



EDMUND G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

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## Los Angeles Regional Water Quality Control Board

June 13, 2017

Mr. Michael Baron  
Rose Hills Memorial Park and Mortuary  
3888 Workman Mill Road  
Whittier, CA 90608-1626

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
CLAIM NO.: **7016 1970 0000 9835 9193**

### GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER REMEDIATION AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND, AND/OR HEXAVALENT CHROMIUM IMPACTED SITES

**ROSE HILLS MEMORIAL PARK  
3888 WORKMAN MILL ROAD, WHITTIER  
(CASE NO. R-00085) (GLOBAL ID NO. T1000000540) (PRIORITY B-2)  
(ORDER NO. R4-2014-0187, SERIES NO. 099, CI NO. 10331)**

Dear Mr. Baron:

We are in receipt of your application for coverage under the General Waste Discharge Requirements (WDR) utilizing in situ chemical oxidation to remediate groundwater contamination beneath the subject site (Site).

Groundwater contamination at the Site has been mitigated by using different remedial technologies between 2013 and 2016 including soil vapor extraction and groundwater extraction. On March 30, 2017, EnviroMonitoring Services, Inc. (EMS), on your behalf, submitted a "Remedial Action Plan" (RAP) proposing in-situ chemical oxidation (ISCO) via application of sodium persulfate with silica activator (PersulfOx™), calcium oxy-hydroxide (ORC Advanced®), or a combination of the two chemicals through direct-push injection. Injection points are proposed to be spaced approximately 10 feet apart in two target areas at the Site. In the area near the former UST, PersulfOx™ will be injected into the saturated portion of the Shallow Zone (between 53 and 56 feet below ground surface [bgs]) through approximately four injection points. Following four weeks after the initial application, a combination of PersulfOx™ and ORC Advanced® will be injected into the Shallow Zone in the same area by the former UST. In the area down-gradient from the former UST area, ORC Advanced® will be injected into the saturated portion of the Deep Zone (between 78 and 83 feet bgs) through approximately 31 injection points. Application volumes will be dependent upon formation permeability at the injection point. The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) approved the RAP on April 13, 2017.

We have completed our review of your application and determined that the proposed injections meet the conditions specified in Order No. R4-2014-0187, "General Waste Discharge Requirements for In-Situ Groundwater Remediation and Groundwater Re-Injection" adopted by the Regional Board on September 11, 2014.

IRMA MUÑOZ, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

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320 West 4<sup>th</sup> St., Suite 200, Los Angeles, CA 90013 | [www.waterboards.ca.gov/losangeles](http://www.waterboards.ca.gov/losangeles)

♻️ RECYCLED PAPER

June 13, 2017

Enclosed is your WDR, consisting of the General WDR Order No. R4-2014-0187, Series No. 099, including the Revised Monitoring and Reporting Program (MRP) Compliance File No. CI-10331 and Standard Provisions. The WDR issued shall not be terminated until Regional Board staff determines the WDR are no longer needed for the site cleanup.

When submitting technical WDR monitoring reports to the Regional Board per these requirements, you are required to reference Compliance File No. CI-10331 to ensure that the reports are directed to the appropriate file and staff. Do not combine other reports with your technical WDR monitoring reports. Submit each type of report as a separate document.


In accordance with regulations adopted by the State Water Resources Control Board (State Board) regarding electronic submittal of information, UST Program monitoring reports have been electronically submitted to the State Board GeoTracker database under the UST Global ID No. T1000000540. To comply with the MRP under the WDR, you shall upload the WDR monitoring reports to the State Board GeoTracker database under both Global ID Nos. T1000000540 and WDR100039706.

For all parties who upload electronic documents to the State Board GeoTracker database the Regional Board will no longer accept documents (submitted by either hard copy or email) that already have been uploaded to GeoTracker. Please see Electronic Submittal to the Regional Board for GeoTracker Users dated December 12, 2011 at:  
<http://www.waterboards.ca.gov/losangeles/resources/Paperless/Paperless%20Office%20for%20OGT%20Users.pdf>.

To avoid paying future annual fees, please submit a written request for termination of your enrollment under the general permit in a separate letter when your project has been completed and the permit is no longer needed. Be aware that the annual fee covers the fiscal year billing period beginning July 1st and ending June 30th, the following year. You will pay the full annual fee if your request for termination is made after the beginning of the new fiscal year beginning July 1st.

If you have any questions, please contact Dr. Eric Wu at (213) 576-6683 or send him an email at [ewu@waterboards.ca.gov](mailto:ewu@waterboards.ca.gov) for issues regarding the WDRs and Mr. James W. Ryan IV at (213) 576-6711 or send him an email at [jamesw.ryan@waterboards.ca.gov](mailto:jamesw.ryan@waterboards.ca.gov) for issues regarding the USTs.

Sincerely,

  
Samuel Unger, P.E.  
Executive Officer

Enclosures: 1. General WDR Order No. R4-2014-0187  
2. Revised Monitoring and Reporting Program No. CI-10331

Mr. Michael Baron  
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cc: Micah Reich, State Water Resources Control Board, UST Cleanup Fund  
Brian Partington, Water Replenishment District of Southern California  
Tim Smith, Los Angeles County Department of Public Works,  
Environmental Program Division  
Javad Masoudi, EnviroMonitoring Services, Inc.

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

**MONITORING AND REPORTING PROGRAM NO. CI-10331**

**FOR**

**ROSE HILLS MEMORIAL PARK & MORTUARY  
3888 SOUTH WORKMAN MILL ROAD, WHITTIER, CALIFORNIA  
(IN-SITU CHEMICAL OXIDATION FOR GROUNDWATER CLEANUP)  
(ORDER NO. R4-2014-0187, SERIES NO. 099)**

**I. REPORTING REQUIREMENTS**

- A. Rose Hills Company (hereinafter Discharger) shall implement this monitoring program on the effective date of this Monitoring and Reporting Program (MRP). The first monitoring report under this MRP, for the period from July 2017 to December 2017, shall be received at the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) by January 15, 2018. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – June	July 15
July – December	January 15

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the MRP to the State Water Resources Control Board (State Board) GeoTracker database, Attention: Information Technology Unit.

If there is no discharge or injection during any reporting period, the report shall so state.

- B. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the State Board Division of Drinking Water - Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.
- C. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Discharger shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Regional Board.

- D. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.
- E. Each monitoring report must affirm in writing "All analyses were conducted at a laboratory certified for such analyses by the State Board ELAP and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- F. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with Waste Discharge Requirements (WDR). This section shall be located at the front of the report and shall clearly list all non-compliance with WDR, as well as all excursions of effluent limitations.
- G. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- H. If the Discharger performs analyses on any groundwater samples more frequently than required by this MRP using approved analytical methods, the results of those analyses shall be included in the report.
- I. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.
- J. The Discharger should not implement any changes to the MRP prior to receiving Executive Officer's written approval.
- K. In accordance with regulations adopted by the State Board regarding electronic submittal of information, UST monitoring reports have been electronically submitted to the State Board GeoTracker database under the UST Global ID T10000000540. To comply with the MRP under this WDR, the Discharger shall upload the WDRs monitoring reports to the GeoTracker database under both Global ID Nos. T10000000540 and WDR100039706.

II. CALCIUM OXY-HYDROXIDE AND SODIUM PERSULFATE WITH SILICA ACTIVATOR MONITORING REQUIREMENTS

The semi-annual reports shall contain the following information regarding injection activities:

1. A location map showing placement locations used for the calcium oxy-hydroxide and sodium persulfate injection (refer to attached Figure 1 for site map).
2. Written and tabular summary defining the quantity of calcium oxy-hydroxide and sodium persulfate injection injected to the groundwater and a summary describing the days on which the injection system was in operation.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS <sup>1</sup>
Sodium Persulfate delivered per location	Gallons and Concentration	--	Semi-Annually
Calcium Oxy-Hydroxide delivered per location	Gallons and Concentration	--	Semi-Annually

III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site. The Executive Officer may change the monitoring program at any time during remediation. Groundwater samples shall be collected, at a minimum, from up-gradient groundwater monitoring well W-12, source area groundwater monitoring wells W-2, W-8, and W-10, and down-gradient groundwater monitoring wells W11-D and W-13D (Figure 1) on a semi-annual schedule to monitor the effectiveness of the in-situ groundwater remediation. Groundwater shall be monitored for the duration of the remediation in accordance with the following monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS <sup>1</sup>
Total petroleum hydrocarbons as gasoline (TPHg)	µg/L <sup>3</sup>	Grab	Semi-Annually
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	µg/L	Grab	Semi-Annually
Methyl tertiary butyl ether (MTBE), Tertiary butyl alcohol (TBA), Tertiary amyl methyl ether (TAME), Di-isopropyl ether (DIPE), Ethyl tertiary butyl ether (ETBE)	µg/L	Grab	Semi-Annually

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS <sup>1</sup>
Naphthalene Ethanol Formaldehyde Acetone	µg/L	Grab	Semi-Annually
Total dissolved solids, Arsenic, Boron, Chloride, Bromide, Sulfate, Lead, Nickel, Cadmium, Manganese	mg/L <sup>4</sup>	Grab	Semi-Annually
Oxidation-reduction potential (ORP)	Millivolts	Grab	Semi-Annually
Dissolved Oxygen	µg/L	Grab	Semi-Annually
Dissolved Ferrous Iron	µg/L	Grab	Semi-Annually
Total Chromium and Hexavalent Chromium <sup>2</sup>	µg/L	Grab	Semi-Annually
pH	pH units	Grab	Semi-Annually
Temperature	°F/°C	Grab	Semi-Annually
Groundwater Elevation	Feet, mean sea level and below ground surface	In situ	Semi-Annually

<sup>1</sup> One week before injection and semi-annually thereafter.

<sup>2</sup> The Discharger is required to monitor for total chromium and hexavalent chromium in the baseline, second and fourth semi-annual sampling. If detected at any of these sampling events, the total chromium and chromium six must be monitored semi-annually thereafter.

<sup>3</sup> µg/L = microgram per liter.

<sup>4</sup> mg/L = milligram per liter.

All groundwater monitoring reports must include, at a minimum, the following:

- a. Well identification, date and time of sampling;
- b. Sampler identification, and laboratory identification;
- c. Semi-annual observation of groundwater levels, recorded to 0.01 feet mean sea level, and calculated groundwater flow direction.

#### IV. MONITORING FREQUENCIES

Specifications in the MRP are subject to periodic revisions. Monitoring frequencies may be adjusted to a less frequent basis or parameters dropped by the Executive Officer if the Discharger makes a request and the Executive Officer determines that the request is adequately supported by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the \_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_.

\_\_\_\_\_ (Signature)

\_\_\_\_\_ (Title)"

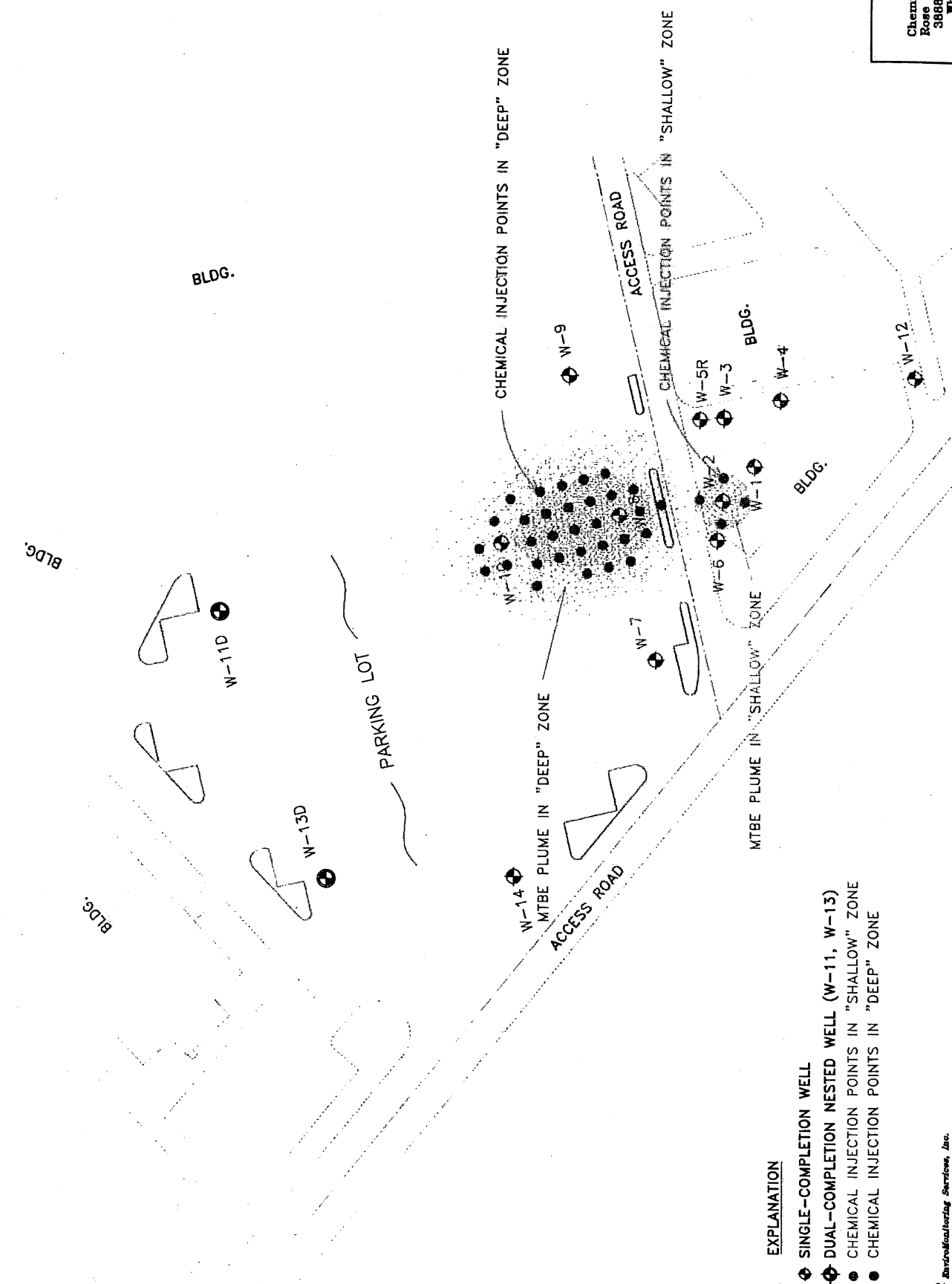
VI. PUBLIC DOCUMENTS

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the Regional Board, upon request by interested parties.

Ordered by: Samuel Unger  
Samuel Unger, P.E.  
Executive Officer

Date: June 13, 2017



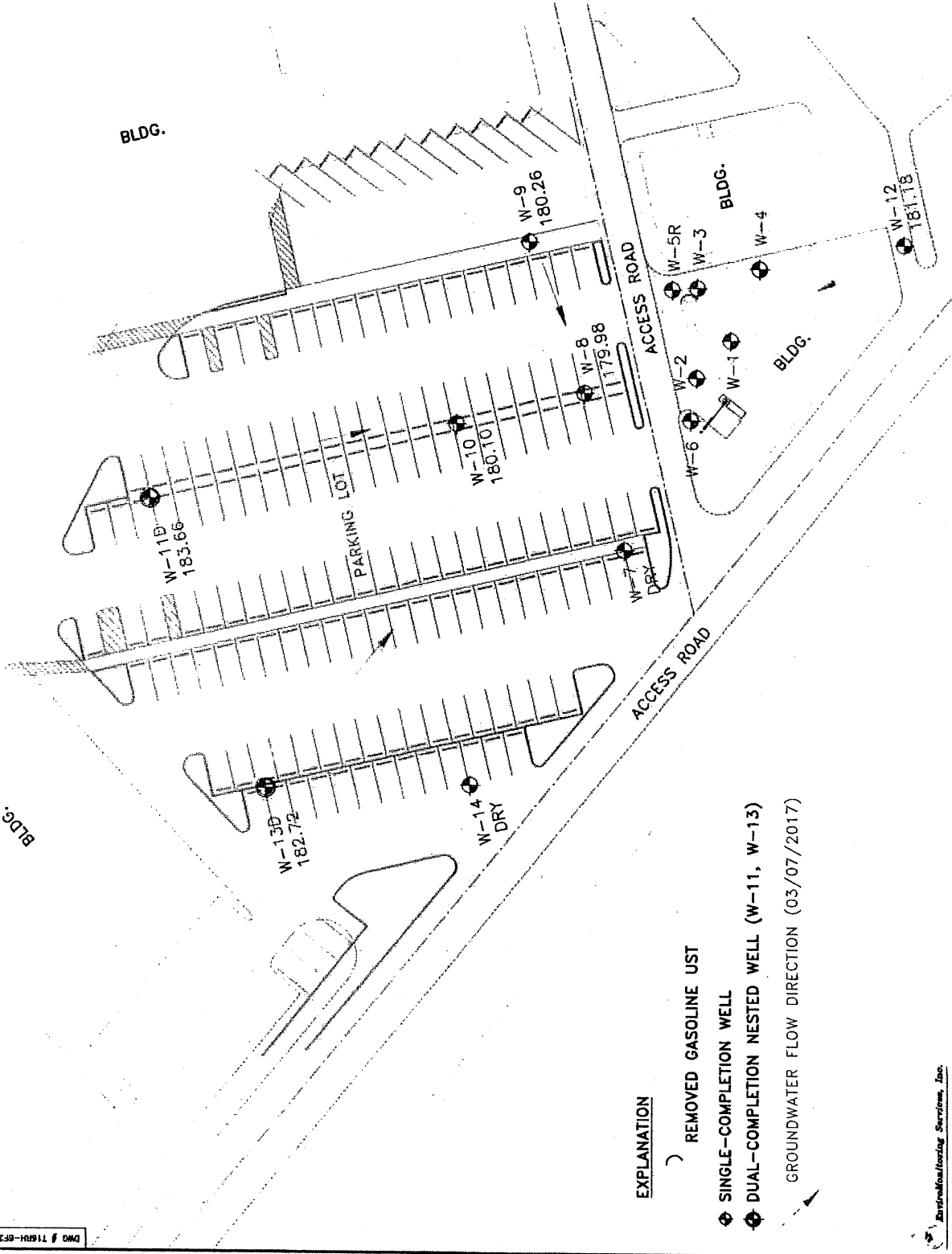
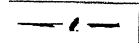


**EXPLANATION**

- ◆ SINGLE-COMPLETION WELL
- ◆ DUAL-COMPLETION NESTED WELL (W-11, W-13)
- CHEMICAL INJECTION POINTS IN "SHALLOW" ZONE
- CHEMICAL INJECTION POINTS IN "DEEP" ZONE



**FIGURE 6**  
Proposed  
Chemical Injection Points  
Rose Hills Memorial Park  
3888 Workman Mill Rd.  
Whittier, California



**FIGURE 2**  
**Groundwater Flow Direction in**  
**"Deep" Wells (March 7, 2017)**  
 Rose Hills Memorial Park  
 3888 Workman Mill Rd.  
 Whittier, California

- EXPLANATION**
- REMOVED GASOLINE UST
  - ⊕ SINGLE-COMPLETION WELL
  - ⊕⊙ DUAL-COMPLETION NESTED WELL (W-11, W-13)
  - GROUNDWATER FLOW DIRECTION (03/07/2017)