



# Camp Stanley Storage Activity Groundwater Contamination – Plume 2 FACT SHEET

No. 4 – October 2001

The purpose of this fact sheet is to provide an overview of groundwater investigation and cleanup activities at Camp Stanley Storage Activity (CSSA). The investigation is in response to the detection of volatile organic compounds (VOCs) in groundwater at CSSA. In the past, these compounds were used to degrease and clean metal surfaces. CSSA is expanding the investigations and evaluating cleanup options at the newly identified Plume 2 area. This fact sheet provides detailed information about the investigation findings and cleanup activities to date. Future fact sheets will be used to provide additional information regarding on-going investigation and cleanup activities.

## Background/Mission

CSSA is a U.S. Army post located in Bexar County, approximately 19 miles northwest of downtown San Antonio, Texas. Its mission is the receipt, storage, and issuance of ordnance materiel as well as quality assurance testing and maintenance of military weapons and ammunition. Because of its ordnance mission, CSSA is a restricted-access facility.

## Chemicals of Concern (COCs)

Groundwater contamination at CSSA is caused by a group of chemical compounds commonly referred to as chlorinated solvents. These solvent compounds are commonly referred to as VOCs. Tetrachloroethene (PCE) and trichloroethene (TCE) are the two most common VOCs found in the CSSA groundwater contamination plumes. The U. S. Environmental Protection Agency (EPA) has established drinking water maximum contaminant levels (MCLs) for PCE and TCE to be 5.0 parts per billion (ppb). Concentrations below 5.0 ppb are considered safe for drinking water.

## Groundwater Contamination History – Plume 2

In December 1999, CSSA initiated testing at Well LS-7, a private off-post well near the southwestern corner of the post as a proactive step to determine if contamination had migrated off-post. Analytical results from this well indicated low levels of tetrachloroethene (PCE) and trichloroethene (TCE) contamination. CSSA continues to monitor Well LS-7. Since 1999, contamination levels have risen; PCE levels have ranged from 2.20 to 4.10 ppb, while TCE has remained below 1.20 ppb.

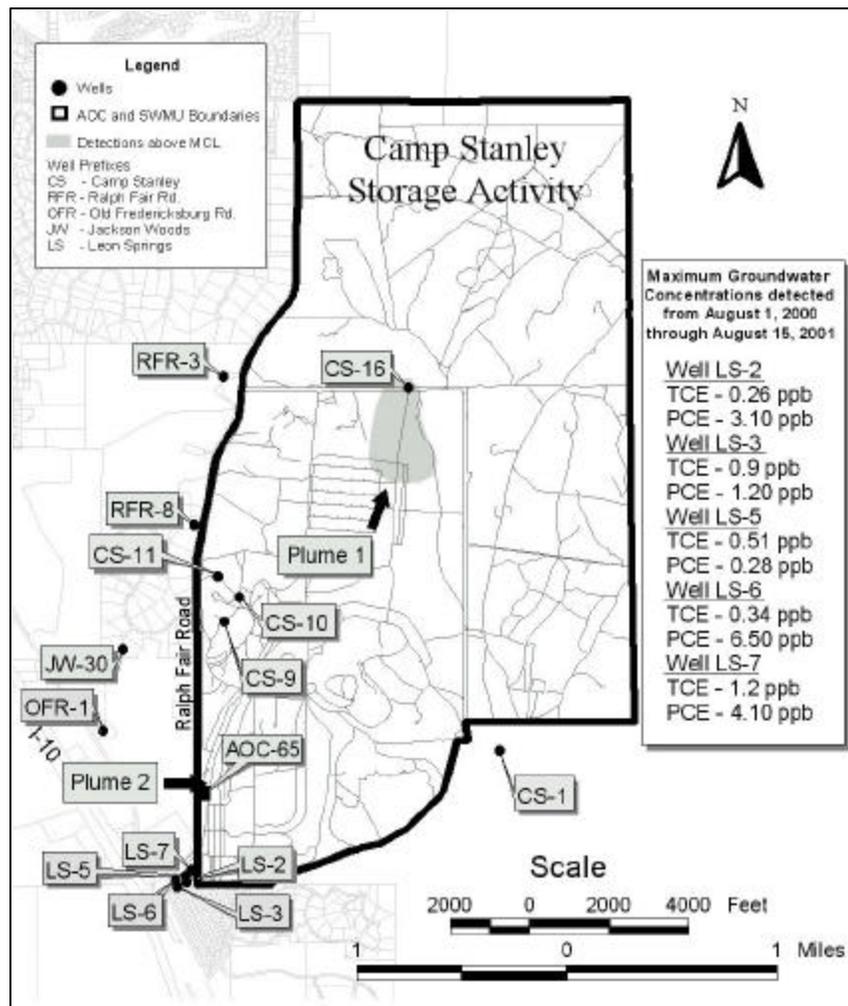
In August 2001, CSSA extended its off-post monitoring program to include four additional private wells (Wells LS-2, LS-3, LS-5, and LS-6) near the southwestern corner of the post (see Figure 1). CSSA tested these wells to establish a baseline of water quality before installing two new on-post monitoring wells. These new on-post monitoring wells are within 50 feet of the post boundary and are close to the

private wells. Analyses of water samples from the off-post wells have found VOC contamination. VOC levels in LS-2, LS-3, and LS-5 ranged from 0.28 to 3.10 ppb for PCE and from 0.26 to 0.90 ppb for TCE. VOC levels in LS-6 were as high as 6.50 ppb for PCE and 0.34 ppb for TCE.

## Identification of Plume 2 Source Area

In past years, PCE and TCE were commonly used in many industries to degrease metal parts. CSSA used PCE and TCE to degrease ordnance materiel. The location where these solvents/VOCs were used was Building 90. Building 90 had a metal vat located in a depressed area of the floor that contained the VOCs. The vat and surrounding area are known as Area of Concern 65 (AOC 65). In April 2000, CSSA collected a soil sample at AOC 65. Analysis of the sample found low levels of VOCs that suggested the solvent had spilled in the depressed area and/or leaked from the vat to the soil below.

Figure 1



CSSA is conducting site investigations to determine the source area for the Plume 2 contamination. From December 2000 through March 2001, CSSA conducted a soil gas survey over approximately 70 acres near the southwestern corner of the post. The goal of this survey was to identify any other potential VOC sources that may be contributing to groundwater contamination in the area. This survey confirmed the presence of VOCs in soil gas at and near AOC 65, and did not identify any other VOC sources. Additional testing of soil and shallow groundwater in the vicinity of AOC 65 confirmed the presence of VOCs.

CSSA installed nine on-post monitoring wells in the vicinity of Plume 2 from February through September 2001. Three of the wells were located upgradient and the remaining six wells were installed downgradient of AOC 65. During the drilling process, screening samples collected from the downgradient wells found VOC contamination in the upper portions of the Lower Glen Rose and Cow Creek formations. VOC levels in the upper portion of the Lower Glen Rose were as high as 57 ppb for PCE and 20.50 ppb for TCE. VOC levels in the Cow Creek were as high as 20.50 ppb for PCE and 19.5 ppb for TCE. However; in June 2001 when these wells had been fully completed, groundwater was tested from MW-8 LGR and MW-8 CC and no VOCs were detected.

Based on the current investigation data, the source of groundwater contamination near the southwestern corner of CSSA is the former solvent vat area located in Building 90 - AOC 65.

## **COCs Present within Plume 2**

Low levels of VOCs have been detected in samples collected from wells located up to 600 feet southwest of the post. Based on CSSA sampling results, Plume 2 includes Wells LS-2, LS-3, LS-5, LS-6, and LS-7 (see Figure 1). VOCs have been detected at concentrations above MCLs in one of these wells (Well LS-6). Maximum concentrations detected in LS-6 were 6.50 ppb for PCE and 0.34 ppb for TCE (8/15/2001).

## **Plume 2 Remedial Activities – Current Activities**

In August 2001, CSSA supplied bottled water to residents using private wells LS-6 and LS-7. Some of the new on-post wells being installed are within 50 feet of the post boundary and in close proximity to the private off-post wells. Bottled water was supplied to reduce the possibility of any negative impact on the quality of the drinking water during the entire well installation process.

Based on the sampling results, CSSA installed granular activated carbon (GAC) filter systems on Wells LS-6 and LS-7. CSSA reviewed potential remedies for the impacted wells and a GAC filter system was selected as the most cost effective solution. This filter system is designed to remove the VOCs from the water. Well LS-7 has not exceeded the MCL for PCE or TCE. However, CSSA anticipates exceeding the MCL based on the pattern of increasing concentrations in test data. CSSA will continue to monitor, operate, and maintain the GAC filter systems until background VOC concentrations in these wells are within drinking water standards.

## **CSSA Environmental Program Plan – Future Activities**

In September 2001, CSSA tested 14 additional off-post wells for possible VOC contamination. The tests will confirm whether drinking water off-post is contaminated by VOCs and possibly define the extent of off-post groundwater contamination. If additional VOC contamination is found in these wells, at concentrations within 90 percent of or above the MCL, CSSA will

supply bottled water to the impacted residents within 24 hours. If follow-up sampling confirms the contamination, CSSA will evaluate options for either installing a GAC filter system or connecting to an alternative water supply.

Selecting off-post water wells for sampling will be based on the suitability of each well for meeting the investigation objectives. Factors such as well location, screened interval, and sampling access will be considered. All well owners will be personally contacted for permission to sample their well(s). More information on CSSA's groundwater sampling program can be found in the *Off-Post Monitoring and Response Plan*.

CSSA is considering a variety of cleanup options for AOC 65. Both conventional and innovative technologies will be reviewed to determine the best cleanup strategy. CSSA will consider horizontal drilling and installation of sub-slab soil vapor extraction systems, placement of microorganisms to bioremediate the site, and conventional excavation and off-post disposal operations. CSSA will initiate cleanup work after completion of the planning stages.

Additional monitoring wells will be installed beginning in the fall of 2001. Fourteen wells will be used to evaluate Plume 2 groundwater quality. CSSA will test all on-post wells quarterly for VOCs and continue its off-post monitoring. Coordination will continue with many regulatory agencies and other potentially affected parties, including the EPA, the TNRCC, Fort Sam Houston, the City of Fair Oaks, Fair Oaks Water Utilities, the Bexar County Commissioner's office, State Representative's office, local, state, and federal elected officials, and others.

## **Other CSSA Fact Sheets**

- Fact Sheet No. 1 – CSSA's Environmental Program
- Fact Sheet No. 2 – CSSA's Soil and Groundwater Contamination
- Fact Sheet No. 3 – Groundwater Contamination – Plume 1

## **Public Comment**

CSSA will distribute additional fact sheets to inform the public about different aspects of its environmental program. The public is welcome to comment on this fact sheet and the environmental activities at CSSA by writing to:

Commander, Camp Stanley Storage Activity  
25800 Ralph Fair Road  
Boerne, Texas 78015-4800

You may also comment by calling:

- CSSA Commander, Lt. Col. Jason D. Shirley, at (210) 295-7416;
- EPA Regional Program Manager, Mr. Greg Lyssy, at (214) 665-8317; or
- U.S. Army Corps of Engineers, Fort Worth District Public Affairs Office, Ms. Anita Horkey, at (817) 978-3395

## Definition of terms:

<b>AOC</b>	Area of Concern, an area of potential or suspected environmental concern.
<b>CC</b>	Cow Creek Formation
<b>CSSA or CS</b>	Camp Stanley Storage Activity
<b>LGR</b>	Lower Glen Rose Formation
<b>MCL</b>	Maximum Contaminant Level
<b>PCE</b>	Tetrachloroethene
<b>TCE</b>	Trichloroethene