



# California Regional Water Quality Control Board

## Los Angeles Region



Alan C. Lloyd, Ph.D.  
Agency Secretary

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

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

June 1, 2005

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
CLAIM NO. 7003 3110 0003 3258 4042

Mr. Dan Truzzolino  
ConocoPhillips Company  
P.O. Box 25376  
Santa Ana, CA 92799

Dear Mr. Truzzolino:

**GENERAL WASTE DISCHARGE REQUIREMENTS FOR HYDROGEN PEROXIDE SOLUTION AND NATURAL IRON (CATALYST) INJECTIONS AT PETROLEUM HYDROCARBON FUEL AND/OR VOLATILE ORGANIC COMPOUND IMPACTED SITES – 76 STATION 3645, 15410 VENTURA BOULEVARD, SHERMAN OAKS, CALIFORNIA (FILE NO. 914030025, CI NO. 8881)**

We have completed our review of your application for coverage under General Waste Discharge Requirements for the injection of hydrogen peroxide solution and, if needed, iron ferrous sulfate as catalyst at the site referenced above in Sherman Oaks, California.

ConocoPhillips Company (hereinafter Discharger) is conducting the groundwater cleanup activities at a facility commonly known as the 76 Station 3645 site (Site) located at 15410 Ventura Boulevard, Sherman Oaks, California (Figures 1 and 2) (Latitude: 118° 28' 09", Longitude: 34° 09' 15"). Amir Anhid N. Nourian owns the land and ConocoPhillips Company owns the facility. The Site, encompassing approximately 14,400 square feet, is an active station located on the southwest corner of Sherman Oaks Avenue and Ventura Boulevard. The gas station consists of two gasoline underground storage tanks (USTs) and three dispenser islands.

Following a reported loss of gasoline, a soil and groundwater investigation was initiated at the Site in September 1986. During the investigation several monitoring and groundwater monitoring wells were installed. Site investigations indicate that soil and groundwater have been contaminated with volatile organic compounds (VOCs). The highest concentration of total petroleum hydrocarbon as gasoline (TPHg) and benzene detected in the soil were 3,000 milligram per kilogram (mg/Kg) and 4.3 mg/Kg respectively.

Groundwater analytical data indicate the presence of TPHg, benzene, toluene, ethyl benzene and total xylenes (BTEX), t-butyl alcohol (TBA), ethyl tertiary butyl ether (ETBE), t-amyl methyl ether (TAME), di-isopropyl ether (DIPE) and methyl tertiary butyl ether (MTBE). Groundwater VOC concentrations ranged from non-detected to 1,400 milligram per liter (mg/L) of TPHg, non-detected to 5,300 microgram per liter ( $\mu\text{g/L}$ ) of benzene, non-detected to 8,600  $\mu\text{g/L}$  of toluene, non-detected to 5,400  $\mu\text{g/L}$  of ethyl-benzene, non-detected to 34,000 of total xylenes, non-detected to 240,000  $\mu\text{g/L}$  of MTBE, non-detected to 180  $\mu\text{g/L}$  of TAME, and non-detected to 110,000  $\mu\text{g/L}$  of TBA.

**California Environmental Protection Agency**



Recycled Paper

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

The subject site is located at the southern edge of the San Fernando Valley along the northern foothills of the Santa Monica Mountains. The Santa Monica Mountains are composed primarily of marine sedimentary rocks, from which the recent alluvium covering the subject site was derived. The alluvium beneath the site is believed to be composed of sand, silt, clay and gravel (Brown and Caldwell, 1986). Soil borings have revealed primarily sand and silt to 55 ft bgs. The maximum depth investigated.

The site appears to lie within the San Fernando groundwater basin (Brown and Caldwell, 1986). The first encountered groundwater occurs at a depth of approximately 36 ft bgs, with a hydraulic gradient directed to the northeast, presumably toward the Los Angeles River, which is located at a distance of approximately 3,000 feet in the direction. The groundwater gradient is approximately 0.02 ft/ft. There are no known drinking water production wells within a 1-mile radius of the site (Brown and Caldwell, 1986).

On October 30, 2002, Los Angeles Regional Water Quality Control Board staff (Mr. Yue Rong, Underground Storage Tank Section) approved the "Feasibility Testing Report and Remediation Action Plan" dated July 15, 2002. In the proposed Remediation Action Plan (RAP), the consultant (TRC Customer-Focused Solutions) proposes to inject hydrogen peroxide solution into dual-phase wells MW-4, MW-5, and MW-11 in five gallon increments over a 30-minute period to maximize dispersion into the soil and groundwater and to minimize temperature increase. The dual-phase extraction system will be used to provide hydraulic control in the injection area and to aid in the distribution of oxidant while capturing off-gases with vacuum. The dual-phase extraction system will continue run throughout the oxidant application; however, groundwater will only be pumped from well BC-3. Preferential pumping of BC-3 will create an artificial hydraulic gradient, causing the peroxide solution to migrate through the dissolve-phase plume toward BC-3.

During the peroxide injection, the groundwater temperature will be monitored at each injection well and at the extraction wells(s) using a thermocouple and data logger. A rise in the temperature of the groundwater being extracted from the extraction well will be used as an indication that the oxidant-treated groundwater has been drawn to the extraction well. If necessary, peroxide may be pressure injected into the injection wells to maximize dispersion into the soil. Subsequent addition of hydrogen peroxide will be based on the results of the initial injection; it is anticipated that the additions will occur at least on a monthly basis.

The hydrogen peroxide solution will be at 7 % by volume and natural occurring iron (dissolved phase Fe in the subsurface) will be used in the process. However, if the additional iron is needed to start up the reaction, iron ferrous sulfate will be added to the hydrogen peroxide solution as a catalyst for the Fentons reaction.

Any potential adverse water quality impacts that may result shall be localized, of short-term duration, and shall not impact any existing or prospective uses of groundwater.

Regional Board staff have determined that the proposed discharge meets the conditions specified in Order No. R4-2005-0030, "General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites," adopted by this Regional Board on May 5, 2005.

Mr. Dan Truzzoline  
ConocoPhillips Company  
(76 Station 3645)

- 3 -

June 1, 2005

Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2005-0030 (Series No. 059) and Monitoring and Reporting Program No. CI-8881 and Standard Provisions.

The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment (June 1, 2005) under Regional Board Order No. R4-2005-0030. 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-8881, 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. R4-2005-0030 only to the applicant. A copy of the Order will be furnished to anyone who requests it.

If you have any questions, please contact Mr. Orlando H. Gonzalez at (213) 620-2267.

Sincerely,

Jonathan S. Bishop  
Executive Officer

Enclosures: 1. Board Order No. R4-2005-0030  
2. Monitoring and Reporting Program No. CI-8881

cc: Mr. Ted Johnson, Water Replenishment District of Southern California  
Mr. Mark Stewart, Central Basin Watermaster, California Department of Water Resources  
Mr. Amir Anhid N. Nourian, Land Owner  
Mr. Bryen Woo, TRC Customer-Focused Solutions

***California Environmental Protection Agency***



Recycled Paper

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