



Alex Carlos



EDMUND G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

**Los Angeles Regional Water Quality Control Board**

January 2, 2013

Ms. Janet Wager  
BP Remediation Management  
201 Helios Way, Sixth Floor  
Houston, TX 77079

VIA CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
CLAIM NO. 7005 0390 0000 4138 5948

**MODIFICATION OF GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER CLEANUP AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND AND/OR HEXAVALENT CHROMIUM IMPACTED SITES  
FORMER ARCO STATION NO. 00210 (B-2 SITE)  
4000 REDONDO BEACH BOULEVARD, TORRANCE, CA (CASE NO. 905040061)  
(ORDER NO. R4-2007-0019, SERIES NO. 197; CI NO. 9859)**

Dear Ms. Janet Wager:

On October 8, 2012, the Executive Officer of this Regional Board issued a Waste Discharge Requirement (WDR) Order No. R4-2007-0019 to BP West Coast Products LLC (hereinafter Discharger) to inject magnesium sulfate (Epsom salt) to remediate groundwater contamination beneath the Site.

On November 12, 2012, your consultant, ARCADIS, on your behalf, submitted a Request to Modify Existing Remedial Approach and Request to Modify Waste Discharge Requirements (Workplan). ARCADIS, in the Workplan, requested to modify the current approved remedy (injection of Epsom salt) and associated WDR to include a combination of remedial approaches of both in-situ chemical oxidation by injecting sodium persulfate and anaerobic biological oxidation (ABOx) by injecting sulfate (Epsom salt) to mitigate the elevated levels of total petroleum hydrocarbons-gasoline range organics (TPH-GRO) and benzene, respectively, in certain areas of the Site.

There are both elevated TPH-GRO and benzene concentrations at the Site. The elevated benzene concentrations are detected near the underground storage tank area. The enhanced ABOx using sulfate is an effective treatment method for benzene, however using sulfate to remediate high concentrations of TPH-GRO is not as effective, and requires large quantities of sulfate and increasing numbers of injection events. Therefore, ARCADIS proposed the injection of sodium persulfate (Kolzur) for the locations with high concentrations of TPH-GRO near the center and northern boundaries of the Site near the injection wells IW-4 through IW-7.

Consistent with the proposed injection of sodium persulfate, ARCADIS indicated in the Workplan that the Monitoring and Reporting Program (MRP No. CI-9859) issued by the Executive Officer on October 8, 2012 will remain the same. However, sodium persulfate will be field tested using the sodium persulfate manufacturer's field testing kit for onsite analysis of persulfate in groundwater samples.

MARIA MEHRANIAN, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

Since the sodium persulfate (Kolzur) meets the conditions specified in Order No. R4-2007-0019, "Revised General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel, Volatile Organic Compound and/or Hexavalent Chromium Impacted Sites (General WDR)," adopted by the Los Angeles Regional Water Quality Control Board on March 1, 2007, and there is no need for additional injection points, Regional Board staff concurs with the proposed change of the remedial action stated in the Workplan. The proposed modification of Order No. 2007-0019 and MRP No. CI-9859 is hereby granted.

Enclosed are your Waste Discharge Requirements, consisting of General WDRs Board Order No. 2007-0019 and Monitoring and Reporting Program No. CI-9859.

The WDRs issued shall not be terminated until Regional Board staff determines the WDRs are no longer needed for the subject site.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File No. CI-9859 to assure that the reports are directed to the appropriate file and staff. Do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

We are sending a copy of Order No. R4-2007-0019 only to the applicant. A copy of the Order will be furnished to anyone who requests it, or on line at:

[http://www.waterboards.ca.gov/losangeles/board\\_decisions/adopted\\_orders/general\\_orders/r4-2007-0019/r4-2007-0019.pdf](http://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/general_orders/r4-2007-0019/r4-2007-0019.pdf)

In accordance with regulations adopted by the State Water Resource Control Board (State Board) in September 2004 regarding electronic submittal of information (ESI), the Discharger has been electronically submitting Underground Storage Tank Program (UST) technical reports to the State Board GeoTracker system under the UST Global ID T0603701480. To comply with this MRP, the Discharger shall upload the MRP monitoring reports to the Geotracker under the two Global ID T0603701480 (continuing) and WDR WDR100007016 (new). For more information regarding the WDR Global ID, please see the ESI training video at: <https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=44145287&rKey=7dad4352c990334b>.

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 of the following year. You are required to pay the full annual fee if your request of termination is made after the beginning of the fiscal year.

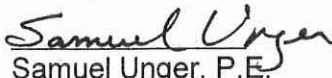
Ms. Janet Wager  
Arco Station No. 00120

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If you have any questions, please contact Mr. Eric Wu at (213) 620-6683 or ewu@waterboards.ca.gov. Questions regarding the UST issues should be forwarded to Ms. Maryam Taidy at (213) 576-6741 or mtaidy@waterboards.ca.gov.

Sincerely,

  
Samuel Unger, P.E.  
Executive Officer

Enclosures: 1. Board Order No. R4-2007-0019  
2. Monitoring and Reporting Program No. CI-9859

cc: Kathy Jundt, State Water Resources Control Board, Underground Storage Tank Cleanup Fund  
Phuong Ly, Water Replenishment District of Southern California  
Kenneth Lew, City of Torrance Fire Department  
Katherine Brandt, Arcadis US, Inc.  
Mark O'Neil, Arcadis US, Inc.



STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION  
MONITORING AND REPORTING PROGRAM NO. CI-9859  
for  
ARCO STATION NO. 00210  
4000 REDONDO BEACH BOULEVARD, TORRANCE, CA  
(MAGNESIUM SULFATE (EPSOM SALT) FOR GROUNDWATER CLEANUP)  
(ORDER NO. R4-2007-0019, SERIES NO. 197)

I. REPORTING REQUIREMENTS

- A. BP West Coast Products LLC (hereinafter Discharger) shall implement this monitoring program on the on the effective date of the enrollment under Regional Board Order No. R4-2007-0019. The first monitoring report under this program shall be received at the Regional Board by **January 15, 2013**. 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 <sup>th</sup>
July – December	January 15 <sup>th</sup>

- B. If there is no discharge or injection during any reporting period, the report shall so state.
- C. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services 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.
- D. 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.
- E. 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.
- F. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services, 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.

January 2, 2013

- G. 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 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.
- H. 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.
- I. If the Discharger performs analyses on any groundwater samples more frequently than required by this Order using approved analytical methods, the results of those analyses shall be included in the report.
- J. 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.
- K. In accordance with regulations adopted by the State Water Resource Control Board (State Board) in September 2004 regarding electronic submittal of information (ESI), the Discharger has been electronically submitting Underground Storage Tank Program (UST) technical reports to the State Board GeoTracker system under the UST Global ID T0603701480. To comply with this MRP, the Discharger shall upload the MRP monitoring reports to the Geotracker under the two Global ID T0603701480 (continuing) and WDR100007016 (new).

## II. DISCHARGE MONITORING REQUIREMENTS

The reports shall contain the following information regarding injection activities:

1. Location map showing application area.
2. Written summary defining:
  - Depth of insertion and depth to groundwater;
  - Quantity of magnesium sulfate and sodium persulfate per area; and
  - Total amount of magnesium sulfate and sodium persulfate applied at site.
3. Groundwater monitoring wells shall not be used as magnesium sulfate and sodium persulfate injection points to avoid reduction of groundwater monitoring network, data bias, well screen clogging and alternation. Separate injection points must be installed for the proposed chemical oxidation injection.



III. GROUNDWATER MONITORING PROGRAM

A groundwater-monitoring program shall be designed to detect and evaluate impacts associated with the magnesium sulfate and sodium persulfate application. The monitoring program shall consist of upgradient well MW-1, source well MW-5, and downgradient wells MW-3 and MW-8 (See Figure 2). A baseline monitoring and sampling shall be conducted one or two weeks prior to the proposed magnesium sulfate application. Baseline monitoring will establish the initial conditions with respect to the contaminant levels. These sampling stations shall not be changed and any proposed change of monitoring locations shall be identified and approved by the Executive Officer. The Discharger shall conduct baseline sampling one or two weeks prior to magnesium sulfate and sodium persulfate application and regular sampling with the required frequencies from the up-gradient, down-gradient, and source monitoring wells for the following constituents:

<u>CONSTITUENT</u>	<u>UNITS</u> <sup>1</sup>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
pH <sup>2</sup>	PH units	Grab	Semi-Annually
Temperature <sup>2</sup>	<sup>o</sup> F	grab	Semi-Annually
Oxidation-reduction potential <sup>2</sup>	Milivolts	grab	Semi-Annually
Specific conductivity <sup>2</sup>	µmhos/cm	grab	Semi-Annually
Ferrous iron	µg/L	grab	Semi-Annually
Dissolved Oxygen <sup>2</sup>	µg/L	grab	Semi-Annually
MTBE	µg/L	grab	Semi-Annually
Tert-Butyl Alcohol (TBA)	µg/L	grab	Semi-Annually
Di-isopropyl Ether (DIPE)	µg/L	grab	Semi-Annually
Ethyl-t-Butyl Ether (ETBE)	µg/L	grab	Semi-Annually
Tert-Amyl-Methyl Ether (TAME)	µg/L	grab	Semi-Annually
Acetone	µg/L	grab	Semi-Annually
Formaldehyde	µg/L	grab	Semi-Annually
Total Petroleum Hydrocarbons as gasoline (TPHg)	µg/L	grab	Semi-Annually
Carbon tetrachloride	µg/L	grab	Semi-Annually
Benzene	µg/L	grab	Semi-Annually
Ethylbenzene	µg/L	grab	Semi-Annually

Toluene	µg/L	grab	Semi-Annually
Total xylenes	µg/L	grab	Semi-Annually
Naphthalene	µg/L	grab	Semi-Annually
Methane	µg/L	grab	Semi-Annually
Total organic carbon	µg/L	grab	Semi-Annually
Total dissolved solids	mg/L	grab	Semi-Annually
Sulfate	mg/l	grab	Semi-Annually
Chloride	mg/L	grab	Semi-Annually
Boron	mg/L	grab	Semi-Annually
Carbon dioxide	mg/L	grab	Semi-Annually
Manganese	µg/L	grab	Semi-Annually
Total iron	µg/L	grab	Semi-Annually
Alkalinity	µg/L	grab	Semi-Annually
Chromium (VI) <sup>3</sup>	mg/L	grab	Semi-Annually <sup>3</sup>
Total Chromium <sup>3</sup>	mg/L	grab	Semi-Annually <sup>3</sup>

<sup>1</sup> mg/L: milligrams per liter; µg/L: micrograms per liter; µmhos/cm: microohms per centimeter; °F: degree Fahrenheit.

<sup>2</sup> Field instrument will be used to test for this constituent.

<sup>3</sup> The Discharger is required to monitor for total chromium and chromium six 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.

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. Quarterly observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.

#### IV. 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 dropped by the Executive Officer if the Discharger



makes a request and the request is backed 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 California Regional Water Quality Control Board, Los Angeles Region.

Ordered by:

Samuel Unger  
Samuel Unger, P.E.  
Executive Officer

Date: January 2, 2013

