



Environmental Action Newsletter Former Galena Forward Operating Location Galena, Alaska

October 2024

The Air Force continued to make progress with environmental cleanup work during the 2024 field season. Air Force environmental and engineering contractors focused on remediating or reversing/stopping environmental damage to soil and groundwater sites while conducting optimization studies for improved system operation and monitoring.

Technicians also collected soil and groundwater samples as part of a robust monitoring program to track the performance of remedies to ensure the protectiveness of human health and the environment.

Air Force program managers, regulatory partners, and contractors continue to press forward with analyzing sampling data, maintaining systems, preparing reports, and writing contracts for next year's field efforts.



Air Force contractors conducting soil gas sampling for petroleum contaminants at Site ST005 Area C.

Galena by the Numbers

- 18** cleanup sites
- 13** sites closed
- 24** remediation systems installed
- 11** remediation systems shut down
- 13** remediation systems still operating
- 177** monitoring wells sampled over the past two years

Groundwater Cleanup

Monitoring of groundwater remedies continued in 2024. Remedies implemented at Galena include vertical and horizontal well air sparge systems, which involves injecting air or oxygen into the ground to remove contaminants, and injection of amendments into the groundwater. Both remedies are designed to stimulate biodegradation of contaminants.

The injection remedies added 310,000 pounds of treatment amendment to the groundwater (gypsum for petroleum contamination and emulsified vegetable oil for chlorinated solvents) to accelerate cleanup by enhancing the conditions for organisms to degrade contaminants in larger sites. Injection of additional amendments is planned for four other sites.

The effectiveness of the groundwater remedies is evaluated annually through groundwater sampling done in August and September. One hundred and seventy-seven (177) monitoring wells were sampled between 2023 and 2024.

At most sites, concentrations of contaminants are decreasing—with levels of many falling below cleanup goals.



Groundwater remedy at Site SS015 using emulsified vegetable oil injection to biodegrade chlorinated solvents.

Soil Cleanup

Progress continues to be made with the soil cleanup at Galena. Remedies implemented include soil vapor extraction (a process that removes compounds that can evaporate into air from soil above the water table), bioventing (uses oxygen to stimulate the natural process of microorganisms like bacteria to breakdown organic matter into nutrients for other organisms to use), in situ chemical oxidation (uses chemical oxidants to reduce contaminants), and excavation with landfarming.



Air Force representatives inspecting the landfarm site in July 2024.

The air sparge systems also treat impacted soil. These soil remedies were implemented between 2015 and 2019, and evaluated for effectiveness through Remedial Process Optimization (RPO) projects. Soil sampling was performed between 2021 and 2023 as part of these RPO projects.

Concentrations of contaminants at most sites are decreasing with levels falling below cleanup goals. Based on the RPO results, remediation systems at six sites were shut down between 2021 and 2023 because the systems had successfully removed the majority of contaminants.

Remedial Systems in Operation

Bioventing, soil vapor extraction (SVE), and air sparging systems have been operating over the winter when the groundwater elevation is at its lowest, which allows for optimal soil conditions to remove contaminants.

General Questions

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Air Force Administrative Record (AR) Website

Remedial Action Work Plans and Cleanup Plans can be found online at: <https://ar.cce.af.mil/>
Select BRAC at the top of the page and select Galena FOL from the Installation List.

One SVE system has also been operated during the summer months. Eleven of the remedial systems completed cleanup at their sites and treatment has been discontinued. The remaining systems will operate until the cleanup goals are met.

PFAS Remedial Investigation Update

Investigations for Per- and Polyfluoroalkyl Substances (PFAS) began in 2022 and continued through 2024. Sampling activities include:

- 102 surface soil samples
- 270 subsurface samples
- 25 sediment samples
- 10 surface samples
- 10 storm water samples
- 10 surface water samples
- 14 samples of biota including insects and voles



Installing monitoring well for PFAS investigation using sonic drill rig.

In addition, public and private wells have been sampled. Remedial investigation reports and risk assessments are being prepared. The findings will be used to guide future Air Force actions.

Learn more about the Air Force's response to PFAS at: <https://www.afcec.af.mil/What-We-Do/Environment/Per-and-Polyfluoroalkyl-Substances/>