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Bandera Road Ground Water Plume Superfund Site: *July 2012 Information Update*

About this Document

At the request of the Bandera Road Community Advisory Group (CAG), this document provides information to Leon Valley residents and workers on the status of the Bandera Road Ground Water Plume (Bandera Road) Superfund site. This information update is the eighth in a series prepared approximately every six months.

Inside this Information Update

- Status of EPA Proposed Site Cleanup Plan
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- Update on the Historical Wells Search Initiative

The Bandera Road CAG includes individuals and organizational representatives from the Leon Valley area. The CAG formed in 2007 to provide input to the U.S. Environmental Protection Agency (EPA) on issues regarding the site's investigation and cleanup. The Bandera Road CAG meets quarterly. Meetings are open to the public.

Site Background

The Bandera Road site includes ground water and soil contaminated with chlorinated solvents, tetrachloroethene (PCE), trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE or DCE), which are commonly referred to as volatile organic compounds (VOCs). PCE is the most frequently detected compound at the site. The area of affected ground water is centered between Poss Road and Grissom Road, southwest of Bandera Road. It extends approximately one mile long (north-south) by one half-mile wide (east-west). The area of most significantly affected ground water is located along Bandera Road between El Verde Road and Huebner Road and between Evers Road and Shady Mist Road. EPA considers two areas along Bandera Road to be sources of contamination: the former location of a dry cleaning facility (Source Area 1) and the area by an active dry cleaning facility (Source Area 2).

Site Update (January 2012 – July 2012)

EPA continues to monitor the two Leon Valley public water supply wells located within one mile of the center of the site. Monitoring detected no VOCs in the public water supply wells in January 2012. EPA also continues to monitor private wells included in its ground water monitoring network.

Upcoming CAG Meetings for 2012

- CAG meetings are planned for the following Thursdays: July 19, 2012; October 25, 2012; and January 17, 2013.
- Meetings begin at 5:30 p.m. at the Leon Valley Conference Center.

- On July 18, 2011, EPA issued a Proposed Plan to guide the site's long-term cleanup. EPA extended the public comment period until October 15, 2011. EPA is currently evaluating comments received during the public comment period.
- Since the release of the Proposed Plan, EPA has approved revised toxicity values associated with PCE, the site's primary contaminant of concern. These changes affect screening values for soil and air.
- EPA's study examining the use of a specialized material to enhance the natural breakdown of contaminants in ground water is underway.
- In May 2012, EPA conducted sampling (including indoor air sampling) at the site. EPA used a portable sampling technology known as a HAPSITE unit to evaluate vapor samples including indoor air samples.
- The historical wells search initiative in collaboration with the Edwards Aquifer Authority and EPA is ongoing.
- The following pages of this information update discuss these activities in more detail.

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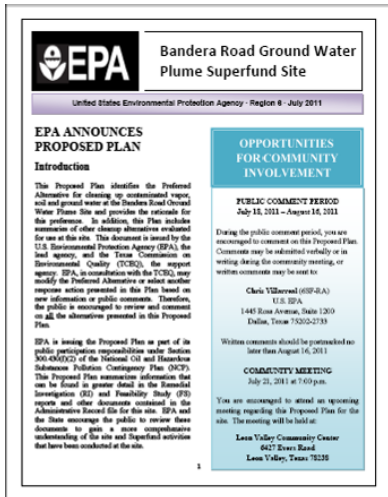
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Bandera Road Ground Water Plume Superfund

Welcome to the Leon Valley Bandera Road Ground Water Plume Superfund Site page. This page is designed to provide information on the Bandera Road Superfund activities of the Bandera Road Community Advisory Group (CAG), The City of Leon Valley's public water supply wells, and the City's participation in the Federal Superfund program. The City of Leon Valley is a rated Superior Water System and takes pride in working with the Federal Superfund program.

The City of Leon Valley recently revised the city website. You can learn more about the site and the CAG and read past information updates here:
http://www.leonvalleytexas.gov/government/public_works/cag.php

Recent and Ongoing EPA Activities



EPA's Proposed Cleanup Plan and Current Status

On July 18, 2011, EPA issued the site's Proposed Plan to gather public input. The Proposed Plan presents EPA's preliminary recommendation for how best to address contamination at the site (i.e., the Preferred Alternative). The Proposed Plan also presents other cleanup alternatives considered and explains why EPA recommends the Preferred Alternative. The Preferred Alternative addresses contaminated vapor, soil, bedrock and ground water. EPA's preferred cleanup approaches include: blocking harmful vapors from entering Building 1 in Source Area 1; removing or reducing concentrations of VOCs (i.e., PCE and TCE) through a process known as soil vapor extraction, or SVE, in surface soil, subsurface soil and underlying bedrock beneath Building 1 in Source Area 1 and contaminated bedrock in Source Area 2; digging up contaminated surface and subsurface soil in Source Area 2 and disposing of the material off site; and treating contaminated ground water by injecting specialized material into the Austin Chalk Aquifer to promote the natural breakdown of chlorinated solvents.

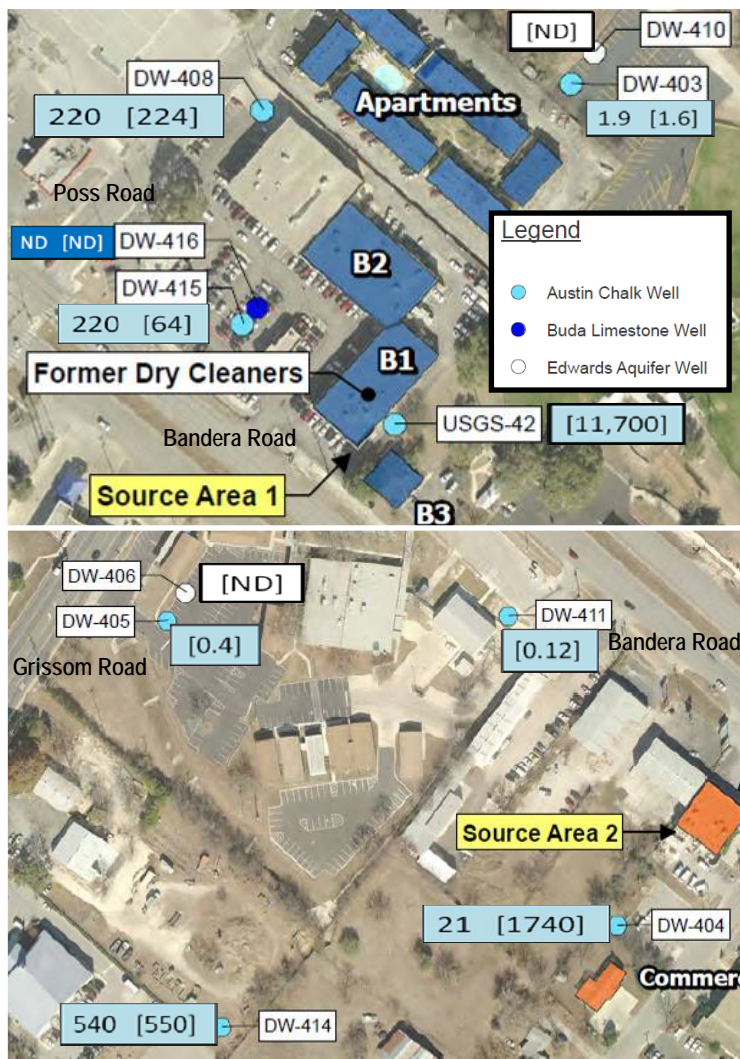
EPA solicited public comments on the Proposed Plan until October 15, 2011. EPA and support agencies (in this case, the Texas Commission on Environmental Quality, or TCEQ) may select a remedy other than the Preferred Alternative based on public comments. EPA is preparing a summary in response to the comments received. Once EPA has considered all comments from TCEQ and the public and updated the Proposed Plan, EPA will select a remedy and document the site's final cleanup plan in the site's Record of Decision (ROD). *Please contact EPA's Remedial Project Manager for copies of the Proposed Plan.*

Continued Monitoring to Ensure Public Safety

EPA continues to collect samples regularly from both public and private wells and analyze them for contaminants. EPA has sampled Leon Valley municipal water supply wells since September 2008. Sampling detected no VOCs in the public water supply wells in January 2012. EPA conducted its most recent sampling effort on May 7, 2012; results will be available in July 2012. Sampling results from some monitoring wells located near source areas included in EPA's ground water monitoring network continue to show concentration levels of PCE and TCE that exceed federal drinking water standards. Figures to the right show sampling results for PCE from January 2012 as well as the highest sampling results EPA has collected from each of the wells included in the network. For example, the concentration of PCE in the sample collected from DW-408 in January was 220 micrograms per liter (µg/L); the highest concentration collected from this well was 224 µg/L. The federal drinking water standard for PCE is 5 µg/L.

Revised EPA Toxicity Values for PCE

Toxicity is the degree to which a substance or mixture of substances can harm humans or animals. On February 10, 2012, EPA revised the cancer and non-cancer toxicity values associated with the site's primary source of the health risk –



The figures above show PCE sampling results collected in January 2012 as well as the historical sampling high [shown in brackets]. ND stands for "non-detect," indicating that PCE was not detected in the sample. EPA did not sample all wells in January; in these instances, only the historical high is shown. (Source: EPA)

PCE (lower for cancer, higher for non-cancer). EPA determined that PCE's ability to cause cancer was significantly less than previously thought (i.e., it is less toxic). However, PCE's ability to cause non-cancer health effects was higher than previously thought (i.e., it is more toxic). Because of these new values, EPA revised the screening levels at which the Agency may choose to take a response action to address PCE contamination. Since PCE's toxicity value is now lower for cancer health effects (for a commercial/industrial worker), EPA raised the site screening level from 2.6 milligrams of PCE per kilogram of soil (mg/kg) to 110 mg/kg for soil and from 2.1 micrograms of PCE per cubic meter of air ($\mu\text{g}/\text{m}^3$) to 47 $\mu\text{g}/\text{m}^3$ for air. At this level, it is estimated that for every 1,000,000 workers that could be exposed to site contaminants, no more than one extra cancer may occur as a result of exposure to PCE. Since PCE's toxicity value for non-cancer health effects is now higher, EPA lowered the screening level from 2,300 mg/kg to 410 mg/kg for soil and from 1,200 $\mu\text{g}/\text{m}^3$ to 175 $\mu\text{g}/\text{m}^3$ for air. At this level, it is estimated that non-cancer health effects for an industrial worker remain below 1, or the "threshold level." EPA is evaluating how these changes may affect actions included in the Proposed Plan. One possibility is a reduction in the amount of contaminated soil previously identified for treatment or excavation. EPA's press release announcing the revised PCE toxicity values and related information are available here: <http://www.epa.gov/IRIS>. The revised PCE toxicity values do not affect the federal drinking water standard for PCE.

EPA's Bioremediation Study

Bioremediation is the use of living organisms to break down contamination. In January 2011, EPA began an on-site bioremediation study. EPA applied a specialized material referred to as 3DME to a Source Area 2 well, DW-404, that added hydrogen to the ground water to increase the population of anaerobic microbes (microbes that do not use oxygen); these microbes naturally degrade contaminants to ethane, ethene and other harmless end products. Results from January 2012 show that conditions for breaking down chlorinated solvents through bioremediation are very good. Methane concentrations in ground water greater than 1 milligram of methane per liter of water (mg/L) are indicative of conditions that will break down chlorinated solvents. Results from January 2012 found methane concentrations greater than 7 mg/L. In well DW-404, PCE concentrations have been reduced over 98 percent from 1,570 $\mu\text{g}/\text{L}$ in January 2011 to 21 $\mu\text{g}/\text{L}$ in January 2012.

Mobile Indoor Air Quality Testing

From May 7 until May 11, 2012, EPA collected indoor air samples from buildings located on site for analysis using a portable sampling technology known as a HAPSITE gas chromatograph/mass spectrometer unit, or HAPSITE unit. With the unit, EPA and the building owner or renter can find out initial results within 20 minutes, instead of first sending the air samples to a lab. EPA also collected and sent traditional air samples to the lab for analysis. The military has used HAPSITE units for many years. In 1998, EPA determined that the unit was an acceptable environmental sampling technology. EPA will use the results to further inform investigation and cleanup options. As with the initial results from the HAPSITE unit, EPA will share laboratory results with property owners and renters.

New Historical Wells Search Initiative

In late 2011, the Edwards Aquifer Authority (EAA) identified well locations from old right-of-way maps and historical photos. EAA then procured a surveying contractor to identify potential well locations and a surface geophysics contractor to search for buried well casings. The geophysics contractor searched for wells at six sites in the contaminated ground water area. Using surface geophysical methods, the contractor found indications of buried wells at the Savings Square Shopping Center and two nearby businesses. The search did not confirm several other expected well locations. As part of next steps, EAA will coordinate with EPA, landowners and utility companies and perform excavations to expose well casings. EAA will discuss well plugging costs with EPA and opportunities for funding. In addition, the Texas Department of Transportation, or TxDOT, completed a records search for information on historical wells in the Grissom Road and Bandera Road rights-of-way. TxDOT's records indicate that three wells were plugged during the expansion of Bandera Road in the early 1970s.



3DME applied to DW-404 in January 2011 as part of EPA's bioremediation study. (Source: EPA)



Ground water samples collected from DW-404 in February 2011. (Source: EPA)



Ground water samples collected from DW-404 in January 2012. (Source: EPA)

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Phases of the Superfund Cleanup Process

1. Preliminary Assessment and Site Inspection (PA/SI)
2. National Priorities List (NPL) Listing
3. Remedial Investigation and Feasibility Study (RI/FS)
4. **Proposed Plan – Record of Decision (ROD)**
5. Remedial Design/Remedial Action
6. Construction Completion (CC)
7. Post-Construction Completion
8. NPL Deletion

Current Status of the Bandera Road Superfund Site

In July 2011, EPA issued the site's Proposed Plan. The Plan describes cleanup approaches that could be used to address the site's contamination and identifies EPA's preferred cleanup approach for the site. EPA collected public comments until October 15, 2011. EPA is preparing a responsiveness summary based upon the comments received. After revising the plan based upon comments, EPA will publish a ROD outlining the site's final cleanup plan.

During the subsequent remedial design phase, EPA will develop a final design to guide the site cleanup work. The remedial design includes a series of documents, drawings, specifications and engineering reports. These materials specify the steps during the remedial action phase to achieve goals outlined in the ROD, clean up the site, and ultimately enable the site's deletion from the NPL.

