Final Meeting Minutes
Restoration Advisory Board (RAB) Meeting
Former Galena Forward Operating Location (FOL), Alaska
Galena, Alaska
21 April 2025

Time/Place: Loudon Tribal Council Offices, Galena, Alaska at 1:00 pm AKT and virtual Teams meeting.

Attendees: Twenty-one (21) people attended the RAB meeting including in-person and virtual attendees, with representatives from the Air Force Civil Engineer Center (AFCEC), the Galena RAB, Alaska Department of Environmental Conservation (ADEC), Alaska Department of Transportation and Public Facilities (ADOT&PF), the City of Galena, community members, and Air Force remediation contractors in attendance. A copy of the sign in sheet and the Teams attendance list are included as **Attachment 1**.

Introduction:

Christiana Hewitt introduced herself and welcomed everyone to the meeting. All participants then introduced themselves.

Presentation

Remedial Process Optimization (RPO) Evaluation Contracts

Brian Blicker of Parsons gave a presentation (**Attachment 2**) with an update on the RPO contracts. The RPO contracts that are performed by EA/Parsons and CH2M (Jacobs) are ending in 2025. Brian explained that the RPO contracts were follow-on contracts to the Performance Based Remediation contracts under which remedies were implemented. He outlined the overall objectives of the RPO projects, which were to monitor the progress of remedies, optimize operating systems to accelerate cleanup, and evaluate the effectiveness of these systems [Slide 2].

Brian provided a summary of some of the RPO activities, which included supplemental evaluations of arsenic and manganese levels in groundwater and groundwater sampling and analytical methods for diesel range organics. He also explained that performance monitoring data were collected under the RPO to evaluate if remedies are working as designed and that the RPO included supplemental soil and groundwater sampling to identify areas needing additional treatment. Brian also explained that the ongoing second Five-Year Review is being completed under the RPO projects [Slide 3].

Brian highlighted the progress made under the RPO, noting that six remediation systems had reached their objectives and the sites have transitioned to groundwater monitoring for the remaining cleanup while groundwater monitoring continues at these sites. Since 2015, 13 of 32 environmental sites have been closed and 19 sites remaining open. He emphasized that while sites with small groundwater plumes were closed in the early years, the remaining sites are challenging to remediate but are progressing towards closure [Slide 4]. Brian presented figures showing open and closed sites [Slide 5] and ongoing remedies [Slide 6].

Brian presented three examples of cleanup progress including Site SS015, where the remedies of emulsified vegetable oil (EVO) injections and SVE implemented in summer 2018 reduced the TCE plume from 750 feet to less than 100 feet in length [Slide 7]. Follow up injections have been recommended for a small area to address the residual TCE. At Site FT001 the soil cover

and bioventing remedies implemented in 2018 have reduced the plume from approximately 800 feet to 500 feet in length [Slide 8]. At SS006, where EVO and SVE remedies implemented in 2018, the TCE plume has decreased from 5 acres to approximately 2 acres [Slide 9]. Brian explained that follow-up injections and continued SVE are recommended at this site.

Win Westervelt discussed the cleanup status of sites CST011 (former Combat Alert Cell), CST014 (Dining Hall), and TU001 (former Power Plant), where all petroleum compounds in groundwater are below ADEC cleanup levels, except for diesel-range organics that become more soluble as they degrade [Slide 10]. At Site SS005 (former Wilderness Hall), all groundwater contaminants have been remediated with the exception of low levels of 1,2-dichloroethane (1,2-DCA), an additive that was historically added to leaded gasoline. The most recent 1,2-DCA concentration measured was 4.5 µg/L, above the cleanup level of 1.7 µg/L [Slide 11]. The 1,2-DCA is expected to naturally attenuate over time.

Win highlighted the progress at site ST005 Area C, where soil sample results in 2023 indicated a 90% reduction in contaminant levels since the soil vapor extraction (SVE) system began operating in 2018. Additionally, at Sites CG001 (Million Gallon Hill) and Southern ST005 (POL Tank Farm), the horizontal well air sparging treatment systems installed in 2017 continue to show decreasing benzene and naphthalene concentrations over time [Slide 12].

Brian outlined the next steps for the sites included under the RPO contracts, which include continuing remedial systems operation and monitoring as well as groundwater monitoring at all open sites until site closure requirements are met. These activities are being performed under a new Remedial Action – Operation (RA-O) contract that was discussed later in the RAB meeting [Slide 13].

Brian discussed the second Five-Year Review, which evaluates whether selected remedies are operating as designed and remain protective of human health and the environment. This review also assesses the impact of changes to cleanup levels and toxicity values, the status of remediation systems, and the effectiveness of institutional controls. The report has been drafted and will be submitted to the Alaska Department of Environmental Conservation (ADEC) [Slide 14].

Public participation is welcomed throughout the review process, with contact information provided for Christiana Hewitt and the Air Force Installations and Mission Support Center Public Affairs office [Slide 15]. Brian emphasized the importance of communications, noting that the Air Force maintains an Administrative Record accessible online [Slide 16]. The presentation concluded with an invitation for questions and provided contact details for the Air Force Installation and Mission Support Command (AFIMSC) Public Affairs office [Slide 17].

Questions and Answers:

Shanda Huntington (Galena City Manager) asked for clarification on the air quality monitoring status and if the community could receive a copy of the TCE air quality monitoring results. Brian explained that a report is prepared each year that summarizes the air emissions that will be available on the Administrative Record. The emissions are also summarized in the annual Performance Monitoring Reports. A question was asked about how the allowable TCE air concentrations are determined. Brian and Ed Heyse explained that, to be conservative, the most conservative indoor air quality standard was used to model allowable emission rates. ADEC approved of the method used to establish safe emission levels. Following system startup, a robust air monitoring program was completed over a period of a year that included sampling at four locations around the SS006 SVE system. This sampling confirmed that the air concentrations did not exceed the target standard.

A question was asked about how long into the future the FYRs will be conducted. Christiana explained that FYRs are conducted as long as there are still contaminants above levels that don't allow for unrestricted land use and unrestricted exposure.

Presentation

Remedial Investigation (RI) for Per- and Poly-Fluoroalkyl Substance (PFAS) Compounds at the Former Galena Forward Operating Location, Alaska

Brian Blicker of Parsons presented an Air Force project for a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation (RI) for two Air Force sites at the Former Galena FOL (**Attachment 3**). He began by explaining what PFAS compounds are and their widespread use since the 1940s in products such as nonstick cookware, food wrappers, stain-resistant fabrics, personal care products, and Aqueous Film Forming Foam (AFFF) used by the Air Force since the early 1970s to fight fires [Slide 2].

Brian detailed how AFFF was used at Galena, identifying potential release areas including the fire-fighter training area at the east end of the runway, a crash site in 2003, storage and handling at fire stations, a fire suppression system in the Vehicle Maintenance Facility, and runoff discharged to the sewage treatment system [Slide 3]. He presented a figure showing the AFFF release areas investigated under the PFAS RI [Slide 4]. He briefly explained the CERCLA process and explained that the subject AFFF Release Areas are in the RI stage (Slide 5). The objective of the RI is to determine the nature and extent of PFAS contamination and include baseline ecological and human health risk assessments [Slide 6].

Brian explained that the PFAS screening levels (SLs) are used in the RI to help determine when the extent of contamination has been adequately delineated. He noted that SLs continue to change as new information is learned about PFAS. The EPA November 2023 Regional Screening Levels (RSLs) are the SLs used to delineate the extent of contamination in the RI and risk assessment reports [Slide 7] because they were the DoD accepted RSLs at the time the report was prepared. He mentioned that on April 10, 2024, the EPA announced the final National Primary Drinking Water Regulation (NPDWR) for six PFAS compounds, establishing Maximum Contaminant Levels (MCLs) and a Hazard Index MCL for PFAS mixtures. The groundwater SLs used in the RI and RA are consistent with these EPA MCLs [Slide 8].

Brian compared the SLs used in the RI to the current DoD SLs, presenting a table that showed the analytes and their respective residential soil and tap water/groundwater SLs levels [Slide 9]. He explained that most SLs used in the RI on consistent with the currently accepted DoD SLs with two notable exceptions - the current soil SLs for perfluorooctanoic acid (PFOA) and perfluoro sulfonic acid (PFOS) are several orders of magnitude lower than the RI SLs. Also, DoD has accepted a SL for a new PFAS (PFDA) that did not have a SL when the RI data evaluation began.

He discussed the delineation of PFOS in surface soil at Site FT001, noting that it was delineated to the north, south, and east based on the SLs used in the RI [Slide 10], He explained that if the current DoD accepted SLs were applied, the extent of PFOS in surface soil would not be as well delineated. Next Brian presented the extent of PFOS in groundwater which is delineated to the east and west of FT001 but PFOS is detected farther to the west near the site of the 2003 civilian airplane crash [Slide 11].

At Site CG109, Brian explained that PFOS in soil near the location an AFFF tank was stored north the Vehicle Maintenance Facility is small and well defined to the RI SLs. He mentioned that surface soil delineation showed evidence of transport along drainages and was not fully

delineated in some areas. A PFAS-contaminated soil hot spot was discovered during sampling in 2024 to better delineate PFAS north of the former Fire Station [Slide 12].

Next Brian presented graphics showing the extent of PFOS in shallow groundwater (<45 feet below ground surface). In addition to high concentrations near the AFFF release areas, there were slight exceedances of PFOS RSL in the northern part of the "Triangle", and exceedances in the airfield east of the known release areas. PFOS was also very high in the western end of the airfield and is not delineated to the west [Slide 13]. In deep groundwater (>70 feet below ground surface) concentrations are less and PFOS is delineated to the north [Slide 14].

Brian also discussed the delineation of PFOS in surface soil and sediment along the length of the wetland in Area 9, with improved delineation to the south and southwest of the outfall from 2024 samples [Slide 15]. The extent of PFAS is delineated along the length of the slough.

Brian outlined future actions for Site FT001 which includes collecting additional surface soil samples to define PFAS to current DoD accepted RSLs, installing deep groundwater wells downgradient of the source area, conducting groundwater grab sample investigations to better delineate PFAS in the airfield, investigating potential AFFF releases near the Civilian Aircraft Crash Site, and conducting ambient PFAS sampling. After performing these data gaps investigations, feasibility studies will be completed to evaluate potential cleanup approaches [Slide 16].

For Site CG109, he explained futures actions may include continued sampling of public and private water supply wells, sampling soil borings to delineate PFAS to current RSLs, conducting groundwater grab sample investigations to better delineate PFAS within and west of the airfield, and conducting ambient PFAS sampling. After these data gaps investigations are performed, feasibility studies will be completed to evaluate potential cleanup approaches [Slide 17].

Brian provided an update on PFAS reports, noting that the Site FT001 RI Report (2022 data) has been approved by ADEC and the Draft Site FT001 RI Addendum (all data) is in Air Force review. The Site CG109 RI Report (2022-2024 data) is being prepared. Baseline Human Health and Screening Level Ecological Risk Assessments for both sites are also in progress [Slide 18]. He concluded with information on communications, stating that the Air Force maintains an Administrative Record accessible online and provided contact details for the Air Force Installation and Mission Support Command (AFIMSC) Public Affairs office [Slide 19]. The presentation ended with an invitation for questions.

Questions and Answers:

Shanda Huntington (Galena City Manager) asked about the testing of private drinking wells and what was being done about ones that have had PFAS detected. Christiana explained that the Air Force will be providing the impacted homes with alternative sources of water or treating the existing water source.

A question was asked about the potential AFFF released from putting out fires at the school and a home residence in New Town and whether or not those areas had been tested. Brian responded that he did not think that these were part of the earlier Preliminary Assessment and Site Inspection. Shanda Huntington asked if there had been any sampling in Old Town Galena for PFAS. Brian stated no soil samples were collected but some groundwater monitoring wells located in Old Town have been sampled. He explained that the RI focused on specific AFFF

release areas (Slides 3 and 4) and that soil sampling started near the AFFF release areas RI and step-out soil samples were collected as needed.

Tim Bodony (RAB Co-Chair) discussed his experience using AFFF on a few house fires while on the Fire Department. He said the AFFF mixture was more dilute than used for fuel fires.

A question was asked about how many PFAS compounds are being analyzed and reported. Brian discussed the testing currently includes 40 compounds and that the PFAS known to be associated with AFFF are included in this list. Some select samples were analyzed for pre-cursor compounds that might break down to other PFAS (e.g., PFOS or PFOA) that are more hazardous to health. Tim recalled that AL Weilbacher (previous AFCEC Base Environmental Coordinator) had said that some sampling was performed at these locations and there was no groundwater contamination detected.

Amy Klein (USFWS) asked if the Air Force planned on further investigation to delineate PFAS in the RAPCON Yard. Christiana Hewitt replied that AFCEC is working on a contract action for further investigation but the work may not be completed in 2025.

Presentation

CS001 Remedy/RPO and RAO/Landfarm Operation

Monte Garroutte presented a summary of the RPO and Site CS001 Remedy Implementation at the Former Galena FOL, Alaska. The presentation covered the scope and schedule of contracts FA8903-24-C-0030 and FA8903-24-C-0031, which include Remedial Action-Operations (RA-O) and Landfarm Operations [Slide 1].

Monte outlined the planning documents involved in the RPO and Site CS001 Remedy Implementation, including the Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP), the CS001 Remedial Design/Remedial Action Work Plan, and the Hot Spot Excavation Work Plan for sites CST011, SS016, and SS018. He detailed the mobilizations scheduled for 2025, which include PFAS pre-sampling at hot spot excavations in June, CS001 remedy implementation in July, and hot spot excavations in August. The CS001 RA-Operations are planned from October 2025 to October 2026. Reporting documents will include the PFAS Pre-Sampling Report, CS001 Remedial Action Completion Report, Hot Spot Excavation Report, and CS001 Annual O&M Report [Slide 3].

Monte provided background information on Site CS001, noting that Tank 37, a former underground storage tank with a 1-million-gallon capacity, was located on Million Gallon Hill. In 1997, a biocell was constructed in Tank 37 using contaminated soil from Site ST009 and various other sites. The bioventing system operated from June to October in 1998 and 1999 [Slide 5]. He discussed the 2017 Interim Remedy Evaluation, which involved inspecting the tank cover and sampling tank soil and water. The evaluation found that POL constituents and pesticide 4,4-DDD exceeded cleanup levels in soil and groundwater [Slide 6].

Monte described the remedial approach for Site CS001, which was selected through a Feasibility Study in 2019, a Proposed Plan in 2019, and a Record of Decision in 2020. The approach includes removing and treating tank water anaerobically, treating the upper ~16 feet of POL-contaminated soil with bioventing, replacing the cover, establishing land use controls, and ongoing operations and maintenance [Slide 7].

He detailed the hot-spot excavations planned for sites CST011, SS016, and SS018, which involve PFAS pre-sampling and analyzing for PFAS Method 1633 across the POL-contaminated interval. Reporting on the 2025 excavation will be sent out once results are received [Slide 8].

Specific excavation activities include removing concrete and excavating POL-contaminated soil at CST011, SS016, and SS018, with concrete characterized for disposal [Slide 9].

Monte discussed the RA-O and Landfarm Operations under contract FA8903-24-C-0031, which include upcoming planning documents such as the UFP-QAPP, Landfarm O&M Work Plan, and Annual RA-O Work Plan. Mobilizations include bioventing and SVE operations from October through April, annual groundwater sampling events, and performance monitoring in April 2025. Landfarm tilling is scheduled for summer 2025, with reporting documents including the Annual O&M Report, Annual Emissions Report, and Landfarm Operations Report [Slide 11].

He outlined the RA-O monitoring activities for FY2025, which began in December 2024, covering sites such as CPL006, SS006/SS019, SS017N/S, SS015, SS022, ST005, ST009, and ST010. These activities involve bioventing, SVE, and vapor intrusion mitigation systems [Slide 12]. Monthly O&M activities include measuring flows, vacuum/pressure, temperatures, and VOC concentrations, sampling SVE and VIMS effluent for VOCs, and monitoring ambient air [Slide 13].

Monte described the RA-O spring soil vapor sampling, which involves measuring oxygen levels in soil vapor, performing in situ respiration tests, and sampling soil vapor approximately one week after shutdown for both bioventing and SVE systems. Results are compared to past years to track progress [Slide 14]. Landfarm operations include annual uncovering and winterization events, with the Brown Bear Tiller mobilized to Galena for tilling five times per week. Spring and fall sampling events will cover surface water, groundwater, and ISM decision units [Slide15].

Questions and Answers:

Tim Bodony (RAB Co-Chair) asked if it is possible that tank has overfilled. Monte explained it is a possibility and that the tank would be inspected as it is uncovered for evidence of it overflowing.

Karen Bodony (USFWS) asked if it is possible the pesticides in the soil placed at the bottom of the tank have wicked up into shallower soil. Brian explained that the 2017 soil samples showed the highest pesticide concentrations remain in the bottom 2 feet of the tank and the levels in the shallower soil were below ADEC cleanup levels.

Tim Bodony (RAB Co-Chair) asked when the periods of performance for these new contracts end. Christiana Hewitt stated they end in 2027. Tim also asked if there were plans for hiring local labor for the landfarm. Monte explained that a local contractor would be used to uncover the landfarm in the spring and move soil as necessary. Brice is also looking for a local operator to run the Brown Bear tiller during the tilling season.

Alaska Department of Environmental Conservation Remarks

Tim Sharp – Alaska Department of Environmental Conservation Contaminated Sites Program (ADEC CSP)

Tim acknowledged the communities' concerns with possible health effects from exposure to PFAS and mentioned the Department of Health's continued interaction with the community. He said that Andrew Cyr and Alison Natcher of the Alaska Department of Health could address questions regarding health concerns. Tim also mentioned the ADOH Cancer Concerns Workgroup led by Dr. Rosa Avila as another resource.

RAB Adjournment Discussion

Tim Bodony (RAB Co-Chair) expressed his opinion that it would be best to transition from the RAB to something focused health concerns rather than environmental restoration. After 16

years on the RAB he plans on resigning and offered to provide his notes since 2009 in searchable digital format. Tirzah Bryant (Louden Tribal Council and RAB member) said she along with Brooke Sanderson wanted to continue to be involved with the RAB as representatives of the Louden Tribal Council. It was agreed that the RAB would continue with the next meeting in the fall. Christiana Hewitt said she would look into the process for selecting a new RAB Co-Chair.

Miscellaneous

Karen Bodony (USFWS) brought up the issue of invasive non-native plant species including Siberian Snow Pea and a sweet clover, that the Air Force planted that are now spreading. She asked if there were any programs or funds available from the Air Force to help address these invasive plants. Christiana Hewitt said she was not aware of any but would investigate it further. Tim Sharp stated it may be helpful to contact the Fairbanks Soil and Water Conservation District.

Closing Remarks

Christiana thanked the Galena community for attending and contributing to the meeting, and to contact her or the Air Force Public Affairs if they have any questions. Christiana asked if there were any additional questions (there were none) and closed the RAB meeting.

Attachments:

1. Sign In Sheet
2. Presentation: Remedial Process Optimization (RPO) at the Former Galena Forward Operating Location (FOL), Alaska
3. Presentation: Remedial Investigation (RI) for PFAS Compounds at the Former Galena Forward Operating Location, Alaska
4. Presentation: CS001/RPO and RAO/Landfarm Operation at the Former Galena Forward Operating Location, Alaska

Attachment 1

Sign In Sheet

U.S. Air Force

Restoration Advisory Board (RAB) Meeting
Sign In Sheet

April 21, 2025

Name	Organization	Email Address
TIM BODONY	RAB Community Co-Chair	tim@thecutbank.net
Tim Sharp	State of Ak Contaminated Sites	tim.sharp@alaska.gov
FRANK KIRK	ST. OF AK - D.O.T.	FRANK.KIRK@ALASKA.GOV
Larry Hausman	Galena	larry_hausman@hotmail.com
Joe Thomas	Booz Allen Hamilton	thomas_joseph@bah.com
Shanda Huntington	City of Galena	shuntington@ci.galena.ak.us
Kavin Bodony	Galena Resident	kavin@thecutbank.net

Attachment 2

Remedial Process Optimization (RPO) at the Former Galena Forward Operating Location (FOL), Alaska

Air Force Installation & Mission Support Center

Remedial Process Optimization (RPO) at the Former Galena Forward Operating Location (FOL), Alaska

Restoration Advisory Board (RAB) Meeting
21 April 2025

Former Galena FOL
Remedial Process Optimization

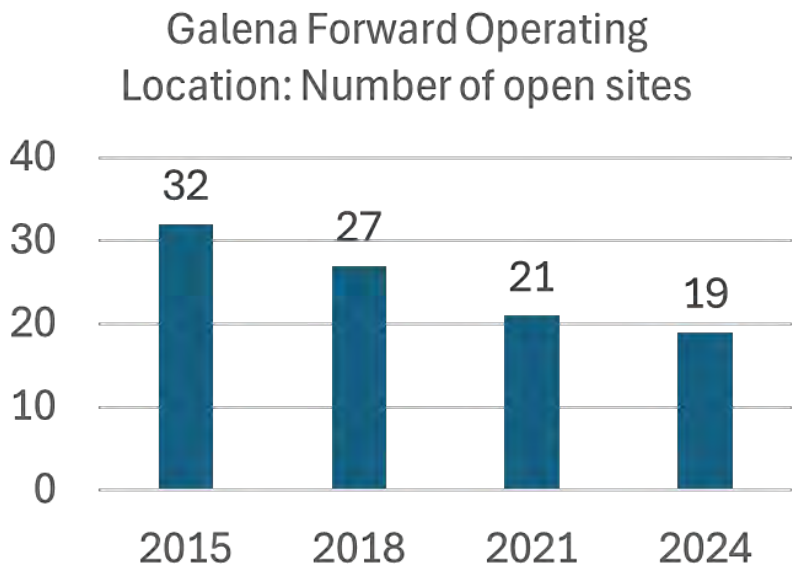
- RPO Projects end in summer 2025
  - EA/Parsons: 9/17/2020 to 7/31/2025
  - CH2M (Jacobs): 9/4/2020 to 6/20/2025
- Overall objectives of a Remedial Process Optimization were to:
  - Evaluate operating remedies regularly
  - Monitor progress of remedies
  - Optimize systems to accelerate cleanup

Remedial Process Optimization Activities Summary

- **Supplemental evaluation of:**
  - **Background arsenic and manganese levels in groundwater**
  - **Evaluation of groundwater sampling and analytical methods for diesel range organics**
- **Performance monitoring data evaluated to see if remedies are working as designed**
  - **Annual evaluation of groundwater data**
  - **Supplemental soil sampling to evaluate progress of remediation**
  - **Supplemental soil and grab groundwater sampling to identify areas that may need additional treatment**
- **Supplemental Site Characterization of Site SS018**
- **Second Five Year Review**

Progress Made Under Remedial Process Optimization

- **Six remediation systems shut down**
  - **Reached end of treatment effectiveness**
  - **Continue to monitor groundwater at these sites**
- **Since 2015 - 13 of 32 environmental sites have been closed and 19 sites remain open**
  - **Sites with small sources and/or small plumes closed in early years**
  - **Remaining open sites are more challenging to remediate but are progressing towards closure**



Site Closure Progress Since 2015

On-Going Remedies

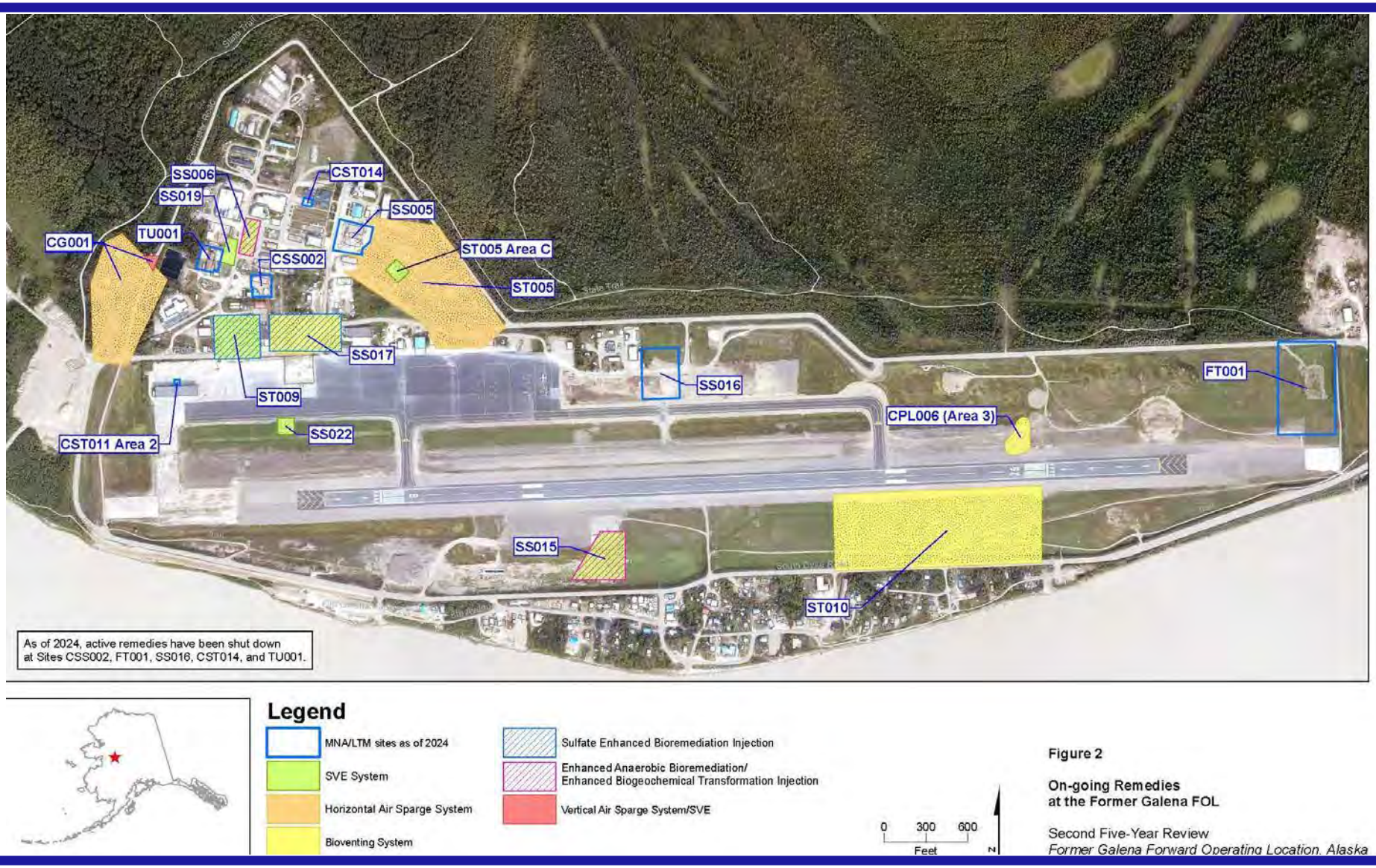


Figure 2

On-going Remedies at the Former Galena FOL

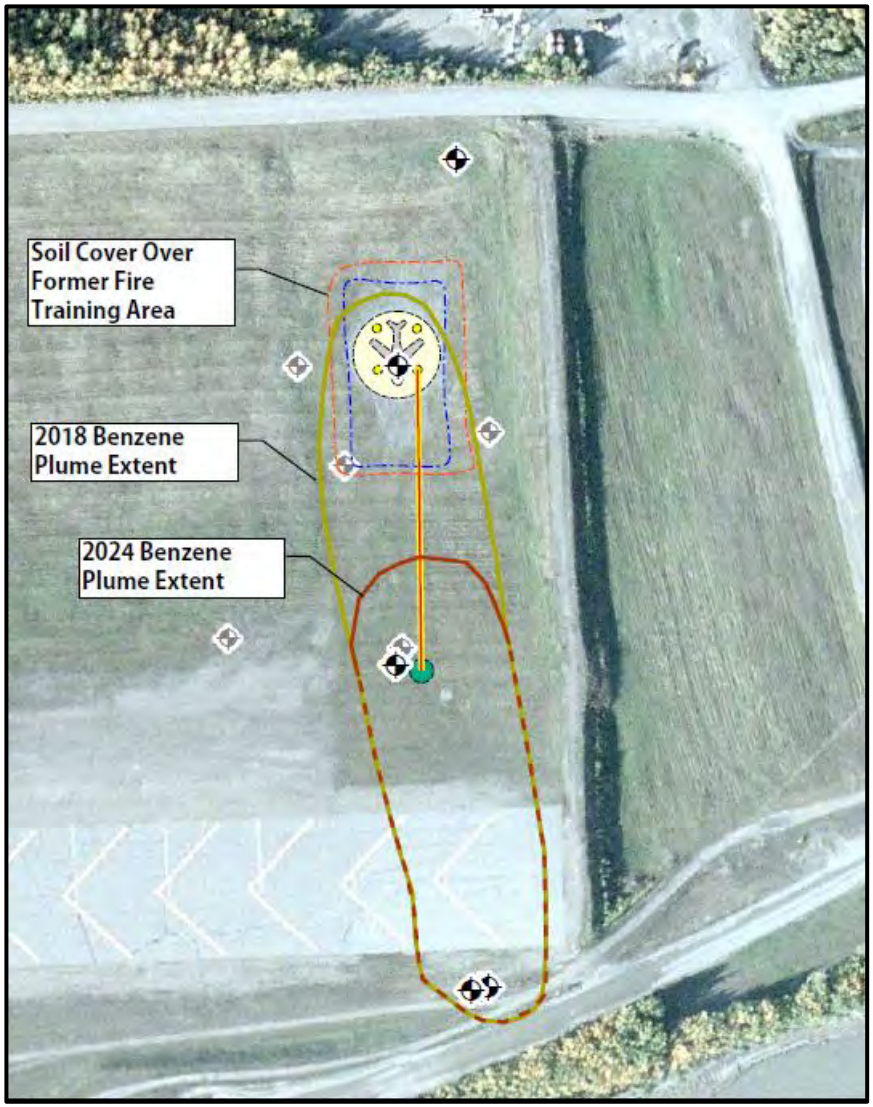
Second Five-Year Review
Former Galena Forward Operating Location, Alaska

RPO Site Cleanup Status

- **SS015 TCE Plume Reduction**
  - **Remedies implemented in summer 2018**
  - **TCE plume has shrunk from 750 feet to <100 feet in length**

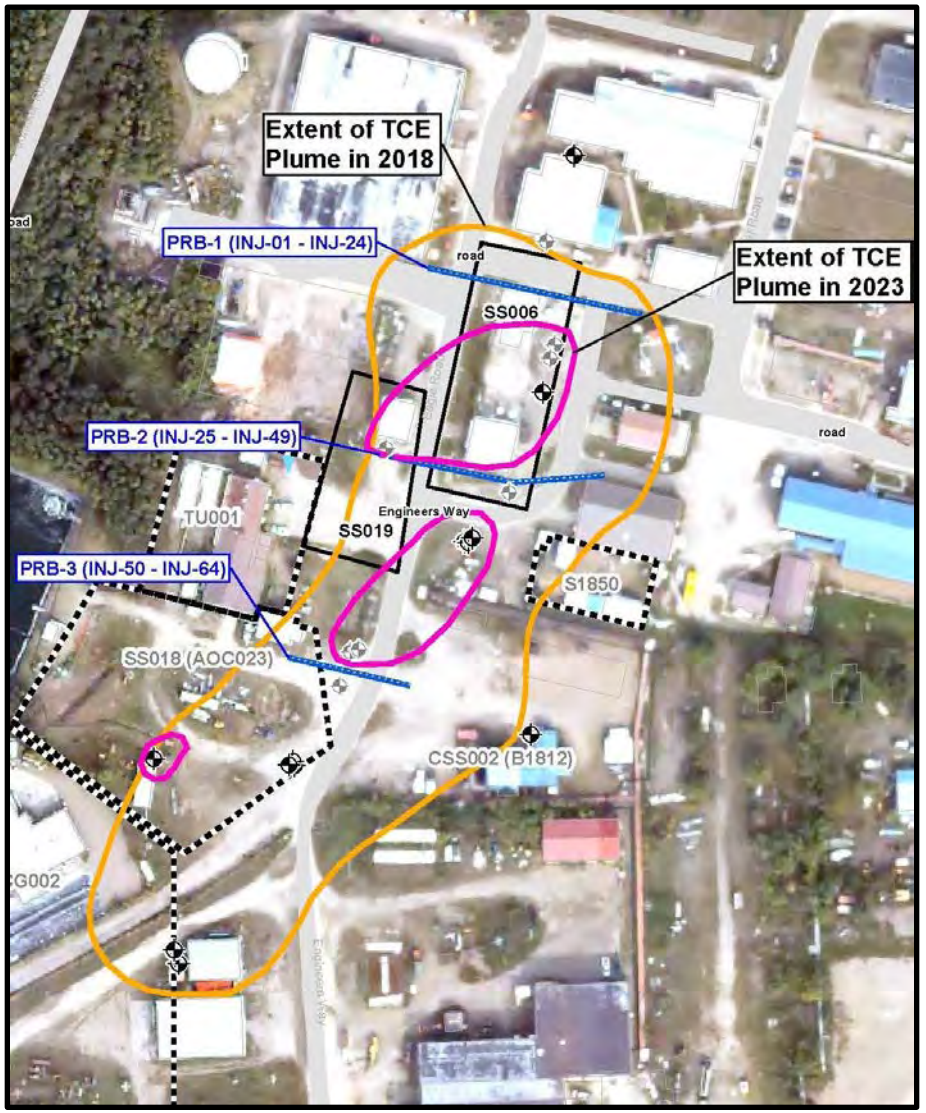
RPO Site Cleanup Status

- **FT001 Plume Reduction**
  - **Soil cover & bioventing remedies implemented in summer 2018**
  - **Plume has shrunk from ~800 feet to ~500 feet in length**



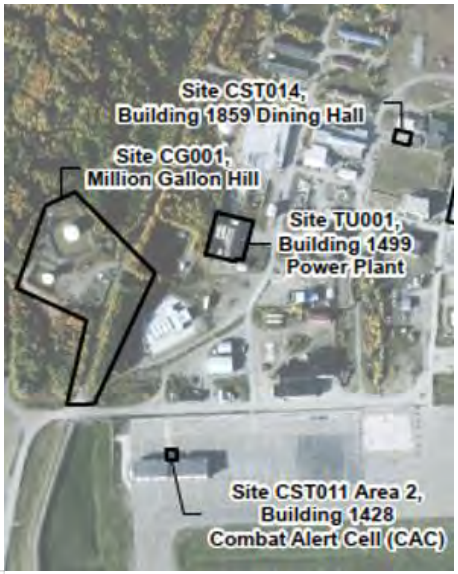
RPO Site Cleanup Status

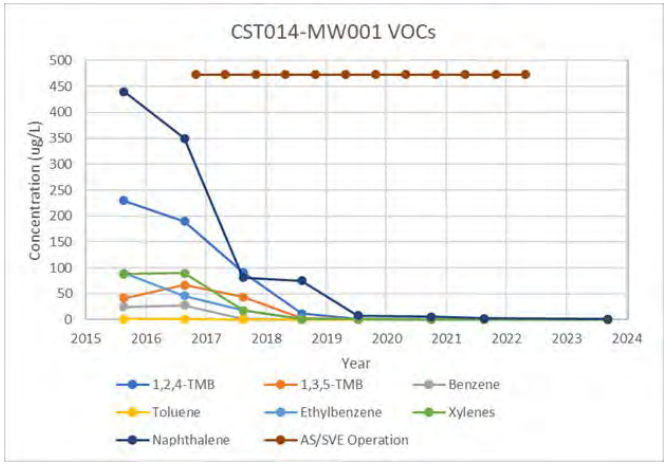
- **SS006 TCE Plume Reduction**
  - **Remedies implemented in 2018**
  - **TCE plume has decreased from 5 acres to ~2 acres**

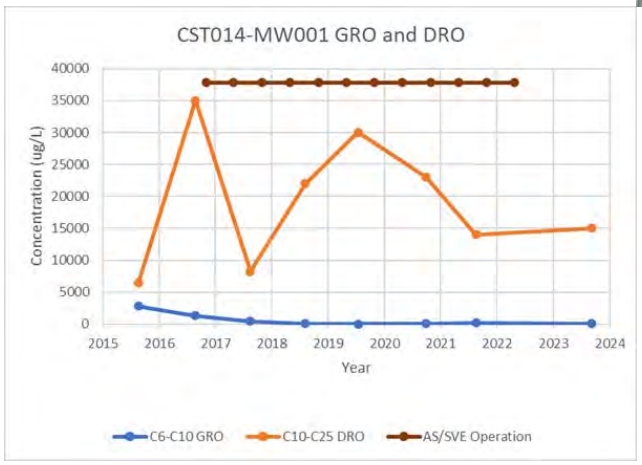


RPO Site Cleanup Status

- **Site CST011 (former Combat Alert Cell)**
- **Site CST014 (Dining Hall)**
- **Site TU001 (Power Plant)**
  - **All petroleum compounds (benzene, toluene, naphthalene, etc.) in the groundwater are below ADEC cleanup levels, with the exception of diesel-range organics that become more soluble as they degrade (become polar compounds).**







RPO Site Cleanup Status

- **Site SS005 (former Wilderness Hall)**
  - **All petroleum compounds in groundwater are below ADEC cleanup levels, with the exception of low levels of 1,2-dichloroethane (1,2-DCA, a "lead scavenger" compound that was historically added to leaded gasoline).**
  - **Most recent 1,2-DCA concentration was 4.5 µg/L in one monitoring well (above the cleanup level of 1.7 µg/L).**

RPO Site Cleanup Status

- **Site ST005 Area C (former fuel storage tanks)**
  - **Soil sample results in 2023 indicated a 90% reduction in contaminant levels since the soil vapor extraction (SVE) system began operating in 2018.**
- **Site CG001 (Million Gallon Hill)**
- **Southern Site ST005 (POL Tank Farm)**
  - **Installed in 2017, horizontal well air sparging treatment of groundwater plumes continues.**
  - **Benzene and naphthalene concentrations have decreased over time in the treatment areas.**

Next Steps

- **Remedial Action Operations (RAO) and monitoring will continue under new contract**
  - **Remedial systems operation and monitoring will continue**
  - **Groundwater monitoring will continue at all open sites until site closure requirements are met**
  - **New contract will be briefed separately**

Five-Year Review

- **Purpose**
  - **Evaluate whether remedies selected to clean up contaminated sites are operating as designed and continue to remain protective of human health and the environment**
    - Assesses impact of changes to cleanup levels and toxicity values, status of remediation systems, and effectiveness of institutional controls
    - Note: Remedial Process Optimization is complimentary process but also makes recommendations to optimize and accelerate cleanup
- **Current Status**
  - **Report has been drafted and will be submitted to the Alaska Department of Environmental Conservation (ADEC)**

Five-Year Review

- **Public participation welcomed throughout the process**
  - **Christiana Hewitt at:**
    - Address: 2261 Hughes Ave, Ste 155 JBSA Lackland, TX 78236-9853
    - Email: christiana.hewitt.1@us.af.mil
  - **General questions/comments may also be referred to the Air Force Installations and Mission Support Center Public Affairs office at:**
    - Address: 2261 Hughes Ave, Ste.155 JBSA Lackland, TX 78236-9853
    - Email: afimsc.pa.workflow@us.af.mil
    - Phone: Toll Free (866) 725-7617

Communications

- **Air Force maintains Administrative Record for Final Documents at:**

  https://ar.cce.af.mil/

Questions?

Air Force Installation and Mission Support Command (AFIMSC) Public Affairs

AFIMSC/Public Affairs
2261 Hughes Ave., Suite 155
JBSA Lackland, TX 78236-9853
Toll Free (866) 725-7617
afimsc.pa.workflow@us.af.mil

Your Success is Our Mission!

Attachment 3

Remedial Investigation (RI) for PFAS Compounds at the Former Galena Forward Operating Location, Alaska

Air Force Installation & Mission Support Center

Remedial Investigation (RI) for PFAS Compounds at the Former Galena Forward Operating Location, Alaska

Restoration Advisory Board (RAB) Meeting
21 April 2025

What are PFAS Compounds?

- **PFAS are fluorinated chemicals (9,000+) used in industry and commercially since the 1940's**
  - **Nonstick cookware**
  - **Some food wrappers**
  - **Stain resistant fabrics, carpet, clothing (e.g., Gore-Tex)**
  - **Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)**
  - **Aqueous Film Forming Foam (AFFF) used by the Air Force beginning in the early 1970s to fight fires**

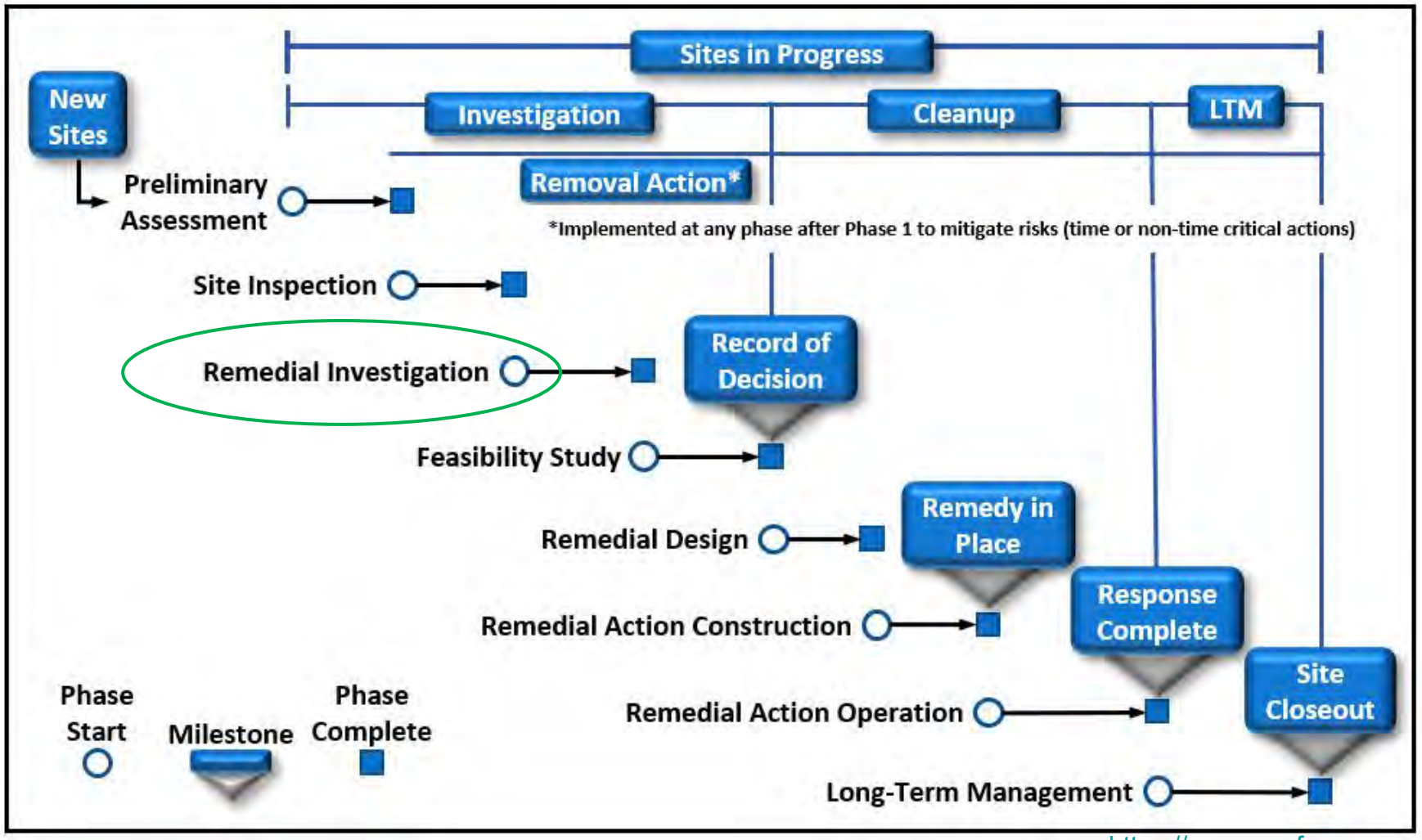
- **Health and environmental impacts of PFAS began to be recognized in 1990's and 2000's**
- **Persistence and mobility of some PFAS, combined with decades of widespread use, resulted in their presence in the environment at trace levels across the globe**

How was AFFF used at Galena?

- Air Force used AFFF for fire-fighting
- Potential release areas identified, including:
  - Fire-fighter training area at east end of the runway
  - AFFF used to fight fire at crash site in 2003
  - AFFF stored at old and new Fire Stations
  - AFFF fire suppression system in Vehicle Maintenance Facility
  - Runoff discharged to sewage treatment system

AFFF Release Areas

PFAS Investigations at Galena CERCLA Process



https://exwc.navfac.navy.mil/

PFAS Investigations at Galena

- **Currently in Remedial Investigation (RI) Phase:**
  - **(1) Determine nature and extent of PFAS**
    - Screening levels (SLs) are used to delineate extent
  - **(2) Following delineation, conduct a baseline ecological and human health risk assessments**
- **Use results to determine if and where cleanup is needed**
- **If cleanup is necessary, conduct Feasibility Study (FS)**

PFAS Screening Levels (SLs)

- Screening Levels are based on regulatory guidance that continues to change as new information is learned about PFAS
- DoD continually evaluates regulatory guidance/limits and sets/updates policy
- The current RI and Risk Assessment (RA) Reports used DoD accepted EPA November 2023 Regional Screening Levels (RSLs) to delineate extent as these were the current RSLs at the time the investigation began

Maximum Contaminant Levels (MCLs)

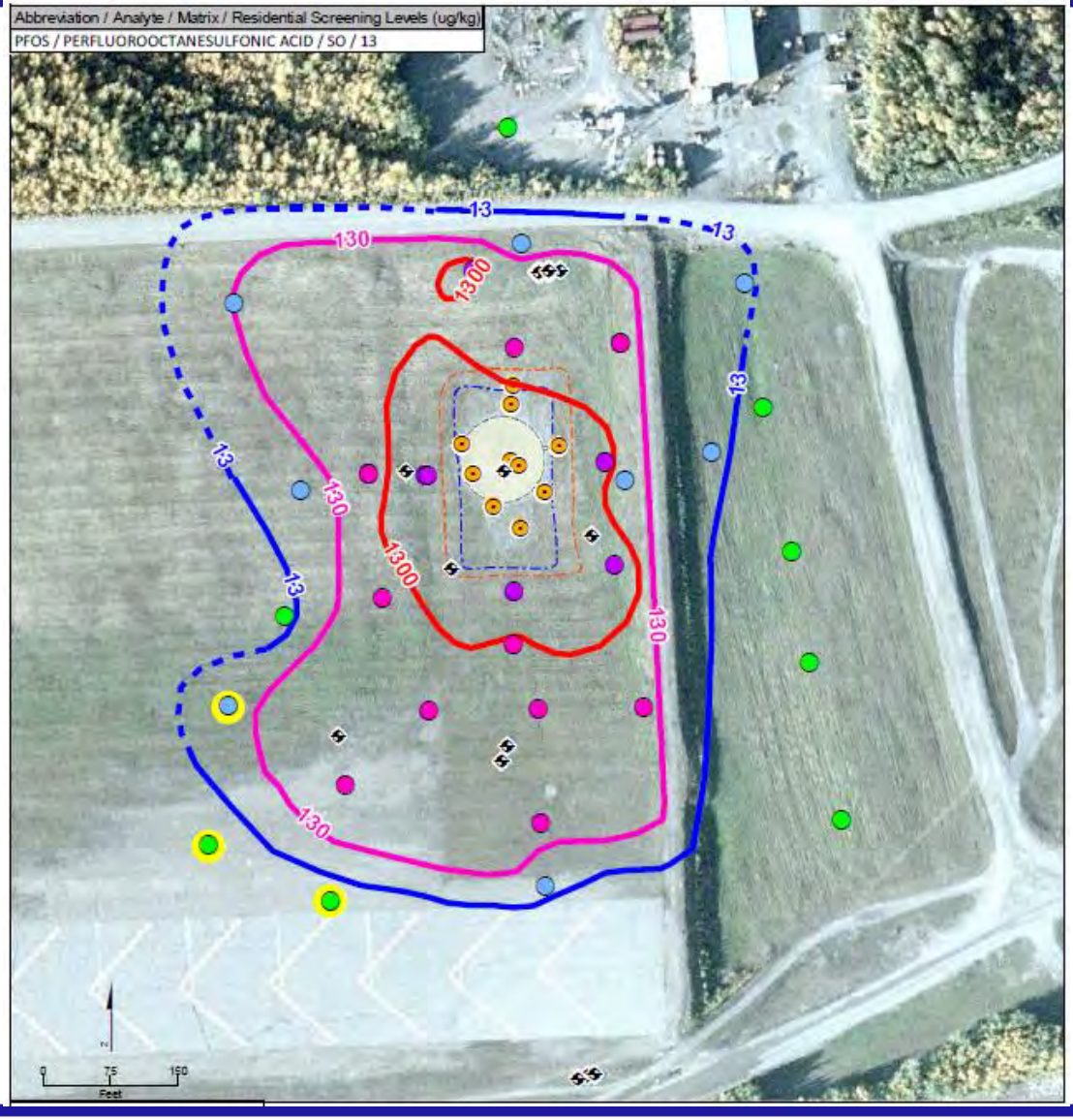
- **10 April 2024: EPA announced final National Primary Drinking Water Regulation (NPDWR) for 6 PFAS**
  - **Established Maximum Contaminant Levels (MCLs) for 6 individual PFAS. MCLs are typically used to determine cleanup levels for a site.**
  - **Established a Hazard Index MCL for PFAS mixtures containing 2 or more of: PFHxS, PFNA, HFPO-DA, and PFBS. A Hazard Index (HI) is used in risk assessments to determine the risk associated with multiple chemicals. The higher the hazard index, the higher the risk associated with the group of chemicals**
  - **The Groundwater SLs used in the RI and RA are consistent with the EPA MCLs**

Comparison of SLs used in RI to Current DoD PFAS SLs

RI SLs (EPA November 2023) compared to current DoD SLs (EPA November 2024)
Note – Bold numbers are consistent with EPA MCLs

Analyte	Residential Soil parts per billion (ppb)		Tap Water/Groundwater (ppb)	
	RI	Current	RI	Current
PFBA	7,800	7,800	1,800	1,800
PFHxA	3,200	3,200	990	990
PFOA	19	0.070	**4.0**	**4.0**
PFNA	19	19	5.9	5.9
PFBS	1,900	1,900	600	600
PFHxS	130	130	**10.0**	**10.0**
PFOS	13	0.63	**4.0**	**4.0**
HFPO-DA (GenX)	23	23	1.5	1.5
PFDA	--	0.06	--	0.52

Site FT001 Surface Soils Delineation for PFOS



- **PFOS delineated to RSL of 13 ppb for residential soil in surface soil at FT001 to the north, south, and east**

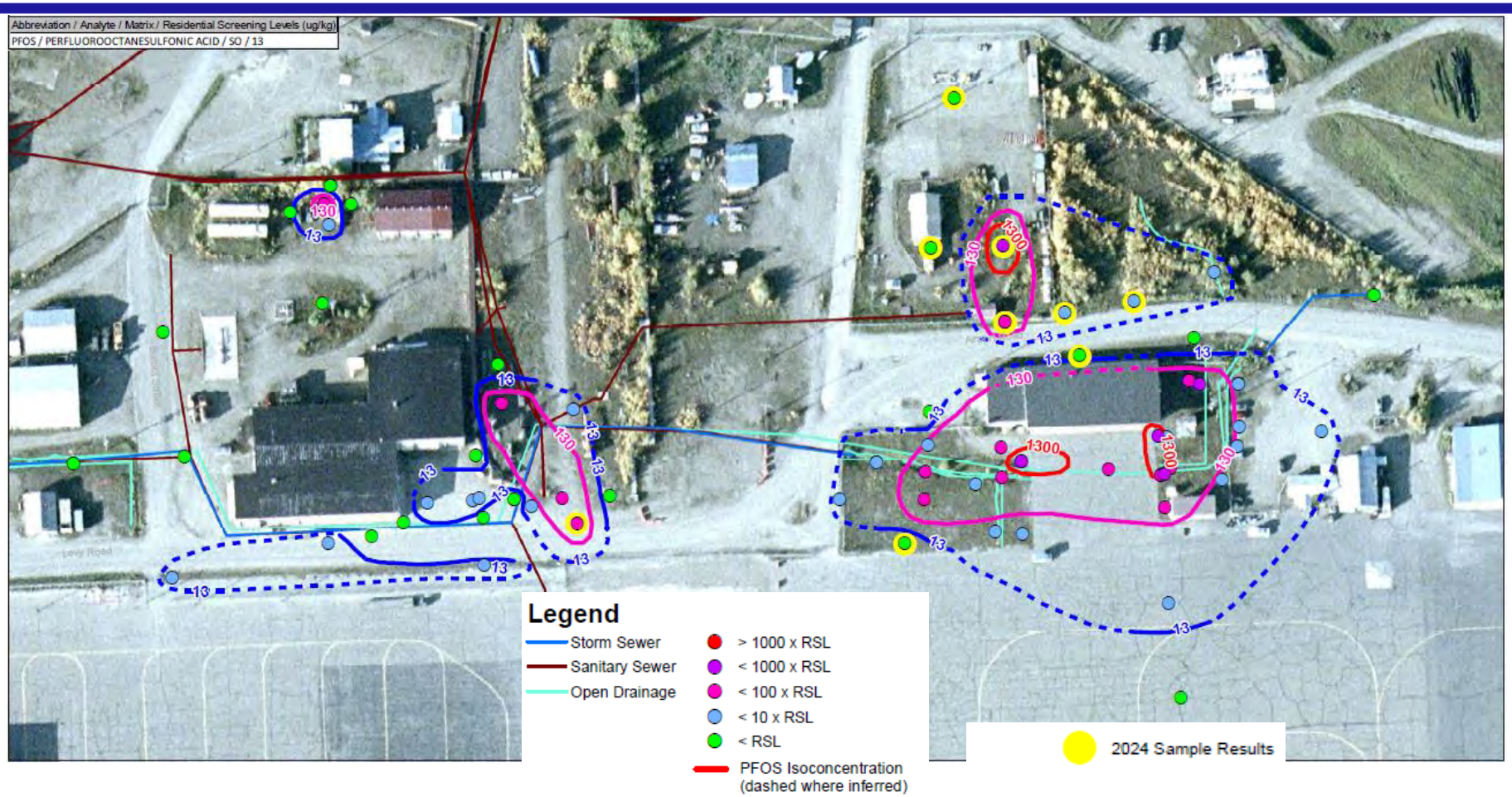
Legend

- Existing Monitoring Well Locations
- Historical PFAS Soil Boring
- Top of Soil Cover
- Toe of Soil Cover
- 1 < 1000xSL
- < 100 x RSL
- < 10 x RSL
- < RSL
- 2024 Sample Results
- PFOS Isoconcentration (dashed where inferred)

Site FT001 Groundwater Delineation for PFOS

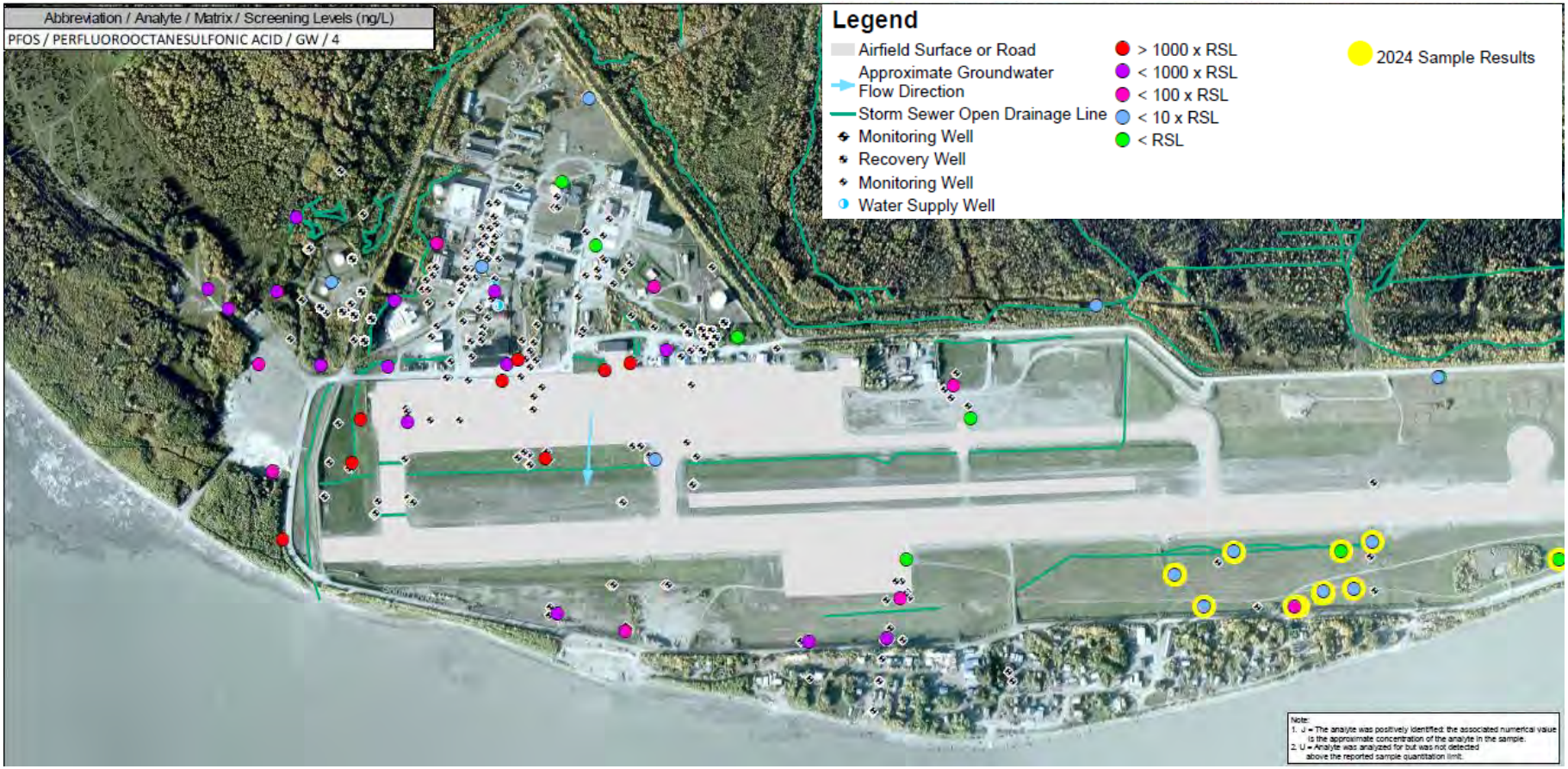
- **PFOS delineated in groundwater to east and west of FT001**

Site CG109 Surface Soil Delineation of PFOS



- Small northern area delineated; other areas not fully delineated
- Evidence of transport along drainages but delineated to west

Site CG109 Shallow (<45 feet) Groundwater Delineation for PFOS

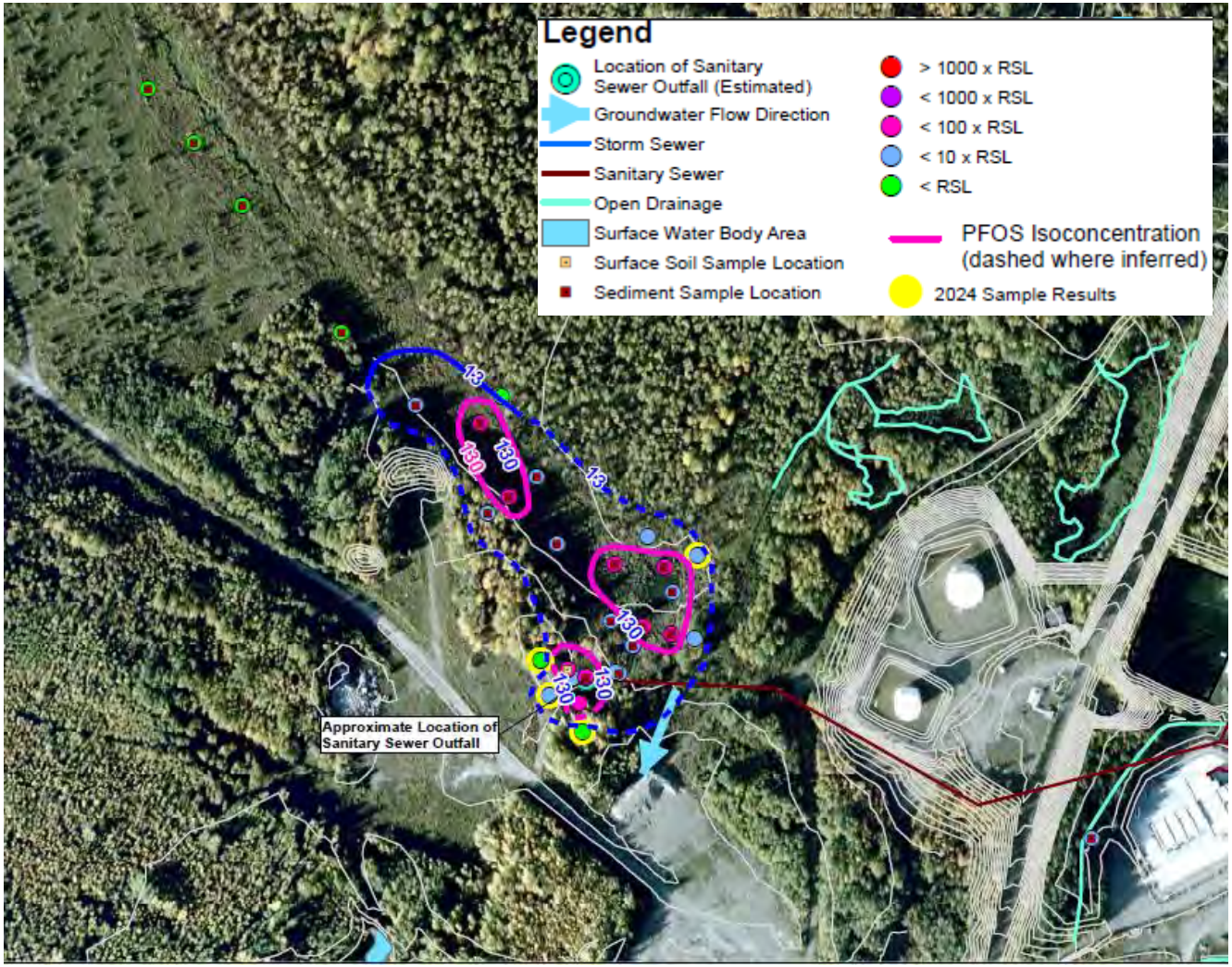


- **Slight exceedance of PFOS RSL in groundwater in northern part of "Triangle"**
- **Not delineated to west; some uncertain areas in mid-airfield**

Site CG109 Deep (> 70 feet) Groundwater Delineation for PFOS

- **Delineated to RSLs in groundwater in northern "Triangle"**
- **Lower concentrations in deeper groundwater**

Area 9 Surface Soil and Sediment Delineation for PFOS



- **Delineated along length of wetland using soil RSLs**
- **2024 samples improved delineation**

Future Actions

- **Site FT001 RI**
  - **Collect additional surface soil samples to define to the current DoD RSLs**
  - **Install deep groundwater well(s) downgradient of source area**
  - **Conduct groundwater grab sample investigation west of the FT001 source area and/or north of the runway**
  - **Investigate potential AFFF release near Civilian Aircraft Crash Site**
  - **Conduct background PFAS sampling**
  - **Complete Feasibility studies for potential cleanup methods based on investigation results**

Future Actions

- **Site CG109 RI**
  - **Continue to sample public and private water supply wells**
  - **Collect additional soil borings to delineate PFAS to current RSLs:**
    - RAPCON Yard and north and southwest of Former Fire Station
    - Drainage at the west end of the airfield
    - West of the dike beyond the western end of the airfield
  - **Conduct groundwater grab sample investigation within and to the west of the airfield**
    - Use results to place permanent wells
  - **Collect samples of the sewer effluent**
  - **Conduct background sampling**
  - **Conduct Feasibility Studies following investigation**

PFAS Reports

- Site FT001 RI Report (2022 data) – Approved by ADEC
- Site FT001 RI Report Addenda (2022-2024 data) – Draft in Air Force review
- Site CG109 RI Report (2022-2024 data) – in progress
- Baseline Human Health and Screening Level Ecological Risk Assessments (2025)
  - Site FT001 – in Air Force review
  - Site CG109 – being prepared

Communications

- **Air Force maintains Administrative Record for Final Documents at:**

  https://ar.cce.af.mil/

- **Air Force Installation and Mission Support Command (AFIMSC) Public Affairs**

  AFIMSC/Public Affairs
  2261 Hughes Ave., Suite 155
  JBSA Lackland, TX 78236-9853
  Toll Free (866) 725-7617

  afimsc.pa.workflow@us.af.mil

Questions?

Your Success is Our Mission!

Attachment 4

CS001/RPO and RAO/Landfarm Operation at the Former Galena Forward Operating Location, Alaska

Air Force Civil Engineer Center

Integrity-Service-Excellence

Remedial Process Optimization (RPO) and Site CS001 Remedy Implementation

(Contract: FA8903-24-C-0030)

and

Remedial Action-Operations (RA-O) and Landfarm Operations

(Contract: FA8903-24-C-0031)

Former Galena Forward Operating Location (FOL), Galena, Alaska

Brice Integrated

21 April 2025

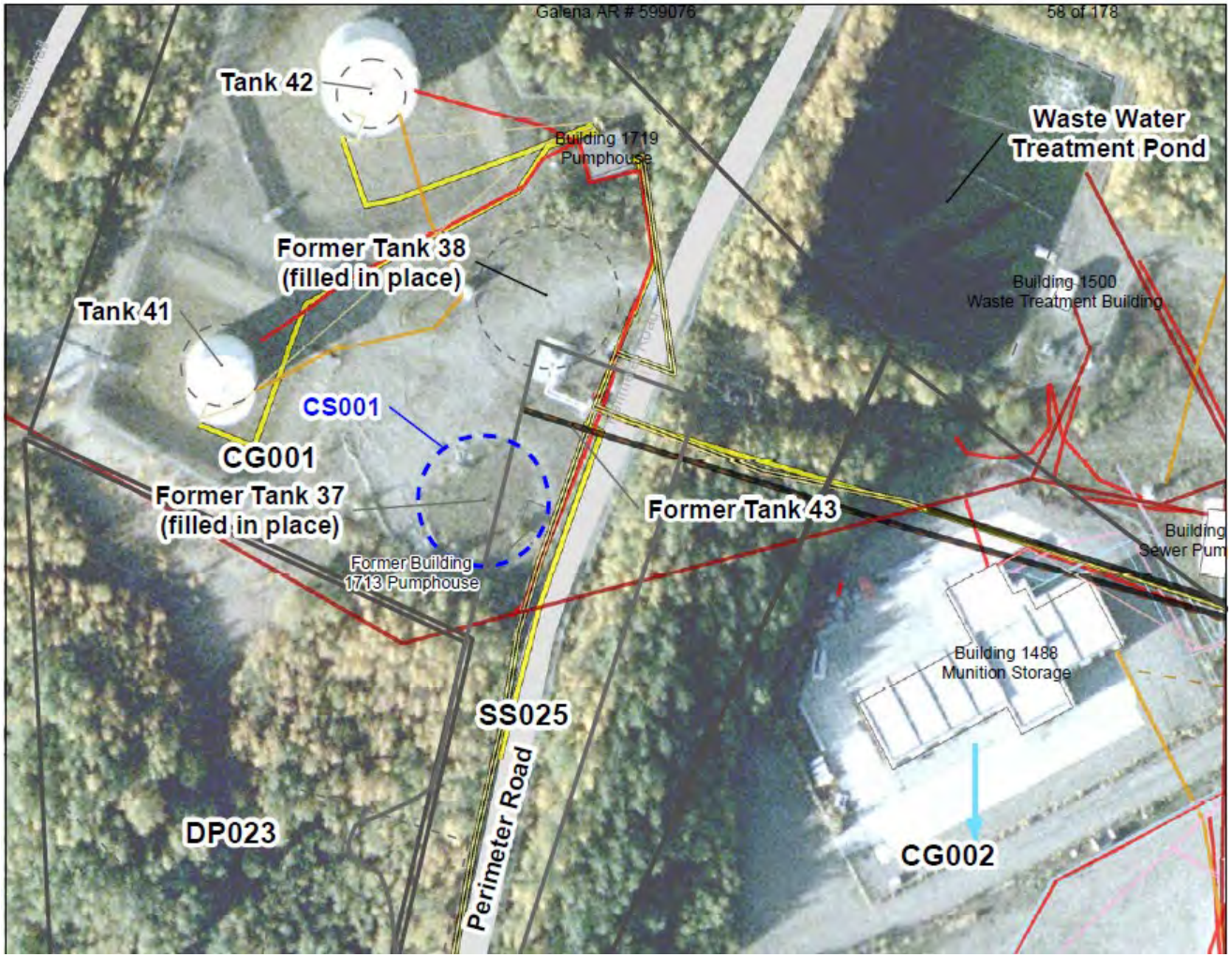
Remedial Process Optimization (RPO) and Site CS001 Remedy Implementation

(Contract: FA8903-24-C-0030)

RPO and Site CS001 Remedy Scope and Schedule

- Planning Documents
  - UFP-QAPP
  - CS001 Remedial Design/Remedial Action Work Plan
  - Hot Spot Excavation Work Plan at CST011, SS016, and SS018
- Mobilizations
  - June 2025 – PFAS Pre-Sampling at Hot Spot Excavations CST011, SS016, and SS018
  - July 2025 – CS001 Remedy Implementation
  - August 2025 – Hot Spot Excavations at CST011, SS016, and SS018
  - October 2025 to October 2026 – CS001 RA-Operations
- Reporting Documents
  - PFAS Pre-Sampling Report
  - CS001 Remedial Action Completion Report
  - Hot Spot Excavation Report
  - CS001 Annual O&M Report

Site CS001 Remedy
Site Location and Vicinity



Site CS001 Background

Tank 37 – 1-million-gallon capacity former UST located on Million Gallon Hill

1997 - Biocell constructed in Tank 37:

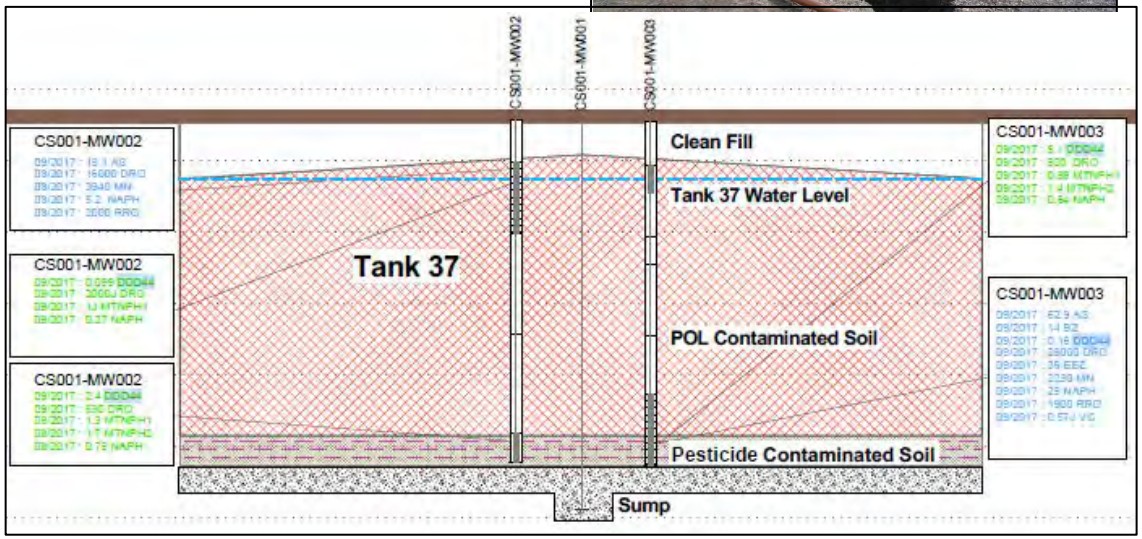
- Bottom 2 feet - 670 CY pesticide-contaminated soil from Site ST009
- Upper ~18 feet - 6,210 CY of POL-contaminated soil (various sites)
- Air injection piping and vapor monitoring points

Operated as a bioventing system from June – October in 1998 & 1999

CS001
2017 Interim Remedy Evaluation

2017 – Interim Remedy Evaluation
Inspected tank cover, and sampled tank soil and water

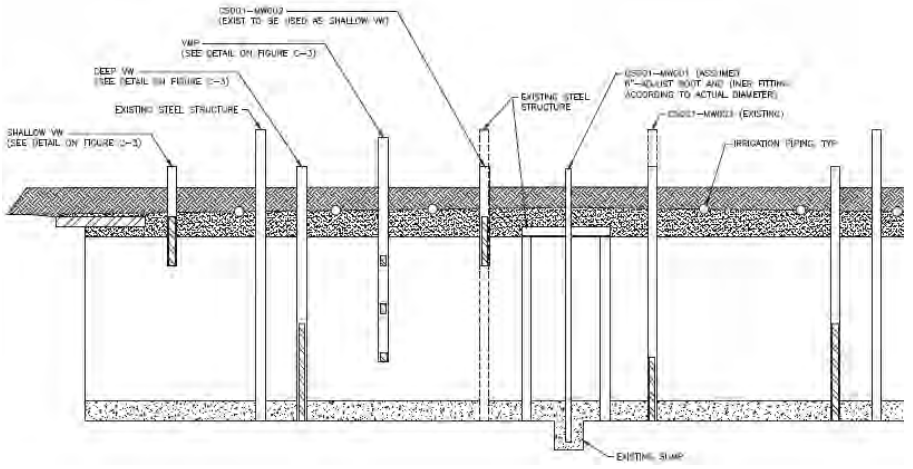
- **Soil:** POL constituents and Pesticide 4,4-DDD exceed cleanup levels
- **Tank water:** POL constituents, 4,4-DDD, exceed Groundwater CULs



Site CS001 Remedial Approach

Remedy selected through Feasibility Study (2019), Proposed Plan (2019), and Record of Decision (2020) -

- Remove and treat tank water
- Keep 4 feet of water in tank bottom and amend with sulfate to treat 4,4-DDD anaerobically
- Treat upper ~16 feet of POL contaminated soil with bioventing
- Replace cover
- Establish Land Use Controls
- Ongoing Operations and Maintenance



Integrity - Service - Excellence

7

Site CST011, SS016, and Site SS018 Hot-Spot Excavations
PFAS Pre-Sampling

- Team will advance 5 soil borings, including at least one at each hot-spot excavation at CST011, SS016, and SS018 and analyze for PFAS Method 1633 across the POL-contaminated interval.
- Reporting will be sent out when results are received to allow for a 2025 excavation.

Site CST011, SS016, and Site SS018 Hot-Spot Excavations

- CST011
  - Remove concrete from 100 ft^2 area
  - Excavate 30 cy of POL-contaminated soil
- SS016
  - Excavate 500 CY of POL-contaminated soil from 3 hot spot locations
- SS018 Subarea 5
  - Remove concrete from 80 ft^2 area
  - Excavate 280 CY of POL-contaminated soil
- Concrete will be characterized for disposal

Remedial Action-Operations (RA-O) and Landfarm Operations

(Contract: FA8903-24-C-0031)

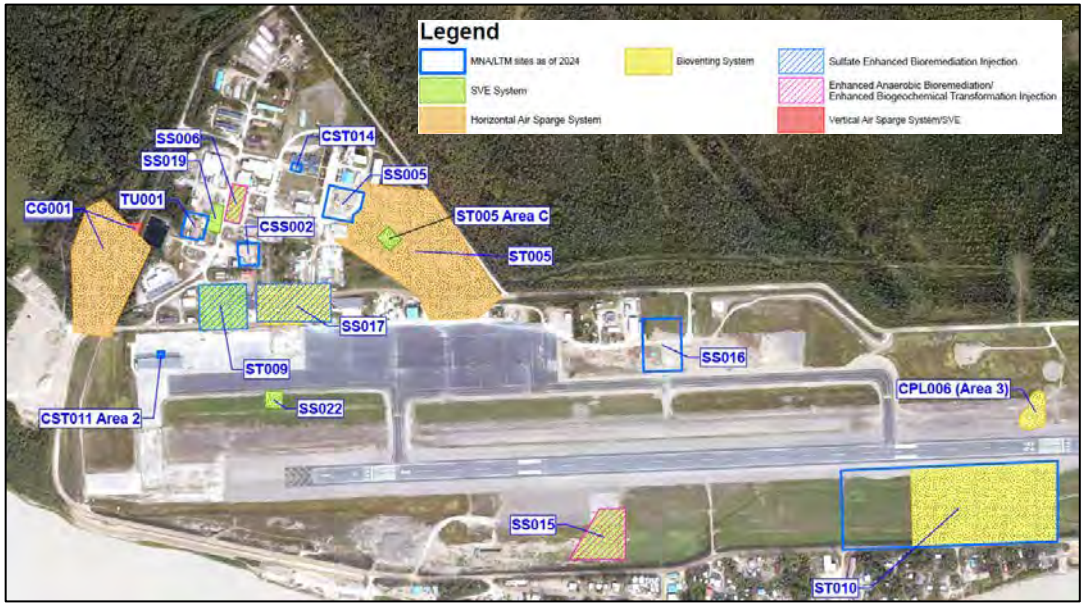
RA-O and Landfarm Operations Scope and Schedule

- Upcoming Planning Documents
  - UFP-QAPP
  - Landfarm O&M Work Plan
  - Annual RA-O Work Plan
- Mobilizations
  - Annually– Bioventing and SVE Operations October through April
  - Annual Groundwater Sampling Events
  - Annual Performance Monitoring (April 2025)
  - Summer 2025 – Landfarm Tilling
- Reporting Documents
  - Annual O&M Report
  - Annual Emissions Report
  - Landfarm Operations Report

RA-O Monitoring

FY2025 operations began December 2024 -

- CPL006 - bioventing
- SS006/SS019* - SVE
- SS017N/S - bioventing
- SS015 - SVE
- SS022 - SVE
- ST005 - HAS/SVE/VIMS
- ST009 - SVE
- ST010 - bioventing

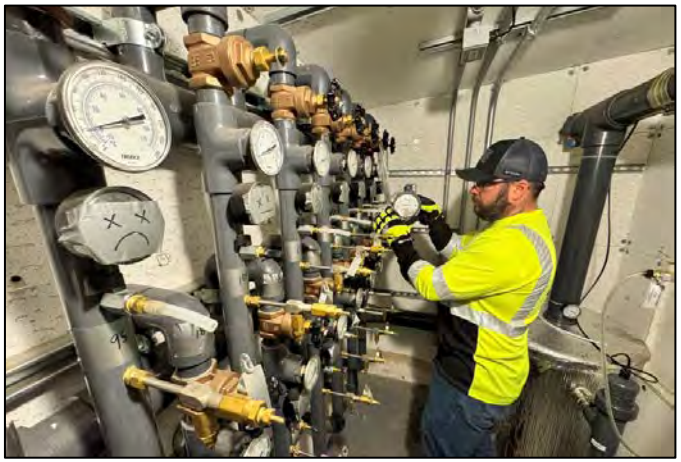


- CG001 – HAS was not operable

*SS019 SVE was inoperable until March 2025
HAS = Horizontal Air Sparging
SVE = Soil Vapor Extraction
VIMS = vapor intrusion mitigation system

RA-O O&M Activities

- **Monthly O&M Trips**
  - Measured flows, vacuum/pressure, temperatures, volatile organic compound (VOC) concentrations
  - Sampled SVE and VIMS effluent for VOCs
  - Monitored ambient air



RA-O Spring Soil Vapor Sampling

Bioventing systems:

- Measure oxygen levels in soil vapor
- Perform in situ respiration tests
- Measure/sample soil vapor ~1 week after shutdown

SVE systems:

- Measure/sample soil vapor after ~1 week after shutdown
- Compare results to past years to track progress

Landfarm Operations

- Annual uncovering and winterization events
- Brown Bear Tiller will be mobilized to Galena
  - Tilling will be conducted 5 times per week
- Spring and Fall Sampling Events – surface water, groundwater, ISM decision units