



THE STATE  
of **ALASKA**  
GOVERNOR MIKE DUNLEAVY

Department of Environmental  
Conservation

SPILL PREVENTION & RESPONSE  
Contaminated Sites Program

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File No.: 702.26.001

May 15, 2020

**Electronic Delivery Only**

Lisa Ebbs  
Federal Aviation Administration  
222 W 7th Ave, #14  
Anchorage, AK 99513

Subject:           **Decision Document: Cleanup Complete Determination**  
                          **FAA Chandalar Lake NDB Site UST**

Dear Ms. Ebbs,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the FAA Chandalar Lake NDB Site UST. Based on the information provided to date, 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 Chandalar Lake NDB Site UST, 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 Chandalar Lake NDB Site UST  
Chandalar, Alaska  
• 67°30'12.99"N, 148°28'4.02"W

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

Lisa Ebbs  
Federal Aviation Administration  
222 West 7th Avenue, Box 14  
Anchorage, AK 99513-7587

**DEC Site Identifiers**

File No.: 702.26.001  
Hazard ID: 24421

**Regulatory Authority for  
Determination:**

18 AAC 75

### Site Description and Background

The Chandalar Lake FAA Station is an inactive air navigation station near a 3,800-foot-long gravel runway that was constructed in the 1950s to support mining in the area. The FAA began operating a remote navigational facility at Chandalar Lake in 1968, where a primary power facility was built including a small utility building and a tank farm (See attached site figure). The site named “FAA Chandalar Lake NDB Site UST” refers to the former non-directional beacon (NDB) underground storage tank (UST) 8-B-1, and is separate from the other FAA areas of concern at Chandalar Lake, which are managed by DEC under the “FAA Chandalar Lake Facility” site, Hazard ID 4351, file number 702.38.001.

### Contaminants of Concern

During the site characterization and cleanup activities at the former NDB UST 8-B-1, soil samples were analyzed for diesel range organics (DRO), gasoline range organics (GRO), residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs). Contaminants were either non-detect or had concentrations below the applicable cleanup levels. Maximum detected concentrations are summarized in **Table 1**. Contamination in soil does not exceed the applicable cleanup levels.

### Cleanup Levels

Due to the presence of continuous permafrost, the Table B1 Arctic Zone Human Health and Table B2 Ingestion cleanup levels for soil apply at the FAA Chandalar Lake Facility. The applicable cleanup levels are summarized in **Table 1**, below.

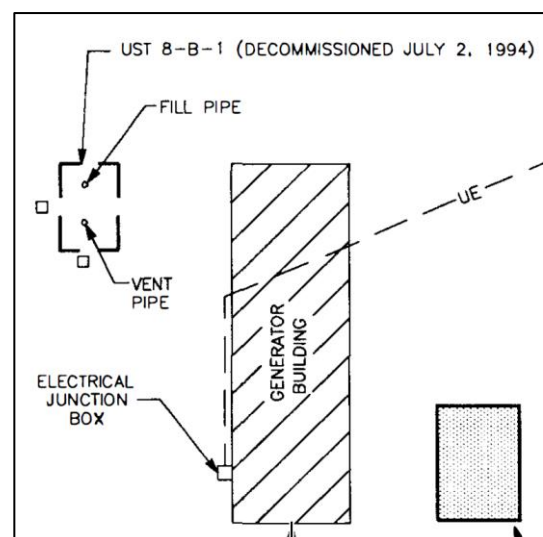
**Table 1 – Approved Soil Cleanup Levels and Maximum Detected Concentrations**

Contaminant	Former NDB UST 8-B-1	
	Approved Cleanup Level Table B2 Arctic Zone (mg/kg)	Maximum Detected Concentrations (mg/kg)
DRO	12,500	54.7
GRO	1,400	17.6

mg/kg = milligrams per kilogram

### Characterization and Cleanup Activities

**FAA NDB UST 8-B-1:** In 1994, a 500-gallon UST (8-B-1) was removed at the NDB (Figure 2). Soil confirmation samples collected and analyzed for extractable petroleum hydrocarbons (EPH), and BTEX did not exceed the applicable cleanup levels. In 2009, five boreholes were advanced at the location of the former UST 8-B-1 and analyzed for DRO, GRO, RRO, and BTEX. DRO and GRO were detected well below the applicable cleanup levels; all other analytes were non-detect (Table 1). Monitoring wells were installed in 2009 in the five boreholes to sample the super-permafrost water for GRO, DRO, RRO, BTEX, and PAHs; one well exceeded Table C values for DRO. The five wells were resampled in 2012 and again in 2015; all results were below Table C cleanup levels.



**Figure 2.** NDB former UST 8-B-1 location. The tank was commissioned on July 2, 1994.

### 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 at the former NDB UST 8-B-1 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 De Minimis Exposure or Pathway Incomplete. A summary of this pathway evaluation is included in **Table 2**.

**Table 2 – Exposure Pathway Evaluation**

Pathway	FAA Chandalar Lake NDB Site UST
Surface Soil Contact	PATHWAY INCOMPLETE: No contamination has been detected in surface soil.
Sub-Surface Soil Contact	DE MINIMIS: All subsurface soil sample concentrations are well below the applicable Arctic Zone Cleanup levels.
Inhalation – Outdoor Air	PATHWAY INCOMPLETE: No volatile contaminants have been detected at this AOC.
Inhalation – Indoor Air (vapor intrusion)	PATHWAY INCOMPLETE: There are no structures at the location of the former NDB UST. Contamination in soil does not exceed the applicable cleanup levels.
Groundwater Ingestion	PATHWAY INCOMPLETE: The FAA Chandalar Lake Facility is underlain by continuous permafrost. Table C groundwater cleanup levels do not apply.
Surface Water Ingestion	PATHWAY INCOMPLETE: There is no surface water at the former NDB.
Wild and Farmed Foods Ingestion	PATHWAY INCOMPLETE: No bioaccumulative contaminants have been detected at the former NDB.
Exposure to Ecological Receptors	PATHWAY INCOMPLETE: There are no concerns about ecological pathways. Contamination at the former NDB does not exceed the applicable cleanup levels.

**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 at the site has been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. The FAA Chandalar Lake NDB Site UST, tracked under File No. 702.26.001 and Hazard ID 24421, will be given a Cleanup Complete status in the Contaminated Sites Database<sup>1</sup>, subject to the following standard conditions.

<sup>1</sup> DEC Contaminated Sites Database: <https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/Search>

**Standard Conditions**

1. Any proposal to transport soil or groundwater off-site requires ADEC 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 15 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, please contact me at (907) 451-5175, or via email at [jamie.mckellar@alaska.gov](mailto:jamie.mckellar@alaska.gov).

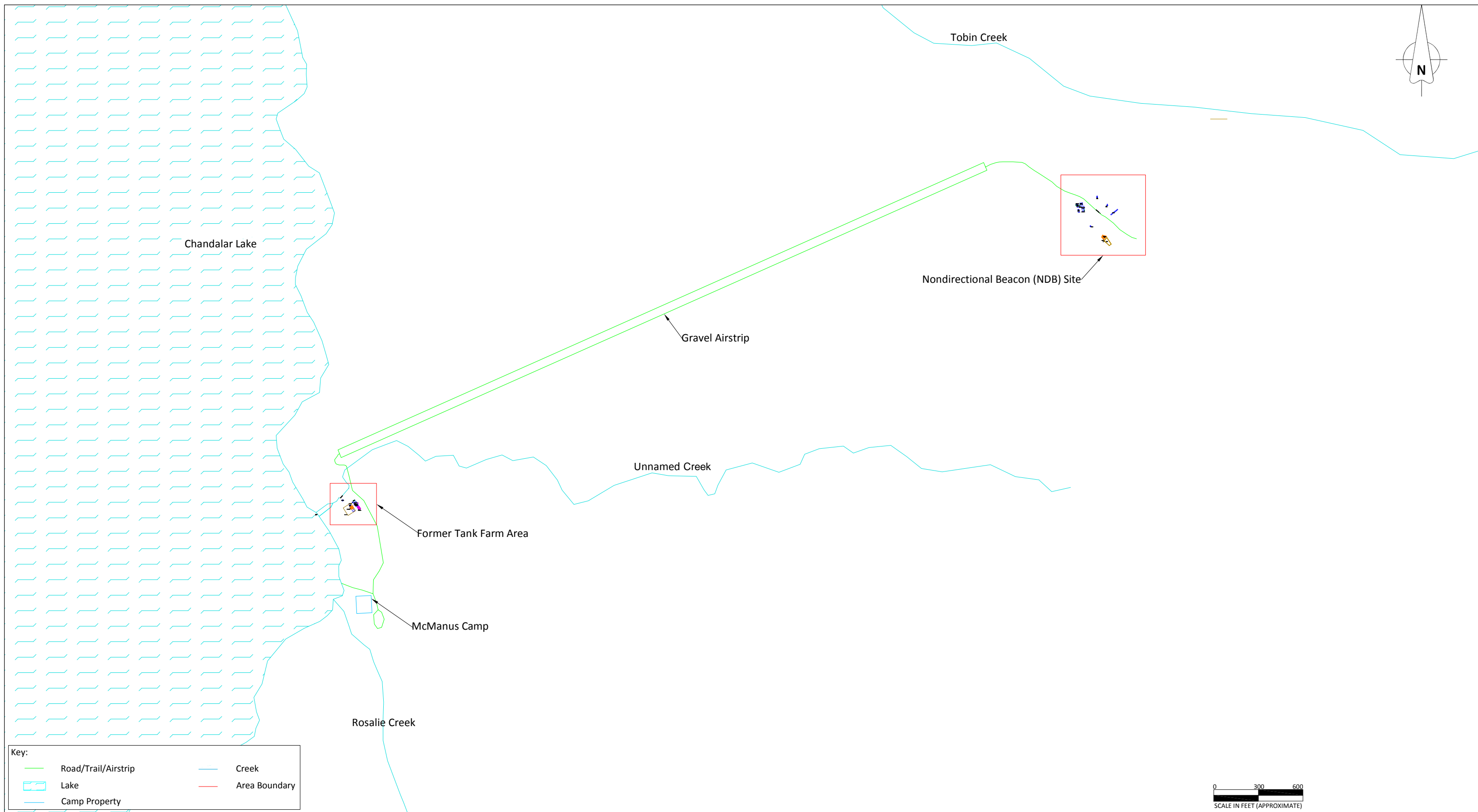
Sincerely,



Jamie McKellar  
Project Manager

Enclosure: FAA Chandalar Lake Facility site figure

cc, via email: Eric Breitenberger, ADEC  
Kara Kusche, ADEC  
Spill Prevention and Response, Cost Recovery Unit



Notes:  
 1. All locations are approximate.  
 2. Figures modified from figures within: Ecology and Environmental, Inc., *Environmental Compliance Investigation Report (ECIR), Chandalar FAA Station, Chandalar, Alaska*, December, 1992; Montgomery Watson (MW), *Aboveground Storage Tank (AST) Decommissioning Assessment, FAA Chandalar Lake Station*, January 2000.

Project Number:  
10002.054.01

## Release Investigation and Monitoring Report Chandalar Lake FAA Station Chandalar Lake, Alaska

# Site Plan

**AHTNA**  
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Date: 03-31-2010	Figure Number: 2
Drafted By: L.D.	