GeoStrategies Inc.

WELL INSTALLATION REPORT

Shell Service Station
4411 Fotthill Boulevard
Oakland, California

768101-3

January 19, 1993

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

January 19, 1993

Shell Oil Company
Post Office Box 5278
Concord, California 94520

Attn: Mr. Dan Kirk

Re: **WELL INSTALLATION REPORT**
Shell Service Station
4411 Foothill Boulevard
Oakland, California

Mr. Kirk:

This Well Installation Report describes the installation of Monitoring Well S-1, drilled by GeoStrategies Inc. (GSI) on November 24, 1992 at the above referenced location (Plate 1). The work was performed to evaluate the extent and concentration of petroleum hydrocarbons in soils and groundwater adjacent to the former waste oil tank at the site. Field work was performed in accordance with the GSI Work Plan dated October 15, 1992, and with State of California and local agency guidelines for investigation of underground storage tanks and GSI Field Methods and Procedures.

BACKGROUND

A former waste oil tank located west of the station building was removed in February, 1992 as described in a GSI report dated March 26, 1992 (Plate 2). A GSI geologist observed the tank removal and collected a soil sample from below the tank, at a depth of 11-feet below grade. A composite soil sample was also collected from the soil stockpile. Chemical analysis of the soil samples indicated that the native soil below the tank was ND for petroleum hydrocarbons. The stockpile sample contained TPH-Gasoline, TPH-Diesel and Total Oil and Grease at concentrations of 5.2 ppm, 14 ppm, and 130 ppm, respectively.

:SHELL3/768101-3(rt)

HYDROGEOLOGIC CONDITIONS

The site is located on the nearly flat-lying surface of the East Bay plain, approximately 1-mile northeast of the Oakland Estuary (Plate 1). The Hayward Fault and the Oakland Hills are located approximately 2-miles northeast of the site.

The project site is underlain by Quaternary deposits (Qu), composed of alluvial sands, silts, clays and gravel, deposited in the eastern portion of the San Francisco Bay Basin. The geologic map (Radbruch, 1969), indicates that an old stream channel emerges from the moderately sloping area approximately 500 feet northeast of the site. This suggests that former stream deposits may occur near or below the site.

The exploratory boring encountered approximately 4 feet of clayey gravel fill under the asphalt pavement. Clay topsoil and clayey sand alluvium were encountered between 4 and 13 feet below grade. A bed or lens of coarse sand was encountered 13 to 19 feet below ground surface and silty clay extended to the final depth of 26.0 feet.

Static groundwater is approximately 9.5 feet below ground surface. Based on potentiometric data obtained by others at a nearby Chevron service station located across High Street, local groundwater flows to the southwest.

FIELD ACTIVITIES AND PROCEDURES

On November 24, 1992, Monitoring Well S-1 was drilled to a depth of 26.0 feet using a truck-mounted, hollow-stem auger drilling rig. Soil samples were collected at five-foot intervals using a modified California split-spoon sampler fitted with brass or stainless steel sample tube liners. A GSI geologist observed the drilling, described the soil samples using the Unified Soil Classification System and Munsell Soil Color Chart, and prepared a lithologic log for each boring. The Exploratory Boring Logs are presented in Appendix A.

Soil Sampling

An Organic Vapor Monitor (OVM) photoionization detector was used to perform head-space analyses on each soil sample, as a reconnaissance-level test for the presence of hydrocarbons in the soil. Head-space analysis results are presented on the Exploratory Boring Logs (Appendix A).

Soil samples retained for chemical analysis were collected in clean brass or stainless steel tube liners. Upon removal from the sampler, the tubes were immediately covered on both ends with teflon and sealed with plastic end caps. The soil samples were labeled, entered on a Chain-of-Custody Form, placed in a cooler with blue ice, and transported to Sequoia Analytical, a State-certified laboratory located in Redwood City, California.

Monitoring Well Installation

Monitoring Well S-1 was installed to a total depth of 24.5-feet below the existing ground surface, using 4-inch-diameter Schedule 40 PVC well casing and 15-feet of 0.020-inch machine-slotted well screen. Lonestar #2/12 graded sand was placed in the annular space across the entire screened interval, and extended 1.5 feet above the top of the well screen. A 1-foot thick bentonite seal was placed above the sand pack, and was hydrated with clean water. Cement grout was placed from the top of the bentonite to approximately 1.5 feet below ground surface. A concrete vault box, waterproof locking well cap and lock were placed at the top of the well casing. Well completion details are presented with the Exploratory Boring Logs in Appendix A.

CHEMICAL ANALYTICAL RESULTS

Soil Analyses

Each soil sample was analyzed for TPH-Gasoline, TPH-Diesel and TPH-Motor-Oil, according to EPA Method 8015 (Modified), and for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020. The sample from 11.0 feet below grade was also analyzed for Semi-Volatile Organic Hydrocarbons (EPA Method 8270). Chemical analytical results are summarized in Table 1, and the Sequoia Analytical Report and Chain-of-Custody form are presented in Appendix B.

Soil samples from depths of 11.0 and 16.0 feet contained TPH-Gasoline at concentrations of 110 part per million (ppm) and 2.8 ppm, respectively. The sample from 11.0 feet also contained TPH-Diesel and TPH-Motor Oil at concentrations of 180 ppm and 390 ppm, respectively. Semi-Volatile hydrocarbons detected in the soil at a depth of 11.0 feet included 2, 4-Dimethylphenol, 2-Methylnaphthalene, and Naphthalene, at concentrations of 160 parts per billion (ppb), 1900 ppb and 1900 ppb, respectively.

Well Development, Monitoring and Sampling

Monitoring Well S-1 was developed on December 9, 1992, by the Shell sampling contractor. Prior to ground-water sampling on December 18, 1992, static ground-water in Well S-1 was measured at 9.06 feet below the top of the well box, using an electronic oil-water interface probe. Groundwater elevations and physical parameters measured during well development and sampling are presented on Tables 2 and 3.

Ground-water Analysis

The ground-water sample collected from Well S-1 was analyzed for TPH-Gasoline, TPH-Diesel and TPH-Motor-Oil according to EPA Method 8015 (Modified) and BTEX according to EPA Method 8020. The groundwater samples contained TPH-Gasoline and TPH-Motor Oil at concentrations of 41,000 parts per billion (ppb) and 9,400 ppb, respectively. Volatile and Semi-Volatile hydrocarbons were also detected in the groundwater from Well S-1. Chemical analytical data are summarized on Table 4, and a copy of the Sequoia Analytical Report and Chain-of-Custody form is presented in Appendix C.

DISCUSSION

GSI has reviewed Site Investigation and Quarterly Monitoring Reports for the nearby British Petroleum (BP) and Chevron service stations (see references). The BP station is located on the northeast corner of the intersection, and contains a total of 1 offsite and 7 onsite monitoring wells. The Chevron station is located on the northwest corner of the intersection, and contains a total of 3 offsite and 5 onsite monitoring wells.

Boring logs and cross-sections included in these reports indicate that the monitoring wells are screened in sand lenses deposited at various depths below the ground surface. Static groundwater elevations in these wells range from approximately +22 feet to -10 feet (MSL), and the groundwater generally flows to the west.

Chemical data from these wells indicate that high concentrations of TPH-Gasoline and benzene may exist in the groundwater below High Street, immediately north and west of the Shell site. This contamination appears to be downgradient of the UST's at the BP station, and possibly downgradient of the UST's at the Chevron station.

If you have any questions, please call.

GeoStrategies Inc. by,

Michael C. Carey
Engineering Geologist
C.E.G. 1351

MCC/rmt

Plate 1: Vicinity Map
Plate 2: Site Map

Appendix A: Exploratory Boring Logs and Well Construction Details
Appendix B: Soil Analytical Report and Chain-of-Custody Form
Appendix C: Groundwater Analytical Report and Chain-of-Custody Form

QC Review: JKP

:SHELL3/768101-3(rt)

REFERENCES

Alisto Engineering Group, May 19, 1992; Quarterly Monitoring and Sampling Report, B.P. Oil Company Service Station No. 11109; 4280 Foothill Boulevard, Oakland, California.

Alton GeoScience, Inc., February 16, 1989, Site Investigation Report, Former Mobile Service Station No. 10-H69; 4280 Foothill Boulevard, Oakland, California.

Groundwater Technology Inc., April 10, 1992, Groundwater Monitoring and Sampling Activities, Chevron Service Station No. 9-0076; 4265 Foothill Boulevard, Oakland, California.

Radbruch, D.H., 1969, Areal and Engineering Geology of the Oakland East Quadrangle, California.

Rittenhouse-Zeman and Associates, Inc, April 24, 1989, Limited Subsurface Petroleum Hydrocarbons Evaluation, Mobile Service Station No. 10-H69; 4280 Foothill Boulevard, Oakland, California.

Weiss Associates, December 18, 1990; Subsurface Investigation at Chevron Service Station No. 9-0076, 4265 Foothill Boulevard, Oakland, California.

Weiss Associates, January 30, 1992, Quarterly Ground-water Monitoring Report, Chevron Service Station No. 9-0076; 4265 Foothill Boulevard, Oakland, California.

TABLE 1

SOIL ANALYSES DATA
Shell Service Station
4411 Foothill Boulevard, Oakland

SAMPLE #	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	TPH-MO (PPM)
S-1-6.0	24-Nov-92	03-Dec-92	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	<1.0
S-1-11.0	24-Nov-92	03-Dec-92	110	0.45	<0.0050	2.2	8.0	180	390
S-1-16.0	24-Nov-92	03-Dec-92	2.8	0.050	0.51	0.097	0.50	<1.0	<1.0
S-1-21.0	24-Nov-92	03-Dec-92	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	<1.0
S-1-26.0	24-Nov-92	03-Dec-92	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<1.0	<1.0

TPH-MO = Total Petroleum Hydrocarbons calculated as Motor Oil
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
TPH-D = Total Petroleum Hydrocarbons calculated as Diesel
PPM = Parts Per Million

TABLE 2

WELL DEVELOPMENT DATA
SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD, OAKLAND

WELL NO.	DATE	CASING DIA. (IN)	WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	WATER ELEV. (FT)	METHOD OF PURGING	TIME	VOLUME PURGED (GALS)	pH	CONDUCTIVITY (uMHOS/cm)	TEMP (C)
S-1	09-Dec-92	4	24.5	N/A	9.37	----	N/A	Surge/Block	9:15	0	7.3	1530	61.7
									9:20	10	7.08	1580	63.3
									9:25	20	7.4	1650	64.4
									Dewatered				
									9:45	25	7.8	1480	62.2

TABLE 3

FIELD MONITORING DATA
SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD, OAKLAND

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	WATER ELEV. (FT)	METHOD OF PURGING	METHOD OF SAMPLING	TIME	VOLUME PURGED (GALS)	pH	CONDUCTIVITY (uMHOS/cm)	TEMP (C)
S-1	18-Dec-92	4	24.7	----	[illegible]	----	----	Diaphragm Pump	Bailer	10:34	3	7.69	848	65.5
										10:37	12	7.71	918	65.6
										10:40	21	7.68	956	65.5
										12:40	22	7.13	951	64.5

TABLE 4

GROUNDWATER ANALYTICAL DATA SUMMARY
SHELL SERVICE STATION
4411 FOOTHILL BOULEVARD, OAKLAND

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	TPH-MO (PPB)
13-Dec-92	S-1	41000	3100	1100	1200	8700	9400

41 ppm

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.680 ppm

CURRENT DHS ACTION LEVELS Toluene 0.1000 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
TPH-MO = Total Petroleum Hydrocarbons calculated as Motor Oil
PPB = Parts Per Billion

Notes: 1. All data shown as <x is reported as ND (none detected).
2. DHS Action Levels and MCLs are subject to change pending State review.

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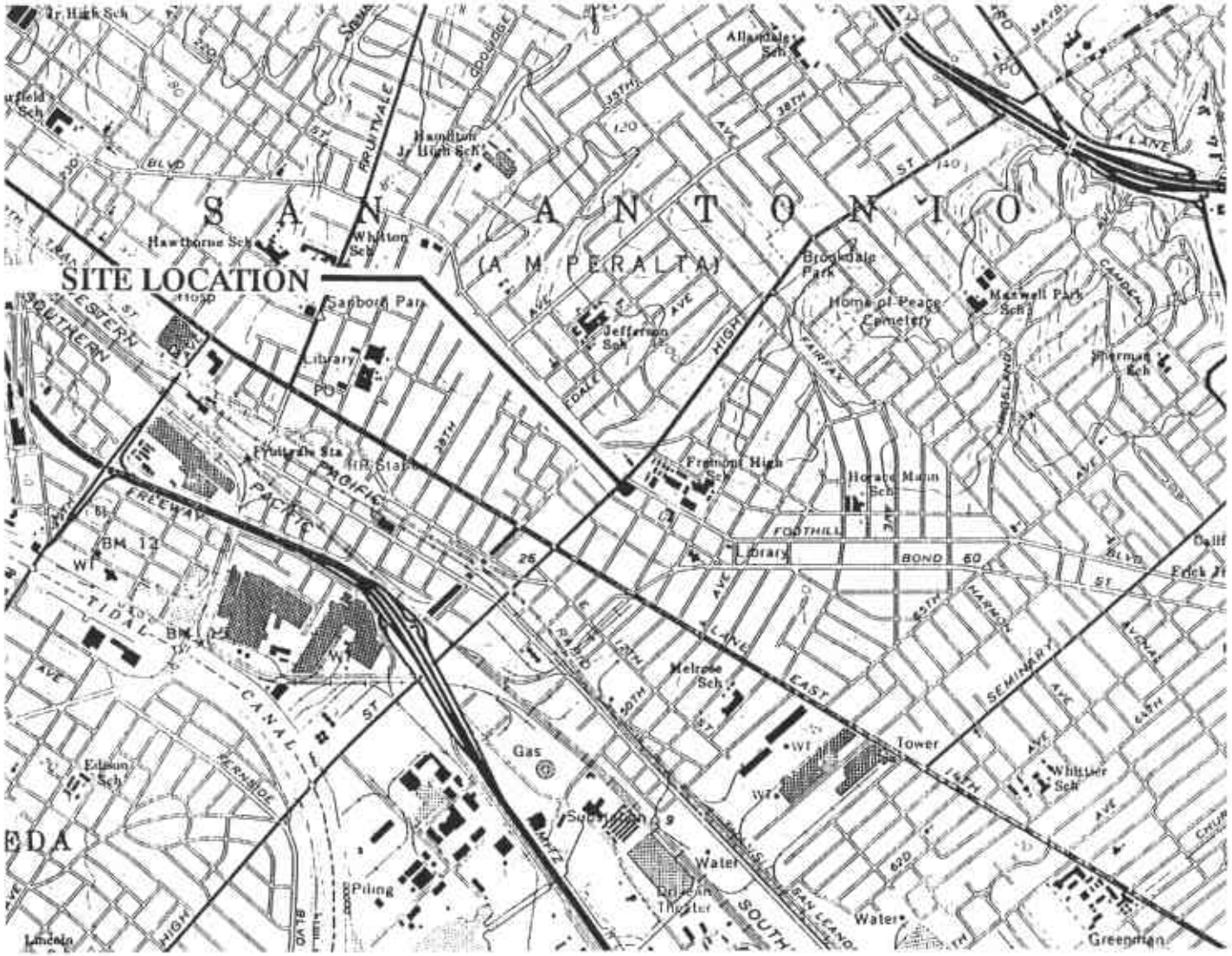


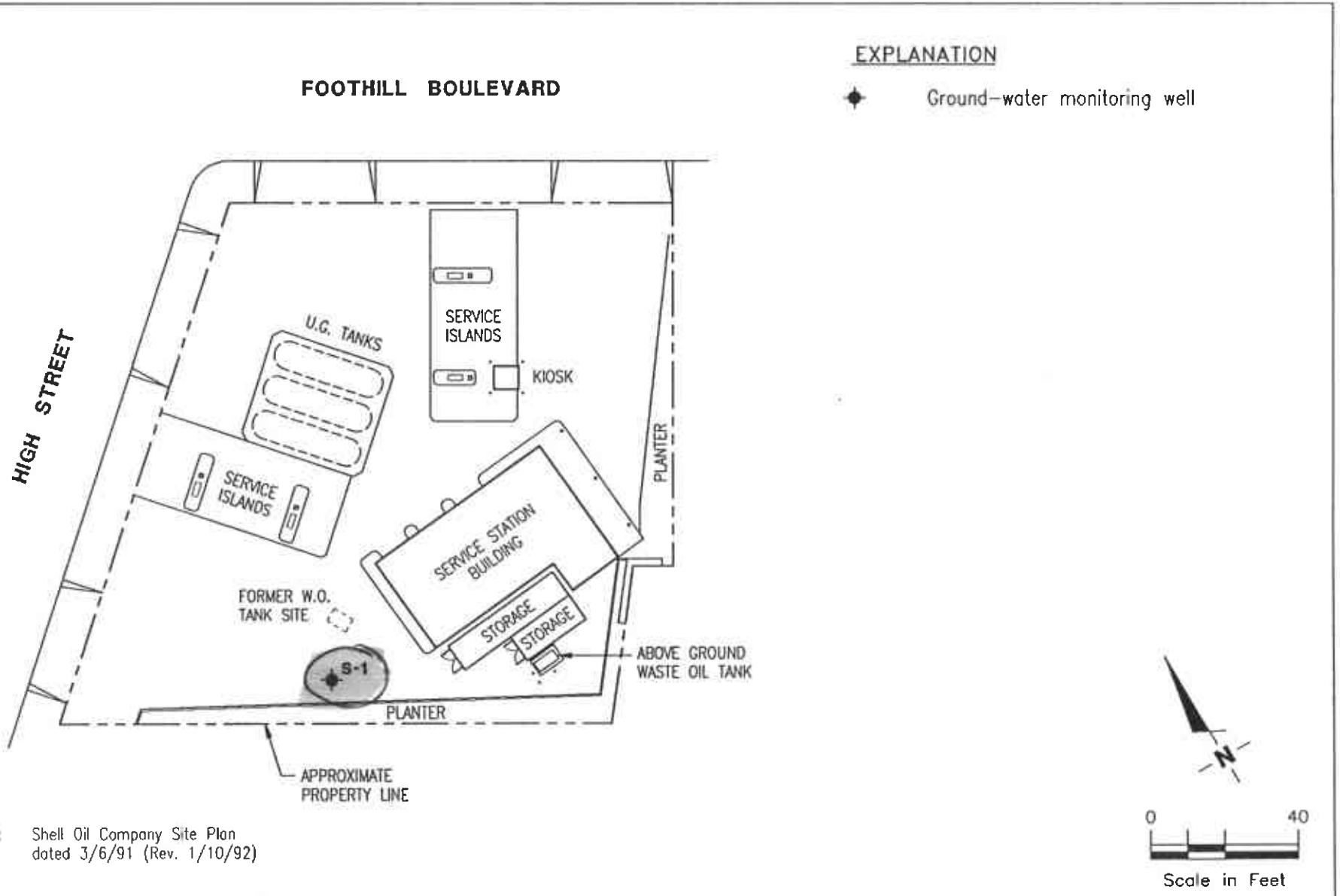
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Shell Service Station
4411 Foothill Boulevard
Oakland, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7681		3/92	



Base Map: Shell Oil Company Site Plan dated 3/6/91 (Rev. 1/10/92)

GeoStrategies Inc.

SITE PLAN
Shell Service Station
4411 Foothill Boulevard
Oakland, California

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7681	MCC	1/93	

APPENDIX A
EXPLORATORY BORING LOGS
WELL CONSTRUCTION DETAILS

Field location of boring:

(See Plate 2)

Project No.:	768101	Date: 11/24/92	Boring No: S-1
Client:	Shell Oil Company		
Location:	4411 Foothill		
City:	Oakland		Sheet 1 of 2
Logged by:	MCC	Driller: Gregg	

Casing installation data:

See Well Installation Detail

Drilling method: Hollow-Stem Auger

Hole diameter: 10-inches

Top of Box Elevation: N/A Datum: N/A

Water Level	9.37			
Time	09:15			
Date	12/9/92			

PID (ppm)	Blows/ft. * or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
								PAVEMENT SECTION - 0.5 ft.
				1				
				2				CLAYEY GRAVEL (GC) - strong brown (7.5 YR-5/6); medium dense, damp; 50% clay, 20% coarse sand, 30% gravel up to 3 inches in diameter (fill).
				3				
				4				
				5				CLAY (CL) - black (5Y-2.5/1); stiff, damp; 80% clay, 20% coarse sand.
			S-1					
3	14	S&H	6.0	6				
				7				
				8				
				9		▽		
				10				CLAYEY SAND (SC) - olive gray (5Y-5/3); medium dense, damp; 50% fine sand, 40% clay, 10% silt.
			S-1					
500	15	S&H	11.0	11				
				12				
				13				
				14				SAND (SP) - dark gray-brown (2.5Y-4/2); dense, saturated; 80% coarse sand and rock fragments, 20% silt and clay.
				15				
			S-1					
450	38	S&H	16.0	16				
				17				
				18				
				19				
				20				

Remarks:

* Converted to equivalent Standard Penetration blows/ft.

GeoStrategies Inc.

Log of Boring

BORING NO. S-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
768101	MCC	11/92		

Field location of boring:

(See Plate 2)

Project No.: 768101	Date: 11/24/92	Boring No: S-1	
Client: Shell Oil Company			
Location: 4411 Foothill			
City: Oakland		Sheet 2 of 2	
Logged by: MCC	Driller: Gregg		

Drilling method: Hollow-Stem Auger

Hole diameter: 10-inches

Casing installation data: See Well Installation Detail

Top of Box Elevation: N/A Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. * or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
			S-1					
7	22	S&H	21.0	21				SILTY CLAY (CL) - yellowish brown (10YR-5/4); very stiff, damp; 80% silty clay, 20% fine sand.
				22				
				23				
				24				
				25				
			S-1					
3	37	S&H	26.0	26				
				27				Bottom of boring at 26.0 ft. 11/24/92
				28				
				29				
				30				
				31				
				32				
				33				
				34				
				35				
				36				
				37				
				38				
				39				
				40				

Remarks:

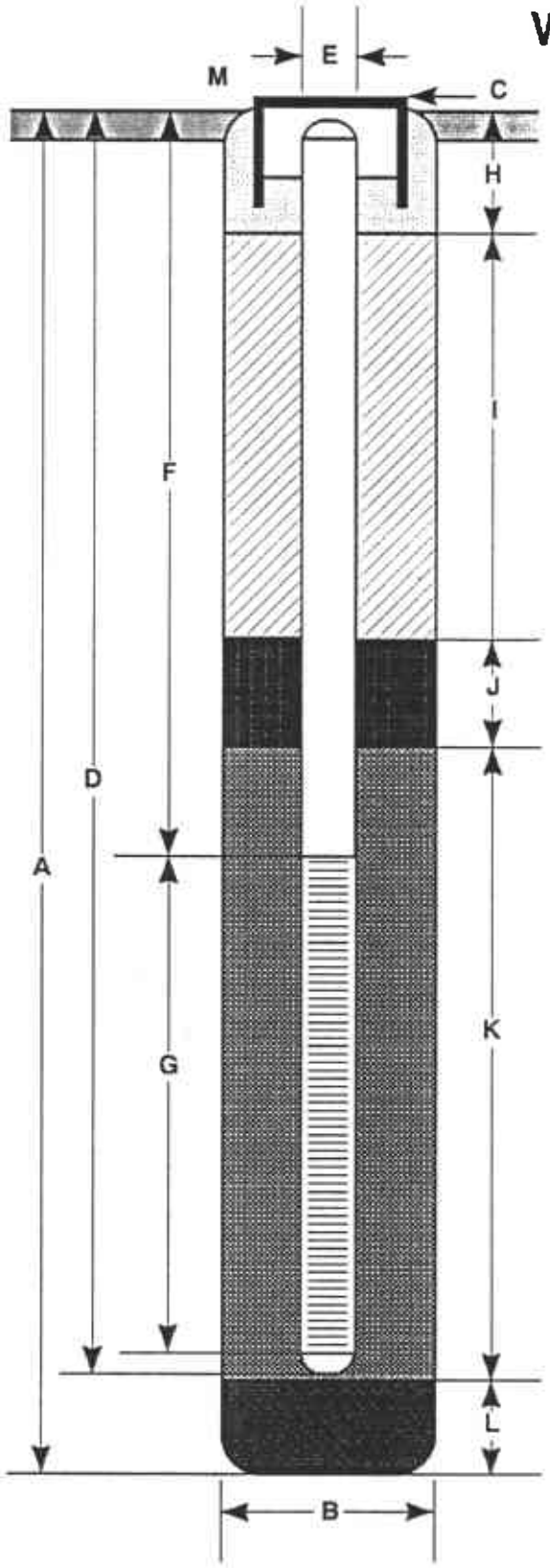
GeoStrategies Inc.

Log of Boring

BORING NO. S-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
768101	MCC	11/92		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 26.0 ft.

B Diameter of Boring 10.0 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation N/A ft.
☐ Referenced to Mean Sea Level
☐ Referenced to Project Datum

D Casing Length 24.5 ft.
Material Schedule 40 PVC

E Casing Diameter 4 in.

F Depth to Top Perforations 9.5 ft.

G Perforated Length 15.0 ft.
Perforated Interval from 24.5 to 9.5 ft.
Perforation Type Machine-Slotted
Perforation Size 0.020 in.

H Surface Seal from 0 to 1.5 ft.
Seal Material Concrete

I Backfill from 1.5 to 7.0 ft.
Backfill Material Neat Cement

J Seal from 7.0 to 8.0 ft.
Seal Material Bentonite

K Gravel Pack from 8.0 to 24.5 ft.
Pack Material Lonestar #2/12 Sand

L Bottom Seal 1.5 ft.
Seal Material Soil

M Traffic-rated vault box with locking well cap and lock.

Note: Depths measured from initial ground surface.

GeoStrategies Inc.

Well Construction Detail

WELL NO
S-1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
768101	MCC	11/92		

APPENDIX B
SOIL CHEMICAL ANALYTICAL REPORT
AND
CHAIN-OF-CUSTODY

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Robert Lauritzen

Project: Shell-4411 Foothill Blvd., Oakland

Enclosed are the results from 5 soil samples received at Sequoia Analytical on November 30,1992. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2114882	Soil, S-1-6.0	11/24/92	EPA 3550/8015 EPA 3550/8015 As Motor Oil EPA 5030/8015/8020
2114883	Soil, S-1-11.0	11/24/92	EPA 3550/8015 EPA 3550/8015 As Motor Oil EPA 5030/8015/8020 EPA 8270
2114884	Soil, S-1-16.0	11/24/92	EPA 3550/8015 EPA 3550/8015 As Motor Oil EPA 5030/8015/8020
2114885	Soil, S-1-21.1	11/24/92	EPA 3550/8015 EPA 3550/8015 As Motor Oil EPA 5030/8015/8020
2114886	Soil, S-1-26.0	11/24/92	EPA 3550/8015 EPA 3550/8015 As Motor Oil EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	Shell-4411 Foothill Blvd., Oakland	Sampled:	Nov 24, 1992
2150 W. Winton Avenue	Sample Descript:	Soil, S1-11.0	Received:	Nov 30, 1992
Hayward, CA 94545	Analysis Method:	EPA 8270	Extracted:	Dec 2, 1992
Attention: Robert Lauritzen	Lab Number:	211-4883	Analyzed:	Dec 2, 1992
			Reported:	Dec 8, 1992

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene	100	N.D.
Acenaphthylene	100	N.D.
Aniline	100	N.D.
Anthracene	100	N.D.
Benzidine	2,500	N.D.
Benzoic Acid	500	N.D.
Benzo(a)anthracene	100	N.D.
Benzo(b)fluoranthene	100	N.D.
Benzo(k)fluoranthene	100	N.D.
Benzo(g,h,i)perylene	100	N.D.
Benzo(a)pyrene	100	N.D.
Benzyl alcohol	100	N.D.
Bis(2-chloroethoxy)methane	100	N.D.
Bis(2-chloroethyl)ether	100	N.D.
Bis(2-chloroisopropyl)ether	100	N.D.
Bis(2-ethylhexyl)phthalate	500	N.D.
4-Bromophenyl phenyl ether	100	N.D.
Butyl benzyl phthalate	100	N.D.
4-Chloroaniline	100	N.D.
2-Chloronaphthalene	100	N.D.
4-Chloro-3-methylphenol	100	N.D.
2-Chlorophenol	100	N.D.
4-Chlorophenyl phenyl ether	100	N.D.
Chrysene	100	N.D.
Dibenz(a,h)anthracene	100	N.D.
Dibenzofuran	100	N.D.
Di-N-butyl phthalate	500	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,2-Dichlorobenzene	100	N.D.
3,3-Dichlorobenzidine	500	N.D.
2,4-Dichlorophenol	100	N.D.
Diethyl phthalate	100	N.D.
2,4-Dimethylphenol	100	160
Dimethyl phthalate	100	N.D.
4,6-Dinitro-2-methylphenol	500	N.D.
2,4-Dinitrophenol	500	N.D.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	Shell-4411 Foothill Blvd., Oakland	Sampled:	Nov 24, 1992
2150 W. Winton Avenue	Sample Descript:	Soil, S1-11.0	Received:	Nov 30, 1992
Hayward, CA 94545	Analysis Method:	EPA 8270	Extracted:	Dec 2, 1992
Attention: Robert Lauritzen	Lab Number:	211-4883	Analyzed:	Dec 2, 1992
			Reported:	Dec 8, 1992

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene	100	N.D.
2,6-Dinitrotoluene	100	N.D.
Di-N-octyl phthalate	100	N.D.
Fluoranthene	100	N.D.
Fluorene	100	N.D.
Hexachlorobenzene	100	N.D.
Hexachlorobutadiene	100	N.D.
Hexachlorocyclopentadiene	100	N.D.
Hexachloroethane	100	N.D.
Indeno(1,2,3-cd)pyrene	100	N.D.
Isophorone	100	N.D.
2-Methylnaphthalene	100	1,500
2-Methylphenol	100	N.D.
4-Methylphenol	100	N.D.
Naphthalene	100	1,900
2-Nitroaniline	500	N.D.
3-Nitroaniline	500	N.D.
4-Nitroaniline	500	N.D.
Nitrobenzene	100	N.D.
2-Nitrophenol	100	N.D.
4-Nitrophenol	500	N.D.
N-Nitrosodiphenylamine	100	N.D.
N-Nitroso-di-N-propylamine	100	N.D.
Pentachlorophenol	500	N.D.
Phenanthrene	100	N.D.
Phenol	100	N.D.
Pyrene	100	N.D.
1,2,4-Trichlorobenzene	100	N.D.
2,4,5-Trichlorophenol	500	N.D.
2,4,6-Trichlorophenol	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	Shell-4411 Foothill Blvd., Oakland	Sampled:	Nov 24, 1992
2150 W. Winton Avenue	Sample Matrix:	Soil	Received:	Nov 30, 1992
Hayward, CA 94545	Analysis Method:	EPA 5030/8015/8020	Reported:	Dec 8, 1992
Attention: Robert Lauritzen	First Sample #:	211-4882		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 211-4882 S-1-6.0	Sample I.D. 211-4883 S-1-11.0	Sample I.D. 211-4884 S-1-16.0	Sample I.D. 211-4885 S-1-21.1	Sample I.D. 211-4886 S-1-26.0	Sample I.D.
Purgeable Hydrocarbons	1.0	N.D.	110	2.8	N.D.	N.D.	
Benzene	0.0050	N.D.	0.45	0.050	N.D.	N.D.	
Toluene	0.0050	N.D.	N.D.	0.51	N.D.	N.D.	
Ethyl Benzene	0.0050	N.D.	2.2	0.097	N.D.	N.D.	
Total Xylenes	0.0050	N.D.	8.0	0.50	N.D.	N.D.	
Chromatogram Pattern:		--	Gas	Gas	--	--	

Quality Control Data

Report Limit Multiplication Factor:	1.0	50	1.0	1.0	1.0
Date Analyzed:	12/3/92	12/3/92	12/3/92	12/3/92	12/3/92
Instrument Identification:	GCHP-6	GCHP-6	GCHP-6	GCHP-6	GCHP-6
Surrogate Recovery, %: (QC Limits = 70-130%)	100	92	100	88	98

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	Shell-4411 Foothill Blvd., Oakland	Sampled:	Nov 24, 1992
2150 W. Winton Avenue	Sample Matrix:	Soil	Received:	Nov 30, 1992
Hayward, CA 94545	Analysis Method:	EPA 3550/8015	Reported:	Dec 8, 1992
Attention: Robert Lauritzen	First Sample #:	211-4882		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 211-4882 S-1-6.0	Sample I.D. 211-4883 S-1-11.0	Sample I.D. 211-4884 S-1-16.0	Sample I.D. 211-4885 S-1-21.1	Sample I.D. 211-4886 S-1-26.0	Sample I.D.
Extractable Hydrocarbons	1.0	N.D.	160	N.D.	N.D.	N.D.	
Chromatogram Pattern:		--	Diesel Mix < C28	--	--	--	

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Extracted:	12/2/92	12/2/92	12/2/92	12/2/92	12/2/92
Date Analyzed:	12/3/92	12/3/92	12/3/92	12/3/92	12/3/92
Instrument Identification:	GCHP-5	GCHP-5	GCHP-5	GCHP-5	GCHP-5

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	Shell-4411 Foothill Blvd., Oakland	Sampled:	Nov 24, 1992
2150 W. Winton Avenue	Sample Matrix:	Soil	Received:	Nov 30, 1992
Hayward, CA 94545	Analysis Method:	EPA 3550/8015	Reported:	Dec 8, 1992
Attention: Robert Lauritzen	First Sample #:	211-4882		

FUEL FINGERPRINT AS MOTOR OIL

Analyte	Reporting Limit mg/kg	Sample I.D. 211-4882 S-1-6.0	Sample I.D. 211-4883 S-1-11.0	Sample I.D. 211-4884 S-1-16.0	Sample I.D. 211-4885 S-1-21.1	Sample I.D. 211-4886 S-1-26.0	Sample I.D.
Extractable Hydrocarbons	1.0	N.D.	390	N.D.	N.D.	N.D.	
2 a m o							
Chromatogram Pattern:		--	Non-Motor Oil < C18 ?		--	--	

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Extracted:	12/2/92	12/2/92	12/2/92	12/2/92	12/2/92
Date Analyzed:	12/4/92	12/4/92	12/4/92	12/4/92	12/4/92
Instrument Identification:	GCHP-4	GCHP-4	GCHP-4	GCHP-4	GCHP-4

Extractable Hydrocarbons are quantitated against a fresh motor oil standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	Shell-4411 Foothill Blvd., Oakland	
2150 W. Winton Avenue	Method:	EPA 8270	Q.C. Sample Dates
Hayward, CA 94545	Analyst(s):	N.Injejikian	Extracted: Dec 2, 1992
Attention: Robert Lauritzen	QC Sample #:	212-0049	Analyzed: Dec 2, 1992
			Reported: Dec 8, 1992

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
Phenol	N.D.	100	64	64	66	66	3.1
2-Chlorophenol	N.D.	100	73	73	84	84	14
1,4-Dichloro-benzene	N.D.	50	31	62	33	66	6.3
N-Nitroso-Di-N-propylamine	N.D.	50	34	68	37	74	8.5
1,2,4-Trichloro-benzene	N.D.	50	35	70	37	74	5.6
4-Chloro-3-Methylphenol	N.D.	100	79	79	76	76	3.9
Acenaphthene	N.D.	50	36	72	37	74	2.7
4-Nitrophenol	N.D.	100	86	86	81	81	6.0
2,4-Dinitro-toluene	N.D.	50	35	70	36	72	2.8
Pentachloro-phenol	N.D.	100	83	83	80	80	3.7
Pyrene	N.D.	50	39	78	41	82	5.0

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Robert Lauritzen

Client Project ID: Shell-4411 Foothill Blvd., Oakland

QC Sample Group: 2114882 - 86

Reported: Dec 8, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Extractable Hydrocarbons
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	R.Lee	R.Lee	R.Lee	R.Lee	C.Lee
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Dec 3, 1992	Dec 3, 1992	Dec 3, 1992	Dec 3, 1992	Dec 2, 1992
QC Sample #:	GBLK120292	GBLK120292	GBLK120292	GBLK120292	DBLK120292
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.20	0.20	0.20	0.60	15
Conc. Matrix Spike:	0.21	0.21	0.21	0.61	15
Matrix Spike % Recovery:	105	105	105	102	100
Conc. Matrix Spike Dup.:	0.23	0.23	0.22	0.66	15
Matrix Spike Duplicate % Recovery:	115	115	110	110	100
Relative % Difference:	9.1	9.1	4.7	7.9	0.0

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date:
Page 1 of 1

Site Address: 4411 Foothill Blvd, Oakland

WIC#: 204-5508-3400

Shell Engineer: | Phone No.: 510 685-3850 Fax #: 685-3943

Consultant Name & Address: Gettler-Ryan/GeoStrategies 2150 West Winton Avenue Hayward, CA 94545

Consultant Contact: John Werfal | Phone No.: 510 783-7500 Fax #: 783-1089

Comments:

Sampled by: Michael Carey

Printed Name: Michael Carey

LAB: Sequoia

CHECK ONE (1) BOX ONLY	C/T/DT	TURN AROUND TIME
Quarterly Monitoring ☐	6441	24 hours ☐
Site Investigation ☒	6441	48 hours ☐
Soil Closure/Disposal ☐	6442	10 days ☒ (Normal)
Water Closure/Disposal ☐	6443	Other ☐ ____
Soil/Air Rem. or Sys. O & M ☐	6482	NOTE: Notify lab as soon as possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M ☐	6483	
Other ☐		

COPY

Sample ID	Date	Sludge	Soil	Water	Air	No. of cont.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	8270 Semi-Volatiles	TPH-Motor Oil	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-1-6.0	11-24		/					/				/		/						
S-1-11.0	11-24		/					/				/	/	/						
S-1-16.0	11-24		/					/				/		/						
S-1-21.0	11-24		/					/				/		/						
S-1-26.0	11-24		/					/				/		/						

Relinquished By (signature): Michael Carey	Printed Name:	Date: 11/25 Time: 600	Received (signature): Pat Montgomery	Printed Name:	Date: Time:
Relinquished By (signature): [illegible]	Printed Name: [illegible]	Date: 11/27 Time: 8:00	Received (signature): Iqbal Khan	Printed Name: IQBAL KHAN	Date: Time:
Relinquished By (signature): [illegible]	Printed Name: ANTHONY CINEROS	Date: 11/28 Time: 1115	Received (signature): Rebekah J. Harper	Printed Name: Rebekah J. Harper	Date: 11/30/92 Time: 1115

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Relq: Rebekah J. Harper Rebekah J. Harper 11/30/92 12:40 recd by - K. Graves

APPENDIX C

GROUND-WATER CHEMICAL ANALYTICAL REPORT AND CHAIN-OF-CUSTODY FORM

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Robert Lauritzen

Project: 3681.03, Shell-Oakland

Enclosed are the results from 2 water samples received at Sequoia Analytical on December 18,1992. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2123858	Water, S-1	12/13/92	EPA 3510/3520/8015 as Motor Oil EPA 5030/8015/8020 EPA 8270
2123859	Water, Trip Blank	12/13/92	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

681-A

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	3681.03, Shell-Oakland	Sampled:	Dec 13, 1992
2150 W. Winton Avenue	Sample Descript:	Water, S-1	Received:	Dec 18, 1992
Hayward, CA 94545	Analysis Method:	EPA 8270		
Attention: Robert Lauritzen	Lab Number:	212-3858	Analyzed:	Dec 29, 1992
			Reported:	Dec 30, 1992

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	4.0	N.D.
Acenaphthylene	4.0	N.D.
Aniline	4.0	N.D.
Anthracene	4.0	N.D.
Benzidine	100	N.D.
Benzoic Acid	20	N.D.
Benzo(a)anthracene	4.0	N.D.
Benzo(b)fluoranthene	4.0	N.D.
Benzo(k)fluoranthene	4.0	N.D.
Benzo(g,h,i)perylene	4.0	N.D.
Benzo(a)pyrene	4.0	N.D.
Benzyl alcohol	4.0	N.D.
Bis(2-chloroethoxy)methane	4.0	N.D.
Bis(2-chloroethyl)ether	4.0	N.D.
Bis(2-chloroisopropyl)ether	4.0	N.D.
Bis(2-ethylhexyl)phthalate	20	N.D.
4-Bromophenyl phenyl ether	4.0	N.D.
Butyl benzyl phthalate	4.0	N.D.
4-Chloroaniline	4.0	N.D.
2-Chloronaphthalene	4.0	N.D.
4-Chloro-3-methylphenol	4.0	N.D.
2-Chlorophenol	4.0	N.D.
4-Chlorophenyl phenyl ether	4.0	N.D.
Chrysene	4.0	N.D.
Dibenz(a,h)anthracene	4.0	N.D.
Dibenzofuran	4.0	N.D.
Di-N-butyl phthalate	20	N.D.
1,3-Dichlorobenzene	4.0	N.D.
1,4-Dichlorobenzene	4.0	N.D.
1,2-Dichlorobenzene	4.0	N.D.
3,3-Dichlorobenzidine	20	N.D.
2,4-Dichlorophenol	4.0	N.D.
Diethyl phthalate	4.0	N.D.
2,4-Dimethylphenol	4.0	[redacted]
Dimethyl phthalate	4.0	N.D.
4,6-Dinitro-2-methylphenol	20	N.D.
2,4-Dinitrophenol	20	N.D.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	3681.03, Shell-Oakland	Sampled:	Dec 13, 1992
2150 W. Winton Avenue	Sample Descript:	Water, S-1	Received:	Dec 18, 1992
Hayward, CA 94545	Analysis Method:	EPA 8270		
Attention: Robert Lauritzen	Lab Number:	212-3858	Analyzed:	Dec 29, 1992
			Reported:	Dec 30, 1992

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	4.0	N.D.
2,6-Dinitrotoluene	4.0	N.D.
Di-N-octyl phthalate	4.0	N.D.
Fluoranthene	4.0	N.D.
Fluorene	4.0	N.D.
Hexachlorobenzene	4.0	N.D.
Hexachlorobutadiene	4.0	N.D.
Hexachlorocyclopentadiene	4.0	N.D.
Hexachloroethane	4.0	N.D.
Indeno(1,2,3-cd)pyrene	4.0	N.D.
Isophorone	4.0	N.D.
2-Methylnaphthalene	4.0	[redacted]
2-Methylphenol	4.0	[redacted]
4-Methylphenol	4.0	[redacted]
Naphthalene	4.0	[redacted]
2-Nitroaniline	20	N.D.
3-Nitroaniline	20	N.D.
4-Nitroaniline	20	N.D.
Nitrobenzene	4.0	N.D.
2-Nitrophenol	4.0	N.D.
4-Nitrophenol	20	N.D.
N-Nitrosodiphenylamine	4.0	N.D.
N-Nitroso-di-N-propylamine	4.0	N.D.
Pentachlorophenol	20	N.D.
Phenanthrene	4.0	N.D.
Phenol	4.0	[redacted]
Pyrene	4.0	N.D.
1,2,4-Trichlorobenzene	4.0	N.D.
2,4,5-Trichlorophenol	20	N.D.
2,4,6-Trichlorophenol	4.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	3681.03, Shell-Oakland	Sampled:	Dec 13, 1992
2150 W. Winton Avenue	Sample Matrix:	Water	Received:	Dec 18, 1992
Hayward, CA 94545	Analysis Method:	EPA 5030/8015/8020	Reported:	Dec 30, 1992
Attention: Robert Lauritzen	First Sample #:	212-3858		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 212-3858 S-1	Sample I.D. 212-3859 Trip Blank	Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.
Purgeable Hydrocarbons	50	41,000	N.D.				
Benzene	0.50	3,100	N.D.				
Toluene	0.50	11,000	N.D.				
Ethyl Benzene	0.50	1,200	N.D.				
Total Xylenes	0.50	8,700	N.D.				
Chromatogram Pattern:		Gas	--				

Quality Control Data

Report Limit Multiplication Factor:	200	1.0
Date Analyzed:	12/29/92	12/29/92
Instrument Identification:	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%)	106	105

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	3681.03, Shell-Oakland	Sampled:	Dec 13, 1992
2150 W. Winton Avenue	Sample Matrix:	Water	Received:	Dec 18, 1992
Hayward, CA 94545	Analysis Method:	EPA 3510/3520/8015	Reported:	Dec 30, 1992
Attention: Robert Lauritzen	First Sample #:	212-3858		

FUEL FINGERPRINT AS MOTOR OIL

Analyte	Reporting Limit µg/L	Sample I.D. 212-3858 S-1	Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.
Extractable Hydrocarbons	50	9,400					
Chromatogram Pattern:		< C22					

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	12/23/92
Date Analyzed:	12/29/92
Instrument Identification:	GCHP-4

Extractable Hydrocarbons are quantitated against a fresh motor oil standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	3681.03, Shell-Oakland	
2150 W. Winton Avenue	Method:	EPA 8270	Q.C. Sample Dates
Hayward, CA 94545	Analyst(s):	N.Injejikian	Extracted: Dec 15, 1992
Attention: Robert Lauritzen	QC Sample #:	CBLK121592	Analyzed: Dec 16, 1992
			Reported: Dec 30, 1992

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
Phenol	N.D.	100	70	70	72	72	2.8
2-Chlorophenol	N.D.	100	73	73	73	73	0.0
1,4-Dichloro-benzene	N.D.	50	32	64	33	66	3.1
N-Nitroso-Di-N-propylamine	N.D.	50	34	68	33	66	3.0
1,2,4-Trichloro-benzene	N.D.	50	35	70	35	70	0.0
4-Chloro-3-Methylphenol	N.D.	100	64	64	63	63	1.6
Acenaphthene	N.D.	50	35	70	35	70	0.0
4-Nitrophenol	N.D.	100	38	76	44	44	15
2,4-Dinitro-toluene	N.D.	50	34	68	32	64	6.1
Pentachloro-phenol	N.D.	100	65	65	71	71	8.8
Pyrene	N.D.	50	36	72	38	76	5.4

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

$$\% \text{ Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Robert Lauritzen

Client Project ID: 3681.03, Shell-Oakland

QC Sample Group: 2123858 - 59

Reported: Dec 30, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M.Nipp	M.Nipp	M.Nipp	M.Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Dec 29, 1992	Dec 29, 1992	Dec 29, 1992	Dec 29, 1992
QC Sample #:	GBLK122992	GBLK122992	GBLK122992	GBLK122992
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	10	9.3	30
Matrix Spike % Recovery:	100	100	93	100
Conc. Matrix Spike Dup.:	10	10	10	30
Matrix Spike Duplicate % Recovery:	100	100	100	100
Relative % Difference:	0.0	0.0	7.3	0.0

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Robert Lauritzen

Client Project ID: 3681.03, Shell-Oakland

QC Sample Group: 212-3858

Reported: Dec 30, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Extractable Hydrocarbons
Method:	EPA 8015
Analyst:	C.Lee
Reporting Units:	µg/L
Date Analyzed:	Dec 28, 1992
QC Sample #:	DBLK122292
Sample Conc.:	N.D.
Spike Conc. Added:	300
Conc. Matrix Spike:	250
Matrix Spike % Recovery:	83
Conc. Matrix Spike Dup.:	240
Matrix Spike Duplicate % Recovery:	80
Relative % Difference:	4.1

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

COPY

Date: 12/18/92 Page 1 of 1

Site Address: 4411 Foothill - Oakland

WIC#: 204-5508-3400

Shell Engineer: D. Kirk — Phone No.: 510 Fax #675-6172

Consultant Name & Address: Gettler-Ryan Inc
2150 W.Winton Ave., Hayward, CA 94545

Consultant Contact: F. Cline — Phone No.: (510) 783-7500 Fax #: 783-1689

Comments:
GR# 3681.03

Sampled by: [signature]

Printed Name: CHRIS O'CONNOR

LAB: SEQUOIA

Analysis Required

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	TPH - Oil	8270 (SEMI - VOLIT.)	Asbestos	Container Size	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-1	12/18/92			✓		6						✓	✓	✓		40ml / 1L	HCl / —		GW/gas	2123858
TB	—			✓		2						✓				40 ml	HCl		↓	↓ 59

CHECK ONE (1) BOX ONLY — Cl/Dl

- Quarterly Monitoring ☒ 8461
- Site Investigation ☐ 8461
- Soil Closure/Disposal ☐ 8462
- Water Closure/Disposal ☐ 8463
- Soil/Air Rem. or Sys. O & M ☐ 8462
- Water Rem. or Sys. O & M ☐ 8463
- Other ☐

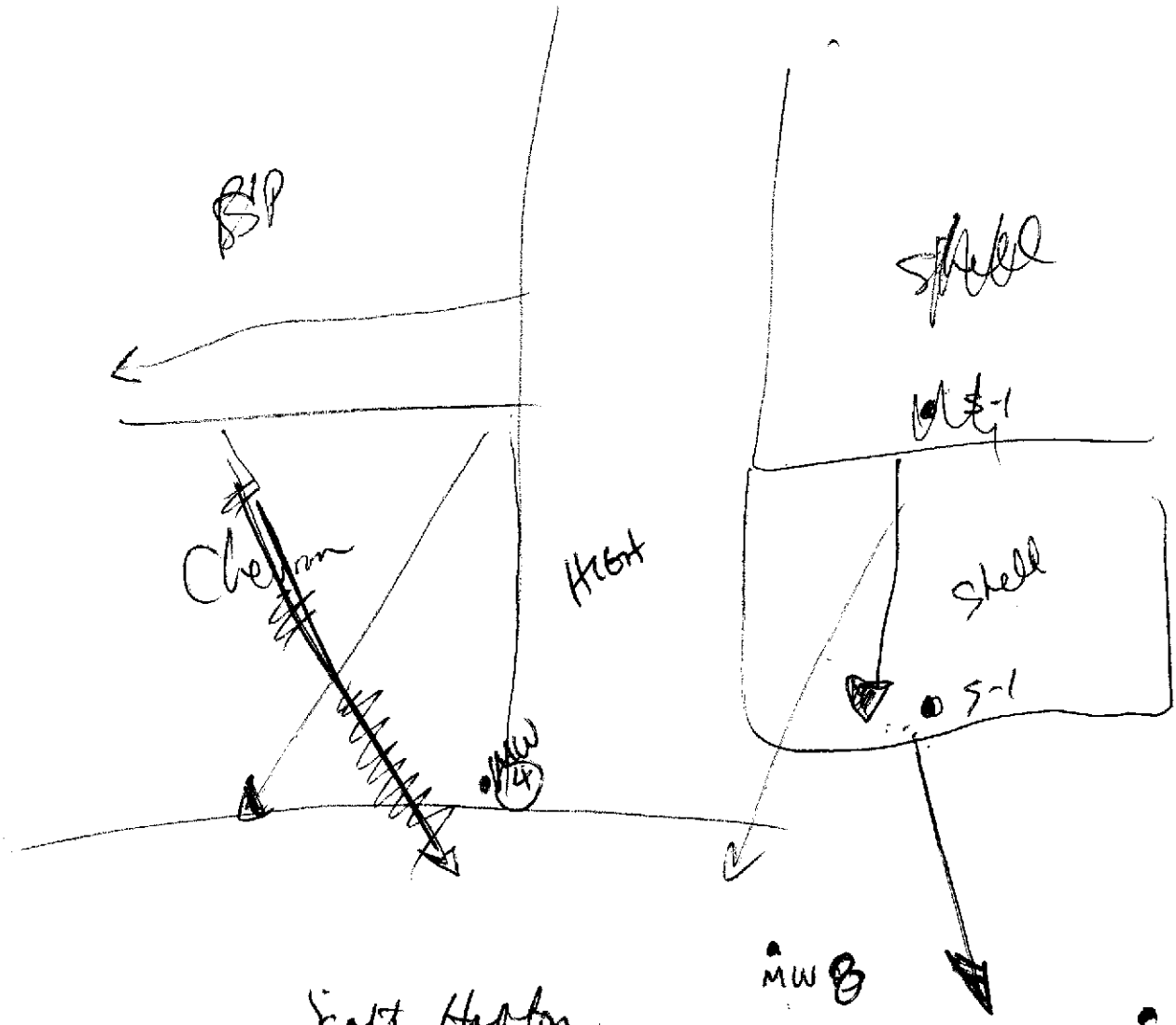
TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 10 days ☒ (Normal)
- Other ☐ ____

NOTE: Notify Lab soon as Possible 24/48 hrs. TAT.

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
[signature]	CHRIS O'CONNOR	12-18	1515	Tina Van Laarhoven	Tina Van Laarhoven	12/18/92	1515
Tina Van Laarhoven	Tina Van Laarhoven	12-18-92	1735				
				Tim Costello	Tim Costello	12-18-92	1735

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



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