
Central Valley Regional Water Quality Control Board

August 18, 2017

Mr. Todd Leon
1717 S Street Investors LP
1522 14th Street
Sacramento, CA 95814

NOTICE OF APPLICABILITY OF GENERAL ORDER NO. R5-2015-0012-034, S STREET REDEVELOPMENT PROJECT, 1717 S STREET, SACRAMENTO, SACRAMENTO COUNTY

1717 S Street Investors LP submitted a completed Notice of Intent, dated June 21, 2017, requesting coverage under Order No. R5-2015-0012, *Waste Discharge Requirements General Order for In-situ Groundwater Remediation and Discharge of Treated Groundwater to Land*. Based on information in the submittal, it is our determination that this project meets the required conditions to be approved under Order No. 2015-0012. All of the requirements contained in the general order are applicable to this project. The project is assigned Order No. R5-2015-0012-034.

Project Location:

The project is in Sacramento County, Township 8N, Range 4E, Section 12, Mount Diablo Baseline & Meridian. Assessor's Parcel Numbers 009-0095-006, 009-0095-007, 009-0095-008, 009-0095-0011; Latitude 38°34'4" N, Longitude 121°29'16"W.

Project Description:

The 1717 S Street property is located on the north side of S Street between 17th and 18th Streets in Sacramento. The property is currently a vacant lot. Past businesses on the property include auto parts, auto repair, and metal plating. Leaks and spills of chemicals used at the businesses contaminated soil and groundwater beneath the property.

Previous investigations at the site and the nearby Orchard Supply Company property have installed monitoring wells into three distinct water-bearing units (shallow, deep, and deeper). The shallow water-bearing unit includes silts and sands located at depths between approximately 15 and 40 feet deep. The deep water-bearing unit is generally encountered at depths of 55 to 68 feet and ranges in thickness from 5 to 25 feet. The deep water-bearing unit is composed of fine-grained sand and separated from the shallow aquifer by 15 to 40 feet of silty clay/clayey silt. The deeper water-bearing unit is first encountered at 115 feet. The primary constituents of concern at the site impacting groundwater are trichloroethene, cis-1,2-dichloroethene, and hexavalent chromium. The highest concentrations of groundwater contaminants are located in shallow groundwater beneath the southeast corner of the property and extend beneath and across S Street to the south.

The in-situ groundwater remediation project consists of injecting a slurry solution of ELS with zero valent iron plus SDC-9 into the shallow and deep groundwater to treat concentrations of trichloroethene, cis-1,2-dichloroethene, and hexavalent chromium. ELS is a lecithin-based micro emulsion composed of complex organic carbon used to enhance biological reduction of contaminants. Zero valent iron can chemically reduce trichloroethene, cis-1,2-dichloroethene, and hexavalent chromium. SDC-9 bioaugmentation culture is a microbial consortium capable of biologically degrading trichloroethene and cis-1,2-dichloroethene. Up to 6,900 pounds of ELS and 58,000 pounds of zero valent iron may be injected using direct push tooling into the groundwater within the areas shown on Figure 2 of the attached Groundwater Monitoring and Reporting Program.

1717 S Street Investors LP circulated a fact sheet describing the project. No comments were received in the 30-day comment period. 1717 S Street Investors LP will be conducting sampling and reporting the results as described in the attached Groundwater Monitoring and Reporting Program.

General Information:

1. The project will be operated in accordance with the requirements contained in the General Order and in accordance with the information submitted in the completed Notice of Intent.
2. The required annual fee (as specified in the annual billing you will receive from the State Water Resources Control Board) shall be submitted until this Notice of Applicability is officially revoked.
3. Injection of materials other than ELS, zero valent iron, SDC-9 and water into the subsurface is prohibited.
4. Failure to abide by the conditions of the General Order could result in an enforcement action as authorized by provisions of the California Water Code.
5. 1717 S Street Investors LP shall comply with the attached Monitoring and Reporting Program, Order No. R5-2015-0012-034 and any revisions thereto as ordered by the Executive Officer.

If you have any questions regarding this matter, please call Nathan Casebeer at (916) 464-4665.

ORIGINAL SIGNED BY ANDREW ALTEVOGT FOR

PAMELA C. CREEDON
Executive Officer

Attachment

cc: Ms. Della Kramer, Regional Water Quality Control Board, Rancho Cordova
Mr. Brian Silva, GHD, Rancho Cordova

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2015-0012-034

FOR
IN-SITU GROUNDWATER REMEDIATION
AND DISCHARGE OF TREATED GROUNDWATER TO LAND

S STREET REDEVELOPMENT PROJECT
1717 S STREET
SACRAMENTO, SACRAMENTO COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a groundwater remediation system for the Orchard Supply Company facility. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. As appropriate, California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

GROUNDWATER MONITORING

As shown on Figure 2, there are 16 monitoring wells associated with this site. The groundwater monitoring program for these wells and any treatment system wells installed subsequent to the issuance of this MRP shall follow the schedule below. Sample collection and analysis shall follow standard EPA protocol. The monitoring wells shall be sampled according to the schedule in Table 1, as follows:

Table 1: Sampling Frequency and Constituent Suite

Well Number ¹	Constituent ²	Frequency ³	Monitoring Objective
MW-2, MW-5, MW-13, MW-14, MW-15	VOCs, Hexavalent Chromium	Semi-annual (4 events only)	Compliance ⁴
EX-1, MW-1	VOCs, Hexavalent Chromium	Quarterly (4 quarters only)	Treatment Zone ⁵
MW-7, MW-10, MW-11D, MW-12	VOCs, Hexavalent Chromium	Semi-annual (4 events only)	Treatment Zone ⁵
MW-4, MW-9	VOCs, Hexavalent Chromium	Semi-annual (4 events only)	Transition Zone ⁶
MW-3, MW-6, MW-8	VOCs, Hexavalent Chromium	Semi-annual (4 events only)	Background ⁷

¹ Well numbers and locations as shown on Figure 2.

² Volatile organic compounds (VOCs) analyzed by EPA Method 8260B. Hexavalent Chromium analyzed by EPA Method 7199.

³ i.e., weekly, monthly, quarterly, semi-annually, annually, other. Semi-annual sampling occurs 1st and 3rd quarters, annual sampling occurs in the 1st quarter, biennial sampling occurs every two years in the 1st quarter, with the first sample during year two.

⁴ Wells used to determine compliance with water groundwater limitations.

⁵ Wells sampled to evaluate in-situ bioremediation progress inside the treatment zone.

⁶ Wells sampled to evaluate migration of pollutants from the treatment zone.

⁷ Wells used to develop background concentrations.

FIELD SAMPLING

In addition to the above sampling and laboratory analyses, field sampling and analysis shall be conducted each time a monitoring well or extraction well is sampled. The sampling and analysis of field parameters shall be as specified in Table 2.

Table 2: Field Sampling Requirements

Parameters	Units	Practical Quantitation Limit	Analytical Method
Groundwater Elevation	Feet, Mean Sea Level	0.01 feet	Measurement
Oxidation-Reduction Potential	Millivolts	10 millivolts	Field Meter
Electrical Conductivity	uhmos/cm	50 μ S/cm ²	Field Meter
Dissolved Oxygen	mg/L	0.2 mg/L	Field Meter
pH	pH Units (to 0.1 units)	0.1 units	Field Meter
Temperature	$^{\circ}$ F/ $^{\circ}$ C	0.1 $^{\circ}$ F/ $^{\circ}$ C	Field Meter

All wells that are purged shall be purged until pH, temperature, conductivity and dissolved oxygen are within 10% of the previous value.

Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;

3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in item (b) of the “Reporting” section of this MRP.

IN-SITU DISCHARGE MONITORING

The Discharger shall monitor daily the discharge of water and amendments that are injected into the groundwater according to the requirements specified in Table 3. Each amendment addition shall be recorded individually, along with information regarding the time period over which the amendment was injected into the aquifer.

Table 3: Discharge Monitoring Requirements

Parameters	Units	Type of Sample
Injected Volume	gallons per day	Meter
Amendment(s) Added	pounds per day	Measured

AMENDMENT ANALYSIS

Prior to use, amendments shall be analyzed for the constituents listed in Table 4. The analysis should be done on a mixture of the amendment and deionized water at the estimated concentration that would be injected during the pilot project.

Table 4: Amendment Analytical Requirements

Constituent	Method ¹	Maximum Practical Quantitation Limit (ug/L) ²
Volatile Organic Compounds	EPA 8020 or 8260B	0.5
General Minerals ³	Various	Various
Metals, Total and Dissolved ⁴	EPA 200.7, 200.8	Various
Semi-Volatile Organic Compounds	EPA Method 8270	5.0
Total Dissolved Solids	EPA 160.1	10,000
pH	meter	NA
Electrical Conductivity	meter	NA

¹ Or an equivalent EPA Method that achieves the maximum Practical Quantitation Limit.

² All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported, and reported as an estimated value.

³ Alkalinity, bicarbonate, potassium, chloride, sulfate, total hardness, nitrate, nitrite, ammonia.

⁴ Metals include arsenic, barium, cadmium, calcium, total chromium, copper, iron, lead, manganese, magnesium, mercury, molybdenum, nickel, selenium and silica.

REPORTING

When reporting the data, the Discharger shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to illustrate clearly the compliance with this Order. In addition, the Discharger shall notify the Central Valley Water Board within 48 hours of any unscheduled shutdown of any soil vapor and/or groundwater extraction system. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall also be reported to the Central Valley Water Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional Civil Engineer or Geologist or their subordinate and signed by the registered professional.

The Discharger shall submit semi-annual electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30. The semi-annual reports shall be submitted electronically over the internet to the Geotracker database system by **1 March** and **1 September**, until such time as the Executive Officer determines that the reports are no longer necessary.

Each semi-annual report shall include the following minimum information:

- (a) a description and discussion of the groundwater sampling event and results, including trends in the concentrations of pollutants and groundwater elevations in the wells, how and when samples were collected, and whether the pollutant plume(s) is delineated;
- (b) field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.;
- (c) groundwater contour maps for all groundwater zones, if applicable;
- (d) pollutant concentration maps for all groundwater zones, if applicable;
- (e) a table showing well construction details such as well number, groundwater zone being monitored, coordinates (longitude and latitude), ground surface elevation, reference elevation, elevation of screen, elevation of bentonite, elevation of filter pack, and elevation of well bottom;
- (f) a table showing historical lateral and vertical (if applicable) flow directions and gradients;
- (g) cumulative data tables containing the water quality analytical results and depth to groundwater;
- (h) a copy of the laboratory analytical data report;

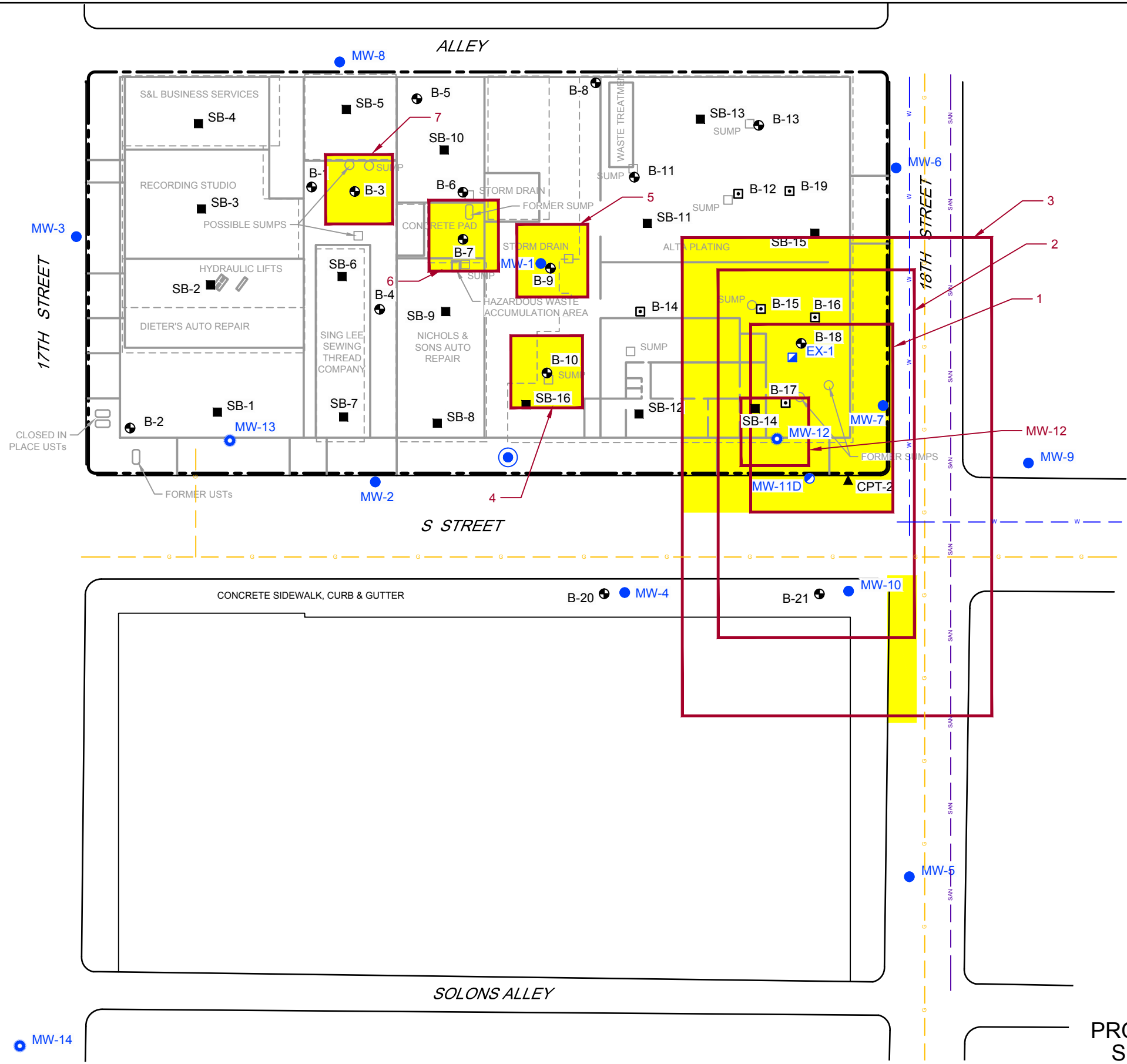
- (i) A discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells;
- (j) An analysis of whether the pollutant plume is being effectively treated;
- (k) A description of all remedial activities conducted during the year, an analysis of their effectiveness in removing the pollutants, and plans to improve remediation system effectiveness;
- (l) The status of any ongoing remediation, including an estimate of the cumulative mass of pollutant removed from or treated in the subsurface, system operating time, the effectiveness of the remediation system, and any field notes pertaining to the operation and maintenance of the system; and
- (m) If applicable, the reasons for and duration of all interruptions in the operation of any remediation system, and actions planned or taken to correct and prevent interruptions.

A letter transmitting the monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: **ORIGINAL SIGNED BY
ANDREW ALTEVOGT FOR**
PAMELA C. CREEDON Executive Officer

8/22/17
(Date)



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- - - FORMER BUILDING FOOTPRINT
- PREVIOUS STRUCTURE
- ⊕ DIRECT PUSH BORING (LOCATION IS APPROXIMATE)
- ⊙ HAND AUGER BORING (LOCATION IS APPROXIMATE)
- ▲ CPT BORING
- SHALLOW MONITORING WELL LOCATION (10-25 ftbg)
- ⦿ DEEP MONITORING WELL LOCATION (25-40 ftbg)
- ⦿ DEEPER MONITORING WELL LOCATION (73-79 ftbg)
- ⊖ EXTRACTION WELL
- SOIL BORING (CVATC)
- ⊖ UST
- ⊖ UST
- ⦿ PROPOSED WELL LOCATION
- SAN SEWER LINE
- W WATER MAIN
- PG+E GAS LINE
- AREA ACCESSIBLE FOR INJECTION BORING AND INJECTION EQUIPMENT

TREATMENT AREAS 1-3 INJECTION INTERVALS = 15-20 ftbg + 27-37 ftbg
 TREATMENT AREAS 4-7 INJECTION INTERVALS = 15-30 ftbg
 TREATMENT AREA MW-12 INJECTION INTERVAL = 62-65 ftbg

figure 2
 PROPOSED TREATMENT AREA SITE MAP
 S STREET REDEVELOPMENT PROJECT
 Sacramento, California



SOURCES:
 • SITE MAP, FIGURE 2, TETRA TECH EM INC. AND SITE PLAN, FIGURE 1, DRAWING NO. 90.75438.0014 ATC, 3/30/12.
 • MORROW SURVEYING, DATED 6-16-16.