Camp Stanley Storage Activity
Environmental Program Update

FACT SHEET

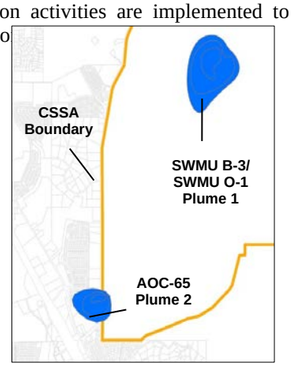
No. 40 – Annual Fact Sheet
August 2020

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 over-view of quarterly groundwater sampling conducted in 2019. CSSA's Adminis-trative 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]). Sub-sequent sampling showed volatile organic compound (VOC) contami-nant concentrations greater than MCLs in other wells. VOCs make up substances such as paint thinners, dry cleaning solvents, and some con-stituents 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.

In May 1999, the U.S. Environmental Protection Agency (USEPA) is-sued a Resource Conservation and Recovery Act (RCRA) 3008(h) Ad-ministrative Order on Consent (Order) requiring CSSA to identify, in-vestigate, 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 enviro



Sources of CSSA's groundwater contamination were determined to be Solid Waste Management Unit (SWMU) O-1 and SWMU B-3; this area is referred to as Plume 1. Area of Concern 65 (AOC-65) was identified as the source of ground-water contamination at Plume 2.

Following completion of a RCRA Facility Investigation and Correc-tive Measures Study in 2014, the following corrective measures were documented in the Decision Document, approved by USEPA in July 2015:

- Source area treatment for Plume 1 at SWMU B-3;
- Source area treatment for Plume 2 at AOC-65;
- Granular activated carbon (GAC) units on six off-post pri-vate drinking water wells;
- Long-term monitoring of on- and off-post groundwater; and
- Land use controls (restricted entry to CSSA and under-ground/dig activity permits).

Five-Year Review

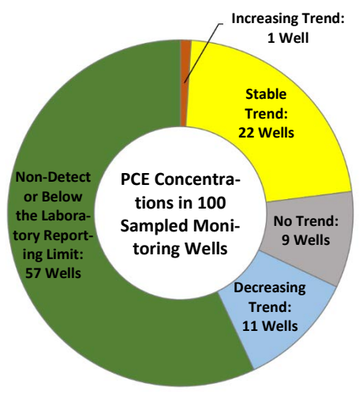
This year, CSSA conducted a five-year review to:

- Evaluate the implementation and performance of corrective measures;
- Determine if the corrective measures continue to be protective of human health and the environment;
- Assess whether improvements can be made to make the measures more effective and/or efficient; and
- Reach out to stakeholders to gain their input and opinions on the corrective measures in place at CSSA.

Results of the Five-Year Review indicate that the approved corrective measures are performing as intended and are pro-tective of human health and the environment.

Exposure to contaminated groundwater is prevented through a combination of on-site access controls and GAC filtration at affected off-post drinking water wells.

Corrective measures remain focused on reducing con-taminant concentrations to the two groundwater plumes source areas. To achieve long-term pro-tectiveness of human health and the environment, operations and maintenance of the corrective measures systems/programs will con-tinue and enhancements to existing systems should continue to be eval-uated, planned, and implemented to address potential current or future issues.



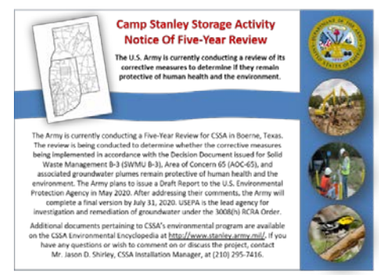
An analysis of PCE concentrations in on- and off-post ground-water wells over the last five years gener-ally indicate stable or decreasing trends for wells containing con-centrations above the laboratory reporting limit. Out of 102 total monitoring wells sampled, all but three either had non-detect-able concentrations of PCE, or indicated sta-ble, decreasing, or no trend in PCE concentrations. Two locations had too few sampling results because they are shallow and typically dry, and while one location indicated an increasing trend, the PCE concen-trations measured there are below the USEPA MCL.

Plume 1 continues to be treated using an in-ground bioreactor which has been operating since 2007. Contaminants in groundwater are pumped out of the ground and into the bioreactor where they are bro-ken down by natural bacteria into nonhazardous substances. Since the construction of the bioreactor, over 243 million gallons of contami-nated groundwater have been treated by the system.

Plume 2 continues to be treated using in-situ chemical oxidation, a pro-cess by which a substance called an oxidant is applied to the surround-ing groundwater where it reacts with contaminants to break them down into nonhazardous substances. This process has been in place since 2012, and prior to that, the area was treated using various other reme-diation techniques.

Potential system enhancements identified in this review included:

- Updating the CSSA Quality Assurance Program Plan which out-lines the quality assurance and quality control procedures for all sampling and analytical activities;
- Refreshing the in-situ chemical oxidation applications at AOC-65 on a regular 18-month schedule which will ensure a more con-stant, steady source of oxidant, and
- Evaluating a recent well survey to identify any new off-post wells that could be included in the long-term monitoring program.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Notice Of Five-Year Review

The U.S. Army is currently conducting a review of its corrective measures to determine if they remain protective of human health and the environment.

The Army is currently conducting a Five-Year Review for CSSA in Boerne, Texas. The review is being conducted to determine whether the corrective measures being implemented in accordance with the Decision Document issued for Solid Waste Management B-3 (SWMU B-3), Area of Concern 65 (AOC-65), and associated groundwater plumes remain protective of human health and the environment. The Army plans to issue a Draft Report to the U.S. Environmental Protection Agency in May 2020. After addressing their comments, the Army will complete a final version by July 31, 2020. USEPA is the lead agency for investigation and remediation of groundwater under the 3008(h) RCRA Order.

Additional documents pertaining to CSSA's environmental program are available on the CSSA Environmental Encyclopedia at http://www.stanley.army.mil. If you have any questions or wish to comment on or discuss the project, contact Mr. Jason D. Shirley, CSSA Installation Manager, at (210) 295-7416.

A post card was mailed out to all community members on the CSSA mailing list to announce the initiation of the five-year review process and invite feedback. In addi-tion, in-person inter-views were held with five local residents who have a well equipped with a GAC to discuss their perceptions of the groundwater program and corrective measures at CSSA. The well owners' overall impression of how CSSA is man-aging the groundwater plumes was positive. All five well owners feel adequately informed about project activities and progress, and none of the well owners had concerns related to the operation and handling of their GAC units.

2019 Groundwater On- and Off-Post Sampling Results

On- and off-post groundwater monitoring has been conducted for nearly 30 years and continues on a regular basis. Samples collected during monitoring events are analyzed by a laboratory, and the results are evaluated to determine if the corrective measures in place remain protective of human health and the environment.

The locations of all on- and off-post wells sampled in 2019 are shown on the map on the back side of this Fact Sheet. Table 1 on the map presents off-post groundwater data for PCE and trichloroethene (TCE) from all 2019 sampling events. Two wells (OFR-3 and RFR-10) ex-ceeded 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 de-tected had concentrations below the drinking water MCLs for PCE and TCE.

All GAC-filtered samples collected in March 2019 and September 2019 were non-detect indicating the GAC units were functioning properly as shown on Table 2. Semi-annual GAC maintenance was performed in March and September 2019. This involved replacing the first carbon canister in each GAC system and other routine mainte-nance. Carbon canisters were replaced in March 2020 and will be re-placed again in September 2020.

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.

Activities Planned for the Remainder of 2020

- Continued monitoring and operation & maintenance of the AOC-65 in-situ chemical oxidation remediation area and the SWMU B-3 bioreactor system to assess the corrective measures' impacts on source area contaminant concentrations.
- Continued groundwater monitoring at on- and off-post wells in accordance with the most recent long-term monitoring optimiza-tion results and data quality objectives approved by USEPA and TCEQ.
- CSSA drinking water system monitoring, operation, and mainte-nance.

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 con-tinue 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 at (210) 295-7416;
- USEPA Regional Program Manager, Mr. Greg Lyssy, at (214) 665-8317;
- TCEQ Regional Program Manager, Mr. Timothy Brown, at (512) 239-6526; or
- SGM Dean Welch, ARNORTH Public Affair Office, of-fice (210) 221-0765, mobile (210) 216-5546, email usarmy.jbsa.arnorth.list.pao-owner@mail.mil.

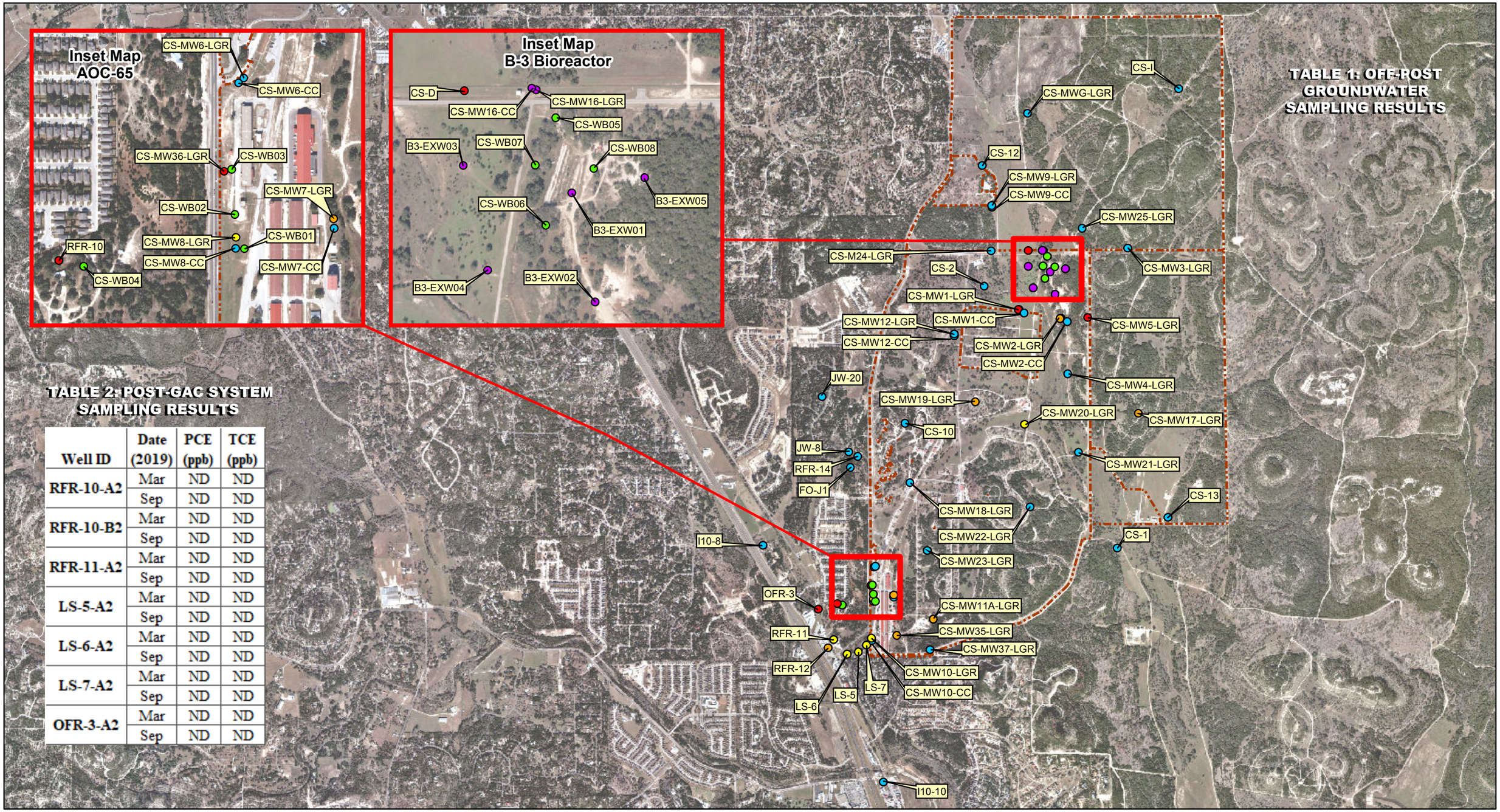

TABLE 2: POST-GAC SYSTEM SAMPLING RESULTS

Well ID	Date (2019)	PCE (ppb)	TCE (ppb)
RFR-10-A2	Mar	ND	ND
	Sep	ND	ND
RFR-10-B2	Mar	ND	ND
	Sep	ND	ND
RFR-11-A2	Mar	ND	ND
	Sep	ND	ND
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	Mar	ND	ND
	Sep	ND	ND

Aerial Photo Date: 2013

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0 0.5 1 2 Miles

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

2019 Sampled On-Post and Off-Post Groundwater Wells
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