ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
OFFICE OF THE DIRECTOR
1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502
(510) 567-6777
FAX (510) 337-9135

June 7, 2013

Mr. Randal Nahas
P.O. Box 3059
San Ramon, CA 94583
(Sent via E-mail to renahas@nahasco.com)

Frank Tien
Unknown Address

Subject: Case Closure Transmittal; Fuel Leak Case No. RO0000295 and GeoTracker Global ID T0600101370, Unocal (Independent), 20405 Redwood Rd., Castro Valley, CA 94546

Dear Mr. Nahas and Mr. Tien:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Residual pollution remaining in soil beneath the site includes TPH as diesel, TPH as motor oil, TPH as hydraulic oil, and oil and grease at concentrations of up to 1,000 ppm, 4,800 ppm, 2,000 ppm and 1,200 ppm, respectively.
- Maximum concentrations of up to 1,900 ppb TPH as gasoline, 860 ppb TPH as diesel and 2,000 ppb oil and grease, 65 ppb benzene, and 560 ppb MTBE remain in groundwater beneath the site.
- This fuel leak case has been evaluated for closure consistent with the criteria in the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy (LTCP). Sites that meet the general and media-specific criteria in the LTCP are considered to not pose a threat to human health, safety, or the environment and are appropriate for closure pursuant to Health and Safety Code section 25296.10. Therefore, no site management requirements are placed on the site.

If you have any questions, please call Barbara Jakub at (510) 639-1287. Thank you.

Sincerely,

Donna L. Drogos, P.E.
Division Chief

Enclosures:
1. Remedial Action Completion Certificate
2. Case Closure Summary

cc: Ms. Cherie McCaulou (w/enc.), SF- Regional Water Quality Control Board, 1515 Clay Street, Suite 1400, Oakland, CA 94612, (sent via electronic mail to CMacaulou@waterboards.ca.gov)
Leroy Griffin, Oakland Fire Department 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (sent via electronic mail to lgriffin@oaklandnet.com)
Barbara Jakub (w/ enc via e-mail), D. Drogos (w/ enc via e-mail), T. Le (w/orig enc)

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REMEDIAL ACTION COMPLETION CERTIFICATION

June 7, 2013

Randal Nahas
P.O. Box 3059
San Ramon, CA 94583
(Sent via E-mail to renahas@nahasco.com)

Frank Tien
Address Unknown

Subject: Case Closure for Fuel Leak Case No. RO0000295 and GeoTracker Global ID T0600101370, Unocal (Independent), 20405 Redwood Rd., Castro Valley, CA 94546

Dear Mr. Nahas and Mr. Tien:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

Ariu Levi
Director

CASE CLOSURE SUMMARY
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM

I. AGENCY INFORMATION

Date: March 1, 2013

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6791
Responsible Staff Person: Barbara Jakub	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: Unocal (Independent)		
Site Facility Address: 20405 Redwood Road, Castro Valley, CA 94546		
RB Case No.: 01-1484	Local Case No.: STID 650	LOP Case No.: RO0000295
URF Filing Date: 4/18/1990	Geotracker ID: T0600101370	APN: 84A-80-9-3, 84A-80-9-4

Responsible Parties	Addresses	Phone Numbers
Randall Nahas	RT Nahas Company PO Box 3059 San Ramon, CA 94583	(925) 855-1978
Frank Tien	Tien's Unocal Unknown Address	---

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
1	10,000	Gasoline	Removed	11/16-18/1998
2	10,000	Gasoline	Removed	11/16-18/1998
3	300	Waste Oil	Removed	11/16-18/1998
Piping			Removed	11/16-18/1998

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Heavy pitting in steel USTs was noted but "through going" holes were only observed in the waste-oil UST not in the gasoline USTs. An oily residue and strong odor were observed coating the base of the waste-oil UST. A sheen was observed on the water in the gasoline UST pit.		
Site characterization complete? Yes	Date Approved By Oversight Agency: -----	
Monitoring wells installed? Yes	Number: 7	Proper screened interval? Yes*
Highest GW Depth Below Ground Surface: 8.02 ft bgs	Lowest Depth: 14.37 ft bgs	Flow Direction: South/ Southeast
Most Sensitive Current Use: Potential drinking water source.		

* Wells submerged during high water portions of the year.

Summary of Production Wells in Vicinity: Two domestic irrigation wells were identified within a ¼-mile radius of the site.
Well 3S/2W 3K2 is located approximately 1050 feet to the northeast and has a depth of 70 feet and an 8-inch diameter. The screen interval and depth to water are unknown. Well 3S/2W 3K3 is located 1282 feet to the northeast with a depth of 56 feet, 8-inch diameter, depth to water of 38 ft bgs and unknown screen interval. Based on the distance from the site and their cross-gradient direction from the site, these wells are not expected to be receptors for the site.

Are drinking water wells affected? No	Aquifer Name: Castro Valley Basin
Is surface water affected? No	Nearest SW Name: San Lorenzo Creek~ 720 feet to the east
Off-site Beneficial Use Impacts (Addresses/Locations): None identified.	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	Two 10,000-gallon gas One 300-gallon waste-oil	Tanks disposed of at Ecology Control Industries facility in Torrance, CA.	11/18/1998
Piping	~60 feet	Assumed disposed with USTs	11/18/1998
Hydraulic Hoist	Two hydraulic hoists, unknown size	Disposed as scrap metal, no destination provided	11/19/1998
Clarifier	One concrete clarifier, no size noted	Disposed with concrete rubble	11/19/1998
Free Product	-----	-----	----
Soil	175 yd^3	The soil was treated and reused at Vasco Road Landfill, Livermore, CA.	12/1/1999
Groundwater	650-gallons 425-gallons	Water recycled by Alviso Oil, Inc. facility in Alviso, CA.	11/17/1998 11/20/1998

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments 1 through 6 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	1,100	6.3	49,000	1,900
TPH (Diesel)	2700	1,000	5,400	860
TPH (Motor Oil)	4800	4800	Not Analyzed	Not Analyzed
TPH (Hydraulic Oil)	2,000	2,000	Not Analyzed	Not Analyzed
Oil and Grease	2,300	1,200	2,000	2,000
Benzene	7.8	< 0.005	3,900	65
Toluene	67	< 0.005	13,000	0.57
Ethylbenzene	27	0.14	2,800	70
Xylenes	140	0.25	15,000	20.5
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	9.0[1]	9.0[1]	Not Analyzed	Not Analyzed
MTBE (8260)	0.80[2]	0.80[2]	1,800[3]	560[4]
Other (8260/8270)	0.82[5]	0.82[6]	28[7]	28[7]

[1] 9.0 ppm Pb; <0.50 ppm Cd, 22 ppm Cr, 19 ppm Ni and 31 ppm Zn. Soil removed but confirmation sampling after excavation not performed.

[2] 0.80 ppm MTBE; DIPE, TAME, ETBE, TBA, EDB, and EDC all not analyzed in soil.

[3] 1,800 ppb MTBE, <1.0 ppb DIPE, <1.0 ppb TAME, < 1.0 ppb ETBE, <1.0 ppb EDB, 12 ppb EDC (SP-1), <1.0 ppb EDC, and <50 ppb TBA.

[4] 560 ppb MTBE, <1.0 ppb DIPE, <1.0 ppb TAME, < 1.0 ppb ETBE, <1.0 ppb EDB, 12 ppb EDC (SP-1), <1.0 ppb EDC, and <50 ppb TBA.

[5] 0.82 ppm; bis (2-ethylhexyl) phthalate, 0.22 ppm pyrene, 0.17 ppm flouranthene, 0.10 phenanthrene. All other 8240/8270 analytes ND.

[6] 0.82 ppm bis (2-ethylhexyl) phthalate, 0.20 ppm pyrene, 0.13 ppm flouranthene, <0.10 phenanthrene. All other 8240/8270 analytes ND.

[7] 28 ppb cis-1,2-DCA,22 ppb PCE, 20 ppb TCE, 12 ppb 1,2-DCA; 8270 not analyzed in water. The source of solvent contamination detected at this site appears to originate from Marshall Steel Cleaners (DTSC lead site) and are not considered part of this closure.

Site History and Description of Corrective Actions:

The site was operated as a Unocal service station from 1964 until 1998, at which time it was demolished. The station was equipped with two pump islands, two 10,000-gallon unleaded gasoline underground storage tanks (USTs), and one 300-gallon waste-oil UST. Currently, the site is a vacant, unpaved lot located adjacent to a strip mall that includes a dry cleaner site which is located across the driveway from the former gasoline station. The source of solvent contamination detected at this site appears to originate from Marshall Steel Cleaners (DTSC lead site) and are not considered part of this closure. Property surrounding the site is of commercial and residential land use.

Between December 4 and 14, 1989, BSK oversaw installation of three groundwater monitoring wells (MW-2 through MW-4) in the vicinity of the two on-site 10,000-gallon USTs. A fourth and fifth monitoring well (MW-1 and MW-1A) were planned to be installed, but were not due to concern of creating a contaminant pathway to the lower water-bearing zone. Soil samples were collected from the borings at five foot intervals, extending to the soil-groundwater interface. Up to 110 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg), 50 ppm total petroleum hydrocarbons as diesel (TPHd), and 2.2 ppm benzene were detected in soil samples downgradient of the USTs.

In March 1991 BSK advanced 13 shallow soil borings (SB-1 through SB-13) and collected fourteen soil samples at depths ranging between 10.5 and 20.5 ft bgs. The maximum TPHg and TPHd concentrations in soil were 1,100 ppm and 340 ppm from SB-2 and SB-13, respectively.

Between March 30 and April 27, 1992, BSK advanced five soil borings (MW-5 through MW-7, SB-14, and SB-15) approximately 120 feet down gradient (south) of the site. Soil borings MW-5 through MW-7 were completed as monitoring wells. Soil samples were collected from each boring at five foot intervals. The soil sample collected from boring SB-15 contained a maximum concentration of 3.0 ppm TPHd. TPHg was detected in monitoring well MW-7 at a concentration of 1,300 parts per billion (ppb). Subsequent monitoring revealed that the TPHg in this well was due to interference from perchoroethylene (PCE) from the adjacent Marshall Steel Dry Cleaners.

To assess the PCE plume's extent and determine potential sources, soil borings SP-1 and SP-2 were advanced on November 18, 1993 at locations approximately 45 feet south-southwest and 20 feet west, respectively, of the USTs. Shallow groundwater and soil samples were collected from the borings at the soil-groundwater interface. Soil samples contained up to 9 ppm TPHg and 0.18 ppm benzene in boring SP-2. The grab groundwater sample from boring SP-1 contained 49,000 ppb TPHg, 3,900 ppb benzene, 22 ppb PCE, 20 ppb trichloroethylene (TCE), and 12 ppb 1,2-dichloroethane (1,2-DCA).

On November 16 to 18, 1998, two 10,000-gallon gasoline USTs, one 300-gallon waste-oil UST, two hydraulic hoists and a clarifier sump were removed from the site. A maximum concentration of 100 ppm TPHg was detected in soil from the bottom of the UST. Soil samples collected from the waste-oil tank pit contained 270 ppm TPHd and 2,300 ppm Oil and Grease. The hydraulic hoist and clarifier sump soil samples contained 1,000 ppm TPHd, 120 ppm TPHd, and 2,000 ppm hydraulic oil.

In May 1999, the waste-oil tank pit and clarifier sump were over-excavated. Confirmation soil samples collected from the sump at four ft bgs contained 2,700 ppm TPHd and 4,800 ppm TPH quantified as motor oil. No lead confirmation samples were collected from the waste oil excavation. To determine the impacts of chlorinated hydrocarbons, an additional sampling event was conducted in the waste oil and sump pits at depths of ten and seven ft bgs, respectively, on August 3, 1999. The only detectable concentrations of semi-volatile organic compounds were 0.13 ppm flouranthene, 0.2 ppm pyrene, and 0.82 bis(2-ethylhexl) phthalate. In December 1999, further excavation was again conducted on the waste oil and sump pits. The confirmation soil sample collected from the sump pit contained 690 ppm TPHd and 1,200 ppm oil and grease. TPH as motor oil was not reported separately in the confirmation sample. The soil sample collected from the waste oil pit did not contain detectable concentrations of contaminants.

Groundwater monitoring at the site has been conducted intermittently since August 1990. Detections of TPHg, TPHd, and methyl-tert butyl ether (MTBE) have been greatest in areas down gradient (south) of the former gasoline

USTs. The most recent sampling event of May 2, 2012 indicated that 1,900 ppb TPHg, 190 ppb TPHd, and 560 ppb MTBE is present in off-site well MW-7, located approximately 130 feet south of the former gasoline USTs. The current maximum on-site groundwater contamination is 1,900 ppb TPHg (MW-7), 860 ppb TPHd, and 65 ppb benzene from well MW-101, located approximately 10 feet south of the former USTs.

On May 10 and 11, 2012 BSK conducted a soil vapor assessment. Nine soil vapor samples (SV-1 through SV-9) were collected on at depths of five fbgs. Soil vapor samples were collected throughout the site and off-site adjacent to the dry cleaning operation. Maximum soil vapor concentrations of 15,000 micrograms per cubic meter ($\mu g/m^3$) TPHg and 4,200 $\mu g/m^3$ TPHd were collected near the former gasoline USTs and former waste oil UST, respectively. Benzene in soil vapor was detected at a maximum concentration of 23 $\mu g/m^3$ from a sample collected within the former UST backfill. These concentrations are below the residential Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board. PCE was detected in soil vapor from sample points SV-1 through SV-3 and SV-9. The maximum PCE soil vapor concentrations of 1,400,000 $\mu g/m^3$ and 7,000 $\mu g/m^3$ PCE were detected in off-site vapor points SV-3 and SV-2, respectively, adjacent to the dry cleaning operation.

The source of solvent contamination detected at this site appears to originate from Marshall Steel Cleaners (DTSC lead site) and are not considered part of this closure.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, closure of this site appears to be consistent with the policies established by the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy which became effective on August 17, 2012.		
Site Management Requirements: This fuel leak case has been evaluated for closure consistent with the criteria in the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy (LTCP). Sites that meet the general and media-specific criteria in the LTCP are considered to not pose a threat to human health, safety, or the environment and are appropriate for closure pursuant to Health and Safety Code section 25296.10. Therefore, no site management requirements are placed on the site.		
Should corrective action be reviewed if land use changes? No		
Was a deed restriction or deed notification filed? No		Date Recorded: ----
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 7
List Enforcement Actions Taken: ----		
List Enforcement Actions Rescinded: ----		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

The source of solvent contamination detected at this site appears to originate from Marshall Steel Cleaners (DTSC lead site) and are not considered part of this closure.

Conclusion:

Alameda County Environmental Health staff believe that the site meets the criteria for case closure under the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy. No further investigation or cleanup for the fuel leak case is necessary at this time.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Barbara Jakub, P.G.	Title: Hazardous Materials Specialist
Signature: Barbara Jakub	Date: 3/1/13
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature:	Date: 3/1/13

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: 3/4/13	

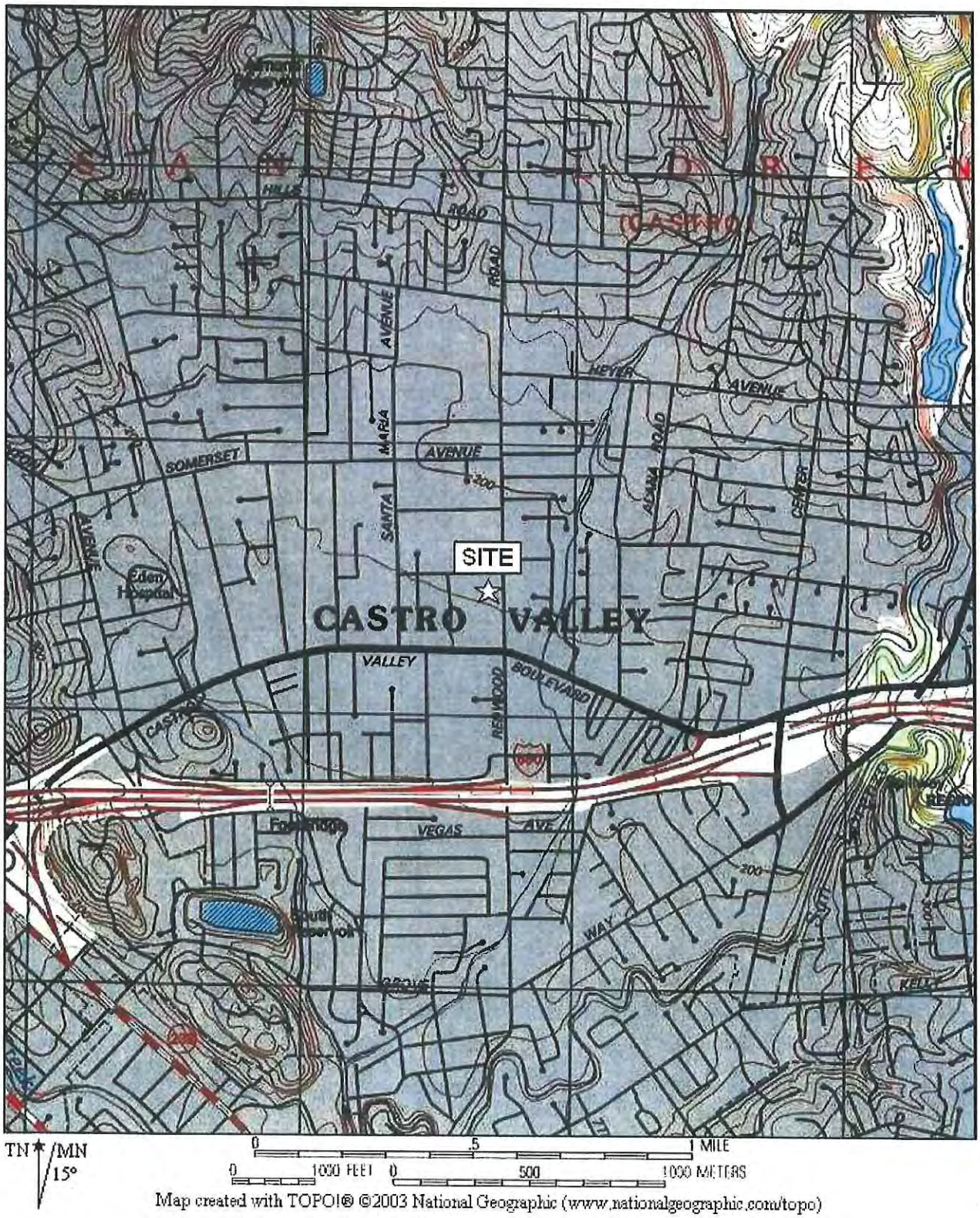
VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: 3/4/13	Date of Well Decommissioning Report: 6/4/13	
All Monitoring Wells Decommissioned: Yes (No)	Number Decommissioned: 3	Number Retained: 3
Reason Wells Retained: 3 wells Transferred To monitor Marshall Steel Cleaners site.		
Additional requirements for submittal of groundwater data from retained wells: — — —		
ACEH Concurrence - Signature: Barbara J Jakub		Date: 6/7/13

Attachments:

1. Site Vicinity Map (pp 2)
2. Site Plans (pp 5)
3. Soil Analytical Data (pp 7)
4. Groundwater Analytical Data (pp 16)
5. Soil Vapor Data (pp 2)
6. Boring Logs (pp 28)
7. Cross Sections (pp 3)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.



Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

BSK Associates Engineers & Laboratories

SITE VICINITY

FORMER UNOCAL SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

FIGURE 1

PROJECT: E0805401S

ATTACHMENT 1

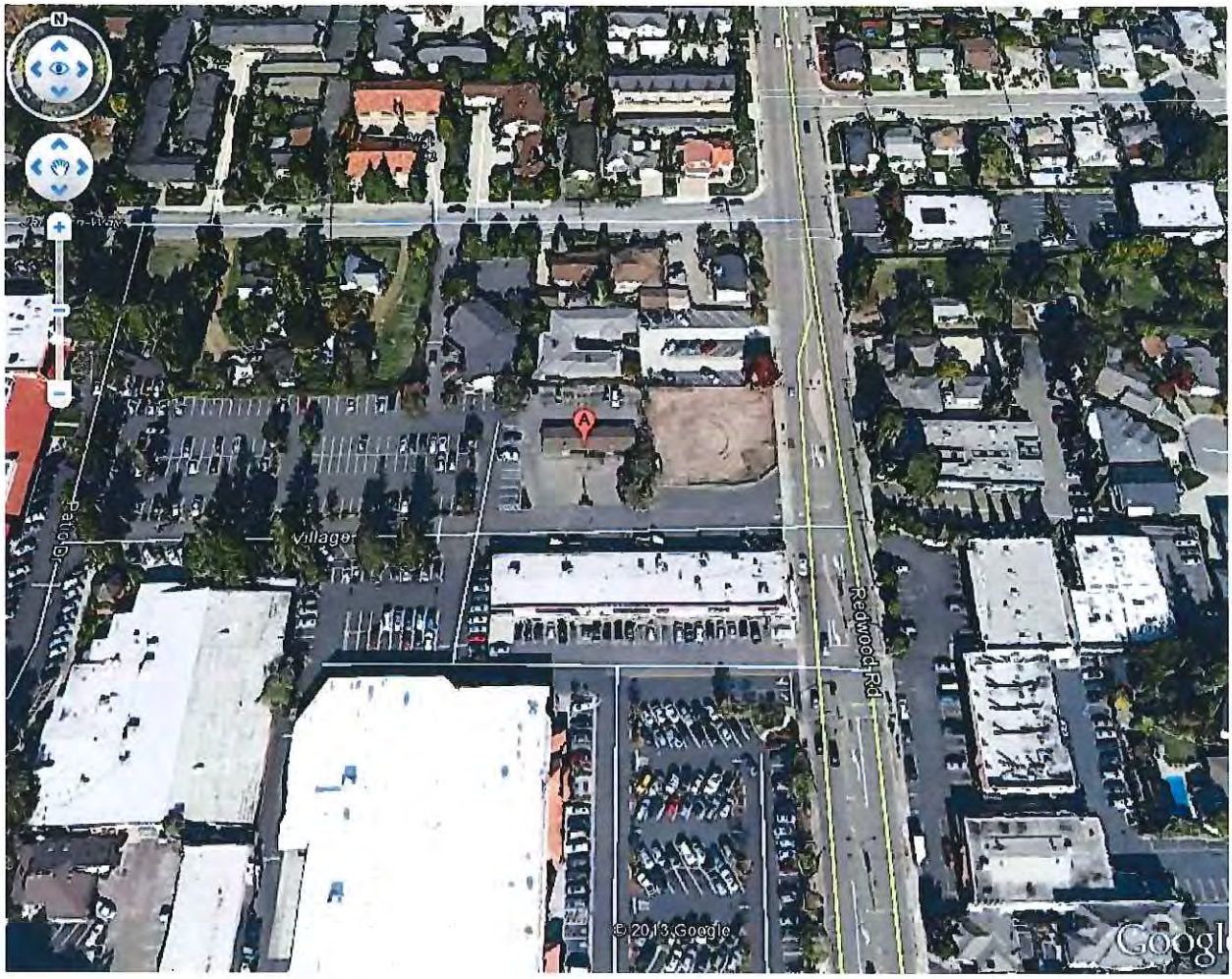
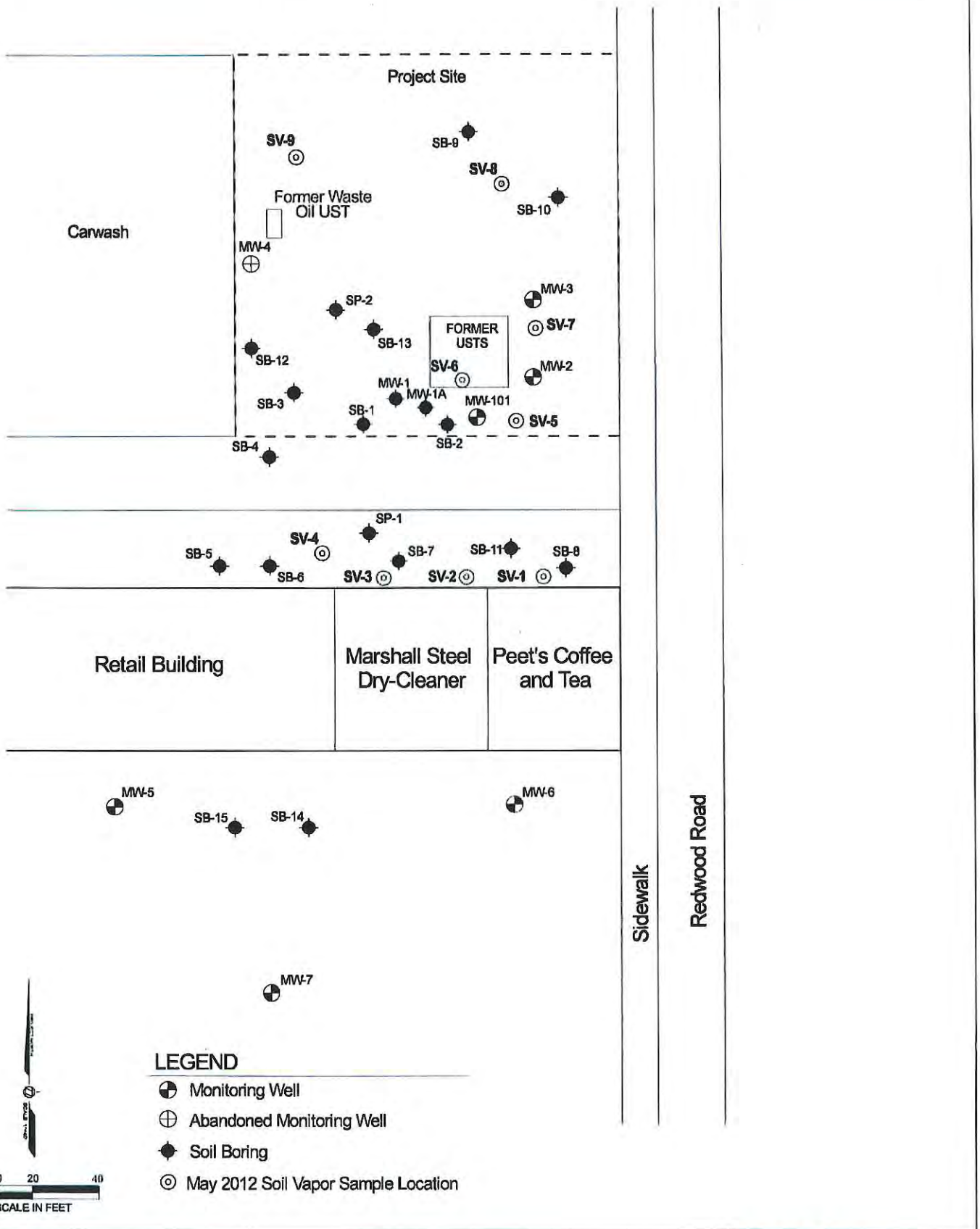


Figure 2. Site Aerial Photograph



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SITE PLAN

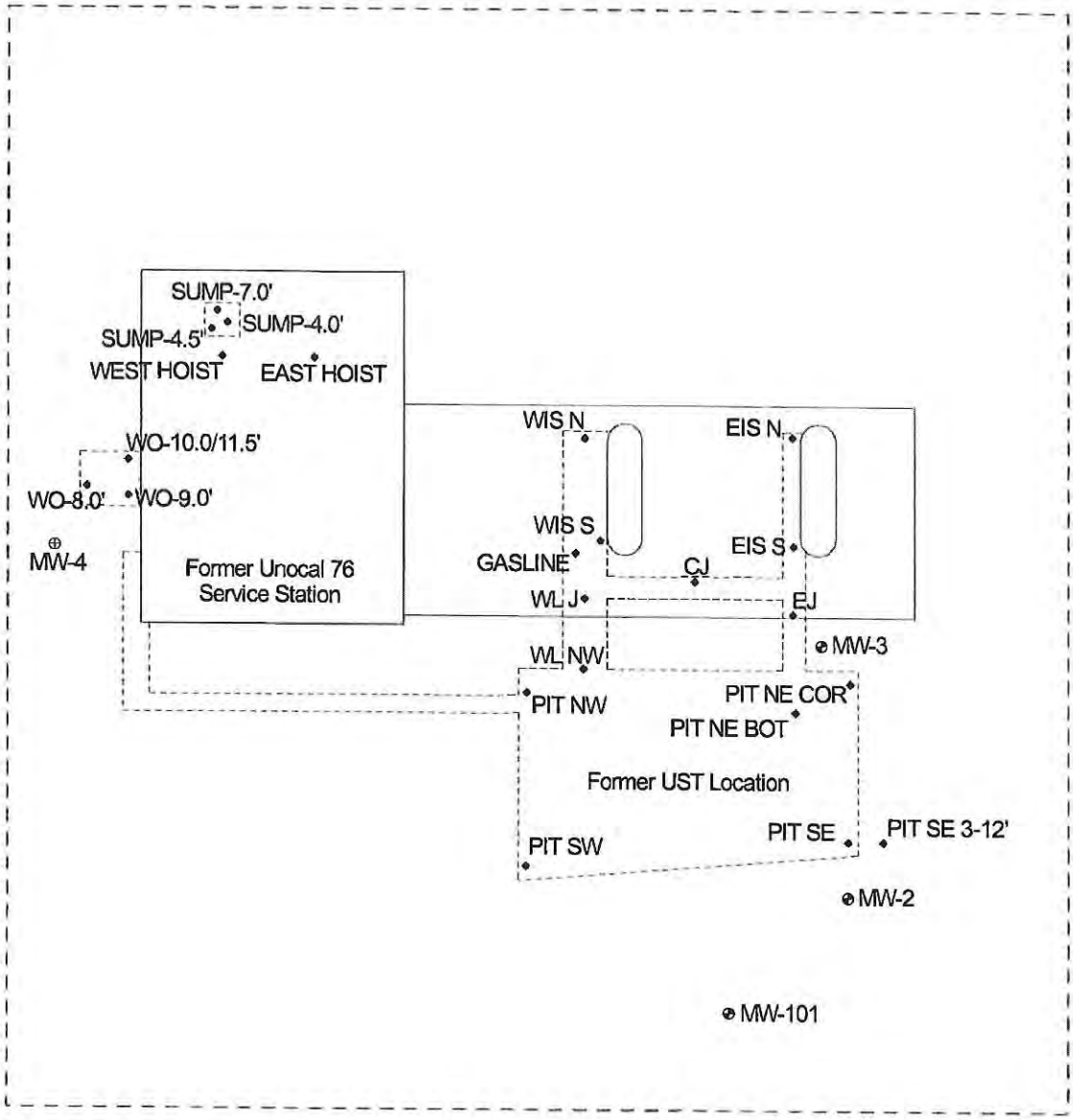
FORMER UNOCAL SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

FIGURE 2

PROJECT: E0805401S

DATE: 6/13/2012

ATTACHMENT 2



LEGEND	
•	Soil Sample Location
⬚	Approximate Extent of Excavation
⊘	Monitoring Well Location
⊕	Abandoned Monitoring Well Location

BSK Associates
Engineers & Laboratories

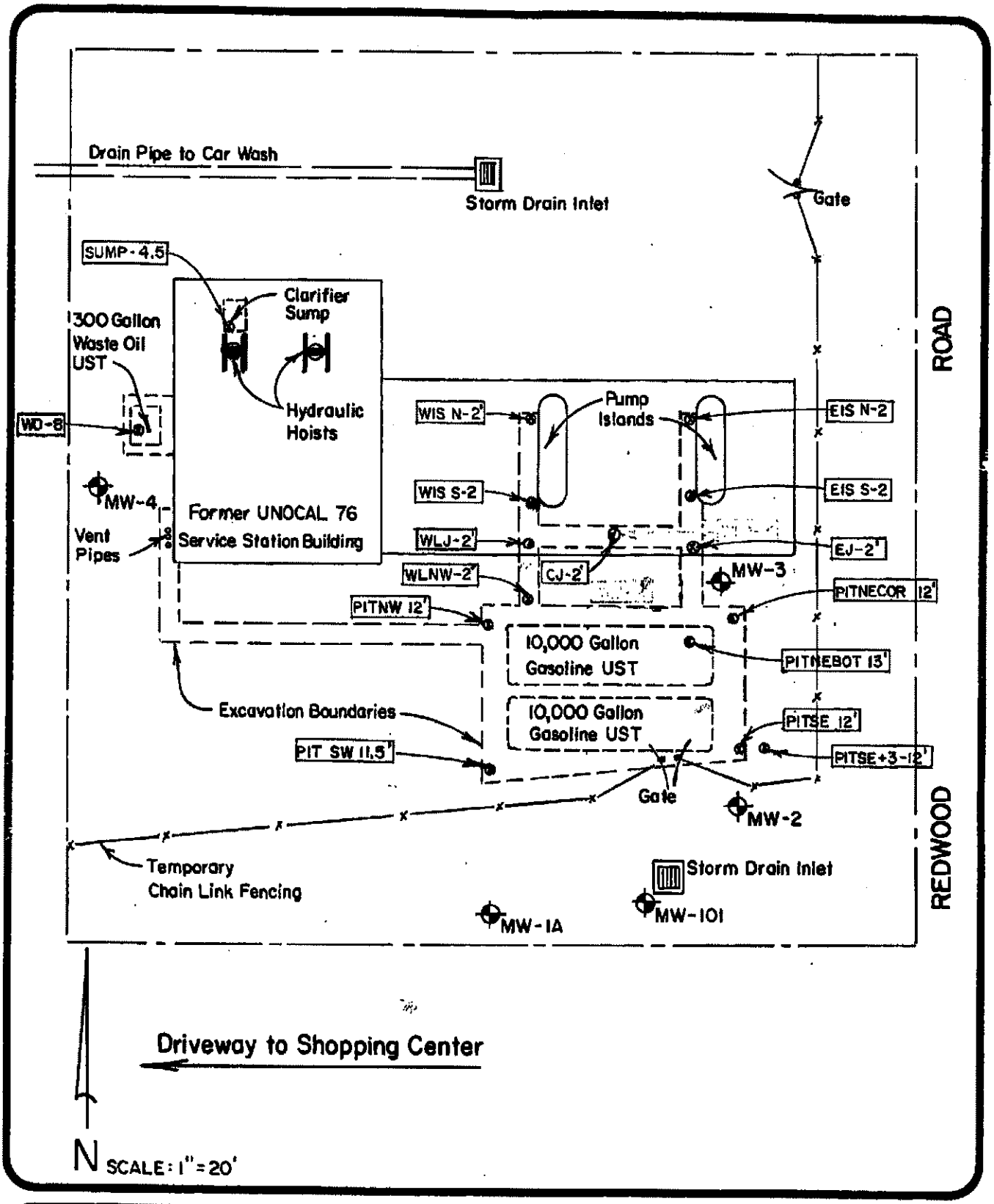
EXTENT OF EXCAVATIONS AND EXCAVATION SOIL SAMPLE LOCATIONS

FORMER UNOCAL SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

FIGURE 3

PROJECT: E0805401S

DATE: 2/12/09



Life Springs Environmental, Inc.

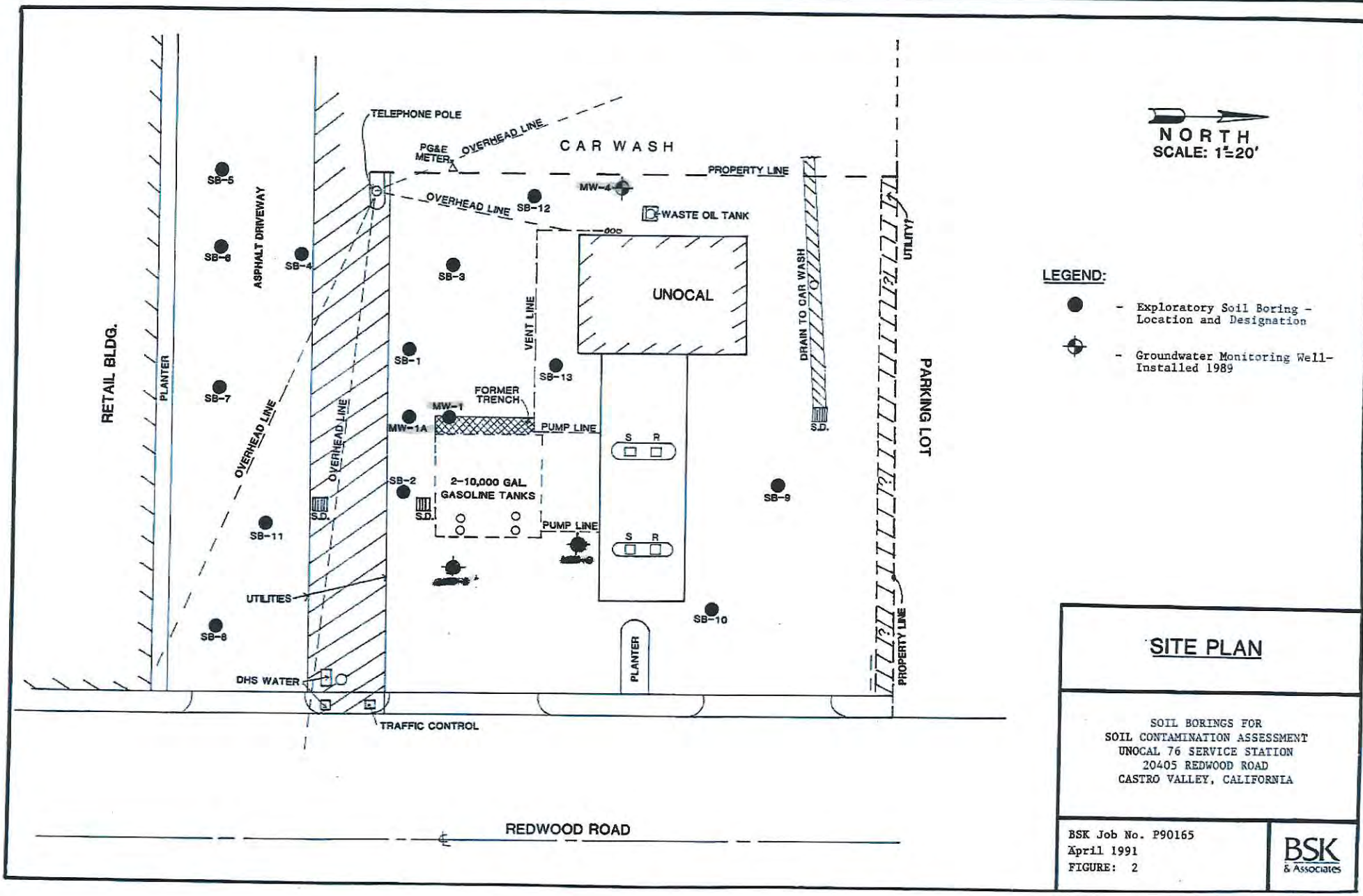
SITE SAMPLING PLAN

R.T. NAHAS COMPANY UST SITE

20405 Redwood Road
Castro Valley, California

Figure No. 4

98041.1 Project No.

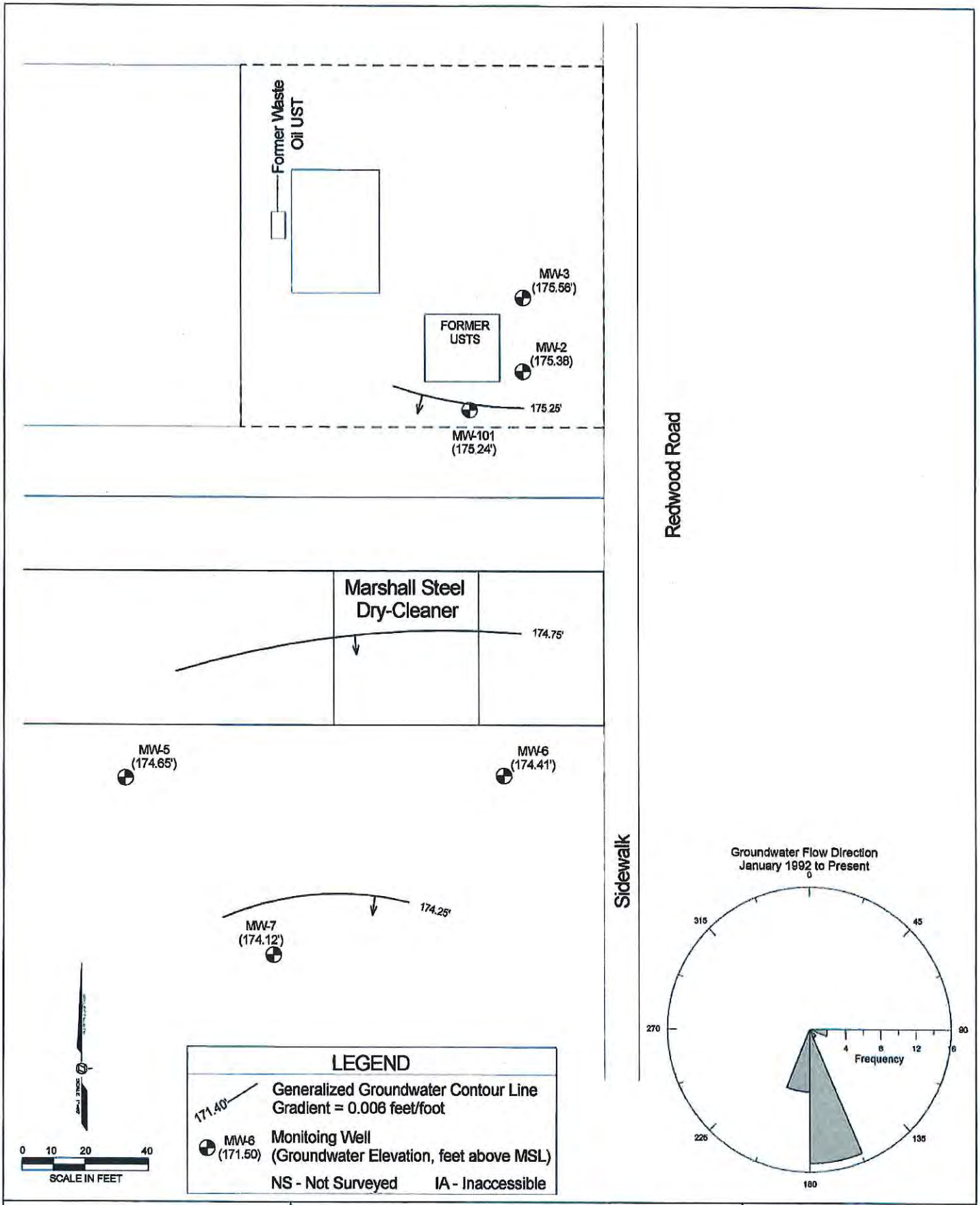


SITE PLAN

SOIL BORINGS FOR
SOIL CONTAMINATION ASSESSMENT
UNOCAL 76 SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

BSK Job No. P90165
April 1991
FIGURE: 2

BSK & Associates



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GENERALIZED GROUNDWATER ELEVATION MAP
MAY 2012

FORMER UNOCAL SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

FIGURE 4

PROJECT: E0805401S

DATE: 5/7/12

Table 1
Soil Sample Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in mg/kg)

Location	Depth (feet)	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	Oil and Grease	Total Lead	MTBE
December 1989, Soil Investigation and Monitoring Well Installation										
MW-1	5	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
	10	89	-	1.8	7.8	3.8	20	-	-	-
	15	<10	-	0.09	<0.02	<0.02	<0.02	-	-	-
	19	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
MW-1A	5	<10	<10	<0.02	<0.02	<0.02	<0.02	-	<2.0	-
	10	110	50[b]	2.2	11	5.4	25	-	<2.0	-
	13	11	<10	0.64	0.71	0.64	3.5	-	<2.0	-
	16.5	<10	<10	<0.02	<0.02	<0.02	<0.02	-	<2.0	-
MW-2	5	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
	10	<10	-	0.05	<0.02	<0.02	0.03	-	-	-
	15	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
	20	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
MW-3	5	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
	10	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
	15	92	-	ND	ND	0.97	4.0	-	-	-
	19	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
MW-4[a]	5	-	<10	<0.02	<0.02	<0.02	<0.02	<100	-	-
	8.5	-	<10	<0.02	<0.02	<0.02	<0.02	<100	-	-
	13	-	<10	<0.02	<0.02	<0.02	<0.02	<100	-	-
March 1991, Soil Investigation										
SB-1	14.5	<10	-	0.05	0.03	<0.02	0.06	-	-	-
SB-2	10.5	440	-	4.5	18	11	55	-	<2.0	-
	13	810	340[b]	5.3	4.2	13	76	-	-	-
SB-3	13.5	15	<10	0.09	0.18	0.19	1.1	-	<2.0	-
	17	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
SB-4	14	<10	<10	<0.02	<0.02	<0.02	0.1	-	-	-
SB-5	14.5	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
SB-6	15	310	-	0.8	15	6.2	36	-	-	-
SB-8	20.5	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
SB-10	16	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
SB-11	10.5	31	-	0.09	0.03	0.49	1.8	-	-	-
SB-12	15.5	<10	-	<0.02	<0.02	<0.02	<0.02	-	-	-
SB-13	10.5	1100	-	5.5	67	27	140	-	-	-
	14	530	-	7.8	48	14	73	-	-	-

ATTACHMENT 3

Table 1
Soil Sample Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in mg/kg)

Location	Depth (feet)	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	Oil and Grease	Total Lead	MTBE
March through April 1992, Soil Borings and Monitoring Well Installation										
SB-14	21	<1	<1	<0.005	<0.005	<0.005	<0.005	-	-	-
SB-15	20.5	<1	3	<0.005	0.007	<0.005	<0.008	-	-	-
MW-5	21	<1	<1	<0.005	<0.005	<0.005	<0.005	-	-	-
MW-6	16	<1	<1	<0.005	<0.005	<0.005	<0.005	-	-	-
MW-7	15.5	<1	<1	<0.005	<0.005	<0.005	<0.005	-	-	-
November 1993, Soil Borings										
SP-2	14	9	-	0.14	0.52	0.19	1.0	-	-	-
SP-1	16	-	-	0.18	<0.005	0.075	0.055	-	-	-
December 1995, Monitoring Well Installation										
MW-101	10	120	-	<0.005	0.95	2.1	11	-	-	-
	15	63	-	ND	1.5	0.87	9.8	-	-	-
November 1998, UST Removal										
WO	8	<1.0	270	<0.005	0.0061	0.027	0.079	2300	9.0	<0.005
PIT NE COR	12	47	-	<0.62	<0.62	0.74	3.4	-	-	<0.62
PIT NE BOT	13	14	-	<0.62	<0.62	<0.62	<0.62	-	-	<0.62
PIT SE	12	31	-	<0.62	1.8	<0.62	3.0	-	-	<0.62
PIT SE	unk	100	-	<2.5	<2.5	2.6	14	-	-	<2.5
PIT SW	11.5	22	-	<0.62	<0.62	<0.62	3.0	-	-	<0.62
PIT NW	12	2.6	-	0.088	0.0054	0.11	0.52	-	-	0.014
WL NW	2	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	0.018
WL J	2	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	<0.005
WIS S	2	410	-	3.6	11	12	72	-	-	0.80
WIS N	2	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	<0.005
EJ	2	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	<0.005
EIS S	2	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	<0.005
EIS N	2	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	<0.005
CJ	2	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	<0.005
WEST HOIST[3]	8.5	-	1000*,1	-	-	-	-	-	-	-
EAST HOIST[3]	8.5	-	<1.0**	-	-	-	-	-	-	-
SUMP	4.5	<1.0	120[1]	<0.005	<0.005	<0.005	<0.005	96	7.9	<0.005

Table 1
Soil Sample Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in mg/kg)

Location	Depth (feet)	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	Oil and Grease	Total Lead	MTBE
May 1999, Soil Re-excavation and Sampling										
GASLINE	3	<1.0	-	<0.005	<0.005	<0.005	<0.005	-	-	-
SUMP	4	-	**2700[1]/4800[c]**	-	-	-	-	-	-	-
WO	9	-	**38[1]**	-	-	-	-	**140**	-	-
August 1999, Waste Oil and Clarifier Sump Pit Sampling										
SUMP	7	-	**84**	-	-	-	-	**88**	-	-
WO	10	-	**560**	-	-	-	-	**1400**	-	-
September 1999, Waste Oil Pit Sampling										
WO	11.5	<1.0	**1.2[1]**	<0.005	<0.005	<0.005	<0.005	<50	-	-
October 1999, Clarifier Sump Pit Sampling										
SUMP[3]	9.5	**71[1]**	**270[2]**	<0.62	<0.62	<0.62	<0.62	**220**	-	<0.62
December 1999, Waste Oil and Clarifier Sump Pit Deepening and Sampling										
WO[3]	11	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<50	-	<0.005
SUMP[3]	15	**6.3[1]**	**690[1]**	<0.005	<0.005	**0.14**	**0.25**	**1200**	-	<0.005

Notes:
-: Not analyzed.
unk: Unknown.
[1]: Hydrocarbon reported does not match the pattern of Chromalab, Inc. standard.
[2]: Estimated concentration reported due to overlapping fuel patterns.
[3]: Exact location not mapped.
* West Hoist also had 2000 mg/kg hydraulic oil.
**East Hoist <50 mg/kg hydraulic oil.
[a]: Soil samples at were also analyzed for VOCs by EPA method 8010. None were detected.
[b]: Sample contains lower molecular weight hydrocarbons.
[c]: Reported as motor oil

Table 2
Soil Sample Analytical Results
Volatile and Semi-Volatile Organic Compounds
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in mg/kg)

Well	Depth	Phenanthrene	Fluoranthene	Pyrene	bis(2-Ethylhexyl) phthalate
December 1989, Soil Investigation and Monitoring Well Installation					
MW-4*	5	-	-	-	-
	8.5	-	-	-	-
	13	-	-	-	-
November 1993, Soil Borings					
SP-2*	1	-	-	-	-
SP-1*	16	-	-	-	-
November 1998, UST Removal					
WO	8	**0.10**	**0.17**	**0.22**	**0.6**
SUMP	4.5	<0.10	<0.10	<0.10	<0.50
August 1999, Waste Oil and Clarifier Sump Pit Sampling					
SUMP	7	<0.10	<0.10	<0.10	<0.50
WO	10	<0.10	**0.13**	**0.20**	**0.82**
September 1999, Waste Oil Pit Sampling					
WO	11.5	<0.10	<0.10	<0.10	<0.50

Notes:
-: Not analyzed
*: Samples were analyzed for VOCs by EPA Method 8260 only; none were detected above reportable detection limits

CHROMALAB, INC.

Environmental Services (SDB)

December 3, 1998 *Submission #:* 9811352

LIFE SPRINGS ENVIRONMENTAL

Atten: Kenneth Meleen

Project: R.T. NAHAS COMPANY *Project#:* 98041.1D
Received: November 20, 1998

re: One sample for TEPH analysis.
Method: *EPA 8015M*

Client Sample ID: **W. HOIST 8.5**
Spl#: 217294 *Matrix:* SOIL *Extracted:* November 24, 1998
Sampled: November 20, 1998 *Run#:*16200 *Analyzed:* December 3, 1998

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
DIESEL	1000	100	N.D.	83.9	100
Note: Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard. Surrogate diluted out.					
HYDRAULIC OIL	2000	1000	N.D.	--	100

Carolyn House
Analyst

Bruce Havlik
Analyst

1220 Quarry Lane • Pleasanton, California 94566-4756
(925) 484-1919 • Facsimile (925) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 3, 1998 *Submission #:* 9811352

LIFE SPRINGS ENVIRONMENTAL

Atten: Kenneth Meleen

Project: R.T. NAHAS COMPANY *Project#:* 98041.1D
Received: November 20, 1998

re: One sample for TEPH analysis.
Method: *EPA 8015M*

Client Sample ID: **SUMP-4.5**
Spl#: 217293 *Matrix:* SOIL *Extracted:* November 30, 1998
Sampled: November 20, 1998 *Run#:*16208 *Analyzed:* December 3, 1998

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
DIESEL	120	1.0	N.D.	83.1	1
Note: Hydrocarbon reported does not match the pattern of our Diesel Standard.					
HYDRAULIC OIL	98	50	N.D.	--	1

Carolyn House
Analyst

Bruce Havlik
Analyst

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CHROMALAB, INC.

Environmental Services (SDB)

December 3, 1998 *Submission #:* 9811352

LIFE SPRINGS ENVIRONMENTAL

Atten: Kenneth Meleen

Project: R.T. NAHAS COMPANY *Project#:* 98041.1D
Received: November 20, 1998

re: One sample for TEPH analysis.
Method: *EPA 8015M*

Client Sample ID: **E. HOIST 8.5**
Spl#: 217295 *Matrix:* SOIL *Extracted:* November 24, 1998
Sampled: November 20, 1998 *Run#:*16200 *Analyzed:* December 3, 1998

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
DIESEL	N.D.	1.0	N.D.	83.9	1
HYDRAULIC OIL	N.D.	50	N.D.	--	1

Carolyn House
Analyst

Bruce Havlik
Analyst

408-243-8888 PM 12/01

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S015 D:QC0405 CMH 15:09

Table 3
Groundwater Monitoring Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in µg/L)

Well	Date	TPHg	TPHd	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-2	12/89	72	-	-	<0.5	<0.5	<0.5	<0.5	-
	8/90	180	-	-	21	3.9	7.2	28	-
	1/91	430	-	-	50	33	22	110	-
	4/91	4,800	-	-	640	520	140	790	-
	7/91	220	-	-	14	1	17	8	-
	10/91	170	-	-	2.9	ND	2.5	6	-
	1/92	5,200	-	-	480	870	160	860	-
	4/20/92	300	-	-	70	0.3	15	7	-
	7/9/92	84	-	-	10	ND	0.6	2.3	-
	10/8/92	ND	-	-	2.3	ND	2.3	3	-
	1/12/93	170	-	-	11	5.1	1.4	6.3	-
	3/4/93	720	-	-	110	32	67	28	-
	7/1/93	220	-	-	17	1.1	6	12	-
	10/19/93	98	-	-	4.0	ND	2.3	3.1	-
	1/12/94	130	-	-	13	3.4	4.9	9.2	-
	4/25/94	270	-	-	23	1.1	8.2	17	-
	7/28/94	180	-	-	14	0.7	5.8	12	-
	10/13/94	97	-	-	2.8	ND	2.9	1.8	-
	1/10/95	440	-	-	48	2.8	15	27	-
	4/19/95	480	-	-	72	2.8	47	22	-
	10/12/95	450	-	-	7.4	ND	5.1	5.5	-
	4/12/96	690	-	-	41	2.8	27	50	-
	10/8/96	180	-	-	9.4	0.5	7.2	9.4	1,400
	4/9/97	470	-	-	23	1.6	21	31.4	1,800
	11/5/97	360	-	-	6.8	0.64	4.7	8.2	1,200
	3/1/00	560	-	-	14	0.92	16	24	1,400
	9/00	180	-	-	0.89	ND	1	0.65	620
	3/22/01	1,000	-	-	ND	ND	ND	ND	1,300[1]/1,200
	8/23/01	160	-	-	22	1.5	17	27	690[1]/820
	3/02	140	-	-	2.6	0.31	2	1.7	420
	10/02	92	-	-	ND	ND	ND	ND	280
	03/03	IA	IA	IA	IA	IA	IA	IA	IA
	9/17/03	IA	IA	IA	IA	IA	IA	IA	IA
	11/20/08	IA	IA	IA	IA	IA	IA	IA	IA
	2/11/09*	<50	<50	-	<0.3	<0.3	<0.3	<0.3	62
	8/25/09	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
	8/4/10	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
	1/7/11	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
	4/8/11	<50	<50	-	0.4	<0.3	1.7	1.2	110
	10/13/11	430	220	-	<0.3	<0.3	<0.3	<0.4	400
	5/2/12	69	130	-	<0.3	<0.3	<0.3	<0.4	69

ATTACHMENT 4

Table 3
Groundwater Monitoring Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in µg/L)

Well	Date	TPHg	TPHd	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-3	12/89	<50	-	-	<0.5	<0.5	<0.5	<0.5	-
	8/90	290	-	-	55	3.8	20	59	-
	1/91	110	-	-	29	3.3	9.7	34	-
	4/91	3,600	-	-	450	270	150	760	-
	7/91	220	-	-	14	14	33	8.0	-
	10/91	ND	ND	ND	ND	ND	ND	ND	-
	1/92	60	-	-	4.0	10	2.0	8.0	-
	4/20/92	ND	-	-	1.0	0.4	ND	0.9	-
	7/9/92	ND	-	-	1.3	0.40	ND	1.3	-
	10/8/92	ND	-	-	2.1	ND	ND	0.30	-
	1/12/93	ND	-	-	1.2	1.0	0.60	4.1	-
	3/4/93	330	-	-	32	0.90	64	13	-
	7/1/93	330	-	-	24	11	14	82	-
	10/19/93	ND	-	-	5.0	ND	0.60	1.2	-
	1/12/94	69	-	-	13	3.4	4.9	9.2	-
	4/25/94	62	-	-	17	1.0	4.9	24	-
	7/28/94	52	-	-	7.2	0.4	1.6	4.6	-
	10/13/94	ND	-	-	0.9	ND	ND	ND	-
	1/10/95	250	-	-	26	0.60	14	45	-
	4/19/95	450	-	-	26	0.60	40	19	-
	10/12/95	340	-	-	9.0	3.9	8.5	34	-
	4/12/96	170	-	-	41	2.8	27	50	-
	10/8/96	79	-	-	3.8	1.5	2.1	6.8	55
	4/9/97	120	-	-	7.3	ND	3.3	5.4	230
	11/5/97	62	-	-	1.7	1.4	2.3	8.3	65
	3/1/00	96	-	-	0.61	ND	ND	ND	240
	9/00	ND	-	-	ND	ND	ND	ND	98
	3/22/01	ND	-	-	ND	ND	ND	ND	190
	8/23/01	ND	-	-	ND	ND	ND	ND	26
	3/02	ND	-	-	ND	ND	ND	ND	26
	10/02	ND	-	-	ND	ND	ND	ND	15
	3/03	IA	IA	IA	IA	IA	IA	IA	IA
	9/17/03	ND	-	-	ND	ND	ND	ND	13
	11/20/08	IA	IA	IA	IA	IA	IA	IA	IA
	2/11/09*	<50	<50	-	<0.3	<0.3	<0.3	<0.3	12
	8/25/09	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
	8/4/10	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
	1/7/11	CNL	CNL	CNL	CNL	CNL	CNL	CNL	CNL
	4/8/11	<50	<50	-	<0.3	<0.3	<0.3	<0.4	19
	10/13/11	<50	130	-	<0.3	<0.3	<0.3	<0.4	15
	5/2/12	<50	<50	-	<0.3	<0.3	<0.3	<0.4	5.0

Table 3
Groundwater Monitoring Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in µg/L)

Well	Date	TPHg	TPHd	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-4	12/89	<50	<100	<5,000	<0.5	<0.5	<0.5	<0.5	-
	08/90	ND	ND	ND	ND	ND	ND	ND	-
	1/91	-	-	-	-	-	-	-	-
	4/91	ND	ND	ND	ND	ND	ND	ND	-
	7/91	-	-	-	-	-	-	-	-
	10/91	ND	ND	ND	ND	ND	ND	ND	-
	1/92	-	-	-	-	-	-	-	-
	4/20/92	ND	ND	ND	ND	ND	ND	ND	-
	7/9/92	-	-	-	-	-	-	-	-
	10/8/92	ND	**120**	ND	ND	ND	ND	ND	-
	1/12/93	ND	ND	ND	ND	ND	ND	ND	-
	3/4/93	ND	ND	ND	ND	ND	ND	ND	-
	7/1/93	ND	ND	**1,000**	ND	ND	ND	ND	-
	10/19/93	ND	ND	ND	**0.40**	ND	ND	**0.40**	-
	4/25/94	ND	ND	ND	ND	ND	ND	**0.40**	-
	7/28/94	ND	**86**	ND	ND	**0.60**	ND	ND	-
	10/13/94	**70**	ND	ND	ND	**36**	ND	**1.3**	-
	1/10/95	ND	ND	**2,000**	ND	ND	ND	ND	-
	4/19/95	ND	ND	ND	ND	ND	ND	ND	-
	10/12/95	ND	ND	-	ND	ND	ND	ND	-
	4/12/96	ND	ND	-	ND	ND	ND	ND	-
	10/8/96	ND	ND	-	ND	ND	ND	ND	ND
	4/9/97	ND	ND	-	ND	ND	ND	ND	ND
	11/5/97	ND	ND	-	ND	ND	ND	ND	ND
	Abandoned December 1999.								

Table 3
Groundwater Monitoring Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in µg/L)

Well	Date	TPHg	TPHd	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-5	4/13/92	ND	-	-	ND	ND	ND	ND	-
	4/27/92	ND	-	-	ND	ND	ND	ND	-
	7/9/92	ND	-	-	ND	ND	ND	ND	-
	10/8/92	ND	-	-	ND	0.40	ND	ND	-
	1/12/93	ND	-	-	ND	ND	ND	ND	-
	3/4/93	ND	-	-	ND	ND	ND	ND	-
	7/1/93	ND	-	-	ND	ND	ND	ND	-
	10/19/93	ND	-	-	ND	ND	ND	ND	-
	4/25/94	ND	-	-	ND	0.40	ND	1.0	-
	7/94	-	-	-	-	-	-	-	-
	10/13/94	87	ND	ND	ND	36	ND	1.3	-
	1/95	-	-	-	-	-	-	-	-
	4/19/95	ND	-	-	ND	ND	ND	ND	-
	10/12/95	ND	-	-	ND	ND	ND	ND	-
	4/12/96	ND	-	-	ND	ND	ND	ND	-
	10/8/96	ND	-	-	ND	ND	ND	ND	ND
	4/9/97	ND	-	-	ND	ND	ND	ND	ND
	11/5/97	ND	ND	-	ND	ND	ND	ND	ND
	3/1/00	ND	-	-	ND	ND	ND	ND	ND
	9/00	ND	-	-	ND	ND	ND	ND	ND
	3/22/01	ND	-	-	ND	ND	ND	ND	ND
	8/23/01	NS	NS	NS	NS	NS	NS	NS	NS
	3/02	NS	NS	NS	NS	NS	NS	NS	NS
	10/02	NS	NS	NS	NS	NS	NS	NS	NS
	3/03	NS	NS	NS	NS	NS	NS	NS	NS
	9/17/03	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/08*	<50	<50	-	0.31	<0.3	<0.3	0.38	<5.0
	2/6/09*	<50	<50	-	<0.3	<0.3	<0.3	<0.3	<5.0
	8/25/09	<50	<50	-	<0.5	<0.5	<0.5	<0.5	<5.0
	8/4/10	<50	<100	-	<0.3	<0.3	<0.3	<0.3	<1.0
	1/7/11	<50	<50	-	<0.3	<0.3	<0.3	0.64	<1.0
	4/8/11	<50	<50	-	<0.3	<0.3	<0.3	<0.4	<0.5
	10/13/11	<50	120	-	<0.3	<0.3	<0.3	<0.4	<0.5
	5/2/12	<50	260	-	<0.3	<0.3	<0.3	<0.4	<0.5

Table 3
Groundwater Monitoring Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in µg/L)

Well	Date	TPHg	TPHd	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-6	4/13/92	ND	-	-	ND	0.30	ND	ND	-
	4/27/92	ND	-	-	ND	ND	ND	ND	-
	7/9/92	ND	-	-	ND	ND	ND	ND	-
	10/8/92	ND	-	-	ND	ND	ND	ND	-
	1/12/93	ND	-	-	ND	ND	ND	ND	-
	3/4/93	ND	-	-	ND	ND	ND	ND	-
	7/1/93	ND	-	-	ND	ND	ND	ND	-
	10/19/93	ND	-	-	ND	ND	ND	ND	-
	4/25/94	ND	-	-	ND	0.30	ND	0.40	-
	7/94	-	-	-	-	-	-	-	-
	10/13/94	160	-	-	0.40	140	0.5	2.3	-
	1/95	-	-	-	-	-	-	-	-
	4/19/95	ND	-	-	ND	ND	ND	ND	-
	10/12/95	ND	-	-	ND	ND	ND	ND	-
	4/12/96	ND	-	-	2.9	2.9	ND	ND	-
	10/8/96	ND	-	-	ND	ND	ND	ND	17
	4/9/97	ND	-	-	ND	ND	ND	ND	ND
	11/5/97	ND	ND	-	ND	ND	ND	ND	9.0
	3/1/00	78	-	-	ND	0.49	ND	ND	260
	9/00	54	-	-	ND	ND	ND	ND	170
	3/22/01	130	-	-	ND	ND	ND	ND	440
	8/23/01	79	-	-	ND	ND	ND	ND	280[1]/350
	3/02	91	-	-	ND	ND	ND	ND	370
	10/02	83	-	-	ND	ND	ND	ND	260
	3/03	61	-	-	ND	ND	ND	ND	200
	9/17/03	140	-	-	ND	ND	ND	ND	440
	11/20/08*	<50	<50	-	0.81	<0.3	<0.3	<0.3	300
	2/6/09*	97	<50	-	<0.3	<0.3	<0.3	<0.3	200
	8/25/09	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/10	<50	<100	-	<0.3	<0.3	<0.3	<0.3	54
	1/7/11	<50	<50	-	<0.3	<0.3	<0.3	0.44	40
	4/8/11	<50	<50	-	<0.3	<0.3	<0.3	<0.4	68
	10/13/11	99	85	-	<0.3	<0.3	<0.3	<0.4	95
	5/2/12	120	<50	-	<0.3	<0.3	<0.3	<0.4	160

Table 3
Groundwater Monitoring Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in µg/L)

Well	Date	TPHg	TPHd	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-7	4/13/92	1,300	-	-	0.40	0.30	0.30	0.9	-
	4/27/92	1,100	-	-	ND	ND	ND	ND	-
	7/9/92	830	-	-	ND	ND	ND	ND	-
	10/8/92	3,900	-	-	ND	ND	ND	ND	-
	11/30/92	2,700	ND	-	-	-	-	-	-
	1/12/93	U	U	U	U	U	U	U	U
	1/93	1,900	-	-	ND	ND	ND	ND	-
	3/4/93	830	-	-	ND	ND	ND	ND	-
	7/1/93	680	-	-	ND	ND	ND	ND	-
	10/19/93	360	-	-	ND	ND	ND	0.70	-
	1/12/94	330	-	-	ND	ND	ND	ND	-
	4/25/94	360	-	-	ND	ND	ND	ND	-
	7/28/94	-	-	-	-	-	-	-	-
	10/13/94	-	-	-	-	-	-	-	-
	1/95	-	-	-	-	-	-	-	-
	4/19/95	-	-	-	ND	ND	ND	ND	-
	10/12/95	-	-	-	ND	ND	ND	ND	-
	4/12/96	-	-	-	ND	ND	ND	ND	-
	10/8/96	-	-	-	-	-	-	-	-
	4/9/97	-	-	-	-	-	-	-	-
	11/5/97	-	-	-	-	-	-	-	-
	3/1/00	ND	-	-	890	ND	ND	ND	ND
	9/00	770	-	-	3.0	0.32	13	27	ND
	3/22/01	630	-	-	ND	ND	ND	ND	ND
	8/23/01	800	-	-	ND	ND	ND	ND	7.3[1]/ND
	3/02	280	-	-	0.35	ND	0.91	2.2	7.7
	10/02	IA	IA	IA	IA	IA	IA	IA	IA
	3/03	IA	IA	IA	IA	IA	IA	IA	IA
	9/17/03	IA	IA	IA	IA	IA	IA	IA	IA
	11/20/08	520	70	-	<0.3	<0.3	<0.3	<0.3	<5.0
	2/6/09*	400	<50	-	<0.3	<0.3	<0.3	<0.3	<5.0
	8/25/09	IA	IA	IA	IA	IA	IA	IA	IA
	8/4/10	430	<100	-	<0.3	<0.3	<0.3	<0.3	<1
	1/7/11	250	<50	-	<0.3	<0.3	<0.3	<0.3	<1
	4/8/11	130	<50	-	<0.3	<0.3	<0.3	<0.4	<0.5
	10/13/11	IA	IA	IA	IA	IA	IA	IA	IA
	5/2/12	1,900	190*	-	<0.3	<0.3	<0.3	<0.4	<0.5

Table 3
Groundwater Monitoring Analytical Results
Petroleum Hydrocarbon Constituents
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California
(Concentrations in µg/L)

Well	Date	TPHg	TPHd	Total Oil and Grease	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-101	9/95	9,400	-	-	170	94	150	710	-
	3/01/00	40,000	-	-	2,500	490	4,300	10,000	2,400[1]/ 1,400
	9/00	770	-	-	3.0	0.32	13	27	-
	3/01	34,000	-	-	1,400	62	3,400	7,700	970
	8/23/01	12,000	-	-	630	ND	1,500	480	1,400
	3/02	19,000	-	-	600	25	1,600	3,100	1,600[1]/ 870
	10/02	5,200	-	-	240	0.74	230	76	1,500[1]/ 1,400
	3/03	6,300	-	-	330	ND	440	370	1,400[1]/ 840
	9/17/03	3,000	-	-	150	ND	100	110	850[1]/ 1,100
	11/20/08*	2,800	5,400	-	61	<0.3	38	1.6	570
	2/6/09*	<50	3,600	-	<0.3	<0.3	<0.3	<0.3	630
	8/25/09	2,200	1,500	-	9.9	<0.5	14	5.6	440
	8/4/10	1,100	<100	-	11	<0.3	12	4.8	280
	1/7/11	1,600	2,300	-	75	0.72	150	110	420
	4/8/11	2,400	1,900	-	150	0.89	210	130	370
	10/13/11	1,300	2,800	-	37	<0.3	44	15	500
	5/2/12	1,200	860	-	65	0.57	70	20.5	560
SP-1	11/1993	49,000	-	-	3,900	13,000	2,800	15,000	-
SP-2	11/1993	1,400	-	-	54	240	87	390	-

Notes:
ND: Not detected, detection limit unknown.
<: Not detected above laboratory's indicated reportable detection limit.
NS: No sample collected.
IA: Well inaccessible at time of sampling.
CNL: Could not locate well.
U: Unavailable.
-: Not analyzed.
*: Other fuel oxygenates and 1,2-DCA not detected above 5 µg/L (50 µg/L for TBA).
[1]: MTBE by EPA method 8015/8020; otherwise by EPA Method 8260.

Table 4
Groundwater Monitoring Analytical Results
Volatile Organic Compounds
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

(Concentrations in µg/L)

Well	Date	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloroethane	Tetrachloroethene	Trichloroethene
MW-2	3/4/93	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
	10/19/93	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	12/14/89	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	3/4/93	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/19/93	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	0.9
MW-5	3/4/93	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5
MW-6	3/4/93	<0.5	<0.5	<0.5	<0.5	<0.5	3.5	<0.5
MW-7	11/30/92	2.0	2.0	180	1.5	-	14,000	660
	3/4/93	-	<20	-	<20	<20	3,700	210
SP-1	11/18/93	unknown	unknown	28	15	12	22	20
SP-2	11/18/93	unknown	unknown	ND	ND	ND	ND	ND

Notes:
<: Not detected above laboratory's indicated reportable detection limit.
-: Not analyzed.
ND: Not detected, detection limit unknown.

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Report Issue Date: 05/15/2012 9:12
Received Date: 05/04/2012
Received Time: 07:45

Lab Sample ID: A2E0464-01
Sample Date: 05/02/2012 07:30
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-6

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Volatile Organics (BTEX and Oxygenates) by GC-MS									
*1,2-Dibromoethane (EDB)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*1,2-Dichloroethane	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Benzene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*Di-isopropyl ether (DIPE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Ethylbenzene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*m,p-Xylenes	EPA 8260B	ND	0.40	ug/L	1	A204808	05/08/12	05/08/12	
*o-Xylene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Amyl Methyl Ether (TAME)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Butyl alcohol (TBA)	EPA 8260B	ND	50	ug/L	1	A204808	05/08/12	05/08/12	
*Toluene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	EPA 8260B	106 %		*Acceptable range: 70-130 %*					
Surrogate: Bromofluorobenzene	EPA 8260B	102 %		*Acceptable range: 70-130 %*					
Surrogate: Toluene-d8	EPA 8260B	100 %		*Acceptable range: 70-130 %*					
*Total Xylenes, EPA 8260B		ND	0.50						
TPH-Diesel by GC-FID									
*TPH as Diesel	EPA 8015B	ND	50	ug/L	1	A204695	05/07/12	05/11/12	
Surrogate: Tetracosane	EPA 8015B	97.7 %		*Acceptable range: 45-189 %*					
TPH-Gasoline by GC-MS									
***TPH as Gasoline**	LUFT GC/MS	**120**	50	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	LUFT GC/MS	81 %		*Acceptable range: 70-130 %*					

Lab Sample ID: A2E0464-01RE1
Sample Date: 05/02/2012 07:30
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-6

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual

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Report Issue Date: 05/15/2012 9:12
Received Date: 05/04/2012
Received Time: 07:45

Lab Sample ID: A2E0464-01RE1
Sample Date: 05/02/2012 07:30
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-6

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Volatile Organics (BTEX and Oxygenates) by GC-MS									
*Methyl-t-butyl ether	EPA 8260B	**160**	1.0	ug/L	2	A204865	05/09/12	05/09/12	
Surrogate: 1,2-Dichloroethane-d4	EPA 8260B	110 %		*Acceptable range: 70-130 %*					
Surrogate: Bromofluorobenzene	EPA 8260B	97 %		*Acceptable range: 70-130 %*					
Surrogate: Toluene-d8	EPA 8260B	97 %		*Acceptable range: 70-130 %*					

Lab Sample ID: A2E0464-02
Sample Date: 05/02/2012 08:30
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-5

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Volatile Organics (BTEX and Oxygenates) by GC-MS									
*1,2-Dibromoethane (EDB)	EPA 8260B	ND	1.0	ug/L	1	A204865	05/09/12	05/09/12	
*1,2-Dichloroethane	EPA 8260B	ND	1.0	ug/L	1	A204865	05/09/12	05/09/12	
*Benzene	EPA 8260B	ND	0.30	ug/L	1	A204865	05/09/12	05/09/12	
*Di-isopropyl ether (DIPE)	EPA 8260B	ND	1.0	ug/L	1	A204865	05/09/12	05/09/12	
*Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	ND	1.0	ug/L	1	A204865	05/09/12	05/09/12	
*Ethylbenzene	EPA 8260B	ND	0.30	ug/L	1	A204865	05/09/12	05/09/12	
*m,p-Xylenes	EPA 8260B	ND	0.40	ug/L	1	A204865	05/09/12	05/09/12	
*Methyl-t-butyl ether	EPA 8260B	ND	0.50	ug/L	1	A204865	05/09/12	05/09/12	
*o-Xylene	EPA 8260B	ND	0.30	ug/L	1	A204865	05/09/12	05/09/12	
*tert-Amyl Methyl Ether (TAME)	EPA 8260B	ND	1.0	ug/L	1	A204865	05/09/12	05/09/12	
*tert-Butyl alcohol (TBA)	EPA 8260B	ND	50	ug/L	1	A204865	05/09/12	05/09/12	
*Toluene	EPA 8260B	ND	0.30	ug/L	1	A204865	05/09/12	05/09/12	
Surrogate: 1,2-Dichloroethane-d4	EPA 8260B	112 %		*Acceptable range: 70-130 %*					
Surrogate: Bromofluorobenzene	EPA 8260B	109 %		*Acceptable range: 70-130 %*					
Surrogate: Toluene-d8	EPA 8260B	100 %		*Acceptable range: 70-130 %*					
*Total Xylenes, EPA 8260B		ND	0.50						
TPH-Diesel by GC-FID									
*TPH as Diesel	EPA 8015B	**260**	50	ug/L	1	A204695	05/07/12	05/11/12	HC04

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Report Issue Date: 05/15/2012 9:12
Received Date: 05/04/2012
Received Time: 07:45

Lab Sample ID: A2E0464-02
Sample Date: 05/02/2012 08:30
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-5

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Surrogate: Tetracosane	EPA 8015B	76.1 %		*Acceptable range: 45-189 %*					
TPH-Gasoline by GC-MS									
*TPH as Gasoline	LUFT GC/MS	ND	50	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	LUFT GC/MS	80 %		*Acceptable range: 70-130 %*					

Lab Sample ID: A2E0464-03
Sample Date: 05/02/2012 09:35
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-7

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Volatile Organics (BTEX and Oxygenates) by GC-MS									
*1,2-Dibromoethane (EDB)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*1,2-Dichloroethane	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Benzene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*Di-isopropyl ether (DIPE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Ethylbenzene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*m,p-Xylenes	EPA 8260B	ND	0.40	ug/L	1	A204808	05/08/12	05/08/12	
*Methyl-t-butyl ether	EPA 8260B	ND	0.50	ug/L	1	A204808	05/08/12	05/08/12	
*o-Xylene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Amyl Methyl Ether (TAME)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Butyl alcohol (TBA)	EPA 8260B	ND	50	ug/L	1	A204808	05/08/12	05/08/12	
*Toluene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	EPA 8260B	119 %		*Acceptable range: 70-130 %*					
Surrogate: Bromofluorobenzene	EPA 8260B	94 %		*Acceptable range: 70-130 %*					
Surrogate: Toluene-d8	EPA 8260B	108 %		*Acceptable range: 70-130 %*					
*Total Xylenes, EPA 8260B		ND	0.50						
TPH-Diesel by GC-FID									
*TPH as Diesel	EPA 8015B	190	50	ug/L	1	A204695	05/07/12	05/11/12	X01

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Report Issue Date: 05/15/2012 9:12
Received Date: 05/04/2012
Received Time: 07:45

Lab Sample ID: A2E0464-03
Sample Date: 05/02/2012 09:35
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-7

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Surrogate: Tetracosane	EPA 8015B	82.1 %		*Acceptable range: 45-189 %*					
TPH-Gasoline by GC-MS									
***TPH as Gasoline**	LUFT GC/MS	**1900**	50	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	LUFT GC/MS	96 %		*Acceptable range: 70-130 %*					

Lab Sample ID: A2E0464-04
Sample Date: 05/02/2012 10:45
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-2

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Volatile Organics (BTEX and Oxygenates) by GC-MS									
*1,2-Dibromoethane (EDB)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*1,2-Dichloroethane	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Benzene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*Di-isopropyl ether (DIPE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Ethylbenzene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*m,p-Xylenes	EPA 8260B	ND	0.40	ug/L	1	A204808	05/08/12	05/08/12	
***Methyl-t-butyl ether**	EPA 8260B	**69**	0.50	ug/L	1	A204808	05/08/12	05/08/12	
*o-Xylene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Amyl Methyl Ether (TAME)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Butyl alcohol (TBA)	EPA 8260B	ND	50	ug/L	1	A204808	05/08/12	05/08/12	
*Toluene	EPA 8260B	ND	0.30	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	EPA 8260B	111 %		*Acceptable range: 70-130 %*					
Surrogate: Bromofluorobenzene	EPA 8260B	100 %		*Acceptable range: 70-130 %*					
Surrogate: Toluene-d8	EPA 8260B	100 %		*Acceptable range: 70-130 %*					
*Total Xylenes, EPA 8260B		ND	0.50						
TPH-Diesel by GC-FID									
***TPH as Diesel**	EPA 8015B	**130**	50	ug/L	1	A204695	05/07/12	05/11/12	X01

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Report Issue Date: 05/15/2012 9:12
Received Date: 05/04/2012
Received Time: 07:45

Lab Sample ID: A2E0464-04
Sample Date: 05/02/2012 10:45
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-2

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Surrogate: Tetracosane	EPA 8015B	78.2 %		*Acceptable range: 45-189 %*					
TPH-Gasoline by GC-MS									
***TPH as Gasoline**	LUFT GC/MS	**69**	50	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	LUFT GC/MS	84 %		*Acceptable range: 70-130 %*					

Lab Sample ID: A2E0464-05
Sample Date: 05/02/2012 12:15
Sample Type: Grab

Client Project: E0805401S
Sampled by: E. Basel
Matrix: Water

Sample Description: MW-101

Organics

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Volatile Organics (BTEX and Oxygenates) by GC-MS									
*1,2-Dibromoethane (EDB)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*1,2-Dichloroethane	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Di-isopropyl ether (DIPE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
***m,p-Xylenes**	EPA 8260B	**18**	0.40	ug/L	1	A204808	05/08/12	05/08/12	
***o-Xylene**	EPA 8260B	**2.5**	0.30	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Amyl Methyl Ether (TAME)	EPA 8260B	ND	1.0	ug/L	1	A204808	05/08/12	05/08/12	
*tert-Butyl alcohol (TBA)	EPA 8260B	ND	50	ug/L	1	A204808	05/08/12	05/08/12	
***Toluene**	EPA 8260B	**0.57**	0.30	ug/L	1	A204808	05/08/12	05/08/12	
Surrogate: 1,2-Dichloroethane-d4	EPA 8260B	98 %		*Acceptable range: 70-130 %*					
Surrogate: Bromofluorobenzene	EPA 8260B	113 %		*Acceptable range: 70-130 %*					
Surrogate: Toluene-d8	EPA 8260B	112 %		*Acceptable range: 70-130 %*					
***Total Xylenes, EPA 8260B**		**20**	0.50						
TPH-Diesel by GC-FID									
***TPH as Diesel**	EPA 8015B	**860**	250	ug/L	5	A204695	05/07/12	05/11/12	HC04
Surrogate: Tetracosane	EPA 8015B	98.0 %		*Acceptable range: 45-189 %*					
TPH-Gasoline by GC-MS									

Table 5
Summary of Groundwater Elevation Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Well	Date Measured	Casing Elevation (Feet above MSL)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet above MSL)
MW-101	09/95	U	U	-
	3/1/00		9.75	-
	09/00		U	-
	03/01		U	-
	08/23/01		9.70	-
	03/02		U	-
	10/02		U	-
	03/03		U	-
	9/17/03		9.80	-
	11/20/08		10.69	-
	2/6/09		10.46	-
	8/25/09		10.53	-
	8/4/10		11.47	-
	4/8/11		9.01	-
	10/13/11		10.41	-
	5/2/12	185.44	10.20	175.24

Table 5
Summary of Groundwater Elevation Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Well	Date Measured	Casing Elevation (Feet above MSL)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet above MSL)
MW-2	12/89	U	U	-
	08/90		U	-
	01/91		U	-
	04/91		U	-
	07/91		U	-
	10/91		U	-
	01/92		U	-
	4/20/92	183.10	10.36	172.74
	7/9/92		10.65	172.45
	10/8/92	183.47	11.60	171.87
	1/12/93		9.11	174.36
	3/4/93		9.28	174.19
	7/1/93		10.37	173.10
	10/19/93		10.82	172.65
	1/12/94		10.66	172.81
	4/25/94		10.23	173.24
	7/28/94		10.70	172.77
	10/13/94		14.19	169.28
	1/10/95		8.12	175.35
	4/19/95		9.24	174.23
	10/12/95		10.66	172.81
	4/12/96		10.05	173.42
	10/8/96		10.61	172.86
	4/9/97		10.40	173.07
	11/5/97		10.88	172.59
	3/1/00		8.49	174.98
	09/00		U	-
	3/22/01		9.65	173.82
	8/23/01		9.65	173.82
	03/2002		U	-
	10/2002		U	-
	03/2003		IA	-
	9/17/03		IA	-
	11/20/08		IA	-
	2/11/09		U	-
	8/25/09		CNL	-
	8/4/10		CNL	-
	1/7/11		CNL	-
	4/8/11		9.35	174.12
	10/13/11		10.30	173.17
	5/2/12	185.49	10.11	175.38

Table 5
Summary of Groundwater Elevation Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Well	Date Measured	Casing Elevation (Feet above MSL)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet above MSL)
MW-3	12/89	U	U	-
	08/90		U	-
	01/91		U	-
	04/91		U	-
	07/91		U	-
	10/91		U	-
	01/92		U	-
	4/20/92	183.52	10.34	173.18
	7/9/92		10.84	172.68
	10/8/92	184.03	11.96	172.07
	1/12/93		9.28	174.75
	3/4/93		9.53	174.50
	7/1/93		10.56	173.47
	10/19/93		11.04	172.99
	1/12/94		10.90	173.13
	4/25/94		10.37	173.66
	7/28/94		10.95	173.08
	10/13/94		14.37	169.66
	1/10/95		8.23	175.80
	4/19/95		9.54	174.49
	10/12/95		10.97	173.06
	4/12/96		10.06	173.97
	10/8/96		10.87	173.16
	4/9/97		10.40	173.63
	11/5/97		10.97	173.06
	3/1/00		8.68	175.35
	09/00		U	-
	3/22/01		10.22	173.81
	8/23/01		10.02	174.01
	03/02		U	-
	10/02		U	-
	03/03		U	-
	9/17/03		10.00	174.03
	11/20/08		IA	-
	2/11/09		U	-
	8/25/09		CNL	-
	8/4/10		CNL	-
	1/7/11		CNL	-
	4/8/11		9.66	174.37
	10/13/11		10.46	173.57
	5/2/12	185.93	10.37	175.56

Table 5
Summary of Groundwater Elevation Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Well	Date Measured	Casing Elevation (Feet above MSL)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet above MSL)
MW-4	12/89	U	U	-
	08/90		U	-
	01/91		U	-
	04/91		U	-
	07/91		U	-
	10/91		U	-
	01/92		U	-
	4/20/92		10.89	-
	7/9/92	184.33	10.65	173.68
	10/8/92	184.61	12.78	171.83
	1/12/93		9.67	174.94
	3/4/93		10.20	174.41
	7/1/93		11.41	173.20
	10/19/93		11.92	172.69
	4/25/94		10.94	173.67
	7/28/94		11.74	172.87
	10/13/94		15.31	169.30
	1/10/95		8.02	176.59
	4/19/95		9.97	174.64
	10/12/95		11.70	172.91
	4/12/96		10.33	174.28
	10/8/96		11.65	172.96
	4/9/97		10.93	173.68
	11/5/97		11.82	172.79

MW-4 abandoned December 1999.

Table 5
Summary of Groundwater Elevation Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Well	Date Measured	Casing Elevation (Feet above MSL)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet above MSL)
MW-5	4/27/92	183.62	11.72	171.90
	7/9/92		12.24	171.38
	10/8/92	183.92	13.24	170.68
	1/12/93		10.30	173.62
	3/4/93		10.53	173.39
	7/1/93		11.85	172.07
	10/19/93		12.32	171.60
	4/25/94		11.58	172.34
	07/94		U	-
	10/13/94		15.71	168.21
	01/95		U	-
	4/19/95		10.41	173.51
	10/12/95		12.12	171.80
	4/12/96		10.85	173.07
	10/8/96		12.00	171.92
	4/9/97		11.40	172.52
	11/5/97		12.19	171.73
	3/1/00		9.45	174.47
	09/00		U	-
	3/22/01		11.04	172.88
	8/23/01		11.06	172.86
	03/02		NS	-
	10/02		NS	-
	03/03		NS	-
	9/17/03		11.03	172.89
	11/20/08		11.80	172.12
	2/6/09		11.56	172.36
	8/25/09		11.90	172.02
	8/4/10		11.61	172.31
	1/7/11		10.45	173.47
	4/8/11		10.26	173.66
	10/13/11		11.53	172.39
	5/2/12	186.00	11.35	174.65

Table 5
Summary of Groundwater Elevation Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Well	Date Measured	Casing Elevation (Feet above MSL)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet above MSL)
MW-6	4/27/92	U	11.90	171.80
	7/9/92	183.70	12.34	171.36
	10/8/92	183.96	13.3	170.66
	1/12/93	183.60	10.59	173.01
	3/4/93		10.86	172.74
	7/1/93		12.00	171.60
	10/19/93		12.48	171.12
	4/25/94		11.86	171.74
	07/94		U	-
	10/13/94		15.87	167.73
	01/95		U	-
	4/19/95		10.70	172.90
	10/12/95		12.32	171.28
	4/12/96		11.09	172.51
	10/8/96		12.19	171.41
	4/9/97		11.70	171.90
	11/5/97		12.33	171.27
	3/1/00		9.73	173.87
	09/00		U	-
	3/22/01		11.01	172.59
	8/23/01		11.21	172.39
	03/02		U	-
	10/02		U	-
	03/03		U	-
	9/17/03		11.50	172.10
	11/20/08		12.10	171.50
	2/6/09		11.83	171.77
	8/25/09		Dry	-
	8/4/10		12.85	170.75
	1/7/11		10.75	172.85
	4/8/11		10.59	173.01
	10/13/11		11.81	171.79
	5/2/12	186.09	11.68	174.41

Table 5
Summary of Groundwater Elevation Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Well	Date Measured	Casing Elevation (Feet above MSL)	Depth to Groundwater (Feet)	Groundwater Elevation (Feet above MSL)
MW-7	4/27/92	182.52	10.97	171.55
	7/9/92		11.43	171.09
	10/8/92	182.78	12.40	170.38
	11/30/92		12.00	170.78
	1/12/93		9.51	173.27
	01/93		U	-
	3/4/93		9.88	172.90
	7/1/93		11.07	171.71
	10/19/93		11.55	171.23
	1/12/94	182.42	11.36	171.06
	4/25/94		10.85	171.57
	7/28/94		NS	-
	10/13/94		NS	-
	01/95		U	-
	4/19/95		9.66	172.76
	10/12/95		11.34	171.08
	4/12/96		10.06	172.36
	10/8/96		11.16	171.26
	4/9/97		11.70	170.72
	11/5/97		11.36	171.06
	3/1/00		8.72	173.70
	09/00		U	-
	3/22/01		10.04	172.38
	8/23/01		10.18	172.24
	03/02		U	-
	10/02		IA	-
	03/03		IA	-
	9/17/03		IA	-
	11/20/08		11.05	171.37
	2/6/09		10.76	171.66
	8/25/09		IA	-
	8/4/10		10.76	171.66
	1/7/11		9.67	172.25
	4/8/11		9.49	172.93
	10/13/11		IA	-
	5/2/12	184.82	10.70	174.12

Notes:
IA: Well Inaccessible
CNL: Could not locate well
NS: Well Not Sampled
U: Data Unavailable
-: Unable to calculate elevation

Table 6
Summary of Groundwater Flow Direction and Gradient Data
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Date	Flow Direction	Gradient (Feet/Foot)
11/1/92	Southeast	0.006
1/27/93	Southeast	0.01
3/4/93	Southeast	0.01
7/1/93	Southeast	0.01
10/19/93	South	0.005
1/12/94	South	0.001
5/13/94	Southwest	0.007
10/13/94	South	0.001
1/31/95	South	0.002
5/17/95	South	0.009
10/30/95	South	0.007
4/12/96	South	0.008
11/5/96	South	0.008
4/9/97	South	0.01
8/23/01	South	0.008
9/17/03	Southeast	0.01
11/20/08	Southeast	0.01
2/5/09	South-southeast	0.01
8/25/09	-	-
8/4/10	East-southeast	0.01
1/7/11	South-southeast	0.02
4/8/11	South-southeast	0.01
10/13/11	South-southeast	0.01
5/2/12	South	0.006

Notes:
-: Unable to calculate flow direction

Table 7
Soil Vapor Sample Analytical Results, May 2012
Former Unocal Service Station
20405 Redwood Road, Castro Valley, California

Sample Location	TPHg	TPHd	MTBE	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	TCE	PCE
SV-1	**1,200**	-	<2.6	<2.3	<3.8	<3.1	<3.1	<3.1	<3.9	**9.4**
SV-2	**6,000**	-	<11	<9.5	<11	<13	<13	<13	<16	**7,000**
SV-3	<150,000	-	<2,600	<2,300	<2,700	<3,100	<3,100	<3,100	**9,500**	**1.4x10^6**
SV-4	<10,000	-	<180	<160	<190	<220	<220	<220	-	-
SV-5	**7,200**	-	**4.6**	**23**	**74**	**16**	**62**	**19**	-	-
SV-6	**15,000**	-	<2.7	<2.4	<2.8	<3.2	<3.2	<3.2	-	-
SV-7	**1,500**	-	**10**	**6.3**	**8.9**	<3.6	**6.3**	<3.6	-	-
SV-8	**670**	-	**15**	<2.5	**2.9**	<3.4	**4.3**	<3.4	-	-
SV-9	**360**	**4,200**	<2.7	<2.4	<2.9	<3.3	<3.3	<3.3	<4.1	**7.7**
Screening Values										
ESL[1]	290,000	290,000	310,000	2,800	1,800,000	33,000	480,000	480,000	41,000	14,000
OEHHA Values[2]	NE	NE	13,000	120	380,000	14,000	890,000	880,000	18,000	6,000

Notes:
All concentrations in µg/m^3
<: Not detected above laboratory detection limit.
[1]: Commercial Environmental Screening Level for shallow soil gas less than 5 feet bgs (SFBRWQCB, 2005).
[2]: Commercial soil-gas screening number for volatile chemicals below buildings constructed without engineered fill below sub-slab gravel (OEHHA, 2010).
-: Not analyzed.
NE: Not established/available/published.
Underlined concentration indicates the smallest screening value is exceeded.

ATTACHMENT 5

eurofins | Air Toxics

Client Sample ID: SV-9

Lab ID#: 1205286-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**2051716**	**Date of Collection: 5/11/12 6:14:00 PM**	
Dil. Factor:	**1.52**	**Date of Analysis: 5/17/12 09:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cumene	0.76	Not Detected	3.7	Not Detected
Propylbenzene	0.76	Not Detected	3.7	Not Detected
Chloromethane	7.6	Not Detected	16	Not Detected
1,2,4-Trichlorobenzene	3.0	Not Detected	22	Not Detected
Hexachlorobutadiene	3.0	Not Detected	32	Not Detected
Acetone	7.6	Not Detected	18	Not Detected
Carbon Disulfide	3.0	Not Detected	9.5	Not Detected
2-Propanol	3.0	Not Detected	7.5	Not Detected
trans-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.0	Not Detected	9.0	Not Detected
Tetrahydrofuran	0.76	Not Detected	2.2	Not Detected
1,4-Dioxane	3.0	Not Detected	11	Not Detected
4-Methyl-2-pentanone	0.76	Not Detected	3.1	Not Detected
2-Hexanone	3.0	Not Detected	12	Not Detected
Bromoform	0.76	Not Detected	7.8	Not Detected
4-Ethyltoluene	0.76	Not Detected	3.7	Not Detected
Ethanol	3.0	Not Detected	5.7	Not Detected
Methyl tert-butyl ether	0.76	Not Detected	2.7	Not Detected
tert-Butyl alcohol	3.0	Not Detected	9.2	Not Detected
Ethyl-tert-butyl ether	3.0	Not Detected	13	Not Detected
Isopropyl ether	3.0	Not Detected	13	Not Detected
tert-Amyl methyl ether	3.0	Not Detected	13	Not Detected
3-Chloropropene	3.0	Not Detected	9.5	Not Detected
2,2,4-Trimethylpentane	0.76	Not Detected	3.6	Not Detected
Naphthalene	3.0	Not Detected	16	Not Detected
TPH ref. to Gasoline (MW=100)	38	88	160	360

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	100	70-130

DATE: 12/05/89
LOGGED BY: MC
ELEVATION: Approx. 190'
WATER LEVEL: Initially encountered at 20'-0", then rose to 12'-0"
EQUIPMENT: Mobil Drill B-53 8" Hollow Stem Auger

LOG DESIGNATION MW-1

JOB: P89134
FIGURE: 3

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
						PMT	2.5" Asphaltic Concrete over 8" Aggregate Base	
						CL	SILTY CLAY: Brown, moist, firm	
						CH	SILTY CLAY: Black gray, saturated soft	
5		22			1	CH/CL	SILTY CLAY: Greenish gray, moist, stiff, slighty sandy, numerous air voids	PID = 0.0
10		27			2	CL/ML	SANDY CLAY: Light yellow brown, moist, very stiff	[redacted]
15		28			3	CL/SC	SANDY CLAY/[redacted]: Light yellow-brown, moist, very stiff strong hydrocarbon odor Saturated at 17'	PID to 28.8 PID to 605.0
		36			4	SC	[redacted]: Greenish gray, saturated No odor	
20							SILTY CLAY: Light brown, moist, very stiff Saturated at 20'	
25							Note: PID denotes Photo Ionization Detector Reading	

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lb. HAMMER - 30 INCH DROP,
(P) HYDRAULICALLY PUSHED

BSK & Associates

ATTACHMENT 6

DATE: 12/05/89
LOGGED BY: MC
ELEVATION: Approx. 190'
WATER LEVEL: Initially encountered at 20'-0", then rose to 12'-0"
EQUIPMENT: Mobile Drill B-53 8" Hollow Stem Auger

LOG DESIGNATION MW-1

JOB: P89134
FIGURE: 3 (cont'd)

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
						CL	SILTY CLAY: Light brown, saturated	
30								Boring terminated at 30', then backfilled with neat grout to surface using Tremie method Note: Surface seal depth = 30'

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 12-07-89
LOGGED BY: MC
ELEVATION: Approx. 190'
WATER LEVEL: Seepage noted at 15' (not water table)
EQUIPMENT: Mobile Drill B-53 8" Hollow Stem Auger

LOG DESIGNATION MW-1A

JOB: P89134
FIGURE: 4

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
						PMT	2.5" Asphaltic Concrete over 8" Aggregate Base	
						CL/CH	SILTY CLAY: Black gray, very moist, medium stiff	PID = 0.0
							Grades to gray brown	
5	2.0	27	-	-	1	CL	SILTY CLAY: Greenish gray, moist stiff to very stiff	PID = 0.0
							Grades to yellow brown	
							Grades to mottled gray yellow-brown	PID = 0.0
10	2.0	28	-	-	2	CL	SANDY CLAY: Greenish gray, moist stiff, strong hydrocarbon odor	PID to 342.0
							Grades to very moist	PID to 58.0
	2.0	20	-	-	3		Grades to yellow brown, moist, lesser sand fraction and slight odor	PID to 37.0
15						CL/SC	SANDY CLAY: Yellow brown, saturated, soft, no odor	
	2.0	35	-	-	4	CL	SILTY CLAY: Reddish brown, damp, very stiff to hard	PID = 0.0
20								Boring terminated at 17½' backfilled to surface with neat grout Note: Surface seal depth = 17.5'
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 12/04/89
LOGGED BY: MC
ELEVATION: Approx. 190'
WATER LEVEL: Initially encountered at 20'-0", then rose to 12'-5"
EQUIPMENT: Mobile Drill B-53 8" Hollow Stem Auger

LOG DESIGNATION MW-2

JOB: P89134
FIGURE: 5

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
						PMT	2" Asphaltic Concrete over 8" Aggregate Base	
						CL	SILTY CLAY: Brown, very wet, soft	
						CH/OH	SILTY CLAY: Black gray, saturated, soft, organic clay fraction	
5	2.0	13	-	-	1	CH/CL	SILTY CLAY: Greenish gray, moist stiff, slighty sandy, some air voids, blocky texture	PID to 11.0
10	2.0	21	-	-	2	CL/ML	SANDY CLAY: Light yellow brown, moist, very stiff, horizontal air voids	PID = 0.0
						CL	SILTY CLAY: Light yellow brown, moist, very stiff to hard	
15	2.0	38	-	-	3			PID = 0.0
						CL/SC	SANDY CLAY: Light yellow brown saturated, very stiff	
20	2.0	23	-	-	4		Grades to clayey fine sand	
25	1 3/8"	-	-	-		CL	SILTY CLAY: Light brown, saturated	

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 12/04/89
LOGGED BY: MC
ELEVATION: Approx 190'
WATER LEVEL: Initially encountered at 20'-0", then rose to 12'-5"
EQUIPMENT: Mobile Drill B-53 8" Hollwo Stem Auger

LOG DESIGNATION MW-2

JOB: P89134
FIGURE: 5 (cont'd)

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS / FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
25						CL	SILTY CLAY: Light brown, saturated, very stiff, sand fraction	
30	1 3/8"	13	-	-				Boring terminated at 31' 30' monitoring well installed having 15' of casing over 15' of screen Note: Surface seal depth = 12'
40								
45								
50								
55								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 12/05/89
LOGGED BY: MC
ELEVATION: Approx. 190'
WATER LEVEL: Initially encountered at 19'-0", then rose to 12'-4"
EQUIPMENT: Mobile Drill B-53 8" Hollow Stem Auger

LOG DESIGNATION MW-3

JOB: P89134
FIGURE: 6

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
						PMT	3" Asphaltic Concrete over 8" Aggregate Base	
						CL	SILTY CLAY: Brown, moist	
						CH/OH	SILTY CLAY: Black gray, saturated soft, organic clay fraction	PID = 0.8
5	2.0	27	-	-	1	CH/CL	SILTY CLAY: Greenish gray, moist stiff, mottled yellow brown	PID = 1.2
10	2.0	28	-	-	2	CL/ML	SANDY CLAY: Light yellow brown, moist, stiff, mottled olive brown, numerous horizontal air voids	PID = 0.0
15	2.0	36	-	-	3	CL	SILTY CLAY: Light yellow brown, moist, very stiff to hard, slighty sandy, blocky texture	PID = 0.0
20	2.0	37	-	-	4	CL/SC	SANDY CLAY: Light yellow brown, wet, very stiff to hard Saturated at 20'	PID = 2.5
25						CL	SILTY CLAY: Light brown saturated	

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 12/05/89
LOGGED BY: MC
ELEVATION: Approx. 190'
WATER LEVEL: Initially encountered at 19'-0", then rose to 12'-4"
EQUIPMENT: Mobile Drill B-53 8" Hollow Stem Auger

LOG DESIGNATION MW-3

JOB:P89134
FIGURE: 6 (cont'd)

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
25							SILTY CLAY: Light brown, saturated, very stiff, sand fraction	
30	$1\frac{3}{8}$"	12	-	-				Boring terminated at $30\frac{1}{2}$' 30' monitoring well installed having 15' of casing over 15' of screen Note: Surface seal depth = 11'
10								
15								
20								
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 12-07-89
LOGGED BY: MC
ELEVATION: Approx. 190'
WATER LEVEL: Initially encountered at 16'-6", then rose to 12'-2"
EQUIPMENT: Mobile Drill B-53 8" Hollow Stem Auger

LOG DESIGNATION MW-4

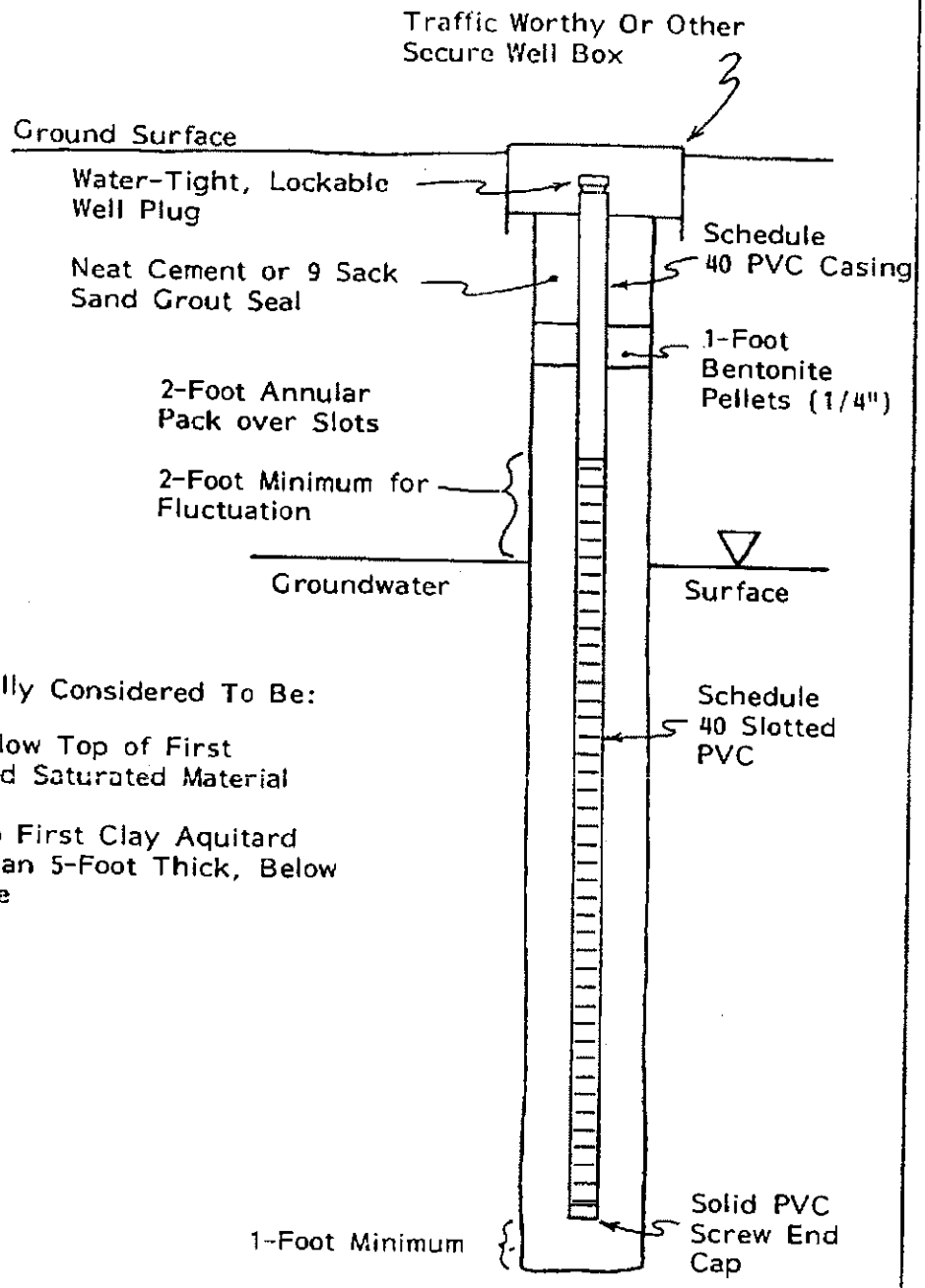
JOB: P89134
FIGURE: 7

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
						PMT	2.5" Asphaltic Concrete over 1.5' Aggregate Base	
						CH/CL	SILTY CLAY: Black gray, very moist, medium stiff	PID = 0.0
5	2.0	30	-	-	1	CL	SILTY CLAY: Greenish gray, moist, stiff to very stiff, numerous vertical small air voids	PID = 0.0 Note: Surface seal depth = 8'
	2.0	23	-	-	2		Grades to yellow brown, stiff, black staining in root voids	PID to 2.3
10						CL	SANDY CLAY: Light yellow brown, moist, stiff	No odor noted
	2.0	22	-	-	3		Grades to very moist, olive staining on rootlets	PID = 0.0
15							Saturated at 16½'	PID to 6.1
	2.0	27	-	-		CL/SC	SANDY CLAY: Light brown, saturated fine-grained sand, stiff	No odor noted
20								25' monitoring well installed having 10' of casing over 15' of screen
25						CL	SILTY CLAY: Light brown, saturated, stiff	Boring terminated at 25'

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates



Well Bottom Generally Considered To Be:

1. 20 Feet Below Top of First Encountered Saturated Material
2. 1 Foot Into First Clay Aquitard Greater Than 5-Foot Thick, Below Water Table

TYPICAL GROUNDWATER MONITORING WELL

(Not To Scale)

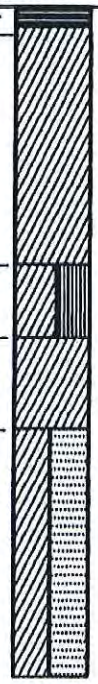
Job No. P89134
February 1990
FIGURE: 8

BSK & Associates

LOG DESIGNATION MW-5

DATE: 3/31/92
LOGGED BY: Tim Berger
WATER LEVEL: First Encountered -22.5' bpg
ELEVATION: 183.92 ' MSL
EQUIPMENT: Mobile Drill, 8" Diameter Hollow Stem Auger

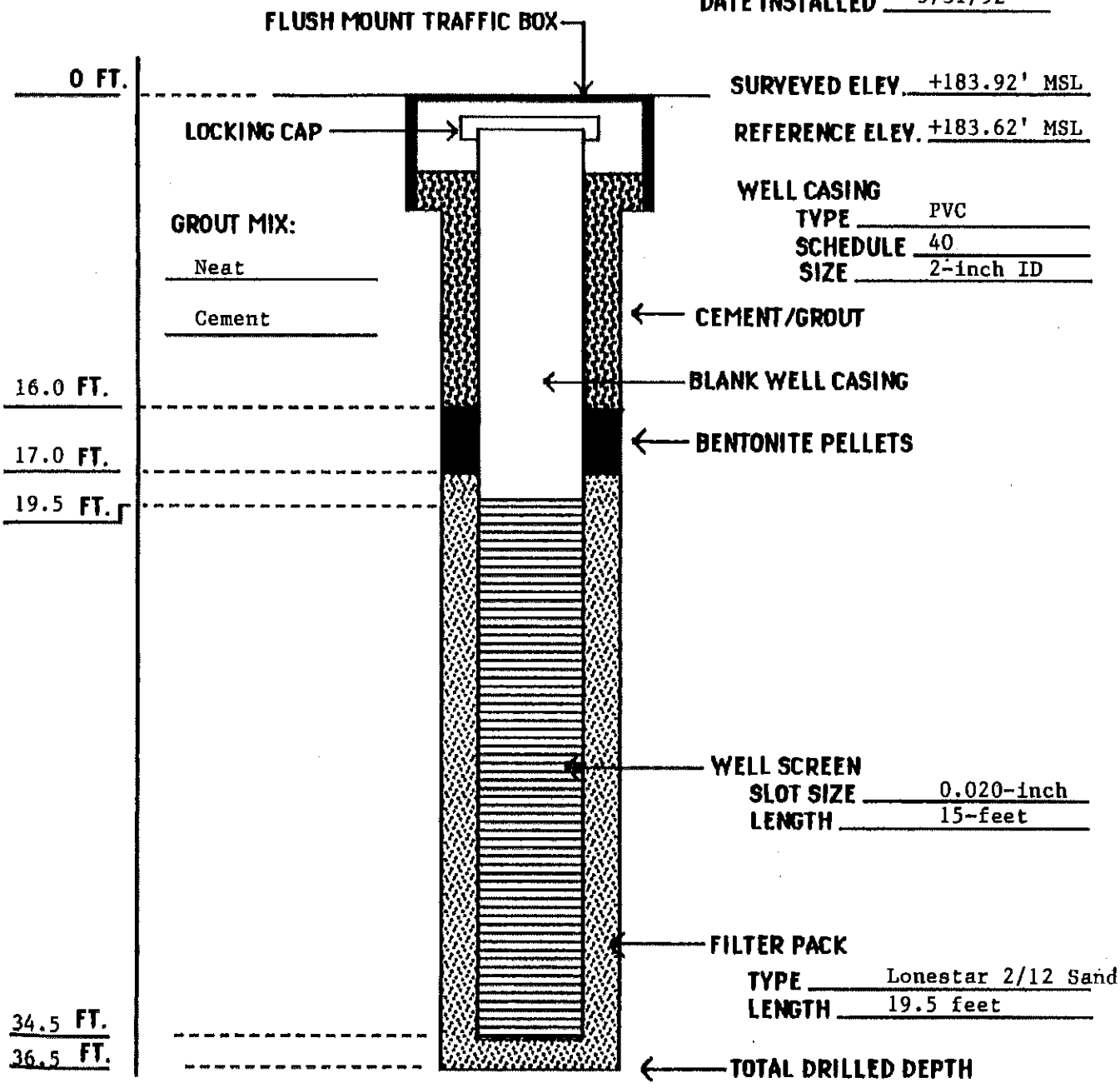
	Chemical Analysis						Field Data				
	TPH-Diesel (mg/Kg)	TPH-Gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	PID READING	TYPE OF SAMPLER	BLOWS/FOOT	SYMBOLS	DESCRIPTION
0										PMT	2" Asphaltic Concrete, 8"-12" Aggregate base
										CL	SILTY CLAY: Olive gray (2.5 YR 5/2), moist,firm,sandy
											grades medium to dark gray (7.5 YR 4/0), with granular material
10											grades medium gray brown to light gray yellow brown (2.5 Y 6/4), less moist, no sand
											grades moist,brown to dark brown, organic odor
							0.0	CS	55	CL/ ML	SILTY CLAY/ CLAYEY SILT: Orange (10 YR 5/6) with blue streaks, damp, hard, sandy, trace coarse grains,few wet pores
20	ND	ND	ND	ND	ND	ND		CS	62	CL	SILTY CLAY: Blue gray (2.5 Y 4/2), moist, stiff
											grades medium gray brown (10YR 4/4),hard,damp,trace organics, very few 1 mm pores (dry)
								SPT	34	CL/ SC	CLAYEY SAND/SANDY CLAY: Yellow to orange brown (10 YR 5/4),clay is interbedded with medium grained subangular wet sand with some clay binder,clay is moist to wet
30								SPT	13		clay grades firm to soft,sticky,moist,silt lenses moist to wet,some clayey medium grained sand,wet,clay silt and sand ocur in beds of ± 6 inches
								SPT	17		grades light gray to yellow brown (10 YR 6/3 to 5/8),wet to saturated,firm to stiff,loose to medium dense
40											



NOTES:
1.WELL BORE COMPLETED AT A DEPTH OF 36.5 FEET 3/30/92.
2.GROUNDWATER MONITORING WELL INSTALLED, SEE WELL CONSTRUCTION DIAGRAM.
3.WELL BORE INDICATES INTERPRETED SUBSURFACE CONDITIONS ONLY AT THE TIME THE BORING WAS DRILLED.
4.FOR AN EXPLANATION OF SOIL SYMBOLS SEE THE SOIL CLASSIFICATION CHART, PLATE 1.

20629 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA	Job No. P92057.3 FIGURE A-4 MAY 1992	BSK & ASSOCIATES

WELL NO. MW-5
PROJECT NO. P92057.3
DATE INSTALLED 3/31/92



REMARKS: Well developed 4/07/92 by surging and pumping, 50 gallons removed.

PROJECT NO. P92057.3 FIGURE: A-7	MONITORING WELL INSTALLATION DIAGRAM	BSK &ASSOCIATES

LOG DESIGNATION MW-6

DATE: 4/1/92
LOGGED BY: Tim Berger
WATER LEVEL: First Encountered -16' bpg
ELEVATION: 183.926' MSL
EQUIPMENT: Mobile Drill, 8" Diameter Hollow Stem Auger

Chemical Analysis						Field Data				
	TPH-Diesel (mg/Kg)	TPH-Gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	PID READING	TYPE OF SAMPLER	BLOWS/FOOT	SYMBOLS
0										PMT / CL
10										ML
	ND	ND	ND	ND	ND	ND		CS	30	CL
20								CS	49	
								SPT	27	SP
30										
40										

DESCRIPTION

2" Asphaltic Concrete, 8"-12" Aggregate base
SILTY CLAY: Dark to medium gray, moist,firm to stiff trace to some sand,slight organic odor

grades silty,yellow brown (10 YR 5/6),damp

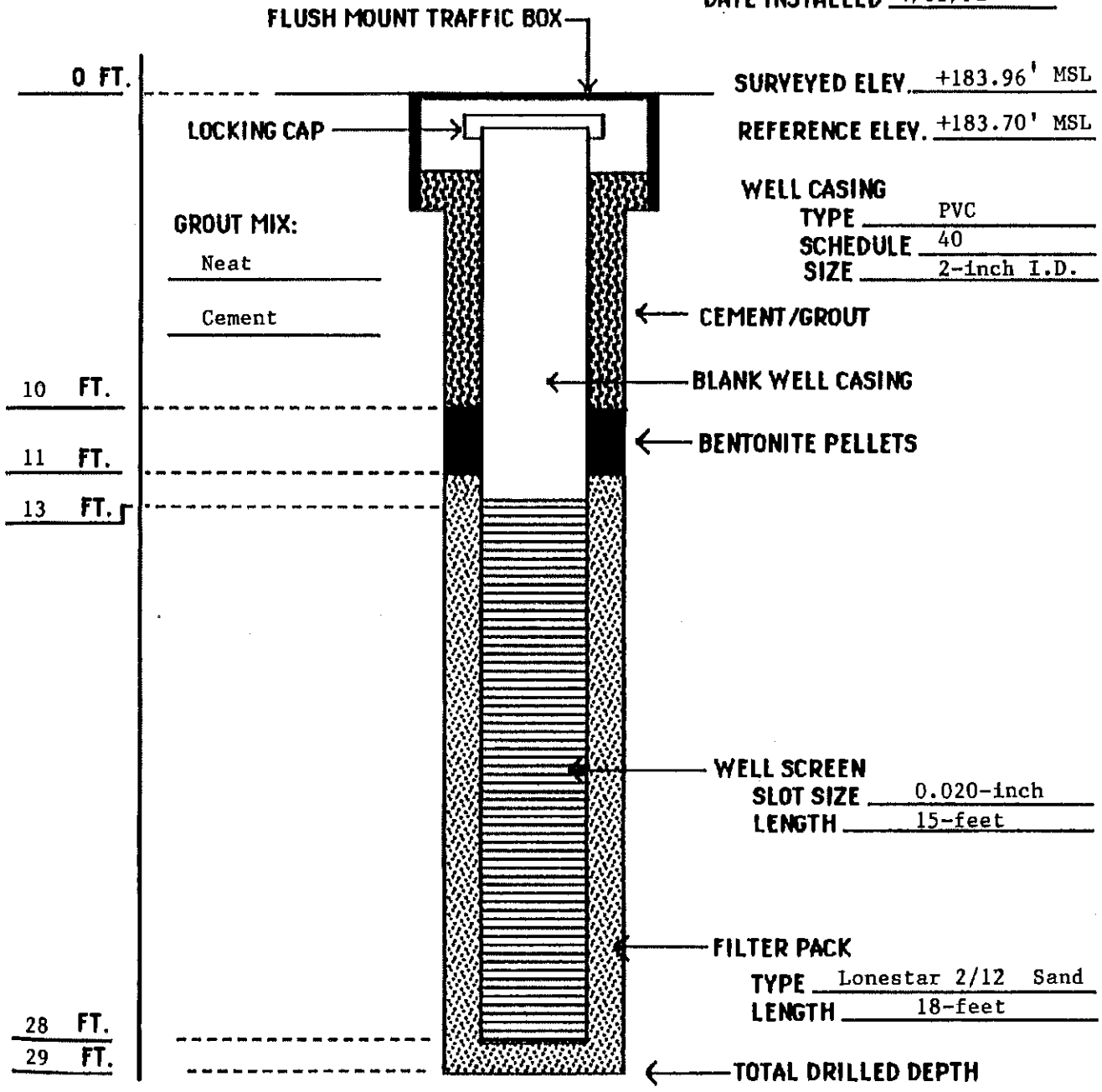
CLAYEY SILT: Orange brown (10 YR 5/6),stiff,damp,trace sand
SILTY CLAY: Gray brown (10 YR 5/5), moist,saturated in pores,very porous,very stiff,pores horizontal,with gray linings,some saturated silt lenses,no odor
grades hard,mottled,thin lenses of saturated fine sand and silt,few 2-3 mm saturated pores, no odor

SAND: Yellow brown (10 YR 6/4),wet to saturated,medium dense,medium to coarse grained sand,few pebbles,some clay binder,few thin clay lenses,can be flowing,no odor

NOTES:
1. WELL BORE COMPLETED AT A DEPTH OF 29 FEET 4/1/92.
2. GROUNDWATER MONITORING WELL INSTALLED, SEE WELL CONSTRUCTION DIAGRAM.
3. WELL BORE INDICATES INTERPRETED SUBSURFACE CONDITIONS ONLY AT THE TIME THE BORING WAS DRILLED.
4. FOR AN EXPLANATION OF SOIL SYMBOLS SEE THE SOIL CLASSIFICATION CHART, PLATE 1.

20629 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA	Job No. P92057.3 FIGURE A-5 MAY 1992	BSK & ASSOCIATES

WELL NO. MW-6
PROJECT NO. P92057.3
DATE INSTALLED 4/01/92



REMARKS: Well developed 4/06/92 by surging and pumping, 50 gallons removed.

PROJECT NO. P92075.3 FIGURE: A-8	MONITORING WELL INSTALLATION DIAGRAM	BSK &ASSOCIATES

LOG DESIGNATION MW-7

DATE: 4/2/92
LOGGED BY: Tim Berger
WATER LEVEL: First Encountered ~15' bpg
ELEVATION: 182.78' MSL
EQUIPMENT: Mobile Drill, 8" Diameter Hollow Stem Auger

Chemical Analysis						Field Data				
TPH-Diesel (mg/Kg)	TPH-Gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	PID READING	TYPE OF SAMPLER	BLOWS/FOOT	SYMBOLS	DESCRIPTION
									PMT	2" Asphaltic Concrete, 8"-12" Aggregate base
									CL	SILTY CLAY: Dark gray, moist,firm
										grades yellow gray ,less moist
										grades gray brown,moister
										grades orange brown (10 YR 5/8),less moist
										grades moist
ND	ND	ND	ND	ND	ND	8.0	CS	22	SM	SILTY SAND: Orange brown,medium dense,wet to saturated,few blue and black mottles,fine grained sand,no odor or staining
						0.0	SPT	43	CL	SANDY CLAY: Gray brown (10 YR 6/4),damp to moist, grading less moist with depth,clayey sand at sampler tip,hard,no odor
						1.0	SPT	34	SP/ CL	SAND/SANDY CLAY: Gray brown ,wet to saturated, dense occasional thin (< 6 inches) clay lenses,no odor
							SPT	14		grades medium dense,running sand encountered

0
10
20
30
40

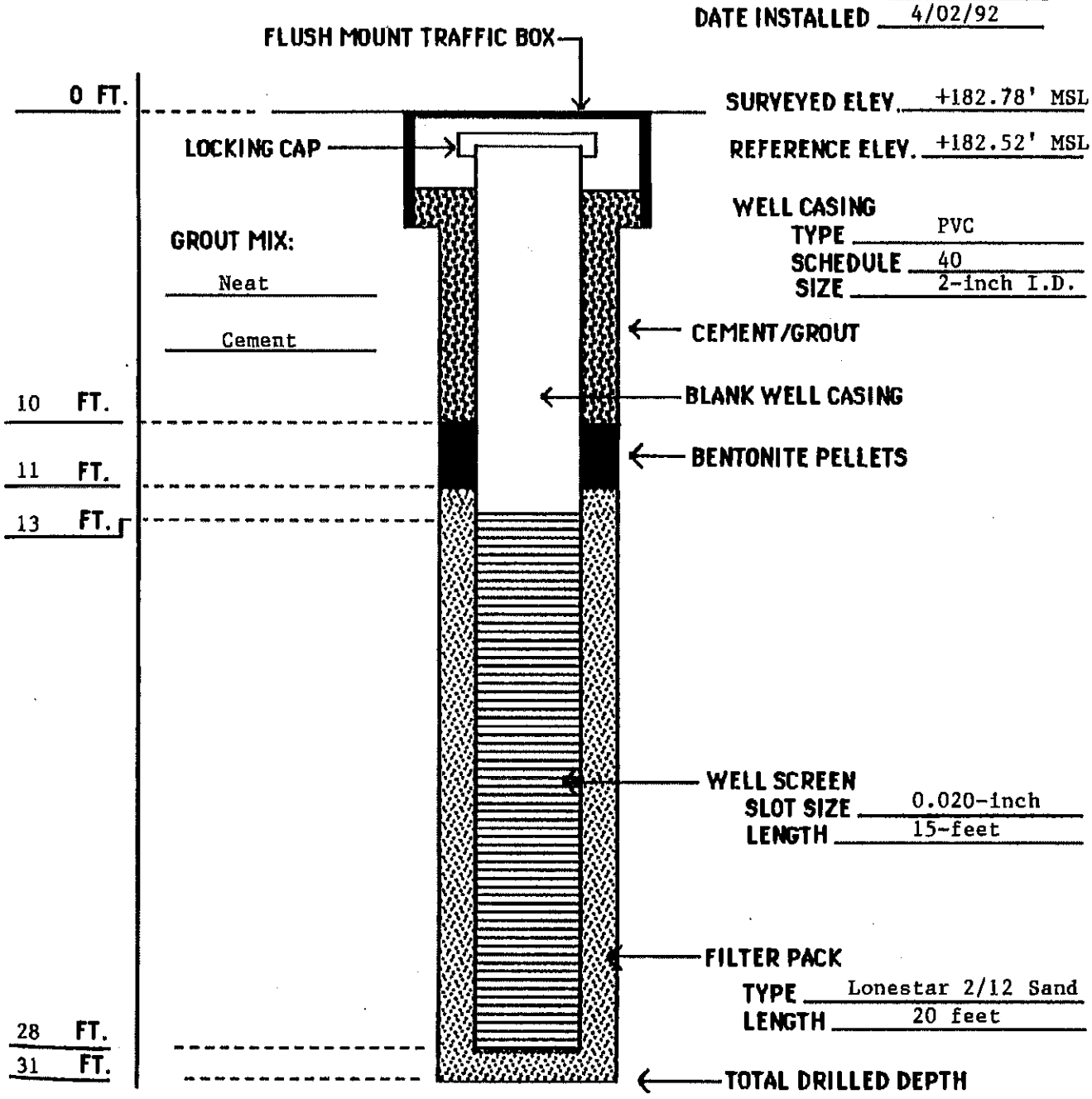
NOTES:
1. WELL BORE COMPLETED AT A DEPTH OF 31 FEET 4/2/92.
2. GROUNDWATER MONITORING WELL INSTALLED, SEE WELL CONSTRUCTION DIAGRAM.
3. WELL BORE INDICATES INTERPRETED SUBSURFACE CONDITIONS ONLY AT THE TIME THE BORING WAS DRILLED.
4. FOR AN EXPLANATION OF SOIL SYMBOLS SEE THE SOIL CLASSIFICATION CHART, PLATE 1.

20629 REDWOOD ROAD
CASTRO VALLEY,
CALIFORNIA

Job No. P92057.3
FIGURE A-6
MAY 1992

BSK
& ASSOCIATES

WELL NO. MW-7
PROJECT NO. P92057.3
DATE INSTALLED 4/02/92



REMARKS : Well developed 4/07/92 by surging and pumping, 50 gallons removed.

PROJECT NO. P92057.3 FIGURE: A-9	MONITORING WELL INSTALLATION DIAGRAM	BSK &ASSOCIATES

BORING LOG: MW-101

FIGURE: A-2

DATE: 9/26/95

JOB NUMBER: 04400027

LOGGED BY: M. Cline

ELEVATION: --

WATER LEVEL: Intially at 15 ft. below the ground surface

EQUIPMENT: Mobile Drill, 10" Hollow Stem Auger

Tien's UNOCAL Station
20405 Redwood Road
Castro Valley, California

Depth	PID Reading (ppm)	Time	Type of Sampler	Blows Per Foot	Sample No.	Graphic Log	U.S.C.S.	Description	Notes
0							PMT	3" Asphalt Concrete over Aggregate Baserock	Monitoring Well Installed with 4" PVC Casing From 0 to 10 ft., 0.02" Slotted PVC from 10 to 30, 2/12 sand from 8 to 30 ft., Bentonite from 7 to 8 ft., Neat cement from 7 to 1 ft.
1									
2							CL	SILTY CLAY: Dark gray, very moist	
3									
4									
5	0	9:45	MC	16	1		CL	SILTY CLAY trace sand: Brown-mottled grey,moist, no odor	
6									
7									
8									
9									
10	1036	10:00	MC	15	2		CL	SILTY CLAY with some sand: Brown-trace grey mottles, moist, fine to very fine grained sand, slight hydrocarbon odor	
11									
12									
13									
14									
15	109	10:15	MC	48	3		CL	SANDY CLAY: Brown to grey in thin lenses, moist to wet in pockets, no odor	
16									
17									
18									
19									
20	45	10:30	MC	19	4			grades brown, very moist to wet in lenses, no odor	

BSK

BORING LOG: MW-101 (CONT.) | FIGURE: A-3

DATE: 9/26/95 | JOB NUMBER: 04400027

LOGGED BY: M. Cline

ELEVATION:

WATER LEVEL: Initially at 15 ft. below the ground surface

EQUIPMENT: mobile Drill, 10" Hollow Stem Auger

Tien's UNOCAL Station
20405 Redwood Road
Castro Valley, California

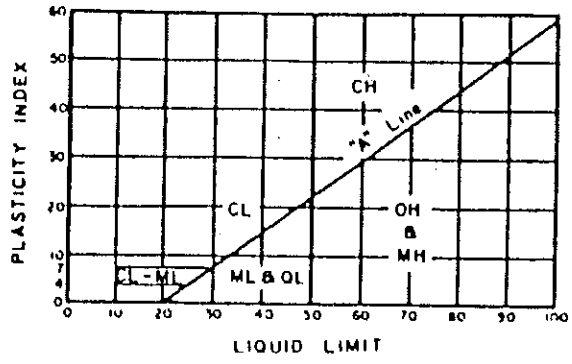
Depth	PID Reading (ppm)	Time	Type of Sampler	Blows Per Foot	Sample No.	Graphic Log	U.S.C.S.	Description	Notes
21									
22									
23									
24									
25	0	10:53	MC	13	5		CL	SILTY CLAY: Brown, very moist, no odor	
26									
27									
28									
29									
30	0	11:15	MC	30	6		CL	SILTY CLAY: Brown, mottled reddish brown, moist, no odor	Boring Terminated at 30 ft.
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									

BSK

LEGEND FOR TEST HOLE LOGS

METHOD OF SOIL CLASSIFICATION
(Unified Soil Classification System)

MAJOR DIVISIONS		SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 1/2 of soil > no. 200 sieve size)	GRAVELS (More than 1/2 of coarse fraction > no. 4 sieve size)	GW	Well graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (More than 1/2 of coarse fraction < no. 4 sieve size)	SW	Well graded sands or gravelly sands, little or no fines
		SP	Poorly graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS (More than 1/2 of soil < no. 200 sieve size)	SILTS & CLAYS LL < 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS LL > 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts



PLASTICITY CHART

Key to Samples

- ■ Indicates depth of undisturbed sample
- ☐ Sample not recovered
- ⊠ Indicates depth of disturbed sample
- ◪ Indicates depth of Standard Penetration Split Spoon Sample

BSK & Associates

DATE: March 13, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: NA
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-1

JOB: P90165
FIGURE: 4

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement	
0						FILL	SAND & GRAVEL: Orange, aggregate base, moist	
							SILT CLAY: Dark gray, moist, slight hydrocarbon odor	PID to 0.8
						CL	SANDY CLAY: Mottled blue-gray and orange, fine-grained, damp	
5	2.0	45	-	-	1			PID to 0.8
							Grades brown Grades gray-yellow	
10	2.0	45	-	-	2		Grades stiff, trace small pebbles	PID to 111
						CL	SILTY CLAY: Yellow-brown, damp, stiff to hard	PID to 72 First Encounter
15	2.0	38	-	-	3	SC	CLAYEY SAND: Mottled blue-gray and orange, wet to saturated, trace to little gravel	PID to 168 ▽ PID to 48
								Boring Terminated at 16'
20								PID = Photo-ionization Detector
								Boring Backfilled with Grout
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lb HAMMER-30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 13, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: First Encountered at 14'
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-2

JOB: P90165
FIGURE: 5

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement	
0						FILL	SILTY CLAY: Dark gray, damp to moist, firm strong odor	PID to 0
							Grades medium gray	PID to 2
5	2.0	42	–	–	1	ML	CLAYEY SILT: Greenish-gray, damp, very stiff to hard, brittle, sand blebs hydrocarbon odor	PID to 18
10	2.0	46	–	–	2	CL	SANDY CLAY: Yellow-orange, moist to wet, very stiff to hard, black mottles, no pores, medium sand, strong odor	PID to 400
								First Encounter ▽
	2.0	29	–	–	3	SM	SILTY SAND: Orange to red-orange, wet to saturated, vertical blue-gray streaks, trace to little fine gravel, strong odor, fine sand	PID to 450
15								Boring Terminated at 14.5'
								Boring Backfilled with Grout
20							Note: Substantial sheen on wet auger bit	PID = Photo-ionization Detector
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER – 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 13, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: First Encountered at 15'
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-3

JOB: P90165
FIGURE: 6

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Surface (2-1/2 inches)	
0						FILL	AGGREGATE BASE: Orange and gray, moist to wet	PID to 0
							CLAYEY SILT: Black, damp	PID to 0
5	2.0	41	-	-		ML	CLAYEY SILT: Mottled dark-gray and yellow-brown, very stiff to hard, damp, rootlets	PID to 0
10	2.0	42	-	-	1	SC	CLAYEY SAND: Mottled blue-gray and yellow-brown, moist, dense, many very fine pores, hydrocarbon odor	PID to 37
	2.0	30	-	-	2	ML	SANDY SILT: Orange-brown, fine-grained sand, minor clay, moist to wet, very stiff, porous, saturated pores have strong odor	PID to 1500 First Encounter PID to 20
15	2.0	27	-	-				PID to 70
						SC	CLAYEY SAND: Orange-brown, saturated, medium-dense	
20							Note: Sheen observed on water in boring	Boring Terminated at 18' Boring Backfilled with Grout PID = Photo-ionization Detector
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 13, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: Not Encountered
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-4

JOB: P90165
FIGURE: 7

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement (2-1/2 inches)	
0							AGGREGATE BASE: Orange	
						FILL	SILTY CLAY: Dark gray-brown, sandy, moist	
5	1.4	33	-	-		CL	SILTY CLAY: Mottled dark gray and brown, damp, very stiff, sandy, roots to 1/8" diameter Grades gray-yellow	
						SC	CLAYEY SAND: Orange-brown, damp to moist, dense, friable, no pores	
10	2.0	49	-	-			Grades gray, odorous	PID to 2
							Grades moister, more clay	
	2.0	42	-	-	1	SM	SILTY SAND: Orange and blue-gray, moist to wet, dense, fine grained sand, trace clay, trace small pebbles, vertical wet blue-gray odorous seams	PID to 98
15								Boring Terminated at 15' Boring Backfilled with Grout PID = Photo-ionization Detector
20								
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 13, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: Not Encountered
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-5

JOB: P90165
FIGURE: 8

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement	
0						FILL	AGGREGATE BASE: Orange, moist	
							SILTY CLAY: Dark to medium gray, some sand moist, firm	
5	1.4	20	-	-			Grades mottled gray, black, and yellow-brown, moist, stiff, organics present	PID to 0
							Red vitreous clay pipe shards encountered	PID to 0
						ML	CLAYEY SILT: Orange-brown with light yellow-gray mottles, damp, very stiff, little sand	
10	1.4	39	-	-				PID to 0
						CL	SILTY CLAY: Orange with few blue-gray blebs, little to some sand, damp to moist, stiff	
15	2.0	25	-	-	1			PID to 0
								Boring Terminated at 15.5'
20								Boring Backfilled with Grout
								PID = Photo-ionization Detector
20								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 13, 1991

LOGGED BY: TWB

ELEVATION: Approximately +180' MSL

WATER LEVEL: First Encountered at 15-1/2'

EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-6

JOB: P90165

FIGURE: 9

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement (1.75 inches)	
0						FILL	AGGREGATE BASE: Orange, sandy, moist	
							CLAYEY SILT: Dark gray-brown, damp, firm, some sand and pebbles Glass encountered	
5	1.4	46	-	-		CL	SILTY CLAY: Mottled yellow-gray and medium gray, damp, hard, little to some sand, no pores	
						ML	SILT: Mottled, yellow-brown and light gray, damp to moist, stiff to very stiff, some very fine pores, trace to little clay	PID to 21
10	1.4	36	-	-				
						SM	SILTY SAND: Orange-brown with vertical blue-gray streaks, moist to saturated, medium dense, fine to medium grained, no pores, trace clay	PID to 164 PID to 2149 ▽
15	2.0	34	-	-	1			Boring Terminated at 15.5' Boring Backfilled with Grout PID = Photo-ionization Detector
20								
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 14, 1991
LOGGED BY: TWB
ELEVATION: Approximately ±180' MSL
WATER LEVEL: Not Encountered
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-7

JOB: P90165
FIGURE: 10

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement	
0						FILL	AGGREGATE BASE: Orange, sandy, damp to moist	
							SILTY CLAY: Black, damp to moist, firm, with wood	
							Roots, glass encountered	
5	1.4	31	-	-		ML	CLAYEY SILT: Mottled orange and gray, damp to moist, very stiff, some fine sand, few very fine pores	
							Grades gray-yellow	PID to 7
10	1.4	38	-	-			Grades orange, vertical blue-gray streaks	PID to 1194
								Boring Terminated at 11'
15								Boring Backfilled with Grout
								PID = Photo-ionization Detector
20								
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lb HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 14, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: Not Encountered
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-8

JOB: P90165
FIGURE: 11

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement	
0						FILL	AGGREGATE BASE: Orange, sandy	
							SILTY CLAY: Black, moist, firm	
							Grades dark gray	
5	1.4	31	–	–		ML/CL	CLAYEY SILT/SILTY CLAY: Mottled dark gray and orange, damp to moist, stiff to very stiff, thin layers of manganese coated small pebbles, some sand	
10	1.4	60	–	–		CL	SANDY CLAY: Yellow-brown, damp to moist, hard, some medium sand, trace pebbles	PID to 0
							Grades gravelly	
	2.0	57	–	–		ML	CLAYEY SILT: Yellow-brown, damp, hard, no pores	
15								PID to 0
	2.0	60	–	–			Grades clayey, mottled gray with orange	PID to 0
	2.0	52	–	–				PID to 0
	2.0	43	–	–			Grades brownish-gray, gray pore walls, trace sand	PID to 0
20	2.0	39	–	–		SC	CLAYEY SAND: Orange, moist to wet, medium dense, medium grained	PID to 0
								Boring Terminated at 21.5'
25							PID = Photo-ionization Detector	Boring Backfilled with Grout

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER – 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 14, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: First Encountered at 17'
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-9

JOB: P90165
FIGURE: 12

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement	
0						FILL	SILTY CLAY: Black, moist, soft	
						CL	SILTY CLAY: Mottled gray and orange, moist to damp, little sand	
5	1.4	35	-	-			Grades brown-gray, moist, firm	
						GC	CLAYEY SANDY GRAVEL: Orange, moist, medium dense, well bound, coarse sand	
						CL	SANDY CLAY: Yellow-brown, moist, stiff, fine to medium sand, few small pores, gray pore walls	
10	1.4	27	-	-				PID to 0
						GC	CLAYEY SANDY GRAVEL: Orange, moist, medium dense, angular gravel to 1/2" diameter	
	2.0	38	-	-				PID to 0
15								PID to 0
	2.0	60	-	-		CL	SILTY CLAY: Orange-gray, damp, hard, trace to little sand	
	1.4	60	-	-		ML/CL	CLAYEY SILT/SILTY CLAY: Gray-brown with gray mottles, damp, hard, very few fine pores	PID to 0 ▽
20								Boring Terminated at 18'
								Boring Backfilled with Grout
25								PID = Photo-ionization Detector

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: March 14, 1991
LOGGED BY: TWB
ELEVATION: Approximately +180' MSL
WATER LEVEL: Not Encountered
EQUIPMENT: B-53 Mobile Drill Using 8" Hollow Stem Auger

LOG DESIGNATION SB-10

JOB: P90165
FIGURE: 13

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement (1-1/2 inches)	
0						FILL	AGGREGATE BASE: Orange, wet	
							CLAYEY SILT: Dark gray, moist, firm, roots and brick shards	
						CL	SILTY CLAY: Mottled gray and orange, damp to moist, very stiff, with sand	PID to 0
5	1.4	37	-	-		SP	CLAYEY GRAVELLY SAND: Orange damp, medium dense, angular, well bound	PID to 0
						SC	CLAYEY SAND: Yellow-gray, moist, dense, fine-grained, mottled wiht black blebs	PID to 0
10	1.4	43	-	-				PID to 0
							Grades gravelly	
						CL	SILTY CLAY: Gray-brown, damp, hard, few pores with gray walls	
15	2.0	53	-	-				PID to 0
	2.0	56	-	-	1		Grades brown, no pores	
20								Boring Terminated at 17'
								Boring Backfilled with Grout
								Photo-ionization Detector
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 3/28/91
LOGGED BY: MC
ELEVATION: Approx. +180' MSL
WATER LEVEL: First Encountered at -15'
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION SB-11

JOB: P90165
FIGURE: 14

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement = 3-1/2"	
0						FILL	SAND & GRAVEL: Orange, aggregate base	
							SILTY CLAY: Dark gray, very moist	
							Grades to dark brown	
						CL	SILTY CLAY: Brown with gray mottles, damp to moist, very stiff, slightly sandy	
5	1.4	24	–	–				PID to 0
								PID to 13
							Grades greenish-gray, sandier, with greenish staining around pores	
10	2.0	49	--	--	1			PID to 226 Stabilized ▼
						SC?	CLAYEY SAND: Wet, gravelly	1st Encounter ▽
15	2.0	49	–	–	2	CL	SILTY CLAY: Greenish-gray mottled with brownish-yellow, Manganese stained sand grains, moist, hard	PID to 0
								Boring terminated at 16.5'
20							NOTE: Product sheen observed in boring upon auger removal	PID = Photo-ionization Detector
								Boring backfilled with grout
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lbs HAMMER – 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 3/28/91
LOGGED BY: MC
ELEVATION: Approx. +180' MSL
WATER LEVEL: First encountered at 14'
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION SB-12

JOB: P90165
FIGURE: 15

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement - 2"	
0						FILL	SAND & GRAVEL: Orange, aggregate base	
							SILTY CLAY: Brownish-yellow, moist, sandy	
							Grades dark gray, moist, clayey	
						CL	SILTY CLAY: Brown and gray mottled, moist, very stiff, slightly sandy	
5	1.4	37	-	-				PID to 0
								stabilized ▼
10	1.4	33	-	-			Grades yellow-brown, contains roots having grenish-gray aureole, slightly moist	PID to 0
							Grades very moist	▽ 1st Encounter
15	2.0	30	-	-	1	SC	CLAYEY SAND: Yellow-brown with gray mottles, saturated from 14' to 15.5', moist with saturated vertical lenses below 15.5', dense, gravel lenses inclined to 30°	PID to 0
								Boring terminated at 16.5'
20								PID = Photo-ionization Detector
								Boring back-filled with grout
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

DATE: 3/28/91
LOGGED BY: MC
ELEVATION: Approx. +180' MSL
WATER LEVEL: First Encountered at 13.5'
EQUIPMENT: B-53 Mobile Drill, Using 8" Hollow Stem Auger

LOG DESIGNATION SB-13

JOB: P90165
FIGURE: 16

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement = 3"	
0						FILL	SAND & GRAVEL: Orange, aggregate base	
							SILTY CLAY: Dark gray, very moist, wood fragments	
						CL	SILTY CLAY: Gray mottled with brown, moist, very stiff, sandy	
5	2.0	31	-	-	1			PID to 4
								stabilized ▼
10	2.0	54	-	-	2		Grades brown mottled with olive, slightly moist, hard, sandy	PID to 2479
								1st Encounter ▽
						SC	CLAYEY SAND: Wet to saturated	
	2.0	29	-	-	3	CL	SILTY CLAY: Yellow-brown, moist, very stiff, pores, pockets of product saturation - stained olive	PID to 3625
15								Boring terminated at 15'
								PID = Photo-Ionization Detector
20								Boring back-filled with grout
25								

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

LOG DESIGNATION SB-14

DATE: 3/30/92
LOGGED BY: Tim Berger
WATER LEVEL: First Encountered -23' bpg
ELEVATION: Approximately 184 ' MSL
EQUIPMENT: Mobile Drill, 8" Diameter Hollow Stem Auger

	Chemical Analysis						Field Data				
	TPH-Diesel (mg/Kg)	TPH-Gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	PID READING	TYPE OF SAMPLER	BLOWS/FOOT	SYMBOLS	DESCRIPTION
0										PMT	2" Asphaltic Concrete, 8"-12" Aggregate base
										CL	SILTY CLAY: Yellow to gray brown (10YR 4/1), moist, firm, sandy
							0.0				
							0.0				grades yellow gray (2.5 Y 6/4)
10							0.0			ML/ CL	CLAYEY SILT/SILTY CLAY: Orange brown (10 YR 6/8), damp to moist, hard, with fine grained sand, trace fine pores (gray), small black mottles
	--	--	--	--	--	--	0.0	CS	60		
	--	--	--	--	--	--		CS	49		
	--	--	--	--	--	--	13	CS	62		grades damp, harder, slight odor
	--	--	--	--	--	--	1.5	CS	63		sand lense at sampler end
20	ND	ND	ND	ND	ND	ND	20	CS	55		
	--	--	--	--	--	--	2.0	CS	22	SC	CLAYEY SAND: Medium dense

Boring off-gases at surface to 9.0 on PID

NOTES:
1. WELL BORE COMPLETED AT A DEPTH OF 23 FEET 3/30/92.
2. WELL BORE INDICATES INTERPRETED SUBSURFACE CONDITIONS ONLY AT THE TIME THE BORING WAS DRILLED.
3. FOR AN EXPLANATION OF SOIL SYMBOLS SEE THE SOIL CLASSIFICATION CHART, PLATE 1.

20629 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA	Job No. P92057.3 FIGURE A-2 MAY 1992	BSK & ASSOCIATES

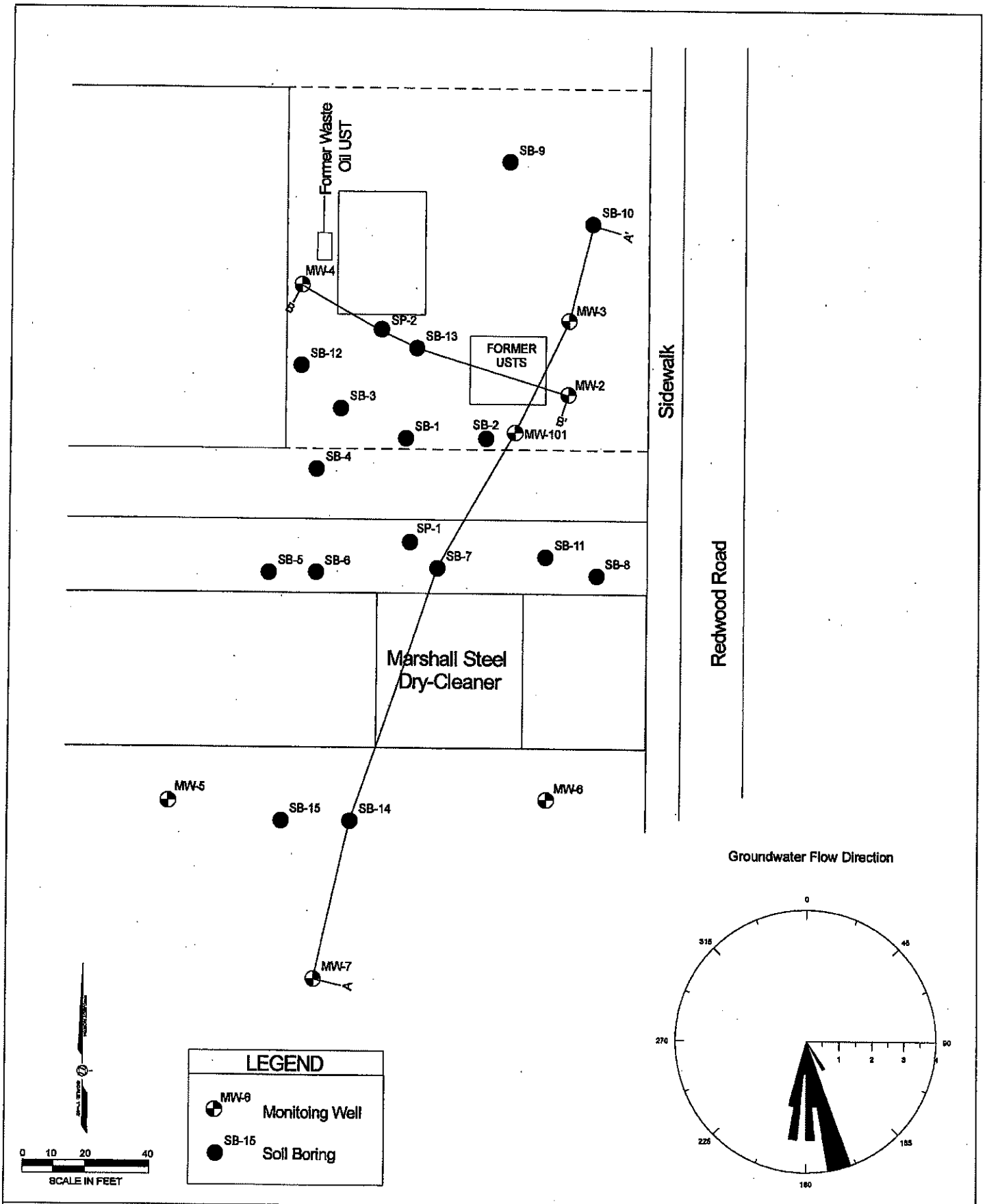
LOG DESIGNATION SB-15

DATE: 3/30/92
LOGGED BY: Tim Berger
WATER LEVEL: None Encountered at time of drilling
ELEVATION: Approximately 184 ' MSL
EQUIPMENT: Mobile Drill, 8" Diameter Hollow Stem Auger

	Chemical Analysis						Field Data				
	TPH-Diesel (mg/Kg)	TPH-Gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	PID READING	TYPE OF SAMPLER	BLOWS/FOOT	SYMBOLS	DESCRIPTION
0										PMT	2" Asphaltic Concrete, 8"-12" Aggregate base
										CL	SILTY CLAY: Gray to dark gray (10YR 3/1), moist
10											grades medium brown gray to light reddish gray (10 YR 5/3), siltier, some fine sand
											grades moister, olive yellow (2.5 Y 5/4)
							50	CS	55		grades grayish orange brown (10 YR 5/3), damp to moist, hard, blue streaks, some fine sand and silt, distinct odor
20	3	ND	ND	.007	ND	.008	51	CS	50	CL/ SC	SANDY CLAY/ CLAYEY SAND: Grayish orange brown, damp, hard, blue mottles, vertical seams and pores are wet, have odor

NOTES:
1.WELL BORE COMPLETED AT A DEPTH OF 21.5 FEET 3/30/92.
2.WELL BORE INDICATES INTERPRETED SUBSURFACE CONDITIONS ONLY AT THE TIME THE BORING WAS DRILLED.
3.FOR AN EXPLANATION OF SOIL SYMBOLS SEE THE SOIL CLASSIFICATION CHART, PLATE 1.

20629 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA	Job No. P92057.3 FIGURE A-3 MAY 1992	BSK & ASSOCIATES



BSK Associates Engineers & Laboratories

SITE PLAN

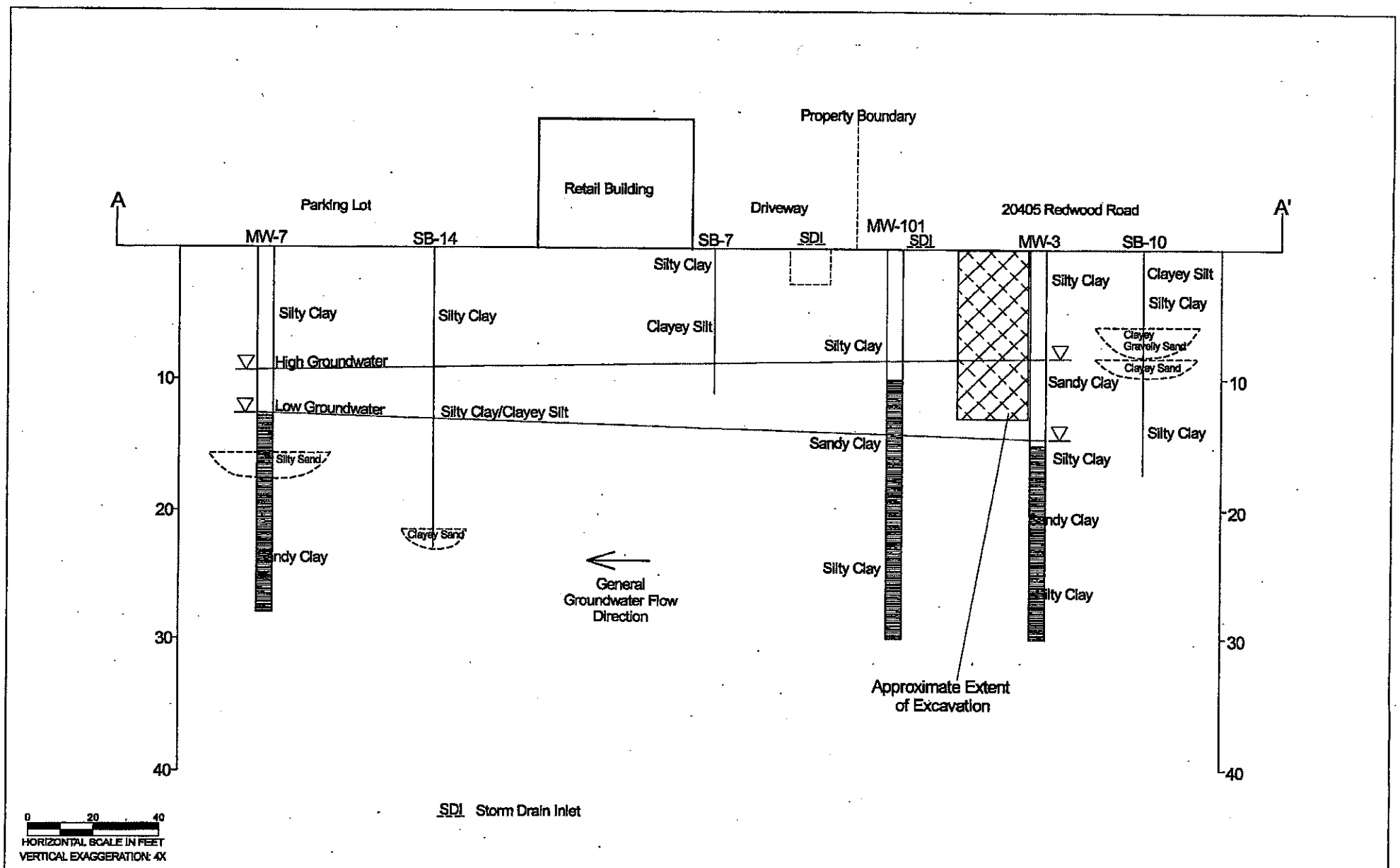
FORMER UNOCAL SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

FIGURE 2

PROJECT: E0805401S

DATE: 1/21/09

ATTACHMENT 7



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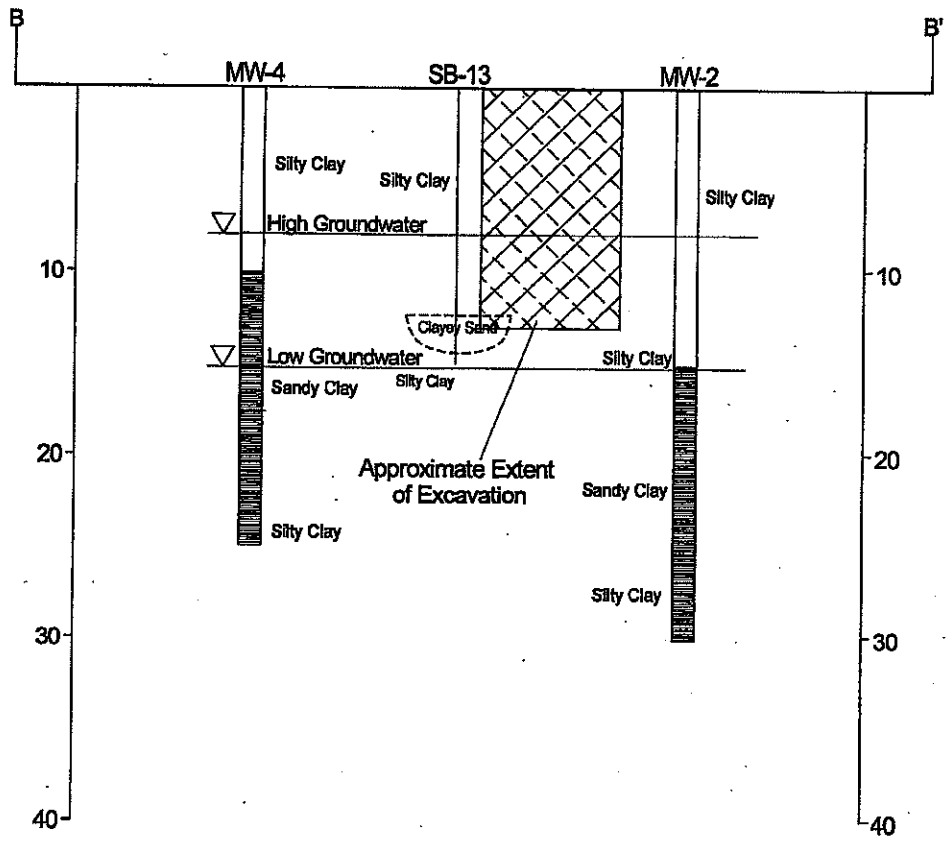
CROSS SECTION A-A'

FORMER UNOCAL SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

FIGURE 11

BSK PROJECT E0805401S

3/5/09



0 20 40
HORIZONTAL SCALE IN FEET

VERTICAL EXAGGERATION: 4X

BSK Associates Engineers & Laboratories

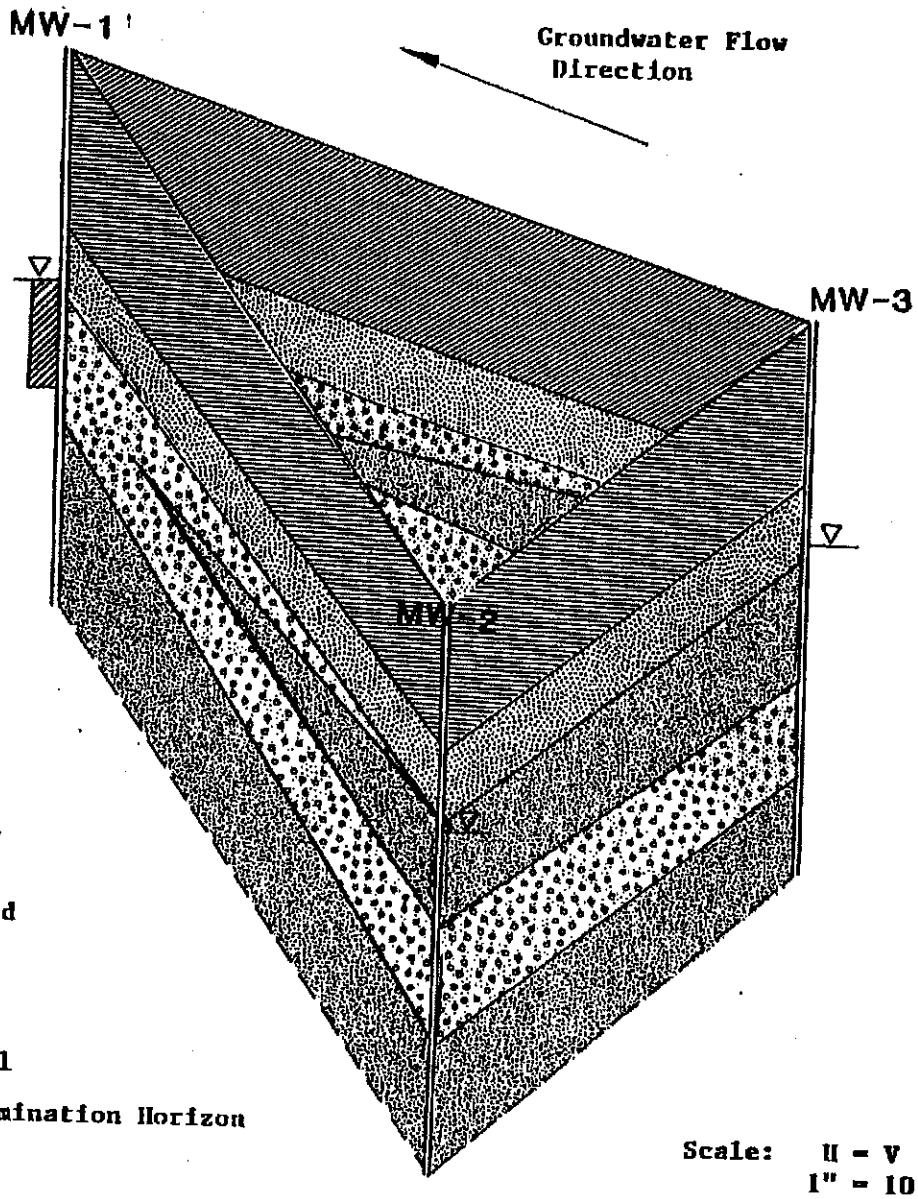
CROSS SECTION B-B'

FORMER UNOCAL SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

FIGURE 12

BSK PROJECT E0805401S

3/5/09



SUBSURFACE PROFILE

Job No. P92057.3
May 1992
FIGURE: 2-3

BSK & Associates