R.T. NAHAS COMPANY
REAL ESTATE DEVELOPERS AND INVESTORS

20630 PATIO DRIVE
CASTRO VALLEY, CALIFORNIA 94546
TELEPHONE (510)538-9600
FAX (510)881-7618

November 19, 1991

Mr. Scott Seery
Hazardous Materials Specialist
Alameda County Health Care Services
80 Swan Way, Room 220
Oakland, CA 94621

RE: Tien's Unocal Station
20405 Redwood Road, Castro Valley, CA

Dear Scott:

Enclosed is a copy of the Fifth Quarterly Ground Water Monitoring Report for the '76 Station. I hope this meets with your approval.

Sincerely,

Randall E. Nahas

REN/hrs

Enclosure
cc: Jerry Mason, Unocal
Frank Tien

BSK & ASSOCIATES
JOB No. P90165

FIFTH QUARTERLY GROUNDWATER MONITORING REPORT
UNOCAL 76 SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA
NOVEMBER 1991

BSK & Associates

BSK & Associates
1181 Quarry Lane
Building 300
Pleasanton, CA 94566
(415) 462-4000
(415) 462-6283 FAX

November 12, 1991 BSK JOB P90165

R. T. Nahas Company/Eden Managements
20630 Patio Drive
Castro Valley, CA 94546

Attention: Mr. Randy T. Nahas

SUBJECT: Fifth Quarterly Groundwater Monitoring Report
Unocal 76 Service Station
20405 Redwood Road
Castro Valley, California

Gentlemen:

As requested and authorized, we have performed groundwater monitoring well quarterly sampling on October 17, 1991 at the above-referenced facility. This quarterly report presents the project background, groundwater data obtained during this sampling event, conclusions based on this quarter's data, and recommendations for further action.

BACKGROUND

BSK & Associates installed three groundwater monitoring wells in December 1989, at the Unocal 76 Service Station located at 20405 Redwood Road, Castro Valley, California. The service station location is shown on Figure 1, Vicinity Map. The monitoring facilities were installed in order to comply with the California UST Monitoring requirements of Alternative 6, Subchapter 16, Title 23, California Code of Regulations. Initially, the plan included four monitoring wells with at least one well (MW-1) to be located down-gradient of the existing tank cluster. However, due to the encounter of fuel contamination of

soil from approximately 10 to 13 feet below grade, during boring for monitoring well installation, the down-gradient borings (MW-1 and MW-1A) were backfilled with 11-sack cement-sand grout following soil sampling in order to avoid further groundwater contamination. The results of well installations, soil sampling and chemical testing of the soil and water samples were summarized in Our Report P89134, dated February 5, 1990. The installed and attempted groundwater monitoring well locations are shown in Figure 2, Site Plan.

Following a subsequent meeting with Eden Managements and Mr. Scott Seery on April 24, 1990, and receipt of the Alameda County Environmental Health letter dated April 24, 1990, we prepared and submitted our Proposal PR90066 to provide quarterly monitoring services for one year, and to assess the extent of soil contamination at the subject site. A Soil Contamination Assessment Work Plan was also prepared in accordance with Appendix "A" of the Regional Board Staff Recommendations.

The first quarterly groundwater monitoring report was submitted on August 30, 1990. The first quarterly report concluded that an apparent unauthorized petroleum release had occurred at the site, based on groundwater data adjacent to, but up-gradient from the UST group. This report also reiterated that a down-gradient well does not exist at the site.

BSK & Associates submitted the second quarterly groundwater monitoring report in January 1991. The second quarterly report verified that motor fuel hydrocarbons were present in groundwater at the site. Benzene and TVH concentrations remained above primary drinking water and informal action levels, respectively.

BSK performed an assessment of the lateral extent of shallow soil contamination in April 1991 (see our Report P90165, dated April 1991). During this investigation, shallow soil contamination was observed to occur from the pump islands to the south property boundary, and within the east and west property boundaries.

The third quarterly monitoring report was submitted contemporaneously with the soil contamination assessment. A large increase in contaminant concentrations in Wells MW-2 and MW-3 was reported in conjunction with water level increase due to March precipitation. Toluene levels were observed to exceed recommended limits, in addition to Benzene and Total Petroleum Hydrocarbons.

A fourth quarterly groundwater monitoring report was submitted on July 30, 1991. In this report, contaminant levels are shown to be sharply reduced to below previously recorded levels. Benzene, however, remains above recommended allowable levels.

Review of Subsurface Conditions

The site subsurface soil conditions, as exposed by Borings MW-1A, MW-2, MW-3, and MW-4 of our previous investigation (P89134), consist primarily of silty and sandy clays. Four to five feet of black organic-rich silty clay fill are found immediately below the ground surface, followed by three to five feet of greenish-gray sandy/silty clay native material. In the western portion of the study area, the greenish clay is underlain by seven to eleven feet of yellow-brown sandy clay, grading to a clayey sand with depth. In the eastern portion of the tank area, the sandy clay and clayey sand are split by a six foot layer of silty clay. Light brown silty clay was encountered in each boring between 17 and 24 feet, and continued to the final depth explored. It is apparent from the boring logs that this lowermost clay layer slopes to the northeast. For additional subsurface detail, see Subsurface Profile, Figure 3.

Groundwater within the site has been encountered at both 13 to 15 feet and 19 to 23 feet. The lower water levels occur in clayey sands along the east and west boundaries of the site, and likely in its northern one-third. This water horizon is considered the first primary aquifer. A shallow "perched" water is found in clayey sand at 13 to 15 feet, occurring throughout the south-central portion of the site.

Hydrostatic pressure in both units results in a piezometric surface at 10 to 12 feet below ground surface. The similar piezometric surface suggests that the "perched" water is connected to the underlying aquifer. Additional evidence for this connection is the lack of a confining layer below the upper clayey sand in several borings in the south-central portion of the site.

Groundwater flow direction at the site has been towards the southwest since December 1989. Gradient has varied at the site from 2.0% to 0.4%. Electrical conductivity is a relatively low 500 to 1,000 micromhos, and pH has generally been slightly acidic. Seasonal precipitation appears to result in more southerly flow, a flatter gradient, and 1 to 2 feet higher water levels in early spring. This data is derived from measurements made of the lower groundwater unit.

Soil contamination by petroleum hydrocarbons was observed olfactorily and by Photo-Ionization Detector (PID) in 11 borings in the south-central portion of the site. Hydrocarbons were detected at depths ranging from just below the asphalt pavement to 16 feet (the greatest depth of several borings in the area of greatest contamination). PID values reached 3,600 ppm total ionizable hydrocarbons in soil (the PID was calibrated daily to a 100 ppm isobutylene standard with a 10.6 eV lamp). The greatest concentrations were observed between 10 feet in depth and first encountered groundwater (where encountered). It was noted that contamination was not always accompanied by soil staining, and volatilization was rapid upon exposure to air.

Groundwater contamination has been encountered at the site in samples obtained quarterly from Wells MW-2 and MW-3 in the lower water horizon. These wells are considered to be up and cross-gradient to what is believed to be the contaminant source area. Sheen and possible free product were observed on "perched" water in the exploratory soil borings, and on auger and soil removed from the borehole.

FIFTH QUARTERLY MONITORING ACTIVITIES

General

Quarterly monitoring and/or observation of Underground Storage Tank (UST) groundwater monitoring wells (MW-2, MW-3 and MW-4) was performed on October 17, 1991. Field procedures and observations are provided in the following text and figures.

Field Work

Three groundwater monitoring wells (MW-2, MW-3 and MW-4) are located adjacent to two 10,000-gallon gasoline USTs and one waste oil UST as shown on Figure 2, Site Plan. The wells were installed and developed in December 1989 (see BSK & Associates Report P89134, dated 2/5/90).

Wells MW-2, MW-3 and MW-4 were purged using a PVC bailer. Four to five well volumes were removed from each well. Purge effluent was field monitored for pH, Conductivity and Temperature during purging, to assess the influx of fresh formational water into the well. Purged water was then transferred to a 55-gallon DOT-approved steel drum for holding. The drum was labeled according to its contents, suspected contaminants, content source, date, etc.

Prior to purging, the depth to water in each well was measured using a Solinst electric sounding tape, marked in twentieths of a foot. The water depth was then interpolated to a hundredth of a foot increment from the tape. Each well was subsequently examined for floating and sinking immiscible product layers, sheen and odor, using a clean PVC bailer having dual check valves for point source sampling. Groundwater flow direction and gradient data were determined from the depth measurements, and are presented in Figure 4, Groundwater Flow Direction and Gradient.

Upon purge completion, each well was again measured to confirm a minimum of 80% well recovery prior to sampling. Water sampling was then performed with a teflon bailer. Sampling for contaminants was done in the order of their volatility, with the most volatile constituents sampled first. Sampling for contaminants known to have densities greater than water were sampled at the bottom of the well. Each water sample obtained for a specific contaminant, or contaminants, was placed into the appropriate receptacle, sealed, labeled and refrigerated for delivery to our State-certified laboratory.

A Well Field Log was prepared for each well sampled, recording the water depth, well volume, water temperature and other data. The Well Field Logs are shown as Figures 5.1 through 5.3.

Site Hydrology

At the time of this sampling, flow direction has become more westerly, to S42°W. Gradient has decreased from 0.9 percent to 0.7 percent and groundwater levels have fallen 0.69 to 0.87 feet since July 1991. Groundwater flow direction and gradient are shown on Figure 4.

Conductivity, pH and temperature data are presented in the Well Field Logs, Figures 5.1 through 5.3. Little significant change has occurred in these parameters.

The changes in flow direction and water level since July 1991 are likely the result of a falling water table due to lack of recharge by precipitation.

Chemical Analyses

The water samples obtained from Wells MW-2 and MW-3 were analyzed for constituents related to gasoline, since the wells are located adjacent to two 10,000 gallon underground gasoline tanks. The samples were tested for the following contaminants: Total Volatile Hydrocarbons (TVH) and Benzene, Toluene, Xylene and

Ethylbenzene (BTXE). Monitoring Well MW-4 was sampled for TVH, BTXE, Total Petroleum Hydrocarbons as diesel (TPH), and Oil and Grease.

The contaminants tested are those specified by the Tri-Regional Water Quality Control Board Recommendations of August 10, 1990 and listed in the Alameda County Department of Environmental Health letter, dated April 26, 1990 to R.T. Nahas Co. Current and former analyses results are presented for comparison in the following tables. The Chemical Test Data Sheets are presented in Figures 6 and 7. Project Chain-of-Custody record is shown as Figure 8.

WATER ANALYSES

TABLE 1
(Results in ppb)

Sampling Date	Sample Locations	Benzene (1)*	Toluene (100)+	Xylene (1750)*	Ethylbenzene (680)*
October 1990	Well MW-2	64	30	160	35
	Well MW-3	18	ND	5.6	3.8
	Well MW-4	ND	ND	ND	ND
December 1990	Well MW-2	17	10	59	13
	Well MW-3	7	2	5	2
January 1991	Well MW-2	50	33	110	22
	Well MW-3	29	3.3	34	9.7
April 1991	Well MW-2	640	520	790	170
	Well MW-3	450	270	760	150
	Well MW-4	ND	ND	ND	ND
July 1991	Well MW-2	14	1	17	8
	Well MW-3	14	14	33	8
October 1991	Well MW-2	2.9	ND	6	2.5
	Well MW-3	ND	ND	ND	ND
	Well MW-4	ND	ND	ND	ND

ND = None Detected
*DHS: Primary Drinking Water Standard (3/89)
+DHS: Action Level

TABLE 2
(Results in ppb)

Sampling Date	Sample Location	TPH (100)*	TVH (100)*	Oil and Grease (100)*
October 1990	Well MW-2	--	740	--
	Well MW-3	--	87	--
	Well MW-4	ND	ND	ND
December 1990	Well MW-2	--	370	--
	Well MW-3	--	76	--
January 1990	Well MW-2	--	430	--
	Well MW-3	--	110	--
April 1991	Well MW-2	--	4800	--
	Well MW-3	--	3600	--
	Well MW-4	ND	ND	ND
July 1991	Well MW-2	--	220	--
	Well MW-3	--	220	--
October 1991	Well MW-2	--	170	--
	Well MW-3	--	ND	--
	Well MW-4	ND	ND	ND

-- = Not Tested

ND = None Detected

*Quantified Action Levels are not provided for these parameters. The amount given is often informally used by regulatory agencies as a threshold value.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

On the basis of our findings to date, an unauthorized fuel release to soil and groundwater has occurred at the site, in the vicinity of the two 10,000-gallon underground gasoline storage tanks.

Contaminants associated with gasoline have decreased in Monitoring Wells MW-2 and MW-3 since the last quarterly sampling event (July 1991). Now, only Benzene concentrations exceed primary drinking water standards. Total hydrocarbon concentration also continues to exceed informal State action levels.

The further decrease in contaminant concentrations is likely related to the continued lowering of groundwater levels.

A groundwater monitoring well located down-gradient from the contaminated area does not exist.

Recommendations

With respect to the obtained field data, and conclusions presented, the recommendations provided in our recently completed soil contaminant assessment report, P90165, dated July 1991, are considered appropriate at this time.

REPORT DISTRIBUTION

Copies of this report should be submitted to the Alameda County Department of Environmental Health for their review. We are providing you with extra copies for this purpose. We understand that copies of the report may be forwarded by ACEH to the Regional Water Quality Control Board in Oakland for their review.

LIMITATIONS

The findings and conclusions presented in this report are based on field review and observations, and from the limited testing program described in this report. This report has been prepared in accordance with generally accepted methodologies and standards of practice in the area. No other warranties, expressed or implied, are made as to the findings, conclusions and recommendations included in the report.

The findings of this report are valid as of the present. The passage of time, natural processes or human intervention on the property or adjacent property can cause changed conditions which can invalidate the findings and conclusions presented in this report.

BSK & Associates is pleased to have been of service to you during this project. If you have questions concerning the contents of this report, please do not hesitate to contact us.

The following are attached and complete this report:

FIGURE 1	Vicinity Map/Site Plan
FIGURE 2	Site Plan
FIGURE 3	Subsurface Profile
FIGURE 4	Groundwater Flow Direction & Gradient
FIGURES 5.1 through 5.3	Well Field Logs

CONTINUED . . .

APPENDIX "A"

FIGURES A-1 through A-5	Fifth Quarterly Laboratory Chemical Test Data Sheets
FIGURE A-6	Project Chain-of-Custody Record

Respectfully submitted,

BSK & Associates

Alex Y. Eskandari, P.E.
Manager - Geotechnical Services
C.E. #038101, R.E.A. #01528

Tim W. Berger

Tim W. Berger, R.E.A. 02336
Project Geologist

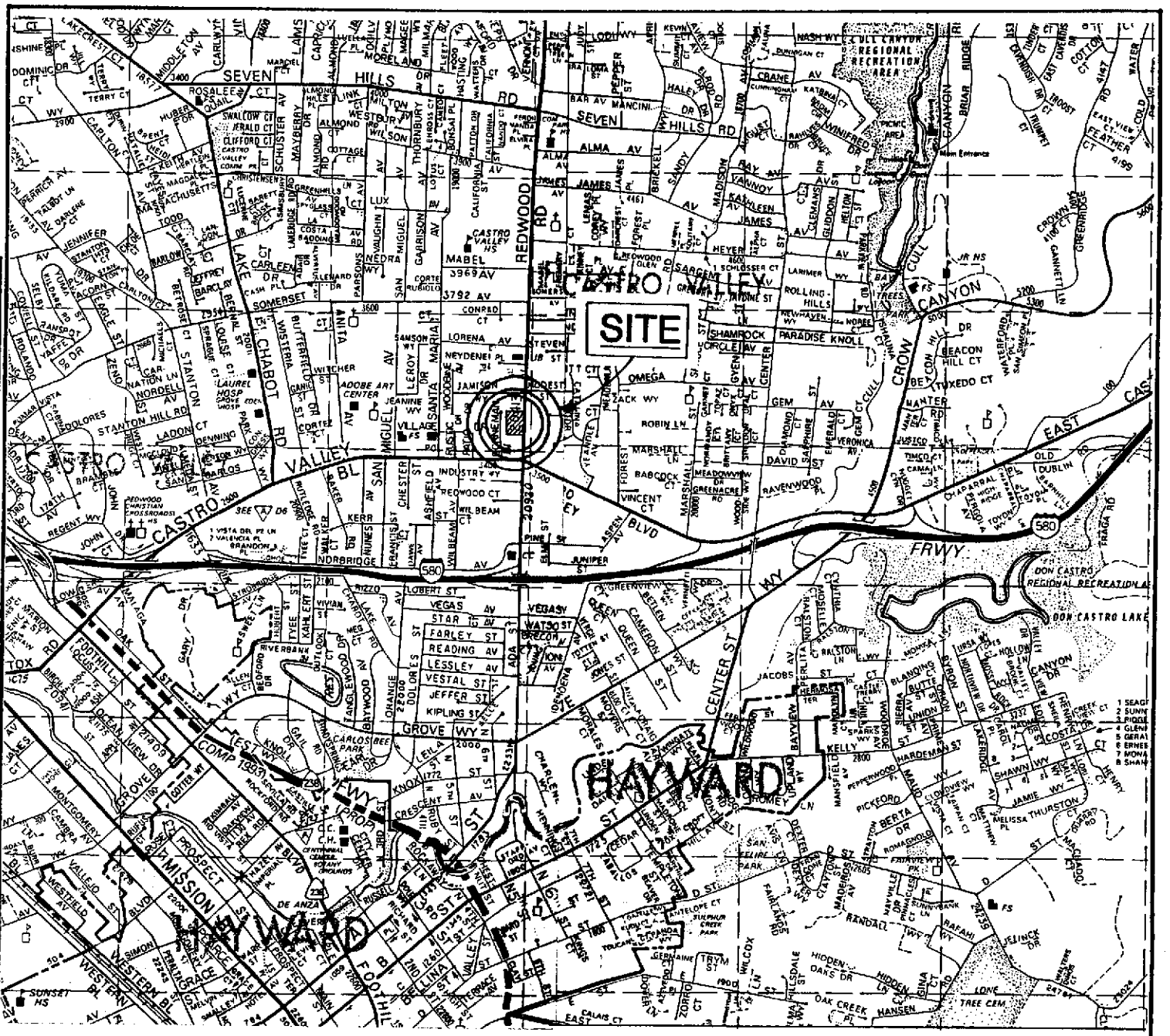
AYE/TWB:kl(MISC#6)

Distribution: R.T. Nahas Co. (5 copies)

CHECKED BY

DATE

BY

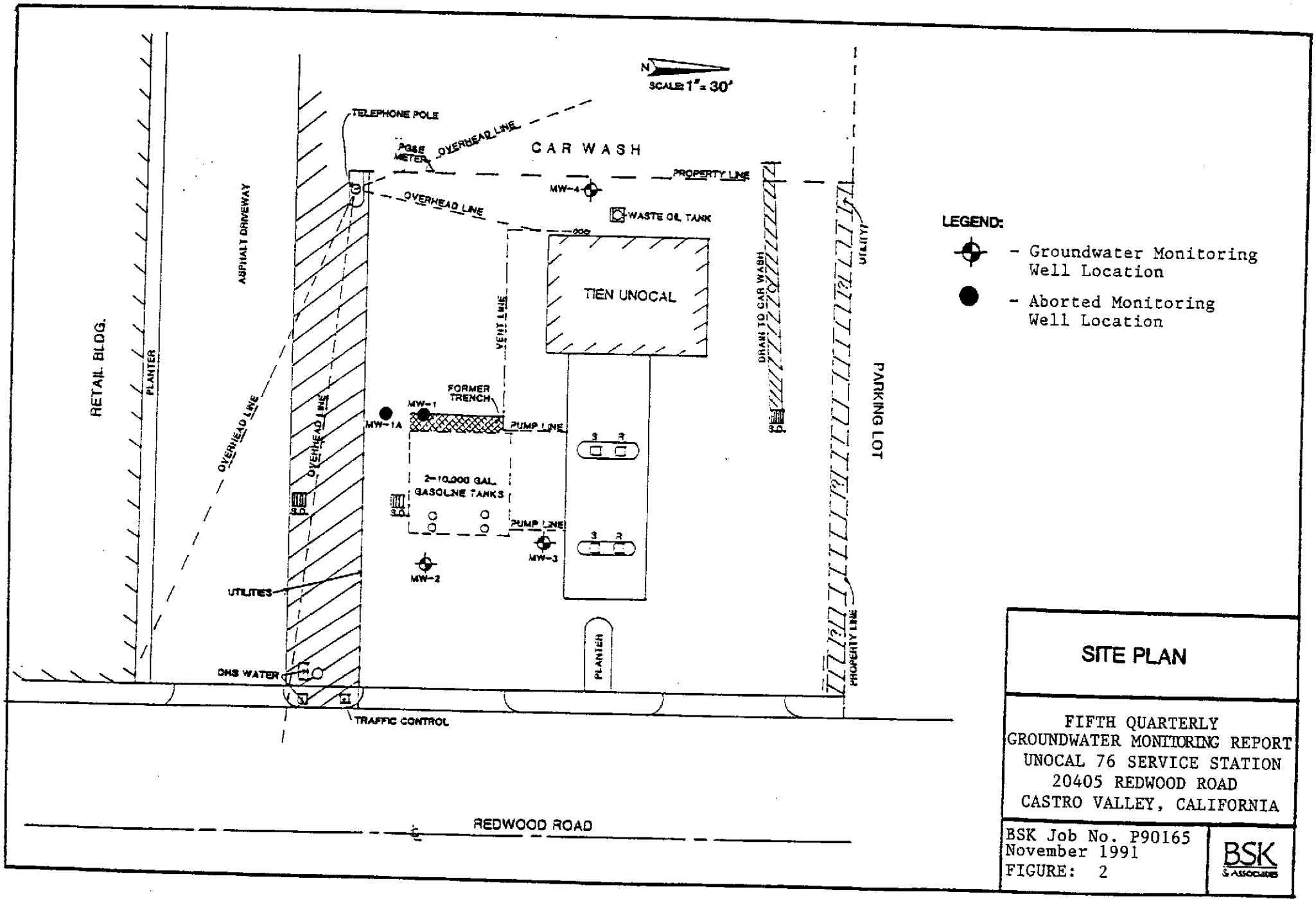


VICINITY MAP

FIFTH QUARTERLY
GROUNDWATER MONITORING REPORT
UNOCAL 76 SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

BSK Job No. P90165
November 1991
FIGURE: 1

BSK & Associates

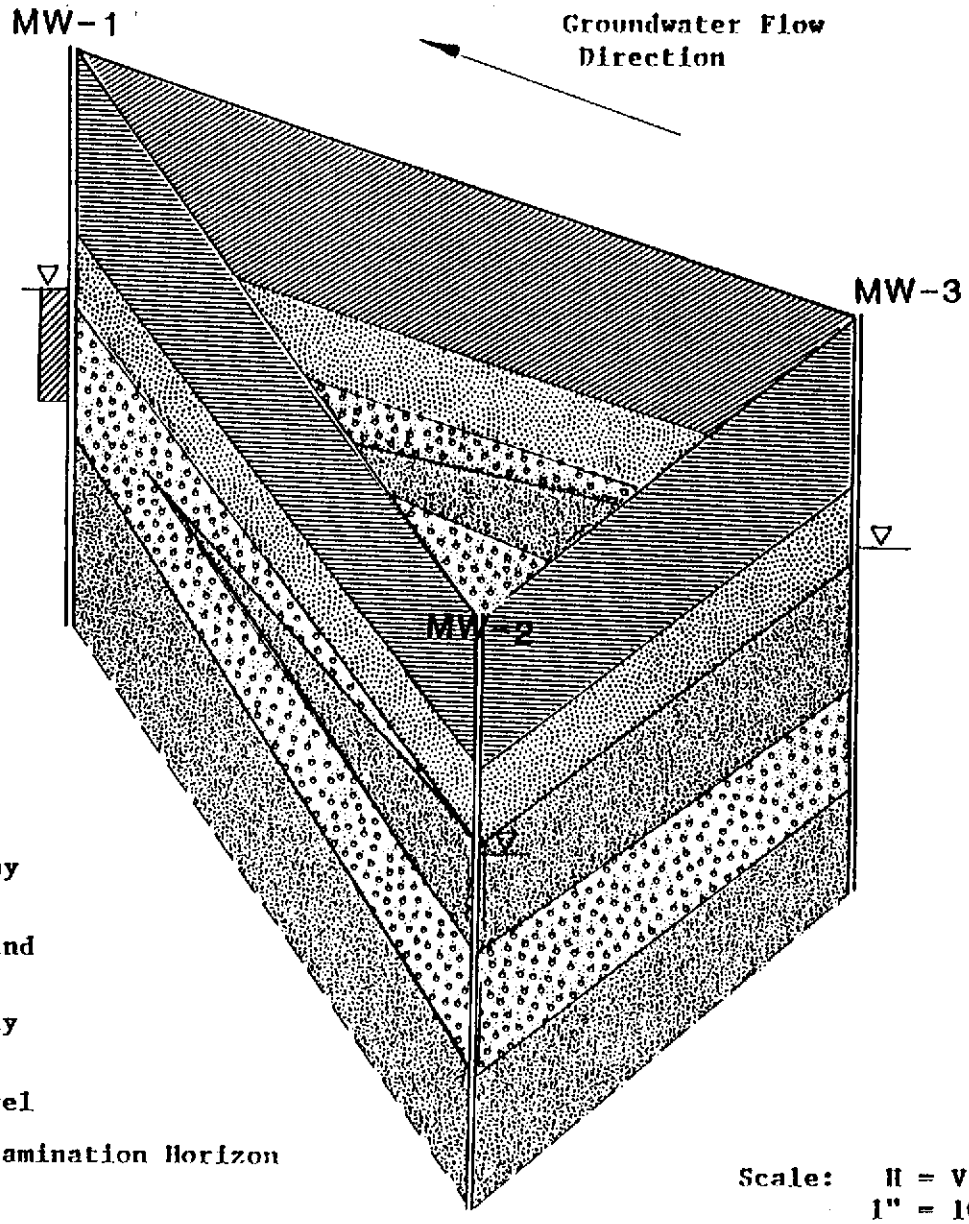


SITE PLAN

FIFTH QUARTERLY
GROUNDWATER MONITORING REPORT
UNOCAL 76 SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

BSK Job No. P90165
November 1991
FIGURE: 2

BSK & Associates



LEGEND:

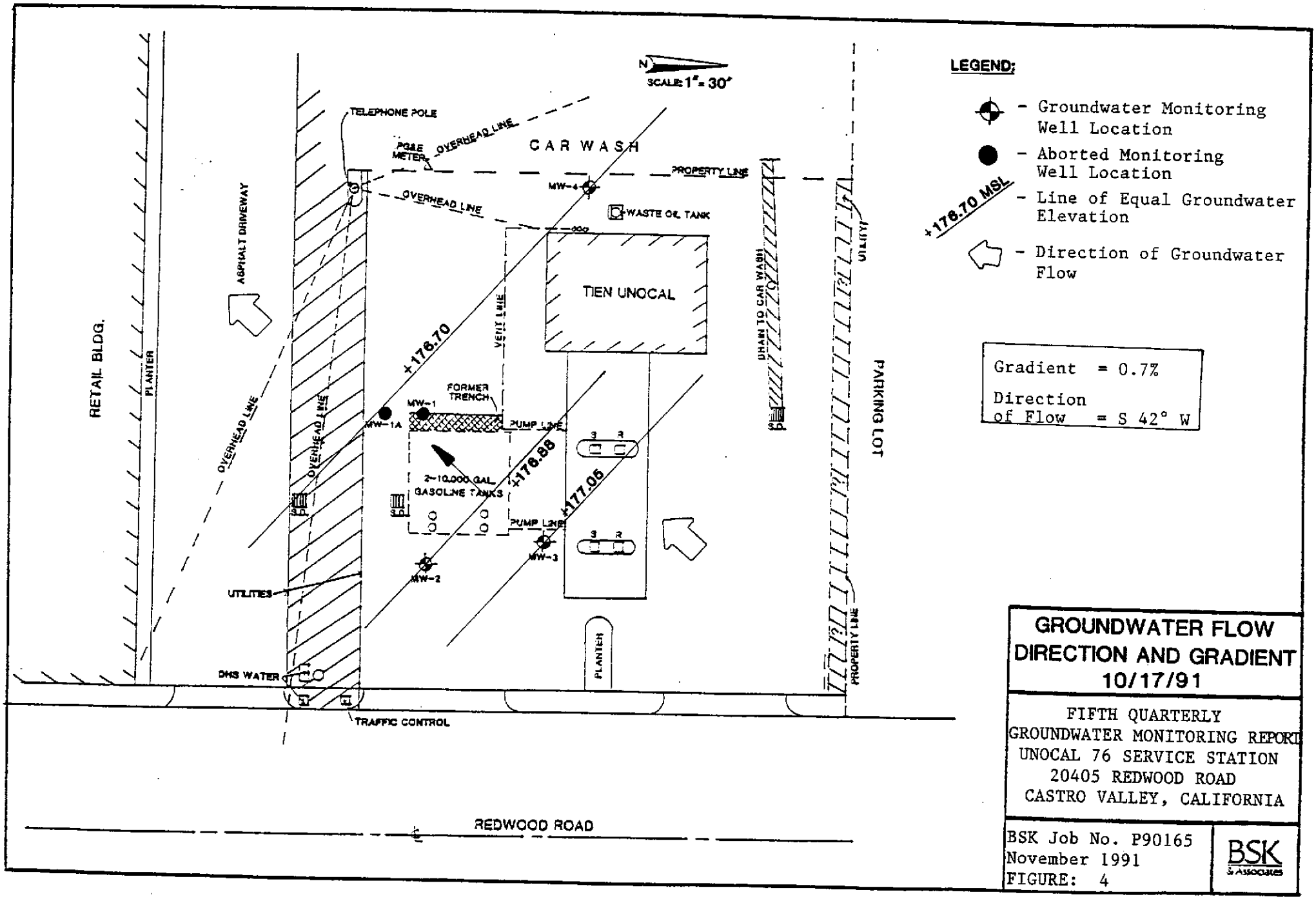
- Clay
- Sandy Clay
- Clayey Sand
- Silty Clay
- Water Level
- Soil Contamination Horizon

Scale: H = V
1" = 10'

SUBSURFACE PROFILE

BSK Job No. P90165
November 1991
FIGURE: 3

BSK & Associates



GROUNDWATER FLOW DIRECTION AND GRADIENT 10/17/91

FIFTH QUARTERLY
GROUNDWATER MONITORING REPORT
UNOCAL 76 SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

BSK Job No. P90165
November 1991
FIGURE: 4

BSK & Associates

WELL FIELD LOG

PROJECT NAME ANDLOCATION: Unocal 76, Service Station
20405 Redwood Road, Castro Valley, CA. 94546

PERSONNEL: M. Cline
WEATHER: Clear, Mild

WELL INFORMATION:

Well No.: MW-2
Depth to Water: [redacted] feet
Water Volume: 2.7 gallons
Reference Elevation: 188.60' (MSL)
Groundwater Elevation: 176.88' (MSL)
Measurement Technique: Electric Well Sounder

Date Purged: [redacted]
Purge Method: PVC Bailer
Purge Rate: 0.5 gpm

IMMISCIBLE LAYERS:

Top: None Oserved, No Odor
Detection Method: Visual, Olfactory
Collection Method: Clear PVC Bailer

Bottom: White Particles, [redacted]

WELL DEVELOPMENT/PURGE DATA:

TIME	Volume Removed (gallons)	Electrical Conductivity (uS/cm)	pH	Temperture (degrees F)	Remarks
10:32	2.7	839	7.8	72	Slight Odor
10:39	5.4	793	6.9	73	↓
10:46	8.1	752	6.8	73	↓
10:53	10.8	710	6.7	73	Slight Odor

SAMPLE COLLECTION DATA

Sampling Equipment: Teflon Point Source Bailer

TIME	ANALYSIS	CONTAINER USED	SAMPLE INTERVAL
10:59	TVH &BTXE	2-40 ml vials with HCL	14 feet

UNOCAL 76, SERVICE STATION FIFTH QUARTERLY GROUNDWATER SAMPLING AND ANALYSIS	BSK. Job No. P90165 FIGURE 5.1 NOVEMBER 1991	BSK & ASSOCIATES

WELL FIELD LOG

PROJECT NAME ANDLOCATION: Unocal 76, Service Station
20405 Redwood Road, Castro Valley, CA. 94546

PERSONNEL: M. Cline
WEATHER: Clear, Mild

WELL INFORMATION:

Well No. [redacted]
Depth to Water [redacted] feet
Water Volume: 2.6 gallons
Reference Elevation: 189.02' (MSL)
Groundwater Elevation: 177.05' (MSL)
Measurement Technique: Electric Well Sounder

Date Purged: 10/17/91
Purge Method: PVC Bailer
Purge Rate: 0.7 gpm

IMMISCIBLE LAYERS:

Top: None Oserved, No Odor
Detection Method: Visual, Olfactory
Collection Method: Clear PVC Bailer

Bottom: Rust Colored Particles , No Odor

WELL DEVELOPMENT/PURGE DATA:

TIME	Volume Removed (gallons)	Electrical Conductivity (uS/cm)	pH	Temperture (degrees F)	Remarks
11:17	2.6	644	7.7	72	
11:23	5.2	648	6.9	73	
11:27	7.8	637	6.7	73	
11:31	10.4	637	6.7	73	

SAMPLE COLLECTION DATA

Sampling Equipment: Teflon Point Source Bailer

TIME	ANALYSIS	CONTAINER USED	SAMPLE INTERVAL
11:37	TVH &BTXE	2-40 ml vials with HCL	14 feet

UNOCAL 76, SERVICE STATION
FIFTH QUARTERLY GROUNDWATER
SAMPLING AND ANALYSIS

BSK. Job No. P90165
FIGURE 5.2
NOVEMBER 1991

BSK & ASSOCIATES

WELL FIELD LOG

PROJECT NAME ANDLOCATION: Unocal 76, Service Station
20405 Redwood Road, Castro Valley, CA. 94546

PERSONNEL: M. Cline
WEATHER: Clear, Mild

WELL INFORMATION:

Well No.: MW-4
Depth to Water: 13.00 feet
Water Volume: 1.8 gallons
Reference Elevation: 189.70' (MSL)
Groundwater Elevation: 176.70' (MSL)
Measurement Technique: Electric Well Sounder

Date Purged: 10/17/91
Purge Method: PVC Bailer
Purge Rate: 0.6 gpm

IMMISCIBLE LAYERS:

Top: None Oserved, No Odor
Detection Method: Visual, Olfactory
Collection Method: Clear PVC Bailer

Bottom: 1 ft. Clay/Colloids, No Odor

WELL DEVELOPMENT/PURGE DATA:

TIME	Volume Removed (gallons)	Electrical Conductivity (uS/cm)	pH	Temperture (degrees F)	Remarks
9:40	2.0	585	8.3	71	
9:45	4.0	554	7.7	71	
9:48	6.0	553	7.6	71	
9:54	8.0	551	7.2	71	

SAMPLE COLLECTION DATA

Sampling Equipment: Teflon Point Source Bailer

TIME	ANALYSIS	CONTAINER USED	SAMPLE INTERVAL
9:59	TVH & BTXE	2-40 ml vials with HCL	14 feet
10:00	TPH as Diesel	1-1000 ml Amber Flask	14 feet
10:03	OIL &GREASE	1-1000 ml Amber Flask	14 feet

UNOCAL 76, SERVICE STATION
FIFTH QUARTERLY GROUNDWATER
SAMPLING AND ANALYSIS

BSK. Job No. P90165
FIGURE 5.3
NOVEMBER 1991

BSK & ASSOCIATES

APPENDIX "A"

CHEMICAL TEST DATA SHEETS

AND

PROJECT CHAIN OF CUSTODY

BSK & Associates

ANALYTICAL BSK LABORATORIES
1414 Stanislaus Street
Fresno, California 93706
Telephone (209) 485-8310
FAX (209) 485-6935
1-800-877-8310

FIGURE: A-1

Environmental Services

BSK Pleasanton
R. T. Nahas, Unocal 76

Date Sampled : 10/17/91
Time Sampled : 1059
Date Received : 10/21/91
Date of Analysis : 10/29/91
Report Issue Date: 11/05/91

Case Number : Ch914940
Lab ID Number : 4940-4
Project Number : P90165
Sample Description: MW- 2 #1

Sample Type: LIQUID

Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Compound	Results	DLR
Benzene	2.9	0.3
Toluene	ND	0.3
Ethylbenzene	2.5	0.3
Total Xylene Isomers	6	0.3
Total Petroleum Hydrocarbons (G)	170	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences may result in higher detection limits.
ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Michael Brechmann, Organics Supervisor

R91 1009 BTPL.t

ANALYTICAL BSK LABORATORIES
Environmental Services
1414 Stanislaus Street
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Telephone (209) 485-8310
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1-800-877-8310

FIGURE: A-2

BSK-Pleasanton
R. T. Nahas, Unocal 76

Date Sampled : 10/17/91
Time Sampled : 1137
Date Received : 10/21/91
Date of Analysis : 10/28/91
Report Issue Date: 11/05/91

Case Number : Ch914940
Lab ID Number : 4940-5
Project Number : P90165
Sample Description: MW- 3 #1

Sample Type: LIQUID

Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Compound	Results	DLR
Benzene	ND	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.3
Total Xylene Isomers	ND	0.3
Total Petroleum Hydrocarbons (G)	ND	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences may result in higher detection limits.
ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Michael Brechmann, Organics Supervisor

R91 1009 BTPL.t

ANALYTICAL BSK LABORATORIES
Environmental Services
1414 Stanislaus Street
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Telephone (209) 485-8310
FAX (209) 485-6935
1-800-877-8310

FIGURE: A-3

BSK-Pleasanton
R. T. Nahas, Unocal 76

Date Sampled : 10/17/91
Time Sampled : 0959
Date Received : 10/21/91
Date of Analysis : 10/28/91
Report Issue Date: 11/05/91

Case Number : Ch914940
Lab ID Number : 4940-1
Project Number : P90165
Sample Description: MW- 4 #1

Sample Type: LIQUID

Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015 Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)

Compound	Results	DLR
Benzene	ND	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.3
Total Xylene Isomers	ND	0.3
Total Petroleum Hydrocarbons (G)	ND	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences may result in higher detection limits.
ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Michael Brechmann, Organics Supervisor

R91 1009 BTPL.t

ANALYTICAL BSK LABORATORIES
Environmental Services
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Fresno, California 93706
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FAX (209) 485-6935
1-800-877-8310

FIGURE: A-4

BSK-Pleasanton
R. T. Nahas, Unocal 76

Date Sampled : 10/17/91
Time Sampled : 1000
Date Received : 10/21/91
Date of Analysis : 10/30/91
Report Issue Date: 11/05/91

Case Number : Ch914940
Lab ID Number : 4940-2
Project Number : P90165
Sample Description: MW- 4 #2

Sample Type: LIQUID

Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)

Analyte	Results	DLR
TPH(D)	ND	100

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences may result in higher detection limits.
ND: None Detected
*-This sample contains lower molecular weight hydrocarbons.
**-This sample contains higher molecular weight hydrocarbons.
***-This sample contains both higher and lower molecular weight hyrdrocarbons.

Cynthia Pigman, QA/QC Supervisor

Michael Brechmann, Organics Supervisor

R910528 TPHDL

ANALYTICAL
BSK
LABORATORIES
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Telephone (209) 485-8310
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1-800-877-8310

FIGURE: A-5

BSK Pleasanton
R. T. Nahas, Unocal 76

Date Sampled : 10/17/91
Time Sampled : 1003
Date Received : 10/21/91
Date of Analysis : 10/24/91
Report Issue Date: 11/05/91

Case Number : Ch914940
Lab ID Number : 4940-3
Project Number : P90165
Sample Description: MW-4 #3

Sample Type: LIQUID

Analyses For Total & Hydrocarbon Oil & Grease By Standard Method 503B,& E

Results Reported in Milligrams Per Liter (mg/L)

Analyte	Results	DLR
Total Oil and Grease.....	ND	1
Hydrocarbon Oil and Grease	ND	1

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences may result in higher detection limits.
ND: None Detected

Cynthia Pigman, QA/QC Supervisor

Michael Brechmann, Organics Supervisor

R910918 OGTHL503

BSK Log Number 4990

ANALYSIS REQUEST/CHAIN OF CUSTODY RECORD

1000-7747

Client Name: R.T. Nabus Unocal 76	Project or P.O.#: P90165
Address: 1181 Quarry Ln #300	Phone #: (510) 462-4000
City, State, Zip: Pleasanton, 94566	Report, attention: BSK Pleasanton T. Berger

Lab Use Only in this section

Analysis required: TVH & BTXE; TPH as Diesel (EPA 8015 Mod.); Oil & Grease; Hazardous sample / Special handling required

Date sampled	Time sampled	Type (See key below)	Sampled by / Sample description	Number of containers	Lab Sample number	Sample Seals (See key below)	TVH & BTXE	TPH as Diesel	Oil & Grease	Remarks
10/17/91	9:59	L	MW-4 #1	2	1	P	X			2x40ml
	10:00	L	MW-4 #2	1	2	A		X		1x1L
	10:03	L	MW-4 #3	1	3	A			X	↓
	10:59	L	MW-2 #1	2	4	P	X			2x40ml
↓	11:37	L	MW-3 #1	2	5	P	X			↓

10-31-91

IMPORTANT NOTICE: No samples will be analyzed without an authorized signature in this section.

I am hereby requesting BSK's Normal Chain-of-Custody Procedures for the above samples. I understand that these procedures are generally consistent with those outlined in the U.S. E.P.A. SW 846 and that there is no extra charge for this service.

By: Marty Cline
Authorized Signature

I am hereby requesting BSK's Formal Chain-of-Custody Procedures for the above samples. I understand that these procedures are generally consistent with those outlined in U.S. EPA Contract Laboratory Program Statement of Work, Section F, and that there is a charge of $50.00 per work order or $5.00 a bottle, whichever is greater.

By: _____
Authorized Signature

	Signature	Print Name	Company	Date	Time
Relinquished by	Marty Cline	Martin Cline	BSK Pleasanton	10/18/91	10:27
Received by	A. Saboor Rahim	A. Saboor Rahim	BSK Fresno	10/18/91	4:55 PM
Relinquished by	Ami Aiello	S. Aiello	BSK	10-21-91	950
Received by					
Relinquished by					
Received by					

BSK & Associates Chemical Laboratories

1414 Stanislaus Street Fresno, California 93706

Telephone (209) 485-8310 • Fax (209) 485-7427

KEY: Type: AQ–Aqueous SL–Sludge SO–Soil PE–Petroleum OT–Other
Seals: P–Present A–Absent B–Broken
DISTRIBUTION: WHITE, CANARY - LABORATORY PINK - ORIGINATOR
Note:
Samples are discarded 14 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

FIGURE: A-6