



Camp Stanley Storage Activity Environmental Program Update

FACT SHEET

No. 37 – Annual Fact Sheet
June 2017

The purpose of this Fact Sheet is to provide an update on the status of Camp Stanley Storage Activity's (CSSA) environmental program, as well as an overview of quarterly groundwater sampling conducted in 2016. CSSA's Administrative Record and results for all groundwater sampling events are available in the CSSA Environmental Encyclopedia located on the internet at www.stanley.army.mil.

Overview of CSSA's Environmental Program

In 1991, routine water well testing by the Texas Department of Health detected the presence of dissolved cleaning solvent tetrachloroethene (PCE) and related degradation products above maximum contaminant levels (MCLs) in a CSSA water supply well (Well 16 [CS-16]). Subsequent sampling showed volatile organic compound (VOC) contaminant concentrations greater than MCLs in other wells. VOCs make up substances such as paint thinners, dry cleaning solvents, and some constituents of petroleum fuels (e.g. gasoline and natural gas). CSSA ceased using VOC solvents in the mid-1990s, and monitors for VOCs and metals associated with its past industrial processes.

Sources of CSSA's groundwater contamination were initially determined to be Solid Waste Management Unit (SWMU) O-1 and SWMU B-3; this area is referred to as Plume 1. Later, Area of Concern 65 (AOC-65) was identified as the source of groundwater contamination at Plume 2. Both plumes are shown on Figure 1.

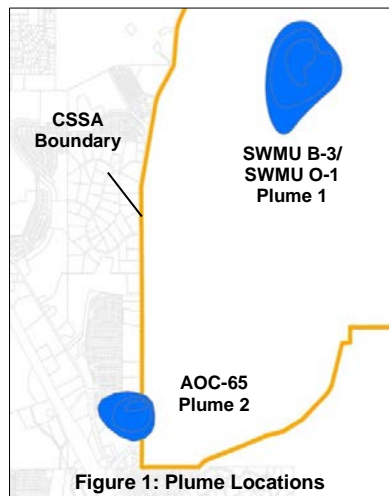


Figure 1: Plume Locations

In May 1999, the U.S. Environmental Protection Agency (USEPA) issued a Resource Conservation and Recovery Act (RCRA) 3008(h) Administrative Order on Consent (Order) requiring CSSA to identify, investigate, and prevent further spread of releases of hazardous wastes and/or hazardous constituents to the environment, and to ensure that corrective action activities are implemented to protect human health and the environment. These requirements were met by following the RCRA process as shown in Figure 2, and CSSA is currently in the final process of Corrective Measures Implementation and Completion.

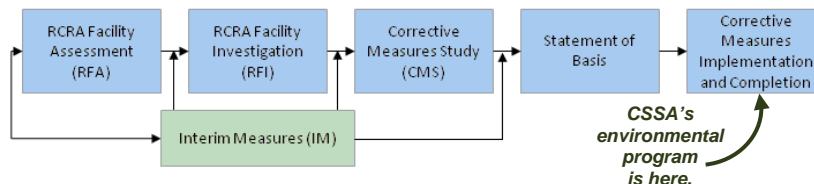


Figure 2: RCRA Corrective Action Process

As described in Fact Sheet No. 35 distributed in May 2015, USEPA issued the Statement of Basis (SB) to the public which detailed its preferred remedies for treating groundwater contamination at CSSA. USEPA subsequently issued a Final Decision Document in July 2015 that officially approved the remedies and initiated the Corrective Measures Implementation phase of RCRA. With these documents and corrective measures in place, CSSA is continuing with contaminant source remediation, and continues to maximize and enhancing the effectiveness of its long-term groundwater monitoring program.

Installation of New On-Post Monitoring Well

A new monitoring well, MW-37, was installed just inside the southern boundary of CSSA. This well will aid in monitoring VOC concentrations within the primary drinking water aquifer (Trinity Glen-Rose) for CSSA and the surrounding communities, and reduce the data gap created with the loss of access to former off-post San Antonio Water System (SAWS) well LS-1. This well replaces LS-1 in CSSA's groundwater monitoring program.

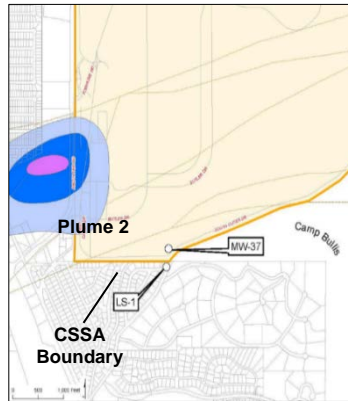


Figure 3: Location of Well MW-37

Perfluorinated Compound (PFC) Assessment

In December 2016, CSSA collected samples from three on-post public water supply wells (CS-1, CS-10, CS-12) for analysis of Perfluorinated Compounds (PFCs). PFCs are a suite of Emerging Contaminants of concern based on the potential human health risks to sensitive populations. The chemical structures of PFCs make them resistant to breakdown in the environment.

PFCs include commonly used PFC-containing products such as Aqueous Film-Forming Foams (AFFF) used in firefighting and chemical fume suppressants. Although none of these common sources are present at CSSA, groundwater at the site was tested for PFCs to ensure they are not present due to any historic training activities that may have occurred there in the past. None of the sampling results exceeded either the TCEQ Residential Protective Concentration Level (PCL) or the EPA Health Advisory Level for PFCs.

Off-post Groundwater Monitoring

The goals of CSSA's off-post monitoring program are to confirm that off-post drinking water meets USEPA and TCEQ safe drinking water standards, determine where VOC contamination has migrated, and define the appropriate response. As part of the program, 54 off-post wells were sampled in 2015 (see Table 1).

Factors considered in deciding if a well is sampled include where the well is located, how close it is to areas where VOCs have been detected, whether the well owner grants access for sampling, and results of previous sampling at the well. A well is initially sampled for four consecutive quarters (i.e., every three months for one year). Depending on the analytical results for the well, future sampling occurs as illustrated on Figure 4. CSSA takes action if VOCs are detected in off-post wells at concentrations that begin approaching 90% of the MCL (greater than 4.5 ppb).

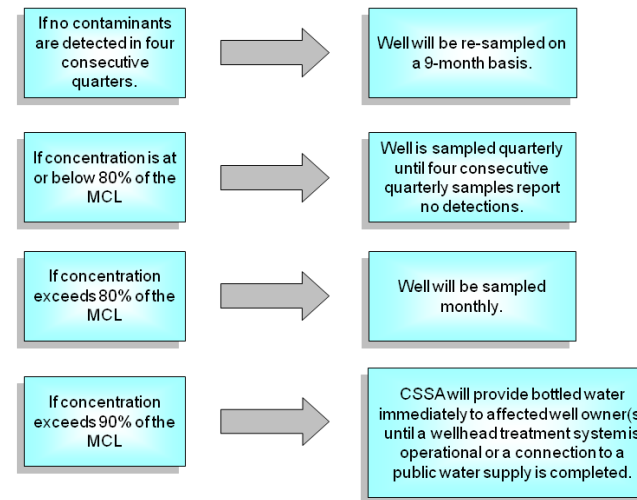


Figure 4: Off-Post Well Sampling Decision Chart

2016 Groundwater On- and Off-Post Sampling Results

The locations of all on- and off-post wells sampled in 2016 are shown on Figure 5 (back side). Table 1 presents off-post groundwater data for PCE and TCE from all 2016 sampling events. Two wells (RFR-10 and OFR-3) exceeded the MCL for PCE and TCE in samples collected prior to the well's GAC filter. In all other wells tested, any VOCs that were detected had concentrations below the drinking water MCLs for PCE and TCE.

In March 2016, 7 GAC-filtered samples were collected. The GAC-filtered sample collected from one of two sampling locations for the RFR-10 GAC filtration system showed detections of PCE and TCE above the MCL. The other post-GAC side of the same GAC system showed no detection of VOCs. Based on this result, the first side of the GAC system was turned off and additional samples were collected. The additional samples indicated no VOCs present at the kitchen tap of both homes. The carbon canisters on the first side of the system were replaced and confirmation samples were collected. All samples indicated that both sides of the GAC system were functioning properly.

All other GAC-filtered samples collected in March 2016 and September 2016 were non-detect indicating the GAC units were functioning properly. Semi-annual GAC maintenance was performed in February and September 2016. This involved replacing the first carbon canister in each GAC system and other routine maintenance. The next carbon canister replacement is scheduled for March and September 2017.

CSSA will continue to sample both on- and off-post groundwater wells at frequencies approved by USEPA and TCEQ; and to coordinate the groundwater monitoring program with the regulatory agencies and other potentially affected parties in the community.

Endangered Species at CSSA

CSSA is dedicated to protecting endangered species and their habitats. There are two federal and state-listed endangered bird species that reside at CSSA during certain times of the year:

- Black-capped Vireos (*Vireo atricapillus*) typically reside in Central Texas Hill Country between April and July.
- Golden-cheeked Warblers (*Dendroica chrysoparia*) typically reside in Central Texas Hill Country between March and July.

CSSA conducts presence-absence surveys for these birds every two years (odd-numbered years). These surveys identify nesting and preferred habitat areas that should be avoided during the period that these birds are typically present: March to July. If tree removal is required within this habitat at any time, it must be reported to U.S. Fish and Wildlife Service (USFWS).



Figure 6: Golden-cheeked Warbler (2017 Survey)

The most recently completed survey, conducted in 2015, showed a 22% increase in the number of Golden-cheeked Warblers (Figure 6) at CSSA since 2013, continuing the increasing trend since 2009. No Black-capped Vireo detections occurred at CSSA during the 2015 survey. The 2017 bird survey is currently underway and scheduled to be completed in July.

Activities Planned for 2017

- Continued monitoring and operation & maintenance (O&M) of the AOC-65 ISCO remediation area and the SWMU B-3 bioreactor system to assess the remedies' impacts to source area contaminant concentrations.
- Continued groundwater monitoring at on- and off-post wells in accordance with the most recent LTMO results and DQOs approved by USEPA and TCEQ.
- CSSA drinking water system monitoring and O&M.

Public Outreach and Future Fact Sheets

CSSA has been issuing Fact Sheets similar to this one since 2000. We will continue to mail Fact Sheets annually to provide information on sampling results, ongoing investigations, and cleanup activities. Each well owner involved in the groundwater monitoring program will continue to receive a separate letter concerning laboratory results for their wells after sampling by CSSA. The public is welcome to comment on this Fact Sheet and the environmental activities at CSSA by writing or calling:

- CSSA Installation Manager, Mr. Jason D. Shirley, at (210) 295-7416;
- CSSA Environmental Program Manager, Ms. Felicia Krantz, at (210) 295-7067;
- USEPA Regional Program Manager, Mr. Greg Lyssy, at (214) 665-8317;
- TCEQ Regional Program Manager, Mr. Paul Gregorio, at (512) 239-1425; or
- SGM Dean Welch, ARNORTH Public Affair Office, office (210) 221-0765, mobile (210) 216-5546, email usarmy.jbsa.arnorth.list.pao-owner@mail.mil

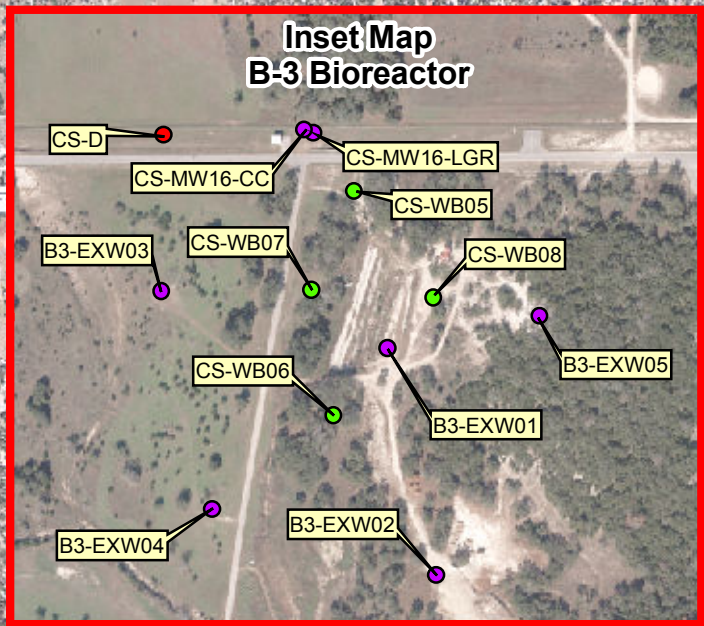
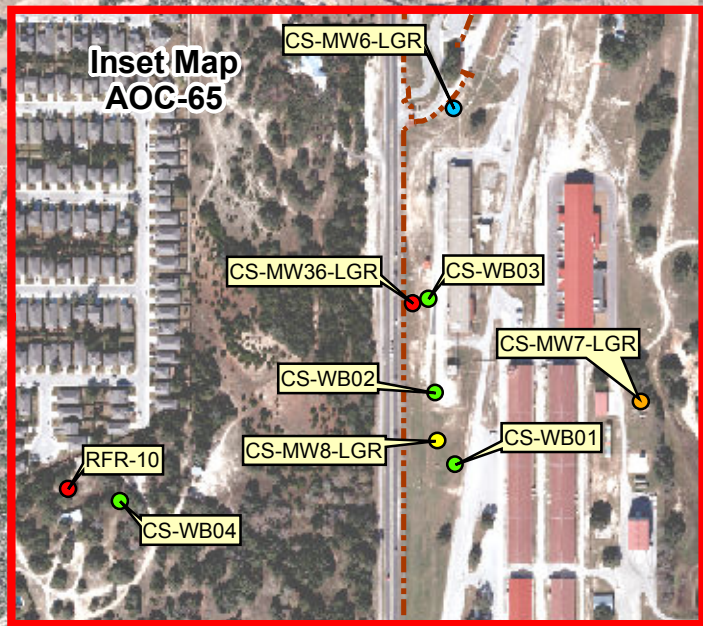


TABLE 2: POST-GAC SYSTEM SAMPLING RESULTS

Well ID	Date (2016)	PCE (ppb)	TCE (ppb)
LS-5-A2	Mar	ND	ND
	Sep	ND	ND
LS-6-A2	Mar	ND	ND
	Sep	ND	ND
LS-7-A2	Mar	ND	ND
	Sep	ND	ND
OFR-3-A2	Apr	ND	ND
	Sep	ND	ND
RFR-10-A1	Apr	ND	ND
	Mar	10.38	6.41
	Apr	ND	ND
	May	ND	ND
	Sep	ND	ND

Well ID	Date (2016)	PCE (ppb)	TCE (ppb)
RFR-10-B1	Apr	ND	ND
	Mar	ND	ND
	Jun	ND	ND
	Sep	ND	ND
	Nov	ND	ND
RFR-11-A2	Mar	ND	ND
	Jun	ND	ND
	Sep	ND	ND
	Nov	ND	ND

Notes:

- Wells with VOC concentrations > MCL
- Wells with VOC concentrations between RL and MCL
- Wells with VOC concentrations < RL
- Non-detect
- Multi-port Westbay Wells
- Other wells

ppb = parts per billion.
MCL = Maximum Contaminant Level.
MDL = Method Detection Level.
RL = Report Limit.
PCE = tetrachloroethene
TCE = trichloroethene
ND = The analyte was not detected above MDL.
F = The analyte was detected, but the concentration is below the RL.
M = There was possible interference from the sample itself, the M flagged result is usable and defensible.
BOLD = Concentration is greater than the MCL of 5 ppb for PCE or TCE.

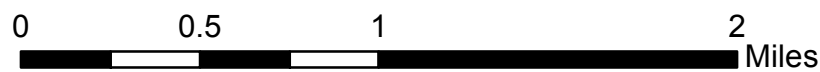


TABLE 1: OFF-POST GROUNDWATER SAMPLING RESULTS

Well ID	Date (2016)	PCE (ppb)	TCE (ppb)
BSR-04	Sep	ND	ND
HS-1	Sep	ND	ND
I10-8	Sep	ND	ND
JW-5	Sep	ND	ND
JW-7	Sep	ND	ND
JW-8	Sep	ND	ND
JW-20	Sep	ND	ND
LS-1	Sep	0.25F	ND
LS-4	Sep	0.16F	ND
	Mar	1.12F	2.5
	Jun	0.88F	1.79
	Sep	0.75F	1.85
	Nov	1.06F	2.16
	Mar	0.76F	1.47
	Jun	0.72F	0.89F
	Sep	0.88F	ND
	Nov	ND	ND
	Mar	1.63	0.28F
	Jun	0.62F	ND
	Sep	0.57F	ND
	Nov	ND	ND
	Apr	2.86	2.38
	Jun	3.34	3.03
	Sep	3.14	2.02
	Nov	6.59	3.02
OW-BARNOWL	Sep	ND	ND
OW-HH2	Sep	ND	ND
	Mar	13.85	7.4
	Apr	11.89	6.73
	May	6.53	4.48
	Jun	7.7	4.9
	Sep	6.95	4.27
	Nov	7.99	3.62
	Mar	0.96F	1.62
	Jun	0.94F	0.30F
	Sep	1.49	0.47F
	Nov	0.91F	1.28
RFR-12	Sep	ND	0.49F
RFR-14	Mar	ND	ND

FIGURE 5: SAMPLED ON-POST AND OFF-POST GROUNDWATER WELLS