



California Regional Water Quality Control Board

Los Angeles Region



Linda S. Adams
Cal/EPA Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

April 2, 2008

Mr. Karl Bewley
ConocoPhillips Company
3611 S. Harbor Bl., Ste 200
Santa Ana, CA 92704

GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER CLEANUP AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND AND/OR HEXAVALENT CHROMIUM IMPACTED SITES – FORMER 76 TEXACO STATION 2535, 4069 NORTH LAKEWOOD BOULEVARD, LONG BEACH (ORDER NO. R4-2007-0019, SERIES NO. 052; CI NO. 9399)

Dear Mr. Bewley:

We have completed our review of your application for coverage under the General Waste Discharge Requirements to inject ORC-A at the site referenced above in Long Beach, California, for groundwater cleanup and remediation.

In October 2001, two 15,000-gallon gasoline USTs and associated station facility were removed from the site which is currently a vacant lot and under construction by the Boeing Corporation as a City park. The site assessment of the site started in June 1985 with the installation of three soil borings and three groundwater monitoring wells by Leighton and Associates; TPHg was detected up to 2,780 mg/kg in soil. Since then, various subsurface investigations have been conducted at the site, which consisted of drilling and sampling numerous soil borings, installing twenty one groundwater monitoring wells, and six vapor extraction wells (refer to Figures 2, 3 and 4 for groundwater flow direction, groundwater plume delineation and groundwater monitoring well locations). Groundwater monitoring data collected in October 2007 indicated that TPHg, BTEX and TBA were detected at a maximum concentration of 5,800, 2,867 and 440 micrograms per liter ($\mu\text{g/L}$) respectively (no MTBE has been detected).

A soil vapor extraction system was initiated in December 2001 to clean up the contaminated soil and has removed 138,490 lbs of hydrocarbons from the subsurface soils over an operational period of 35, 429 hours.

To further remediate the residual soil and groundwater contaminations, a "Remedial Action Plan" (RAP) dated November, 2007, by SECOR proposed to remove approximately 400 cubic yards of contaminated soil by drilling 20 large-diameter (5-foot) soil borings between 25 and 35 feet below ground surface and placing ORC-A nearing the potentiometric surface in 4 of the borings to enhance biodegradation and natural attenuation of petroleum hydrocarbons (please refer Figure 3). ORC-A is a patented formulation of phosphate-intercalated calcium oxyhydroxide that is a timed-released source of oxygen.

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

A letter dated January 10, 2008 from Los Angeles Regional Water Quality Control Board approved the RAP.

Regional Board staff has determined that the proposed discharge 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 WDRs)," adopted by the State Water Resources Control Board on March 1, 2007.

Enclosed are your Waste Discharge Requirements, consisting of General WDRs Board Order No. 2007-0019 and Monitoring and Reporting Program No. CI-9399 and Standard Provisions. This Waste Discharge Requirements shall not be rescinded without the regulatory oversight agency's prior approval.

The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment under Regional Board Order No. R4-2007-0019. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

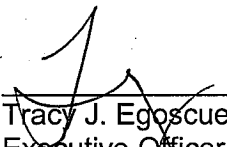
When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File No. CI-9380, which will assure that the reports are directed to the appropriate file and staff. Do not combine other reports with your monitoring reports. Submit 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

If you have any questions, please contact Mr. Rod Nelson at (213) 576-6119.

Sincerely,


Tracy J. Egoscue
Executive Officer

Enclosures. 1. Board Order No. R4-2007-0019
2. Standard Provisions for Reporting and Monitoring
3. Monitoring and Reporting Program No. CI-9399

cc: Mr. Jeff Benedict, Long Beach Health and Human Services
Mr. Kelly Brown, SECOR

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
MONITORING AND REPORTING PROGRAM NO. CI-9399
FOR
FORMER 76 STATION 2535
4069 NORTH LAKEWOOD BOULEVARD, LONG BEACH
(ORC INJECTION FOR GROUNDWATER CLEANUP)
(ORDER NO. R4-2007-0019, SERIES NO. 052)

I. REPORTING REQUIREMENTS

- A. ConocoPhillips Company (hereinafter Discharger) shall implement this monitoring program on the effective date of Regional Board Order No. R4-2007-0019. The first monitoring report under this program, for April-June 2008, shall be received at the Regional Board by July 15, 2008. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15

If there is no discharge or injection during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.

- B. By March 1st of each year, the Discharger shall submit an annual summary report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the Discharger shall explain the compliance record and the corrective actions taken, or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements (WDRs).
- 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.

April 2, 2008

- 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.
- 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. The Discharger should not implement any changes to the Monitoring and Reporting Program prior to receiving Executive Officer's written approval.

II. ORC-A INJECTION MONITORING REQUIREMENTS

The quarterly reports shall contain the following information regarding injection activities:

1. Location map showing placement locations, used for the ORC-A (refer to attached Figure 2 for groundwater contour, Figure 4 for groundwater contaminant plume, and Figure 3 for the proposed injection locations).
2. Written and tabular summary defining the quantity of ORC-A 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
Total ORC-A delivered per injection location	grams	--	• Quarterly

III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site. Groundwater samples shall be collected from up-gradient area groundwater monitoring well MW11; source area groundwater monitoring well MW9; and down-gradient area groundwater monitoring wells MW18 and MW1 on a quarterly basis to monitor the effectiveness of the in-situ groundwater remediation. ORC-A injection points shall not be used as monitoring points. 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
Total petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd)	µg/L	Grab	• Quarterly ¹
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	µg/L	Grab	• Quarterly ¹

Methyl tertiary butyl ether (MTBE), Tertiary butyl alcohol (TBA), Tertiary amyl methyl ether (TAME), Di-isopropyl ether (DIPE), ether (ETBE)	µg/L	Grab	• Quarterly ¹
Ethanol Formaldehyde Acetone	µg/L	Grab	• Quarterly ¹
Total dissolved solids, Arsenic, Boron, Chloride, Bromide, Sulfate, Lead, Nickel, Cadmium, Manganese	mg/L	Grab	• Quarterly ¹
Oxidation-reduction potential	millivolts		• Quarterly ¹
Dissolved Oxygen	µg/L	Grab	• Quarterly ¹
Dissolved ferrous iron	µg/L	Grab	• Quarterly ¹
Total Chromium and chromium six ²	µg/L	Grab	• Quarterly ¹
PH	pH units	Grab	• Quarterly ¹
Temperature	⁰ F/ ⁰ C	Grab	• Quarterly ¹
Groundwater Elevation	Feet, mean sea level and below ground surface	In situ	• Quarterly ¹

¹ One week before injection and Quarterly thereafter

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

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

IV. MONITORING FREQUENCIES

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 California Regional Water Quality Control Board, Los Angeles Region.





Ordered by:

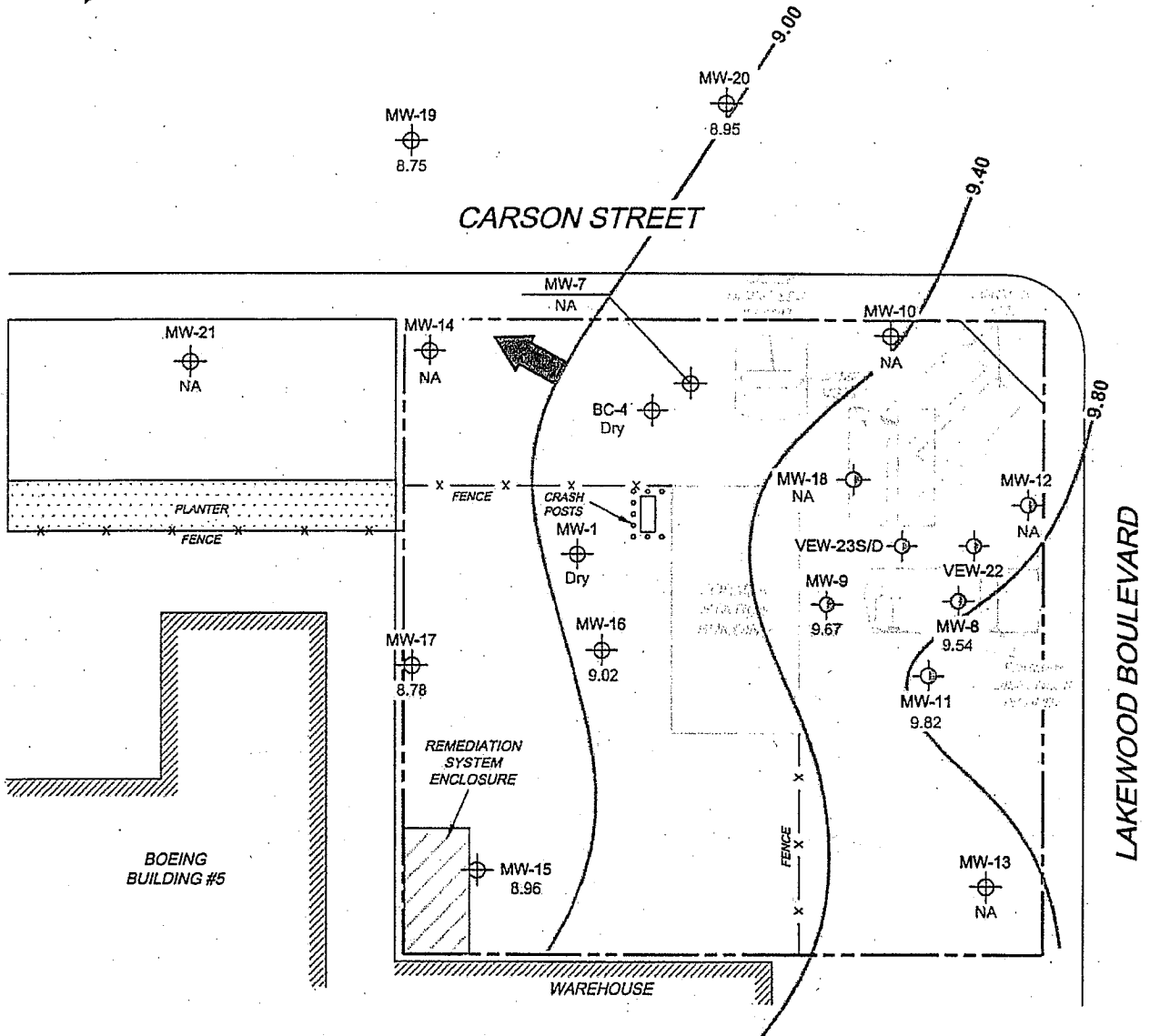


Tracy J. Egoscue
Executive Officer

Date: April 2, 2008

LEGEND

- MW-21  Monitoring Well with Groundwater Elevation (feet)
- VEW-23S/D  Dual Monitoring/Vapor Extraction Well
- 9.80  Groundwater Elevation Contour
-  General Direction of Groundwater Flow



NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. NA = not analyzed, measured, or collected, because of redevelopment by the property owner, the City of Long Beach. UST = underground storage tank.

SCALE (FEET)



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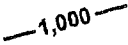


PROJECT: 154770
 FACILITY:
 FORMER 76 STATION 2535
 4069 NORTH LAKEWOOD BLVD.
 LONG BEACH, CALIFORNIA

**GROUNDWATER ELEVATION
 CONTOUR MAP
 October 19, 2007**

FIGURE 2

LEGEND

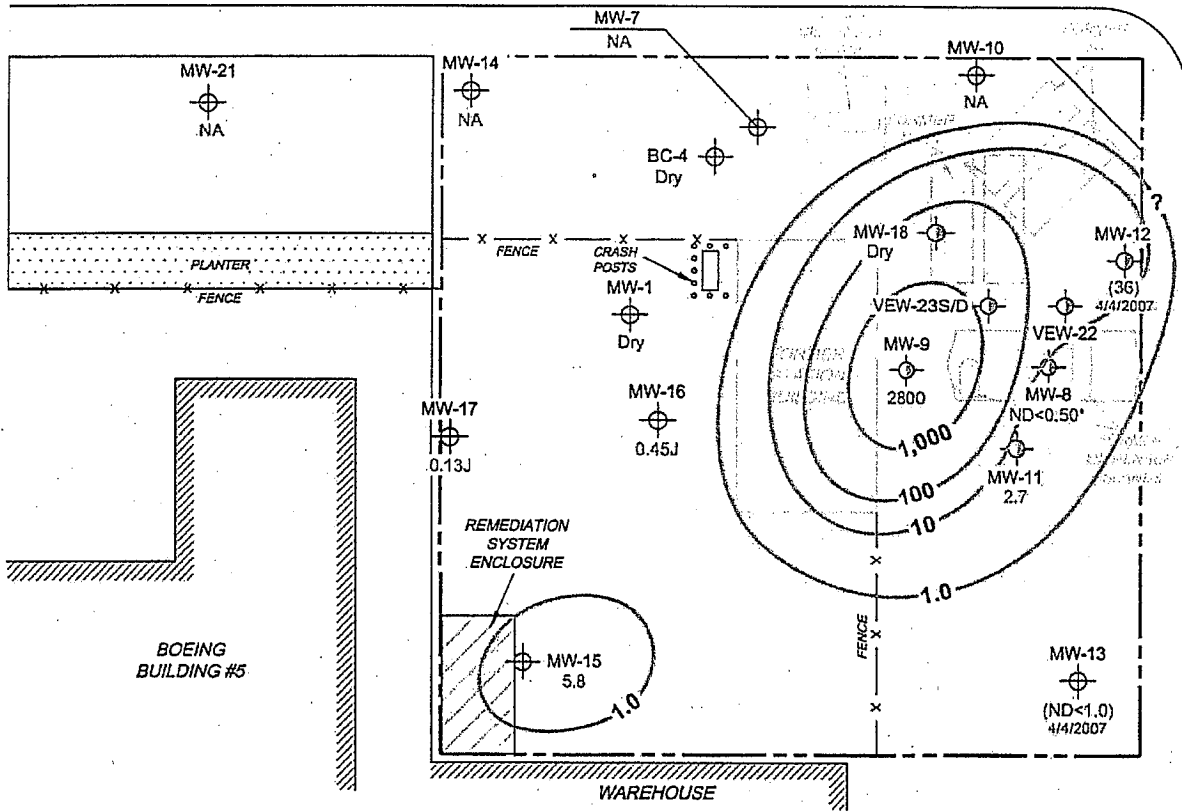
- MW-21  Monitoring Well with Dissolved-Phase Benzene Concentration (µg/l)
- VEW-23S/D  Dual Monitoring/Vapor Extraction Well
-  1,000 Dissolved-Phase Benzene Contour (µg/l)



MW-19
ND<0.50

MW-20
ND<0.50

CARSON STREET

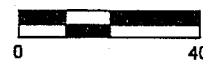


LAKWOOD BOULEVARD

NOTES:

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. NA = not analyzed, measured, or collected, because of redevelopment by property owner, the City of Long Beach. J = estimated concentration, value is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). * = not included in contour interpretation. () = representative historical value. UST = underground storage tank.

SCALE (FEET)



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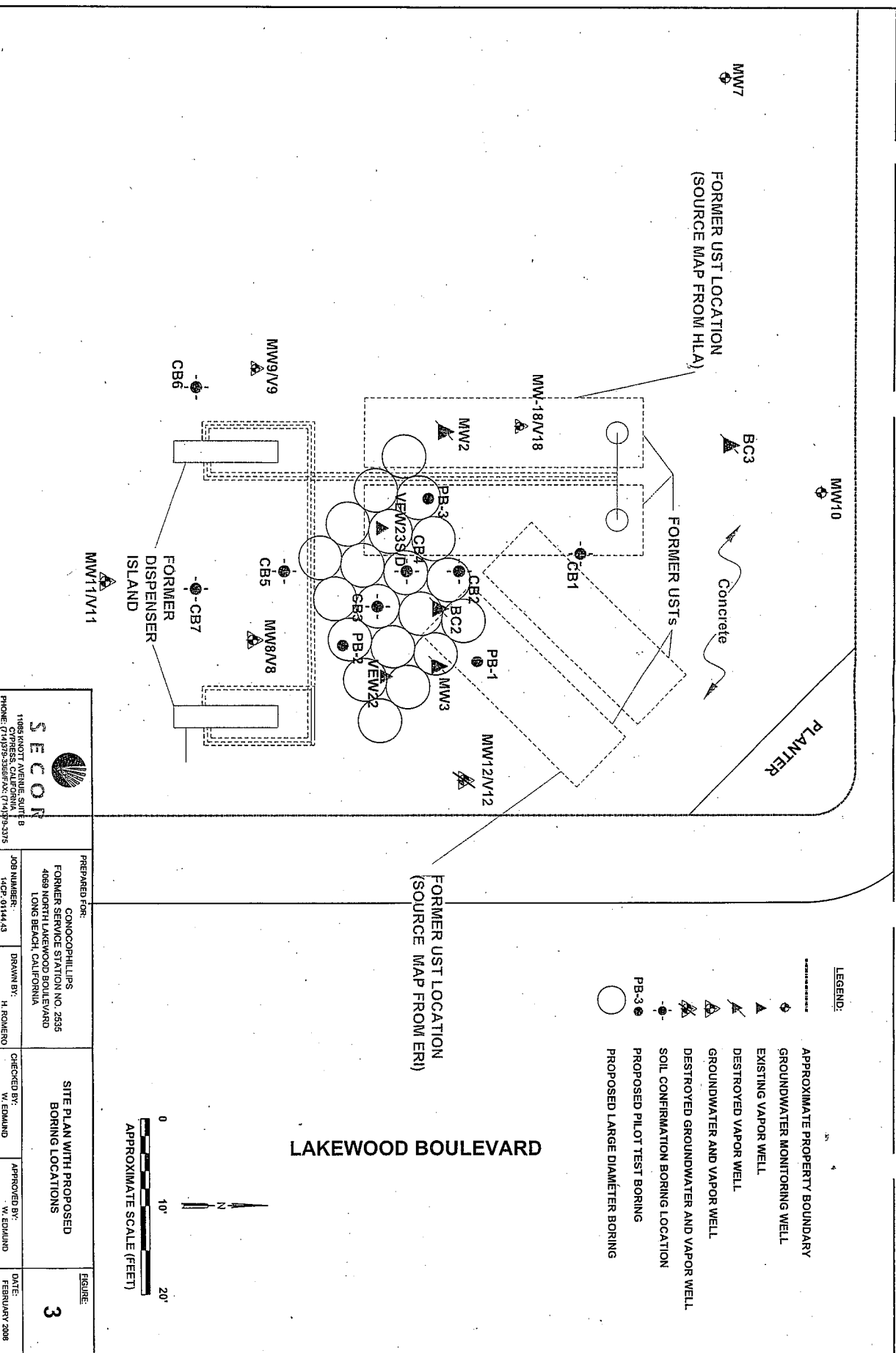


PROJECT: 154770

FACILITY:
FORMER 76 STATION 2535
4069 NORTH LAKEWOOD BLVD.
LONG BEACH, CALIFORNIA

**DISSOLVED-PHASE BENZENE
CONCENTRATION MAP**
October 19, 2007

FIGURE 4



SECOR
 11885 NORTH AVENUE, SUITE 118
 LONG BEACH, CALIFORNIA 90801
 PHONE: (714) 939-3388 FAX: (714) 939-3375

Prepared for:
 CONOCO PHILLIPS
 FORMER SERVICE STATION NO. 2556
 4059 NORTH FLAMENGO BOULEVARD
 LONG BEACH, CALIFORNIA

Job Number: 14CP-011443
 Drawn By: H. ROMERO
 Checked By: W. EDWARDS
 Approved By: W. EDWARDS

DATE: FEBRUARY 2008
 CP 2556 Remediation Draw