



# Del Amo Superfund Site

## Los Angeles, California

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • March 2011

## 2<sup>nd</sup> 5-Year Review at Del Amo Waste Pits Completed

### Background

The Del Amo Superfund Site, located in Los Angeles, California, encompasses approximately 280 acres in a narrow strip of the city known as the Harbor Gateway. The portion of the Site subject to the five-year review—the Waste Pits OU-2—occupies approximately 4 acres at the southern end of the Site. The Del Amo synthetic rubber plant operated from approximately 1943 to 1972, and consisted of three separate plants dedicated to the production of styrene, butadiene, and rubber. During its early operations, waste was disposed of at four unlined evaporation ponds and six unlined waste pits located in the area now identified as the Waste Pits OU-2.

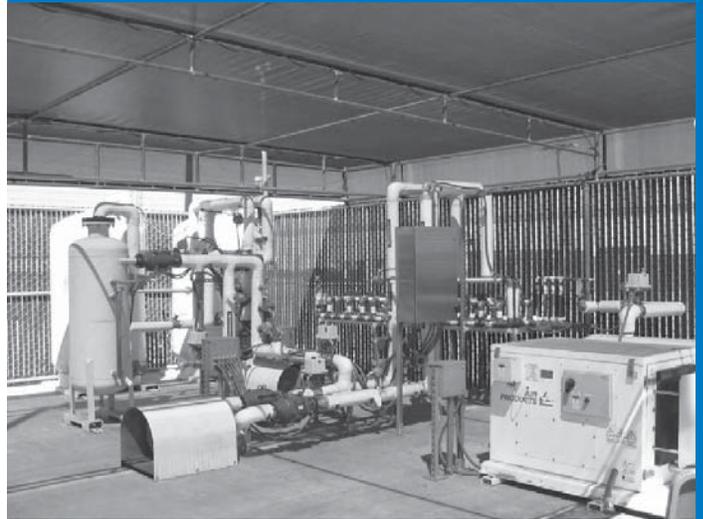
Results from environmental investigations showed that the waste material had contaminated adjacent soil with volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs). Benzene, a VOC and known human carcinogen, is the hazardous substance detected most frequently and at the highest concentrations at the Waste Pits OU-2. Among the SVOCs, naphthalene has been detected at the highest concentrations and at the greatest frequency in waste material and soil. Groundwater is impacted by the VOCs and SVOCs (particularly benzene, ethylbenzene, naphthalene, and phenol).

### Selected Cleanup Remedies

In the 1997 Waste Pits OU-2 Record of Decision (ROD), the selected remedy included:

- Installation of a multi-layer impermeable cap over the waste pits;
- Installation of surface water controls to prevent ponding of water on the cap and run-off to adjacent properties;
- Installation and operation of a soil vapor extraction/ in-situ bioventing technology (SVE/IBT) system;
- Installation of security fencing around the above-ground SVE/IBT treatment units;
- Land use restrictions; and
- Long-term operation, monitoring, and maintenance (OM&M).

### Site Status Report



The United States Environmental Protection Agency (USEPA) completed the second five-year review of the Del Amo Waste Pits Operable Unit (Waste Pits OU-2) at the Del Amo Superfund Site (Site) in Los Angeles, California in September 2010. Superfund guidance requires a review of cleanup actions every five years if the levels of contaminants remaining at a site do not allow unrestricted use of the property. The Del Amo review concluded that the cleanup remedy and deed restrictions are protective of human health and the environment, as is briefly summarized in this Fact Sheet.

## **Current Status of the Cap and Surface**

### **Water Controls**

Since installation, the cap and surface water controls have been routinely inspected and measured for settlement to ensure the cap remains intact and that the surface water controls adequately collect and convey rainfall. The cap's gas collection and treatment system (GCTS) is monitored to ensure that the emission standard of 5 parts per million by volume (ppmv) is not exceeded.

The cap and its GCTS, surface water controls, and security fence are functioning as intended in the Waste Pits ROD. Based on visual inspections over the past five years, there are no problems with the cap or surface water controls that require repair. Vegetative cover on the cap is well established and maintained, with no observed evidence of erosion, slope instability, or settlement. The concrete V-ditch surface drainage channels bordering the cap on the northern and southern edges are in good condition. Caulking at the joints along the concrete-paved ditches is intact and in suitable condition. Debris and sediment have not been observed along the drainage channels or in the catch basins. The retaining wall along the southern edge of the cap is intact and in good condition, with no observable damage or areas needing repair.

The GCTS is effectively collecting and treating vapors from below the cap, consistently reducing benzene concentrations to below the emission standard of 5 ppmv. VOC concentrations entering the GCTS before treatment ranged from 0 to 25.6 ppmv, and have declined steadily during this five-year review period.

### **Current Status of the SVE/IBT System**

The system has completed its third year of full operation during this five-year review period. The objective for the SVE/IBT system is to remove VOCs from the soil in order to prevent them from entering the groundwater or moving out from beneath the impermeable cap. EPA concludes that the SVE/IBT System is functioning as intended in the Waste Pits ROD and meeting the objective.

The vapor extraction wells successfully capture contaminants that could migrate down to the groundwater or laterally out from beneath the cap. The system has proven effective in degrading and removing contaminants from the subsurface, as seen by the steady decrease in concentrations of incoming VOCs between 2005 and 2009. The SVE/IBT system is degrading and adsorbing benzene at an estimated average of 65 pounds per day. By the end of the 2009 operational year, approximately 70,430 pounds of benzene had been removed from the Waste Pits OU-2 since system startup on August 6, 2006. Of this mass removed, an estimated 53,849 pounds had been removed through biodegradation and 16,582 pounds through carbon adsorption.

Quarterly monitoring of the perimeter wells demonstrated that contaminated soil vapors were not migrating beyond the cap boundaries.

System components, including wells, piping, blowers, treatment units, etc., are in good working condition. The fencing surrounding the system enclosure, the overhead canopy, and the concrete pad are well maintained and in good condition.

### **Land Use Restrictions**

The Waste Pits ROD specified environmental deed restrictions as a component of the selected remedy. Such restrictions are intended to prevent residential use or any other use that could impact the integrity of the cap. The Site's property owners are responsible for conducting the ongoing monitoring and for enforcing the restrictions. Current deed restrictions and monitoring procedures comply with the ROD requirements.

**USEPA Web site at [www.epa.gov/region09/delamo](http://www.epa.gov/region09/delamo)**

*A Spanish version of this flyer is also available, see contact information.*

## Five -Year Review Findings

The remedy is effectively preventing direct human contact with contaminants at the Waste Pits OU-2 and is preventing contaminant migration from the soil to the groundwater. The cap, surface water controls, and security fencing were completed in February 2000. The cap is in good condition and continues to prevent human contact with contaminants. The surface water control and security fence are functioning as intended by the Waste Pits ROD. The deed restrictions prohibit use of the site for hospitals, schools, day care, or residences and prohibit disturbance of the cap. The SVE/IBT system was in full operation by August 2006, and is functioning as intended by the Waste Pits ROD. The system has completed its third year of full operation during this five-year review period.

## Five -Year Review Recommendations

No issues that affect the protectiveness of this remedy were identified through this second five-year review. As such, there are no associated recommendations. However, several monitoring items identified during the review require follow-up actions:

- The methodology for measuring progress towards achieving the soil cleanup standard needs to be clearly established.
- Groundwater monitoring needs to be performed consistent with the 2008 OM&M Manual to update the SVE/IBT performance standard.
- Vapor concentration gradients at the clustered vapor monitoring wells need to be evaluated.

These monitoring items do not affect the protectiveness of the remedy, rather they will be used to help determine how long the cleanup system will need to be operated.

## What Happens Next?

The selected remedy is proving successful in removing VOCs from the soil and in protecting the groundwater at the Del Amo Waste Pits OU-2 Site. The systems will continue to be operated, the monitoring issues will be resolved, and another Five-Year Review will be conducted in 2015.

## Information Repositories

The Five-Year Review Reports and other documents related to cleanup activities for the Del Amo Superfund Site Waste Pits OU, are available to the public at the public libraries and web site listed below:

### Torrance Civic Center Library

3301 Torrance Boulevard  
Torrance, CA 94952  
(310) 618-5959

### Carson Public Library

151 East Carson Street  
Carson, CA 90745  
(310) 830-0901

### EPA Superfund Records Center

95 Hawthorne Street, Room 403  
San Francisco, CA 94105-3901  
Telephone: (415) 536-2000  
Fax: (415) 764-4963



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Los Angeles, California

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