Shell Oil Products US

August 20, 2003

Donna Drogos
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: **Former Shell Service Station**
500 40th Street
Oakland, California
Incident #97093400

Dear Ms. Drogos:

Attached for your review and comment is a copy of the *Well Destruction Work Plan* for the above referenced site. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

As always, please feel free to contact me directly at (559) 645-9306 with any questions or concerns.

Sincerely,

Shell Oil Products US

Karen Petryna

Karen Petryna
Sr. Environmental Engineer

P.O. Box 7869 Burbank, CA 91510-7869 Phone (559) 645-9306 Facsimile (559) 645-5643

CAMBRIA

August 20, 2003

Ms. Donna Drogos
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Well Destruction Work Plan**
Former Shell Service Station
500 40th Street
Oakland, California
Incident #97093400
Cambria Project #244-1513-006

Dear Ms. Drogos:

On behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this *Well Destruction Work Plan* to destroy three on-site and three off-site monitoring wells at the subject site. The well destructions were proposed in Cambria's June 23, 2003 *Second Quarter 2003 Monitoring Report*. The rationale for each well destruction is as follows:

EW-1: All analytical results have been below the laboratory report limits since November 1996.

MW-4: All analytical results have been below the laboratory reporting limits since May 1993, except 14.5 parts per billion (ppb) methyl tertiary butyl ether (MTBE) in April 2000, which appears anomalous.

MW-5: All analytical results have been below the laboratory report limits since November 1994.

OMW-10: All analytical results have been below the laboratory reporting limits for four monitoring events, except 6.6 ppb MTBE in April 2003.

OMW-11: Benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE concentrations have been below the laboratory reporting limits since May 1998.

OMW-12: BTEX and MTBE concentrations have been below the laboratory reporting limits since May 1995.

Cambria Environmental Technology, Inc.

5900 Hollis Street
Suite A
Emeryville, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

Quarterly Monitoring: Quarterly groundwater monitoring was initiated at the site in 1990. No SPH has been detected onsite since at 1990. All site monitoring wells have shown decreasing concentration trends since installation.

PROPOSED SCOPE OF WORK

Cambria proposes to destroy groundwater monitoring wells EW-1, MW-4, MW-5, OMW-10, OMW-11 and OMW-12 (Figure 1) by pressure grouting, following Cambria's Standard Field Procedures for Abandoning Monitoring Wells (Attachment A). Prior to destruction activities, Cambria will contact Underground Service Alert to clear all subsurface utilities near each monitoring well. The work will be performed under permits from the Alameda County Public Works Agency.

Copies of available boring logs and construction diagrams showing construction details of wells proposed for destruction are presented as Attachment B. The well depths, diameters, and screened intervals are summarized as follows:

Well	Boring Depth (fbg)	Diameter (inches)	Screen Top (fbg)	Screen bottom (fbg)	Slot Size (inches)	Filter Pack
EW-1	38	4	23	38	0.020	12/20 sand
MW-4	20	4	10.5	15.5	---	---
MW-5	20	4	10	20	---	---
OMW-10	24	4	6	16	---	---
OMW-11	24	4	10	20	0.020	12/20 sand
OMW-12	24	4	10	20	0.020	12/20 sand

Prior to field activities, Cambria will prepare a site-specific health and safety plan, traffic control plan and obtain an encroachment permit from the City of Oakland. Cambria will temporarily store any waste generated (such as displaced soil or water) in labeled drums while characterizing it for proper disposal. Cambria will submit a report documenting the well destruction within 60 days of the completion of field activities.

SCHEDULE

Upon receipt of written approval of this work plan from Alameda County Health Care Services Agency or after 60 days from the date of this work plan, Cambria will apply for permits and schedule drilling.

CLOSING

Thank you for your cooperation on this project. Please call Melody Munz at (510) 420-3324 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Melody Munz
Project Engineer

Matthew W. Derby, P.E.
Senior Project Engineer

Figure: 1 - Site Plan

Attachments: A - Standard Field Procedures for Abandoning Monitoring Wells
B - Boring Logs

cc: Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510-7869
Joseph H. Chan and Ivy T. Wong, 21213-B Hawthorne Blvd. #5146, Torrance, CA 94609

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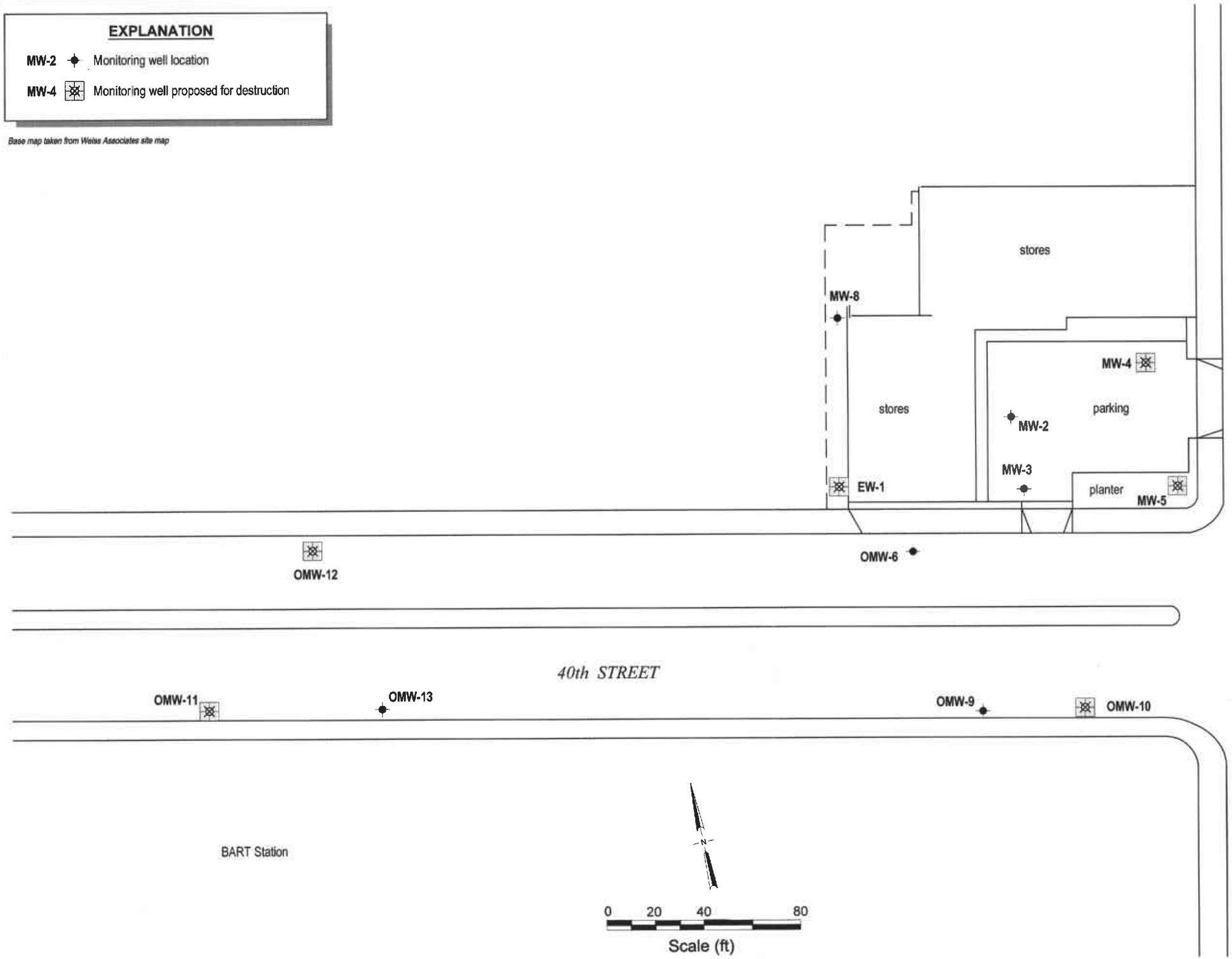
08/06/03

EXPLANATION

MW-2 ✦ Monitoring well location

MW-4 ⊠ Monitoring well proposed for destruction

Base map taken from Weiss Associates site map



G:\OAKLAND\500-40TH\FIGURES\PROP-DEST-WELL.DWG

Site Plan

Former Shell Service Station
500 40th Street
Oakland, California
Incident #97093400

CAMBRIA

FIGURE
1

ATTACHMENT A

Standard Field Procedures for Abandoning Monitoring Wells

CAMBRIA

STANDARD FIELD PROCEDURES FOR ABANDONING MONITORING WELLS

This document presents standard field methods for abandoning ground water monitoring wells. The objective of well abandonment is to destroy wells in a manner that is protective of potential water resources. The two procedures most commonly used are pressure grouting and drilling out the well. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Pressure Grouting

Pressure grouting consists of injecting neat Portland cement through a tremie pipe under pressure to the bottom of the well. The cement is composed of about five gallons of water to a 94 lb. sack of Portland I/II Cement. Once the well casing is full of grout, it remains pressurized by applying pressure with a grout pump. The well casing can also be pressurized by extending the well casing to the appropriate height and filling it with grout. In either case, the additional pressure allows the grout to be forced into the sand pack. After grouting the sand pack and casing, the well vault is removed and the area resurfaced or backfilled as required.

Well Drill Out

When well drill out is required, a hollow-stem auger drilling rig is used to drill out the well casing and pack materials. First, drill rods are dropped down the well and used to guide the augers as they drill out the well. Once the well is drilled out, the boring is filled with Portland cement injected through the augers or a tremie pipe under pressure to the bottom of the boring. The well vault is removed and the area resurfaced or backfilled as required.

ATTACHMENT B

Boring Logs

LOG OF BORING NO. EW-1

DATE DRILLED: 6/28/90 | EL: n/a | WL TAKEN: n/a | EQUIPMENT: 3.75"x 8" / 7.25"x 12" H.S.A.

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/6IN.	O.V.H. (ppm)	T.P.H. (ppm)
				moist	loose	light brown	0.2' CONCRETE. Pea GRAVEL. (Fill)					
				moist	medium	black	Silty CLAY, trace Gravel.	CL				
5						dark gray	Gravelly CLAY.	CL		5		
	1			moist	medium dense	tan	Fine SAND.	SP		6		
	S				loose	tan	Fine SAND.	SP		2 2 3		
				slightly moist	stiff	dark gray	Silty CLAY.	CL		8		
	S									5		
				slightly moist	stiff	dark gray	Silty CLAY.	CL		9		
	2						Silty CLAY, some fine Sand.	CL		8		
10				moist	dense		Clayey GRAVEL.	GC		17		
	S				medium dense	dark gray	Clayey GRAVEL.	GC		15 12		
				slightly moist	very stiff	tan	Silty CLAY.	CL		14 16 7		
	S									18 15		
				slightly moist	very stiff	grayish brown	Silty CLAY.	CL		14 15		
	3			slightly moist	very stiff	tan	Silty CLAY, trace Gravel.	CL		11 10		
15										14		
	S			slightly moist	hard	tan	Silty CLAY, trace Gravel.	CL		18 20 10		
	S									15 19		
				slightly moist	very stiff	light brown	Silty Clay, tr fine Sand.	CL		21 7		
	4			slightly moist	hard	brown	Silty CLAY.	CL		18		
20												

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Drawing No.
A-5

Converse Environmental West

LOG OF BORING NO. EW-1

continued - page 2

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/6IN.	O.V.M. (ppm)	T.P.H. (ppm)
	S			slightly moist	hard	reddish brown	Silty CLAY.	CL		7		
										19		
				moist			Silty CLAY, trace Gravel. Last 2" Clayey Sandy Gravel.	CL		20		
										22		
	S						Sandy GRAVEL, some Silt, trace Clay.	GM		12		
										17		
							0.2' Sandy CLAY.			20		
				very moist	dense	reddish brown	Sandy GRAVEL, some Silt.	GM		22		
	S						Gravelly CLAY.	GC		5		
25		▽		wet	medium dense	brown	Sandy GRAVEL, some Clay, some Silt.	GM		11		
										12		
	S						Gravelly SAND, some Silt.	GC		15		
							Increasing Gravel.			17		
				wet	dense	brown	Sandy GRAVEL, some Silt.	GM		18		
										12		
	S									18		
					medium dense		Silty SAND, some Gravel, trace Clay.	SC/GC		20		
				wet		brown				22		
	S			wet			Fine to coarse Sandy Fine to coarse GRAVEL.	GM		15		
30					dense	brown				23		
	S						Increasing Gravel.			15		
										16		
				wet	dense	brown	Sandy GRAVEL.	GP		19		
										24		
	S									17		
						brown	Sandy GRAVEL.	GP		18		
					v stiff	brown	Silty CLAY, tr fine Sand.	CL		20		
										23		
				wet			Sandy GRAVEL.	GP		17		
	S											
35				wet			Fine to medium GRAVEL, some Sand, some Clay.	GP		22		
										22		
	S									20		
				wet		brown				14		
						rusty red	GRAVEL, little SAND.	GP		17		
										16		
	S					rd brn	Silty fine SAND.	SM		22		
				moist			Fine SAND and GRAVEL, some Silt.	GP		50/5"		
					very dense							
	S									16		
40				moist	very dense	brown	Silty Sandy GRAVEL.	GM		24		

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Drawing No.
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LOG OF BORING NO. EW-1

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DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/6IN.	O.V.M. (ppm)	T.P.H. (ppm)
							Sandy CLAY, some GRAVEL.	CL		12		
	S			moist						13		
						brown				27		
					hard		Sandy CLAY, some GRAVEL.	CL		29		
										6		
	S						Gravelly SAND, some Clay.	SC		23		
										33		
				moist						60		
					very dense	brown						
45												
	S									6		
50				slightly moist	very stiff	tan	Silty CLAY, black organics.	CL		14		
										12		
	S									16		
										19		
				slightly moist	very stiff	tan	Silty CLAY.	CL		22		
										10		
	S									15		
						reddish brown	Silty CLAY.	CL		20		
				slightly moist	hard		Sandy CLAY.	CL		26		
55							Total Depth of Boring: 44 ft Below Ground Surface.					
							Casing: blank 4" ID schedule 40 PVC pipe.					
							Screen: slotted 4" ID schedule 40 PVC pipe. (0.020" slot)					
							Filter Pack: 12/20 Sand.					
60												

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Drawing No.
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LOG OF BORING NO. MW-4

DATE DRILLED: 5/23/89	ELEVATION:	WL TAKEN: 5/23/89	EQUIPMENT: 8"x 3-3/4" & 12"x 8"

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/FT.	T.P.H Mg/Kg	TESTS
				moist	loose medium	brown	GRAVELLY SAND (Fill) GP-SP				
						black	SILTY CLAY and GRAVELS CL Decreasing gravel				
5	D					tan mottled rust	SILTY CLAY Trace gravel		10 38		
	D				stiff	brown mottled rust			45		
	2								19		
10					medium dense		SANDY GRAVEL GM Trace silt.		39		
						tan	LENS CLAY CL				
						gray	LENS GRAVEL GM				
					medium	tan	SILTY CLAY CL and fine SAND		19		
				wet							
	D				medium dense		SANDY GRAVEL and SILT GM		24		
15				very moist	stiff		SILTY CLAY CL some GRAVEL				
					medium				36		
				very moist		tan mottled rust			17		
							Increasing SAND				
20							Bottom of Hole: 20 ft.				

REGISTERED PROFESSIONAL GEOLOGIST
Douglas V. Shallenberger
No. 3310
STATE OF CALIFORNIA

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500 40th Street
Oakland, California

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Drawing No.
A-4

LOG OF BORING NO. MW-5

DATE DRILLED: 9-19-89	ELEVATION:	ML TAKEN: 9-19-89	EQUIPMENT: 8"x 12" Hollow Stem Auger

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/FT.	O.V.M. (ppm)	T.P.H. (ppm)
0				slightly moist	medium dense	dark brown	Gravelly SAND and SILT some rubble (Fill)					
					medium		Sandy SILT increasing Clay	ML				
	1					brown	Silty CLAY trace Sand, trace Gravel	CL		9	0	
5												
	2					brown mottled gray	Silty CLAY and fine SAND black tubelets	CL		11	0	
10												
	3			moist	medium	light brown mottled rust and gray	Sandy CLAY som Silt	CL		14	0	
15		▼										
	4			moist	medium		Fine Sandy CLAY and SILT	CL		15	0	
				very moist								
				wet								
							Total Depth of Boring: 20 ft. Below Ground Surface					
20												

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Drawing No.
A-2

LOG OF BORING NO. OMW-10

DATE DRILLED: 11-13-89	ELEVATION:	WL TAKEN: n/a	EQUIPMENT: 3 3/4"x 8" Hollow-Stem Auge

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/FT.	O.V.M. (ppm)	T.P.H. (ppm)
						light brown	Silty SAND and GRAVEL SM/GM baserock.				
				moist	medium	black	Silty CLAY, CL trace fine Sand, stained olive.			0	
							Increasing staining.				
5	1			slightly moist	medium	dark gray	Fine Sandy CLAY, CL trace Gravel, stained olive. No odor.		18	0	
							Increasing SAND and GRAVEL.				
10	2			slightly moist	medium	dark gray	Fine to medium Sandy CLAY, CL little Gravel. Mottled olive and rust stains.		14	0	
						light brown				0	
15	3			moist	stiff		Silty CLAY, trace fine Sand		16		
				wet		lt. brwn.	F to m Sndy GRVL, tr Cly. GW		23		
20				v. moist	medium		F. Sandy CLAY, tr. Gravel. CL			0	

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Drawing No.
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LOG OF BORING NO. OMW-10

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DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/FT.	O.V.H. (ppm)	T.P.H. (mg/kg)
				v. moist		lt. brwn.	F. Sandy CLAY, tr. Gravel.	CL		22		
				moist			Clayey f. SAND, lt. Grvl.	SC				
				moist	medium		F. Sandy CLAY, lt. Gravel.	CL		25	0	
				v. moist	m. dense	lt. brwn.	Fine Sandy GRAVEL.	GP				
							Fine Sandy CLAY.	CL		7		
	P			moist	medium	gray brown	Fine Sandy CLAY, rust stains.			10	0	
25							Total Depth of Boring: 24 ft Below Ground Surface.					
30												
35												
40												

REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Cleveland
No. 4110
STATE OF CALIFORNIA

SHELL OIL COMPANY
500 40th Street
Oakland, California

Project No.
88-44-361-0

Converse Environmental West

Drawing No.
A-9

LOG OF BORING NO. OMW-11

Start: *11/21/91* Completion: *11/21/91* Water Measure: *11/22/91*	Geologist: *C. Brown* Assistant Geol.: *N/A* Drilling Co.: *A.T.D.*	Driller/Helper: *N/A* Drilling Method: *Hollow Stem Auger* Auger/Bit Dia.: *3.75" x 8" - 7.25" x 13"*

DEPTH (FT)	SAMPLE	WATER LEVEL	SYMBOL	WELL CONSTRUCT.	DESCRIPTION		MOISTURE	SOIL CONSISTENCY OR ROCK HARDNESS	COLOR	BLOWS / 6"	PERCENT RECOVERY
					8" Concrete, 7" Base				gray brown		
							moist	dense			
					Silty Clay	CL		stiff	black		
	S 1									4 9	
5							moist	stiff	brown		
	S 2				Clayey Sand, little fine Gravel	SC	moist	medium dense	gray with rust	5 13	
10	S									10	
	S	▼								14 16	
	SPT 1						moist to very moist			18 9 11 14 18	
	3 S				Slightly Clayey, coarse Sand, trace to little fine Gravel	SP/SC	wet	loose		5 5	
15	S				Fine Sandy Clay	CL	very moist	stiff	gray with rust	4 5	
	S									5 7	
	SPT 2				Clayey fine Sand	SC		medium dense		4 5	
					Silty fine Sand	SP/SM			brown	6 6	
	S				Coarse Sand and fine Gravel, trace Clay	GP/GC	wet			9 20	
20											

REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5038
STATE OF CALIFORNIA

SHELL OIL COMPANY
500 40th Street
Oakland, California

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88-44-361-20

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Drawing No.
A-2

LOG OF BORING NO. OMW-11

Continued - Page 2

DEPTH (FT)	SAMPLE	WATER LEVEL	SYMBOL	WELL CONSTRUCT.	DESCRIPTION		MOISTURE	SOIL CONSISTENCY OR ROCK HARDNESS	COLOR	BLOWS / 6"	PERCENT RECOVERY
	S				Clayey coarse Sand and fine Gravel	SC/GC	wet	dense	brown	11 19	
	S				Fine Gravelly coarse Sand, trace Clay	SP				21 16	
	SPT 3				Very Sandy Clay/Clayey Sand	CL/SC			rust with gray	4 5 10	
					Fine Gravelly fine to medium Sand	SP			gray	11	
25					Total Depth of Boring: 24 ft. Casing: Blank 4" ID Sch. 40 PVC Screen: Slotted 4" ID Sch. 40 PVC, 0.020" slots Filter Pack: 2/12 sand						
30											
35											
40											

REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5038
STATE OF CALIFORNIA

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500 40th Street
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88-44-361-20

Converse Environmental West

Drawing No.
A-3

LOG OF BORING NO. OMW-12

Start: *11/20/91* Completion: *11/20/91* Water Measure: *12/2/91*	Geologist: *C. Brown* Assistant Geol.: *N/A* Drilling Co.: *A.T.D.*	Driller/Helper: *N/A* Drilling Method: *Hollow Stem Auger* Auger/Bit Dia.: *3.75" x 8" - 7.25" x 13"*

DEPTH (FT)	SAMPLE	WATER LEVEL	SYMBOL	WELL CONSTRUCT.	DESCRIPTION		MOISTURE	SOIL CONSISTENCY OR ROCK HARDNESS	COLOR	BLOWS / 6"	PERCENT RECOVERY
					=8" Concrete, 8" Base, 6" Fill						
					6" layer Gravel						
					Silty Clay	CL	moist	stiff	black		
	S 1				trace black specks				brown	10 10	
5											
	S 2				Clayey Sand	SC	moist	medium dense	gray with rust	6 18	
10	S	▼			Fine Sandy Silt	ML				16 11	
	S				Clayey Sand, little fine Gravel	SC	very moist to wet		red brown	11 16	
	SPT 1				wet Sand lens wet Sand lens wet Sand lens					9 12 12 18	
	S				Coarse Sand, pea Gravel	SC/GC	wet			8	
	S 3				Fine Sandy Clay	CL	very moist	stiff	gray	10 5	
15	S								rust with gray	8	
	S				wet lens		wet very moist			11 12	
	SPT 2									4 5	
					Silty Clay	CL	wet			12 15	
	S				Clayey Sand and fine Gravel	SC/GC	very moist	stiff		4	
20					Silty Clay	CL	moist			7	

REGISTERED GEOLOGIST GERARD L. SLATTERY No. 5038 STATE OF CALIFORNIA

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Drawing No.
A-4

LOG OF BORING NO. OMW-12

Continued - Page 2

DEPTH (FT)	SAMPLE	WATER LEVEL	SYMBOL	WELL CONSTRUCT.	DESCRIPTION	MOISTURE	SOIL CONSISTENCY OR ROCK HARDNESS	COLOR	BLOWS / 6"	PERCENT RECOVERY
	S				Silty Clay CL	moist	stiff	rust with gray	5 8	
	S								6 7	
	SPT 3				Becoming Sandy				4 5 6 8	
25					Total Depth of Boring: 24 ft. Casing: Blank 4" ID Sch. 40 PVC Screen: Slotted 4" ID Sch. 40 PVC, 0.020" slots Filter Pack: 2/12 sand					
30										
35										
40										

REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5038
STATE OF CALIFORNIA

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500 40th Street
Oakland, California

Project No.
88-44-361-20

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Drawing No.
A-5