R0204

Shell Oil Products US

January 21, 2005

Roseanna Garcia-La Grille
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. Garcia-La Grille:

Attached for your review and comment is a copy of the *Well Destruction Report* 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

January 21, 2005

Ms. Roseanne Garcia-La Grille
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Well Destruction Report**
Former Shell-branded Service Station
500 40th Street
Oakland, California
Incident #97093400
Cambria Project #247-1513-006

Dear Ms. Garcia-La Grille:

On behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this *Well Destruction Report.* In Cambria's August 20, 2003 *Well Destruction Work Plan* submitted to the Alameda County Health Care Services Agency (ACHCSA), in Cambria's *Second Quarter 2004 Monitoring Report, First Quarter 2004 Monitoring Report,* and *Fourth Quarter 2003 Monitoring Report,* Cambria recommended destruction of three on-site and three off-site monitoring wells. On April 8, 2004, Cambria called Mr. Don Hwang, requesting approval or correspondence on the approval of the proposed monitoring well destructions. To date, Cambria has received no reply or correspondence from ACHCSA regarding the well destructions. After waiting more than 60 days after submittal of the work plan, and after the subsequent notifications in multiple monitoring reports, at Shell's request, Cambria completed the proposed well destructions on November 18, 2004.

SITE CHARACTERISTICS

Site Description: The site is located at the northeastern corner of the 40th Street and Telegraph Avenue intersection in Oakland, California (Figure 1 and 2). The site, a former Shell Service Station which discontinued operation in 1986, is currently developed as a commercial shopping center. The land use surrounding the site is mixed commercial and residential.

Site Lithology: The site subsurface consists mainly of gravelly or silty clay with sands, silts and gravels to the total explored depth of 44 feet below grade (fbg). Groundwater flow direction typically ranges from southeast to southwest.

Cambria Environmental Technology, Inc.

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

SOIL AND GROUNDWATER INVESTIGATION SUMMARY

1982 Investigation: Between 1982 and 1984, IT Enviroscience (IT) installed 11 groundwater monitoring wells (B-1 through B-11) and 2 recovery wells (R-1 and R-2). Separate-phase hydrocarbons (SPH) were noted intermittently in wells B-2, B-7 and B-8 and regularly in wells B-3 and B-4. IT gauged and removed SPH by manual bailing and periodic batch extraction using a vacuum truck. In November 1983, the tanks were removed from the site, and wells R-1 and R-2 were destroyed during tank removal activities. No formal report of UST removal is available.

According to a July 28, 1987 memorandum prepared by Pacific Environmental Group, Inc, a retail commercial shopping center building was erected on the property between January and April 1986, covering wells B-2, B-6, B-7, B-9 and B-10. In addition, wells B-1, B-3, B-4, B-5 and B-8 were covered by parking lot and rear driveway pavement.

1989-1990 Investigations: In 1989, Converse Environmental Consultants California (Converse) of San Francisco, California installed on-site monitoring wells MW-2 through MW-5; off-site monitoring wells OMW-6, OMW-8, OMW-9 and OMW-10; and an off-site soil boring, SB-1. In 1990, Converse installed on-site monitoring wells MW-8 and EW-1. The maximum total petroleum hydrocarbon as gasoline (TPHg) and benzene concentrations detected in soil samples collected during monitoring well and soil boring installation are 210 parts per million (ppm) and 40 parts per million, respectively, in off-site monitoring well OMW-9.

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

WELL DESTRUCTION ACTIVITIES

Destruction Dates:	November 18, 2004.
Wells Destroyed:	Six: Wells EW-1, MW-4, MW-5, OMW-10, OMW-11, OMW-12 (Figure 2).
Permit:	Alameda County Public Works Agency Permit #'s W04-0659, W04-0660, W04-0661, W04-0662, W04-0663, and W04-0664. (Attachment A).

City of Oakland Community and Economic Development Agency, Excavation Permit Appl # (X0402618) (Attachment A).

Personnel Present: Stewart Dalie, Staff Scientist, Cambria.
Jason Neff, Driller, Gregg Inc., (Gregg) of Martinez, California

Drilling Companies: Gregg (C-57 License # 485-165).

Destruction Methods: Gregg filled all six on- and off-site wells with neat Portland Type I/II cement grout using a tremie pipe. Once the wells were completely filled with grout, 25 pounds per square inch of air pressure was applied with a portable air compressor for approximately 5 minutes. After the wells were pressurized, the space in the well casing was topped off with grout, the well lids and support rings were removed, and the vaults were filled with dyed concrete to match the surrounding pavement conditions. However, well MW-5 was constructed with an aboveground well completion and "stovepipe" protective vault. MW-5 was pressure grouted in place, and the aboveground vault was left in place. Upon destruction of the other site wells, Cambria will remove the aboveground vault for well MW-5 when the appropriate equipment is available. Attachment B presents Cambria's Standard Field Procedures for Monitoring Well Destruction. Attachment C presents Department of Water Resources (DWR) well completion reports.

CLOSING

Please call David Gibbs at (510) 420-3363 or Matt Derby at (510) 420-3332 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc

Stewart A. Dalie IV
Staff Scientist

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

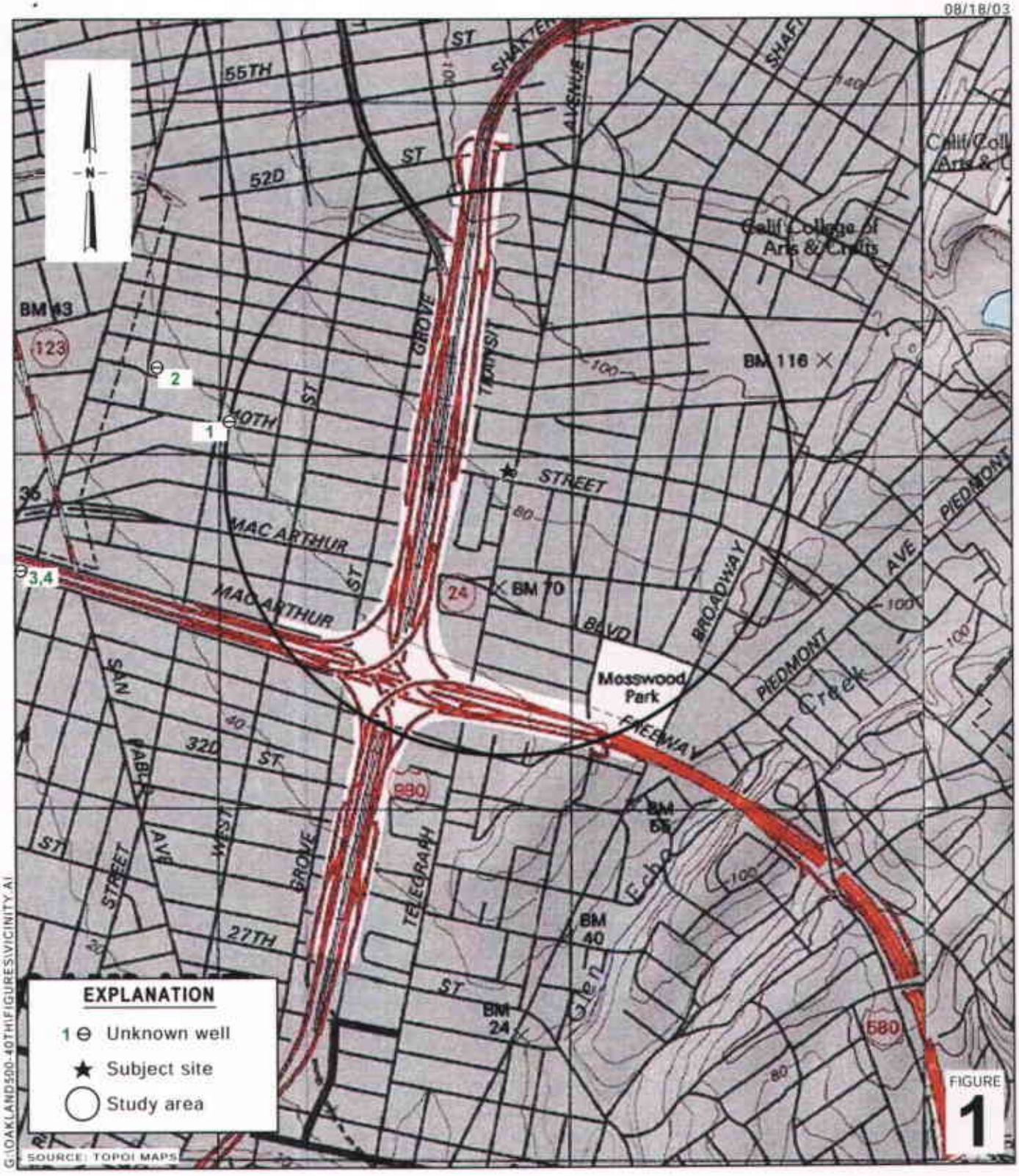
Figures: 1 - Vicinity/Area Well Survey Map
2 - Site Plan

Attachments: A - Permits
B - Cambria's Standard Field Procedures for Monitoring Well Destruction
C - DWR Well Driller's Completion Reports

cc: Karen Petryna, Shell Oil Products US, 20945 S. Wilmington Avenue, Carson, CA 90810
Joseph H Chan, Ivy T Wong, 21213-B Hawthorne Blvd. #5146, Torrance, CA 94609

G:\Oakland 500 40th\2004 Well Destructions\Well Destruction Report.doc

08/18/03



0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

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

CAMBRIA

Vicinity/Area Well Survey Map

(1/2-Mile Radius)

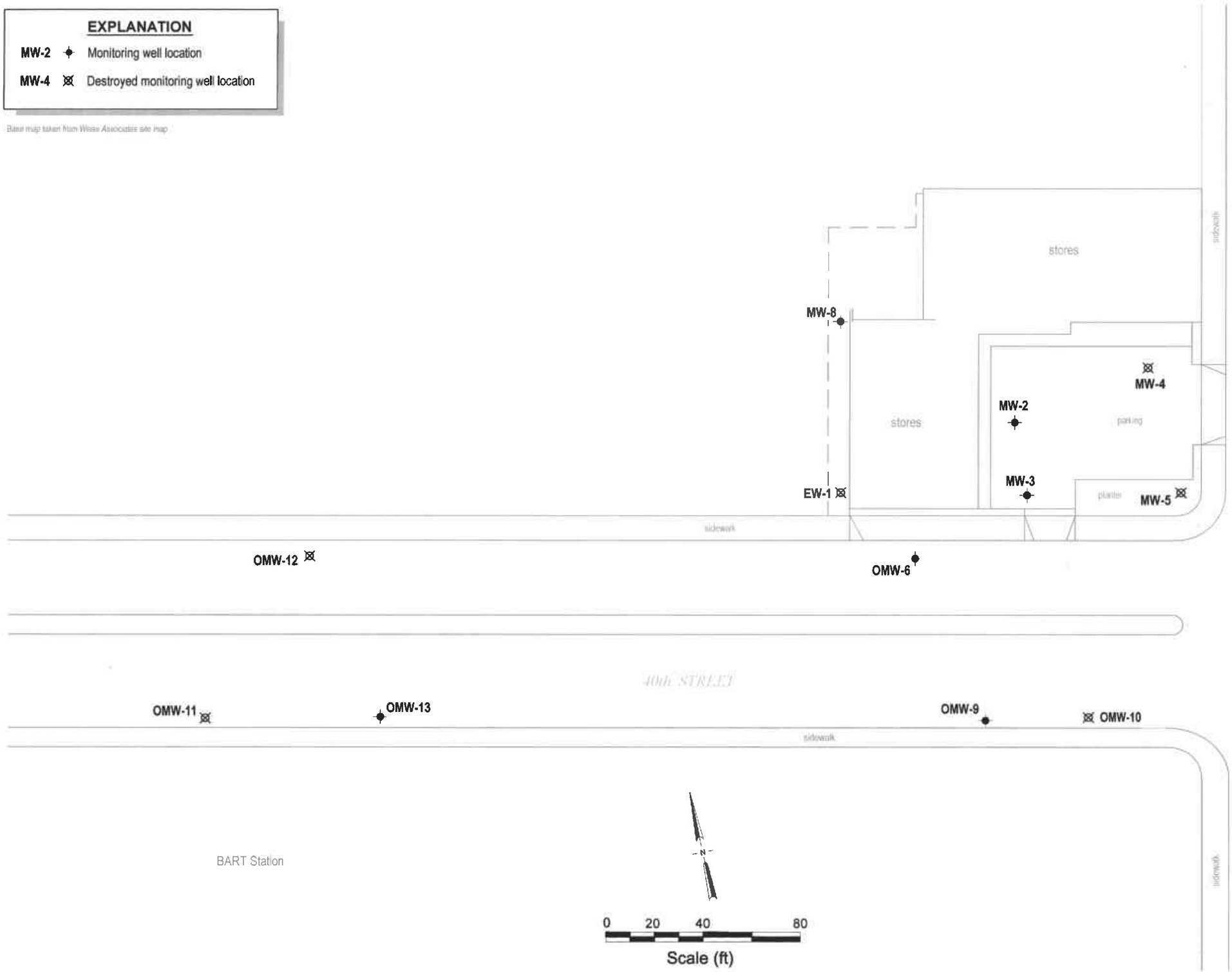
12/13/04

EXPLANATION

MW-2 ✦ Monitoring well location

MW-4 ⊠ Destroyed monitoring well location

Base map taken from Weiss Associates site map



G:\OAKLAND 500 40TH\FIGURES\SITE PLAN 12-04.DWG

FIGURE

2

Site Plan

Former Shell Service Station

500 40th Street

Oakland, California

Incident #97093400

CAMBRIA

ATTACHMENT A

Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939 www.acfewed.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 500 40th St.
Oakland, CA 94609

CLIENT
Name Shell Oil Products (US)
Address 20945 S. Wilmington Phone (555) 645-9306
City Carson, CA Zip 90810

APPLICANT
Name Cambria Environmental
Technology Fax 5104709170
Address 5900 Hollis St. Ste A Phone 5104203339
City Emeryville, CA Zip 94608

TYPE OF PROJECT
Well Construction — Geotechnical Investigation
Cathodic Protection — General
Water Supply — Contamination
Monitoring — Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic — Replacement Domestic
Municipal — Irrigation
Industrial — Other

DRILLING METHOD:
Mud Rotary — Air Rotary — Auger
Cable — Other Pressure Grouting

DRILLER'S NAME Gregg Drilling & Testing Inc
DRILLER'S LICENSE NO. C-57 485165

WELL PROJECTS
Drill Hole Diameter 10" in. Maximum
Casing Diameter 4" in. Depth 38 ft.
Surface Seal Depth 23 ft. Owner's Well Number EW-1

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft

STARTING DATE 6/30/04
COMPLETION DATE 6/30/04

FOR OFFICE USE
PERMIT NUMBER W04-0659
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Maximum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION 76A1
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS 76A1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 6/28/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 6/11/04

PLEASE PRINT NAME Stuart Dale IV

Rev 5-11-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James You
FAX (510) 782-1939 www.acfcwcd.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 500 40th St.
Oakland, CA 94609

CLIENT
Name Shell Oil Products (US)
Address 20945 S. Wilmington Phone (310) 847-9306
City Carson CA Zip 90810

APPLICANT
Name Cambria Environmental Tech, Inc. Fax 510 420 9170
Address 5900 Hollis St. Ste A Phone 510 420 3336
City Emeryville, CA Zip 94608

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection	General
Water Supply	Contamination
Monitoring	(Well Destruction)

PROPOSED WATER SUPPLY WELL USE

New Domestic	Replacement Domestic
Municipal	Irrigation
Industrial	Other

DRILLING METHOD:

Mud Rotary	Air Rotary	Auger
Cable	(Other) Pressure grouting	

DRILLER'S NAME Gregg Drilling & Testing Inc
DRILLER'S LICENSE NO C-57 485165

WELL PROJECTS
Drill Hole Diameter 10 7/8 in. Maximum
Casing Diameter 4" in. Depth 15.5 ft.
Surface Seal Depth 9.5 ft. Owner's Well Number DW-4

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

STARTING DATE 6/30/04
COMPLETION DATE 6/30/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68

APPLICANT'S SIGNATURE [signature] DATE 6/11/04
PLEASE PRINT NAME Steven Defty

Rev 5-11-04

FOR OFFICE USE
PERMIT NUMBER W04-0660
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie

(F) WELL DESTRUCTION — PG&E
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 6-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoa
FAX (510) 782-1939 www.acpwa.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 500 40th St.
Oakland, CA 94609

CLIENT
Name Shell Oil Products (US)
Address 2095 S. Wilmington Phone (559) 645-9306
City Carson, CA Zip 90810

APPLICANT
Name Cambria Environmental
Tech Inc. Fax 510 420 9170
Address 5900 Hollis St. Ste A Phone 510 420 3339
City Emeryville, CA Zip 94608

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection	General
Water Supply	Contamination
Monitoring	Well Destruction

PROPOSED WATER SUPPLY WELL USE

New Domestic	Replacement Domestic
Municipal	Irrigation
Industrial	Other

DRILLING METHOD:

Mud Rotary	Air Rotary	Auger
Cable	Other Pressure Grouting	

DRILLER'S NAME Gregg Drilling & Testing Inc
DRILLER'S LICENSE NO C-57 485165

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4" in. Depth 20 ft.
Surface Seal Depth 9 ft. Owner's Well Number MW-5

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings Maximum
Hole Diameter in. Depth ft.

STARTING DATE 6/30/04
COMPLETION DATE 6/30/04

FOR OFFICE USE
PERMIT NUMBER W04-0661
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

(F) WELL DESTRUCTION - 96447
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 6/28/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68

APPLICANT'S SIGNATURE _____ DATE 6/11/04

PLEASE PRINT NAME Steven Deike II

Rev 5-11-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939 www.acfewed.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 500 40th St.
Oakland, CA 94609

CLIENT
Name Shell Oil Products (US)
Address 20945 S. Wilmington Phone (559) 645-9306
City Carson, CA Zip 90810

APPLICANT
Name Cambria Environmental Tech. Inc. Fax 5104209170
Address 5900 Hollis St. Ste 4 Phone 5104203339
City Emeryville, CA Zip 94608

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection	General
Water Supply	Contamination
Monitoring	(Well Destruction)

PROPOSED WATER SUPPLY WELL USE

New Domestic	Replacement Domestic
Municipal	Irrigation
Industrial	Other

DRILLING METHOD:

Mud Rotary	Air Rotary	Auger
Cable	(Other) Pressure grouting	

DRILLER'S NAME Gregg Drilling & Testing Inc
DRILLER'S LICENSE NO. C-57 485165

WELL PROJECTS
Drill Hole Diameter 10" in Maximum
Casing Diameter 4" in Depth 16 ft
Surface Seal Depth 5 ft Owner's Well Number DMW-10

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in Depth ____ ft

STARTING DATE 6/30/04
COMPLETION DATE 6/30/04

FOR OFFICE USE
PERMIT NUMBER WO4-0662
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole inside zone with concrete placed by tremie.

F. WELL DESTRUCTION — PG#1
Send a map of work site. A separate permit is required for wells deeper than 45 feet

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 6-28-04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 6/11/04

PLEASE PRINT NAME Stewart Dalziel IV

Rev 5-11-03

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939 www.acfcwcd.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 500 40th St.
Oakland, CA 94609

CLIENT
Name Shell Oil Products (US)
Address 20945 S. Wilmington Phone (559) 645-9306
City Carson, CA Zip 90810

APPLICANT
Name Cambria Environmental
Fax 5104709170
Address 5900 Hollis St Ste A Phone 5104703334
City Emeryville, CA Zip 94608

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection	General
Water Supply	Contamination
Monitoring	Well Destruction

PROPOSED WATER SUPPLY WELL USE

New Domestic	Replacement Domestic
Municipal	Irrigation
Industrial	Other

DRILLING METHOD:

Mud Rotary	Air Rotary	Auger
Cable	Other Pressure grouting	

DRILLER'S NAME Gregg Drilling & Testing Inc
DRILLER'S LICENSE NO. C-57 485165

WELL PROJECTS
Drill Hole Diameter 10" in. Maximum
Casing Diameter 4" in. Depth 20 ft.
Surface Seal Depth 9 ft. Owner's Well Number OMW-11

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings Maximum
Hole Diameter in Depth ft.

STARTING DATE 6/30/04
COMPLETION DATE 6/30/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68

APPLICANT'S SIGNATURE [signature] DATE 6/11/04
PLEASE PRINT NAME Steven T. Dale PE

Rev 5-11-04

FOR OFFICE USE
PERMIT NUMBER W04-0663
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
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D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION PG#7
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 6-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939 www.acfewcd.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
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DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 500 40th St.
Oakland, CA 94608

CLIENT
Name Shell Oil Products (US)
Address 20945 S. Wilmington Phone (559) 645-9306
City Carson, CA Zip 90810

APPLICANT
Name Cambria Environmental Tech, Inc. Fax 5104709170
Address 5900 Hollis St. Ste A Phone 5104703339
City Emeryville, CA Zip 94608

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection	General
Water Supply	Contamination
Monitoring	Well Destruction

PROPOSED WATER SUPPLY WELL USE

New Domestic	Replacement Domestic
Municipal	Irrigation
Industrial	Other

DRILLING METHOD:

Mud Rotary	Air Rotary	Auger
Cable	Other Pressure grouting	

DRILLER'S NAME Gregg Drilling & Testing Inc
DRILLER'S LICENSE NO. C-57 485165

WELL PROJECTS
Drill Hole Diameter 10" in Maximum
Casing Diameter 4" in Depth 20 ft.
Surface Seal Depth 9 ft Owner's Well Number OMW-12

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in Depth ___ ft.

STARTING DATE 6/30/04
COMPLETION DATE 6/30/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 6/11/04
PLEASE PRINT NAME Stewart Dale IV

Rev.5-11-04

FOR OFFICE USE
PERMIT NUMBER W04-0664
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
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APPROVED [signature] DATE 6-28-04

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • FAX (510) 238-2263

Job Site 500 40TH ST Parcel# 012 -1012-005-03 Appl# X0402618

Descr REMOVAL OF MONITORING WELLS ADJACENT TO ABOVE ADRESS Permit Issued 10/20/04

Work Type EXCAVATION-PRIVATE P

USA # Util Co. Job # Acctg#:
Util Fund #:

		Applcnt	Phone#	Lic#	--License Classes--
Owner	SONG IN S & YONG J				
Contractor					
Arch/Engr	CAMBRIA ENVIRONMENTAL TECH.	X	(510)420-0700		
Agent					
Applic Addr					

$332.49	TOTAL FEES PAID AT ISSUANCE		
$54.00	Applic	$235.75	Permit
$.00	Process	$27.53	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$15.21	Tech Enh

ADDRESS:

DIST:

JOB SITE

No rig located!

ATTACHMENT B

Cambria's Standard Field Procedures for Monitoring Well Destruction

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELL DESTRUCTION

This document presents standard field methods for destroying groundwater monitoring wells. The objective of well destruction 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, the well location is cleared for subsurface utilities and a hollow-stem auger drilling rig is used to drill out the well casing and filter 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 C

DWR Well Driller's Completion Reports

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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	1					dark gray	Gravelly CLAY.	CL		5		
				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											
15				slightly moist	very stiff	tan	Silty CLAY, trace Gravel.	CL		11 10		
	S									14 18		
				slightly moist	hard	tan	Silty CLAY, trace Gravel.	CL		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												

SHELL OIL COMPANY
500 40th Street
Oakland, California

Project No.
88-44-361-2

Converse Environmental West

Drawing No.
A-5

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)
							Silty CLAY.	CL		7		
	S			slightly moist						19		
					hard	reddish brown	Silty CLAY, trace Gravel.	CL		20		
				moist			Last 2' Clayey Sandy Gravel.			22		
							Sandy GRAVEL, some Silt, trace Clay.	GM		12		
	S									17		
							0.2' Sandy CLAY.			20		
				very moist	dense	reddish brown	Sandy GRAVEL, some Silt.	GM		22		
							Gravelly CLAY.	GC		5		
	S			wet	medium dense	brown	Sandy GRAVEL, some Clay, some Silt.	GM		11		
25		▽								12		
	S						Gravelly SAND, some Silt.	GC		15		
							Increasing Gravel.			17		
				wet	dense	brown	Sandy GRAVEL, some Silt.	GM		18		
	S									12		
										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		
										15		
	S						Increasing Gravel.			16		
					dense					19		
				wet		brown	Sandy GRAVEL.	GP		24		
										17		
	S					brown	Sandy GRAVEL.	GP		18		
					v stiff	brown	Silty CLAY, tr fine Sand.	CL		20		
										23		
				wet						17		
	S						Sandy GRAVEL.	GP				
				wet			Fine to medium GRAVEL, some Sand, some Clay.	GP		22		
35										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				very dense					16		
40				moist		brown	Silty Sandy GRAVEL.	GM		24		

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Project No.
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Converse Environmental West

Drawing No.
A-6

LOG OF BORING NO. EW-1

continued - page 3

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/6IN.	O.V.M. (ppm)	T.P.H. (ppm)
	S			moist			Sandy CLAY, some GRAVEL.	CL		12 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			slightly moist	very stiff	tan	Silty CLAY, some black organics.	CL		6 14		
50										12		
	S									16		
				slightly moist	very stiff	tan	Silty CLAY.	CL		19 22		
										10		
	S									15		
				slightly moist	hard	reddish brown	Silty CLAY. Sandy CLAY.	CL CL		20 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												

SHELL OIL COMPANY
500 40th Street
Oakland, California

Project No.
88-44-361-2(

Converse Environmental West

Drawing No.
A-7

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

LOG OF BORING NO. MW-5

DATE DRILLED: 9-19-89	ELEVATION:	WL 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)
				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												

SHELL OIL COMPANY
500 40th Street
Oakland, California

Project No.
88-44-361-01

Converse Environmental Consultants California

Drawing No.
A-2

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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

REGISTERED PROFESSIONAL GEOLOGIST Douglas W. [illegible] No. [illegible] STATE OF CALIFORNIA

SHELL OIL COMPANY
500 40th Street
Oakland, California

Project No. 88-44-361-01

Converse Environmental Consultants California

Drawing No. A-4

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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 baserock. SM/GM				
				moist	medium	black	Silty CLAY, trace fine Sand, stained olive. Increasing staining. CL			0	
5	1			slightly moist	medium	dark gray	Fine Sandy CLAY, trace Gravel, stained olive. No odor. Increasing SAND and GRAVEL. CL		18	0	
10	2			slightly moist	medium	dark gray	Fine to medium Sandy CLAY, little Gravel. Mottled olive and rust stains. CL		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	

REGISTERED PROFESSIONAL

SHELL OIL COMPANY
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Project No. 88-44-361-C

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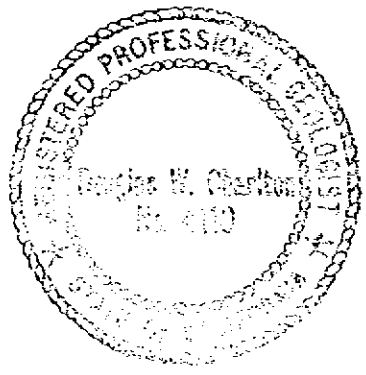
Drawing No. A-8

LOG OF BORING NO. OMW-10

continued - page 2

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	CONSISTENCY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/FT.	O.V.H. (ppm)	T.P.H. (ppm)
				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												



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									4	
5	1						moist	stiff	brown	9	
					Clayey Sand, little fine Gravel	SC	moist	medium dense	gray with rust	5	
	S									13	
10	2									10	
	S									14	
	S									16	
										18	
	SPT 1						moist to very moist			9	
										11	
										14	
										18	
	3				Slightly Clayey, coarse Sand, trace to little fine Gravel	SP/SC	wet	loose		5	
	S									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	

SHELL OIL COMPANY
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Project No.
88-44-361-20

Converse Environmental West

Drawing No.
A-2

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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	
	S P T 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 Filler Pack: 2/12 sand						
30											
35											
40											

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

SHELL OIL COMPANY
500 40th Street
Oakland, California

Project No.
88-44-361-20

Converse Environmental West

Drawing No.
A-3

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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					9 12	
					wet Sand lens					12	
					wet Sand lens					18	
	S				Coarse Sand, pea Gravel	SC/GC	wet			8	
15	S 3				Fine Sandy Clay	CL	very moist	stiff	gray	10 5	
	S				wet lens		wet		rust with gray	8 11	
							very moist			12	
	SPT 2									4 5	
					Silty Clay	CL				12	
	S						wet			15	
20					Clayey Sand and fine Gravel	SC/GC	very moist	stiff		4	
					Silty Clay	CL	moist			7	

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

SHELL OIL COMPANY
500 40th Street
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Project No.
88-44-361-20

Converse Environmental West

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

SHELL OIL COMPANY
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Project No.
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Drawing No.
A-5