



May 26, 2015

**Nicole Arceneaux**  
Project Manager  
Marketing Business Unit

**Chevron Environmental  
Management Company**  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
Tel 925.790.6912  
Nicole.arceneaux@chevron.com

Mr. Keith Nowell  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**RECEIVED**

By Alameda County Environmental Health 10:33 am, Jun 04, 2015

**RE: Well Decommissioning Report**  
15008 East 14th Street, San Leandro, California  
Fuel Leak Case No.: RO0000366

Dear Mr. Nowell,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact me at at (925) 790-6912.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nicole Arceneaux".

Nicole Arceneaux  
Union Oil of California – Project Manager

Attachment:  
Well Decommissioning Report

**Union Oil Company of California**

**Well Decommissioning Report**

76 Service Station 351565  
15008 E. 14<sup>th</sup> Street  
San Leandro, California  
Case No. RO0000366

May 26, 2015



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Katie Wynne,  
Staff Geologist

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Katherine Brandt, P.G.  
Project Manager



### Well Decommissioning Report

76 Service Station 351565  
15008 E. 14<sup>th</sup> Street  
San Leandro, California  
Case No. RO0000366

Prepared for:  
Union Oil Company of California

Prepared by:  
ARCADIS U.S., Inc.  
2000 Powell Street  
Suite 700  
Emeryville  
California 94608  
Tel 510 652 4500  
Fax 510 652 4906

Our Ref.:  
B0047945.2014

Date:  
May 26, 2015

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### **Acronyms and Abbreviations**

ACEH	Alameda County Environmental Health
ACPWA	Alameda County Public Works Agency, Water Resources Section
ARCADIS	ARCADIS U.S., Inc.
bgs	below ground surface
Caltrans	California Department of Transportation
CDWR	California Department of Water Resources
Cruz	Cruz Brothers Locators
EM	electromagnetic transmitter and receiver
GPR	ground-penetrating radar
Gregg	Gregg Drilling and Testing, Inc.
report	Well Decommissioning Report
site	76 Service Station 351565, located at 15008 E. 14 <sup>th</sup> Street, San Leandro, California
Union oil	Union Oil Company of California
UST	underground storage tank



## Well Decommissioning Report

76 Service Station 351565  
San Leandro, California

### 1. Introduction

On behalf of Chevron Environmental Management Company's affiliate, Union Oil Company of California (Union Oil), ARCADIS U.S., Inc. (ARCADIS) prepared this Well Decommissioning Report (report) for the 76 Service Station 351565, located at 15008 E. 14<sup>th</sup> Street in San Leandro, California (site; Figure 1). This report documents the decommissioning of thirteen groundwater monitoring wells (MW-1 through MW-11; MW-2SP and MW-3SP). The wells were decommissioned in accordance with the Alameda County Public Works Agency, Water Resources Section (ACPWA) requirements. Monitoring well decommissioning activities were conducted pursuant to California Well Standards Bulletin No. 74-81 and Supplement No. 74-90, under the supervision and signed by an appropriately licensed California Professional Geologist. Decommissioning of the wells was part of Alameda County Environmental Health's (ACEH) requirements to receive case closure at the site (ACEH 2014 and Appendix A).

### 2. Site Description

The site is an operating 76-branded service station located at 15008 E. 14<sup>th</sup> Street in San Leandro, California. Current site features include a station building with three mechanical service bays, four product dispenser islands, two 12,000-gallon gasoline underground storage tanks (USTs), and one 520-gallon waste oil UST. A site plan showing current site features is presented as Figure 2.

### 3. Monitoring Well Decommissioning Activities

Thirteen existing monitoring wells (MW-1 through MW-11, MW-2SP, MW-3SP) were identified for well decommissioning. A site plan showing the former well locations is included as Figure 2.

#### 3.1 Pre-Field Activities

Prior to initiating field activities, ARCADIS updated the site-specific Health and Safety Plan in accordance with state and federal requirements for use during the field activities. ARCADIS obtained permits from ACPWA prior to initiating the drilling and grouting activities. An encroachment permit was acquired from the City of San Leandro Engineering and Transportation Department to perform well decommissioning activities at MW-6 and MW-7, located in a City of San Leandro right-of-way. An encroachment permit was also acquired from the California Department of Transportation (Caltrans)

District 4 office to complete well decommissioning activities at MW-10 and MW-11, located in a Caltrans right-of-way.

### **3.2 Underground Utility Locating**

On November 04, 2014, ARCADIS contacted Underground Service Alert of Northern California to identify public utilities near the monitoring well locations. On November 4, 2014 and November 6, 2014, Cruz Brothers Locators (Cruz), a private utility-locating company, conducted a utility mark out under direct supervision by ARCADIS. Cruz conducted the utility mark out using an electromagnetic transmitter and receiver (EM); Fisher TW-6 Pipe & Cable Locator 81.92 kHz frequency) and ground-penetrating radar (GPR) to depths of approximately 4 to 6 feet, to clear proposed decommissioned monitoring well locations of conductive and nonconductive underground utilities. Cruz used a traceable rodder to locate the sewer lateral and inspected manholes and storm drains. ARCADIS staff conducted a visual inspection of the site to identify potential overhead utility lines. ARCADIS established three lines of evidence for utility location prior to implementing the planned drilling activities.

No utilities were located within 5 feet of monitoring wells MW-2, MW-4, MW-8, MW-9 MW-2SP, and MW-3SP during the public or private utility scans with EM and GPR. A sewer line was located within 3 feet of on-site monitoring wells MW-1 and MW-5. A linear metal anomaly was located within 2 feet of on-site monitoring well MW-3. An electrical line was located within 1 foot of offsite monitoring wells MW-6 and MW-7. A gas and water line was co-located within 2 feet of offsite monitoring well MW-10 and MW-11.

### **3.3 Monitoring Well Decommissioning by Pressure Grouting**

From November 12 through November 19, 2014, five on-site (MW-1 through MW-5) and eight offsite (MW-6 through MW-9; MW-2SP and MW-3SP) monitoring wells were successfully decommissioned by pressure grouting in place. Monitoring wells MW-10 and MW-11 were decommissioned on March 30, 2015 due to a delay with the Caltrans encroachment permitting. Gregg Drilling and Testing, Inc. (Gregg), a California licensed drilling contractor (C-57 License No. 485165) performed the well abandonments in accordance with ACPWA requirements and the California Well Standards. Available boring logs and well construction diagrams are included as Appendix B.

Prior to well decommissioning, the depth to groundwater and depth to bottom was measured to confirm well construction details (Table 1). The well collar and cover at the well locations were removed using a jackhammer.

Monitoring wells were abandoned using neat cement grout pressurized at approximately 25 pounds per square inch for five minutes. The pressure test was completed by connecting the well casing to an air compressor and monitoring the pressure to confirm sufficient setting of the neat cement mixture without leaks or pressure drop. Following the initial pressure test, additional neat cement was pumped into the well casing as necessary to bring the neat cement level back to the top of the casing. Annular materials were removed to approximately three feet below ground surface (bgs) and the casing was subsequently cut. Additional grout was added in the annular void from approximately 1 to 3 feet bgs.

The surface completion at MW-1 through MW-5, MW-7, MW-8 through MW-11, MW-2SP and MW-3SP was restored to match pre-existing conditions using concrete. The surface completion at MW-6, located in a City of San Leandro right-of-way, will be restored using hot asphalt per the City of San Leandro requirements.

#### **4. Management of Investigation-Derived Waste**

Construction waste generated as part of the well decommissioning activities was properly contained in four 55-gallon Department of Transportation approved steel drums. Drums were labeled as non-hazardous construction debris and left onsite for removal. The drums will be transported offsite to Veolia Environmental Services facility in Azusa, California. A final copy of the waste manifest will be submitted under separate cover.

#### **5. Well Completion Reports**

As required by Section 13751 of the California Water Code, Well Completion Reports must be filed with the California Department of Water Resources (CDWR) within 60 days of completion of the well decommissioning activities. Well Completion Reports were submitted to the CDWR on May 21, 2015. Copies of the Well Completion Reports are included as Appendix C.

#### **6. Summary**

ARCADIS directed the decommissioning of thirteen monitoring wells at the site in November and December 2014. Wells were decommissioned according to ACPWA





## Well Decommissioning Report

76 Service Station 351565  
San Leandro, California

and CDWR Bulletin 74-90 guidelines. ARCADIS has fulfilled the requirements for case closure.

### 7. References

ACEH, 2014. Well Destruction Authorization; *Fuel Leak Case No. RO000366 and Geotracker Global ID T0600101450, UNOCAL #3292, 15008 E. 14<sup>th</sup> Street, San Leandro, CA 94578.* October 27.

**Table**

**Table 1**  
**Well Construction Details**  
**Union Oil Company of California**  
**76 Service Station 351565**  
**15008 E. 14th, San Leandro, California**

Monitoring Well ID	Well Installation Date	Well Destruction Date	Borehole Diameter (inches)	PVC diameter (inches)	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Bottom (feet btoc)
MW-1	4/24/1991	11/12/2014	9	2	20.5	7-19	18.85
MW-2	4/24/1991	11/12/2014	9	2	19.5	7-19.5	18.97
MW-3	4/23/1991	11/12/2014	9	2	22.5	7-22.5	22.00
MW-4	4/23/1991	11/12/2014	9	2	20.5	7-19.5	19.50
MW-5	4/23/1991	11/12/2014	9	2	22.5	7-22.5	21.99
MW-6	5/5/1992	11/17/2014	9	2	20	8-20	20.04
MW-7	5/5/1992	11/17/2014	9	2	21.5	11-21.5	21.09
MW-8	5/6/1992	11/13/2014	9	2	20	8-19	18.98
MW-9	5/6/1992	11/13/2014	9	2	19	8-19	19.25
MW-10	8/13/1992	3/30/2015	8	2	20	8-20	19.80
MW-11	8/13/1992	3/30/2015	8	2	20	7-19	18.90
MW-2SP	10/24/1990	11/19/2014	8	2	21	11-21	20.35
MW-3SP	10/24/1990	11/19/2014	8	2	21	11-21	20.43

**Notes:**

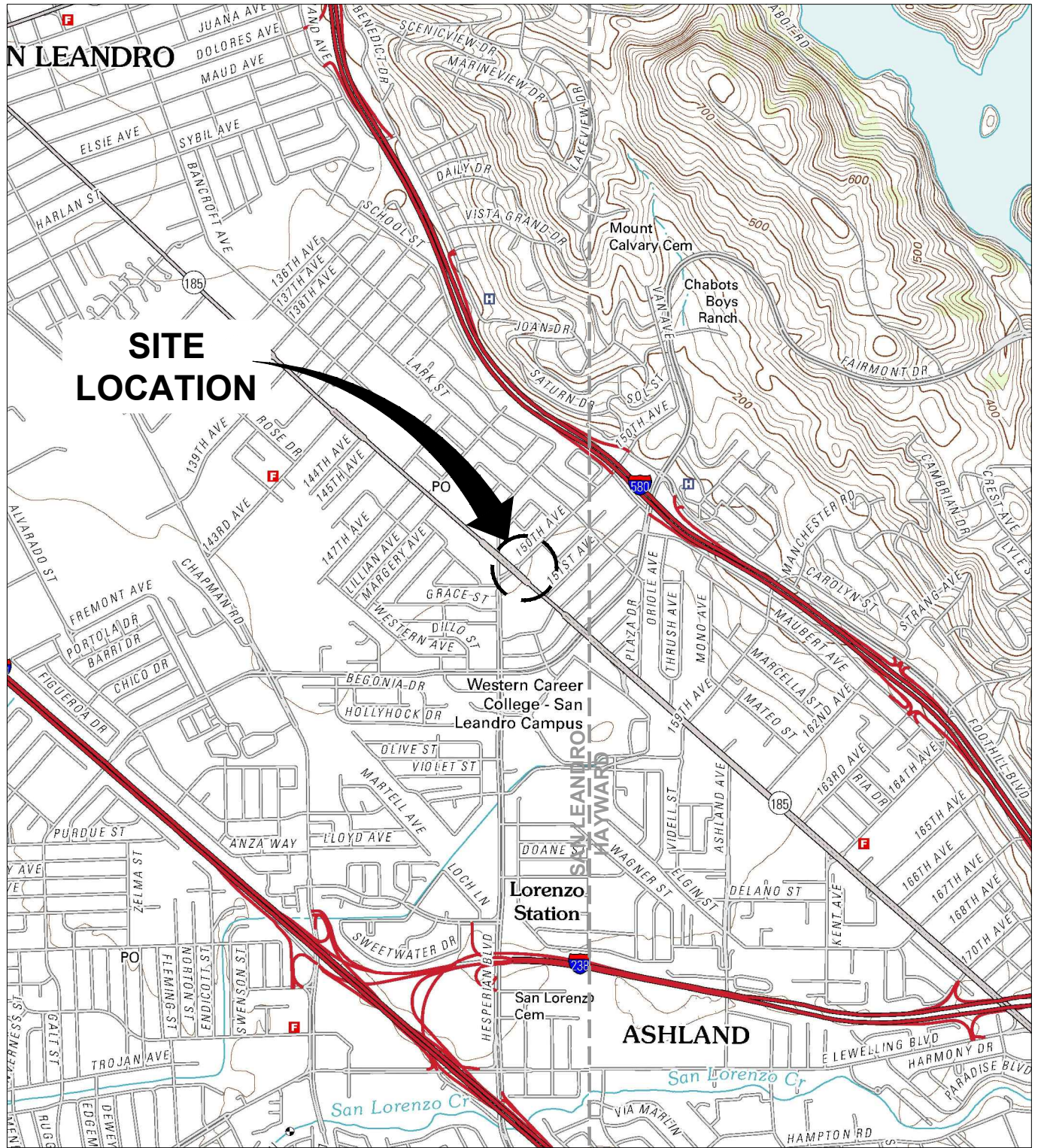
bgs = below ground surface

btoc = below top of casing



**Figures**

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS  
 C:\Users\jharris\Desktop\ENV\CAD\B0047946\2012\0002\DWG\47946\01.dwg LAYOUT: 1 SAVED: 7/5/2012 8:30 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: SETUP1 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 7/5/2012 8:31 AM BY: HARRIS, JESSICA



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., SAN LEANDRO AND HAYWARD, CALIFORNIA, 2012.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



UNION OIL COMPANY OF CALIFORNIA  
 76 SERVICE STATION 35-1565  
 15008 EAST 14TH STREET  
 SAN LEANDRO, CALIFORNIA

**SITE LOCATION MAP**

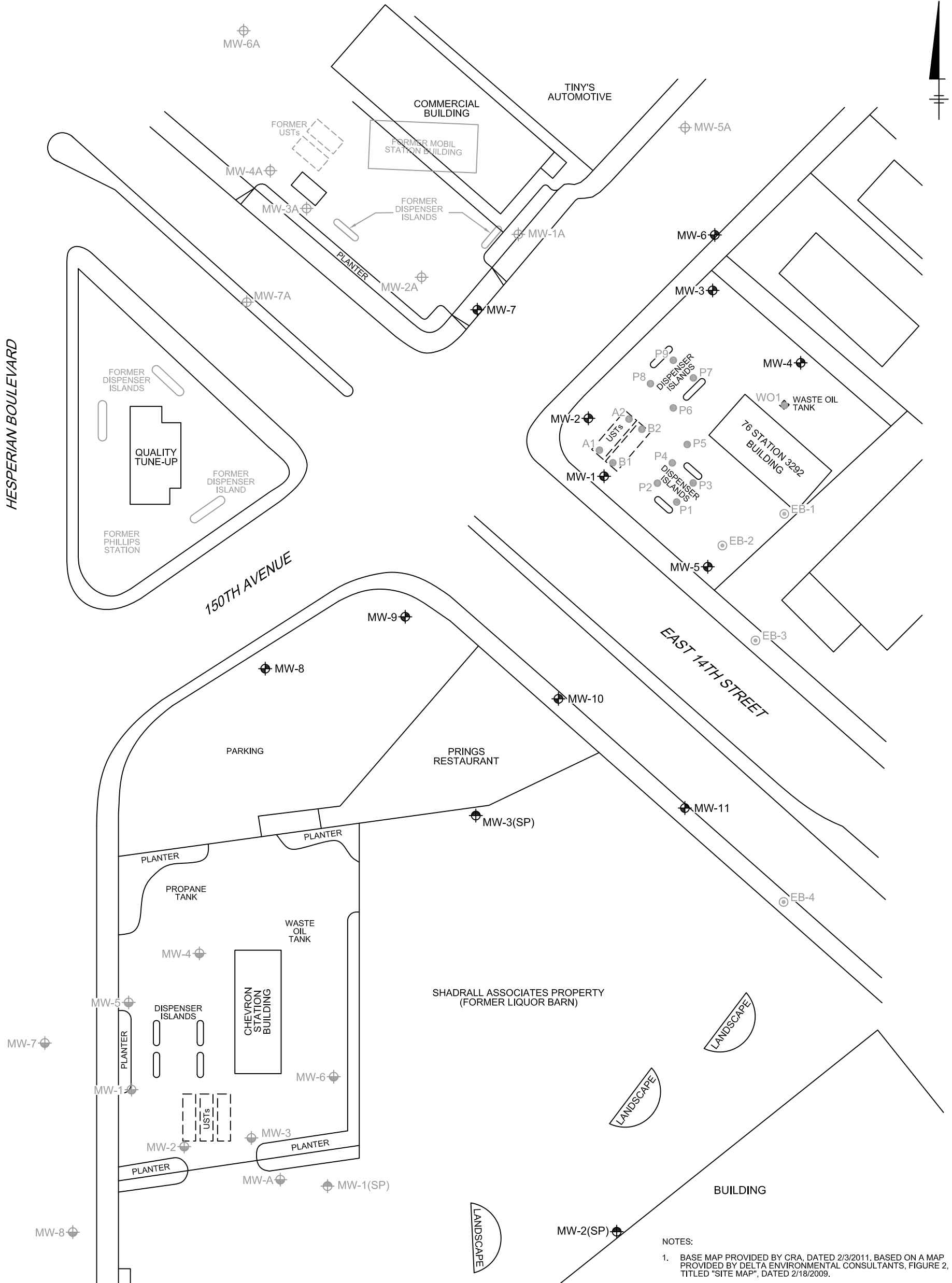


FIGURE

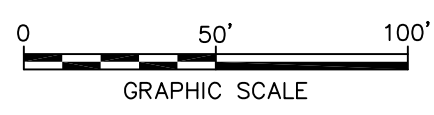
**1**



XREFS: IMAGES: PROJECTNAME: ---  
 47945X01



- NOTES:
1. BASE MAP PROVIDED BY CRA, DATED 2/3/2011. BASED ON A MAP PROVIDED BY DELTA ENVIRONMENTAL CONSULTANTS, FIGURE 2, TITLED "SITE MAP", DATED 2/18/2009.
  2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.



LEGEND

- MW-1 ⊕ 76 STATION MONITORING WELL
- MW-2(SP) ⊕ SHADRALL MONITORING WELL
- MW-1 ⊕ CHEVRON MONITORING WELL
- MW-1A ⊕ FORMER MOBIL STATION WELL
- EB-1 ⊙ SOIL BORING
- P1 ● SOIL SAMPLE LOCATION

UNION OIL COMPANY OF CALIFORNIA  
 76 SERVICE STATION 35-1565  
 15008 EAST 14TH STREET  
 SAN LEANDRO, CALIFORNIA

SITE PLAN





## **Appendix A**

Agency Correspondence



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

October 27, 2014

Nicole Arceneaux  
Chevron Environmental  
Management Company  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
(Sent via electronic mail to:  
[nicole.arceneaux@chevron.com](mailto:nicole.arceneaux@chevron.com))

Ed Ralston  
Phillips 66 Company  
76 Broadway  
Sacramento, CA 95818  
(Sent via electronic mail to:  
[Ed.C.Ralston@p66.com](mailto:Ed.C.Ralston@p66.com))

Clover Trust 1997-1  
Circle K Company  
PO Box 52085  
Phoenix, AZ 85072

Harbans Singh  
NETJA LLC  
584 N. Rengstorff Ave.  
Mountain View, CA 94043

Suncor Holdings Co II LLC  
11601 Wilshire Boulevard  
Los Angeles, CA 90025

Johnny Mui  
3020 Grove Way  
Castro Valley, CA 94546

Union Oil Company of California  
c/o UNOCAL 76 Prop Tax  
P.O Box 7600  
Los Angeles CA 90051

Subject: Well Destruction Authorization; Fuel Leak Case No. RO0000366 and Geotracker Global ID T0600101450, UNOCAL #3292, 15008 E. 14th Street, San Leandro, CA 94578

Dear Responsible Parties:

The public comment period for the subject site ended on October 24, 2014. No comments were received by Alameda County Environmental Health (ACEH).

You are free to proceed with the destruction of all wells associated with the site (groundwater, vapor, etc), as requested in the attached August 15, 2014 letter from ACEH. As requested in the letter, please contact the Alameda County Public Works Agency to obtain well destruction permits. Following the well destruction, please provide ACEH a well destruction report according to the schedule outlined below. The well destruction report should document site activities, provide well destruction permit documentation, and documentation indicating that any remaining investigation, remediation, and well destruction derived waste have been removed from the site

#### **TECHNICAL REPORT REQUEST**

Please submit reports to Alameda County Environmental Health (Attention: Keith Nowell), and upload technical reports to the ACEH ftp site (Attention: Keith Nowell), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:



- **December 26, 2014 – Well Destruction Report** - File to be named RO366\_WELL\_DCM\_R\_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Should you have any questions, please contact me at (510) 567--6764 or send me an electronic mail message at [keith.nowell@acgov.org](mailto:keith.nowell@acgov.org).

If your email address does not appear on the cover page of this notification ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Sincerely,

Keith Nowell, PG, CHG  
Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements/Obligations and Electronic Report Upload (ftp) Instructions

Attachment 2 – ACEH Directive Letter dated August 15, 2014

cc: Alexis Fischer, Chevron Environmental Management Company, 6101 Bollinger Canyon Road, San Ramon, CA 94583 (sent via electronic mail to [AFischer@Chevron.com](mailto:AFischer@Chevron.com))

Katherine Brandt, 2000 Powell Street, 7th Floor, Emeryville, CA 94608,  
(sent via electronic mail to [Katherine.Brandt@arcadis-us.com](mailto:Katherine.Brandt@arcadis-us.com))

Dilan Roe, ACEH, (sent via e-mail to [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org))  
Keith Nowell (sent via electronic mail to [keith.nowell@acgov.org](mailto:keith.nowell@acgov.org))  
Electronic File, GeoTracker

## Attachment 1

### Responsible Party(ies) Legal Requirements / Obligations

#### REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

#### ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements ([http://www.waterboards.ca.gov/water\\_issues/programs/ust/electronic\\_submittal/](http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)).

#### PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

#### PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

#### UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

#### AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

<b>Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)</b>	<b>REVISION DATE:</b> May 15, 2014
	<b>ISSUE DATE:</b> July 5, 2005
	<b>PREVIOUS REVISIONS:</b> October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
<b>SECTION:</b> Miscellaneous Administrative Topics & Procedures	<b>SUBJECT:</b> Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

## REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#\_Report Name\_Year-Month-Date (e.g., RO#5555\_WorkPlan\_2005-06-14)

## Submission Instructions

- 1) Obtain User Name and Password
  - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
    - i) Send an e-mail to [deh.loptoxic@acgov.org](mailto:deh.loptoxic@acgov.org)
  - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
  - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
    - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
  - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
  - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
  - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
  - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
  - a) Send email to [deh.loptoxic@acgov.org](mailto:deh.loptoxic@acgov.org) notify us that you have placed a report on our ftp site.
  - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
  - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
  - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

**ATTACHMENT 2**

**ACEH Directive Letter dated August 15, 2014**

## Nowell, Keith, Env. Health

---

**From:** Nowell, Keith, Env. Health  
**Sent:** Friday, August 15, 2014 11:18 AM  
**To:** Katherine Brandt (Katherine.Brandt@arcadis-us.com)  
**Cc:** Nicole Arceneaux (nicole.arceneaux@chevron.com); Alexis Fischer (AFischer@Chevron.com); Roe, Dilan, Env. Health  
**Subject:** Fuel Leak Cases RO366- Unocal #3292, 15008 E 14th St., San Leandro & RO499- Unocal #5367, 500 Bancroft Ave., San Leandro  
**Attachments:** RO499 clppl ADDRESS LABELS.docx; RO366 clppl ADDRESS LABELS.docx; RO499 \_CL\_PP\_L\_2014-08-20.pdf; RO366\_CL\_PP\_L\_2014-08-20.pdf

Katherine,

Attached are the public notifications for closure and the mailing lists for RO499, Unocal #5367, 500 Bancroft Ave., San Leandro, and RO366 Fuel Leak Case RO366 Unocal #3292, 15008 E 14th St., San Leandro. When the public notification fact sheets have been sent please provide Alameda County Environmental Health (ACEH) with a letter stating the notifications have been sent. Include as an attachment the list of addresses contacted.

### Request for Monitoring Well Destruction Scheduling

As part of an attempt to expedite closures, and with the recognition that coordination of well decommissioning is a long lead item, ACEH requests that you schedule well decommissioning for approximately two weeks after closure of the public comment period for the site. Please contact the Alameda County Public Works Agency at 510.567.6791 or online, to obtain the required permits. After written ACEH concurrence (email or other) that there have been no comments, you would be free to proceed with well decommissioning. Should there be public comments, then there would be sufficient time to cancel (and / or reschedule) the date and not incur a cost from the drilling company. Please provide notification to ACEH by the date identified below, that you have contracted a licensed drilling contractor for the decommissioning of all remaining wells at the site.

### Technical Report Request

Please upload technical reports to the ACEH ftp site (Attention: Keith Nowell), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **September 19, 2014 – FACT SHEET MAILING VERIFICATION** (file name: RO0000366\_CORRES\_L\_yyyy-mm-dd)
- **September 19, 2014 – CONFIRMATION OF SCHEDULED WELL DECOMMISSIONING** (file name: RO0000366\_CORRES\_L\_yyyy-mm-dd)
- **September 26, 2014– FACT SHEET MAILING VERIFICATION** (file name: RO0000499\_CORRES\_L\_yyyy-mm-dd)
- **September 26, 2014 – CONFIRMATION OF SCHEDULED WELL DECOMMISSIONING** (file name: RO0000499\_CORRES\_L\_yyyy-mm-dd)

Thank you for your cooperation. ACEH looks forward to working with you to advance the case toward closure. Should you have any questions regarding this correspondence or your case, please call me at (510) 567-6764 or send an electronic mail message at [keith.nowell@acgov.org](mailto:keith.nowell@acgov.org).

Respectfully,

Keith Nowell

Keith Nowell PG, CHG  
Hazardous Materials Specialist  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda , CA 94502-6540  
phone: 510 / 567 - 6764  
fax: 510 / 337 - 9335  
email: keith.nowell@acgov.org

PDF copies of case files can be reviewed/downloaded at:

<http://www.acgov.org/aceh/lop/ust.htm>



## **Appendix B**

Boring Logs

**B O R I N G   L O G**

<b>Project No.</b> KEI-P91-0102	<b>Boring &amp; Casing Diameter</b> 9"                      2"	<b>Logged By</b> W.W.
<b>Project Name</b> Unocal 15008 E. 14th San L	<b>Well Cover Elevation</b>	<b>Date Drilled</b> 4/24/91
<b>Boring No.</b> MW1	<b>Drilling Method</b> Hollow-stem Auger	<b>Drilling Company</b> EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel. Fill material consisting of gravelly clay with sand and silt, gravel to 4" diameter, moist, stiff, brown.
6/11/12		5	ML/ MH	Clayey silt, with fine-grained sand, trace gravel to 1/2" diaemter, trace caliche, very stiff, moist, very dark grayish brown.
4/5/6		10	CL/ CH	Clay, with silt, root holes common, a 2" sandy clay lens observed at 9-1/2', moist, stiff, olive to olive gray.
5/6/9	▽			Clay, trace silt, sand and caliche, root holes common, moist to very moist, light olive brown and dark yellowish brown.
3/2/4		15		Clay, as above, sheen present, firm, gray and olive brown mottled.
			MH	Silt, saturated, sheen present, firm, dark greenish gray.
			CL/ CH	Clay, trace sand and caliche, porous, moist, stiff, gray and brown mottled.
6/7/9		20		Clayey silt, trace sand, very moist, stiff to very stiff, olive gray.

TOTAL DEPTH: 20.5'



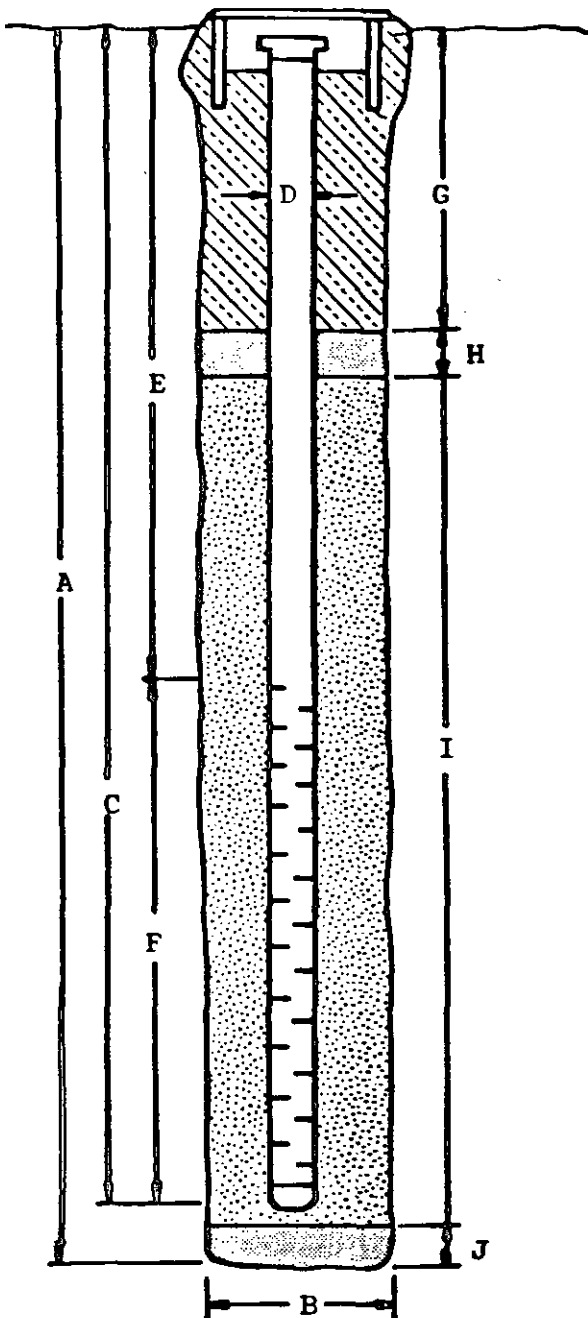
## WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal 15008 E. 14th San Leandro BORING/WELL NO. MW1

PROJECT NUMBER: KEI-P91-0102

WELL PERMIT NO.: \_\_\_\_\_

Flush-mounted Well Cover



A. Total Depth: 20.5'

B. Boring Diameter\*: 9"

Drilling Method: Hollow Stem

Auger

C. Casing Length: 19'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 7'

F. Perforated Length: 12'

Machined  
Perforation Type: Slot

Perforation Size: 0.010"

G. Surface Seal: 3'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 14'

Pack Material: RMC Lonestar  
Sand

Size: #2/16

J. Bottom Seal: 1.5'

Seal Material: Bentonite

\*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

**B O R I N G   L O G**

Project No. KEI-P91-0102		Boring & Casing Diameter 9"                                  2"		Logged By W.W.
Project Name Unocal 15008 E. 14th San L		Well Cover Elevation		Date Drilled 4/24/91
Boring No. MW2		Drilling Method	Hollow-stem Auger	Drilling Company EGI
Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Asphalt pavement over sand and gravel. Fill material consisting of gravelly clay with silt, with cobbles to 12" diameter, moist, stiff, gray to greenish gray.
			CH	Silty clay, trace sand, moist, stiff, black.
3/4/5		5	ML/ MH	Clayey silt with fine-grained sand, trace caliche, moist, stiff, dark brown to very dark grayish brown.  Clayey silt, trace fine-grained sand, porous, moist, stiff, olive gray.
4/5/6		10	CL	Clay, with silt, trace fine-grained sand, trace caliche, gray staining around roots, moist, olive brown mottled with dark grayish brown.
3/4/5				Silty clay, saturated, trace caliche nodules to 3/8" diameter, stiff, olive brown and olive gray mottled with gray staining.
3/4/6		15	MH	Silty clay, as above, olive gray and dark yellowish brown. Clayey silt, trace caliche, saturated, free product present, stiff, olive gray and dark yellowish brown.
4/5/8			CL/ CH	Clay, trace very fine sand, trace caliche, porous, very moist, stiff, dark gray and very dark grayish brown mottled.
		20		TOTAL DEPTH: 19.5'

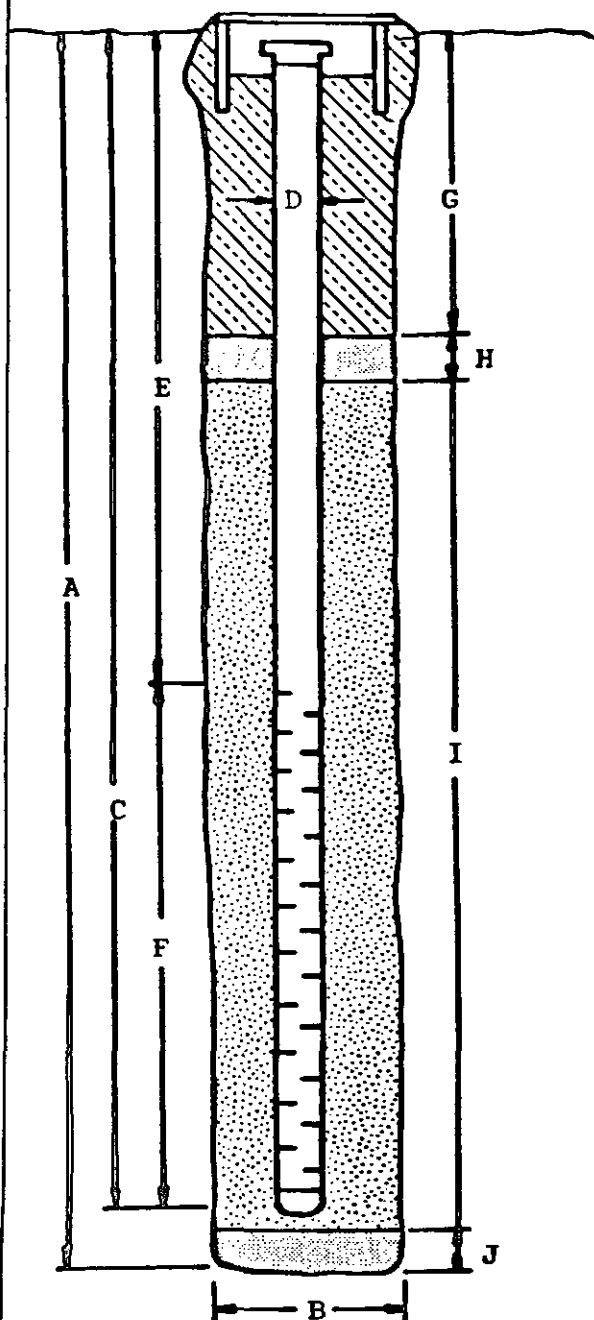
**W E L L   C O M P L E T I O N   D I A G R A M**

PROJECT NAME: Unocal 15008 E. 14th San Leandro    BORING/WELL NO. MW2

PROJECT NUMBER: KEI-P91-0102

WELL PERMIT NO.: \_\_\_\_\_

Flush-mounted Well Cover



A. Total Depth: 19.5'

B. Boring Diameter\*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 19.5'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 7'

F. Perforated Length: \_\_\_\_\_

Machined Perforation Type: Slot

Perforation Size: 0.010"

G. Surface Seal: 3'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 14.5'

Pack Material: RMC Lonestar Sand

Size: #2/16

J. Bottom Seal: None

Seal Material: N/A

\*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

**B O R I N G   L O G**

<b>Project No.</b> KEI-P91-0102	<b>Boring &amp; Casing Diameter</b> 9"                      2"	<b>Logged By</b> W.W.
<b>Project Name Unocal</b> 15008 E. 14th San L	<b>Well Cover Elevation</b>	<b>Date Drilled</b> 4/23/91
<b>Boring No.</b> MW3	<b>Drilling Method</b> Hollow-stem Auger	<b>Drilling Company</b> EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel. Fill material consisting of gravelly clay with silt, trace sand, gravel to 3-1/2" diameter, firm, dark brown.
7/9/13		5	CL/ CH	Silty clay, trace sand, firm, very dark gray.
			ML	Clayey silt, trace gap graded sand, trace gravel to 1/2" diameter, moist, very stiff, dark gray to dark greenish gray.
4/4/5		10	ML/ MH to CL/ CH	Clayey silt to silty clay, porous, caliche common, stiff, greenish gray.
2/3/2	▽		SC	Clayey sand, trace gravel to 1/2" dia. saturated, loose, greenish gray.
		15	ML/ MH	Clayey silt, trace sand, very moist to saturated, firm, greenish gray.
4/6/7		20	CL/ CH	Clay, with fine-grained sand, trace silt, caliche common, porous, very moist, dark gray and dark greenish gray.

### B O R I N G   L O G

<b>Project No.</b> KEI-P91-0102	<b>Boring &amp; Casing Diameter</b> 9"                      2"	<b>Logged By</b> W.W.
<b>Project Name Unocal</b> 15008 E. 14th San L	<b>Well Cover Elevation</b>	<b>Date Drilled</b> 4/23/91
<b>Boring No.</b> MW3	<b>Drilling Method</b> Hollow-stem Auger	<b>Drilling Company</b> EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
6/8/11			CL/ CH	Clay, trace fine-grained sand, trace caliche, porous, moist, very stiff, very dark gray.
				<b>TOTAL DEPTH: 22.5'</b>

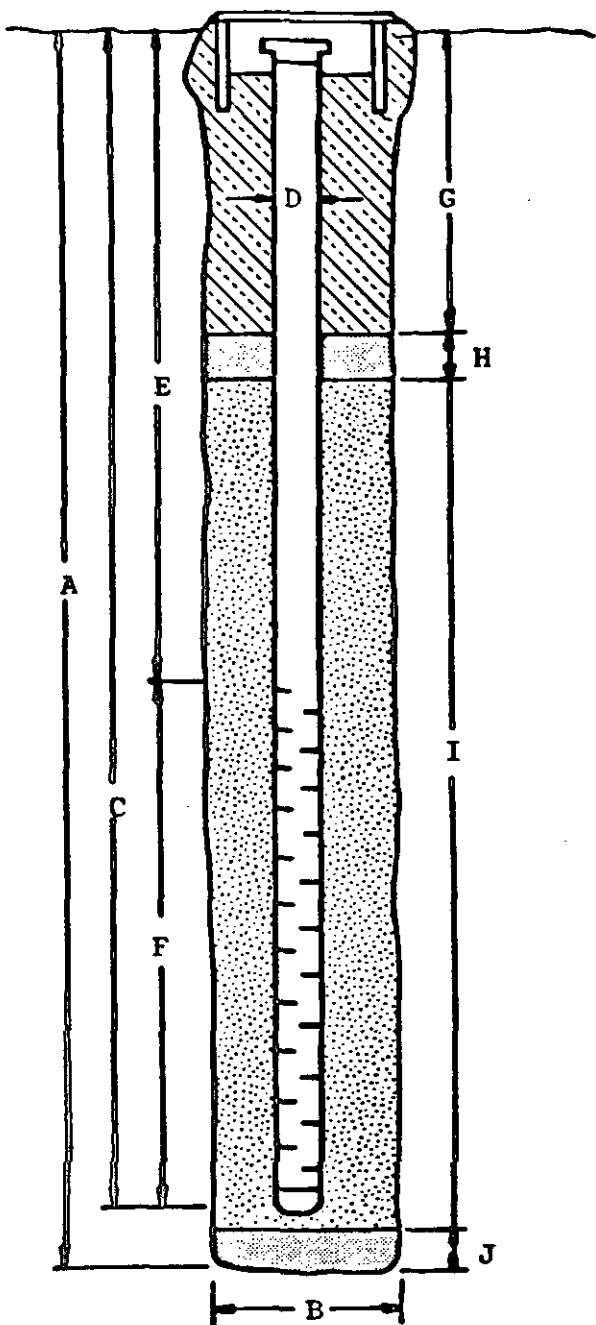
**W E L L   C O M P L E T I O N   D I A G R A M**

PROJECT NAME: Unocal 15008 E. 14th San Leandro BORING/WELL NO. MW3

PROJECT NUMBER: KEI-P91-0102

WELL PERMIT NO.: \_\_\_\_\_

Flush-mounted Well Cover



- A. Total Depth: 22.5'
- B. Boring Diameter\*: 9"
- Drilling Method: Hollow Stem Auger
- C. Casing Length: 22.5'
- Material: Schedule 40 PVC
- D. Casing Diameter: OD = 2.375"  
ID = 2.067"
- E. Depth to Perforations: 7'
- F. Perforated Length: 15.5'
- Perforation Type: Machined Slot
- Perforation Size: 0.010"
- G. Surface Seal: 3'
- Seal Material: Concrete
- H. Seal: 2'
- Seal Material: Bentonite
- I. Gravel Pack: 17.5'
- Pack Material: RMC Lonestar Sand
- Size: #2/16
- J. Bottom Seal: None
- Seal Material: N/A

\*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

## B O R I N G   L O G

<b>Project No.</b> KEI-P91-0102	<b>Boring &amp; Casing Diameter</b> 9"                      2"	<b>Logged By</b> W.W.
<b>Project Name Unocal</b> 15008 E. 14th San L	<b>Well Cover Elevation</b>	<b>Date Drilled</b> 4/23/91
<b>Boring No.</b> MW4	<b>Drilling Method</b> Hollow-stem Auger	<b>Drilling Company</b> EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel. Fill material consisting of gravelly clay with silt and sand, gravel to 3-1/2" diameter, moist, firm, brown.
		5	CH	Silty clay, with fine-grained sand, porous, moist, stiff to very stiff, very dark gray.
7/9/7		5	ML/ MH	Clayey silt, with fine-grained sand, porous, trace angular gravel to 1/2" diameter, moist, stiff, dark brown.
		10	CL/ CH	Sandy silt, trace clay, trace organic matter, very moist to saturated, stiff, brown to light olive brown.
4/5/7		10	CL/ CH	Clay, trace sand and silt, porous, caliche common, moist, stiff, brown and light olive brown mottled.
	▽	15	SC	Clay, as above, except greenish gray.
3/5/6		15	ML/ MH	Clayey sand with gravel to 1/2" diameter, saturated, medium dense, greenish gray.
		15	ML/ MH	Clayey silt, trace fine-grained sand, porous, very moist to saturated, stiff, light olive gray.
		20	CL/ CH	Clay, trace silt, trace fine-grained sand, saturated, stiff, moist, very dark gray.
3/6/8		20	MH	Clayey silt, trace sand and caliche, very moist, stiff, greenish gray.
<b>TOTAL DEPTH: 20.5'</b>				

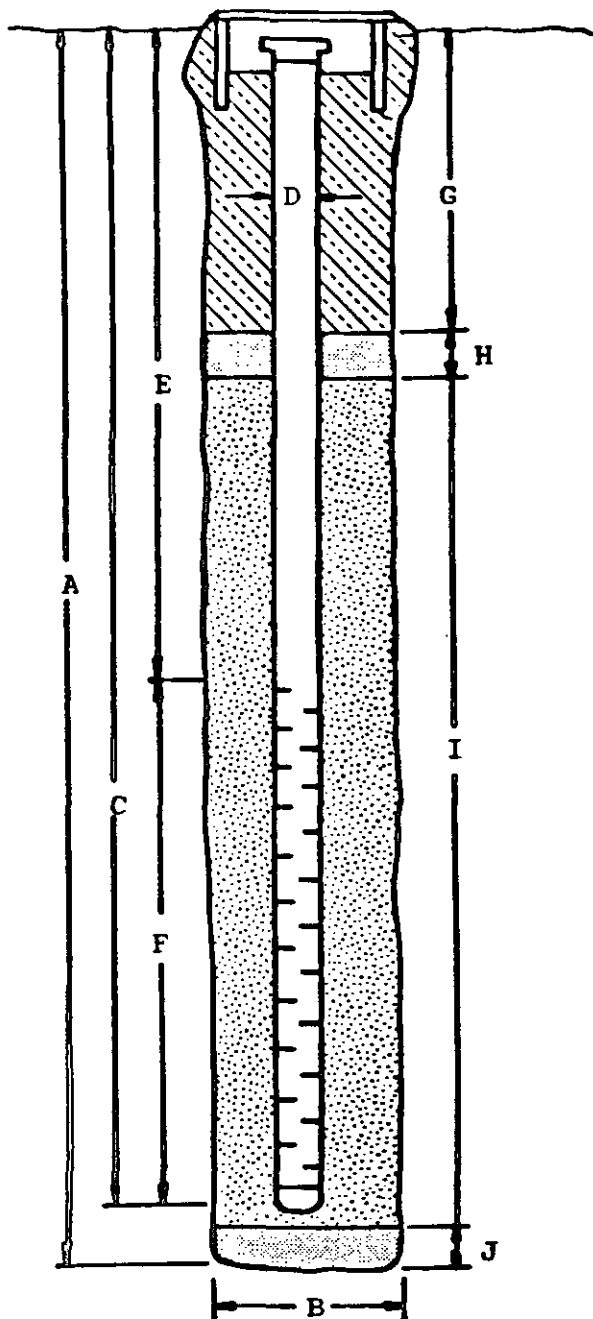
**W E L L   C O M P L E T I O N   D I A G R A M**

PROJECT NAME: Unocal 15008 E. 14th San Leandro BORING/WELL NO. MW4

PROJECT NUMBER: KEI-P91-0102

WELL PERMIT NO.: \_\_\_\_\_

Flush-mounted Well Cover



A. Total Depth: 20.5'

B. Boring Diameter\*: 9"

Drilling Method: Hollow Stem  
Auger

C. Casing Length: 19.5'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 7'

F. Perforated Length: 12.5'

Perforation Type: Machined  
Slot

Perforation Size: 0.010"

G. Surface Seal: 3'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 15.5'

Pack Material: RMC Lonestar  
Sand

Size: #2/16

J. Bottom Seal: None

Seal Material: N/A

\*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.



**B O R I N G   L O G**

<b>Project No.</b> KEI-P91-0102		<b>Boring &amp; Casing Diameter</b> 9"                      2"		<b>Logged By</b> W.W.
<b>Project Name</b> Unocal 15008 E. 14th San L		<b>Well Cover Elevation</b>		<b>Date Drilled</b> 4/23/91
<b>Boring No.</b> MW5		<b>Drilling Method</b>	<b>Hollow-stem Auger</b>	<b>Drilling Company</b> EGI
<b>Penetration blows/6"</b>	<b>G. W. level</b>	<b>Depth (feet) Samples</b>	<b>Strati- graphy USCS</b>	<b>Description</b>
		0		Asphalt pavement over sand and gravel. Fill material consisting of gravelly clay with silt, trace sand, moist, gravel to 3" diameter, firm, dark brown.
			CL/ CH	Silty clay, trace sand, moist, firm, trace rootlets, very dark gray.
7/9/13		5	ML/ MH	Clayey silt, trace sand and trace gravel to 1/2" diameter, moist, very stiff, brown with slight mottling of yellowish brown.
			CL/ CH	Clay, with silt, trace sand, porous, caliche nodules to 3/8" diameter, moist, olive gray.
4/4/5		10		
	▽			
			ML/ MH to CL/ CH	Clayey silt to silty clay, pores locally contain free product, very moist to saturated, firm, olive gray to greenish gray.
2/2/3	initially ▽	15		
			CL/ CH	Silty clay, trace sand, very moist to saturated, porous, trace caliche, stiff, dark gray to olive gray to 20-1/4 feet.
4/5/		20		

**B O R I N G   L O G**

<b>Project No.</b> KEI-P91-0102	<b>Boring &amp; Casing Diameter</b> 9"                                  2"	<b>Logged By</b> W.W.
<b>Project Name Unocal</b> 15008 E. 14th San L	<b>Well Cover Elevation</b>	<b>Date Drilled</b> 4/23/91
<b>Boring No.</b> MW5	<b>Drilling Method</b> <b>Hollow-stem Auger</b>	<b>Drilling Company</b> EGI

<b>Penetration blows/6"</b>	<b>G. W. level</b>	<b>Depth (feet) Samples</b>	<b>Strati- graphy USCS</b>	<b>Description</b>
6/6/11			CL/CH	Clay, trace very fine-grained sand, slightly moist, trace caliche, very stiff, very dark gray with slight dark greenish gray mottling.
		25		
		30		
		35		
		40		
				<b>TOTAL DEPTH: 22.5'</b>

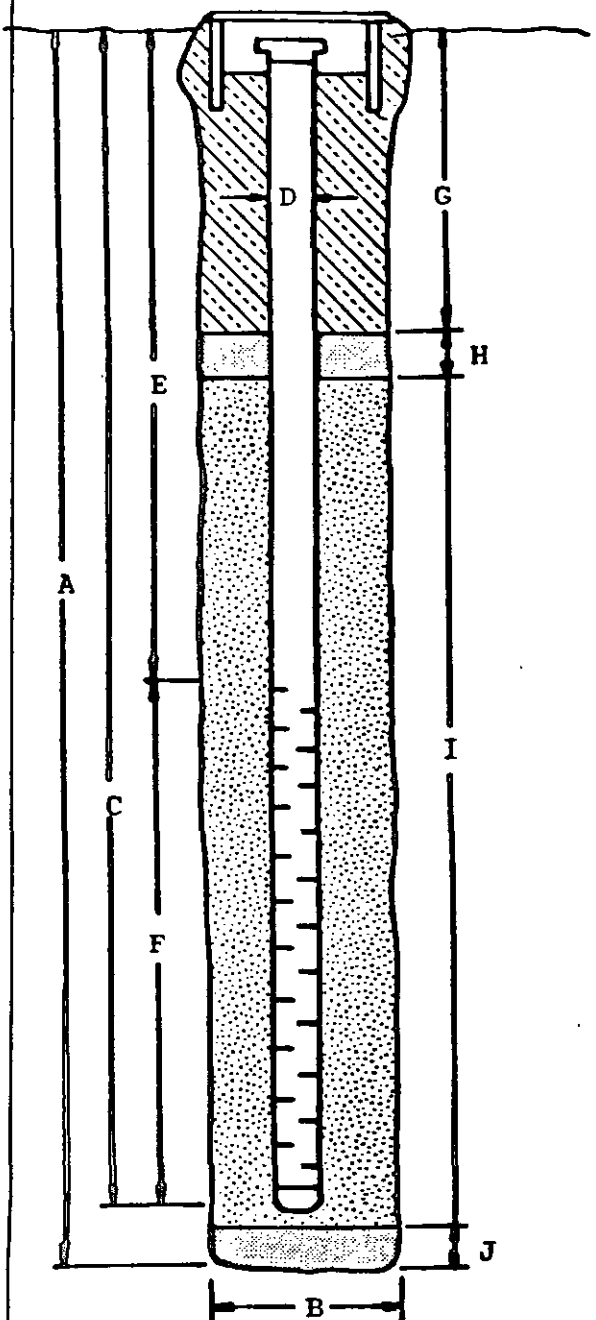
**W E L L   C O M P L E T I O N   D I A G R A M**

PROJECT NAME: Unocal 15008 E. 14th San Leandro    BORING/WELL NO. MW5

PROJECT NUMBER: KEI-P91-0102

WELL PERMIT NO.: \_\_\_\_\_

Flush-mounted Well Cover



A. Total Depth: 22.5'

B. Boring Diameter\*: 9"

Drilling Method: Hollow Stem

Auger

C. Casing Length: 22.5'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 7'

F. Perforated Length: 15.5'

Perforation Type: Machined Slot

Perforation Size: 0.010"

G. Surface Seal: 3'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 17.5'

Pack Material: RMC Lonestar Sand

Size: #2/16

J. Bottom Seal: None

Seal Material: N/A

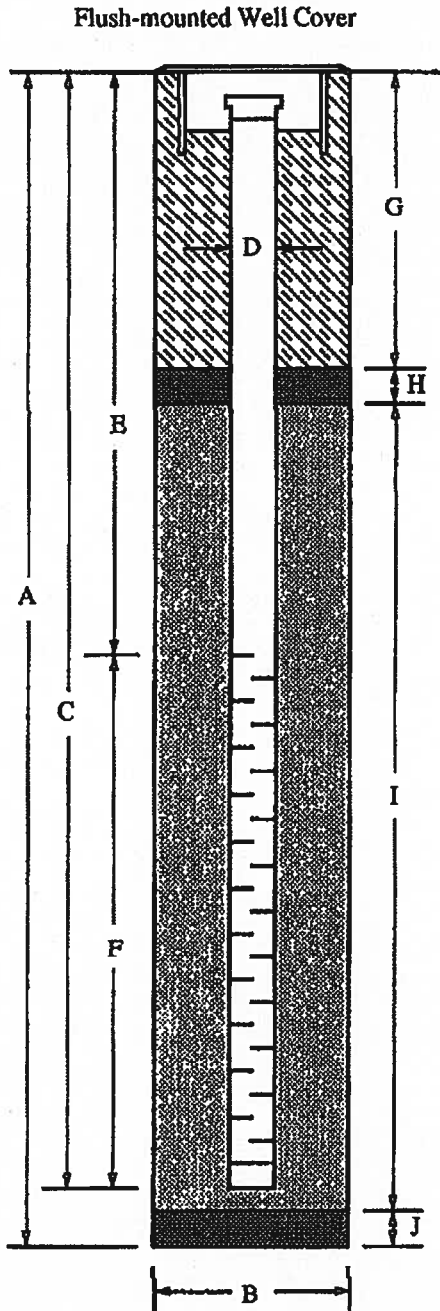
\*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

## WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal S/S #3292, 15008 E. 14th, San Leandro WELL NO. MW6

PROJECT NUMBER: KEI-P91-0102

WELL PERMIT NO.: ACFC & WCD 92201



- A. Total Depth : 20'
- B. Boring Diameter\* : 9"  
Drilling Method: Hollow Stem Auger
- C. Casing Length: 20'  
Material: Schedule 40 PVC
- D. Casing Diameter: OD = 2.375"  
ID = 2.067"
- E. Depth to Perforations: 8'
- F. Perforated Length: 12'  
Perforation Type: Machined Slot  
Perforation Size: 0.010"
- G. Surface Seal: 4'  
Seal Material: Neat Cement
- H. Seal: 2'  
Seal Material: Bentonite
- I. Filter Pack: 14'  
Pack Material: RMC Lonestar Sand  
Size: #2/12
- J. Bottom Seal: None  
Seal Material: N/A

\* Boring diameter can vary from 8 1/4" to 9" depending on bit wear.

# BORING LOG

<b>Project No.</b> KEI-P91-0102	<b>Boring &amp; Casing Diameter</b> 9"                      2"	<b>Logged By</b> <i>JGG</i> D.L. <i>EG 1633</i>
<b>Project Name</b> Unocal S/S #3292 15008 E. 14th, San Leandro	<b>Well Cover Elevation</b>	<b>Date Drilled</b> 5-5-92
<b>Boring No.</b> MW7	<b>Drilling Method</b> Hollow-stem Auger	<b>Drilling Company</b> Woodward Drilling

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description	
		0		Concrete slab over sand and gravel base.	
NO BLOW COUNT DATA - SAMPLES PUSHED          Very poor recovery at 7.5 feet.			ML/CL	Silt, clayey silt, and silty clay in pockets, with minor sand and gravel, soft to firm, moist, yellowish brown to black (fill and disturbed native soil).	
		5		CL/SM	Pocketed clay, silt, and sand, soft, moist (fill).
				CH	Silty clay, stiff, moist, olive brown and dark grayish brown mottled, very dark gray discolored root holes, occasionally wet inside root holes.
		10			Silty clay as above except olive brown.
				ML	Silt, trace very fine-grained sand, firm, wet, olive gray.
		15		MH	Clayey silt, firm to stiff, very moist, dark olive gray, root holes common.
				ML	Sandy silt, trace clay, sand is very fine-grained, firm to stiff, wet, dark olive gray.
		20		CH	Clay with silt, trace very fine-grained sand, stiff, moist, very dark grayish brown and dark gray mottled. Lenses of grayish brown clayey silt below 19.5 feet.
					Clay, very stiff, moist, black, trace caliche.
					TOTAL DEPTH: 21.5'

## BORING LOG

<b>Project No.</b> KEL-91-0102	<b>Boring &amp; Casing Diameter</b> 9"      2"	<b>Logged By</b> <i>JGG</i> <b>W.W.</b> <i>EG 1633</i>
<b>Project Name</b> Unocal S/S #3292 15008 E. 14th, San Leandro	<b>Well Cover Elevation</b>	<b>Date Drilled</b> 5/6/92
<b>Boring No.</b> MW8	<b>Drilling Method</b> Hollow-stem Auger	<b>Drilling Company</b> Woodward Drilling

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		2 inches of asphalt pavement and 4 inches of concrete pavement over sand and gravel base.
			CL	Silty clay, minor gravel, moist, grayish green.
			ML	Clayey silt, estimated at 25% clay, 5% sand and gravel to 1/2 inches in diameter, stiff, moist, very dark grayish brown.
7/9/13		5	CL	Clay, estimated at 10-15% fine sand and 5% subrounded gravel to 3/4 inches in diameter, trace silt, very stiff, moist, brown to dark yellowish brown.
		10		Clay, stiff to very stiff, moist, light olive brown, root pores with decomposed rootlets common.
4/7/9				
			GC	Clayey gravel with well graded sand and well rounded gravel to 3/4 inches in diameter, moist, medium dense.
			ML	Clayey silt, estimated at 5% fine-grained sand, very moist, olive gray.
6/7/5			SC	Clayey sand with silt, estimated at 30% clay and 10-15% silt sand, well graded, saturated, greenish gray.
		15	CL	Clay, trace silt and sand, moist, firm, olive gray and light olive brown mottled, trace root pores.
			ML	Clayey silt, saturated, firm, greenish gray.
2/2/3			SM	Silty sand, estimated at 25% silt, sand is well sorted, fine grained, saturated, olive gray and greenish gray mottled,
			CL/CH	Clay, high plasticity, trace silt, moist, stiff, gray and brown mottled, saturated root pores.
3/4/6			CL	Sandy clay with silt, very moist, olive gray.
		20		
4/5/7				
				TOTAL DEPTH: 19.0'





## BORING LOG

Project No. KBI-P91-0102		Boring & Casing Diameter 9"                      2"		Logged By W.W. <i>JGG</i> <i>EG 1633</i>	
Project Name Unocal S/S #3292 15008 E. 14th, San Leandro		Well Cover Elevation		Date Drilled 5/6/92	
Boring No. MW9		Drilling Method Hollow-stem Auger		Drilling Company Woodward Drilling	
Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description	
		0		2 inches of asphalt over 4 inches of concrete pavement.	
			CL	Silty clay with fine sand, estimated at 15% fine-grained sand, trace gravel, yellowish brown.	
				As above except dark grayish brown.	
				Silty clay, estimated 20% silt, stiff, moist, very dark gray.	
7/15/15		5		Silty clay, estimated 15-20% silt and 5% sand, minor gravel, very stiff, brown.	
				Clay, estimated at 5-10% silt, trace sand and caliche, very stiff, light olive brown and brownish gray, root pores common.	
7/9/9		10		Clay, estimated at 5-10% silt, trace sand and caliche, stiff, very moist to saturated, grayish brown to light olive brown, root pores common.	
	▽   ▽			Clay as above, color change to gray and greenish gray.	
7/7/6				Silty clay, estimated at 15% silt, stiff, saturated, greenish gray and light olive brown mottled, root pores common.	
4/5/6		15		Silty clay, estimated at 15-20% silt, trace sand, saturated, stiff, greenish gray and grayish brown mottled.	
4/6/8				CL/CH	Clay, high plasticity, trace fine sand, stiff, moist, mottled brown and dark gray, trace root pores.
		20		TOTAL DEPTH 19'	

# BORING LOG

Project No. KEI-P91-0102	Boring Diameter 9"	Logged By <i>JGG</i> D.L. <i>CEG 1633</i>
	Casing Diameter 2"	
Project Name Unocal S/S #3292 15008 E. 14th, San Leandro	Well Cover Elevation	Date Drilled 8/13/92
Boring No. MW10	Drilling Method Hollow-stem Auger	Drilling Company Woodward Drilling

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description	
		0		Concrete slab.	
NO BLOW COUNT DATA - SAMPLES PUSHED				Sand and gravel mixed with black silty clay (fill and disturbed native soil).	
			SC	Silty clay with trace sand and gravel, very stiff, moist, very dark brown (10YR 2/1) and black (10YR 1/1), mottled.	
			5		Clayey sand with trace gravel to 3/4 inch in diameter, sand is fine to coarse-grained, medium dense, moist, dark brown (10YR 3/3), with iron-oxide stained root holes.
				ML	Silt with trace fine-grained sand, stiff, moist, dark greenish gray (5GY 4/1).
			10	CL	Silty clay, stiff, moist, dark gray (5Y 4/1), olive brown (2.5YR 4/4) below 10.5 feet with dark greenish gray (5GY 4/1) discolored root holes.
				MH	Clayey silt, stiff, moist, olive gray (5Y 4/2).
				CL	Silty clay, as at 11 feet.
				MH	Clayey silt, stiff, moist, olive gray (5Y 4/2).
				SM	Silty sand with trace clay, sand is fine-grained, medium dense, wet, dark greenish gray (5GY 4/1).
			15	CH	Silty clay, stiff, moist, olive gray (5Y 4/2) and very dark grayish brown (10YR 3/2), mottled.
				ML	Silt and sandy silt, stiff, very moist to wet, dark greenish gray (5Y 4/1), sand is very fine to fine-grained.
				CH	Silty clay, stiff, moist, olive gray (5Y 4/1) with minor iron oxide staining.
				CH	Clay with silt and trace sand, stiff, moist, very dark brown (10YR 2/2) and very dark gray (10YR 3/1), mottled, minor caliche.
			20		TOTAL DEPTH 20'



## BORING LOG

Project No. KEI-P91-0102		Boring Diameter 9"		Logged By <i>JGG</i>		
		Casing Diameter 2"		D.L. <i>CEG 1633</i>		
Project Name Unocal S/S #3292 15008 E. 14th, San Leandro		Well Cover Elevation		Date Drilled 8/13/92		
Boring No. MW11		Drilling Method Hollow-stem Auger		Drilling Company Woodward Drilling		
Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description		
NO BLOW COUNT DATA - SAMPLES PUSHED		0		Concrete slab.		
		1		Sand and gravel mixed with black silty clay: fill and disturbed native soil.		
		2	CL		Silty clay with trace sand and gravel, very stiff, moist, black (10YR 2/1).	
		3				
		4	SC		Clayey sand with trace silt, sand is fine to coarse-grained, medium dense, moist, dark brown (10YR 3/3).	
		5				
		6				
		7				
		8				
		9	CH		Silty clay, stiff, moist, dark olive gray (5Y 4/2), olive gray (5Y 4/2) below 10 feet, with root holes, root holes are discolored, dark greenish gray below (5GY 4/1) below 10 feet.	
		10				
		11	MH		Clayey silt with trace fine-grained sand, stiff, moist to very moist, olive gray (5Y 4/2), grading to dark greenish gray (5GY 4/1) below 12.5 feet with root holes.	
	12					
	13					
	14	ML		Silt with sand, sand is very fine-grained, stiff, very moist, dark greenish gray (5GY 4/1).		
	15	SP		Poorly graded sand, fine-grained, trace silt, medium dense, saturated, dark greenish gray (5GY 4/1).		
	16					
	17	CH		Silty clay, stiff, moist, dark greenish gray (5GY 4/1).		
	18					
	19	MH		Clay with silt and trace sand, stiff, moist, very dark brown (10YR 2/2) and very dark gray (10YR 3/1), mottled, with trace caliche.		
	20	CL		Clayey silt, stiff, moist olive gray (5Y 4/2).		
	21			Silty clay, stiff, moist, dark greenish gray (5GY 4/1).		
				TOTAL DEPTH 20'		

# BORING LOG FOR MW-2

DATUM ELEVATION: 35.44  
 HEIGHT OF RISER: -0.57

ELEVATION (FEET)	DEPTH (FEET)	DESCRIPTION	WELL DIAGRAM	PID READINGS (ppm)																	
				0	5	10	15	20	25	30	35	40	45	50							
36.0	0.5	ASPHALT and BASEROCK																			
	3.0	CLAYEY SAND [SC]; yellow brown to olive; 30-40% low to medium plasticity fines; 50-60% fine to coarse sand (s:m:f:2:2:1); trace fine gravel (<0.1 in.); loose; damp; no petroleum odor; possible fill.																			
31.0		SANDY CLAY [SC]; black; 60-75% low plasticity fines; 25-40% fine to medium sand (f:m:2:1); stiff; damp; no petroleum odor.																			
		Ø 8.5 ft.: 70-85% low to medium plasticity fines; 15-30% fine to medium sand (f:m:3:1); stiff; damp; no petroleum odor.																			
26.0																					
	13.0	SAND [SP]; olive; trace-5% low plasticity fines; 95-100% fine to medium sand (f:m:1:2); loose; damp; no petroleum odor.																			
21.0	14.0	CLAY TO SANDY CLAY [CL]; light gray to olive; 80-95% medium plasticity fines; 5-20% fine to medium sand; stiff; damp; slight petroleum odor.																			
	17.5	SANDY CLAY [CL]; light gray; 60-75% low plasticity fines; 30-40% fine to medium sand (f:m:3:1); firm; wet; slight petroleum odor.																			
16.0																					
	21.0	Boring terminated at 21.0 feet																			
11.0																					
6.0																					
1.0																					
-4.0																					

**REMARKS:**

- 1) Boring advanced with 8-inch hollow stem augers.
- 2) A 2-inch PVC monitoring well was installed. The well was developed by hand bailing and sampled on October 25, 1990.
- 3) Chevron monitoring well MW-6 was used as a benchmark to survey top of casing elevation.

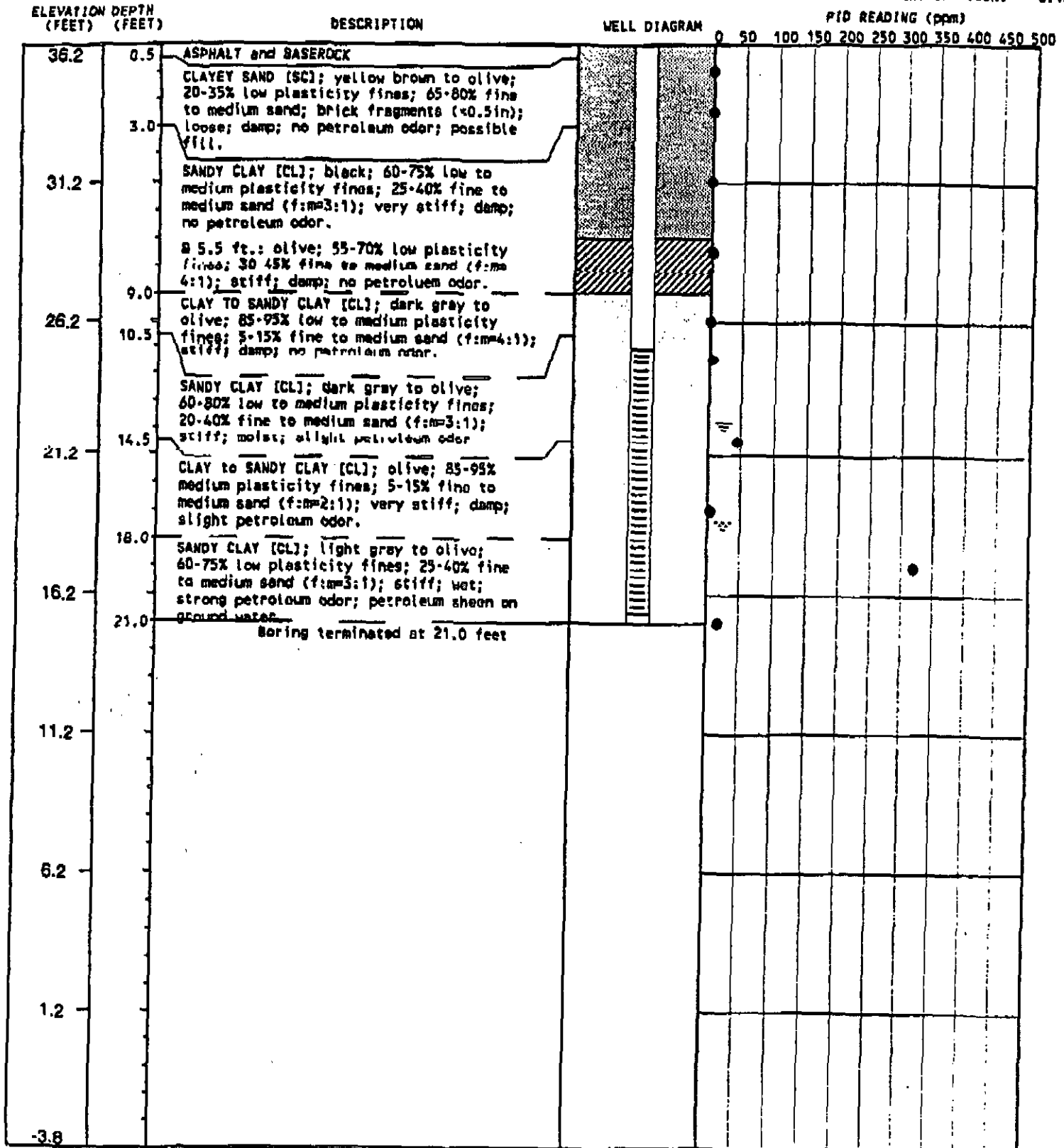
DRILLED BY: SPECT.  
 LOGGED BY: PCB  
 CHECKED BY: TCH

BORING NUMBER: MW-2  
 DATE STARTED: 10/24/90  
 DATE COMPLETED: 10/24/90  
 JOB NUMBER: 31-0525



### BORING LOG FOR MW-3

DATUM ELEVATION: 35.81  
HEIGHT OF RISER: -0.42



**REMARKS:**

- 1) Boring advanced using 8-inch hollow stem augers.
- 2) A 2-inch PVC monitoring well was installed. The well was developed by hand bailing and sampled on October 25, 1990.
- 3) Chevron monitoring well MW-6 was used as a benchmark to survey top of casing elevation.

DRILLED BY: SPECT.  
LOGGED BY: TCH  
CHECKED BY: TCH

BORING NUMBER: MW-3  
DATE COMPLETED: 10/24/90  
JOB NUMBER: 31-0525





## **Appendix C**

Well Completion Reports

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

**STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)**

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**



**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

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STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
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(WELL LOGS)

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**CONFIDENTIAL**

**STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)**

**REMOVED**