



THE FORMER GALENA FOL ENVIRONMENTAL UPDATE



Published to keep the Galena, Alaska community informed of the Air Force's cleanup progress | Oct 2017

Galena Performance Based Remediation Contract Nearing Halfway Mark

In March 2014, the Air Force awarded a Performance Based Remediation, or PBR, contract for the former Galena Forward Operating Location, or FOL, to Parsons Government Services. Parsons along with CH2M are responsible for implementing cleanup remedies at 32 sites through September 2020.

Three and a half years into the contract and the PBR team has made great progress towards cleaning up the sites. The overall approach for site cleanup is to focus on the most contaminated soil, which is a continuing source of contamination to groundwater. Once the source is reduced, remediation of soil and groundwater will occur naturally over time. Cleanup can take as little as a few years or up to several decades. Contamination at Galena is mainly from old spills or leaks of fuel from pipelines and storage tanks or spills of cleaning solvents and degreasers.

The PBR contractor has implemented several remedial systems such as bioventing, soil vapor extraction and air sparging which typically operates over the winter when groundwater is at its lowest. This ensures that the greatest area of soil is treated to remove contamination. Air sparging, or injecting air below the water table, is also a key component in cleaning up groundwater.

A few sites have also included excavation of contaminated soil with treatment at the landfarm or off-site disposal. The addition of treatment amendments to groundwater (gypsum for petroleum contamination and emulsified vegetable oil for chlorinated solvents) for larger sites will accelerate cleanup.

Parsons and CH2M have already closed several sites and the last few systems are scheduled to be installed next summer. Alaska Department of Environmental Conservation, Alaska Department of Transportation & Public Facilities, and others, are working closely with the Air Force and PBR contractor to meet the aggressive cleanup schedule.

Galena PBR by the Numbers

32 sites in the PBR contract

| ACTIONS COMPLETED | REMAINING ACTIONS |
|-------------------------------------------------|--------------------------------------------|
| 5 sites closed | 3 SVE systems |
| 20 remediation systems installed | 3 Excavations |
| 2000 cubic yards of contaminated soil removed | 1 Biovent system |
| 196,000 pounds of treatment amendments injected | 1 Site with treatment amendment injections |

Horizontal Well Air Sparging System Installed

Air Force contractors installed remediation systems at the two largest petroleum contaminated sites this summer and will begin operating this winter, 2017-18. These systems use horizontal wells that were installed just below the groundwater surface over a large area. Air will be injected into the wells to accelerate bioremediation of petroleum contamination in the soil and groundwater. The Air Force selected horizontal wells over vertical wells in order to cover a larger area of contamination.



AF contractors conduct horizontal well drilling at the former Galena FOL. Photo Courtesy: AF Contractor

Overview of Site Remedies

Triangle Area Sites



Legend: Soil Contamination above Cleanup Level and Type of Cleanup

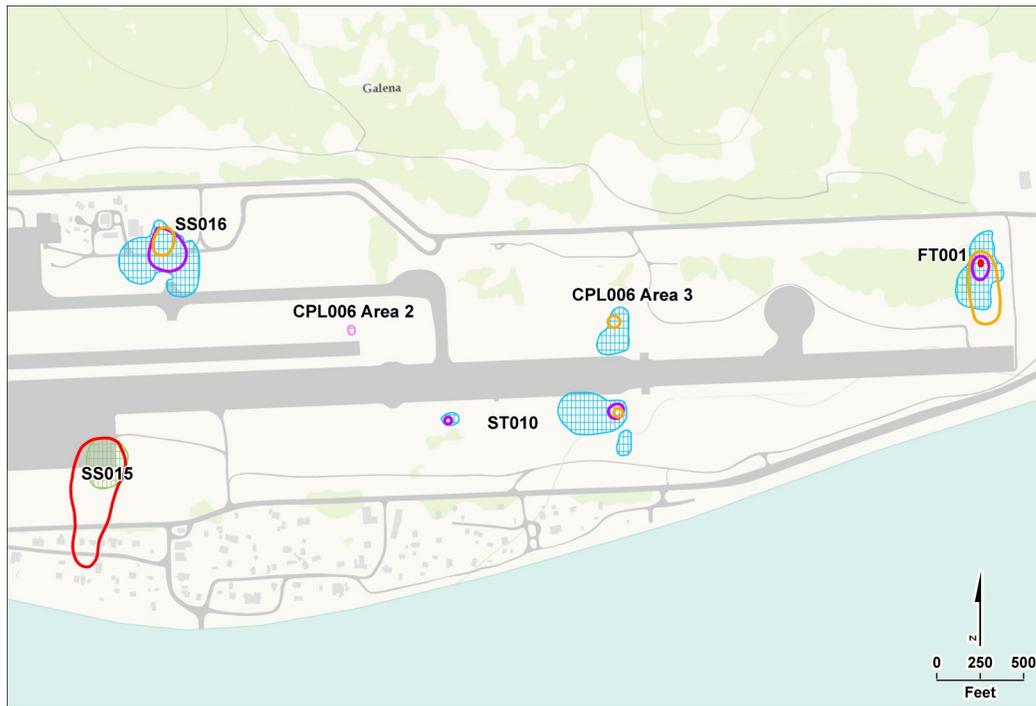
- Bioventing.** Soil was excavated from some of these sites and treatment amendments have been added to groundwater to enhance bioremediation.
- Horizontal Air Sparging.** A small area of ST005 also will have an SVE system.
- Soil Vapor Extraction (SVE).** Soil was excavated from some of these sites and treatment amendments have been added to groundwater to enhance bioremediation.
- Vertical Air Sparging and Soil Vapor Extraction (SVE).** CST011 did not need an SVE system.
- Excavation**

Legend: Groundwater Contamination above Cleanup Level

- Trichloroethene
- Diesel
- Benzene
- Structure
- Airfield or Road

Overview of Site Remedies (cont'd)

Eastern Portion of Airport



Defining Former Galena FOL Cleanup

Soil Vapor Extraction

Soil Vapor Extraction removes volatile fuels such as gasoline or solvents from the ground by creating a vacuum that draws soil vapors into the wells. The low level volatiles are discharged to the air. Emissions are treated if needed prior to discharge.

Injecting Treatment Amendments

At several Galena sites, amendments will be injected into the ground to enhance or accelerate biological activity or transforms fuel and chlorinated solvent contamination to a less hazardous end-product in groundwater. The amendments are pumped into the ground through a temporary borehole. When done, the borehole is grouted up. Injection locations are typically 20 feet apart to ensure that the amendments cover the entire area.

Bioventing/Air Sparging

Bioventing and Air Sparging are types of subsurface aeration systems. Air is injected into the ground either into soil (bioventing) or groundwater (sparging) to add oxygen. Naturally occurring microbes in the ground need the oxygen to degrade petroleum hydrocarbons. Fuels are broken down over time.

Land Use Controls

Land use controls are placed on areas where contamination may present a risk to people. For excavation and construction work this generally involves working with Alaska Department of Environmental Conservation on preparing a work plan to ensure that any contaminated soil or groundwater is handled properly. The installation of drinking water wells is prohibited in areas with groundwater contamination. New buildings must be constructed in areas where vapor intrusion is not a concern or can be mitigated. For a map of the current land use controls at the former Galena FOL, refer to the Galena LUC Map at: http://dec.alaska.gov/spar/csp/galena_land_use_control.htm Instructions on how to use the LUC map are provided on the website.

Air Force Administrative Record, or AR, Website

Remedial Action Work Plans and Cleanup Plans can be found online at: <http://www.afcec.af.mil/Home/BRAC/Galena.aspx> or directly at: <http://afcec.publicadmin-record.us.af.mil/Search.aspx>

To search for Galena documents, select BRAC at the top of the page and then select Galena from the Installation List. There are several different search fields that can be used to find documents. One method is to use the "Subject or Title" field and type in the site ID or type of report. You can also add dates for "Documents After" and/or "Documents Before". If you know the AR number for a document, you can enter that number into the "Full Metadata Search" field for easy access.

In addition to the AR website, the Air Force has placed a DVD of the entire AR in a binder behind the librarian's desk at the library: **The Charles Evans Community Library (Inside Galena High School) Antoski Street, Galena, AK 99741 (907) 656-1205**

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Feedback, comments, and more information

- I would like more information about the environmental cleanup of the former Galena FOL.
- I would like more information about the Restoration Advisory Board for the former Galena FOL.

Please let us know how we are doing. Your comments and opinions are welcomed and assist the Air Force in providing the most accurate and up-to-date information regarding the cleanup for the former Galena FOL. Fill out this form and send it to the address listed below or email information to afcec.pa@us.af.mil.

Name (Mr./Mrs./Ms.) _____

Organization _____

Street Address _____ State _____ Zip _____ Phone _____

Additional Comments _____

Detach and mail this section in a stamped envelope to: AFCEC/Public Affairs, 2261 Hughes Ave., JBSA Lackland, TX 78236-9853