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

RECEIVED
By Alameda County Environmental Health at 10:01 am, Jan 08, 2015

RE: **Pump Test Work Plan**
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 Pump Test Work Plan 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
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ENVIRONMENT

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

Subject:
Pump Test Work Plan
Former Chevron Service Station No. 97127
Grant Line Road and Interstate 580
Tracy, California
RWQCB # RO0000185

Date:
January 8, 2015

Contact:
Tonya R. Russi

Phone:
916.865.3168

Email:
Tonya.Russi@
arcadis-us.com

Our ref:
B0047959.0007

Dear Mr. Detterman:

On behalf of Chevron Environmental Management Company (Chevron), ARCADIS U.S. Inc. (ARCADIS) has prepared this *Pump Test Work Plan* for the 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).

The current remedial strategy at the site is to install a dual-phase extraction (DPE) system. However, DPE may not be feasible if groundwater yields are too high as the site is located in a remote area where a sanitary sewer connection isn't possible. ARCADIS prepared this work plan to determine the amount of groundwater expected to be generated if a DPE system were installed at the site. The details of the work plan are discussed below.

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 station building (Figure 2). The USTs and associated piping were removed during April 1991. The site is currently a vacant lot.

Proposed Scope of Work

ARCADIS proposes the following scope of work to determine the amount of groundwater that could be generated at the site if a DPE system was installed. Figure 2 illustrates the well location. The pump test will be conducted at MW-1.

Site Specific Health and Safety Plan

As required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 Code of Federal Regulations Section 1910.120), and by California Occupational Health and Safety Administration (Cal-OSHA) "Hazardous Waste Operations and Emergency Response" guidelines (California Code of Regulations Title 8, Section 5192), ARCADIS will prepare a site-specific health and safety plan (HASP) prior to commencement of fieldwork. Field staff and contractors will review the HASP before beginning field operations at the site.

LNAPL Pump Test

An eight hour pump test will be conducted at monitoring well MW-1 to determine the amount of groundwater that could potentially be generated to determine if a DPE system would be a feasible remediation remedy at the site. Monitoring well MW-1 was chosen as it is the only 4-inch diameter well installed at the site. However, MW-1 currently has approximately 2.65 feet of light non-aqueous phase liquid (LNAPL) in the well based on the third quarter 2014 groundwater monitoring report.

ARCADIS will attempt to coordinate the pump test to immediately follow the LNAPL removal activities that were proposed in ARCADIS' *LNAPL Recovery Work Plan* dated August 28, 2014. Conducting the pump test after LNAPL removal activities will likely decrease the amount of LNAPL generated during the pump test.

Blaine Tech Services, Inc. (BTS) will be conducting the field activities for the pump test at MW-1. Baseline static water levels and LNAPL levels will be recorded using an interface probe prior to initiating the pump test at the pumping wells and observation wells. MW-3, MW-9, MW-10, MW-11, MW-12, MW-14 and MW-15 will be used as the observation wells. If LNAPL is observed at the pumping well, MW-1, the LNAPL will be manually bailed from the well until removed to the extent practical.

Following LNAPL removal, a bottom loading pneumatic pump and pressure transducer will be lowered into MW-1. The pump intake will be set at approximately 32 feet below ground surface (bgs). The intake will be adjusted throughout the test in order to not run the pump the dry. The outlet of the tubing will be connected to a holding tank that will store the LNAPL and groundwater. Historical data suggests that a pump rate can be sustained at approximately 6 to 7 gallons per minute (gpm). If the well does go dry during the pump test, the field team will stop the pump and wait until the well has recharged at least 80% before restarting the pump test.

Pressure transducers will also be installed in observation wells, MW-3, MW-9, MW-10, MW-11, MW-12, MW-14 and MW-15 prior to the pump test. The pressure transducer installed in the pumping well, MW-1, will be connected to a laptop so that the field team will be able to obtain real-time data and ensure the well doesn't go dry.

During the pump test, the pump rate will be measured using a totalizer every 5 minutes to ensure a steady pump rate for the first hour. If a totalizer is unavailable, a calibrated 5-gallon buckets will be used. Following the first hour, measurements will be taken every 30 minutes. Manual groundwater levels will be collected from the pumping well and observation wells every 30 minutes.

Prior to the commencement of the pump test, the field team will collect water levels at the pumping well and observation wells. Once the pump test has ended, the field team will record the time which the pump test stopped and download data from the pressure transducers and remove them from each well.

All down-hole equipment will be decontaminated using an Alconox™ rinse followed by a water rinse.

Investigation-Derived Waste (IDW) and Disposal

Groundwater extracted during pump testing activities will be temporarily stored onsite prior to disposal. In order to measure how much LNAPL and groundwater was generated, the field team will use an interface probe to drop in the holding tank to determine depth of product and depth to water. The field team will also need to determine the diameter or dimensions of the holding tank in order to calculate the approximate volume of product and groundwater generated during this pump test. A Chevron disposal contractor will transport waste to an appropriate disposal or treatment facility.

Report

ARCADIS will include a detail of results and findings in the Feasibility Study and Corrective Action Plan.

Schedule

ARCADIS is prepared to initiate field work upon the approval of this work plan by the Alameda County Environmental Health.

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:

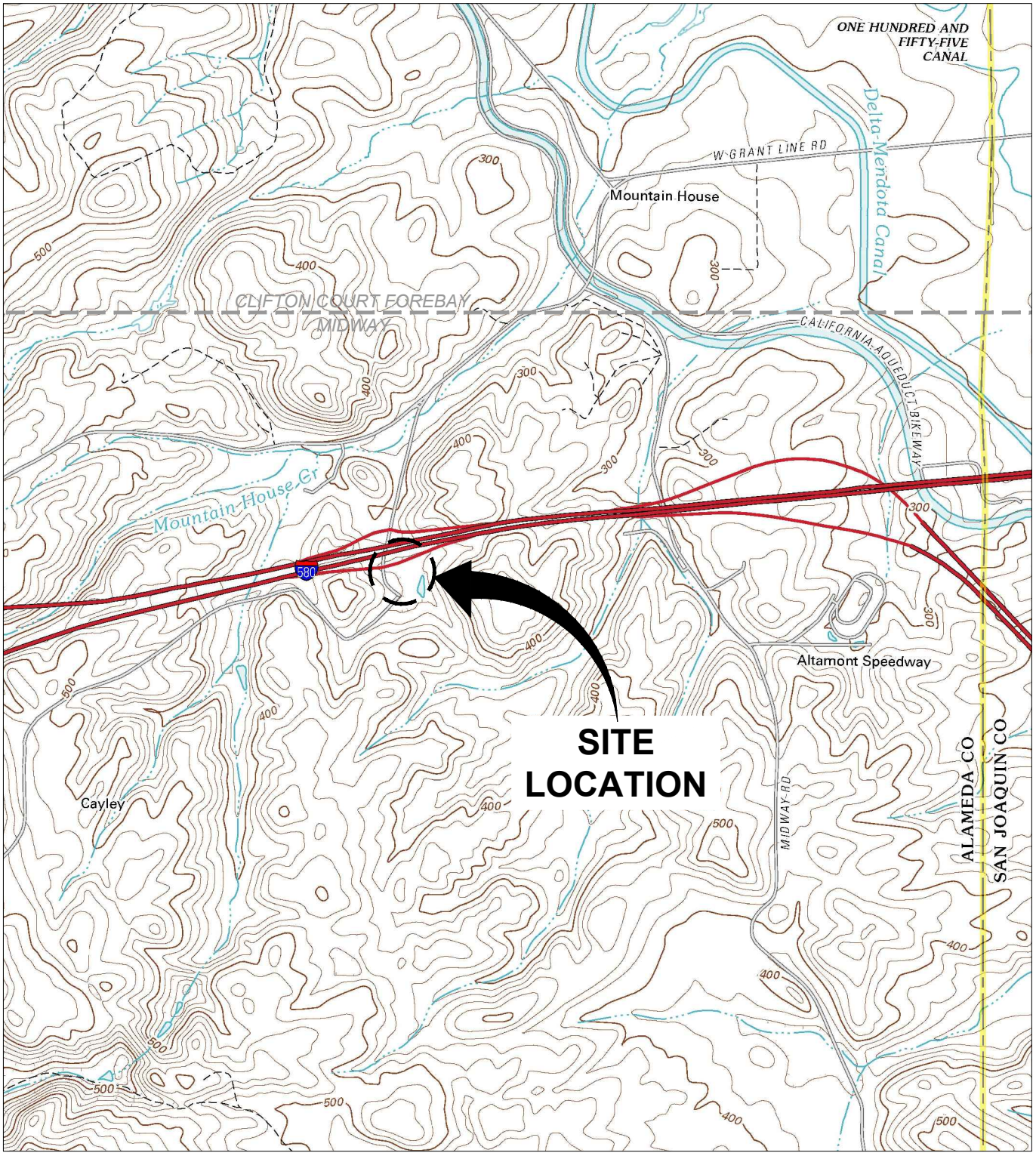
Figure 1	Site Location Map
Figure 2	Site Plan

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'

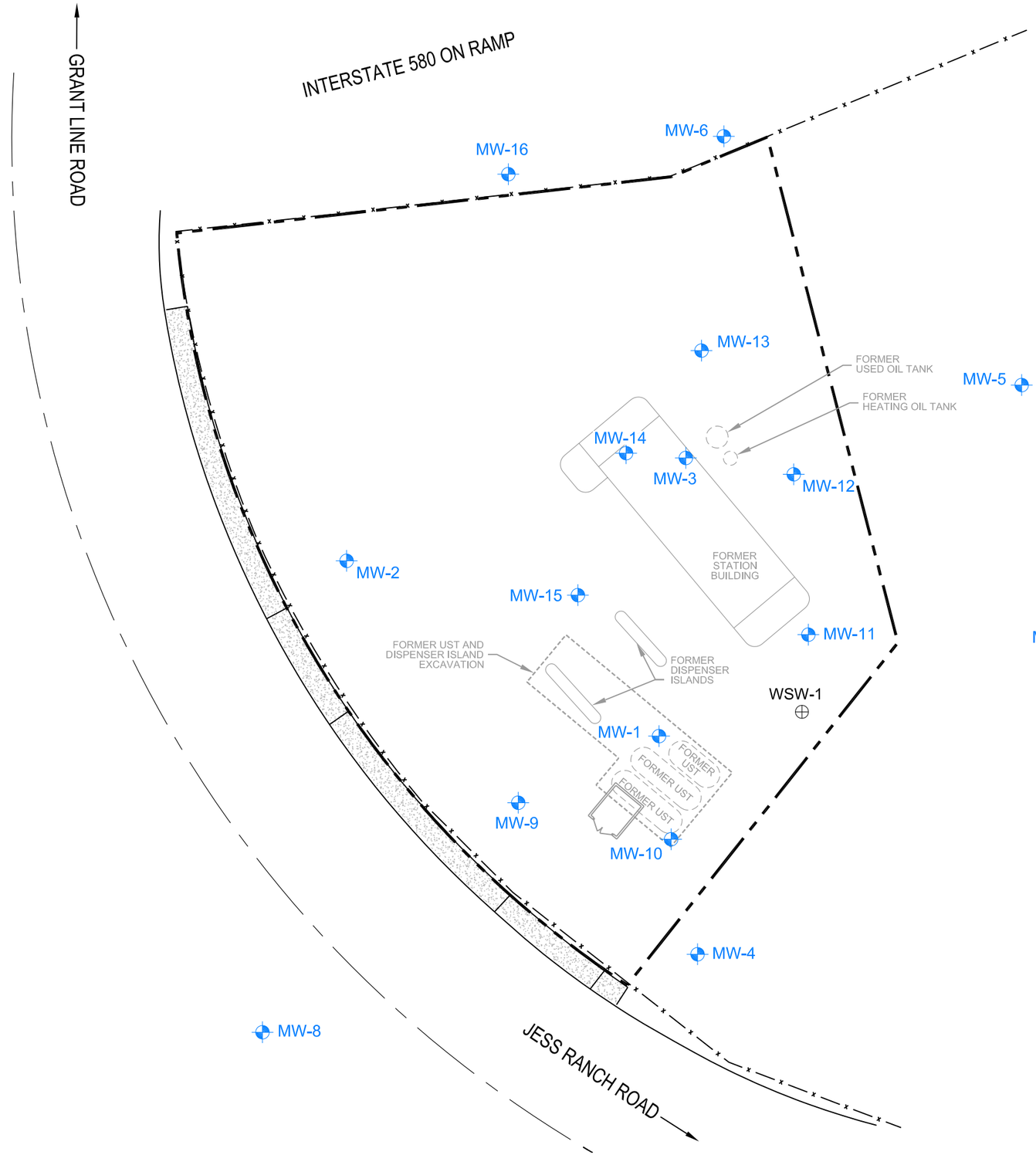
Approximate Scale: 1 in. = 2000 ft.

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

SITE LOCATION MAP

ARCADIS

FIGURE 1



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

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS/BAR PM: DAVID EVANS
Y:\ENVCAD\Petaluma\ACTIVITY\00479590003\00002\B00479590003 V01 C.dwg LAYOUT: 2 (2) SAVED: 8/5/2014 9:44 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: SETUP1 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 8/5/2014 9:44 AM BY: ROBITAILLE, BEVERLY