



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

**Department of Environmental
Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, AK 99709-3643
Phone: 907-451-2143
Fax: 907-451-2155
www.dec.alaska.gov

File: 100.26.172

May 13, 2021

Donna West
USACE
2204 3rd Street
JBER, Alaska 99506

Re: Decision Document: ACOE – Chena Lakes Flood Control Project
Cleanup Complete Determination

Dear Ms. West:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the ACOE – Chena Lakes Flood Control Project, located at 3800 Laurence Road, North Pole, 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 ACOE – Chena Lakes Flood Control Project, 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:

ACOE - Chena Lakes Flood Control Project
3800 Laurence Road
North Pole, Alaska

Name and Mailing Address of Contact Party:

Donna West
USACE
2204 3rd Street
JBER, Alaska 99506

DEC Site Identifiers:

File No.: 100.26.172
Hazard ID.: 24998

Regulatory Authority for Determination:

18 AAC 78 and 18 AAC 75

Site Description and Background

The Chena Lakes Flood Control Project office is located 5 miles east of North Pole, Alaska. This location was formerly used as Nike Site Tare. Nike Site Tare was a component of the Nike-Hercules

Missile System in Alaska. Nike Site Tare was operated by the U.S. Army from 1956 to 1971. The Chena River Lakes Flood Control Project acquired Nike Site Tare real estate in 1973 and structures are still used today by the project. Three underground storage tanks (USTs) have been documented at this location. Two tanks (550 gallon capacity, one containing gasoline, one containing diesel fuel) were removed in November 1998, located northwest of the current office. One soil sample collected from beneath the fuel dispenser exceeded the Method 2 Cleanup Level for DRO with a result of 3,600 mg/kg.

In May 2009, USACE removed the third UST from the site. The 2,500 gallon UST was located on the northern side of the project office and used to store heating oil. Four soil samples were collected beneath the UST and analyzed for GRO, DRO, BTEX and petroleum aromatic hydrocarbons (PAHs). All sample results were either non-detect or significantly below Method 2 Cleanup Levels.

Further site characterization activities were conducted in 2011 and 2019, including soil borings to establish the area of contaminated soil and the installation of groundwater monitoring wells. Groundwater is present approximately 14 feet below ground surface (bgs) at the site. Groundwater elevation and gradient varies at this site and is highly influenced by the stage of the nearby Chena River and the impoundment of water behind the dam.

Contaminants of Concern

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

- DRO
- 1-methlynaphthalene
- 2-methlynaphthalene

Cleanup Levels

The migration to groundwater cleanup levels apply at this site, however DEC is making a site specific determination that this pathway is incomplete. The more restrictive of either the inhalation or ingestion cleanup levels apply to this site. Diesel range organics and 1- and 2- methylnaphthalene were detected above the levels established in 18 AAC 75.341 (c), Table B1, and 18 AAC 75.341 (d), Table B2. This site falls in the Under 40 Inch Zone for precipitation.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)	Migration to Groundwater (mg/kg)	Groundwater (mg/L)
DRO	10,250	250	1500
1-methylnaphthalene	68	0.41	11
2-methylnaphthalene	310	1.3	36

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

Characterization and Cleanup Activities

The first tank removal was in 1998, with several soil samples taken after the removal of both 550-gallon tanks. Samples were analyzed for DRO, GRO and BTEX. One soil sample collected from beneath the fuel dispenser exceeded Method 2 Cleanup Levels for DRO at a concentration of 3,600 mg/kg.

In May 2009, USACE conducted a geotechnical investigation in support of a proposed addition to the Chena River Lakes Flood Control Project office. The investigation included six soil borings completed to the north and east of the project office. Four environmental samples were collected and analyzed for GRO, DRO, residual range organics (RRO), Resource Conservation and Recovery Act (RCRA) metals, hexavalent chromium, volatile organic compounds (VOCs), pesticides, polychlorinated biphenyls (PCBs), and PAHs. A shallow soil sample (2.5 – 4.5 ft bgs) contained DRO, 1-methylnaphthalene and 2-methylnaphthalene above cleanup levels. A second sample collected from 8.0 to 9.5 ft bgs from the same boring was non-detect for DRO and contained 1-methylnaphthalene and 2-methylnaphthalene below cleanup levels.

The third UST was removed from this site in May 2009. The 2,500 gallon UST was located on the northern side of the project office. Four soil samples were collected from beneath the UST and analyzed for GRO, DRO, BTEX, and PAHs. All sample results were either non-detect or below Method 2 Cleanup Levels.

In 2011, USACE completed an ultraviolet optical screening tool (UVOST) investigation at the project office. A total of 43 UVOST probes were completed and two different areas of petroleum contamination were identified at the site. These areas of contamination were estimated to be 460 cubic yards and 55 cubic yards, respectively. Three temporary groundwater wells and the existing drinking water well were sampled during this effort. One sample from a temporary well exceeded cleanup levels for DRO.

In 2019, an environmental investigation completed five monitoring wells, including one in the documented source area, one downgradient of the source area, one upgradient of the source area and two cross gradient to the source area. Soil samples collected during well installation were analyzed for GRO, DRO, lead, VOCs and PAHs. One soil sample (primary and duplicate) taken from 4 to 6 feet bgs exceeded Method Two cleanup levels for DRO with concentrations of 945 and 664 mg/kg. Groundwater samples were analyzed for GRO, DRO, RRO, VOCs, PAHs, iron, lead, manganese, nitrate and sulfates. None of the groundwater samples contained analytes above cleanup levels. DRO concentrations ranged from 0.217 to 0.475 mg/L. Samples taken from the drinking water well ranged from 0.340 mg/L to 0.330 mg/L.

Remaining soil contamination is below human health values, but exceeds migration to groundwater values. However, the exceedances of migration to groundwater values were bounded by deeper samples from the same boring that did not exceed. Groundwater monitoring at the site indicates that some migration to groundwater has occurred, but at levels consistently below Table C cleanup levels. Sufficient site characterization has been completed and ADEC has determined that residual contaminants in soil have achieved steady-state equilibrium and will not further migrate to groundwater.

Cumulative Risk Evaluation

Pursuant to 18 AAC 78.600(d), 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 noncarcinogenic 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, 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	Contamination is not present in surface soil (0 to 2 feet below ground surface).
Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface, but is below human health 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 VOCs are documented above cleanup levels and remaining contamination is below human health levels.
Groundwater Ingestion	De Minimis Exposure	Contamination in groundwater is below human health levels.
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	Area around this site is unlikely to be used for food harvesting and remaining contaminants are not bioaccumulate.
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors are unlikely to come into contact with remaining contamination at this site.

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 Chena Lakes Flood Control Project site has been sufficiently characterized and is unlikely to migrate to groundwater. Levels are below Table B1 human health and Table B2 ingestion and inhalation soil cleanup levels. Groundwater contamination remaining at this site is below human health cleanup levels. The Chena Lakes Flood Control Project 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 78.600(h). A “site” as defined by 18 AAC 78.995(134) 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 78.276(f) 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, 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.

Sincerely,

Kelly Walker
Project Manager

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

Notes:
 1 ADEC Method Two Soil Cleanup Levels, from Tables B1 and B2 of 18 AAC 75.341, for the lowest value of the Under 40-inch Zone "Human Health" or "Migration to Groundwater" Exposure Pathways (ADEC, 2018)
 P = indicates sample is a field duplicate of the preceding sample
 Yellow highlighted and bolded results exceed ADEC soil cleanup levels.
 All results in mg/kg

DRO = diesel range organics
 ft bgs = feet below the ground surface
 GRO = gasoline range organics
 ID = identification
 J = result qualified as estimate because it is less than the LOQ
 LOQ = limit of quantitation
 mg/kg = milligrams per kilogram
 ND = Result is not detected at the limit of detection [LOD], in brackets
 Q = result considered an estimate (L-low; H-high; N-uncertain) due to a QC failure
 QC = quality control

Analyte	ADEC Soil Cleanup Level ¹
DRO	250

Sample ID	Depth (ft bgs)	DRO
19-Chena-SB02-4-5	4.0-5.0	ND [12.2]
19-Chena-SB02-9-10	9.0-10.0	ND [11.1]

Sample ID	Depth (ft bgs)	DRO
19-Chena-SB03-4-5	4.0-5.0	12.3 [12.7] J
19-Chena-SB03-9-10	9.0-10.0	ND [10.4]

Sample ID	Depth (ft bgs)	DRO
11CFC20ASL	14.5-16.0	320 [21] QL

Sample ID	Depth (ft bgs)	DRO
19-Chena-SB04-4-5	4.0-5.0	11.5 [10.4] J
19-Chena-SB04-9-10	9.0-10.0	ND [10.4]

Sample ID	Depth (ft bgs)	DRO
9801001SL	2.0	3,600

Sample ID	Depth (ft bgs)	DRO
11CFC03ASL	3.5-5.0	5,500 [25] J,QL

Sample ID	Depth (ft bgs)	DRO
19-Chena-SB05-4-5	4.0-5.0	945 [12.1] QN
19-Chena-SB05-15-16 ^P	4.0-5.0	664 [11.1] QN
19-Chena-SB05-9-10	9.0-10.0	ND [10.3]

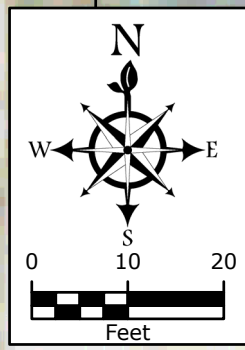
Sample ID	Depth (ft bgs)	DRO
09CM-05A	2.5-4.5	2,970 [106]

Sample ID	Depth (ft bgs)	DRO
11CFC05ASL	4.0-5.5	4,700 [23] QL

Sample ID	Depth (ft bgs)	DRO
11CFC01ASL	4.0-6.0	2,500 [21] QL
11CFC15ASL	4.0-6.0	1,500 [21] QL

Sample ID	Depth (ft bgs)	DRO
19-Chena-SB01-4-5	4.0-5.0	ND [12.2]
19-Chena-SB01-9_9_5	9.0-9.5	ND [10.9]

Existing Water Well



Document Path: G:\Jobs\34190048 - Chena Environmental Investigation Report Maps\Figure3.mxd

Legend

- 1998 SOIL SAMPLE LOCATION
- 2009 SOIL BORING LOCATION
- 2019 SOIL BORING LOCATION
- 2011 UVOST PROBE LOCATION
- 2011 TEMPORARY WELL POINT
- ⊕ WELL
- ▭ EXTENT OF SOIL EXCEEDING ADEC SOIL CLEANUP L
- ▨ NEW BUILDING ADDITION
- ▭ BUILDINGS

FIGURE 3
 CHENA, AK
 CHENA RIVER LAKES FLOOD CONTROL PROJECT
 SELECT SOIL ANALYTICAL RESULTS



DATUM:	DATE:	12/24/2019	SHEET
NAD83	DWN.	NAP	1
PROJECTION:	SCALE:	1" = 20'	of
SP AK Z3 FT	APPRVD.	MF	1
Project No.			
34190048			