



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

December 15, 2020

**Electronic Delivery Only**

Aemon Wetmore  
FAA Alaska Region  
222 West 7<sup>th</sup> Avenue, #14  
Anchorage, AK 99513

Re: Decision Document: FAA Unalakleet – VORTAC  
Cleanup Complete Determination

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 – VORTAC, located in Unalakleet, Alaska. This letter specifically addresses the VORTAC Drum Storage Area source area (ID 78337), associated with the FAA Unalakleet – VORTAC contaminated site. The other source area associated with this site, VORTAC Building and Transformer Pad (ID 78152), was previously closed as documented by ADEC letter dated July 2, 2015. 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 new 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 – VORTAC, 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 – VORTAC;  
3 miles east of Unalakleet  
Unalakleet, Alaska

**Name and Mailing Address of Contact Party:**

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

**DEC Site Identifiers:**

File No.: 630.38.004  
Hazard ID.: 4235  
Source Area: 78337 – VORTAC Drum Storage Area

**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. Permafrost is expected to be largely present, except near streams and along the Unalakleet River.

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 Environmental Compliance Investigation Report (ECIR) prepared in 1992, which identified, among others, the VORTAC – Drum Storage Area as a potential source of contamination.

The VORTAC Drum Storage Area is located in a stand of willows approximately 2,700 feet southwest of the VORTAC facility and 200 feet north of the road. According to the 1992 ECIR, “the drums were in a small ravine on the side of a hill.” The 1992 ECIR also indicated that 25 drums and numerous paint cans were removed from the area.

## Contaminants of Concern

The following contaminants of concern (COCs) were identified during the course of the site investigations. This list covers all of the COCs that have been detected above Method Two cleanup levels.

- Diesel Range Organics (DRO)
- Residual Range Organics (RRO)
- Arsenic
- Barium
- Cadmium
- Chromium
- Lead
- Mercury
- Selenium
- Silver

**Table 1 – Approved Cleanup Levels**

Contaminants	Migration to Groundwater (mg/kg)
Diesel Range Organics (DRO)	250
Residual Range Organics (RRO)	11,000
Arsenic	0.20
Barium	2,100
Cadmium	9.1
Chromium (III)	1.0 x 10 <sup>5</sup>
Lead	400 <sup>1</sup>

Mercury	0.36
Selenium	6.9
Silver	11

mg/kg = milligrams per kilogram

<sup>1</sup> = human health level

### Characterization and Cleanup Activities

Characterization and cleanup activities at the VORTAC Drum Storage Area included a 2007 Release Investigation and a 2017 Decommissioning, Remediation, and Site Investigation.

An initial soil sample was collected from the VORTAC Drum Storage Area in 1992 and analyzed for metals, volatile organic compounds (VOCs), base/neutral extractables, pesticides, PCBs, and chlorinated herbicides. Concentrations of all analytes, with the exception of toluene, were at or below the concentrations reported for the background samples; toluene was reported at an estimated concentration of 0.007 mg/kg.

In 2007, additional site investigation work field screened the VORTAC Drum Storage Area for fuel and metals contamination. One surface soil sample reported a lead concentration of 4,460 mg/kg and an arsenic concentration of 5.73 mg/kg. Subsurface samples detected levels of arsenic (11.5 – 11.4 mg/kg), cadmium (22.8 mg/kg), selenium (5.59 mg/kg), mercury (0.421 mg/kg), and silver (0.942 mg/kg). DRO was detected at a maximum concentration of 540 mg/kg and RRO was detected but at a concentration below cleanup levels. Analytical results for GRO, VOCs, SVOCs, pesticides and PCBs were all non-detect.

In 2015 and 2016, soils were field screened for petroleum and metals in the VORTAC Drum Storage Area, and analytical samples were collected based on the screening results. Results were presented in the 2017 Decommissioning, Remediation, and Site Investigation report. This investigation provided minimal evidence of remaining contamination. Subsurface soil samples from the areas with the highest field screening results showed no exceedance of cleanup levels for DRO and RRO. Total chromium was detected at levels up to 39.3 mg/kg. Given that chromium concentrations were similar across the site (ranging between 23.6 and 39.3 mg/kg), paired with a lack of anthropogenic sources for hexavalent chromium, it is likely that chromium III is a naturally occurring metal in this area. Arsenic concentrations were similar across the site (6.39 – 16.1 mg/kg), indicating that arsenic is likely a naturally occurring metal in this area as well. Chromium and arsenic, among other metals, are a common metal found in Alaskan soils and rock formations. The 2007 Method Two CUL exceedance of lead was not replicated during the 2015 investigation; the highest sample result was 41.5 mg/kg.

The maximum contaminant levels found in the 2017 Decommissioning, Remediation, and Site Investigation report are presented in Table 2.

**Table 2 – Maximum Remaining Contaminant Levels**

Contaminant	Concentration (mg/kg)
DRO	206
RRO	1,200
Arsenic	16.1

Barium	195
Cadmium	1.11
Chromium	39.3
Lead	41.5
Mercury	0.248
Selenium	1.53 J
Silver	0.158 J

mg/kg = milligrams per kilogram

J = estimated value (either less than the laboratory limit of quantitation or qualified during data validation)

### 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, DEC 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	De Minimis Exposure	Contamination remaining in surface soil (0 to 2 feet below ground surface) but is below cleanup levels.
Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface, but is below cleanup levels.
Inhalation – Outdoor Air	Pathway Incomplete	Contamination remains in the sub-surface, but is below inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	No buildings remain at this area of concern.
Groundwater Ingestion	Pathway Incomplete	Minimal contamination in surface soils is not expected to impact groundwater.
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of the site.

Wild and Farmed Foods Ingestion	Pathway Incomplete	The area around the site is unlikely to be used for food harvesting due to its proximity to the airport.
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors are unlikely to contact the remaining contamination in the airport area.

**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 VORTAC – Drum Storage Area is below the approved cleanup levels suitable for residential land use. The FAA Unalakleet – VORTAC contaminated site, along with all associated source areas, 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. (See attached site figure.)
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 future 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, 555 Cordova Street, Anchorage, Alaska 99501-2617, 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](mailto:kelly.walker@alaska.gov).

Sincerely,

Kelly Walker  
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit  
Eric Breitenberger, DEC  
Kara Kusche, DEC