



October 9, 2019

Mr. Daniel Berlenbach City of Long Beach, Flee Services 2600 Temple Street Long Beach, CA 90806

SUBJECT: TRANSMITTAL LETTER FOR FIRE STATION #7, 2295 ELM AVENUE, LONG BEACH, CALIFORNIA, CASE NO. 908061116

Dear Mr. Daniel Berlenbach,

Please find the attached General Waste Discharge Requirements (WDR) for In-Situ Groundwater Remediation. The attached WDR has been updated to reflect a modified CI number. The CI number originally listed on WDR was CI-10484 and has been updated to CI-10483.

Please contact Dr. Eric Wu at (213) 576-6683 or by email at ewu@waterboards.ca.gov or Jeremiah Rose at (213) 576-6760 or by email at jeremiah.rose@waterboards.ca.gov if you have any questions regarding this matter.

Sincerely,

Renee Purdy Executive Officer

CC: Mr. Brian Partington, Water Replenishment District of Southern California Ms. Carmen Piro, City of Long Beach, Department of Health and Human Services Mr. Assaf Rees, AECOM





October 9, 2019

Mr. Daniel Berlenbach City of Long Beach, Fleet Services 2600 Temple Street Long Beach, CA 90806

GENERAL WASTE DISCHARGE REQUIREMENTS FOR IN-SITU GROUNDWATER REMEDIATION

FIRE STATION #7
2295 ELM AVENUE, LONG BEACH, CA 90806
(FILE NO. 908061116; GLOBAL ID NO. T0603701843; ORDER NO. R4-2014-0187; SERIES NO. 141; CI-10483)

Dear Mr. Berlenbach:

The Los Angeles Regional Water Quality Control Board (Regional Board) is in receipt of your application for coverage under the General Waste Discharge Requirements (WDR) to inject activated sodium persulfate for remediation of petroleum hydrocarbon impacted groundwater. The application was prepared by your consultant AECOM on behalf of the City of Long Beach, Fleet Services (The Discharger).

The site is currently occupied by an active Fire Station in Long Beach (Latitude: 33.798722, Longitude: -118.188551) that includes one structure and a parking area. It is located in the Coastal Plain of Los Angeles - West Coast Groundwater Basin. The soil beneath the site consists mainly of fill material, medium sand, fine sand, silt with fine sand laminations, and interbedded with medium sand, silt, and clay. The nearest production well is located approximately 2,600 feet from the site.

Several site assessments have been conducted at the site since 1995. In 1995, two 550-gallon gasoline and diesel underground storage tanks (USTs) were removed from the site. Following removal of the USTs, impacted soils were excavated to an approximate depth of 19 feet below ground surface (bgs).

Semi-annual groundwater monitoring was initiated in September 1997. According to the latest groundwater monitoring report conducted in October 2018, there are thirteen groundwater monitoring wells (MW-1 through MW-13) at the site. Maximum concentrations of 39,000 micrograms per Liter (μ g/L) for total petroleum hydrocarbon as gasoline (TPH-g), 1,100 μ g/L for benzene, non-detect for toluene, 84 μ g/L for ethylbenzene, and non-detect for total xylenes were detected in the groundwater

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samples. Groundwater depths were measured between 20.66 to 22.49 feet bgs with flow direction generally toward the west.

A remedial action plan (RAP) dated January 10, 2019, was approved for this site on March 20, 2019 (copy attached). On May 6, 2019, AECOM applied for coverage under the WDR. The application specified AECOM's intent to inject sodium persulfate with an alkaline (sodium hydroxide) catalyst and/or to inject sodium persulfate with hydrogen peroxide and chelated iron as catalysts. The application included a revised proposal for advancing nineteen borings to be used as injection points (IPs); fourteen at the former UST area and five along the down-gradient plume. The IPs will be screened between 20 and 35 feet bgs.

We have completed the review of your application and determined that the proposed injection of sodium persulfate with an alkaline (sodium hydroxide) catalyst, or injection of sodium persulfate with hydrogen peroxide and chelated iron catalysts 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 September 11. 2014. For quidance. refer Board on http: www.waterboards.ca.gov/losangeles/water issues/programs/ust/guidelines/Subsurface injection of ISRR.pdf.

Enclosed are your WDR, consisting of Regional Board Order No. R4-2014-0187 (Series No.141) and Standard Provisions Applicable to Waste Discharge Requirements, and Monitoring and Report Program (MRP) No. CI-10483. The proposed discharge shall not cause the mineral constituents of the receiving groundwater at the compliance point, down-gradient outside the application area, to exceed applicable limits (West Coast Basin of the Los Angeles Coastal Plain Groundwater Basin) given in Attachment B of Order No. R4-2014-0187.

The MRP No. CI-10483 requires you to implement the monitoring program on the effective date of this enrollment under Regional Board Order No. R4-2014-0187. When submitting monitoring or technical reports to the Regional Board per these requirements, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

In accordance with regulations adopted by the State Water Resources Control Board regarding electronic submittal of information, UST Program monitoring reports have been electronically submitted to the State Board GeoTracker system under the UST Global ID T0603701843. To comply with the MRP under this WDR, the Discharger shall upload the WDR monitoring reports to GeoTracker under both Global IDs T0603701843 (continuing) and WDR100040490 (new).

For all parties who upload electronic documents to the State Geo Tracker Database, the Regional Board will no longer accept documents (submitted by either hard copy or email) that already have been uploaded to GeoTracker.

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 via email at ewu@waterboards.ca.gov for issues regarding the WDR, and Mr. Jeremiah Rose at (213) 576-6760 or via email at jeremiah.rose@waterboards.ca.gov for issues regarding the USTs.

Sincerely,

Renee Purdy Executive Officer

- Enclosures: 1. General Waste Discharge Requirements Order No. R4-2014-0187
 - 2. Monitoring and Reporting Program No. CI-10483
 - 3. Regional Board Directive Letter dated March 20, 2019
 - 4. Figure No. 1, Current Plot Plan and proposed injection point locations

Cc w/o enclosure:

Mr. Brian Partington, Water Replenishment District of Southern California

Ms. Carmen Piro, City of Long Beach, Department of Health and Human Services

Mr. Assaf Rees, AECOM





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

MONITORING AND REPORTING PROGRAM NO. CI-10483 FOR

FIRE STATION #7

2295 ELM AVENUE, LONG BEACH, CALIFORNIA
(INJECTION OF SODIUM PERSULFATE WITH SODIUM HYDROXIDE ACTIVATION
AND/OR DUAL OXIDANT ACTIVATION WITH HYDROGEN PEROXIDE AND
CHELATED IRON AS CATALYSTS)
ENROLLMENT UNDER REGIONAL BOARD
ORDER NO. R4-2014-0187, SERIES NO. 141

I. REPORTING REQUIREMENTS

A. The City of Long Beach, Fleet Services (hereinafter Discharger) shall implement this monitoring program on the effective date of this Monitoring and Reporting Program (MRP). The first monitoring report under this program shall be received at the Regional Board by January 15, 2020. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

Monitoring Period January – June July- December Report Due July 15th January 15th

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 (SWRCB) Geo Tracker 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 Water Resources Control Board (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.

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- 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 that "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 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 Noncompliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, 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.
- 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 Monitoring and Reporting Program prior to receiving the Executive Officer's written approval.

K. In accordance with regulations adopted by the SWRCB regarding ESI, Underground Storage Tank (UST) Program monitoring reports have been electronically submitted to the State Board GeoTracker system under UST Global ID T0603701843. To comply with the MRP under this WDR, the Discharger shall upload the WDR monitoring reports to the Geotracker under both Global ID T0603701843 (continuing) and Global ID WDR100040490 (new).

II. IN-SITU CHEMICAL OXIDATION (ISCO) REQUIREMENTS

The reports shall contain the following information regarding injection activities:

- A map showing the injection points used for injecting sodium persulfate with sodium hydroxide activation and/or dual oxidant activation with hydrogen peroxide and chelated iron as catalysts.
- 2. To avoid groundwater monitoring network reduction, data bias, and well screen clogging or alteration, no groundwater monitoring wells shall be used as injection points. Separate sparge points/wells must be used for injection program.
- 3. A written and tabular summary defining the quantity of sodium persulfate with sodium hydroxide activation and/or dual oxidant activation with hydrogen peroxide and chelated iron as catalysts injected per month to groundwater and a summary describing the days on which the injection system was in operation.

III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site. Existing monitoring wells MW-1, MW-3, MW-6, MW-9, and MW-10 will be used for WDR monitoring. Monitoring wells MW-1, MW-3, and MW-6 will be used for monitoring within the treatment area, MW-9 will be used for monitoring up-gradient of the site, and MW-10 will be used for monitoring down-gradient of the site.

Groundwater shall be monitored for the duration of the remediation in accordance with the following discharge monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS ¹
Total petroleum hydrocarbon as gasoline (TPHg)	μg/L	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

Naphthalene Ethanol	μg/L	Grab	Semi-Annually
Formaldehyde Acetone			
Total dissolved solids, Arsenic, Boron, Chloride, Bromide, Sulfate, Lead, Nickel, Cadmium, Manganese	mg/L	Grab	Semi-Annually
Oxidation-Reduction Potential	millivolts	Grab	Semi-Annually
Dissolved Oxygen	μg/L	Grab	Semi-Annually
Total Ferrous Iron	μg/L	Grab	Semi-Annually
Total Chromium and Hexavalent Chromium ²	µg/L	Grab	Semi-Annually
рН	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

¹ One week before injection and semi-annually thereafter.

All groundwater monitoring reports must include, at 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 foot mean sea level, and 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.

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

³ µg/L= micrograms per liter.

⁴ mg/L = milligrams per liter.

V. CERTIFICATION STATEMENT

"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 theday of	at
		(Signature)
		(Title)"
VI.	PUBLIC DOCUMENTS	
	그렇게 하게 되는 생생님이 되는 것이라면 나무를 들어가면 그렇게 되었다. 그 그래 없는 그리고 있다.	documents and shall be made available for rs at the office of the Regional Board, upon
Orde	Renee Purdy Executive Officer	Date: October 9, 2019





March 20, 2019

Mr. Daniel Berlenbach Fleet Services Bureau 2600 Temple Avenue Long Beach, CA 90806 CERTIFIED MAIL
RETURN RECIEPT REQUESTED
CLAIM NO. 7018 0360 0000 6834 9070

UNDERGROUND STORAGE TANK PROGRAM -- DIRECTIVE TO TAKE CORRECTIVE ACTION IN RESPONSE TO UNAUTHORIZED UNDERGROUND STORAGE TANK RELEASE - HEALTH AND SAFETY CODE SECTION 25296.10 AND TITLE 23, CHAPTER 16, CALIFORNIA CODE OF REGULATIONS, SECTIONS 2720-2727. REMEDIAL ACTION PLAN ADDENDUM #2 APPROVAL FIRE STATION #7 (PRIORITY D-1) 2295 ELM AVENUE, LONG BEACH, CA (CASE NO. 908061116)

Dear Mr. Berlenbach:

Pursuant to Health and Safety Code Section 25296.10, you are required to take corrective action (i.e., Preliminary Site Assessment, Soil and Water Investigation, Corrective Action Plan Implementation, and Verification Monitoring) to ensure protection of human health, safety and the environment. Corrective action requirements are set forth in California Code of Regulations (CCR), Title 23, Sections 2720 through 2727.

We have received the "Remedial Action Plan addendum #2" (updated RAP) dated January 10, 2019, submitted by your consultant AECOM. The updated RAP was submitted as an addendum to the Remedial Action Plan (RAP) submitted to the Los Angeles Regional Water Quality Control Board (Regional Board) on December 15, 2017. The following are Regional Board staff comments on the updated RAP:

Remedial Action Plan Addendum #2 (updated RAP) Approval (Per CCR title 23, §2725)

During the latest groundwater monitoring event conducted in October 2018, elevated concentrations of fuel constituents including benzene up to 1,100 micrograms per liter (μ g/L), methyl tertiary butyl ether (MTBE) up to 12,000 μ g/L, and tertiary butyl alcohol (TBA) up to 700,000 μ g/L were detected in groundwater beneath the Site. The elevated concentrations were detected in samples collected from well MW-1 at the Site.

In the RAP, AECOM selected bio-sparging as the primary remedy for the Site. Following implementation of a membrane-interface probe (MIP) investigation performed at the Site between August 1 and 3, 2018, AECOM concluded that bio-sparging was not likely to be an effective remedy for the Site. In-situ chemical oxidation (ISCO) was selected as a contingency remedy in the RAP. Per the updated RAP, twenty new injection points (IP) are proposed at the Site; sixteen

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IP's at the residual source area that will be screened between 20 feet and 35 feet below ground surface (bgs), and four IP's along the center line of the plume that will be screened between 23 feet and 31 feet bgs. The IP's will be completed through new direct push borings. The chemical oxidant selected is sodium persulfate. The oxidant will use alkaline and dual oxidant activation with hydrogen peroxide as catalysts, and each injection event is expected to use approximately 6,000 pounds (lbs.) of sodium persulfate, 4,000 lbs. of sodium hydroxide, 3,000 lbs. of hydrogen peroxide, and 1,500 lbs. of chelated iron.

The Regional Board has reviewed the updated RAP and concurs with implementing the contingent remedy provided the following actions are performed:

- 1. The updated RAP proposed ISCO with a selected oxidant of sodium persulfate. The sodium persulfate will use alkaline (sodium hydroxide) activation and dual oxidant activation with hydrogen peroxide as catalysts. Chelated iron may be added during the activation process if an addition catalyst is required. The chemical oxidant shall not be injected into the subsurface without a valid Waste Discharge Requirement (WDR) permit from this Regional Board. Moreover, excavated soils containing detectable chemical constituents shall not be backfilled without a valid WDR permit from this Regional Board. Please contact Mr. Eric Wu (Groundwater Permitting Unit) regarding permit information at (213) 620-6683 or via email at eric.wu@waterboards.ca.gov.
- 2. Ambient air monitoring must be conducted at the property boundary to ensure protection of human health, safety, and nuisance in the neighboring area during any trenching, excavation, borings, and/or soil disturbance.
- 3. All necessary permits must be obtained from the appropriate agencies prior to starting the work.

General Requirements

- 1. The contractor who conducts the environmental work as required in this directive shall, at all times, comply with all applicable State laws, rules, regulations, and local ordinances specifically including, but not limited to, environmental, procurement, and safety laws, rules, regulations, and ordinances. The contractor shall obtain the services of a Professional Geologist or Engineer, Civil (PG/PE-Civil) to comply with the applicable requirements of the Business and Professions Code, sections 6700 et seq. and/or 7800 et seq. implementing regulations for engineering or geological analysis and interpretation for this case. All documents prepared by the contractor that reflect or rely upon engineering or geological interpretations by the contractor shall be signed and stamped by the PE-Civil/PG indicating her/his responsibility for them, as required by the Business and Professions Code.
- 2. Prior to commencing any fieldwork, Regional Board staff must be given a minimum of 15 days advance notice in writing, so that one of our staff may be present.

Regulatory Requirement for Electronic Submission of Laboratory Data to the State GeoTracker Internet Database

On September 30, 2004, the State Water Resources Control Board (SWRCB) adopted regulations in Chapter 30, Division 3 of Title 23, CCR, which requires persons to ensure electronic submission of laboratory analytical data (i.e., soil or water chemical analysis) and locational data (i.e., location and elevation of groundwater monitoring wells) via the Internet to the SWRCB's GeoTracker database. The regulations and other background information are available at http://geotracker.waterboards.ca.gov.

In accordance with the above regulations, you are required to submit all laboratory data over the Internet in the Electronic Deliverable Format to the SWRCB's GeoTracker database for any soil and/or groundwater samples obtained after September 1, 2001. This would include any sampling completed for underground storage tank system removal, site assessment activities, periodic groundwater monitoring, and post cleanup verification sampling. Per the same regulations, beginning January 1, 2002, you are also required to submit locational data for all groundwater monitoring wells (i.e., latitude, longitude, and elevation survey data) together with groundwater information (i.e., elevation, depth to free product, monitoring well status, etc.) and a site map electronically to the SWRCB GeoTracker System. Hard copy paper reports are no longer required per Regional Board guidelines available at http://www.waterboards.ca.gov/losangeles/water issues/programs/ust.

Enforcement

Pursuant to Health and Safety Code section 25299, subdivision (d), any person who violates any corrective action requirement established by, or issued pursuant to, section 25296.10 is liable for a civil penalty of not more than ten thousand dollars (\$10,000) for each underground storage tank for each day of violation. A civil penalty may be imposed by civil action pursuant to Health and Safety Code section 25299, subdivision (d)(2) or imposed administratively by the Regional Board pursuant to Water Code sections 13323 through 13328. The Regional Board may also request that the Attorney General seek judicial civil liabilities or injunctive relief pursuant to CWC sections 13264, 13304, and 13340. The Regional Board reserves its rights to take any further enforcement action authorized by law.

If you have any questions regarding this matter, please contact the Unit Chief, Mrs. Ann Lin at (213) 576-6702 or ann.lin@waterboards.ca.gov; or Project Manager, Mr. Jeremiah Rose at (213) 576-6760 or Jeremiah.Rose@waterboards.ca.gov.

Sincerely,

Deborah J. Smith Executive Officer

CC:

Carmen Piro, City of Long Beach, Department of Health and Human Services

Oliver Cruz, City of Long Beach, Fleet Services Bureau

Assaf Rees, AECOM

Brian Partington, Water Replenishment District of Southern California

IRMA MUÑOZ, CHAIR | DEBORAH SMITH, EXECUTIVE OFFICER

