OUR JOB P89134

Feb. 5, 1990

MONITORING FACILITY INSTALLATIONS -

ALTERNATIVE NO. 6

UNDERGROUND PETROLEUM TANKS

UNOCAL 76 SERVICE STATION

20405 REDWOOD ROAD

CASTRO VALLEY, CALIFORNIA

BSK
& Associates

BSK & Associates, Geotechnical Consultants, Inc

Geotechnical Engineering • Engineering Geology • Environmental Engineering • Engineering Laboratories • Chemical Laboratories

February 5, 1990

OUR JOB P89134

R.T. Nahas Company/Eden Managements
20630 Redwood Road
Castro Valley, California 94546

Attention: Ms. Roberta Buchan
Property Manager

SUBJECT: Monitoring Facility Installations - Alternative No. 6
Underground Petroleum Tanks
Unocal 76 Service Station
20405 Redwood Road
Castro Valley, California

Madam/Gentlemen:

As requested and authorized, we have completed the installation of three groundwater monitoring wells, sampled and tested soil and groundwater, and arranged for an independent review of an existing pipeline leak detection system in the vicinity of two 10,000 gallon underground petroleum storage tanks, and one 300 gallon underground waste oil tank. These monitoring installations have been installed at the Unocal 76 Service Station located at 20405 Redwood Road in Castro Valley, California in accordance with our Proposal PR89082, dated September 19, 1989, and the Addendum Proposal dated November 20, 1989. The site location with respect to surrounding geographical features is shown on the Vicinity Map portion of Figure 1, Site Plan, which also shows the site layout with respect to the features addressed in this report.

SITE LOCATION AND DESCRIPTION

The project site is located at 20405 Redwood Road, Castro Valley, California. The site consists of a level lot paved in asphalt and concrete, and housing the Unocal 76 Service Station. The service station pumps draw from two 10,000 gallon tanks containing unleaded gasoline. A 300 gallon underground tank in the rear of the station is used to store waste oil.

Fresno, [illegible]
Fresno, [illegible]
Fresno, [illegible]
Visalia, [illegible]
Bakersfield, [illegible]
X Pleasanton, [illegible]

Adjacent to the Unocal Service Station is a car wash to the west, houses to the north, and a small shopping center to the south. Beyond the car wash and further to the west is a larger shopping complex. Redwood Road, upon which the station faces, is a 4 to 5 lane thoroughfare.

FIELD WORK

One 25 and two 30-foot borings were drilled at the locations shown on Figure 1, Site Plan. **Two additional borings were drilled then backfilled due to the encounter of petroleum contaminated soil.** The installed wells were developed, purged and sampled. The described field work was performed between the dates of December 4 and December 14, 1989.

The well locations were chosen in conformance with State and local guidelines concerning monitoring facilities for USTs, and with respect to the expected groundwater flow direction as judged from surrounding topography. **However, the placement of the down-gradient well, the third well required by the monitoring program, was not performed due to the discovery of petroleum contamination, of soil and water at the proposed well location.** Installation of the well as planned would have provided a pathway for contamination, from a perched water table showing contamination, to an underlying aquifer at 20 feet showing no contamination. The proposed well (MW-1), was instead backfilled with neat cement. A second well (MW-1A) was drilled approximately 7 feet southwest of MW-1, with the same results. This boring was also backfilled with neat cement after excavation to 17 feet.

The monitoring alternative chosen for this project, Alternative 6 of Subchapter 16 from CAC Title 23, includes in its monitoring scheme the use of a pipeline leak detection system. Azonics of San Jose was retained to perform the installation of two Red Jacket diaphragm-style leak detectors. However, **Azonics discovered that a Red Jacket detection system had already been installed.** Azonics tested the in-place system and found it to be fully functional.

The groundwater monitoring well borings were drilled utilizing a Mobile Drill truck-mounted B-53 rig using an 8-inch hollow stem auger. A 2-inch I.D. split-spoon sampler, housing three 2 x 6-inch stainless steel sampling tubes, was used for soil

sampling. Soils were classified in the field by a geologist using the Unified Soil Classification System as shown on the Legend for Test Hole Logs, Figure 2. The Logs of Borings are presented in Figures 3 through 7.

The groundwater monitoring wells were constructed in general accordance with Figure 8, Typical Groundwater Monitoring Well. Two-inch PVC was used, with 15 feet of 0.020 slotted screen below 10 to 15-feet of casing. Lonestar grade 1/12 sand was used as annular fill around the screen. Six to twelve inches of 1/4-inch pelletized Bentonite were placed as a spacer between the annular sand and neat cement seal.

Soil samples were obtained at approximate five foot intervals to first encountered groundwater. The samples were retained in the aformentioned stainless steel tubes, capped with teflon and pressure-fitted plastic caps, labeled, taped, refrigerated and delivered to our State-certified analytical laboratory for pollutant chemical analyses.

Boring and sampling equipment used during the drilling was cleaned by hi-pressure, hi-temperature wash and/or non-phosphate detergent wash, and rinsed prior to usage. Soiled auger was cleaned at the site within a rinsate containment area.

The rinsate was transferred into a DOT-approved 55-gallon drum. Drilling and construction spoils from the monitoring wells were collected in approved drums and stored at the site until the proper fate of the contents could be determined. Development and purge water from the monitoring wells were also stored at the site.

Relative elevations for each monitoring well were surveyed to an accuracy of one-hundredth of a foot using a Berger elevating transit. The well elevation is that of the top of the PVC well casing. The reference elevation used was the top-of-curb on the east side of Redwood Road. The point of reference was engraved with an arrow and Roman numerals. This point was designated as zero. Water depths were determined using a Solinst sounding tape marked in tenths of a foot. Depths to water are referenced to the reference elevation. The groundwater gradient was determined following groundwater measurements taken several days after monitoring well placement. The gradient demonstrates flow to the southwest with a 0.9% grade. Groundwater flow direction is presented in Figure 9.

Groundwater well development was achieved using a PVC hand pump. The well was pumped until sand and silt were removed from the well bottom, and the removed water achieved a degree of clarity, as well as stabilization of temperature, conductivity and pH parameters.

Following development, the well was allowed to equilibrate for two days. Prior to sampling, the well was purged of 8 to 10 volumes of water using a PVC hand-pump. Water temperature, pH and Conductivity were measured for every 5 gallons of removed water. The Sample Collection Logs are presented in Figures 13 through 15. Water sampling was performed using a teflon bailer.

SUBSURFACE CONDITIONS

The site subsurface conditions, as exposed by Borings MW-1A, MW-2, MW-3 and MW-4, 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 sandy 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 lower-most clay slopes to the northeast. For additional subsurface detail, see Test Hole Logs, Figure 3 through 7.

Groundwater was encountered in each boring. In the eastern portion of the site, groundwater was first encountered in Borings MW-2 and MW-3 at 20 1/2 and 19 feet below surface. The water level then stabilized in an open well at approximately 12 1/2 feet in depth. In the western portion of the site, Wells MW-1, MW-1A and MW-4 encountered an elevated saturated zone between 16 and 17 feet. In MW-1, water was again encountered at 20 feet, with stiff, moist clays in between. As previously stated, localized groundwater flow appears to be southwesterly with a gradient of less than 1.0 percent.

Soil and groundwater petroleum contamination was observed in Borings MW-1 and MW1-A, resulting in the abandonment of this area

as a monitoring well site. In Boring MW-1, Photo-ionization Detector (PID) measurements detected hydrocarbon compounds from 15 to 17 feet. The PID readings were especially high in the saturated zone at 17 feet. In Boring MW-1A, hydrocarbons were detected from 10 to 17 feet and were strongest at 10 feet. Also in MW-1A, oily water was observed seeping into the open boring at a depth of 15 feet. Small amounts of photo-ionizable compounds were encountered in Borings MW-2, MW-3 and MW-4 as well, but are not considered significant.

The Unocal station manager reported to BSK that an excavation had been made at the west end of the two 10,000 gallon tanks to accommodate repairs, and that petroleum leakage had occurred into this excavation, coupled with a rainstorm. This may explain the presence of a perched saturated zone and petroleum contaminants in that area.

CHEMICAL ANALYSES

Soil samples from Borings MW-1 and MW-1A were analyzed for Benzene, Toluene, Xylene, Ethylbenzene (BTXE) and Total Petroleum Hydrocarbon (TPH) as gasoline. In addition, soil samples from MW-1A were analyzed for TPH as diesel and total organic lead. Soil and water samples from Wells MW-2 and MW-3 were analyzed for BTXE and TPH as gasoline. With respect to the waste oil tank, MW-4 soil and water samples were analyzed for purgeable halocarbons, oil and grease, TPH as diesel and BTXE.

The compounds tested are those recommended by the Regional Water Quality Control Board's (RWQCB) June 1988 guidelines. The analytical methods used are also those stipulated by RWQCB and other authorities, and consist of the following:

BTXE:	EPA Method 8020
TPH-gas:	EPA Method 8015M
TPH-diesel:	DHS GC/FID
Oil and Grease:	EPA Method 413.1
Total Lead:	DHS - LUFT
Purgeable Halocarbons:	EPA Method 8010

A summation of the chemical analyses results for soil and water, respectively, is presented in the following tables. The Chemical Test Data Sheets are presented in Appendix "A," Figures A-1 through A-42. The project chain-of-custody documentation are provided in Figures A-43 through A-46.

SOILS ANALYSES

TABLE 1

BTXE (PPM)

Sample Location	Depth	Benzene (0)	Toluene (0)	Xylene (0)	Ethylbenzene (0)
MW-1	10'	1.8	7.8	20	3.8
MW-1	15'	0.09	ND	ND	ND
MW-1A	10'	2.2	11	25	5.4
MW-1A	13'	0.64	0.71	3.5	0.64
MW-2	10'	0.05	ND	0.03	ND
MW-3	15'	ND	ND	4.0	0.97

ND = None Detected
( ) = Action Level

TABLE 2

TPH as Gas, TPH as Diesel, Oil and Grease, Total Lead (PPM)

Sample Location	Depth	TPH as Gas (10)	TPH as Diesel (100)	Oil and Grease (NAV)	Total Lead (NAV)
MW-1	10'	89	NT	NT	NT
MW-1A	10'	110	50	NT	ND
MW-1A	13'	11	ND	NT	ND
MW-3	15'	92	NT	NT	NT

ND = None Detected
NT = Not Tested
( ) = Action Level

R.T. NAHAS COMPANY *Since 1947*

REAL ESTATE DEVELOPERS AND INVESTORS

90 FEB 14 PM 1:31

20630 PATIO DRIVE
CASTRO VALLEY, CALIFORNIA 94546
TELEPHONE (415) 538-9600

February 12, 1990

Mr. Scott Seery
Department of Environmental Health
Alameda County
80 Swan Way
Room 200
Oakland, Ca 94621

Dear Scott:

Enclosed are two copies of the final report from BKS regarding our gas station located at 20405 Redwood Road, Castro Valley, California.

Please call should you require any further information .

Sincerely,

Roberta Buchan

Enclosures

TABLE 3

Purgeable Halocarbons

No purgeable halocarbons were detected in the soil samples analyzed.

WATER ANALYSES

TABLE 1

BTXE (PPB)

No BTXE compounds were detected in the water samples analyzed

TABLE 2

TPH Gas, TPG Diesel, Oil and Grease, Total Lead (PPB)

Sample Location	TPH as Gas (NAV)	TPH as Diesel (NAV)	Oil and Grease (NAV)	Total Lead (NAV)
MW-2	72	NT	NT	NT

NT = Not Tested

TABLE 3

Purgeable Halocarbons

No purgeable halocarbons were detected in the water samples analyzed.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

An area of soil and groundwater contamination exists in the vicinity of the southwest corner of the underground gasoline tank cluster. **As determined from Borings MW-1 and MW-1A, contamination occurs between 10 and 17 feet,** and includes a perched saturated zone between 15 and 17 feet. Contamination of the underlying principal water table has not been determined. Small amounts of hydrocarbon contamination were detected in other borings as well.

The origin of contamination of the MW-1 and MW-1A area may be related to a release of petroleum products into an excavation in that area, as reported by the station manager.

Groundwater occurs beneath the site at a depth of 19 to 20 feet, with a potentiometric surface of approximately 12-1/2 feet. Horizontal flow as determined from Wells MW-2, MW-3 and MW-4 is to the southwest, with a gradient approaching 1.0 percent. The use of Well MW-4 as a component of the three-monitoring well gradient evaluation is questionable, with respect to the encountered saturated horizons during excavation.

A down-gradient monitoring well was not established, for the 10,000 gallon UST cluster. This was due to the presence of soil contamination in the area proposed for Well MW-1, which was designated as the down-gradient well. Elimination of this area for the construction of the well was necessary to prevent cross-contamination between upper and lower saturated zones, and because the well would not distinguish contamination between a release from the tank group and the contamination already present.

The detected amounts of soil contaminants exceed the maximum concentrations allowable according to the Leaching Potential Analysis Table (2-1) of the State Water Resources Control Board LUFT Manual, dated May 24, 1988.

The detected amount of TPH as gasoline in water in MW-2 is less than the 100 ppb threshold valve customarily used to identify a site requiring further investigation. The amount of contaminants in the groundwater in the area of MW-1 and MW-1A is not known, but is likely significant.

Recommendations

BSK recommends that an assessment be performed of the MW-1 and MW-1A area to determine the source, amount and areal extent of contamination. It is apparent that remediation of the problem in this area will be required before the initial monitoring objectives can be met for this project site; specifically, a down-gradient monitoring point for the 10,000 gallon UST cluster. The down-gradient point is the most important of the monitoring group.

We suggest that quarterly sampling (as opposed to the quarterly observations and semi-annual sampling described in our proposal) and laboratory testing of the installed monitoring wells be performed for a period of one year due to the unexpected presence of TPH in MW-2, and the presence of contamination in the MW-1 and MW-1A area. The first quarterly sampling event, with laboratory testing, should occur during the second week of March 1990 to facilitate a April 1990 report.

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	-	Legend for Test Hole Logs
FIGURE 3-7	-	Log of Borings
FIGURE 8	-	Typical Groundwater Monitoring Well
FIGURE 9	-	Groundwater Flow Direction
Figure 10-12	-	Sample Collection Logs

Appendix "A"

FIGURES A-1 through A-42	-	Laboratory Chemical Test Data Sheets
FIGURES A-43 through A-46	-	Project Chain of Custody Records

Respectfully submitted,

BSK & Associates

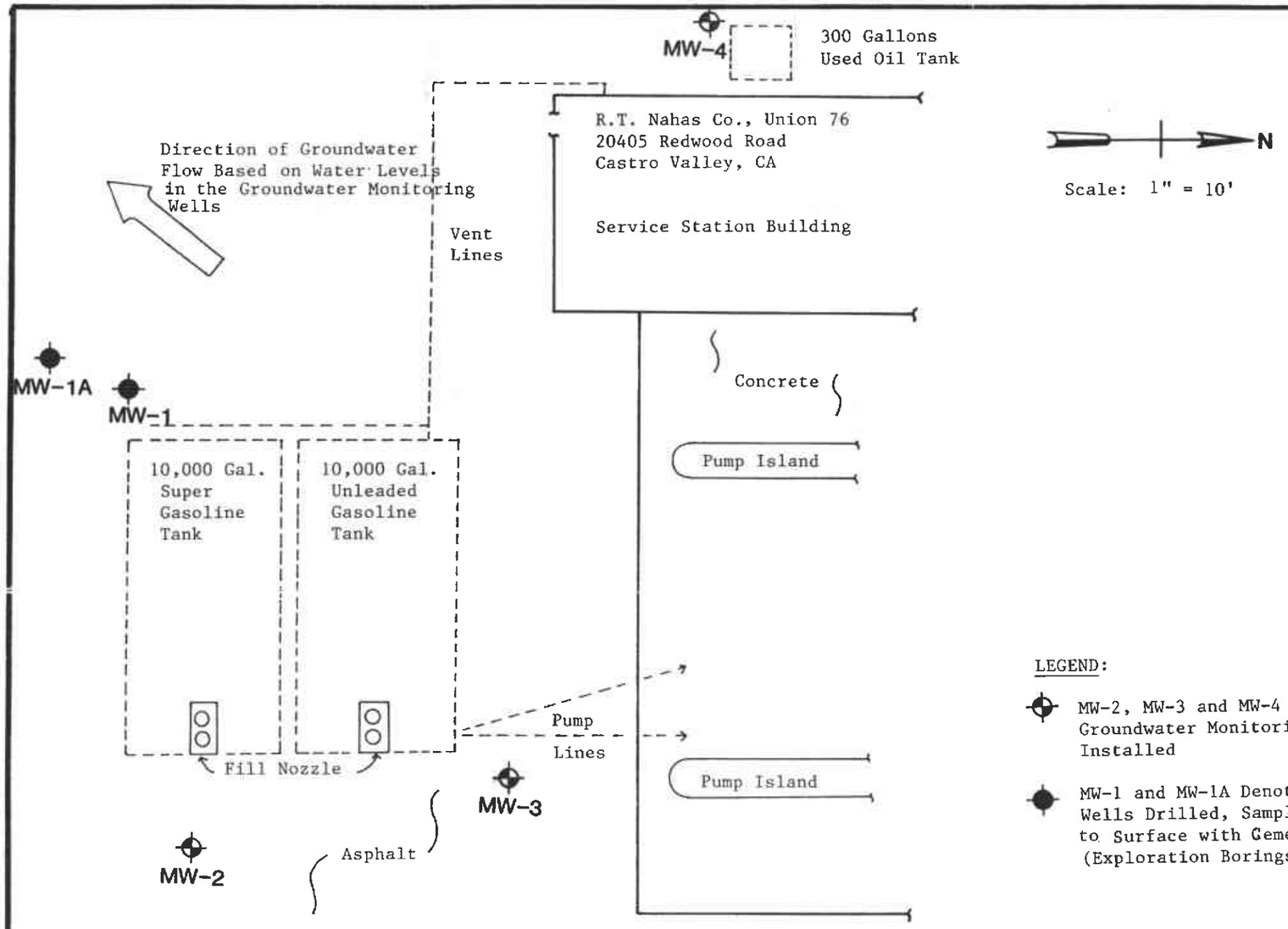
Alex Y. Eskandari,
Project Manager
C.E. 38101

Tim W. Berger
Staff Geologist

AYE/TWB:hhc
(C:P89134.J26)

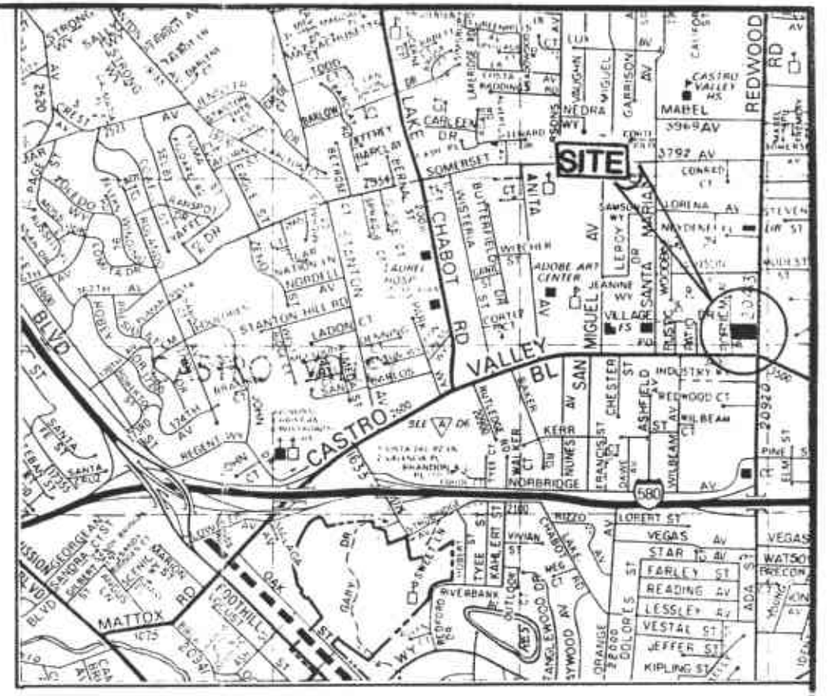
Distribution:
R.T. Nahas Company/Eden Managements (5 copies)

BSK



N

Scale: 1" = 10'



VICINITY MAP
(N.T.S.)

LEGEND:

MW-2, MW-3 and MW-4 Denote Groundwater Monitoring Wells Installed

MW-1 and MW-1A Denote Wells Drilled, Sampled and Backfilled to Surface with Cement Grout (Exploration Borings)

SITE PLAN

Monitoring Facilities Installation
Underground Petroleum Tanks

Unocal Station
20405 Redwood Road
Castro Valley, CA

Job No. P89134
February 1990

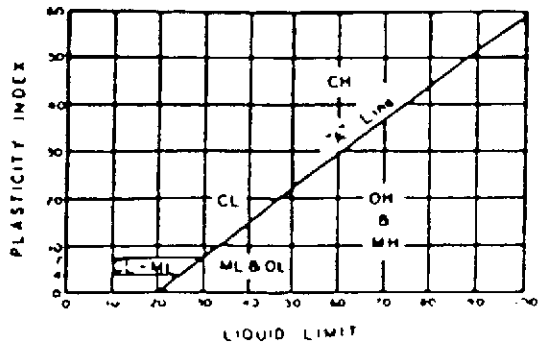
FIGURE 1

BSK & Associates

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: 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 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 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 Grades to clayey fine sand	
20	2.0	23	-	-	4			
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	$1\frac{3}{8}$"	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) 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

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
						CL	SILTY CLAY: Light yellow brown, moist, very stiff to hard, slighty sandy, blocky texture	
15	2.0	36	-	-	3			PID = 0.0
	2.0	37	-	-	4			
20						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) 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 (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 3/8"	12	-	-				Boring terminated at 30½' 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

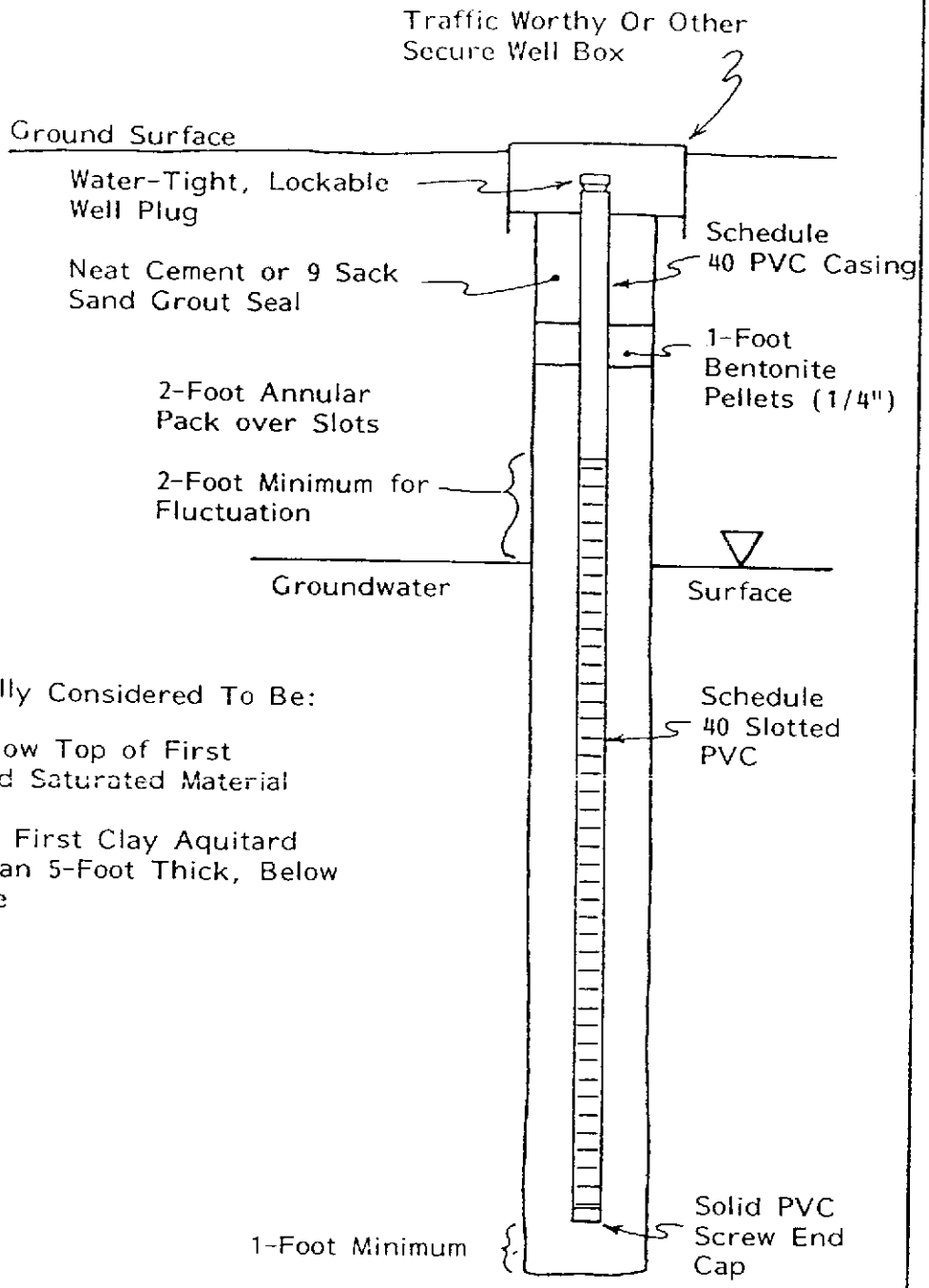
JOB: P89134
FIGURE: 7

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'	
						CL/SC	SANDY CLAY: Light brown, saturated fine-grained sand, stiff	PID to 6.1 No odor noted
	2.0	27	-	-				
20						CL	SILTY CLAY: Light brown, saturated, stiff	25' monitoring well installed having 10' of casing over 15' of screen
25								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:

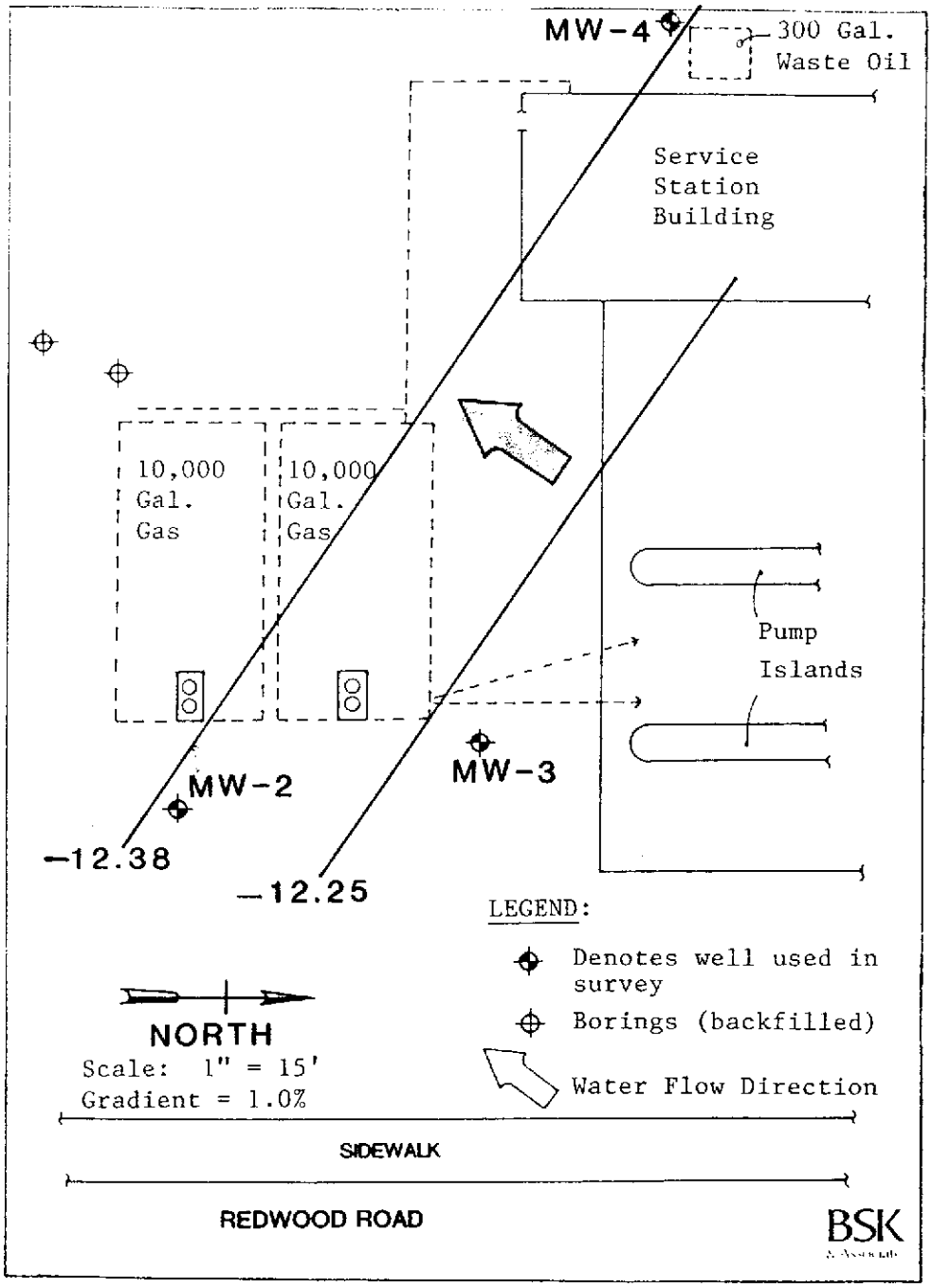
1. 20 Feet Below Top of First Encountered Saturated Material
2. 1 Foot Into First Clay Aquitard Greater Than 5-Foot Thick, Below Water Table

TYPICAL GROUNDWATER MONITORING WELL

(Not To Scale)

Job No. P89134
February 1990
FIGURE: 8

BSK & Associates



GROUNDWATER FLOW DIRECTION AND GRADIENT : 12/14/89

MONITORING FACILITIES INSTALLATION
UNDERGROUND PETROLEUM TANKS
UNOCAL 76 SERVICE STATION
20405 REDWOOD ROAD
CASTRO VALLEY, CALIFORNIA

Job No. P89134
February 1990
FIGURE: 9

BSK & Associates

INDIVIDUAL WELL FIELD LOG - WATER SAMPLING

Job No.: P89134 Project: R.T. Nahas - Castro Valley

Date: 12/14/89 Personnel: M. Cline Weather: clear/cool

Well Identification: MW-2

Depth to Water: 10.98 Well Depth: 30' Water Volume: 3.1 gallons

Reference Point Elevation: -1.4 below curb Groundwater Elevation: 12.38'

Measurement Technique: Ref. = T.O.C., south side Redwood Road

Immiscible Layers: Top: None observed Bottom: None observed

Detection Method: Visual Collection Method: PVC Bailer

Purging: Begin Purge @ 12:25 End Purge @ 12:45 Total Time: 20 min.

Pumping Rate: 1.25g. per/min Total Volume: 25 gal. Well Yeild: High~~xxxx~~

Equipment/Procedure: PVC hand pump

Sampling. Equipment/Procedure: Teflon bailer top of water

Chem No.:

Constituents & Parameters: TVH, BTXE

Containers: Two 40 ml. VOA glass vials

Field Analysis:

Time:	12:25	12:30	12:36	12:40	12:45	
Ec/Range:	1038	988	963	941	942	
pH:	6.39	6.32	6.28	6.14	6.14	
Temp f/c:	70.4	70.4	70.2	70.0	69.4	
Sampled: (gallon)	5	10	15	20	25	

Storage Container Temp: Min _____ Max _____ Mean _____

Field Observations:

Job No. P89134
February, 1990
FIGURE: 10

BSK & Associates

INDIVIDUAL WELL FIELD LOG - WATER SAMPLING

Job No.: P89134 Project: R.T. Nahas, Castro Valley

Date: 12/14/89 Personnel: M. Cline Weather: clear/cool

Well Identification: MW-3

Depth to Water: 11.23 Well Depth: 30' Water Volume: 3.1 gallons

Reference Point Elevation: -0.98 below curb Groundwater Elevation: 12.21

Measurement Technique: Ref. = T.O.C., south side Redwood Road

Immiscible Layers: Top: None observed Bottom: None observed

Detection Method: Visual Collection Method: PVC bailer

Purging: Begin Purge @ 13:30 End Purge @ 13:45 Total Time: 15 min.

Pumping Rate: 1.7g. per/min Total Volume: 25 gal Well Yeild: High/~~Low~~

Equipment/Procedure: PVC hand pump

Sampling: Equipment/Procedure: Tetlon bailer, top of water

Chem No.:

Constituents & Parameters: TVH and BTXE

Containers: Two 40 ml. VOA glass vials

Field Analysis:

Time:	13:30	13:34	13:38	13:41	13:45	
Ec/Range:	923	903	900	905	873	
pH:	6.90	6.54	6.39	6.36	6.34	
Temp f/c:	67.7	68.2	67.9	68.1	68.1	
Sampled: (gallon)	5	10	15	20	25	

Storage Container Temp: Min _____ Max _____ Mean _____

Field Observations:

Job No. P89134
February, 1990
FIGURE: 11

BSK & Associates

INDIVIDUAL WELL FIELD LOG - WATER SAMPLING

Job No.: P89134 Project: R.T. Nahas, Castro Valley

Date: 12/14/89 Personnel: M. Cline Weather: Clear/cool

Well Identification: MW-4

Depth to Water: 12.10 Well Depth: 25' Water Volume: 2.1 gals.

Reference Point Elevation: -0.3 below curb Groundwater Elevation: 12.40

Measurement Technique: Ref. = T.O.C., south side, Redwood Road

Immiscible Layers: Top: None observed Bottom: None observed

Detection Method: Visual Collection Method: PVC Bailer

Purging: Begin Purge @ 10:50 End Purge @ 11:01 Total Time: 11 min.

Pumping Rate: 1.8g. per/min Total Volume: 20 gal. Well Yeild: High

Equipment/Procedure: PVC hand pump

Sampling: Equipment/Procedure: Teflon bailer top of water

Chem No.:

Constituents & Parameters: TPH, BTXE, EPA 601 and Oil & Grease

Containers: Two-1 liter amber glass and two-40 ml. VOA glass vials

Field Analysis:

Time:	10:50	10:53	10:57	11:01		
Ec/Range:	736	753	738	743		
pH:	6.01	6.05	6.12	6.12		
Temp f/c:	68.2	68.2	68.7	68.9		
Sampled: (gallon)	5	10	15	20		

Storage Container Temp: Min _____ Max _____ Mean _____

Field Observations:

Job No. P89134
February, 1990
FIGURE: 12

BSK & Associates

APPENDIX "A"

CHEMICAL TEST DATA SHEETS

AND CHAIN OF CUSTODY RECORDS

BSK
& Associates

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-1

BSK-Pleasanton
P89134

Lab No. Ch894019-9

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 1315 hrs. Date Received 12/7/89

MW-1, No. 1 at 5' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

*110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-2

BSK-Pleasanton
P89134

Lab No. Ch894019-10

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 1603 hrs. Date Received 12/7/89

MW-1, No. 2 at 10' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	1.8	0.02
Toluene	7.8	0.02
Ethylbenzene	3.8	0.02
Total Xylene Isomers	20	0.02
Total Volatile Hydrocarbons	89	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

.10689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-3

BSK-Pleasanton
P89134

Lab No. Ch894019-11

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 1622 hrs. Date Received 12/7/89

MW-1, No. 3 at 15' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	0.09	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

10689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-4

BSK-Pleasanton
P89134

Lab No. Ch894019-12

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 1640 hrs. Date Received 12/7/89

MW-1, No. 4 at 19' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-5

BSK Pleasanton
P89134

Lab No. Ch894058-1

Report Date 12/28/89

Sample Type Soil

Date Sampled 12/7/89

Sample Description 1140 hrs.

Date Received 12/8/89

MW-1A at 5'

Date of Analyses 12/13/89

Soil Analyses for Total Organic Lead

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Organic Lead	ND	2.0

Method: DHS

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-6

BSK Pleasanton
P89134

Lab No. Ch894058-1

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1140 hrs. Date Received 12/8/89

MW-1A at 5' Date of Analyses 12/10/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-7

BSK Pleasanton
P89134

Lab No. Ch894058-1

Report Date 12/28/89

Sample Type Soil

Date Sampled 12/7/89

Sample Description 1140 hrs.

Date Received 12/8/89

MW-1A at 5'

Date of Analyses 12/15/89

Soil Analyses for TPH

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	ND	10

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-8

BSK Pleasanton
P89134

Lab No. Ch894058-2

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1157 hrs. Date Received 12/8/89

MW-1A at 10' Date of Analyses 12/13/89

Soil Analyses for Total Organic Lead

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Organic Lead	ND	2.0

Method: DHS

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

FIGURE: A-9

BSK Pleasanton
P89134

Lab No. Ch894058-2

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1157 hrs. Date Received 12/8/89

MW-1A at 10' Date of Analyses 12/10/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	2.2	0.02
Toluene	11	0.02
Ethylbenzene	5.4	0.02
Total Xylene Isomers	25	0.02
Total Volatile Hydrocarbons	110	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-10

BSK Pleasanton
P89134

Lab No. Ch894058-2

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1157 hrs. Date Received 12/8/89

MW-1A at 10' Date of Analyses 12/15/89

Soil Analyses for TPH

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	50*	10

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

*Note: This sample contains lower molecular weight hydrocarbons.

QA/QC Supervisor

Organics Supervisor

110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-11

BSK Pleasanton
P89134

Lab No. Ch894058-3

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1208 hrs. Date Received 12/8/89

MW-1A at 13' Date of Analyses 12/13/89

Soil Analyses for Total Organic Lead

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Organic Lead	ND	2.0

Method: DHS

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-12

BSK Pleasanton
P89134

Lab No. Ch894058-3

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1208 hrs. Date Received 12/8/89

MW-1A at 13' Date of Analyses 12/10/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	0.64	0.02
Toluene	0.71	0.02
Ethylbenzene	0.64	0.02
Total Xylene Isomers	3.5	0.02
Total Volatile Hydrocarbons	11	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-13

BSK Pleasanton
P89134

Lab No. Ch894058-3

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1208 hrs. Date Received 12/8/89

MW-1A at 13' Date of Analyses 12/15/89

Soil Analyses for TPH

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	ND	10

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-14

BSK Pleasanton
P89134

Lab No. Ch894058-4

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1220 hrs. Date Received 12/8/89

MW-1A at 16.5' Date of Analyses 12/13/89

Soil Analyses for Total Organic Lead

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Organic Lead	ND	2.0

Method: DHS

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

10789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-15

BSK Pleasanton
P89134

Lab No. Ch894058-4

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1220 hrs. Date Received 12/8/89

MW-1A at 16.5' Date of Analyses 12/10/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

FIGURE: A-16

BSK Pleasanton
P89134

Lab No. Ch894058-4

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1220 hrs. Date Received 12/8/89

MW-1A at 16.5' Date of Analyses 12/15/89

Soil Analyses for TPH

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	ND	10

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

10789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-17

BSK-Pleasanton
P89134

Lab No. Ch894019-1

Report Date 12/13/89

Sample Type Soil

Date Sampled 12/4/89

Sample Description MW-2, No. 1 at 5'

Date Received 12/7/89

Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-18

BSK-Pleasanton
P89134

Lab No. Ch894019-2

Report Date 12/13/89

Sample Type Soil Date Sampled 12/4/89

Sample Description 1035 hrs. Date Received 12/7/89

MW-2, No. 2 at 10' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	0.05	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	0.03	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

210689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-19

BSK-Pleasanton
P89134

Lab No. Ch894019-3

Report Date 12/13/89

Sample Type Soil Date Sampled 12/4/89

Sample Description 1050 hrs. Date Received 12/7/89

MW-2, No. 3 at 15' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

FIGURE: A-20

BSK-Pleasanton
P89134

Lab No. Ch894019-4

Report Date 12/13/89

Sample Type Soil Date Sampled 12/4/89

Sample Description 1110 hrs. Date Received 12/7/89

MW-2, No. 4 at 20' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

10689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-21

BSK-Pleasanton
P89134

Lab No. Ch894019-5

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 0825 hrs. Date Received 12/7/89

MW-3, No. 1 at 5' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-22

BSK-Pleasanton
P89134

Lab No. Ch894019-6

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 0839 hrs. Date Received 12/7/89

MW-3, No. 2 at 10' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-23

BSK-Pleasanton
P89134

Lab No. Ch894019-7

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 0856 hrs. Date Received 12/7/89

MW-3, No. 3 at 15' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	0.97	0.02
Total Xylene Isomers	4.0	0.02
Total Volatile Hydrocarbons	92	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-24

BSK-Pleasanton
P89134

Lab No. Ch894019-8

Report Date 12/13/89

Sample Type Soil Date Sampled 12/5/89

Sample Description 0913 hrs. Date Received 12/7/89

MW-3, No. 4 at 19' Date of Analyses 12/9/89

Soil Analyses for BTXE and TVH

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02
Total Volatile Hydrocarbons	ND	10.

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110689

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-25

BSK Pleasanton
P89134

Lab No. Ch894058-5

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1505 hrs. Date Received 12/8/89

MW-4 at 5' Date of Analyses 12/10/89

Soil Analyses for BTXE

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02

Method: BTXE-EPA 8020

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-26

BSK Pleasanton
P89134

Lab No. Ch894058-5

Report Date 12/28/89

Sample Type Soil

Date Sampled 12/7/89

Sample Description 1505 hrs.

Date Received 12/8/89

MW-4 at 5'

Date of Analyses 12/10/89

Oil & Grease

Analyte	Units	Results	DLR
Oil and Grease	mg/kg	ND	100

ND-None Detected BDL-Below Detection Limit
DLR-Detection Limit For the Purposes of Reporting
Analyses performed by Method EPA 413.1

QA/QC Supervisor

Organics Supervisor

R110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

FIGURE: A-27

BSK Pleasanton
P89134

Lab No. Ch894058-5

Report Date 12/28/89

Sample Type Soil

Date Sampled 12/7/89

Sample Description 1505 hrs.

Date Received 12/8/89

MW-4 at 5'

Date of Analyses 12/14/89

Analyses For Purgeable Halocarbons by EPA Method 8010

Compound	Results (mg/kg)	DLR	Compound	Results (mg/kg)	DLR
Bromodichloromethane ...	ND	0.01	1,2-Dichloroethane	ND	0.01
Bromoform	ND	0.01	1,1-Dichloroethene	ND	0.01
Bromomethane	ND	0.02	trans-1,2-Dichloroethene	ND	0.01
Carbon tetrachloride ...	ND	0.01	1,2-Dichloropropane	ND	0.01
Chlorobenzene	ND	0.01	cis-1,3-Dichloropropene .	ND	0.01
Chloroethane	ND	0.01	trans-1,3-Dichloropropene	ND	0.01
2-Chloroethylvinyl ether	ND	0.02	Methylene chloride	ND	0.01
Chloroform	ND	0.01	1,1,2,2-tetrachloroethane	ND	0.01
Cloromethane	ND	0.01	Tetrachloroethene	ND	0.01
Dibromochloromethane ...	ND	0.01	1,1,1-Trichloroethane ...	ND	0.01
1,2-Dichlorobenzene	ND	0.01	1,1,2-Trichloroethane ...	ND	0.01
1,3-Dichlorobenzene	ND	0.01	Trichloroethene	ND	0.01
1,4-Dichlorobenzene	ND	0.01	Trichlorofluoromethane ..	ND	0.01
Dichlorodifluoromethane	ND	0.04	Vinyl chloride	ND	0.02
1,1-Dichloroethane	ND	0.01			

ND-None Detected BDL-Below Detection Limit
DLR-Detection Limit for the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110389

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

FIGURE: A-28

BSK Pleasanton
P89134

Lab No. Ch894058-5

Report Date 12/28/89

Sample Type Soil

Date Sampled 12/7/89

Sample Description 1505 hrs. MW-4 at 5'

Date Received 12/8/89

Date of Analyses 12/15/89

Soil Analyses for TPH

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	ND	10

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110789

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

FIGURE: A-29

BSK Pleasanton
P89134

Lab No. Ch894058-6

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1516 hrs. Date Received 12/8/89

MW-4 at 8.5' Date of Analyses 12/10/89

Soil Analyses for BTXE

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02

Method: BTXE-EPA 8020

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

FIGURE: A-30

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894058-6

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1516 hrs. Date Received 12/8/89

MW-4 at 8.5' Date of Analyses 12/10/89

Oil & Grease

Analyte	Units	Results	DLR
Oil and Grease	mg/kg	ND	100

ND-None Detected BDL-Below Detection Limit
DLR-Detection Limit For the Purposes of Reporting
Analyses performed by Method EPA 413.1

QA/QC Supervisor

Organics Supervisor

R110789

FIGURE: A-31

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894058-6

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1516 hrs. Date Received 12/8/89

MW-4 at 8.5' Date of Analyses 12/14/89

Analyses For Purgeable Halocarbons by EPA Method 8010

Compound	Results (mg/kg)	DLR	Compound	Results (mg/kg)	DLR
Bromodichloromethane ...	ND	0.01	1,2-Dichloroethane	ND	0.01
Bromoform	ND	0.01	1,1-Dichloroethene	ND	0.01
Bromomethane	ND	0.02	trans-1,2-Dichloroethene	ND	0.01
Carbon tetrachloride ...	ND	0.01	1,2-Dichloropropane	ND	0.01
Chlorobenzene	ND	0.01	cis-1,3-Dichloropropene .	ND	0.01
Chloroethane	ND	0.01	trans-1,3-Dichloropropene	ND	0.01
2-Chloroethylvinyl ether	ND	0.02	Methylene chloride	ND	0.01
Chloroform	ND	0.01	1,1,2,2-tetrachloroethane	ND	0.01
Cloromethane	ND	0.01	Tetrachloroethene	ND	0.01
Dibromochloromethane ...	ND	0.01	1,1,1-Trichloroethane ...	ND	0.01
1,2-Dichlorobenzene	ND	0.01	1,1,2-Trichloroethane ...	ND	0.01
1,3-Dichlorobenzene	ND	0.01	Trichloroethene	ND	0.01
1,4-Dichlorobenzene	ND	0.01	Trichlorofluoromethane ..	ND	0.01
Dichlorodifluoromethane	ND	0.04	Vinyl chloride	ND	0.02
1,1-Dichloroethane	ND	0.01			

ND-None Detected BDL-Below Detection Limit
DLR-Detection Limit for the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110389

FIGURE: A-32

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894058-6

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1516 hrs. Date Received 12/8/89

MW-4 at 8.5' Date of Analyses 12/15/89

Soil Analyses for TPH

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	ND	10

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110789

FIGURE: A-33

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894058-7

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1543 hrs. Date Received 12/8/89

MW-4 at 13' Date of Analyses 12/10/89

Soil Analyses for BTXE

Compound	Results (mg/kg)	Detection Limit (DLR)
Benzene	ND	0.02
Toluene	ND	0.02
Ethylbenzene	ND	0.02
Total Xylene Isomers	ND	0.02

Method: BTXE-EPA 8020

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

FIGURE: A-34

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894058-7

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1543 hrs. Date Received 12/8/89

MW-4 at 13' Date of Analyses 12/10/89

Oil & Grease

Analyte	Units	Results	DLR
Oil and Grease	mg/kg	ND	100

ND-None Detected BDL-Below Detection Limit
DLR-Detection Limit For the Purposes of Reporting
Analyses performed by Method EPA 413.1

QA/QC Supervisor

Organics Supervisor

R110789

FIGURE: A-35

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894058-7

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1543 hrs. Date Received 12/8/89

MW-4 at 13' Date of Analyses 12/14/89

Analyses For Purgeable Halocarbons by EPA Method 8010

Compound	Results (mg/kg)	DLR	Compound	Results (mg/kg)	DLR
Bromodichloromethane ...	ND	0.01	1,2-Dichloroethane	ND	0.01
Bromoform	ND	0.01	1,1-Dichloroethene	ND	0.01
Bromomethane	ND	0.02	trans-1,2-Dichloroethene	ND	0.01
Carbon tetrachloride ...	ND	0.01	1,2-Dichloropropane	ND	0.01
Chlorobenzene	ND	0.01	cis-1,3-Dichloropropene .	ND	0.01
Chloroethane	ND	0.01	trans-1,3-Dichloropropene	ND	0.01
2-Chloroethylvinyl ether	ND	0.02	Methylene chloride	ND	0.01
Chloroform	ND	0.01	1,1,2,2-tetrachloroethane	ND	0.01
Cloromethane	ND	0.01	Tetrachloroethene	ND	0.01
Dibromochloromethane ...	ND	0.01	1,1,1-Trichloroethane ...	ND	0.01
1,2-Dichlorobenzene	ND	0.01	1,1,2-Trichloroethane ...	ND	0.01
1,3-Dichlorobenzene	ND	0.01	Trichloroethene	ND	0.01
1,4-Dichlorobenzene	ND	0.01	Trichlorofluoromethane ..	ND	0.01
Dichlorodifluoromethane	ND	0.04	Vinyl chloride	ND	0.02
1,1-Dichloroethane	ND	0.01			

ND-None Detected BDL-Below Detection Limit
DLR-Detection Limit for the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110389

FIGURE: A-36

BSK & Associates Chemical Laboratories

1414 Stanislaus Street • Fresno, California 93706 • Telephone (209) 485-8310 • Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894058-7

Report Date 12/28/89

Sample Type Soil Date Sampled 12/7/89

Sample Description 1543 hrs. Date Received 12/8/89

MW-4 at 13' Date of Analyses 12/15/89

Soil Analyses for TPH

Compound	Results (mg/kg)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	ND	10

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

110789

FIGURE: A-37

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894137-5

Report Date 1/3/90

Sample Type Water Date Sampled 12/14/89

Sample Description 1255 hrs. Date Received 12/15/89

MW-2 #1 Date Analyses Completed 12/16/89

Water Analyses for BTXE and TVH

Compound	Results (ug/l)	Detection Limit (DLR)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Total Xylene Isomers	ND	0.5
Total Volatile Hydrocarbons	72	50

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110689

FIGURE: A-38

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894137-6

Report Date 1/3/90

Sample Type Water Date Sampled 12/14/89

Sample Description 1355 hrs. Date Received 12/15/89

MW-3 #1 Date Analyses Completed 12/16/89

Water Analyses for BTXE and TVH

Compound	Results (ug/l)	Detection Limit (DLR)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Total Xylene Isomers	ND	0.5
Total Volatile Hydrocarbons	ND	50

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110689

FIGURE: A-39

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894137-1

Report Date 1/3/90

Sample Type Water

Date Sampled 12/14/89

Sample Description 1125 hrs.

Date Received 12/15/89

MW-4 #1

Date Analyses Completed 12/19/89

Analyses For Purgeable Halocarbons In Water by EPA Method 601

Compound	Results (ug/l)	DLR	Compound	Results (ug/l)	DLR
Bromodichloromethane ...	ND	0.5	1,2-Dichloroethane	ND	0.5
Bromoform	ND	0.5	1,1-Dichloroethene	ND	0.5
Bromomethane	ND	1.0	trans-1,2-Dichloroethene	ND	0.5
Carbon tetrachloride ...	ND	0.5	1,2-Dichloropropane	ND	0.5
Chlorobenzene	ND	0.5	cis-1,3-Dichloropropene .	ND	0.5
Chloroethane	ND	0.5	trans-1,3-Dichloropropene	ND	0.5
2-Chloroethylvinyl ether	ND	1.0	Methylene chloride	ND	0.5
Chloroform	ND	0.5	1,1,2,2-tetrachloroethane	ND	0.5
Cloromethane	ND	0.5	Tetrachloroethene	ND	0.5
Dibromochloromethane ...	ND	0.5	1,1,1-Trichloroethane ...	ND	0.5
1,2-Dichlorobenzene	ND	0.5	1,1,2-Trichloroethane ...	ND	0.5
1,3-Dichlorobenzene	ND	0.5	Trichloroethene	ND	0.5
1,4-Dichlorobenzene	ND	0.5	Trichlorofluoromethane ..	ND	0.5
Dichlorodifluoromethane	ND	2.0	Vinyl chloride	ND	1.0
1,1-Dichloroethane	ND	0.5			

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit for the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110389

FIGURE: A-40

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894137-2

Report Date 1/3/90

Sample Type Water Date Sampled 12/14/89

Sample Description 1127 hrs. Date Received 12/15/89

MW-4 #2 Date Analyses Completed 12/16/89

Water Analyses for BTXE and TVH

Compound	Results (ug/l)	Detection Limit (DLR)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
Total Xylene Isomers	ND	0.5
Total Volatile Hydrocarbons	ND	50

Method: BTXE-EPA 8020 TVH-EPA 8015M

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110689

FIGURE: A-41

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894137-3

Report Date 1/3/90

Sample Type Water Date Sampled 12/14/89

Sample Description 1140 hrs. Date Received 12/15/89

MW-4 #3 Date Analyses Completed 12/26/89

Water Analyses for TPH

Compound	Results (ug/l)	Detection Limit (DLR)
Total Petroleum Hydrocarbons	ND	100

Method: TPH DHS GC/FID

ND-None Detected BDL-Below Detection Limit

DLR-Detection Limit For the Purposes of Reporting

QA/QC Supervisor

Organics Supervisor

R110789

FIGURE: A-42

BSK & Associates Chemical Laboratories

1414 Stanislaus Street * Fresno, California 93706 * Telephone (209) 485-8310 * Fax (209) 485-7427

BSK Pleasanton
P89134

Lab No. Ch894137-4

Report Date 1/3/90

Sample Type Water Date Sampled 12/14/89

Sample Description 1143 hrs. Date Received 12/15/89

MW-4 #4 Date Analyses Completed 12/18/89

Oil & Grease

Analyte	Units	Results	DLR
Oil and Grease	mg/l	ND	5

ND-None Detected BDL-Below Detection Limit
DLR-Detection Limit For the Purposes of Reporting
Analyses performed by Method EPA 413.1

QA/QC Supervisor

Organics Supervisor

R110789

BSK Log Number 4099

ANALYSIS REQUEST/CHAIN OF CUSTODY RECORD

1000-0419

Client Name: Bsk Pleasanton	Project or PO.#: P89134
Address: 5729 F Sonoma Dr.	Phone #: 462 4000
City, State, Zip: Pleasanton, CA 94566	Report, attention: Tim Berger

Date sampled	Time sampled	Type (See key below)	Sampled by: Marty Cline / Sample description	Number of containers	Lab Sample number	Sample Seals (See key below)	BTXE & TVH	Hazardous sample Special handling required	Remarks
12/4/89	—	SO	MW-2, No.1 at 5'	1	-1	P	X		EXPEDITE
"	10:35	SO	" No.2 at 10'	1	-2		X		
"	10:50	SO	" No.3 at 15'	1	-3		X		12/14
"	11:10	SO	" No.4 at 20'	1	-4		X		
12/5/89	8:25	SO	MW-3, No.1 at 5'	1	-5		X		
"	8:39	SO	" No.2 at 10'	1	-6		X		Results due
"	8:56	SO	" No.3 at 15'	1	-7		X		12/28/89
"	9:13	SO	" No.4 at 19'	1	-8		X		
12/5/89	13:15	SO	MW-1, No.1 at 5'	1	-9		X		

Lab Use Only in this section

Analysis required: BTXE & TVH; Hazardous sample Special handling required; CS

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: Jim Berger
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	Jim Berger	Tim Berger	BSK-P	12/6/89	1200
Received by		CHRIS STOCKLI	ESK	12-7-89	1300
Relinquished by					
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-43

BSK Log Number 4019

ANALYSIS REQUEST/CHAIN OF CUSTODY RECORD

1000-0420

Client Name: BSK - Pleasanton	Project or P.O.# 789134
Address: 5729 F Sonoma Dr.	Phone # 462 4000
City, State, Zip: Pleasanton, CA 94566	Report, attention: Tim Berger

Lab Use Only in this section

Analysis required: BTXE & TVH; Hazardous sample Special handling required

Date sampled	Time sampled	Type (See key below)	Sampled by: Marty Cline / Sample description	Number of containers	Lab Sample number	Sample Seals (See key below)	BTXE & TVH	Hazardous sample Special handling required	Remarks
12/5/89	16:03	SO	MW-1, No. 2 at 10'	1	-10	P	X		
"	16:22	SO	" , No. 3 at 15'	1	-11		X		smelly
"	16:40	SO	" , No. 4 at 19'	1	-12		X		
									EXPEDITE 12/14
									Results due 12/28/89

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: Tim Berger
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	Tim Berger	Tim Berger	BSK-P	12/6/89	1200
Received by	[signature]	CHRIS STOCKE	BSK	12-7-89	1300
Relinquished by					
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-44

BSK Log Number 4058

ANALYSIS REQUEST/CHAIN OF CUSTODY RECORD

1000-0421

Client Name	Project or P.O.#
BSK Pleasanton	P89134
Address	**Phone #**
5729-F Sonoma Dr.	(415)462-4000
City, State, Zip	**Report, attention**
Pleasanton CA	Alex Eskandari

Sampled by: Martin Cline

Date sampled	Time sampled	Type (See key below)	Sample description	Number of containers	Lab Sample number	Sample Seals (See key below)	TPH G	BTX&E	TEL	TPH D	O&G	CL HC (8010)	Hazardous sample Special handling required	Remarks
~~12-7-89~~	11:40	SO	MW-1A at 5'	1	-1	P	X	X	X	X				
12-7-89	11:57	SO	MW-1A at 10'	1	-2		X	X	X	X				EXPEDITE
12-7-89	12:08	SO	MW-1A at 13'	1	-3		X	X	X	X				
12-7-89	12:20	SO	MW-1A at 16.5'	1	-4		X	X	X	X				12/15
12-7-89	15:05	SO	MW-4 at 5'	1	-5			X		X	X	X		
12-7-89	15:16	SO	MW-4 at 8.5'	1	-6			X		X	X	X		
12-7-89	15:43	SO	MW-4 at 13'	1	-7			X		X	X	X		

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 Cli
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 Cli	Martin Cline	BSK & Assoc.	12-8-89	8:30
Received by	Dus. Eduarjc	BSK-LAB		12/8	1630
Relinquished by					
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-45

BSK Log Number 4137

ANALYSIS REQUEST/CHAIN OF CUSTODY RECORD

1000-0572

Client Name: BSK Pleasanton	Project or P.O.#: P84134
Address: 5779-F Sonoma Dr.	Phone #: (415) 462-4000
City, State, Zip: Pleasanton, CA 94566	Report, attention: Alex Eskandari

Date sampled	Time sampled	Type (See key below)	Sampled by / Sample description	Number of containers	Lab Sample number	Sample Seals (See key below)	BTX&E	TPH-G	TPH-Diesel	Oil & Grease	EPA 601	Hazardous sample / Special handling required	Remarks
12/14/89	11:25	AQ	MW-4 #1	2	-1	A					X		
12/14/89	11:27	AQ	MW-4 #2	2	-2		X	X					
12/14/89	11:40	AQ	MW-4 #3	1	-3				X				
12/14/89	11:43	AQ	MW-4 #4	1	-4					X			
12/14/89	12:55	AQ	MW-2 #1	2	-5		X	X					
12/14/89	13:55	AQ	MW-3 #1	2	-6		X	X					

Analysis required: Combined

EXPEDITE

12/22

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: Matt Cli
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	Matt Cli	Martin Cline	BSK & Assoc.	12/14/89	15:30
Received by	David Edwards		BSK-LAB	12/15	1640
Relinquished by					
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-46