



**2008**

**Annual Report to the  
California State Legislature**

**REPORT ON FUNDS  
ALLOCATED FOR NATIONAL PRIORITIES LIST (NPL)  
AND STATE ORPHAN SITES**

**California Environmental Protection Agency  
Department of Toxic Substances Control**



## Executive Summary

The Department of Toxic Substances Control (DTSC) is responsible for protecting the health and safety of Californians. DTSC achieves this goal by controlling exposure of Californians to hazardous materials present in soil, water, and air. Hazardous materials are either treated or removed from commercial and residential properties, military facilities, school sites or industrial parcels.

This report provides information about sites where the parties responsible for releasing hazardous materials are not identifiable, not financially capable, or not willing to pay for the treatment and/or removal of hazardous materials that have been determined to present an imminent danger to the public. While obligated to protect the public health and environment, DTSC is required by statute and policy to aggressively pursue cost recovery against parties unwilling to pay or participate in cleanup actions whenever it elects to use state funds to evaluate or remediate hazardous substance release sites.

In Fiscal Year (FY) 2007-08, DTSC was appropriated \$8,479,923. Of this amount, \$7,357,201 was spent on contracts to perform direct cleanup of contaminated sites, and \$161,664 was encumbered for future cleanup contracts.

These expenditures allowed DTSC to investigate, contain or remove hazardous materials from some of the most contaminated sites in California, which exposed a great number of Californians to very toxic materials in their homes, schools, and businesses. In FY 2007-08 DTSC was able to clean up 11,380 cubic yards of contaminated soil, treat hundreds of millions of gallons of contaminated water, and return 223 acres of contaminated land back to productive use. The combination of the projects listed in this report allowed DTSC to directly protect more than 136,000 Californians from exposure to hazardous materials throughout our great state.

*Provision 2 of Item 3960-001-0018 of the Budget Act of 2007 states that the Department of Toxic Substances Control (DTSC) is required to report on site investigation and cleanup activities conducted in Fiscal Year (FY) 2007/08 at Federal National Priorities List (NPL) State match and State orphan sites.*

## **Introduction**

The mission of the Department of Toxic Substances Control (DTSC) is to provide the highest level of safety, and to protect public health and the environment from toxic harm. DTSC is committed to ensuring that the National Priorities List (NPL) and orphan hazardous waste sites (sites where no one is available to conduct the cleanup) are cleaned up to protect the environment and the health of all Californians. In order to fulfill this mission, the Federal Superfund program appropriates funds to clean up NPL sites in the State of California where no viable responsible party exists. The State must also contribute at least 10 percent of the costs associated with remedial actions, and up to 100 percent of all future maintenance costs; this represents the State match.

The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. Superfund is the federal government's program to clean up the nation's uncontrolled hazardous waste sites.

DTSC projects that during the next five fiscal years (FY) (FY 2008/2009 through FY 2012/2013) over \$15,000,000 will be expended to fund DTSC's 10% match for Federal Superfund site remedial actions. In addition, during the same period, over \$10,000,000 is projected for DTSC's Operation and Maintenance costs at these sites. Table 1 summarizes DTSC's total cost obligations for NPL sites by regional office and fiscal year. These are estimates only and are dependent on many factors including discretionary decisions by the United States Environmental Protection Agency (U.S. EPA) and the availability of federal monies.

State orphan sites are sites that are not on the NPL, but where hazardous substances contamination still poses an environmental or public health threat and the parties responsible for the contamination are unknown, unwilling, or unable to pay for a cleanup. DTSC routinely pursues enforcement actions and seeks cost recovery against responsible parties unwilling to pay for, cooperate, or otherwise contribute to necessary cleanup of releases for which they are liable.

This report describes DTSC's accomplishments, challenges, and various activities conducted in State fiscal year (FY) 2007/08 using funds appropriated for the cleanup of NPL and State orphan sites. The sites activities section of the report consists of newly added sites as well as sites from FY 2007/08 where work will continue into FY 2008/09.

### How Funds Were Used - Net Program Costs

The Budget Act of 2007 appropriated \$8,479,923 to DTSC's Site Remediation Account. DTSC's pro rata share for the fund for FY 2007/08 was \$285,077. The remaining balance of \$8,194,846 was used to provide the required State match funding at NPL sites, and allocated for site investigation and cleanup actions at State Orphan sites. This funding makes it possible for DTSC to protect public health and the environment from the harmful effects of releases and threatened releases of hazardous substances when the party responsible for releasing hazardous materials is not identifiable or financially capable of paying for the cleanup of hazardous materials. During FY 2007/08, DTSC encumbered \$161,664 and spent approximately \$7,357,201 for contracts to perform site work. This includes funding appropriated in FY 2007/08 as well as funding appropriated in previous years that was not fully expended.

**Table 1. Regional NPL Match and O&M Cost Projections  
(in 1,000s) By Fiscal Year**

| Regional Office | FY 08/09       | FY 09/10       | FY 10/11       | FY 11/12       | FY 12/13       | TOTAL           |
|-----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| Berkeley        | \$0            | \$0            | \$500          | \$50           | \$50           | \$600           |
| Cypress         | \$0            | \$200          | \$200          | \$200          | \$3,500        | \$4,100         |
| Chatsworth      | \$940          | \$224          | \$153          | \$153          | \$153          | \$1,623         |
| Sacramento      | \$650          | \$2,137        | \$2,737        | \$5,904        | \$5,464        | \$16,892        |
| <b>TOTAL</b>    | <b>\$1,590</b> | <b>\$2,561</b> | <b>\$3,590</b> | <b>\$6,307</b> | <b>\$9,167</b> | <b>\$23,215</b> |

**Description of Activities**

**National Priorities List and State Orphan Sites**

## NORTHERN CALIFORNIA - CENTRAL

**Site Name: Wickes Forest Industries**

Location: Holdener and A Streets, Elmira, Solano County,  
Assembly District 8, Senate District 5



*Ground water monitoring activities completed by DTSC at this former wood-preserving facility resulted in the continued protection of the citizens of the Vacaville/Elmira region from toxic substances detected in the ground water. Ongoing efforts conducted by DTSC will help to reclaim the affected aquifer as a reliable supply of drinking water in the Vacaville/Elmira region.*

**Description of Site Activities:** This site, a former wood-preserving facility, ceased operating in the early 1980s. Hazardous levels of arsenic and chromium have been discovered on the site. Arsenic poisoning can cause severe skin ulceration and damage to the kidneys, lungs, and nervous systems. Hexavalent chromium exposure is known to cause respiratory disease. A ground water extraction and treatment system and a seven-acre asphalt cap were installed to protect the aquifer and clean up contaminated ground water. In FY 2007/08, DTSC repaired the treatment system, collected soil data from the source area, oversaw maintenance of the cap, and performed required ground water monitoring. However, DTSC has determined that restarting and operating the treatment system is no longer viable and is evaluating what steps are now necessary to complete restoration of ground water based on the information from FY 2007/08 activities. Remedial activities completed by DTSC resulted in the continued protection of the citizens of Elmira from toxic substances and were necessary steps in the ongoing effort to reclaim the affected aquifer as a reliable supply of drinking water in the Vacaville/Elmira region. Expenditures for FY 2007/08 were approximately \$275,000. During FY 2008/09, DTSC will evaluate alternative remedies to protect ground water quality and treat existing ground water contamination.

**Site Name: Orchard Supply Company**

Location: 1731 17th Street, Sacramento, Sacramento County,  
Assembly District 9, Senate District 6



*DTSC continues to monitor and evaluate the contaminated ground water at this former agricultural chemical retail and wholesale outlet facility. This site is bordered by commercial properties and a residential neighborhood. Remediation of ground water will restore the resources for potential use.*

**Description of Site Activities:** This site is a former agricultural chemical retail and wholesale outlet facility. Soil and ground water are contaminated with metals, pesticides, petroleum hydrocarbons, and VOCs. Among these, arsenic may result in damage to organ function; lead is a neurotoxin that may lead to learning disabilities in children; chlordane is toxic if inhaled or comes into contact with the skin. Lab studies indicate that chlordane is also a carcinogen and potent toxin to the central nervous system. 1,2 dichloroethane impacts eyes and respiratory function; carbon tetrachloride exposure affects the central nervous system, liver, and kidneys; 1, 2 dichloropropene may also result in degeneration of various organs.

The site is bordered by light rail tracks and an alley on the north, 18<sup>th</sup> Street on the east, R Street on the south, and 17<sup>th</sup> Street on the west. A residential neighborhood is located north of the site. Commercial properties are located east, south and west of the site. In FY 2007/08, DTSC conducted additional ground water investigation using a cone penetrometer test/hydropunch sampler and installed several monitoring wells. In addition, a bench test and pilot study were conducted to determine the effectiveness of in-situ treatment of the ground water with an emulsified oil substrate (EOS). In FY 2008/09, DTSC encumbered \$75,000 to prepare a RAW to evaluate and plan a ground

water contamination remedy; continue semi-annual ground water monitoring; and evaluate the performance of the pilot study. The information from the pilot study will be used to develop a removal action to address the ground water contamination. Remediation of ground water will restore the resources for potential use.

**Site Name: Orland Dry Cleaners**

Location: 726 Fifth Street, Orland, Glenn County,  
Assembly District 2, Senate District 4

**Description of Site Activities:** The site is approximately two and a half miles long and is contaminated with PCE. In FY 2006/07, DTSC completed a draft Removal Action Work plan (RAW) to address the ground water contamination, recommending in-situ reductive dechlorination (enhanced biodegradation) as the treatment method. In FY 2007/08, DTSC encumbered \$250,000 to implement the recommended remedial actions and conducted additional investigation using cone penetrometer test/hydropunch to determine the treatment area inside the plume. New monitoring wells will be installed to monitor the treatment performance and injection of emulsified oil substrate to treat the contaminated ground water. During FY 2008/09, DTSC will continue semi-annual ground water monitoring at 32 wells and evaluate the effectiveness of the enhanced biological treatment of ground water. The information gathered will assist the placement of the injection points. The City of Orland has production wells within 0.5 miles of the estimated contamination plume boundary. These wells supply drinking water to more than 5,000 people. In addition, several private wells are located inside the plume.

**Site Name: World Radiator and Air Conditioning Shop**

Location: 8336 Skyway, Paradise, Butte County,  
Assembly District 3, Senate District 4

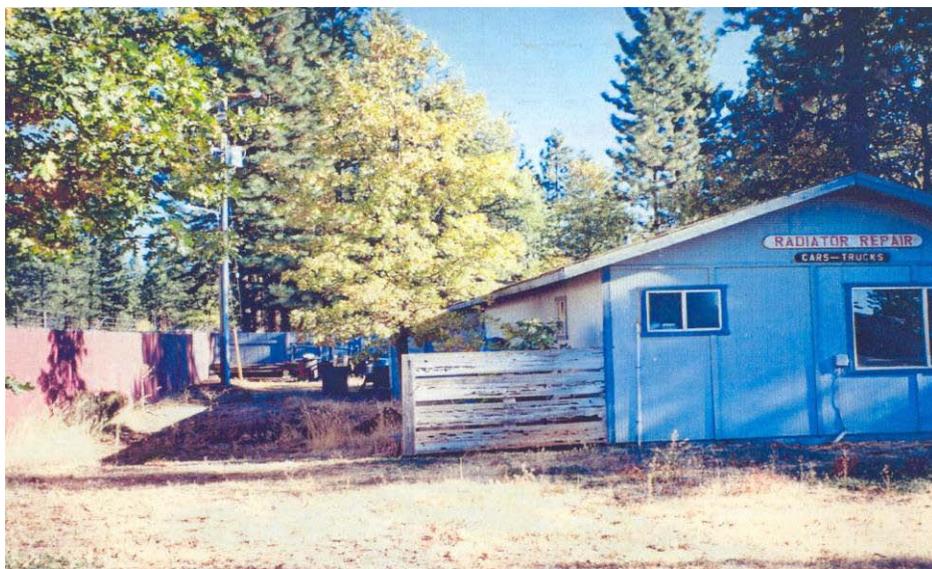


*World Radiator and Air Conditioning Shop is the site of a former automobile and radiator air conditioner repair facility with soil contamination impacted by lead, antimony, and arsenic. DTSC will certify the site as acceptable for restricted use upon completion of ground water monitoring and recordation of a land use covenant.*

**Description of Site Activities:** The site is a former automobile radiator and air conditioner repair facility. Soils at the site are impacted by lead, a substance known for leading to learning disabilities in children; antimony, which produces skin lesions and degenerates lung capacity; and arsenic, known to damage organ function. In FY 2006/07, DTSC implemented the removal action that consisted of excavation and disposal of contaminated soil and materials. The site is in an area zoned for residential and commercial properties. Residential properties are located adjacent to the site on the north and on the east. In FY 2007/08, DTSC continued ground water monitoring to assess the effect of soil cleanup on the ground water contaminant levels. During FY 2008/09, DTSC will complete an evaluation of the ground water monitoring and the effectiveness of the soil remedy to protect ground water quality. Upon completion of ground water monitoring and recordation of a land use covenant, DTSC will certify the site as acceptable for restricted use.

**Site Name: Sellars Brothers Radiator Shop**

Location: 38312 Main Street, Burney, Shasta County,  
Assembly District 4, Senate District 2



*Sellar Brothers Radiator Shop is a former automobile radiator repair facility with soils impacted by lead, a substance known for leading to learning disabilities in children. During FY 2008/09, DTSC will complete a Removal Action Work plan to develop a soil remedy that provides protections from the elevated human health threat and will begin implementation of that plan.*

**Description of Site Activities:** The site is a former automobile radiator repair facility. Soils at the site are impacted by lead, a substance known for leading to learning disabilities in children, and cadmium compounds, which damage the kidneys and lungs. DTSC approved an Imminent and Substantial Endangerment (ISE) Order. In FY 2007/08, DTSC completed an investigation to determine the lateral and vertical extent of the lead contamination. In FY 2007/08, \$200,000 was encumbered to complete the soil and ground water investigation. The investigation was used to ascertain risk and determine if the ground water had been impacted. The soil contamination has not adversely affected the ground water. During FY 2008/09, DTSC will complete a Removal Action Workplan (RAW) to develop a soil remedy that provides protections from the elevated human health threat and will begin implementation of that plan.

**Site Name: Valley Plating**

Location: 3920 El Cajon Avenue, Central Valley, Shasta County,  
Assembly District 2, Senate District 4



*This former electroplating facility contains high levels of contaminated ground water with hexavalent chromium, known to cause kidney, lung, and respiratory damage. DTSC will continue conducting annual ground water monitoring and will record a Land Use Covenant (LUC) on the facility property restricting the allowable uses of the property to industrial and/or commercial use.*

**Description of Site Activities:** The site is a 1.5-acre former electroplating facility that contaminated ground water with hexavalent chromium, which damages the kidneys and lungs, and zinc, which can be corrosive to the respiratory system. The contaminant plume extends approximately 150-feet off-site to an adjacent industrial property. The closest residents are living approximately one-half mile down gradient from the site and no impacts have been detected to private domestic wells. In FY 2007/08, DTSC encumbered \$6,000 to continue implementing the monitored natural attenuation remedy and sampled the monitoring wells to ensure the contamination in ground water plumes continues to decrease. The \$6,000 spent determined that the ground water plume is decreasing and that threats to nearby drinking water wells are controlled. DTSC will continue conducting annual ground water monitoring in FY 2008/09 and will record a LUC on the facility property restricting the allowable uses of the property to industrial and/or commercial use.

**Site Name: Argonaut Mine Tailings**

Location: Along Argonaut Lane, Jackson, Amador County,  
Assembly District 10, Senate District 1

Description of Site Activities: This site consists of arsenic-laden mine tailings. Arsenic exposure is known to have a damaging effect on the function of vital organs. These tailings are a result of mining activities at Argonaut Mine from 1850 -1942. The site was fenced at State expense in 1995. An inspection in 2007 showed high levels of arsenic on the surface and indications that arsenic is moving off site. An Imminent and Substantial Endangerment Order was issued in 2007. The property owner has indicated she is unable to fund the sampling and cleanup activities. In FY 2007/08, the site was allocated \$900,000 for investigation and remediation. In FY 2008/09, a work order was signed to allocate \$185,118 for investigation sampling and creating a Removal Action Work Plan. In FY 2009/10, implementation of the Removal Action Work Plan is planned. This site is located between a residential area and a school. Remediation will stop exposure to trespassers and further migration of contamination.

**Site Name: Benham & Johnson (New Site)**

Location: 340 Daniels Lane, Bakersfield, Kern County, California  
Assembly District 30, Senate District 18

Description of Site Activities: This site is a six-acre site in the City of Bakersfield used for industrial purposes since at least 1950 for pesticide sales and distribution, metal salvage, and fertilizer distribution. Lead, arsenic, and pesticides including DDT and DDE, and poly-chlorinated biphenyls (PCBs) have been detected in soil samples collected at the site. Lead is a leading cause of learning disabilities among children, while arsenic negatively impacts organ function. PCB exposure can cause skin cancer and has the potential to inhibit proper fetal development. In March of 2007, DTSC issued an Imminent or Substantial Endangerment Determination for the Site. DTSC also initiated remedial investigation (RI) activities at the site in 2007 that have continued to date. State funding has been procured for an RI Work Plan, fieldwork, RI Report and fence repair around the perimeter of the site. During FY 2007/08, approximately \$116,000 was spent to complete the RI Work Plan and the subsequent field sampling and analysis that will be used to characterize the site and assess the risk posed by the site to develop a cleanup strategy. Several homes are located within 50 feet of the site's northern boundary. Additional work, to be conducted during FY 2008/09, includes preparation of a baseline risk assessment and a cleanup plan.

**Site Name: Visalia Dry Cleaner Investigation (New)**

Location: City of Visalia, North of Walnut Avenue, Tulare County, California  
Assembly District 34, Senate District 18

**Description of Site Activities:** The investigation area encompasses approximately 1,000 acres in the northern portion of the City of Visalia. During FY 2007/08, DTSC conducted a Remedial Investigation (RI) utilizing approximately \$285,000 in State Orphan Site Funding. The objective of the RI was to identify potential source release areas for perchloroethylene (PCE) detections identified in 25 of 77 public drinking water supply wells in the City of Visalia. Seven of the PCE impacted wells have PCE concentrations in water exceeding the State Maximum Contaminant Level (MCL) of 5.0 micrograms per liter (ug/l). These wells serve a population of approximately 88,000 people. PCE is a compound used by dry cleaners and other commercial and industrial operations. Exposure to PCE can cause cancer and, under the right conditions, can enter structures through foundation cracks. As part of the RI, DTSC identified 30 former or current dry cleaner locations in the Visalia area. Soil gas and grab ground water samples were collected in public right of ways (ROW) in proximity to the drycleaner locations to identify whether the dry cleaners are potential sources for the PCE detected in the public wells, and whether the potential for vapor intrusion of PCE into buildings exists. During FY 2008/09, additional investigation including active soil gas sampling, sewer sampling, and sewer video surveys will be conducted at 15 former or current dry cleaner properties to determine if they are source release areas for PCE and to assist in identification of Potentially Responsible Parties. Additionally, the lateral extent of potential vapor intrusion impacts and the population potentially affected will be evaluated.

**Site Name: Central Valley Fertilizer**

Location: 7657 Azusa Road, Dos Palos, Merced County, California  
Assembly District 17, Senate District 12



*The southern portion of this site contains high levels of residual pesticides (primarily toxaphene that is poison if swallowed) in the surface soils. Information obtained from the Feasibility Study will allow DTSC to identify a cost effective cleanup that is acceptable to and protects the surrounding community.*

**Description of Site Activities:** Central Valley Fertilizer is a 4.3-acre former agricultural chemical manufacturing facility surrounded by single-family residences that rely upon private wells for potable water. Ground water in the area is very shallow. The southern portion of the site contains high levels of residual pesticides (primarily toxaphene) in surface soils. Toxaphene is a poison if swallowed, inhaled, or absorbed in the skin. To date, approximately \$173,000 has been spent on the project. During FY 2007/08, DTSC finalized the Feasibility Study for the site. DTSC conducted an additional soil investigation to determine the vertical and lateral extent of the contamination to allow refinement of the volume of impacted soils for use in the cleanup document. Information obtained from the study will allow DTSC to identify a cost effective cleanup that is acceptable to and protects the surrounding community. During FY 2008/2009, a cleanup plan and design document will be prepared.

**Site Name: Sacramento Plating**

Location: 2809 S Street, Sacramento, Sacramento County,  
Assembly District 9, Senate District 6



*Shallow ground water emanating from the site is contaminated with hexavalent chromium and trichloroethylene (TCE) which is known to cause respiratory disease. Bench scale studies will tell whether one or more of the Feasibility Study identified in-situ remedies will work with site water and biological community conditions.*

**Description of Site Activities:** The site is a former electroplating facility surrounded by mixed residential/commercial land use. Shallow ground water emanating from the site is contaminated with hexavalent chromium and trichloroethylene (TCE). Hexavalent chromium is a known cause of respiratory disease. Extended exposure to TCE ingested from contaminated ground water may cause cancer. In FY 2007/08, a focused ground water feasibility study (FS) and Treatability Study Work plan (TSW) were completed and implementation of treatability bench studies began. During FY 2007/08, DTSC spent the final \$24,295.92 of the \$75,000 encumbered in February 2006 and \$16,605.87 of the \$100,000 encumbered in February 2008. Bench scale studies will tell whether one or more of the Feasibility Study identified in-situ remedies will work with site water and biological community conditions. During FY 2008/09, DTSC will continue the treatability bench scale studies. If bench scale studies are successful, DTSC will begin planning and implementing an on-site pilot study for ground water treatment.

**Site Name: Frontier Fertilizer**

Location: 2nd Street between Mace and Pena Blvd., Davis, Yolo County,  
Assembly District 8, Senate District 5

**Description of Site Activities:** Historic pesticide and fertilizer operations at this site resulted in soil and ground water pesticide contamination. Dibromoethane, dichloropropane, carbon tetrachloride, trichloropropane, and dibromochloropropane were the primary compounds found during investigations. Exposure to these compounds may cause cancer. A ground water pump and treat system has operated at the site since 1995. A Record of Decision for soil and ground water contamination, quarterly ground water monitoring reports, and initial phase of a biological pilot study for nitrate have been completed. In September 2007, DTSC completed two State Superfund Contracts for remedial design (RD) of in-situ thermal remediation of soil and ground water treatment. The first State Superfund Contract is for \$1,014,300. This is a 10 percent cost share for use in removing the source area in soil and ground water designed to shorten the time frame for reaching cleanup goals. The second State Superfund Contract is for \$155,000 to fund the State's share of plant operations and maintenance. The plant's operation capacity is 85 gallons per minute using granular activated carbon. The treated effluent enters the City of Davis' sewer system under permit. The Mace Ranch neighborhood immediately north of the site remains protected from potential indoor air exposure. The ground water extracted from deeper depths by the City of Davis remains safe for the Davis Community to use.

**Site Name: McCormick & Baxter**

Location: 1214 W. Washington Street, Stockton, San Joaquin County,  
Assembly District 17, Senate District 5

**Description of Site Activities:** This site is a 29-acre former wood-preserving facility located in an industrial area near the Port of Stockton. Soil and ground water are contaminated with polycyclic aromatic hydrocarbons (PAHs), polychlorinated dibenzodioxins (PCDDs) and furans, and arsenic. Exposure to PAHs, dioxin, and furan may cause cancer. Arsenic exposure is known to have a damaging effect on organ function. A sediment cap was completed in the Old Mormon slough, an adjacent surface water body. The sediment cap minimizes the migration of site contaminants into the Sacramento Delta System and is protective of the aquatic and benthic ecosystems. Protection of the Sacramento Delta is necessary as a source of drinking water and habitat for more than 70 fish and bird species. In FY 2008/09, an O&M plan for the sediment cap will be prepared and DTSC will assume responsibility for the remedy. Because of a previous settlement, DTSC and U.S. EPA are reviewing plans for construction of the soil remedy that will remove impediments to redeveloping 13.25 acres of the site. A Land Use Covenant (LUC) is under review for five of the 13.25 acres; the remaining 8 acres have adequate controls in place. The soil remedy construction should be completed in the summer of 2009. DTSC is monitoring the progress towards completion of the ground water evaluation for 1-2 million gallons of contaminated ground water beneath the site. Protection and restoration of this ground

water is necessary because past drinking water wells in the area were shut down. The evaluation will yield data to support selection of an appropriate ground water remedy for the site.

**Site Name: Selma Pressure Treating Company**

Location: 1735 Dockery Avenue, Selma, Fresno County,  
Assembly District 31, Senate District 14

**Description of Site Activities:** The site is a 14-acre former wood preserving treatment facility. The soil and ground water are contaminated with polychlorinated dibenzodioxins (PCDDs) and furans, VOCs, chromium, arsenic, and copper. Dioxins, furans, and hexavalent chromium may cause cancer. Arsenic and copper exposures are known to have a damaging effect on organ function. The soil remedy, composed of a Resource Conservation and Recovery Act (RCRA) Cap and Soil Impoundment Cell (SIC), is located at the site. The first three phases of the In-Situ Bioremediation (ISB) plan have been implemented. A system to extract, amend with a molasses substrate, and inject ground water is operating to reduce the concentration of chromium in ground water. The site originally encompassed 40 acres. Because of the remedial investigation and removal actions, 14 acres have returned to productive use. Currently, two materials recycling facilities operate at the site. These facilities are instrumental in the recycling of wood, green, plastic, glass and aluminum. The City is in partnership with an independent firm to establish recycling at schools and public buildings. DTSC is currently the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) lead agency for the RCRA Cap. SIC actions by DTSC include periodic inspection. In September 2009, DTSC will become the CERCLA lead agency for the ISB and ground water remedy. The current projections estimate that the ground water remedy will need to operate for more for more than five, but less than 10 years.

**Site Name: Ken's Buff and Plating**

Location: 1816 21<sup>st</sup> Street, Sacramento, Sacramento County  
Assembly District 9, Senate District 6

**Description of Site Activities:** Ken's Buffing & Plating operated a chrome, copper, brass, nickel and gold electroplating operation at this location from 1993 through 2005. The building encompasses all areas where manufacturing and storage occurred. The site is located in a mixed commercial residential district of the City of Sacramento. Previous investigations confirmed that past hazardous substance/waste management practices have resulted in a release to the environment. Cadmium, chromium, copper, zinc, nickel, lead, and cyanide compounds were found. Exposure to these compounds may damage organ function. Lead may lead to learning disabilities among children. Based on these findings, DTSC initiated a Remedial Investigation at the site. The Remedial Investigation is complete, presents a conceptual model of the extent of contamination, and estimates the volume of contaminated soil/material to be removed. During FY 2008/09, DTSC will prepare a Removal Action Work plan (RAW) to address contamination attributed to the site. Despite orders from DTSC, the facility owners have

not taken any action at this site. As a result, DTSC has elected to use state funds to complete investigation and proceed with cleanup. DTSC has placed a lien on the property for \$178,966.84, which is the portion of staff and contractor costs billed to the responsible parties. This amount remains unpaid. During the coming year, DTSC will complete the RAW and implement the remedy. It is estimated that preparation and implementation of the RAW will cost \$500,000. At this time, it is envisioned that the building will have to be demolished to remove contaminated soil, protect the ground water, and return the property to beneficial use.

**Site Name: Brown & Bryant - Arvin Facility**

**Location:** 600 South Derby Road, Arvin, Kern County,  
Assembly District 30, Senate District 16

**Description of Site Activities:** This 4.7-acre site was used for storage and sale of liquid fertilizer, insecticides, herbicides, fumigants, and defoliant. The soil is contaminated with dinoseb and other pesticides including trichloropropane, dichloropropane, dichloropropene, and dibromochloropropane. These compounds may cause cancer. In FY 2007/08, DTSC provided match funding for Operation and Maintenance (O&M) activities for the site cap (Operable Unit (OU) 1), as well as for replacement of a damaged monitoring well and soil gas investigation. DTSC also concurred with United States Environmental Protection Agency's (U. S. EPA) proposed plan and participated in public hearings leading to U. S. EPA's Record of Decision (ROD). In FY 2008/09, DTSC will continue to provide ten percent matching funds for O&M activities for OU 1. U. S. EPA is delaying additional remedial measures until the degree of the Responsible Party (RP) participation can be determined.

**Site Name: Chico Ground water – Central Plume**

Location: City of Chico, Butte County,  
Assembly District 3, Senate District 4



*Chico Ground water – Central Plume is contaminated with Volatile Organic Carbons and PCE. Exposure to PCE may cause cancer. The interim ground water extraction and treatment system provides source control of the ground water contamination.*

**Description of Site Activities:** This site consists primarily of a ground water plume that is contaminated with Volatile Organic Carbons (VOCs), including perchloroethylene (PCE). Exposure to PCE may cause cancer. Two dry cleaners were identified as the primary sources of the ground water contamination. In FY 2007/08, DTSC continued to fund the interim ground water extraction and treatment system that provides source control. Because of settlements in the litigation involving the site, no additional state funding will be required during FY 2008/09.

**Site Name: Chico Ground water – Southwest Plume**

Location: City of Chico, Butte County,  
Assembly District 3, Senate District 4

**Description of Site Activities:** This site consists primarily of a ground water plume contaminated with VOCs, including PCE. Exposure to PCE can cause cancer and under the right conditions enter structures through foundation cracks. Four dry cleaners were identified as the primary sources of the ground water contamination. DTSC litigation settlements on this site have been completed. However, since the funds from a settlement were not available, FY 2007/08 funding was used to continue the Remedial Investigation (RI). As settlement monies are now in 0294 accounts, no additional state funding will be required during FY 2008/09.

**Site Name: Lava Cap Mine**

Location: Five miles east of Nevada City, Nevada County,  
Assembly District 3, Senate District 4



*Several decades of arsenic-laden mine tailing discharges have traveled several miles to a lake historically used as a surface impoundment. There has been construction of mine Operable Unit (OU) remedies and investigation of ground water contamination.*

**Description of Site Activities:** This site consists of arsenic-laden mine tailings that have discharged into a creek over several decades and have traveled several miles to a lake historically used as a surface impoundment. Arsenic exposure is known to have a damaging effect on organ function. Water in flooded mineshaft tunnels continues to seep out to the surface, contributing to arsenic in the creek. There has been construction of mine Operable Unit (OU) remedies and investigation of ground water contamination. In FY 2007/08, a Remedial Investigation/Feasibility Study (RI/FS) for OU2 was completed. In FY 2008/09, a proposed plan and record of decision will be completed for the drinking water component of OU 2, with a 10 percent state fund match.

**Site Name: Modesto Ground Water**

Location: Modesto, Stanislaus County,  
Assembly District 25, Senate District 12

**Description of Site Activities:** The Modesto Ground Water Site consists of soil and ground water contaminated by a dry cleaning facility. The PCE-contaminated ground water is being extracted and treated. Exposure to PCE can cause cancer and, under the right conditions, PCE can enter structures through foundation cracks. Soil Vapor Extraction (SVE) is also operating in the source area. This work is being done in accordance with an Interim ROD issued by U. S. EPA in 1997. In FY 2007/08, DTSC continued funding 10 percent O&M of the SVE system and the ground water treatment system and replacement of the existing ground water extraction well. During FY 2008/09, new wells will be installed and optimization and enhancements of the existing SVE system will be evaluated and conducted. This effort contains contamination and prevents contamination of a municipal drinking water supply. DTSC will provide match funding for the enhancements.

## NORTHERN CALIFORNIA - COASTAL

**Site Name: 3533 (Formerly 3103) 50<sup>th</sup> Street West, Rosamond**

**Location:** West of 50<sup>th</sup> St. West and one half mile north of West Rosamond Blvd.,  
Rosamond, Kern County,  
Assembly District 34, Senate District 18



*Shown in this photograph is the excavation of approximately 130 cubic yards of metals contaminated soils from this site located at 3533 50<sup>th</sup> Street West. . After excavation, the contaminated soils were characterized, removed, and disposed of off-site. In Spring 2008, DTSC certified the site for unrestricted residential use.*

**Description of Site Activities:** This site is a 20-acre residential parcel used to store scrap metals, including automobiles, electrical parts, wire, household appliances, and military scrap metals. Several hundred people live within a half mile and a public school is approximately 1000 feet from the site. Following the death of the property owner, unknown chemicals, asbestos-containing materials (including friable asbestos), automobile products, waste oil, and battery parts were found on site. Site sampling indicated that the property was contaminated with metals, dioxins, asbestos, and petroleum hydrocarbons. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. Asbestos exposure can cause serious lung problems and cancer. Dioxins may cause cancer in people. DTSC's contractor completed the removal action for this site in December 2007. Approximately 130 cubic yards of metals contaminated soils were excavated, characterized, and removed from the site for offsite disposal. During May 2008, the removal action implementation report was approved and DTSC staff certified the site as acceptable for unrestricted residential use. DTSC filed a lien for \$420,061 with the Kern County Recorder to recover DTSC project oversight and management costs.

**Site Name: Fresno Battery Exchange**

Location: 1403 East Jensen Avenue, Fresno, Fresno County,  
Assembly District 29, Senate District 14



*Completion of remediation activities at this former battery recycler and lead recovery operation site now allows the site to be utilized for unrestricted use.*

**Description of Site Activities:** The Fresno Battery Exchange site was a former battery recycler and lead recovery operation. A portion of the 8.87-acre parcel is contaminated with high levels of lead, a very dangerous neurotoxin that leads to learning disabilities in children, in the surface soils. In FY 2007/08, the remediation activities were completed, allowing the site to be utilized for unrestricted use. In FY 2008/09, the remediation completion report is due from the consultant for DTSC review and approval prior to completion of the certification package and implementation of cost recovery activities.

**Site Name: Osage Industries 60<sup>th</sup> Street West**

Location: 60th Street West, Rosamond, Kern County,  
Assembly District 34, Senate District 18

Description of Site Activities: The site is a former ore milling and metal recovery business. The site is comprised of 80 acres of rural industrial land and is surrounded by open desert. Approximately 400 people live within a half mile. Surface soil at the site is contaminated with elevated concentrations of cadmium, lead, dioxins, and furans. Cadmium damages the lungs, can cause kidney disease, and may irritate the digestive tract. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. Dioxins may cause cancer in people. The contamination occurs as hotspots within areas of waste storage. In FY 2006/07, a RAW was prepared, and additional waste streams having hazardous concentrations of lead were identified. In FY 2007/08, the waste streams were segregated and disposed to Clean Harbors Class 1 Disposal Facility. Approximately 150 cubic yards of waste were removed from the site. During the course of the removal action, approximately 40 cubic yards of soil, ash and debris contaminated with high concentrations of dioxin and furans were consolidated into two containers. Additionally, approximately 100 gallons of water mixed with motor oil were discovered. In FY 2008/09, DTSC plans to procure a facility to dispose of the

dioxin/lead waste in the two bins and will recycle the waste motor oil. DTSC will also record a lien on the properties addressed in the cleanup. DTSC will require the owners of the site to record a Land Use Covenant (LUC) restricting the site to industrial and/or commercial use.

**Site Name: S. R. Kilby**

Location: 2021 15th Street West, Rosamond, Kern County, Assembly District 34, Senate District 18



***S. R. Kilby site formerly stored automobile and scrap airplane components. Upon completion of the removal action report, the site will be certified by DTSC for industrial use.***

**Description of Site Activities:** This site consists of 7.4-acres that stored automobile and scrap airplane components. Sample results from an investigation of illegally deposited slag waste documented hazardous levels of lead and arsenic in soil next to the slag pile waste. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. In FY 2006/07, a Remedial Design report addressed the consolidation and capping of contaminated materials. The removal action for the site was completed in December 2007. Approximately 7,500 cubic yards of lead contaminated soils were placed in an onsite waste management unit and capped with a two foot depth of clean soil and a bentonite mat. DTSC staff has contracted with Envirocon, Inc. to complete a removal action completion report for this site. When the report has been completed and received, the site will be certified by DTSC for industrial use.

**Site Name: Cal-Tech Metal Finishers**

Location: 841, 829 and 825 31<sup>st</sup> Street, Oakland, Alameda County,  
Assembly District 16, Senate District 9



*DTSC staff worked with the property owner to demolish the buildings at the site. In FY 2008/09, DTSC will install an interim soil vapor extraction system, conduct additional sampling of soil on adjacent residential properties, and conduct pilot tests to address ground water contamination.*

**Description of Site Activities:** Lane Metal Finishers and Cal-Tech Metal Finishers (Cal-Tech) operated at the site from 1947 to 2000. Cal-Tech operations included polishing, electroplating, anodizing, and plating of metal parts. Chemicals historically used at the site include caustic liquids, sodium hydroxide, hydrochloric acid, nitric acid, sulfuric acid, chromic acid, chromic trioxide, sodium cyanide, cadmium, copper cyanide, potassium cyanide, silver cyanide and plating solutions containing a variety of metals. FY 2006/07 soil, soil-gas, and ground water sample results confirmed the presence of solvents in soil, soil-gas, and the underlying ground water. In FY 2007/08, DTSC conducted additional sampling and was able to document that neighbors in the immediate vicinity (approximately 225 people) are not being exposed to significant concentrations of solvents (including trichloroethylene) in indoor air. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. DTSC staff also worked with the property owner to demolish the buildings at the site. In FY 2008/09 DTSC will install an interim soil vapor extraction system, conduct additional sampling of soil on adjacent residential properties, and conduct pilot tests to address ground water contamination.

**Site Name: Chemical & Pigment Company**

Location: 600 Nichols Road, Bay Point, Contra Costa County,  
Assembly District 11, Senate District 7

**Description of Site Activities:** This site was used to recover zinc from galvanizing waste. Operations at the site included treatment and disposal of hazardous wastes. There is zinc and lead contamination in the ground water. Exposure to large amounts of zinc can be harmful. It can cause stomach cramps, anemia, and changes in cholesterol levels. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. In FY 2007/08, storm water was collected, treated, and discharged to a local wastewater treatment plant and work on the Feasibility Study (FS) and Remedial Action Plan (RAP) continued. In FY 2008/09, the FS and RAP should be completed and storm water will continue to be collected, treated, and discharged to a local wastewater treatment plant.

**Site Name: Eel River Sawmill-Mill A**

Location: 1053 Northwestern Avenue, Fortuna, Humboldt County,  
Assembly District 1, Senate District 2



*PCP and petroleum hydrocarbons were detected in the ground water at the Eel River Sawmill-Mill A site. In FY 2007/08, new owners conducted the additional sampling recommended in the work plan developed by DTSC's contractor and demolished many of the buildings on the site.*

**Description of Site Activities:** Eel River Sawmills, Inc. treated lumber with fungicides containing pentachlorophenol (PCP) and other chlorophenols from 1962 to 1989. Exposure to high levels of PCP can cause increases in body temperature, liver effects, damage to the immune system, reproductive effects, and developmental effects. PCP and petroleum hydrocarbons were detected in the ground water at this site. In FY 2006/07, DTSC's contractor evaluated all the available data and developed a work plan that identified the additional information needed to completely characterize the site. In FY 2007/08, new owners purchased the property. The new owners conducted the

additional sampling recommended in the work plan developed by DTSC's contractor and demolished many of the buildings on the site. The new owners are working with DTSC to enter into a consent order for the future site work.

**Site Name: Harbor Front Area/ Pacific Hard Chrome**

Location: 1390 South 49<sup>th</sup> Street, Richmond, Contra Costa County, Assembly District 14, Senate District 9

**Description of Site Activities:** This business park (approximately 38 businesses with roughly 250 fulltime employees) is located adjacent and to the south and east of the Zeneca/former Stauffer Chemical facility. Soil, soil-gas, and ground water samples were taken to determine what contamination exists. The results confirmed the presence of solvents (including trichloroethylene) and hexavalent chromium contamination in the underlying ground water. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. Chromium at high levels can damage the nose and can cause cancer. Sources of the contamination may be either from operations that occurred in the business park or may be from Zeneca. As a result of the state's efforts, the Zeneca Feasibility Study/Remedial Action Plan will include alternatives to remedy contaminated ground water migrating off-site. In FY2007/08 ground water wells were monitored on a quarterly basis, concurrently with monitoring wells located at the Zeneca site. In FY2007/08 soil and ground water sampling was conducted at the Pacific Hard Chrome site. Additional work planned for FY 2008/09 in the Harbor Front Area will focus on the Former Pacific Hard Chrome Site and will include finalization of the sampling report and evaluation of issues relating to the hexavalent chromium in the ground water.

**Site Name: K & L Plating – 89<sup>th</sup> Avenue**

Location: 981, 989, and 995 - 89th Avenue, Oakland, Alameda County, Assembly District 6, Senate District 9

**Description of Site Activities:** This is the site of a former electroplating company. Poor management practices allowed contamination of the soil and building structures with acids, caustics, and metals. Chlorinated solvents (including tetrachloroethylene and trichloroethylene) from a historical auto repair facility have affected the underlying ground water. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. In FY 2006/07, a pilot study work plan to evaluate in-situ treatment of the underlying ground water was approved and implemented. Ground water will continue to be monitored in FY 2008/09.

**Site Name: MacDonald-San Pablo-Wall-45th Plume**

Location: Area bounded by MacDonald Avenue, San Pablo Avenue, Wall Avenue and 45<sup>th</sup> Street, El Cerrito and Richmond, Contra Costa County, Assembly District 11, Senate District 7

**Description of Site Activities:** DTSC focused attention on this area because volatile organic compounds (VOCs, including tetrachloroethylene and trichloroethylene) were found during investigations of the former Endo, Oishi, and Sakai properties, where three family-owned plant nurseries previously operated. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. The chlorinated VOCs are attributed to an up-gradient source since no on-site sources were identified. A report was completed in FY 2007/08 for the ground water investigation that was implemented near the end of FY 2006/07. No State-funded investigation and cleanup activities are planned for FY 2008/09. The next planned step is for DTSC staff to perform site screenings for properties identified as potential ground water contamination sources.

**Site Name: (Formerly) McNamara and Peepe Lumber Mill**

Location: 1619 Glendale Drive, Arcata, Humboldt County, Assembly District 1, Senate District 2

**Description of Site Activities:** Several owners have operated a lumber mill at this site. Wood anti-stain solutions containing PCP and tetrachlorophenol (TCP) were applied to the lumber. Exposure to high levels of PCP can cause increases in body temperature, liver effects, damage to the immune system, reproductive effects, and developmental effects. The current site owner declared bankruptcy and has ceased operations. The final RAP called for consolidation of contaminated soils and construction of a reinforced concrete cap over PCP-contaminated soil. During routine ground water monitoring, high concentrations of PCP and TCP were detected in the capped area. In FY 2007/08, the contracting process was initiated for work to be conducted in FY 2008/09. Additional ground water sampling will be performed and additional monitoring wells will be installed. A bench-scale treatability study and pilot study will also be performed to determine the effectiveness of in-situ ground water treatment. Once this work is completed, the final RAP will need to be amended to include a ground water remediation component and soil removal to address the source of ground water contamination.

**Site Name: Osage Industries, 15<sup>th</sup> Street West**

Location: 2001 15<sup>th</sup> Street West, Rosamond, Kern County,  
Assembly District 34, Senate District 18

**Description of Site Activities:** The 2.3-acre site stored mining related materials, aerospace equipment, and miscellaneous salvaged equipment. Some of the equipment stored on the site included surplus material purchased from nearby Edwards Air Force Base. Chemicals of concern identified in near surface site soils include the following: antimony, arsenic, cadmium, lead and dioxin. Breathing high levels of antimony for a long time can irritate the eyes and lungs, and can cause problems with the lungs, heart, and stomach. Lead is a very dangerous neurotoxin that leads to learning disabilities in children. Dioxins may cause cancer in people. In FY 2006/07, soil sampling was conducted on and off-site. DTSC in correspondence dated June 12, 2008 approved a document dated May 2, 2008 and titled "Remedial Investigation, Feasibility Study, and Risk Assessment Report." A draft RAW will be prepared in FY 2008/09. The RAW will include plans for the removal of surface materials and for the removal of soil containing contaminants of concern at levels that exceed residential cleanup levels.

**Site Name: San Leandro Residential Area**

Location: Floresta Avenue, San Leandro, Alameda County,  
Assembly District 18, Senate District 10

**Description of Site Activities:** This site lies within the San Leandro Regional Plume, which is a large area of ground water contaminated with volatile organic compounds such as tetrachloroethylene and trichloroethylene. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. Historic site sampling suggested that a source area existed within this residential area. During FY 2006/07, DTSC's contractor monitored the effectiveness of the in-situ project. Ground water continued to be monitored in FY 2007/08. No additional work is planned for this area at this time.

**Site Name: Barbary Coast Steel Site (IKEA)**

Location: 4400 Shellmound Street, Emeryville, Alameda County,  
Assembly District 14, Senate District 9

**Description of Site Activities:** The former Barbary Coast Steel site is owned by IKEA and is occupied by one of its retail stores. The site historically served as above and below ground storage, with tanks containing petroleum hydrocarbons while the steel facility operated. Under a Prospective Purchaser Agreement (PPA), IKEA will maintain the cap on the site. Birmingham Steel Company, the parent company of Barbary Coast Steel, was to be responsible for the ground water monitoring but it filed for bankruptcy in 2002 and DTSC took over performing the ground water monitoring. Between 2000 and 2001, IKEA built the structures for its currently operating furniture store. In FY 2007/08, DTSC performed ground water monitoring of two wells, completed the five-year review and subsequently abandoned the two wells. DTSC does not expect to require additional state funds for this site. The IKEA Project has created approximately 300 permanent jobs for the local community and generates approximately \$70 million in annual sales.

## SOUTHERN CALIFORNIA

**Site Name: AAD Distribution and Dry Cleaning Services**

Location: 2306 East 38<sup>th</sup> Street, Vernon, Los Angeles County  
Assembly District 22, Senate District 46



*AAD Distribution and Dry Cleaning Services was a former permitted dry cleaning solvent recycler, The risk from exposure to indoor air vapors was assessed and identified to be a significant risk to potential on-site workers from existing vapors in the subslab beneath the site. The site requires a continued ground water and on-site soil vapor extraction operation and maintenance monitoring program .*

**Description of Site Activities:** This former permitted dry cleaning solvent recycler, located in an industrial area, had a release of tetrachloroethylene (PCE) at the site. PCE is a known carcinogen and exposure to this chemical also causes irritation to the respiratory system and liver damage. Using closure funds, DTSC investigated vapor, soil and ground water at and around the site. Elevated levels of VOCs were detected and remedial actions to remove PCE from the soil and soil vapor began using closure funds. Ground water was detected at over 250 feet below ground surface and was identified to be a regional problem. With the closure funds nearly depleted, orphan money was allocated to the site to evaluate the risk from remaining solvents. The risk from exposure to indoor air vapors was assessed and identified to be a significant risk to potential on-site workers from existing vapors in the subslab beneath the site. The facility shares a common wall and utility corridors with a neighboring business, which employs more than 20 employees. DTSC allocated \$400,000 to conduct a time critical soil removal and installation of shallow sub-slab vapor probes to extract shallow vapors

and create a depressurization zone between the facility and the neighboring businesses. The ground water and on-site soil vapor extraction operation and maintenance monitoring program continues.

**Site Name: Alco Pacific**

Location: 16914 South Broadway, Carson, California  
Assembly District 48, Senate District 55



*Alco Pacific is the site of a former lead acid battery recycler. A ground water monitoring program requires continued sampling of the ground water through FY 2008/09.*

**Description of Site Activities:** This former lead acid battery recycler, located in an industrial commercial setting had a release of heavy metals and acid in and around an injection well used for onsite disposal while the facility was operating. Lead is a neurotoxin and exposure to this metal can result in damage to the central nervous system. Sensitive receptors are especially affected and exposure to lead in children is known to be responsible for some learning disabilities in children. In FY 2005/06 DTSC conducted a removal action of approximately 5,000 tons of contaminated soil from the site. While the removal resulted in the soils meeting the unrestricted cleanup goals, five site ground water wells were sampled and soluble metals were detected at the site over the action levels. A ground water monitoring program requires continued sampling of the ground water through FY 2008/09. The site encompasses five parcels and upon certification will be developed by five property owners to establish five businesses. DTSC currently has contracted \$44,000 expenditure at the site. Cost recovery actions are being taken by the Attorney General on the State's behalf to negotiate settlement with identified Responsible Parties.

**Site Name: Brawley Radiator Shop**

Location: 556 E Street, Brawley, Imperial County,  
Assembly District 80, Senate District 40



*Brawley Radiator Shop is located in a mixed-use area. Several heavy metals were detected in the soil, soil-gas, and ground water samples collected at the site. In FY 2008/09, the removal action is planned to address the heavy metal soil contamination.*

**Description of Site Activities:** DTSC conducted a site investigation to determine the extent of hazardous substances released at the site. The site is located in a mixed-use area with commercial, industrial, and residential housing. Two schools are located approximately 700 hundred feet north and northwest of the site. Soil, soil-gas, and ground water samples were collected from the site. Several metals (lead, copper, and arsenic) were detected at higher levels than previously reported. Lead is a neurotoxin and exposure to this metal can result in damage to the central nervous system. Sensitive receptors are especially affected and exposure to lead in children is known to be responsible for some learning disabilities. In FY 2007/08, the site was further investigated. A removal action work plan, a factsheet, and a public notice are being prepared. The removal action is planned for FY 2008/09 to address the heavy metal soil contamination.

So far, approximately \$235,000 has been spent on the Brawley Radiator Shop site to characterize it. Once the removal action takes place it is expected to reduce or limit exposure to harmful toxins for approximately 400 people in residences close by, approximately 1,470 students in the schools nearby, as well as 10 employees working at the site.

**Site Name: Former Chrome Crankshaft Company**

Location: 6845 East Florence Place, Bell Gardens, Los Angeles County, Assembly District 50, Senate District 30

**Description of Site Activities:** This site is a former chrome plating facility located in the City of Bell Gardens. Site soil was contaminated with hexavalent chromium and other metals. Hexavalent chromium is a poison by ingestion, intraperitoneal and subcutaneous routes. It is a human carcinogen by inhalation (nasal and lung tumors). Ground water beneath the site was also found to contain the same constituents at a lesser concentration. The site is immediately surrounded by a population of nearly 3,000 people including nearly 50 single-family homes to the south, large commercial/industrial properties to the north and east, the former J&S Chrome Plating site to the east, and Suva Elementary and Intermediate Schools, with a total population of nearly 2,000 students and staff members to the west.

During FY 2007/08, DTSC implemented the approved Operable Unit 1 (OU1), soil remediation, Remedial Action Plan (RAP) that called for the excavation and offsite disposal of nearly 7,500 cubic yards (nearly 9,000 tons) of contaminated soil at a cost of nearly \$1.7 million, nearly \$800,000 below budget.

During FY 2008/09, DTSC restored the site using nearly 10,500 tons of clean base material thereby completing the OU1 RAP implementation. DTSC is in the process of finalizing the Operable Unit 2 (OU 2) ground water remediation, RAP. DTSC plans to initiate implementation of the OU2 RAP during FY 2008/09.

**Site Name: Cudahy Residential Property**

Location: 5260 Elizabeth Street, Cudahy, Los Angeles County, Assembly District 50, Senate District 30

**Description of Site Activities:** This is a one-acre property occupied by two residential units located adjacent to Park Avenue Elementary School. Contaminated soil at this site showed elevated levels of lead and other metals. This contamination was an extension of an old landfill underlying the Park Avenue School and Cudahy City Park. In FY 2005/2006, removal of all accessible contaminated soil was completed. Around 11,860 cubic yards (17,800 tons) of contaminated soil was excavated and disposed off site. A concrete cap was placed in an area of the backyard to prevent potential exposure to inaccessible lead-impacted soil. Los Angeles County recorded a Land Use Covenant (LUC) to prohibit disturbances to the cap. The work was completed in 2006 and no further remedial action will be required. The site will be regularly inspected for compliance with the LUC.

**Site Name: Hard Chrome Products**

Location: 617 East 56th Street, City of Los Angeles, Los Angeles County  
Assembly District 52, Senate District 22



*During the excavation of contaminated soil at Hard Chrome Products site, a former plating facility, the workers are building the infrastructure for the in situ chemical treatment system for hexavalent chromium contamination in vadose zone soils.*

**Description of Site Activities:** This site is a former plating facility and is located directly across from the Los Angeles Academy, formerly known as the Jefferson New Middle School. The site also has residential structures adjacent to the east and the north. During FY 2007/08, the RAP was approved and pilot studies for ground water and vadose zone soil were conducted. Excavation and disposal of approximately 2,075 cubic yards of Cr<sup>+6</sup>-contaminated soil was completed during this time and the infrastructure for insitu treatment of hexavalent chromium in vadose zone soil was constructed. In FY 2008/09, DTSC will complete the Remedial Design Implementation Plan and implement the full-scale vadose zone soil remedy in addition to the onsite ground water remedy to treat hexavalent chromium.

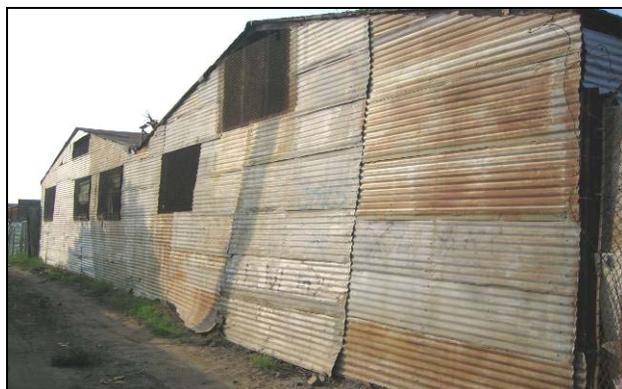
**Site Name: Lubrication Company of America (LUBCO)**

Location: 12500 Lang Station Road, Canyon Country, Los Angeles County, Assembly District 38, Senate District 17

**Description of Site Activities:** This four-acre site is a former waste oil recycling facility located in a rural area north of Los Angeles. Contaminants included petroleum hydrocarbons, VOCs, SVOCs, lead, and PCBs. An engineered cap was installed in 2003. In FY 2006/07, DTSC installed a soil vapor extraction (SVE) system onsite to remove the VOCs including benzene, vinyl chloride, TCE, and PCE. PCBs, benzene, TCE and vinyl chloride are all known human carcinogens. To date, 7,000 pounds of VOCs have been removed from the soil. The SVE system is expected to operate for another year at which time the concentration of VOCs should be reduced to levels that are protective of human health and the environment. The site is part of a 64-acre parcel of land that is currently for sale.

**Site Name: Navarro Property**

Location: 1250-56 East 57<sup>th</sup> Street, South Los Angeles, Los Angeles County, Assembly District 46, Senate District 22



*Navarro Property - Before Cleanup*



*Navarro Property – After Cleanup*

**Description of Site Activities:** The site was an abandoned metal polishing and plating facility located in a residential neighborhood in South Central Los Angeles. In September 2006, DTSC conducted a Time Critical Removal Action, which involved removal of 841 tons of soil containing elevated levels of arsenic, lead, and chromium from the property and the adjacent alleyway. Lead can cause decreased performance of the nervous system and increases in blood pressure; arsenic can cause nausea and vomiting, decreased production of red and white blood cells; and prolonged exposure to hexavalent chromium can cause sores to develop in the nose and result in nosebleeds, or development of an allergic skin reaction. The removal action included removal of the clarifier and a hazardous material storage area. The site has been developed into two apartment complexes, which house approximately 50 people. The removal of the plating facility and the new development of apartments have become a vibrant stimulant to this neighborhood.

**Site Name: Pemaco Superfund Site**

Location: 5050 E. Slauson Avenue, Maywood, Los Angeles County  
Assembly District 46, Senate District



*Pemaco Superfund site was formerly a chemical blending facility. Pemaco Superfund site developed for use as a park.*

**Description of Site Activities:** This NPL fund lead site was a chemical blending facility until 1991, in this residential/ industrial/ commercial neighborhood. Volatile organic compounds (VOCs) were present in the soil and ground water beneath the site. Tetrachloroethylene (PCE) was the primary VOC removed from the soil. PCE is a known carcinogen and exposure to this chemical also causes irritation to the respiratory system and liver damage. DTSC has provided a ten percent match for this site, which totaled \$800,000 dollars. Remediation of the site consisted of a soil vapor extraction system and a ground water remedy of high-vacuum dual-phase extraction, electrical resistance heating with vapor extraction and vacuum-enhanced pump and treat, flameless thermal oxidation with carbon, and ultraviolet oxidation technologies for the destruction of VOCs. Construction of the remedy began August 1, 2005 and continued through the year. The final design was approved August 21, 2006. The construction was completed in FY 2006/07. In FY 2007/08, the start-up/shake down phase of operation of the treatment unit was conducted. Without concurrence from DTSC, U. S. EPA has turned off the treatment unit and begun its demolition. U. S. EPA is generally proposing to use bioremediation at the site. No contract exists between DTSC and U. S. EPA for this activity and therefore future contribution is undefined. The property is developed for use as a park for the City of Maywood.

**Site Name: PMC-CAMEO Site**

Location: 6904 E. Slauson Avenue, Commerce, Los Angeles County,  
Senate District 50, Assembly District 30



*PMC-CAMEO site before remediation*



*PMC-CAMEO site during backfilling with clean soil*

**Description of Site Activities:** A Time Critical Removal Action Work plan (TCRAW) was prepared to address the removal of soils contaminated with  $\text{Cr}^{+6}$  and Cr at this 2.6-acre site of vacant land (Lot 2). Formerly, the site was approximately 4.9 acres and encompassed two areas known as Lot 1 and Lot 2. DTSC issued a “No Further Action” determination as to Lot 1, which was later sold by PMC. The remediation of the soil was conducted in FY 2007/2008 and approximately 7,000 cubic yards of contaminated soil was excavated. Ground water is also impacted with  $\text{Cr}^{+6}$  and Cr. In FY 2008/2009, DTSC will install new ground water monitoring wells and conduct ground water sampling and monitoring.

**Site Name: Renu Plating Company, Incorporated**

Location: 1531 East 32nd Street, Los Angeles, Los Angeles County,  
Assembly District 46, Senate District 22



*Renu Plating Co., Inc. is a former brass plating facility that borders an elementary school. The site has heavy metal subsurface soil contamination, including hexavalent chromium, a known carcinogen, and lead that leads to learning disabilities in children.*

**Description of Site Activities:** This site is a former brass plating facility that borders the Nevin Avenue Elementary School. The subsurface soils are contaminated with heavy metals, including hexavalent chromium and lead. Hexavalent chromium is a poison by ingestion, intraperitoneal and subcutaneous routes; it is a human carcinogen by inhalation (nasal and lung tumors). Lead is a very dangerous neurotoxin that leads to learning disabilities in children. All of the fieldwork was completed in FY 2007/2008. The RI/FS and RAP were started in FY 2007/08 and should be completed in FY 2008/09.

**Site Name: Southland Oil**

Location: 5619 Randolph Street, City of Commerce, Los Angeles County, Assembly District 50, Senate District 30

**Description of Site Activities:** This site has been used for waste oil recycling, hauling and storage since the 1930s. Contaminants included petroleum hydrocarbons, VOCs, SVOCs, lead, and PCBs. The total area of the site is slightly less than one acre, and is covered by a permanent engineered concrete-asphalt cap. In FY 2006/07, an SVE system was put in place to remove VOCs including benzene, vinyl chloride, TCE and PCE. PCBs, benzene, TCE and vinyl chloride are all known human carcinogens. To date, the SVE system has extracted and destroyed 23,000 pounds of VOCs. The August 2008 status report recommended that the SVE system be shut down to check for rebound, as cleanup levels appear to have been achieved. An adjacent property owner, who has recently re-developed the adjacent property with a 50,000 square foot warehouse, is now interested in purchasing the Southland property.



***Southland Oil was the former site of a waste oil recycling, hauling and storage. This Soil Vapor Extraction System was put in place to remove VOCs including benzene, vinyl chloride, TCE and PCE. PCBs, benzene, TCE and vinyl chloride are all known human carcinogens. To date, the Soil Vapor Extraction System has extracted and destroyed over 23,000 pounds of VOCs.***

**Site Name: Spence Property**

Location: 7047-7051 North Figueroa Street, Los Angeles, Los Angeles County  
Assembly District 44, Senate District 21



*Spence Property was formerly a dry cleaning facility. In fiscal year 2006/07, DTSC conducted a Soil Vapor Investigation and Indoor Air Modeling Evaluation to determine current concentrations of hazardous substances at this site. Significant levels of PCE, a known carcinogen as well as other hazardous substances were detected at this site.*

**Description: of Site Activities:** This former dry cleaning facility, located in a residential/commercial setting, had a release of dry cleaning solvents in and around the former treatment unit and within 50 feet of residences and businesses. In FY 2006/07 DTSC conducted a Soil Vapor Investigation and Indoor Air Modeling Evaluation to determine current concentrations of hazardous substances at this site. Significant levels of PCE were detected in the soil, soil vapor and ground water at the site. PCE is a known carcinogen and exposure to this chemical also causes irritation to the respiratory system and liver damage. In FY 2007/08, I & S E Orders were developed and provided to the former and current property owners. The identified Responsible Parties were non-responsive. DTSC implemented a time critical removal action for the installation and operation of a soil vapor extraction system. Operation of the system will require ongoing onsite monitoring of the vapor plume. In FY 2008/09, continued investigation of the offsite soil vapor and ground water plume will be conducted. The property is zoned for two residential developments. The property cannot be used as a residential development at this time as the site poses a  $10^{-2}$  indoor air health risk to onsite and surrounding residential properties. High levels of VOCs detected in the shallow ground water at the site present a concern of offsite migration and impact to surface targets. A school site is less than 1/8 mile downgradient. DTSC has approved a \$300,000 expenditure for investigation and remedial actions at the site.

**Site Name: Whittier Narrows Operable Unit - San Gabriel Valley Superfund Site**

Location: 331 North Durfee Avenue, South El Monte, Los Angeles County,  
Assembly District 58, Senate District: 30



*Volatile organic compounds (VOCs) were discovered in the Baldwin Park area. The primary public health concern associated with chronic low-level exposures to VOCs is the probability of cancer via ingestion of contaminated drinking water. The Whittier Narrows Extraction and Treatment System shown above, is designed to extract and treat 11,000 gallons of contaminated ground water per minute. This water serves as drinking water supply for approximately 48,000 residents of the City of Whittier.*

**Description of Site Activities:** The Whittier Narrows Operable Unit encompasses approximately four square miles and is located in the southern portion of the San Gabriel Basin. Ground water in the Whittier Narrows and immediately down gradient in the Central Basin is primarily used for drinking water supply. Whittier Narrows is a 1.5-mile gap in the low-lying hills that separates the San Gabriel Basin and the Central Basin and represents the primary discharge point for ground water and surface water flow exiting the San Gabriel Basin.

In 1979, volatile organic compounds (VOCs) were discovered in the Baldwin Park area. Subsequent testing found that VOC contamination was widely distributed throughout the Basin, and was determined to pose a significant threat to the ground water resources in the area. Contaminants of concern (COCs) originally identified in the San Gabriel Basin included perchloroethylene (PCE), trichloroethylene (TCE), 1, 2 dichloroethane (1, 2 DCA), and carbon tetrachloride (CTC). The primary public health concern associated with chronic low-level exposures to VOCs is the probability of cancer via ingestion of contaminated drinking water. Currently, all drinking water provided meets Federal and State drinking water standards. U.S. EPA believes that the source of this contamination initially stems from an increase in industrial activity during World War II, followed by rapid industrial and residential growth during the post-war period. Perchlorate, nitrosodimethylamine (NDMA) and 1, 4-dioxane have also been found in the ground water in the San Gabriel Basin and have been subsequently been added to the list of

contaminants of concern. These contaminants have been found in low concentrations in the Whittier Narrows OU.

In 1997, perchlorate was discovered in the Baldwin Park area of the Basin, and further sampling found it widely distributed throughout the San Gabriel Basin. Perchlorate is primarily produced for use in rocket fuel, explosives, fireworks, road flares and air-bag inflation systems. The primary health concern associated with perchlorate is the reduction of the uptake of iodide, an essential nutrient, by the thyroid gland. While not harmful by itself, inadequate iodide uptake may lead to the harmful disruption of proper thyroid function. 1, 4 - dioxane is used as a solvent for oils, resins, waxes, adhesives, cellulose esters and ethers, and is also used as a stabilizer in chlorinated solvents. 1, 4-dioxane is known to primarily affect the liver and kidneys. Acute toxic effects of 1, 4-dioxane through inhalation in animal studies include eye, nose and throat irritation and kidney and liver damages.

NDMA contamination has become more important in California because of its increasing detection in drinking water. It has been associated with the chloramine drinking water disinfection process, and has also been reported to be formed in the chlorination of wastewater used for aquifer recharge. Carcinogenic affects have been observed in animal studies. NDMA is associated with the production of liquid rocket fuel.

U.S. EPA selected a ground water extraction and treatment system as the remedy for the Whittier Narrows Operable Unit (OU). U. S. EPA declared the remedy operational and functional in 2003. The Whittier Narrows Extraction and Treatment System is designed to extract and treat 11,000 gallons of contaminated ground water per minute. Approximately 10,800,000,000 gallons of treated ground water have been returned to beneficial use as a drinking water supply since the facility became operational in 2001. This water serves as drinking water supply for approximately 48,000 residents of the City of Whittier.

As a CERCLA fund lead remedy, DTSC is required to contribute 10 percent of the cost for the first 10 years of O&M for the facility. Since the State Superfund Contract (SSC) was first executed on August 28, 2002, DTSC has encumbered \$1,540,000 to meet the State's 10 percent cost share requirement for the Whittier Narrows remedy. U. S. EPA currently estimates the annual O&M cost for the treatment facility to be approximately \$1.5 million, making DTSC's estimated annual cost share about \$150,000 per year.

The California Department of Public Health requires that a local water purveyor operate the plant if the treated ground water is to be used for the purpose of drinking water supply. In December 2005, the City of Whittier took over operation and maintenance (O & M) of the Whittier Narrows facility pursuant to an Inter-Agency Agreement with U.S. EPA. In 2013, DTSC will be required to take over financial responsibility for 100 percent of the O & M costs for the facility and will have to re-negotiate the Inter-Agency O & M Agreement with the City of Whittier.

**Site Name: J & S Chrome Plating Company**

Location: 6863 Florence Place, Bell Gardens, Los Angeles County,  
Assembly District 30, Senate District 50

**Description of Site Activities:** This site is a former chrome plating facility located in the City of Bell Gardens. Site soil and ground water were contaminated with hexavalent chromium and other metals. The site is immediately surrounded by a population of nearly 3,000 people including nearly 50 single-family homes to the south, large commercial/industrial properties to the north and east, and the former Chrome Crankshaft site and Suva Elementary and Intermediate Schools, with a total population of nearly 2,000 students and staff members to the west.

During FY 2007/08, to ensure the health and safety of students, teachers, and the nearby residents, DTSC implemented the approved Operable Unit 1 (OU 1), soil remediation, Remedial Action Plan (RAP), which called for the excavation and offsite disposal of nearly 9,000 cubic yards (nearly 11,500 tons) of contaminated soil. The cost of this project was approximately \$2.3 million, nearly \$1.3 million below budget. In addition, an abandoned structure used by transients was demolished and removed from the site.

During FY 2008/09, DTSC restored the site using nearly 13,000 tons of clean base material thereby completing the OU1 RAP implementation. DTSC is in the process of finalizing the Operable Unit 2 (OU 2), ground water remediation, RAP. DTSC plans to initiate implementation of the OU2 RAP during FY 2008/09.

**Site Name: Gerald Hobbs Property**

Location: 7194 Conejo Drive, San Bernardino. San Bernardino County,  
Assembly District 62, Senate District 32

**Description of Site Activities:** This site is a private home owned by Mr. Gerald Hobbs. On June 11, 2005, a residential structure fire was reported at the Gerald Hobbs property with an emergency response involving hazardous materials. Mr. Hobbs conducted precious metal extraction from circuit boards using nitric acid, hydrochloric acid, and ferrous sulfate in the property backyard. Over the years, approximately 300 gallons of nitric acid had been dumped as hazardous waste into a small pit in the property backyard. Copper, silver, cyanide and mercury were detected, at levels above the California Human Health Screening Levels (CHHSLs), in the soil samples that were collected by DTSC. To ensure the safety of Mr. Hobbs and nearby residents, DTSC prepared a Removal Action and Implementation Work plan in November 2007. DTSC signed a contract with Engineering/Remediation Resources Group, Inc. (ERRG) to conduct the removal of contaminated soils at a total cost of approximately \$130,000. DTSC will complete this work in FY 2008/09.

**Site Name: D&M Drum Company**

Location: 137 S. Lilac Avenue in Rialto, San Bernardino County,  
Assembly District 62, Senate District 32

**Description of Site Activities:** The site is no longer an orphan site because, due to DTSC's work on the site, the property owner has taken over the remaining investigation and remediation tasks. The site covers about .75-acre and has an office, auto repair bays, an unpaved grassy area, and a paved area. Most of the unpaved area was previously used for drum storage, when a drum recycling company operated there in the 1980's. Storage and automobile repair bays are presently located at this site. PCE in soil-gas and antimony in soil are the two primary chemicals of concern at the site. PCE (tetrachloroethylene) is a known carcinogen in animals. In humans, it can affect the eyes, skin, respiratory system, liver, kidneys, and central nervous system. It is a suspected carcinogen in humans. Antimony and its compounds are irritating to the skin and mucous membranes, and are systemic poisons. In FY 2007/08, a supplemental site investigation was completed. The property owner then informed DTSC that the owner would take responsibility to complete any remaining investigation and cleanup, and funding shifted from the state to the property owner.

## ABBREVIATIONS AND ACRONYMS

|           |   |
|-----------|---|
| CERCLA    | Comprehensive Environmental Response, Compensation, and Liability Act |
| CEQA      | California Environmental Quality Act                                  |
| COCs      | Contaminants of Concern   |
| Cr        | Chromium  |
| CRD       | Catalytic Reductive Dehalogenation Treatment Unit                     |
| DSB       | Distal Site Boundary  |
| DTSC      | Department of Toxic Substances Control                                |
| EE/CA     | Engineering Evaluation/Cost Analysis                                  |
| EM        | Environmental Management  |
| ER        | Environmental Restoration   |
| FFA       | Federal Facility Agreement  |
| FS        | Feasibility Study   |
| FY        | Fiscal Year   |
| GAC       | Granular Activated Carbon   |
| gpm       | gallons per minute  |
| GSA       | General Services Area   |
| GTU       | Granular Activated Carbon Treatment Unit                              |
| GWETS     | Ground Water Extraction and Treatment System                          |
| HSU       | Hydrostratigraphic Unit   |
| ISB       | In-Situ Bioremediation  |
| ISE       | Imminent and Substantial Endangerment                                 |
| LUC       | Land Use Covenant   |
| MCL       | Maximum Contaminant Level   |
| MTU       | Miniature Portable Treatment Unit                                     |
| NNSA      | National Nuclear Security Administration                              |
| NPDES     | National Pollutant Discharge Elimination System                       |
| NPL       | National Priorities List  |
| OU        | Operable Unit   |
| O & M     | Operation and Maintenance   |
| PCE       | Perchloroethylene or Tetrachloroethylene                              |
| PNAs/PAHs | Polynuclear Aromatic Hydrocarbons or Polycyclic Hydrocarbons          |
| PPA       | Prospective Purchaser Agreement                                       |
| PRX       | Proximal  |
| PTU       | Portable Treatment Unit   |
| RAIP      | Remedial Action Implementation Plan                                   |
| RAP       | Remedial Action Plan  |
| RAW       | Removal Action Work Plan  |
| RCRA      | Resource Conservation and Recovery Act                                |
| RD        | Remedial Design   |
| RDWP      | Remedial Design Work Plan   |
| RDX       | Research Department Explosive   |

|           |   |
|-----------|---|
| RI        | Remedial Investigation                        |
| RI/FS     | Remedial Investigation/Feasibility Study      |
| RP        | Responsible Party                             |
| RWQCB     | Regional Water Quality Control Board          |
| ROD       | Record of Decision                            |
| RPM       | Remedial Project Manager                      |
| SIC       | Soil Impoundment Cell                         |
| SSC       | State Superfund Contract                      |
| SVE       | Soil Vapor Extraction                         |
| SVETS     | Soil Vapor Extraction and Treatment System    |
| TBOS      | Tetrabutyl Orthosilicate                      |
| TSW       | Treatability Study Work plan                  |
| TCE       | Trichloroethylene                             |
| TCRAW     | Time Critical Removal Action Work plan        |
| TSW       | Treatability Study Work                       |
| UPRR      | Union Pacific Railroad                        |
| U. S. EPA | United States Environmental Protection Agency |
| VES       | Vapor Extraction System                       |
| VOCs      | Volatile Organic Compounds                    |

## GLOSSARY OF TERMS

### **Feasibility Study (FS)**

An evaluation of the alternatives for the remediation of any identified soil or ground water contamination. Remediation refers to a cleanup method used to remove or contain a toxic spill or hazardous materials, and can include removal, treatment, and encapsulation of wastes.

### **Ecological and Health Risk/Endangerment Assessment**

A health risk assessment is a document that describes the possible adverse health effects that may result from exposure to contaminants. An ecological risk assessment is a document that describes the possible adverse impacts to the surrounding flora and fauna.

### **Operable Unit (OU)**

A term used for each of a number of separate areas undertaken as part of a Superfund cleanup. Typical operable units are soil and ground water. Investigation and ultimate cleanup remedy will be tied specifically to that unit.

### **Operation and Maintenance (O&M)**

These activities must be maintained or monitored after a site has been remediated in order to protect public health/safety or the environment. They include such things as maintaining an asphalt cap or monitoring ground water wells.

### **Pentachlorophenol (PCP)/Tetrachlorophenol (TCP)**

Both are petroleum-based chemicals that are used as a wood preservative that kills fungus and termites.

### **Perchloroethylene or Tetrachloroethylene (PCE)**

Perchloroethylene (tetrachloroethylene or "perc", PCE) is a manufactured chemical compound that is widely used for the dry cleaning of fabrics and for metal-degreasing.

### **Polynuclear Aromatic Hydrocarbons or Polycyclic Hydrocarbons (PNAs or PAHs)**

PNAs or PAHs are natural constituents of crude oil, and may be formed when organic materials such as coal, oil, fuel, wood or even foods are not completely burned. PNAs are also found in lampblack, a by-product of the historic gas manufacturing process. PNAs are found in a wide variety of other materials including diesel exhaust, roofing tars, asphalt, fireplace smoke and soot, cigarettes, petroleum products, some foods, and even some shampoos. PNAs tend to stick to soil, do not easily dissolve in water, and generally do not move in the environment. The test method used to analyze for PNAs detects 17 different compounds, seven of which are suspected of causing cancer.

**Record of Decision (ROD)**

A public remedy selection document explaining the cleanup methods used at a NPL site, based upon U.S. EPA studies, public comments, and community concerns.

**Remedial Action Plan (RAP)**

This is a document that summarizes the history of the site, the remedial investigations conducted, feasibility studies prepared, and explains the reasons for selecting a cleanup alternative for a contaminated site. A key element of a RAP is to provide the public with an opportunity to comment on the proposed cleanup remedy. DTSC is required to consider all comments before approving the final RAP. A RAP is required when the estimated cost of the remedy is greater than \$ 2 million.

**Removal Action Work plan (RAW)**

This remedy selection document is prepared in order to carry out a removal action. The RAW is protective of public health, safety, and the environment, and provides an opportunity for public review and comment. A RAW is required when the estimated cost of the removal action is less than \$ 2 million.

**Remedial Investigation (RI)**

This is a series of investigations and studies that identify the types and extent of chemicals of concern at the site. This is done by collecting soil, soil-gas, ground water, and surface water samples.

**Remedial Design (RD)**

Remedial Design is the detailed engineering plan to implement the remedial action alternative approved by DTSC.

**Remedial Design & Implementation Work plan (RD&IW)**

Remedial Design is the detailed engineering plan to implement the remedial action alternative approved by DTSC. The Implementation Work plan is the document that provides timelines, procedures, and protocols to be followed for completing the activities that are established by the Remedial Design.

**Site Characterization**

A location-specific or area-specific survey conducted to define the physical, chemical, and/or biological attributes of an area; such surveys may be conducted at different times during the course of a project to provide information on how these attributes may change over time.

**Soil Vapor Extraction (SVE)**

A process that is used to extract chemical vapors from the soil by applying a vacuum to wells that have been placed in the ground. The vapors are then treated.

**Trichloroethylene (TCE)**

Commonly referred to as TCE, this is a colorless liquid, which is used as a solvent for cleaning metal parts.

**Volatile Organic Compounds (VOCs)**

These are organic chemicals, including many common solvents, that readily evaporate at temperatures normally found at ground surface and at shallow depths. They take part in atmospheric photochemical (sun-driven) reactions to produce smog.

# Appendix

## Data Tables

| <b>Site Name</b>                     | <b>Quantity of Soil<br/>Removed/Contained (Cubic Yards)</b> |
|--------------------------------------|---|
| 3533 50 <sup>th</sup> Street         | 130   |
| Fresno Battery                       | 2,500   |
| Lava Cap Mine                        | 1,100   |
| Osage Industries (60 <sup>th</sup> ) | 150   |
| SR Kilby                             | 7,500   |
| <b>Total</b>                         | <b>11,380</b>   |

| <b>Site Name</b>                     | <b>Acres Made Available</b> | <b>Site Name</b>                     | <b>People<br/>Protected</b> |
|--------------------------------------|-----------------------------|--------------------------------------|-----------------------------|
| 533 50 <sup>th</sup> Street          | 20                          | 3533 50 <sup>th</sup> Street         | 200                         |
| Brown & Bryant – Arvin               | 4.7                         | CalTech                              | 225                         |
| Fresno Battery                       | 9                           | Chico GW Central                     | 15,000                      |
| Lava Cap Mine                        | 30                          | Chico GW Southwest                   | 10,000                      |
| Modesto Ground water                 | 2.5                         | Fresno Battery                       | 200                         |
| Orchard Supply                       | 23                          | Frontier Fertilizer                  | 5,800                       |
| Orland Dry Cleaners                  | 25                          | Harbor Front                         | 250                         |
| Osage Industries (60 <sup>th</sup> ) | 80                          | Lava Cap Mine                        | 100                         |
| SR Kilby                             | 7.4                         | Orchard Supply                       | 1,600                       |
| Selma Pressure Treating              | 14                          | Orland Dry Cleaners                  | 5,000                       |
| Wickes Forest Ind.                   | 7                           | Osage Industries (60 <sup>th</sup> ) | 400                         |
| World Radiator                       | 0.3                         | SR Kilby                             | 100                         |
| <b>Total</b>                         | <b>222.9</b>                | Visalia Dry Cleaners                 | 97,000                      |
|                                      |                             | Wickes Forest Ind.                   | 50                          |
|                                      |                             | World Radiator                       | 50                          |
|                                      |                             | <b>Total</b>                         | <b>135,975</b>              |