



## Los Angeles Regional Water Quality Control Board

September 8, 2015

Mr. Clay Rumbaoa, Trustee  
Anadite California Restoration Trust  
1003 Bishop Street, Suite 1170  
Honolulu, Hawaii 96813

**REVISED MONITORING AND REPORTING PROGRAM – IN-SITU ENHANCED ANAEROBIC BIOREMEDIATION OF VOLATILE ORGANIC COMPOUNDS IMPACTED GROUNDWATER AT FORMER ANADITE FACILITY, 10647 GARFIELD AVENUE, SOUTH GATE, CALIFORNIA (FILE NO. 97-019, WDR ORDER NO. R4-2011-0036, CI-8685, CLEANUP AND ABATEMENT ORDER NO. 98-004, SCP NO. 0541, SITE ID NO. 2041C00, GLOBAL ID WDR100000235)**

Dear Mr. Rumbaoa:

On February 3, 2011, the Anadite California Restoration Trust (hereinafter Discharger) was provided coverage under Waste Discharge Requirements (WDR) Order No. R4-2011-0036 by the California Regional Water Quality Control Board, Los Angeles Region (Regional Board). The application of in-situ enhanced anaerobic bioremediation of volatile organic compounds (VOCs) impacted groundwater at the former Anadite facility was regulated under the WDR and its corresponding Monitoring and Reporting Program (MRP) No. CI-8685.

On June 30, 2011, the Discharger notified Regional Board staff of the suspension of monitoring and remediation activities at the site due to the Discharger's inability to provide financial resources. Regional Board staff requested financial documents from the Discharger to verify the financial status. The State Water Resources Control Board, Office of Research, Planning and Performance (ORPP) reviewed financial documents provided by the Discharger, and determined that the Discharger is able to continue remediation activities at a reduced scope. Based upon ORPP's determination, Regional Board staff required the Discharger to implement a reduced-scale groundwater remediation and monitoring program on March 18, 2013.

*A Reduced-Scale Groundwater Remedial Action Plan and Implementation Plan (REDUCED-SCALE RAP)* was submitted on November 27, 2013. Regional Board staff approved the REDUCED-SCALE RAP on March 10, 2014, as an interim remedial action. Due to the reduced scope of work proposed in the REDUCED-SCALE RAP, MRP No. CI-8685 was revised on June 30, 2014 to identify the 16 monitoring wells and associated monitoring and reporting schedule.

During the baseline sampling event in August 2014, three of the shallow 50-foot zone wells (MW-9, MW-10, and MW-12) were found to be dry and could not be sampled. As a result, on October 16, 2014, Regional Board staff required the Discharger to install new groundwater wells in the immediate vicinity of MW-9, MW-10, and MW-12 with the screen intervals properly placed to prevent dry well conditions.

In May 2015, the Discharger installed and developed three new wells, MW-9A, MW-10A, and MW-12A to serve as replacement for the three above-mentioned dry wells.

On June 9, 2015, the Discharger requested to modify the existing MRP to account for the above-mentioned changes to the groundwater monitoring wells and the reporting schedule.

The revised MRP, which incorporates the requested modifications, is enclosed. When submitting monitoring and technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-8685", which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the MRP, including groundwater monitoring data, discharge location data, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100000235.

Please see Electronic Submittal for GeoTracker Users, dated December 12, 2011 at:

<http://www.waterboards.ca.gov/losangeles/resources/Paperless/Paperless%20Office%20for%20GT%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 1 and ending June 30, 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 1.

If you have any questions, please call the Project Manager, Mr. David Koo, at (213) 620-6155 ([David.Koo@waterboards.ca.gov](mailto:David.Koo@waterboards.ca.gov)) or the Groundwater Permitting Unit Chief, Dr. Eric Wu, at (213) 576-6683 ([Eric.Wu@waterboards.ca.gov](mailto:Eric.Wu@waterboards.ca.gov)) regarding this matter.

Sincerely,

  
Samuel Unger, P.E.  
Executive Officer

Enclosure: Revised Monitoring and Reporting Program No. CI-8685 dated September 4, 2015

cc: Mr. Ted Johnson, Water Replenishment District of Southern California  
Mr. Mark Stuart, California Department of Water Resources, Central Basin  
Mr. Gladis Deras, City of South Gate, Public Works Department, Engineering Division  
Mr. Sibel Tekce, CDM Smith  
Mr. John Didun, Anadite South Gate  
Ms. Shu-Fang Peng Orr, State Water Resources Control Board, Division of Drinking Water

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

REVISED MONITORING AND REPORTING PROGRAM NO. CI-8685  
FOR  
ANADITE CALIFORNIA RESTORATION TRUST  
FORMER ANADITE SOUTH GATE FACILITY  
SOUTH GATE, CALIFORNIA

(FILE NO. 97-019, SCP NO. 0541)

The Discharger shall implement this monitoring and reporting program (MRP) effective September 4, 2015.

**I. GROUNDWATER MONITORING PROGRAM**

It is anticipated that injection activities will be initiated in the third quarter of 2015. Monitoring of the application of Enhanced Anaerobic Bioremediation (EAB) injections shall consist of samples collected from the following groundwater wells:

Injection Wells:	50-foot zone:	MW-9A
	80-foot zone:	MW-15 and MW-22
	100-foot zone:	MW-19
Performance Monitoring Wells:	50-foot zone:	MW-10A
	80-foot zone:	MW-18 and MW-20,
	100-foot zone:	MW-21 and MW-28,
Downgradient Monitoring Wells:	50-foot zone:	MW-12A
	80-foot zone:	MW-38
	100-foot zone:	MW-40
Upgradient Monitoring Wells:	50-foot zone:	MW-1 and MW-2 (cross gradient)
	80-foot zone:	MW-16 (cross gradient)
	100-foot zone:	MW-23

Figure 1 shows the location of the Facility. The groundwater injection and monitoring network, which includes a total of 16 groundwater wells as listed above, are shown in Figure 2.

Groundwater samples will be collected once from all the injection and monitoring wells prior to injection (baseline). Once EAB starts, groundwater samples shall be collected and analyzed in accordance with the following program.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total Daily Injections	Liters or Gallons	Measurement	Per injection
Depth to Groundwater	feet below ground surface (ft bgs)	In-situ	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter
Groundwater Elevation	Feet above mean sea level	Calculation	<u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter
Field Parameters (dissolved Oxygen, Oxidation-Reduction Potential, pH, Temperatures, Specific Conductance, and Turbidity)	m/L, millivolts, pH units, degrees C, $\mu\text{S/cm}$ , and NTU, respectively	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter <u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter
Volatile Organic Compounds	$\mu\text{g/L}$	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter <u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and semi-annual thereafter
Dissolved Hydrogen Gases: Ethane, ethene, methane	$\mu\text{g/L}$	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter <u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter
Total Organic Carbon	$\mu\text{g/L}$	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter <u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter
Anions: (Sulfate, nitrate, nitrite, chloride)	$\mu\text{g/L}$	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter <u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter

Alkalinity	µg/L	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter <u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter
Volatile Fatty Acids	µg/L	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline and Semiannual (second and fourth quarters) for first year only <u>Upgradient Monitoring Wells</u> : Baseline and Semiannual (second and fourth quarters) for first year only
Bacterial DNA analysis*	gene copies/mL	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline and Semiannual (second and fourth quarters) for first year only <u>Upgradient Monitoring Wells</u> : Baseline and Semiannual (second and fourth quarters) for first year only
Total Dissolved Solids	µg/L	Grab	<u>Injection wells</u> : Baseline <u>Performance Monitoring Wells</u> : Baseline, Quarterly for first year, and Semi-annual thereafter <u>Downgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter <u>Upgradient Monitoring Wells</u> : Baseline, Quarterly starting from the second quarter for first year, and Semi-annual thereafter

**Notes:**

\* Bacterial DNA Analysis = Quantitative Polymerase Chain Reaction (qPCR) test for Dehalococcoides bacteria and functional analyses for the three reductase (RDase) genes – tceA (TCE RDase), vcrA, and bvcA (BAV1 RDase)

**II. AMENDMENT INJECTION REPORTING REQUIREMENTS**

The EAB monitoring reports shall contain the following information regarding injection activities:

- a. Depth of injection points/zones;
- b. Quantity and concentration of amendment injected and dates injected; and
- c. Total amount of amendment injected during the reporting period and to date.

**III. GROUNDWATER MONITORING REPORTING REQUIREMENTS**

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; and

- c. Routine observation of groundwater elevation levels, recorded to 0.01 feet above mean sea level (ft amsl) and groundwater flow direction.

The Discharger is required to submit MRP reports which shall include data collected during the baseline, quarterly, and semi-annual sampling events. The groundwater monitoring wells shall be gauged and sampled as outlined in Section I, and results shall be reported to the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) under the MRP for the Individual Waste Discharge Requirements according to the following schedule. Any future changes in the injections, sampling, and reporting schedule will be provided in a revised MRP approved by the Regional Board.

<b>Reporting Period</b>	<b>Sampling Period</b>	<b>Report Due Date</b>
Baseline	Prior to injections	October 15, 2014 and July 31, 2015
Quarterly (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> )	Months 3, 6, 9, and 12	October 15, 2015, January 15, 2016, April 15, 2016, and July 15, 2016
Semi-annual (2 <sup>nd</sup> year)	Months 18 and 24	January 15, 2017 and July 15, 2017
Final Report	Active remediation period	To be determined

The Discharger shall submit reports detailing the results of the remediation. The reports shall include a discussion of the use of electron donor and bioaugmentation culture to treat VOC-contaminated groundwater at and in the vicinity of the site.

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

Whenever wastes associated with the discharge under this Order, are transported to a different disposal site, the following shall be reported in the monitoring report: type and quantity of wastes; name and address of the hauler (or method of transport if other than by hauling); and location of the final point(s) of disposal.

#### **IV. CERTIFICATION STATEMENT**

Each report shall contain the following completed 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)

#### V. MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations removed by the Executive Officer if the Discharger makes a request and the request is supported by statistical trends of monitoring data submitted.

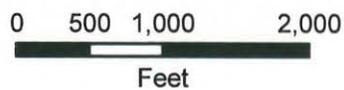
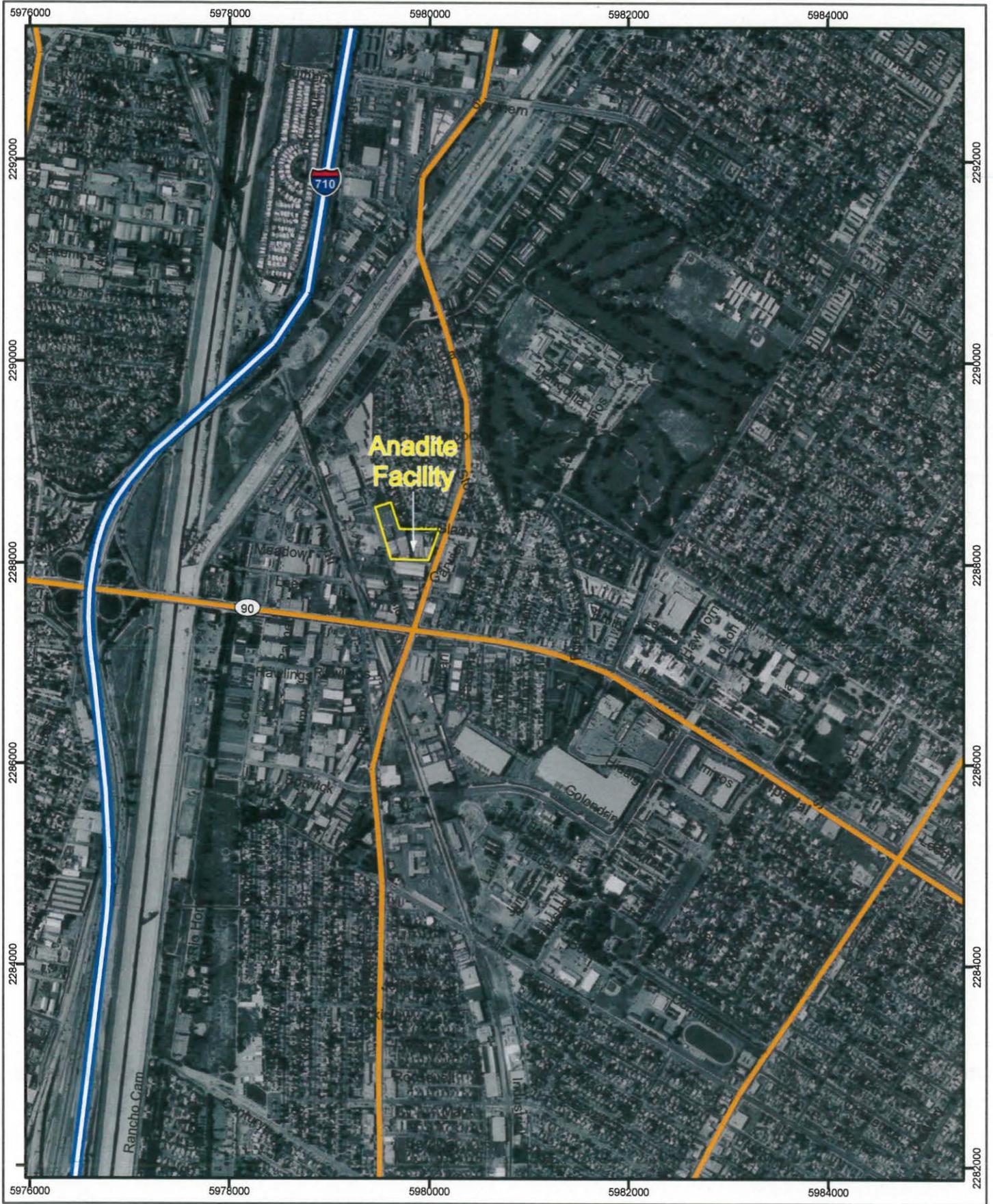
#### VI. ELECTRONIC SUBMITTAL OF INFORMATION (ESI) TO GEOTRACKER

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the MRP, including groundwater monitoring data and discharge location data (latitude and longitude), correspondence, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100000235.

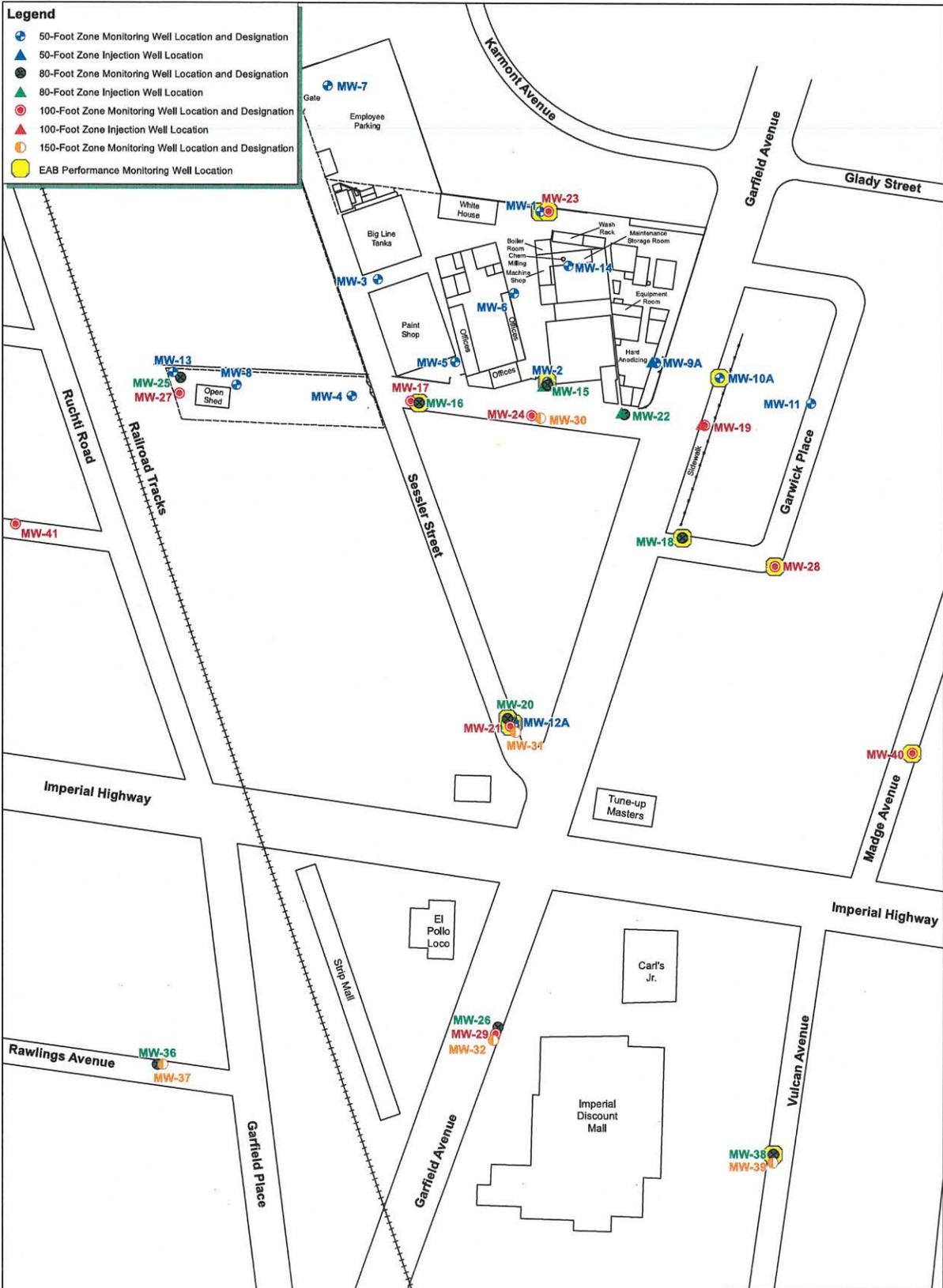
All records and reports submitted in compliance with this Order are public documents and will be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger, will be treated as confidential.

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

Date: September 8, 2015



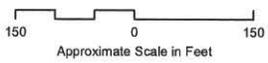
**Former Anadite Inc., Facility**  
**10647 Garfield Avenue**  
**South Gate, California**  
**Figure 1**  
**Site Vicinity Map**



- Legend**
- ⊕ 50-Foot Zone Monitoring Well Location and Designation
  - ▲ 50-Foot Zone Injection Well Location
  - ⊙ 80-Foot Zone Monitoring Well Location and Designation
  - ▲ 80-Foot Zone Injection Well Location
  - ⊙ 100-Foot Zone Monitoring Well Location and Designation
  - ▲ 100-Foot Zone Injection Well Location
  - ⊙ 150-Foot Zone Monitoring Well Location and Designation
  - EAB Performance Monitoring Well Location

**NOTE:**  
 1. All locations and dimensions are approximate  
 2. MW-9, MW-10, and MW-12 were replaced with MW-9A, MW-10A, and MW-12A in May 2015  
 3. EAB = Enhanced Anaerobic Bioremediation

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**Anadite, Inc.**  
 South Gate, California  
 Revised EAB Injection and Performance  
 Monitoring Well Location  
**Figure 2**