



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

**Department of Environmental
Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 630.38.004

October 25, 2021

Aemon Wetmore
FAA Alaska Region
222 West 7th Avenue, #14
Anchorage, Alaska 99513

Re: **Decision Document: Cleanup Complete Determination**
FAA Unalakleet - SBRAZ

Dear Mr. Wetmore:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the FAA Unalakleet Radio Site, also known as SBRAZ (Low/Medium Frequency Adcock Radio Range), located in Unalakleet, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment and no further remedial action will be required unless information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the FAA Unalakleet – SBRAZ, which is located in the ADEC office in Fairbanks, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:

FAA Unalakleet – SBRAZ
3 miles east of Unalakleet
63° 52' 11.6"N, 160° 43' 2.28"W
Unalakleet, Alaska

Name and Mailing Address of Contact Party:

Aemon Wetmore
FAA Alaska Region
222 West 7th Ave., #14
Anchorage, AK 99513

DEC Site Identifiers:

File No.: 630.38.004
Hazard ID.: 4234

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

Unalakleet is located in eastern Norton Sound, approximately 148 miles southeast of Nome and 395 miles northwest of Anchorage. The SBRAZ site is located approximately three miles southeast of the Unalakleet Regional Airport on 23 acres of land (Figure 1). When it was active, the SBRAZ facility consisted of a transmitter building, five towers, a fuel tank of unknown size, and a transformer.

The FAA (formerly Civil Aeronautics Administration) has maintained and operated a station in Unalakleet since 1942. An environmental compliance investigation was performed at the Unalakleet FAA Facility in 1991 by the FAA. The results of this investigation were presented in the 1992 Environmental Compliance Investigation Report (ECIR) which identified the SBRAZ as a potential source of contamination. All infrastructure has since been removed. The ECIR indicated that contamination was likely present at the location of a removed aboveground storage tank (AST).

Contaminants of Concern

During site characterization activities, soils were analyzed for petroleum hydrocarbons, polychlorinated biphenyls (PCBs), total lead, polyaromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs). Surface water was analyzed for PAHs and benzene, toluene, ethylbenzene and total xylenes (BTEX). Sediments were analyzed for diesel range organics (DRO), residual range organics (RRO), PAHs, and VOCs. The following contaminants of concern (COCs) in soil have been identified at the SBRAZ:

- Diesel Range Organics
- Residual Range Organics
- Lead
- Polychlorinated biphenyls
- Toluene
- Ethylbenzene
- Naphthalene
- 2-methylnaphthalene

Cleanup Levels

On March 21, 2016, ADEC issued a letter to FAA acknowledging that the presence of continuous permafrost in this area acts as a barrier for soil contaminant migration to groundwater. Due to this finding and the finding that groundwater was not encountered during site characterization activities at the SBRAZ, the migration to groundwater pathway does not naturally exist.

In the absence of a migration to groundwater pathway, the soil cleanup levels that apply at the SBRAZ site are the Method Two Under 40-Inch Zone Human Health soil cleanup levels, established in 18 AAC 75.341. The soil CULs must also be protective of surface water to the standards set forth in 18 AAC 70. The applicable cleanup levels and residual concentrations at the SBRAZ are summarized in Table 1, below.

Table 1 – Approved Soil Cleanup Levels

Contaminant	Table B1/B2 Under 40-Inch Migration to Groundwater Cleanup Levels (mg/kg)	Table B1/B2 Under 40-Inch Human Health/Ingestion Cleanup Levels (mg/kg)	Maximum Remaining Concentration (mg/kg)
DRO	250	10,250	1,780
RRO	11,000	10,000	7,970

Contaminant	Table B1/B2 Under 40-Inch Migration to Groundwater Cleanup Levels (mg/kg)	Table B1/B2 Under 40-Inch Human Health/Ingestion Cleanup Levels (mg/kg)	Maximum Remaining Concentration (mg/kg)
PCBs	--	1.0	0.226
Lead	--	400	310
Toluene	6.7	200	0.339
Ethylbenzene	0.13	49	0.0316
Naphthalene	0.038	29	0.305
2-methylnaphthalene	1.3	310	0.660

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

Characterization and cleanup activities started at the SBRAZ site in 1992 with an environmental compliance investigation, conducted by FAA. This investigation detailed the infrastructure and possible sources of contamination at this location. The report detailed an area of possible contamination associated with the location of a former AST. A soil sample was taken and analyzed for metals, volatile organic compounds (VOCs), base/neutral extractables, pesticides, polychlorinated biphenyls (PCBs), and chlorinated herbicides. The reported concentrations of contaminants that exceeded the current ADEC Method Two cleanup levels were lead (430 mg/kg), toluene (31 mg/kg), ethylbenzene (6.6 mg/kg), naphthalene (20 mg/kg), and 2-methylnaphthalene (44 mg/kg).

A release investigation was performed in 2007. This investigation identified potential contamination, in addition to verifying locations of previously identified source areas at the SBRAZ site. Six surface soil samples and six subsurface soil samples were collected from the former AST area for GRO, DRO, RRO, BTEX, and total lead analyses. Surface samples were collected from 0-3 inches below ground surface (bgs) and subsurface samples were collected at the permafrost layer (typically at 2 or 2.5 feet bgs). A majority of the samples collected from the former AST area exceeded Method Two cleanup levels for DRO and RRO. GRO and BTEX were detected in some of the soil samples but below cleanup levels. Lead was detected in all samples, with a maximum concentration of 310 mg/kg, below the 400 mg/kg cleanup level.

An infrastructure decommissioning effort, site investigation, and remedial action were conducted at the SBRAZ in 2015 and 2016. All remaining infrastructure was removed. Additionally, an assessment of permafrost was conducted and identified that continuous permafrost is present at the SBRAZ at a depth of approximately 2.0 to 6.0 feet across the site. Groundwater was not encountered at the site during any of the characterization or cleanup efforts.

In 2015, two sediment samples and two surface water samples were collected from two seasonal meltwater ponds adjacent to the former fuel tank and within an area that was later excavated. Both sediment samples exceeded ADEC Method Two Under 40-Inch Ingestion cleanup levels for DRO and RRO. Both surface water samples contained concentrations of Total Aromatic Hydrocarbons (TAH) and Total Aqueous Hydrocarbons (TAqH) below the applicable 18 AAC 70 ADEC surface water quality standards. Approximately 30 cubic yards (CY) of fuel-impacted soil was removed from the location of the former AST location in 2016. Confirmation soil samples collected at the limits of the excavation indicated that DRO and RRO remained above Method Two Under 40-Inch Zone Ingestion cleanup levels of 10,250 mg/kg and 10,000 mg/kg, respectively.

In 2018, additional delineation of contaminated soils and sampling for total organic carbon (TOC) was conducted at the former AST location at the SBRAZ. Surface water and sediment samples were also collected from a small seasonal meltwater pond adjacent to the former AST. Approximately 4.75 CY of contaminated soil was removed from the area adjacent to the former AST.

A comparative study to evaluate naturally occurring organic material was also conducted at the SBRAZ in 2018. Four background soil samples were collected from an area adjacent to the release site and analyzed for TOC, DRO, and RRO before and after silica gel cleanup. The comparative analysis found that silica gel cleanup significantly reduced DRO and RRO concentrations, demonstrating that high levels of naturally occurring organic carbon are present in this area.

In 2019, an additional 4.2 CY of soil was removed was excavated from the 2018 excavation location and transported off site for disposal. Confirmation samples collected from the excavation sidewalls and base using DRO, RRO, DRO silica gel, RRO silica gel extraction methods were below the applicable cleanup levels. The maximum detected concentrations for DRO silica gel and RRO silica gel methods were 1,610 mg/kg and 1,060 mg/kg, respectively.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative non-carcinogenic risk standard at a hazard index of one across all exposure pathways.

Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations meet the human health cumulative risk criteria for residential land use.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	No residual soil contamination remains from 0 to 2 ft bgs.
Sub-Surface Soil Contact	De Minimis Exposure	Residual contamination in subsurface soil is below human health cleanup levels.
Inhalation – Outdoor Air	Pathway Incomplete	Residual contamination remains in soils but is below human health cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	No buildings remain at this location, residual soil contamination is de minimis.
Groundwater Ingestion	Pathway Incomplete	During site characterization activities, groundwater was not encountered.

Pathway	Result	Explanation
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of this site.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Residual concentrations are well below the applicable cleanup levels and would not be expected to impact wild or farmed foods.
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors are unlikely to come into contact with the remaining contamination.

Notes to Table 2: “De Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors.

ADEC Decision

Soil contamination remaining at the FAA Unalakleet – SBRAZ site is below the approved cleanup levels suitable for residential land use. The FAA Unalakleet – SBRAZ contaminated site will receive a “Cleanup Complete” designation on the Contaminated Sites Database, subject to the standard conditions below.

Standard Conditions

1. Any proposal to transport soil or groundwater from a site that is subject to the site cleanup rules or for which a written determination from the department has been made under 18 AAC 75.380(d)(1) that allows contamination to remain at the site above method two soil cleanup levels or groundwater cleanup levels listed in Table C requires DEC approval in accordance with 18 AAC 75.325(i). A “site” as defined by, 18 AAC 75.990 (115), means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. (Figure 1)
2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
3. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

This determination is in accordance with 18 AAC 75.380 and does not preclude ADEC from requiring additional assessment and/or cleanup action if information indicates that contaminants at this site may pose an unacceptable risk to human health, safety, or welfare or to the environment.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 610 University Avenue, Fairbanks, Alaska 99709, within 20 days after receiving the department’s decision reviewable under this section. Adjudicatory hearing requests must be delivered to the

Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska 99811-1800, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please feel free to contact me at (907) 451-2166, or email at kelly.walker@alaska.gov.

Sincerely,

Kelly Walker
Project Manager

cc, via email: Jamie McKellar, DEC
 Nick Waldo, DEC

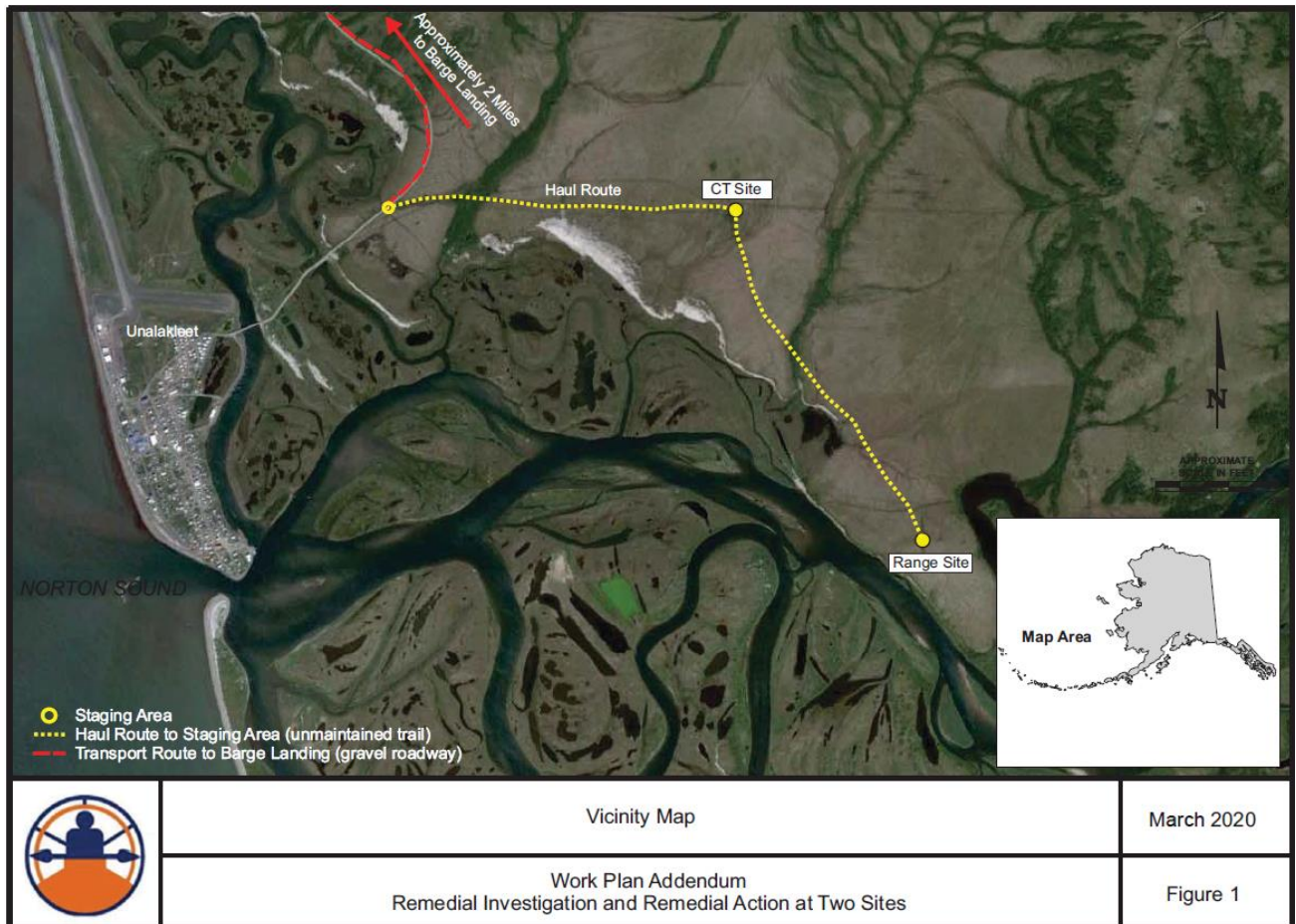


Figure 1. FAA Unalakleet Site Vicinity Map - SBRAZ (Range Site) site location