



# **CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY** **DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

## **CHICO AREA GROUNDWATER** **REMEDIATION UPDATE**

Fact Sheet

June 1999

### **Introduction**

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), is overseeing remediation activities for various sites in Chico, California. This fact sheet contains site updates for the Central Plume, North Valley Cleaners, Louisiana Pacific, North Central Plume and the Southwest Plume. Updates for other plumes/sites will be in future fact sheets. This fact sheet also includes information concerning information repositories, DTSC contacts and mailing list information. For plume and site locations please see the map on page 4.

### **Area History**

Groundwater contamination was first discovered in the Chico area in October 1984. Eventually eight contaminated areas (plumes) were defined (see map on page 4). Those areas with their contaminant(s) in parentheses are: the Central Plume (Perchloroethylene/PCE), North Valley Cleaners Plume (PCE), Louisiana Pacific Plume (pentachlorophenol/PCP), North Central Plume (PCE), Southwest Plume (PCE), Chloroform Plume (chloroform), Victor 20th Street Plume (trichloroethylene/TCE), and the Chico Airport Plume (TCE). Following these discoveries, public water supply wells showing contamination above state standards were taken out of service.

### **Central Plume**

DTSC has been involved in investigating and remediating this plume since 1986. In July of 1995, DTSC completed construction of an Interim Remedial Measure (IRM) which consists of two groundwater extraction wells and a granulated activated carbon (GAC) treatment system. The purpose of the IRM is to prevent PCE contamination from spreading farther until a final remedy can be selected and implemented. The GAC removes PCE contamination from the water and the treated water is piped into the California Water Service (CWS)

distribution system where it is blended with other water. CWS is a private company that provides water for the city of Chico.

When in operation, the IRM treats almost 400 gallons of water per-minute. However, during the first two years of operation the IRM had numerous mechanical problems and was either operating at a reduced capacity or non-operational. The IRM was in continuous operation from September 1997 to November 1998, and during that time removed over 300 pounds of PCE from the groundwater.

It was during this period of continuous operation that CWS did not sample the recycled water as required by the Department of Health Services (DHS). This was a result of a failure to reinstitute procedures when the IRM was back on line. A sample taken in November 1998 indicated that water coming out of the treatment system exceeded health standards for PCE and the system was immediately shut down. PCE was not being captured because the carbon filter in the IRM had become fully saturated. DTSC replaced the carbon filter and returned the system to continuous operation in January of 1999.

To prevent this from happening again, CWS has changed its procedures for reporting sampling results to DHS and DHS will also be changing how it monitors the sampling results. Additionally, DTSC will be reviewing sampling results from the treatment system, as well as sample results directly from the wells. The sampling data will also be included in the public record for the Central Plume and made available for public review upon request.

Sampling of DTSC groundwater monitoring wells in March 1998 showed that the plume was spreading at a much slower rate than before the IRM was implemented. DTSC is also developing a final Remedial Action Plan (RAP) to eliminate contamination from the entire plume. The Draft RAP will be subject to public review and comment before finalization and will require at least one public meeting.

Within the Central Plume is the Chico High School Irrigation Well (Well). The Well is located at Chico High School. Water from the Well has shown a steady increase in the level of PCE. Although the water was used only for irrigating landscaping at Chico High School, DTSC felt the well may be acting as a conduit for spreading PCE vertically within the Central Plume. The well is located on campus and uses water from two of Chico's drinking water aquifers.

An investigation by a Chico Unified School District consultant found that a modification of the Well's construction could resolve the problem. It was determined that all the contamination was in the upper aquifer and that the Well could be modified to only use water from a lower zone. DTSC has found this plan to be acceptable and has approved the work going forward.

**North Valley Cleaners**

The North Valley Cleaners (NVC) is located at 801 East Avenue. NVC was constructed in 1964 as part of the North Valley Plaza Shopping Center and did on-site dry cleaning until 1997. From 1964 to 1988, NVC discharged to an on-site septic system. In January 1995, remnants of PCE, a common dry-cleaning chemical, was detected in the drinking water supply in a well on Alba Avenue. The well is located four blocks down gradient from the site.

Preliminary investigations were done in 1995, 1996, and 1997. Two sources of contamination were found. Remnants of PCE were detected in soils at the two leach fields associated with the on-site septic system and PCE was found in soil and groundwater beneath a possible spill location just outside the backdoor of NVC.

As an interim measure, a soil vapor extraction system (SVE) was installed at the spill location in 1997 to address soil contamination. The SVE creates a vacuum in a well, pulling the PCE out of the soil and capturing it in a carbon filter. This has reduced soil as a source of groundwater contamination. The SVE is still active and is performing as expected.

In March 1998 DTSC issued a Remedial Action Order to the responsible parties for continued investigation and remediation of the site. Site investigations continue under DTSC oversight for soil and groundwater in order to fully characterize the site. Long term measures to address PCE contamination are being developed.

**Louisiana Pacific**

Construction of remedial actions to address arsenic contamination in soil and pentachlorophenol, ethyl benzene, and xylene contamination in groundwater have been completed. Soil contamination has been addressed by excavating approximately 30,000 cubic yards of soil, consolidating the contaminated soil on site, and covering it with a three acre asphalt cap. The site has been cleaned up to allow unrestricted uses in all areas except the location of the cap where site uses are limited to commercial and industrial uses. A deed restriction will limit exposures to remaining contaminants contained under the cap. Contaminated groundwater is being addressed by extraction, treatment, and recycling it back into the ground. DTSC certification of cleanup

## North Central Plume

Remediation of PCE in this plume is nearing completion. Remediation was done by the continuous operation of an air stripping treatment unit on CWS well number 16 located in the center of the plume since 1986. Water is pulled up out of the aquifer into a treatment system. There the water is volatilized with air and PCE is captured in a carbon filter and the water is then dispersed into the CWS distribution system. Initially, sampling showed the well to have PCE levels as high as 42.5 parts per billion (ppb) well above the Maximum Contaminant Level of 5.0 ppb. Raw water samples during 1998 averaged 0.6 ppb PCE prior to treatment and PCE was not detected after treatment.

## Southwest Plume

The Southwest Plume extends for over one and one-half miles under the southern portion of Chico and flows from the northeast to the southwest. In August 1991 fourteen private wells on the leading edge of the plume were shut down and abandoned due to PCE contamination. These residents were hooked up to a waterline funded by DTSC.

In January 1992, a carbon treatment unit was purchased by CWS and DTSC and installed on well number 46. At the beginning of treatment, groundwater samples tested as high as 38 ppb for PCE. Today raw water samples are now averaging about 10 ppb and samples of treated water are not detecting PCE. Also, the monitoring wells on the leading edge of the plume have shown a steady decrease in PCE concentrations since the treatment unit has been operating. Treatment (at well number 46) combined with monitoring is planned to continue into the foreseeable future.

## Information Repositories

Copies of site related documents including sampling reports, remediation plans, and past fact sheets are available at the information repositories located at:

Meriam Library, Special Collection Department  
California State University, Chico, CA 95929  
(530) 895-5710

Butte County Library, Chico Branch  
1108 Sherman Avenue  
Chico, CA 95925  
(530) 891-2762

DTSC, Sacramento Office File Room  
10151 Croydon Way, Suite 3  
Sacramento, CA 95827  
Contact: Alberta McMurray (916) 255-3758

## DTSC Contacts

If you have questions or would like more information, please contact:

For the Central, North Central, and Southwest Plumes contact:

Don Mandel, Project Manager  
(916) 255-3667

North Valley Cleaners:

Ed Cargile, Project Manager  
(916) 255-3703

Louisiana Pacific:

Fernando Amador, Project Manager  
(916) 255-3737

For general site information please contact:

Randy Sturgeon, Public Participation Specialist  
DTSC, Sacramento Office  
10151 Croydon Way, Suite 3  
Sacramento, CA 95827-2106  
(916) 255-3649

**NOTICE TO  
HEARING IMPAIRED INDIVIDUALS**

TDD users can obtain additional information by using the California State Relay Service at 1-888-877-5378 to reach Randy Sturgeon at (916) 255-3649.

**MAILING LIST**

If you did not receive this fact sheet in the mail and wish to be on the Chico Area Groundwater mailing list, please complete the following coupon and return it to Randy Sturgeon, Public Participation Specialist, at 10151 Croydon Way, Suite 3, Sacramento, CA 95827

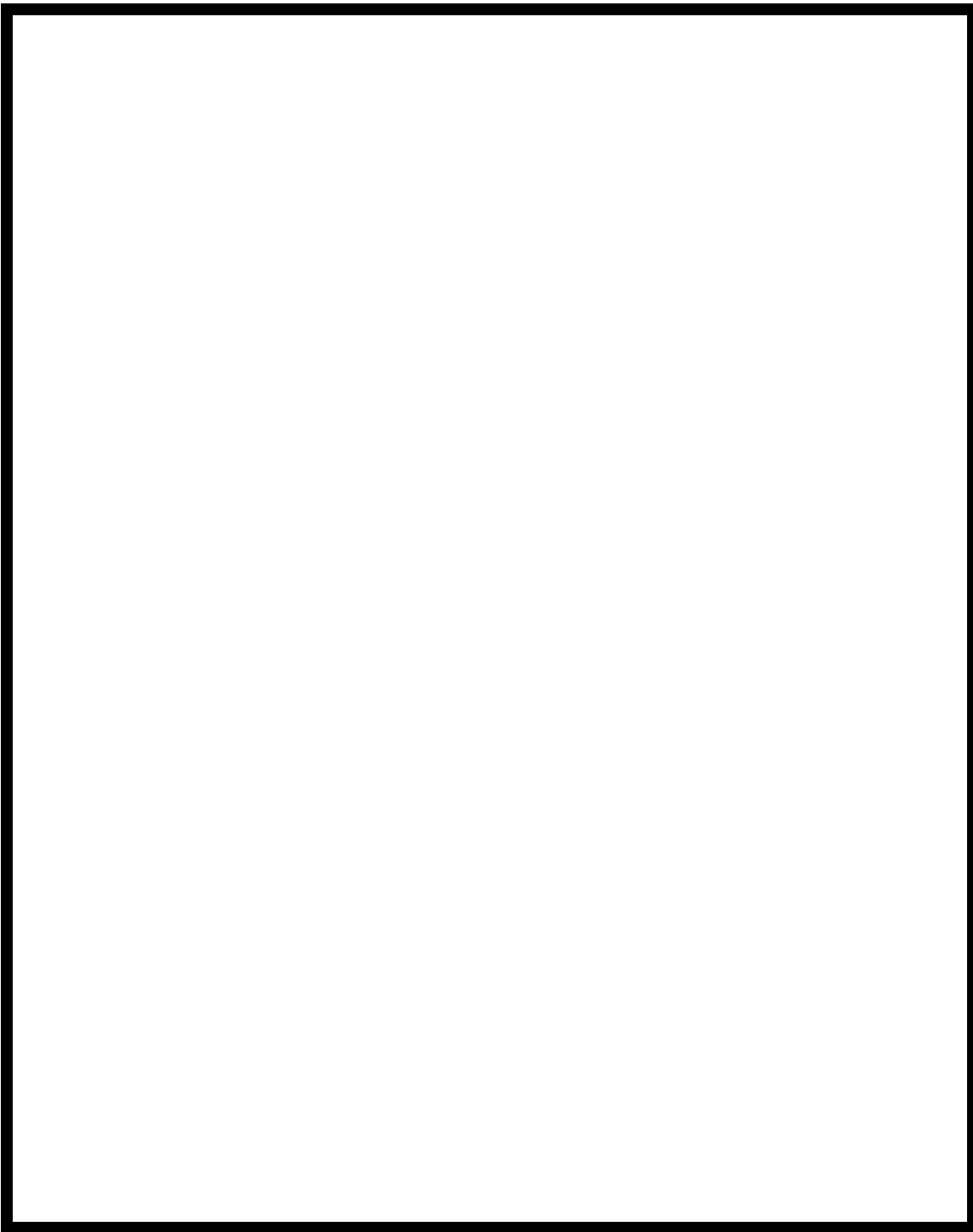
DTSC mailing lists are solely for the purpose of keeping persons informed of DTSC activities. Mailing lists are not routinely released to outside parties. However, they are considered public records and, if requested, may be subject to release.

**I WOULD LIKE TO BE INCLUDED ON THE CHICO AREA GROUNDWATER MAILING LIST.**

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



**Plumes and Chemicals of Concern**

- Central Plume PCE
- North Valley Cleaners Plume PCE
- Louisiana Pacific Plume PCP
- North Central Plume PCE
- Southwest Plume PCE
- Chloroform Plume Chloroform
- Victor 20th Street Plume TCE
- Chico Airport Plume TCE

