34.0	0.00E+00
35.0	0.00E+00
36.0	0.00E+00
37.0	0.00E+00
38.0	0.00E+00
39.0	0.00E+00
40.0	0.00E+00
41.0	0.00E+00
42.0	0.00E+00
43.0	0.00E+00
44.0	0.00E+00
45.0	0.00E+00
46.0	0.00E+00
47.0	0.00E+00
48.0	0.00E+00
49.0	0.00E+00
50.0	0.00E+00
51.0	0.00E+00
52.0	0.00E+00
53.0	0.00E+00
54.0	0.00E+00
55.0	0.00E+00
56.0	0.00E+00
57.0	0.00E+00

58.0	0.00E+00
59.0	0.00E+00
60.0	0.00E+00
61.0	0.00E+00
62.0	0.00E+00
63.0	0.00E+00
64.0	0.00E+00
65.0	0.00E+00
66.0	0.00E+00
67.0	0.00E+00
68.0	0.00E+00
69.0	0.00E+00
70.0	0.00E+00
71.0	0.00E+00
72.0	0.00E+00
73.0	0.00E+00
74.0	0.00E+00
75.0	0.00E+00
76.0	0.00E+00
77.0	0.00E+00
78.0	0.00E+00
79.0	0.00E+00
80.0	0.00E+00
81.0	0.00E+00
82.0	0.00E+00
83.0	0.00E+00
84.0	0.00E+00
85.0	0.00E+00
86.0	0.00E+00
87.0	0.00E+00
88.0	0.00E+00
89.0	0.00E+00
90.0	0.00E+00
91.0	0.00E+00
92.0	0.00E+00
93.0	0.00E+00
94.0	0.00E+00
95.0	0.00E+00
96.0	0.00E+00
97.0	0.00E+00
98.0	0.00E+00
99.0	0.00E+00
100.0	0.00E+00

The maximum concentration occurred at the following time:

2.0	2.57E-03


Concentration in Groundwater [mg/l]
GW Conc.
0.0020
0.0015
0.0010
0.0005
0.0000
0
20
40
60
80
100
Years
MTBE

Saturated zone model (dissolved phase source)

Title: 11107 - San Lorenzo - Average Downgradient

Simulation time (years)..... 100

Saturated Zone Model Source

Pulse Source:

Length of pulse (yr).....	1.00
Total thickness of source (m).....	1.00
Length of source (m).....	10.0
Width of source (m).....	10.0

Aquifer Properties

Effective porosity (cm3/cm3).....	.300
Fraction organic carbon (g oc/g soil)...	1.600E-03
Hydraulic conductivity (m/d).....	1.00
Soil bulk density (g/cm3).....	1.70
Hydraulic gradient (m/m).....	4.000E-03
Longitudinal dispersivity (m).....	code calculated
Transverse dispersivity (m).....	code calculated
Vertical dispersivity (m).....	code calculated

Receptor Well Location

Distance downgradient (m).....	155.
Distance cross-gradient (m).....	.000
Depth to top of well screen (m).....	.000
Depth to bottom of well screen(m).....	4.40
Number of points used to calc. conc.....	2

CHEMICAL DATA INPUT: MTBE

Diffusion coeff. in air (cm2/s).....	7.100E-02
Diffusion coeff. in water (cm2/s)...	9.040E-06
Solubility (mg/l).....	4.800E+04
KOC (ml/g).....	12.0
Henry"s Law Coefficient (-).....	2.040E-02
Molecular Weight (g/mol).....	88.2
Density of chemical (g/cm3).....	.740
Degradation rate sat. zone (1/d)....	.000
Degradation rate unsat. zone (1/d)..	.000

Source Concentrations: MTBE

Source conc. for GW model (mg/l)..... 13.0

MODEL OUTPUT FOR: MTBE

Mass input rate for pulse source in GW (kg/d)... 5.20E-04

Calculated longitudinal dispersivity: 17.0
Calculated transverse dispersivity: 5.67
Calculated vertical dispersivity: .651E-01
Number of integration terms used: 10

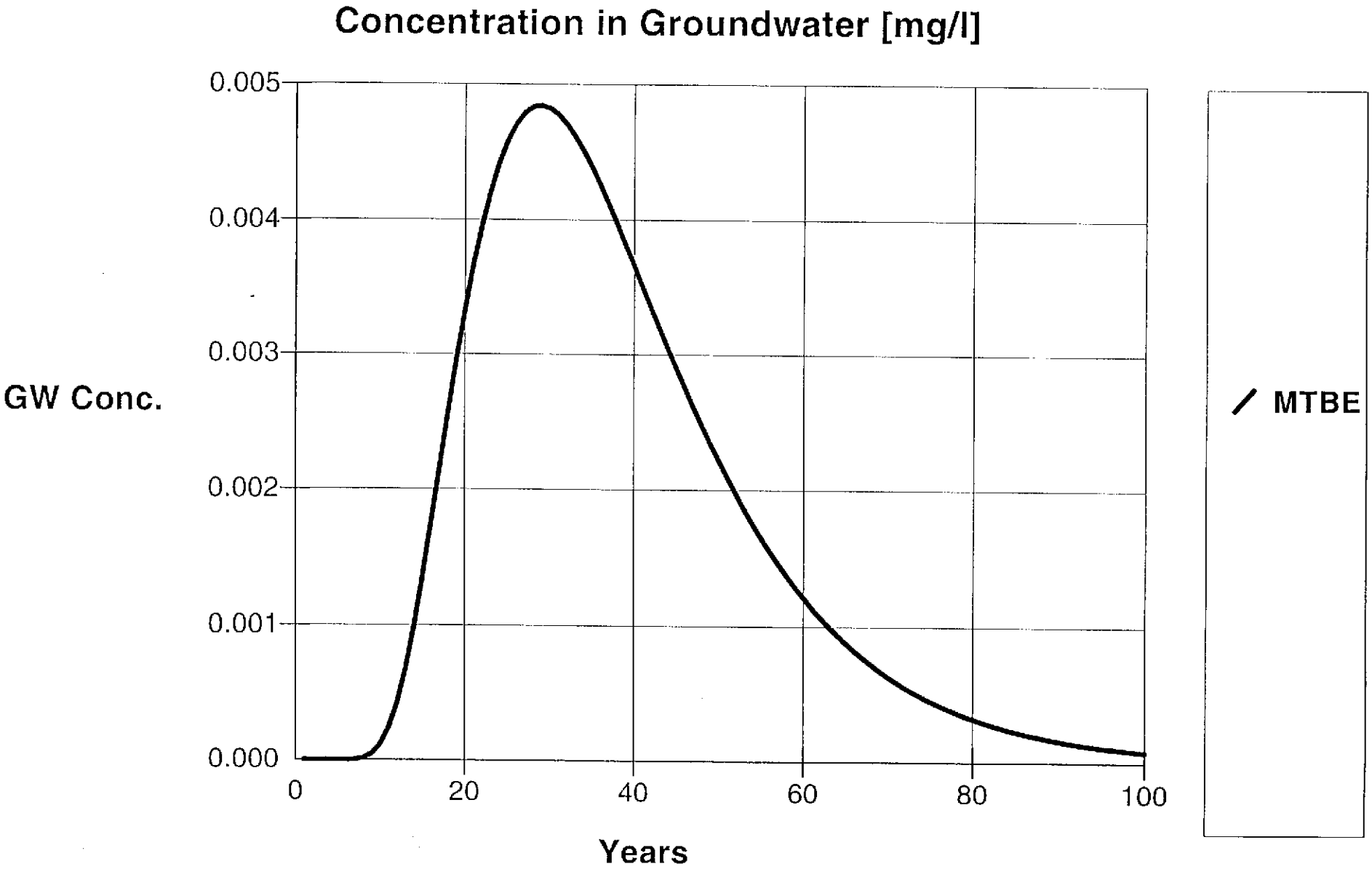
GROUNDWATER CONCENTRATION AT WELL (annual average)
MTBE

Time (yr)	Concentration at well (mg/l)
1.0	0.00E+00
2.0	0.00E+00
3.0	7.25E-14
4.0	1.43E-10
5.0	1.41E-08
6.0	3.12E-07
7.0	2.78E-06
8.0	1.38E-05
9.0	4.60E-05
10.0	1.16E-04
11.0	2.40E-04
12.0	4.27E-04
13.0	6.81E-04
14.0	9.94E-04
15.0	1.35E-03
16.0	1.75E-03
17.0	2.16E-03
18.0	2.56E-03
19.0	2.96E-03
20.0	3.33E-03
21.0	3.67E-03
22.0	3.96E-03
23.0	4.22E-03
24.0	4.42E-03
25.0	4.59E-03
26.0	4.71E-03
27.0	4.79E-03
28.0	4.84E-03
29.0	4.85E-03
30.0	4.83E-03
31.0	4.78E-03
32.0	4.71E-03
33.0	4.62E-03
34.0	4.51E-03
35.0	4.39E-03
36.0	4.26E-03
37.0	4.12E-03
38.0	3.97E-03
39.0	3.82E-03
40.0	3.67E-03
41.0	3.51E-03
42.0	3.36E-03
43.0	3.20E-03
44.0	3.05E-03
45.0	2.90E-03
46.0	2.76E-03
47.0	2.62E-03
48.0	2.48E-03
49.0	2.35E-03
50.0	2.22E-03
51.0	2.10E-03
52.0	1.98E-03
53.0	1.87E-03
54.0	1.76E-03
55.0	1.66E-03
56.0	1.56E-03
57.0	1.47E-03

58.0	1.38E-03
59.0	1.29E-03
60.0	1.22E-03
61.0	1.14E-03
62.0	1.07E-03
63.0	1.00E-03
64.0	9.41E-04
65.0	8.82E-04
66.0	8.26E-04
67.0	7.73E-04
68.0	7.24E-04
69.0	6.78E-04
70.0	6.34E-04
71.0	5.93E-04
72.0	5.55E-04
73.0	5.19E-04
74.0	4.85E-04
75.0	4.53E-04
76.0	4.23E-04
77.0	3.96E-04
78.0	3.70E-04
79.0	3.45E-04
80.0	3.22E-04
81.0	3.01E-04
82.0	2.81E-04
83.0	2.62E-04
84.0	2.45E-04
85.0	2.29E-04
86.0	2.13E-04
87.0	1.99E-04
88.0	1.86E-04
89.0	1.73E-04
90.0	1.62E-04
91.0	1.51E-04
92.0	1.41E-04
93.0	1.31E-04
94.0	1.22E-04
95.0	1.14E-04
96.0	1.06E-04
97.0	9.91E-05
98.0	9.24E-05
99.0	8.62E-05
100.0	8.04E-05

The maximum concentration occurred at the following time:

28.4	4.85E-03


Concentration in Groundwater [mg/l]
GW Conc.
0.005
0.004
0.003
0.002
0.001
0.000
0
20
40
60
80
100
Years
MTBE

Saturated zone model (dissolved phase source)

Title: 11107 - San Lorenzo - Average Crossgradient

Simulation time (years)..... 100

Saturated Zone Model Source

Pulse Source:

Length of pulse (yr).....	1.00
Total thickness of source (m).....	1.00
Length of source (m).....	10.0
Width of source (m).....	10.0

Aquifer Properties

Effective porosity (cm3/cm3).....	.300
Fraction organic carbon (g oc/g soil)...	1.600E-03
Hydraulic conductivity (m/d).....	1.00
Soil bulk density (g/cm3).....	1.70
Hydraulic gradient (m/m).....	4.000E-03
Longitudinal dispersivity (m).....	code calculated
Transverse dispersivity (m).....	code calculated
Vertical dispersivity (m).....	code calculated

Receptor Well Location

Distance downgradient (m).....	.100
Distance cross-gradient (m).....	12.0
Depth to top of well screen (m).....	.000
Depth to bottom of well screen(m).....	4.40
Number of points used to calc. conc.....	2

CHEMICAL DATA INPUT: MTBE

Diffusion coeff. in air (cm2/s).....	7.100E-02
Diffusion coeff. in water (cm2/s)...	9.040E-06
Solubility (mg/l).....	4.800E+04
KOC (ml/g).....	12.0
Henry"s Law Coefficient (-).....	2.040E-02
Molecular Weight (g/mol).....	88.2
Density of chemical (g/cm3).....	.740
Degradation rate sat. zone (1/d)....	.000
Degradation rate unsat. zone (1/d)..	.000

Source Concentrations: MTBE

Source conc. for GW model (mg/l)..... 13.0

MODEL OUTPUT FOR: MTBE

Mass input rate for pulse source in GW (kg/d)... 5.20E-04

Calculated longitudinal dispersivity: .827
Calculated transverse dispersivity: .276
Calculated vertical dispersivity: .317E-02
Number of integration terms used: 10

GROUNDWATER CONCENTRATION AT WELL (annual average)
MTBE

Time (yr)	Concentration at well (mg/l)
1.0	9.40E-08
2.0	1.23E-04
3.0	1.49E-03
4.0	3.15E-03
5.0	2.73E-03
6.0	1.50E-03
7.0	6.46E-04
8.0	2.40E-04
9.0	8.12E-05
10.0	2.59E-05
11.0	7.88E-06
12.0	2.33E-06
13.0	6.70E-07
14.0	1.90E-07
15.0	5.30E-08
16.0	1.46E-08
17.0	4.00E-09
18.0	1.09E-09
19.0	2.93E-10
20.0	7.89E-11
21.0	2.11E-11
22.0	5.63E-12
23.0	1.50E-12
24.0	3.25E-13
25.0	3.02E-15
26.0	0.00E+00
27.0	0.00E+00
28.0	0.00E+00
29.0	0.00E+00
30.0	0.00E+00
31.0	0.00E+00
32.0	0.00E+00
33.0	0.00E+00
34.0	0.00E+00
35.0	0.00E+00
36.0	0.00E+00
37.0	0.00E+00
38.0	0.00E+00
39.0	0.00E+00
40.0	0.00E+00
41.0	0.00E+00
42.0	0.00E+00
43.0	0.00E+00
44.0	0.00E+00
45.0	0.00E+00
46.0	0.00E+00
47.0	0.00E+00
48.0	0.00E+00
49.0	0.00E+00
50.0	0.00E+00
51.0	0.00E+00
52.0	0.00E+00
53.0	0.00E+00
54.0	0.00E+00
55.0	0.00E+00
56.0	0.00E+00
57.0	0.00E+00

58.0	0.00E+00
59.0	0.00E+00
60.0	0.00E+00
61.0	0.00E+00
62.0	0.00E+00
63.0	0.00E+00
64.0	0.00E+00
65.0	0.00E+00
66.0	0.00E+00
67.0	0.00E+00
68.0	0.00E+00
69.0	0.00E+00
70.0	0.00E+00
71.0	0.00E+00
72.0	0.00E+00
73.0	0.00E+00
74.0	0.00E+00
75.0	0.00E+00
76.0	0.00E+00
77.0	0.00E+00
78.0	0.00E+00
79.0	0.00E+00
80.0	0.00E+00
81.0	0.00E+00
82.0	0.00E+00
83.0	0.00E+00
84.0	0.00E+00
85.0	0.00E+00
86.0	0.00E+00
87.0	0.00E+00
88.0	0.00E+00
89.0	0.00E+00
90.0	0.00E+00
91.0	0.00E+00
92.0	0.00E+00
93.0	0.00E+00
94.0	0.00E+00
95.0	0.00E+00
96.0	0.00E+00
97.0	0.00E+00
98.0	0.00E+00
99.0	0.00E+00
100.0	0.00E+00

The maximum concentration occurred at the following time:

3.8	3.33E-03