**Carryl MacLeod**
Project Manager
Marketing Business Unit

**Chevron Environmental Management Company**
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6506
CMacleod@chevron.com

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577



RE: **Water Supply Well Destruction Report**
Former Chevron Service Station 97127
Grant Line Road and Interstate 580
Tracy, California
*RWQCB # RO0000185*

Dear Mr. Detterman:

ARCADIS U.S., Inc. (ARCADIS), at the request of Chevron Environmental Management Company (Chevron), has prepared the enclosed Water Supply Well Destruction Report for Former Chevron Service Station 97127, located at Grant Line Road and Interstate 580 in Tracy, California.

I declare to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct. The enclosed report is submitted pursuant to the requirements of California Water Code Section 13267 (b)(1).

Sincerely,

Carryl MacLeod
Project Manager

ARCADIS U.S., Inc.
101 Creekside Ridge Court
Suite 200
Roseville
California 95678
Tel 916.786.0320
Fax 916.786.0366
**www.arcadis-us.com**

ENVIRONMENT

Mr. Mark Detterman, P.G., C.E.G.
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject:
**Water Supply Well Destruction Report**
Former Chevron Service Station No. 97127
Grant Line Road and Interstate 580
Tracy, California
*RWQCB # RO0000185*

Date:
April 16, 2015

Contact:
Tonya R. Russi

Phone:
916.865.3168

Email:
Tonya.Russi@
arcadis-us.com

Our ref:
B0047959.0013

Dear Mr. Detterman:

On behalf of Chevron Environmental Management Company (Chevron), ARCADIS U.S. Inc. (ARCADIS) has prepared this report to document well destruction activities associated with former Chevron service station 97127, located at the east side of Grant Line Road, just south of Interstate-580 in a rural area of Tracy, California (the site; Figure 1). Alameda County Environmental Health (ACEH) requested the destruction of the water supply well, WSW-1, in their electronic mail (e-mail) dated December 23, 2014. Activities were performed in accordance with Zone 7 Agency requirements.

**Site Description and Features**

The site is a vacant lot located on the east side of Grant Line Road, just south of Interstate-580 in a rural area of Tracy, California (Figure 1). Former service station facilities at the site included fuel underground storage tanks (USTs) (two 10,000-gallon capacity and one 1,000-gallon capacity), one steel used oil UST (1,000-gallon capacity), one heating oil UST (750-gallon capacity), product line piping and pump islands, and a station building (Figure 2). The USTs and associated piping were removed during April 1991. The site is currently a vacant lot.

**Permitting**

Prior to conducting the field activities, ARCADIS secured a well destruction permit from Zone 7 Agency. A copy of the permit is included as Attachment A.

**Underground Utility Locating**

Underground Service Alert (USA) was called a minimum of 48 hours prior to the commencement of field activities. A third party private utility locator, Ground Penetrating Radar Systems, Inc. (GPRS) from Scotts Valley, California was used to verify that there were no utilities or subsurface obstructions beneath and in the vicinity of the water supply well location.

**Well Decommissioning Activities**

On March 6, 2015, ARCADIS supervised Welenco of Bakersfield, California and Gregg Drilling and Testing, Inc. (Gregg) of Martinez, California during well destruction activities. Gregg is a California-licensed drilling contractor (C57 License No. 485165). Prior to well destruction, depth to water and total depth was measured to verify that the casing was free of obstructions.

Welenco placed an explosive 50 grain detonator cord with seven 150 grain charges set at approximately 62 feet below ground surface (bgs), within the screen interval of WSW-1. Subsequently, Gregg added neat cement grout to the well using a stainless steel tremie pipe set at the bottom of the well until the casing was completely filled with grout. Due to the size of the well casing, a cement truck from Cemex and a pump truck was onsite to pump cement into the well. Once the grout was placed, everyone was cleared around the work area and the charge was detonated in the well. Approximately 165 gallons of neat cement grout was used during well destruction.

Following detonation, Gregg attempted to remove the top five feet of the well casing and the well vault. However, the well casing was dual cased (steel conductor casing and steel well casing) and the well vault was reinforced with rebar; therefore, Gregg couldn't safely use a jack hammer to remove the well vault.

On April 8, 2015, ARCADIS and Gregg returned to the site to complete well destruction activities including the removal of the well vault and the top five feet of the well casing. Prior to well destruction activities, Gregg completed lock out tag out (LOTO) of the electrical line running to the electrical box that energized the former pump in the water supply well. Once the electrical line was LOTO, the line was also tested with a multimeter to ensure that the electrical line was not energized. The electrical line was then cut at the circuit breaker and left in place. The pole and electrical box for the former pump were also in place.

Prior to well vault removal activities, Gregg traced the water spigot and sprinkler line located adjacent to the well vault using a backhoe. The water spigot and entire line was removed. The backhoe was then used to break up the well vault and the top 5 feet of the conductor and well casing. The construction debris was placed in Gregg's support vehicle using the backhoe. The remainder of the boring was backfilled with native soil to surface.

Well completion report for the water supply well destruction is included as Attachment B.

**Investigation Derived Waste**

The drilling contractor disposed of the conductor casing, steel well casing well vault and other waste generated during the well destruction activities as construction debris. The over-excavated soil was used to backfill the boring.

If you have any questions or comments regarding the content of this work plan, please contact Tonya Russi by telephone at 916.865.3168 or by e-mail at Tonya.Russi@arcadis-us.com.

Sincerely,

ARCADIS U.S., Inc.

Tonya Russi

Tonya R. Russi
Senior Scientist

David W. Lay, P.G., C.P.G.
Principal Geologist

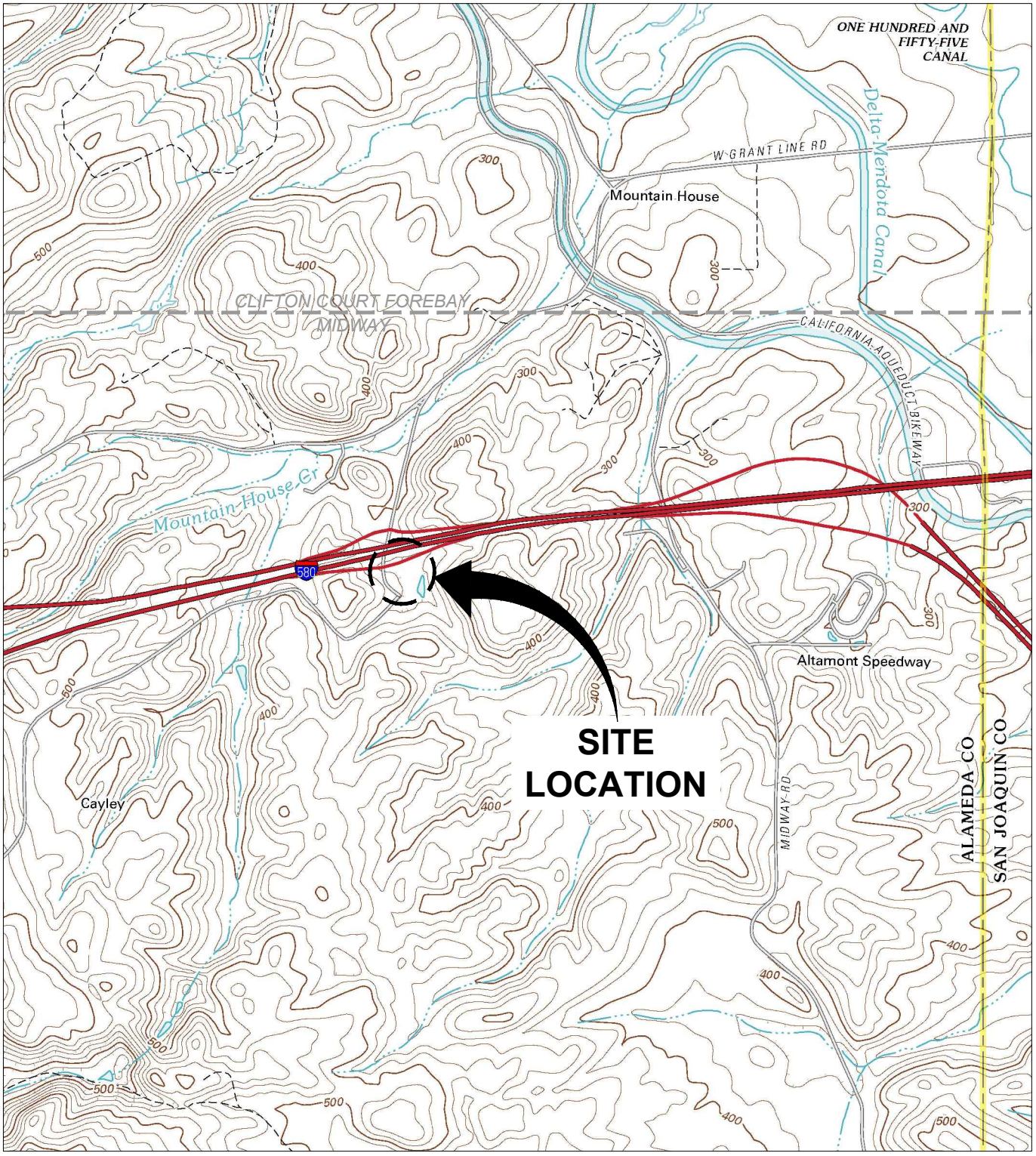

Enclosures:

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Site Plan |
| Attachment A | Zone 7 Agency Well Destruction Permit |
| Attachment B | Well Completion Report |

Copies:
Ms. Carryl MacLeod, Chevron Environmental Management Company
Mr. Ardavan Onsori, DM Livermore, Inc.
Mr. Wyman Hong, Zone 7 Water Agency

ARCADIS

**Figures**




REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., MIDWAY AND CLIFTON COURT FOREBAY, CALIFORNIA, 2012.

0 2000' 4000'

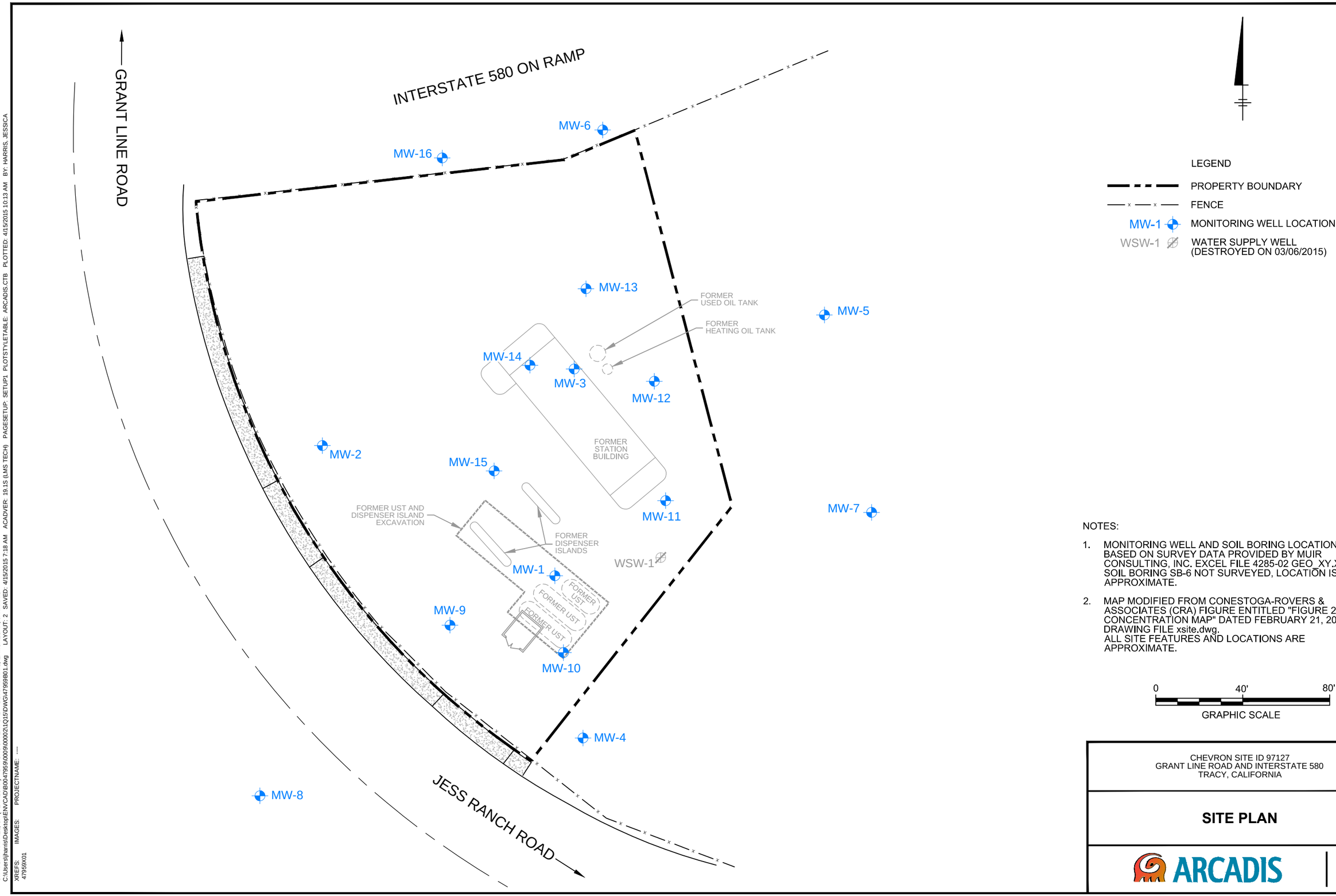
Approximate Scale: 1 in. = 2000 ft.


CHEVRON SITE ID 97127
GRANT LINE ROAD AND INTERSTATE 580
TRACY, CALIFORNIA

**SITE LOCATION MAP**

ARCADIS

FIGURE 1




NOTES:

1. MONITORING WELL AND SOIL BORING LOCATIONS BASED ON SURVEY DATA PROVIDED BY MUIR CONSULTING, INC. EXCEL FILE 4285-02 GEO_XY.XLS. SOIL BORING SB-6 NOT SURVEYED, LOCATION IS APPROXIMATE.
2. MAP MODIFIED FROM CONESTOGA-ROVERS & ASSOCIATES (CRA) FIGURE ENTITLED "FIGURE 2 CONCENTRATION MAP" DATED FEBRUARY 21, 2012, DRAWING FILE xsite.dwg.
   ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 40' 80'

GRAPHIC SCALE

CHEVRON SITE ID 97127
GRANT LINE ROAD AND INTERSTATE 580
TRACY, CALIFORNIA

# SITE PLAN

ARCADIS

FIGURE 2

**Attachment A**

Zone 7 Agency Well
Destruction Permit

# ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 245-8306
E-MAIL whong@zone7water.com

## DRILLING PERMIT APPLICATION

**FOR APPLICANT TO COMPLETE**

LOCATION OF PROJECT Interstate 580 and Grant Line Road,
10 Grant Line Rd, Livermore

Coordinates Source _____ ft. Accuracy _____ ft.
LAT: _____ ft. LONG: _____ ft.
APN 998-7700-12-2

CLIENT
Name Chevron Environmental Management Company
Address 6101 Bollinger Canyon Road Phone 925.790.3949
City San Ramon Zip 94583

APPLICANT
Name ARCADIS U.S., Inc. (Loretta Kwong)
Email Loretta.Kwong@arcadis-us.com Fax 212.682.9275
Address 655 Third Avenue, 12th Floor Phone 415.744.4906
City New York Zip 10017

TYPE OF PROJECT:

| | | | |
|---|---|---|---|
| Well Construction | __ | Geotechnical Investigation | __ |
| Well Destruction | X | Contamination Investigation | __ |
| Cathodic Protection | __ | Other | __ |

PROPOSED WELL USE:

| | | | |
|---|---|---|---|
| Domestic | __ | Irrigation | __ |
| Municipal | __ | Remediation | __ |
| Industrial | __ | Groundwater Monitoring | __ |
| Dewatering | __ | Other | __ |

DRILLING METHOD:

| | | | | | |
|---|---|---|---|---|---|
| Mud Rotary | __ | Air Rotary | __ | Hollow Stem Auger | __ |
| Cable Tool | __ | Direct Push | __ | Other detonation | X |

DRILLING COMPANY Gregg Drilling and Testing
DRILLER'S LICENSE NO. 485165 expires 1/31/2016

WELL SPECIFICATIONS:
Drill Hole Diameter _____ in. Maximum
Casing Diameter _____ in. Depth _____ ft.
Surface Seal Depth _____ ft. Number _____

SOIL BORINGS:
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 2/6/2015
ESTIMATED COMPLETION DATE 2/6/2015

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

APPLICANT'S SIGNATURE [signature] Date 1/12/2015

**FOR OFFICE USE**

PERMIT NUMBER 2015005
WELL NUMBER 2S/4E-19N7 (WSW-1)
APN 99B-7700-012-02

PERMIT CONDITIONS
(Circled Permit Requirements Apply)

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to your proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report (DWR Form 188), signed by the driller.
3. Permit is void if project not begun within 90 days of approval date.
4. Notify Zone 7 at least 24 hours before the start of work.

B. WATER SUPPLY WELLS
1. Minimum surface seal diameter is four inches greater than the well casing diameter and six inches for public wells.
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.
3. Grout placed by tremie.
4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
5. A sample port is required on the discharge pipe near the wellhead.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
3. Grout placed by tremie.

D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

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

(F.) WELL DESTRUCTION. See attached.

G. SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.

Approved [signature] Wyman Hong Date 1/17/15

ATTACH SITE PLAN OR SKETCH

Revised: May 17, 2011

January 15, 2015

Zone 7
Water Resources Engineering
Groundwater Protection Ordinance

Chevron Environmental Management Company
10 Grant Line Road
Livermore
Well 2S/4E-19N7 (WSW-1)
Permit: 2015005

Destruction Requirements:

1. Well destruction shall be performed by a C-57 Licensed Contractor.

2. Remove pump column, pump bowls, motor, discharge head and appurtenances from the existing well and clean out casing to total depth or deepest practical depth. Sound the depth that the casing was cleaned out to and document on the well destruction report.

3. Place a metal tremie pipe in the casing. Place explosive charges (booster caps) in the well casing from 40 to 80 feet below ground surface at ten foot intervals.

4. Fill the well casing up to 5 feet below grade with a 10-sack sand cement grout sealing mixture using the metal tremie pipe. The end of the tremie pipe shall remain submerged in the sealing material at all times during placement of the cement grout.

5. Set off the explosive charges to rip the casing allowing the cement grout to fill the voids around the casing.

6. Refill the casing with cement grout up to 5 feet below grade.

7. Cut and remove the casing to 5 feet below grade. Backfill the remaining borehole with native soil to grade.

# Wellbore Video Report

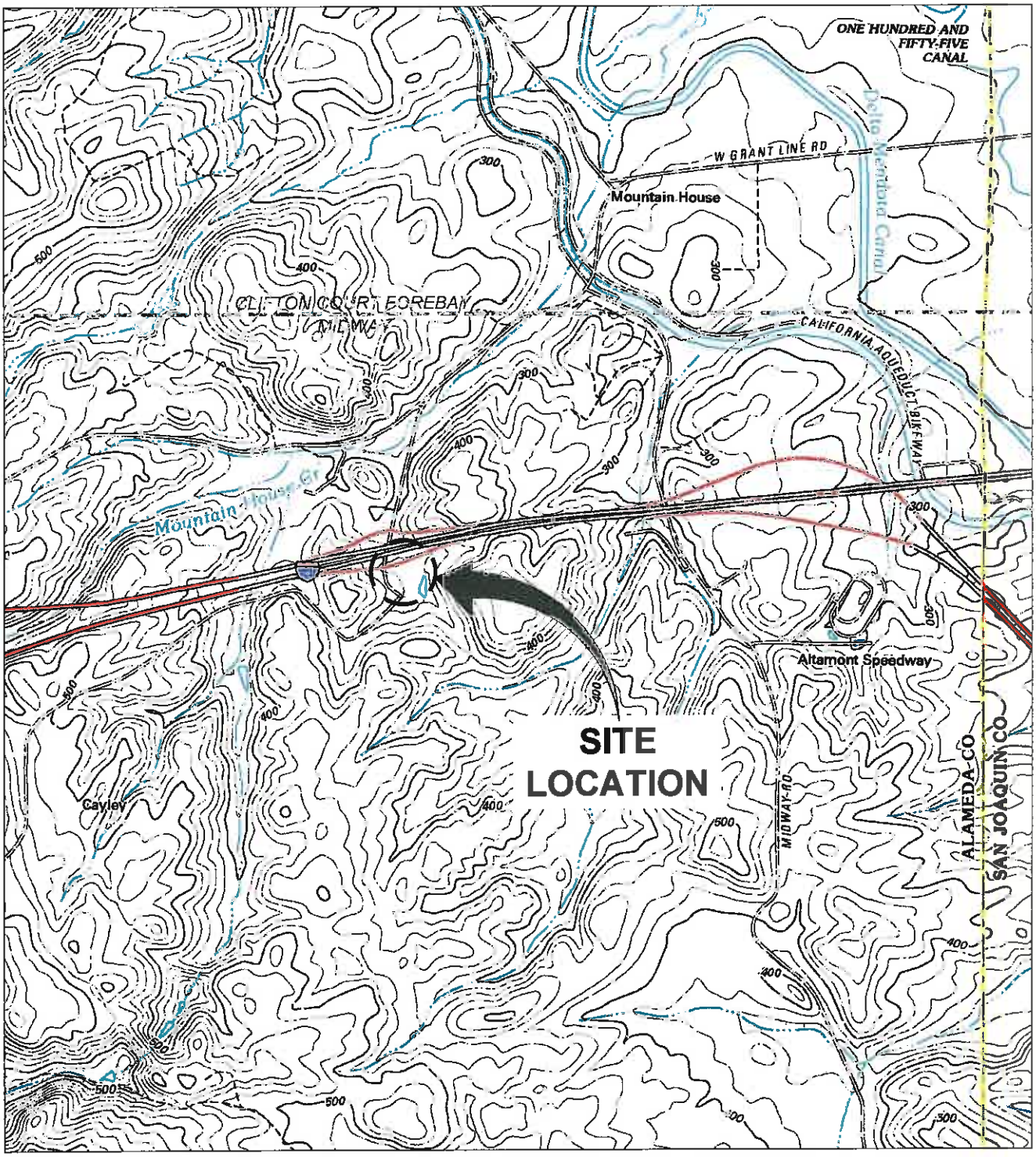
**Welenco**
5201 Woodmere Drive Bakersfield, CA. 93313
Phone: 661-834-8100 Fax: 661-834-2550 Web: www.welenco.com

Company: Cascade Drilling | Invoice No: 17853 | Run No.: 1
Address: 3000 Duluth Street | Well Number: WSW 1 (Tracy)
City: West Sacramento | State: CA | Zip: 95691 | Survey Date: Nov 7, 2013
Requested By: Paul | P.O.: | Well Owner: Chevron Site
Copy To: Arcadis | Camera: CCV S.S. Color Camera - Short L.H.
Reason For Survey: General Inspection | Zero Datum: Top of Casing
Operator: E. Fulton & J. Lawhead | Lat.: | Long.: | Sec: | Twp: | Rge:
Location: 1-580 & Grant Line Rd. Tracy, Ca | Depth: | Van: PV-4
Csg I.D.@Surface: 8" | I.D. Ref: Measured | Casing Corrosion: Heavy

| SELECTED WELLBORE SNAPSHOTS | TRUE DEPTHS (SideScan - Feet) | WELLBORE / CASING INFORMATION |
|---|---|---|
|  0' 27' 50' 51' 81' | 0' | Zeroed Out At Top Of Casing Begin Survey |
| | 27' | Static Water Level (SWL) |
| | 51' | Perforations Begin - Slots (51' - Fill ) |
| | 51' | Downview Of Perforations - Slots |
| | 81' | Soft Fill - Bottom - End Of Survey |
| | | Camara length Was Added For Correct Total Depth |



**Notes:**




REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., MIDWAY AND CLIFTON COURT FOREBAY, CALIFORNIA, 2012.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.


CHEVRON SITE ID 97127
GRANT LINE ROAD AND INTERSTATE 580
TRACY, CALIFORNIA
**FIRST QUARTER 2014**
**GROUNDWATER MONITORING REPORT**

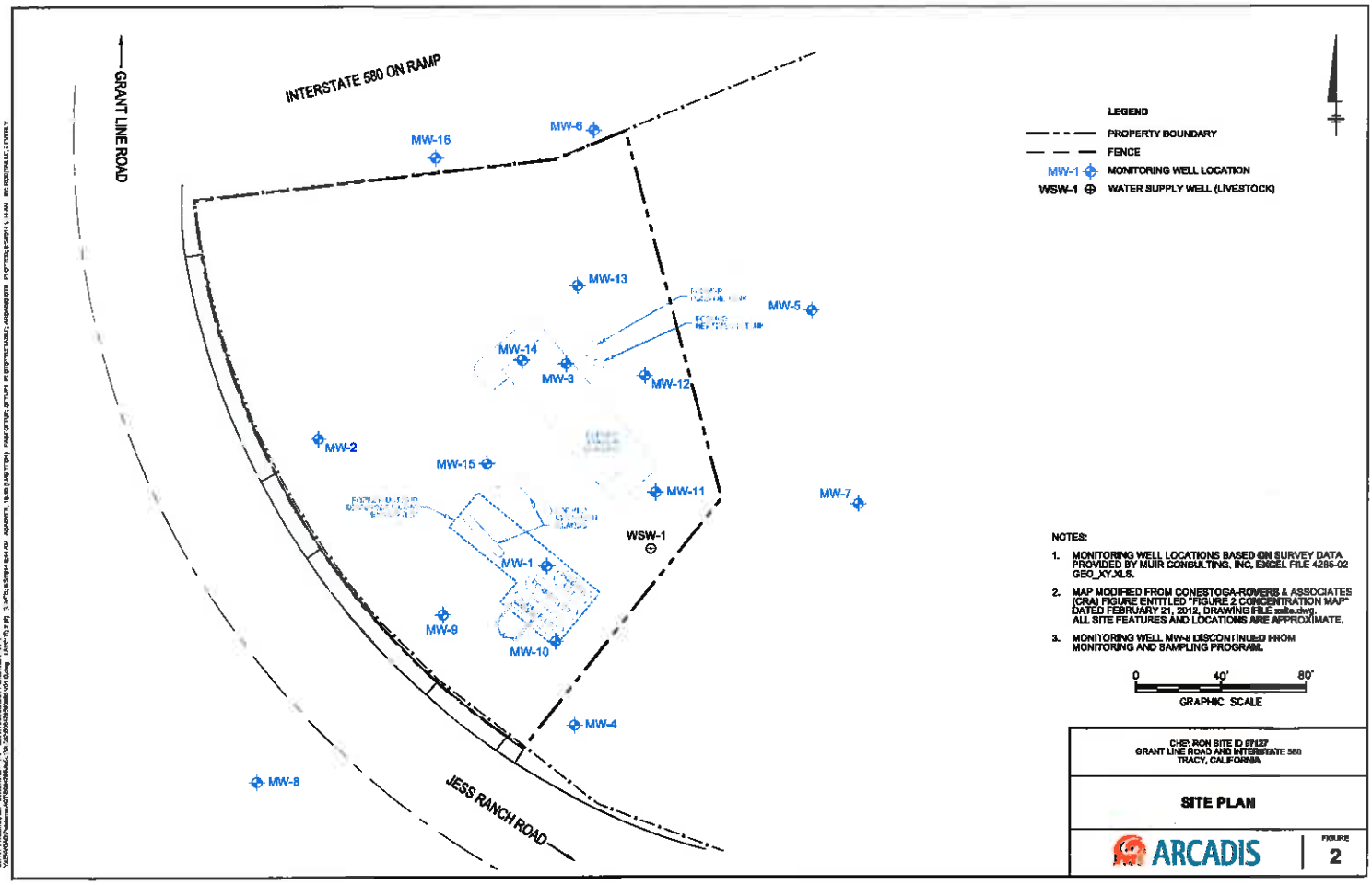
## SITE LOCATION MAP

ARCADIS

FIGURE 1

XREFS: IMAGES: PROJECTNAME: Clifton Court Forebay 2012.jpg Midway 2012.jpg

CITY: SAN RAFAEL, CA (PETALUMA) DW/GROUP: ENVCAD DB: J. HARRIS
C:\Users\jharris\Desktop\ENVCAD\DB\0047959\0004\0002\Q1\4\DWG\47959N01.dwg LAYOUT: 1 SAVED: 1/10/2014 1:51 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: SETUP1 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/26/2014 11:01 AM BY: HARRIS, JESSICA


GRANT LINE ROAD
INTERSTATE 580 ON RAMP
JESS RANCH ROAD
MW-16
MW-6
MW-13
MW-5
MW-14
MW-3
MW-12
MW-2
MW-15
MW-11
MW-7
WSW-1
MW-1
MW-9
MW-10
MW-4
MW-8
LEGEND
PROPERTY BOUNDARY
FENCE
MW-1 MONITORING WELL LOCATION
WSW-1 WATER SUPPLY WELL (LIVESTOCK)
NOTES:
1. MONITORING WELL LOCATIONS BASED ON SURVEY DATA PROVIDED BY MUIR CONSULTING, INC. EXCEL FILE 4285-02 GEO_XY.XLS.
2. MAP MODIFIED FROM CONESTOGA-ROVERS & ASSOCIATES (CRA) FIGURE ENTITLED "FIGURE 2 CONCENTRATION MAP" DATED FEBRUARY 21, 2012, DRAWING FILE xsite.dwg. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. MONITORING WELL MW-8 DISCONTINUED FROM MONITORING AND SAMPLING PROGRAM.
0 40' 80'
GRAPHIC SCALE
CHEVRON SITE ID 97127
GRANT LINE ROAD AND INTERSTATE 580
TRACY, CALIFORNIA
SITE PLAN
ARCADIS
FIGURE
2

**Attachment B**

Well Completion Report

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Page 1 of 1

Owner's Well Number WSW-1

Date Work Began 03/06/2015 Date Work Ended 4/8/2015

Local Permit Agency Zone 7 Agency

Permit Number 2015005 Permit Date 1/17/15

State of California

# Well Completion Report

*Refer to Instruction Pamphlet*

**No. e0262638**

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N Latitude W Longitude

APN/TRS/Other

## Geologic Log

**Orientation** ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

| Depth from Surface Feet | to Feet | Description (Describe material, grain size, color, etc) |
|---|---|---|
| | | Destroyed the well by detonation methods. A 50 |
| | | grain detonator cord with 7 150 grain charges |
| | | set at approximately 62 feet bgs within the screen |
| | | interval. Subsequently, neat cement grout was |
| | | added to the well using stainless steel tremie |
| | | pipe from the bottom up. Approximately 165 |
| | | gallons of neat cement grout was used. The top |
| | | 4.5 feet of the well casing and conductor casing |
| | | was removed and the boring was backfilled with |
| | | native soil to surface. |

Total Depth of Boring Feet

Total Depth of Completed Well 87 Feet

## Well Owner

Name Ardavan Onsori

Mailing Address

City State Zip

## Well Location

Address Interstate 580 and Grant Line Road

City Tracy County Alameda

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Dec. Lat. Dec. Long.

APN Book Page Parcel

Township Range Section

## Location Sketch

(Sketch must be drawn by hand after form is printed.)

North / West / East / South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

## Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other
◉ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

## Planned Uses

◉ Water Supply
☑ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

## Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level 28 (Feet) Date Measured 03/06/2015

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

## Casings

| Depth from Surface Feet | to Feet | Borehole Diameter (Inches) | Type | Material | Wall Thickness (Inches) | Outside Diameter (Inches) | Screen Type | Slot Size if Any (Inches) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

## Annular Material

| Depth from Surface Feet | to Feet | Fill | Description |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

## Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Gregg Drilling & Testing, Inc (Person, Firm or Corporation)

950 Howe Rd (Address) Martinez (City) CA (State) 9453 (Zip)

Signed (C-57 Licensed Water Well Contractor) 4/13/2015 (Date Signed) 485165 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM