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: 100.38.131

January 4, 2022

Joshua Barsis
Formerly Used Defense Sites
USACE Alaska District
PO Box 6898
JBER, AK 99806-0898

Subject: **Decision Document: Cleanup Complete Determination**
Nike Site Love

Dear Mr. Barsis,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Nike Site Love, located approximately 11 miles north of Fairbanks, 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 Nike Site Love, 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:
Nike Site Love
-147.89, 64.98
11 miles north of Fairbanks
Fairbanks, AK 99701

Name and Mailing Address of Contact Party:

Joshua Barsis
USACE/FUDS
PO Box 6898
JBER, AK 99806-0898

DEC Site Identifiers:
File No.: 100.38.131
Hazard ID.: 3241

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background
Nike Site Love was formerly used by the Department of Defense (DOD) and met eligibility requirements for inclusion in the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS). The Nike Site Love property was acquired by the United States Army in 1958, Nike Site Love was developed around 1960 for the guided missile air defense system north of Fairbanks, Alaska. By 1970-1971, other similar missile sites had been deactivated, and Nike Site Love was unmanned. In 1971, Cook Inlet Regional Incorporated (CIRI) received the 100 acres that includes Nike Site Love as part of a settlement from the Alaska Native Claims Settlement Act (ANCSA). CIRI currently owns both surface and subsurface rights to the property.

Nike Site Love contains two specific areas: the Battery Control Area and the Launch Complex Area (Figure 1). The Battery Control Area included the gate house, vehicle repair shop, barracks building, a high-power acquisition radar building and tower, gas pump island, several underground storage tanks (USTs), an above ground storage tank (AST), and a helicopter landing pad. The Launch Complex Area contained the main gate house, a war heading building, a launching control building, an ammunition magazine, a fuel AST, as well as launching pads and associated buildings. The two areas are approximately one mile apart on the ridge.

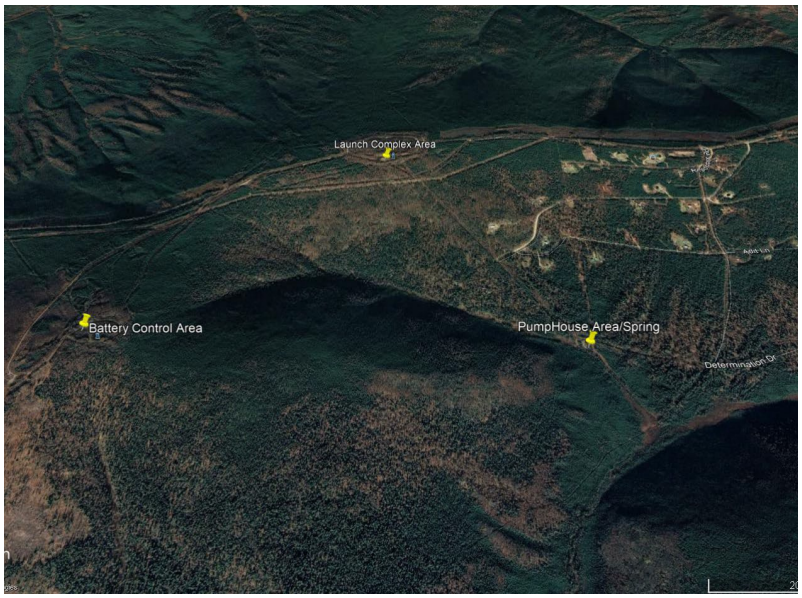

Figure 1. Nike Site Love test areas

The sources of contamination at Nike Site Love were USTs, an AST, related piping, and drums. All buildings, towers and tanks were removed in 1986. Recreational uses of the area include off road vehicles, dog sledding, and hiking.

The geology of the site consists of up to 10 feet of silty soil overlaying 1 to 18 feet of weathered schist. Under the weathered layer, the schist bedrock is dense and impermeable to water, as evidenced by artesian conditions detected in an aquifer at around 66 feet below ground surface (bgs). There is no surface water present and groundwater has not been encountered above the intact bedrock.

Contaminants of Concern
The following contaminants of concern (COCs) in soil have been identified for Nike Site Love:

- Diesel Range Organics (DRO)
- Benzo(a)anthracene

Cleanup Levels
The following 18 AAC 75 soil and groundwater cleanup levels apply at Nike Site Love:
- Table B1 and B2 Method Two Migration to Groundwater soil cleanup levels
- Table B1 Under 40-Inch Zone Human Health soil cleanup levels
- Table B2 Ingestion/Inhalation Concentrations for soil

ADEC acknowledges that the solid bedrock acts as a barrier to soil contamination migrating to the deep aquifer, and no groundwater has been encountered above the solid bedrock during site characterization. Based on these findings, ADEC has determined that the migration to groundwater pathway is incomplete and residual soil contamination does not pose an unacceptable risk to groundwater.

In the absence of a migration to groundwater pathway, the approved cleanup levels and residual soil concentrations for Nike Site Love are presented in **Table 1**, below.

Table 1 – Approved Cleanup Levels and Remaining Contaminant Concentrations

Contaminant	Method Two Migration to Groundwater Soil Cleanup Level (mg/kg)	Method Two Human Health or Ingestion/Inhalation Soil Cleanup Level (mg/kg)	Maximum Remaining Soil Concentration (mg/kg)
DRO	250	10,500	6,930
Benzo(a)anthracene	0.70	14	0.739

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

In 1985, a field investigation was conducted to determine the nature and extent of the contamination at Nike Site Love. Surface soil, waste products in USTs, and leachates were sampled. Surface soil was analyzed for polychlorinated biphenyls (PCBs), petroleum products, chlorinated solvents, acid residues, lead, and hydrocarbons. One sample collected at the Battery Control Area had a maximum concentration of 23,000 mg/kg for "hydrocarbons", with the exact type unspecified. Four samples contained low levels of PCBs and five samples contained detections of oil and grease ranging from 12,850 mg/kg to 25,310 mg/kg. The report indicated the detections were only in the surface soil.

In 1997, the Superfund Technical Assessment Response Team (START) collected seven surface samples from the site: four from the Battery Control Area and three from the Launch Complex Area. All samples were analyzed for polycyclic aromatic hydrocarbons (PAHs), PCBs, and total petroleum hydrocarbons (TPH). PAHs were not detected, PCBs were detected at low levels (0.11 mg/kg), and TPH were detected from 31 mg/kg to 230 mg/kg.

In 2016, a site investigation was conducted by the USACE and 39 soil samples were collected from the Battery Control Area and Launch Complex Area. At the Launch Complex Area, DRO exceeded the migration to groundwater cleanup levels in Table B2 with a maximum concentration of 10,400 mg/kg. Benzo(a)anthracene and benzo(a)pyrene exceeded the Table B1 migration to groundwater and under 40-inch zone human health cleanup levels with concentrations of 8.86 mg/kg and 5.48 mg/kg, respectively.

In 2017, USACE conducted a removal action and further site characterization by removing soil from the former UST location, digging two test pits, and collecting analytical samples from the three excavations. Soil was excavated from the former UST site. The excavation was limited on all sides by bedrock. A concrete slab was discovered on top of bedrock on the floor of excavation. Sidewall samples and all but one floor sample had concentrations below the Method Two migration to groundwater cleanup levels. One of the floor samples exceeded the Table B2 Method Two migration to groundwater cleanup level for DRO with a maximum concentration of 6,930 mg/kg. The Launch Complex Area had a maximum DRO concentration of 1,430 mg/kg. One sample from the Battery Control Area had a benzo(a)anthracene concentration of 0.739 mg/kg, exceeding the Table B1 migration to groundwater cleanup level.

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 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 applicable 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	Contamination remains in the sub-surface but is below inhalation cleanup levels.
Groundwater Ingestion	Pathway Incomplete	The migration to groundwater pathway is incomplete due to impermeable bedrock underlaying the area. No groundwater was encountered above the bedrock during field activities.
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	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	There are no concerns about other ecological pathways.

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
ADEC has reviewed the environmental records associated with Nike Site Love and determined that residual contamination does not pose a risk to human health or the environment. Nike Site Love will receive a "Cleanup Complete" designation on the Contaminated Sites Database, subject to the following standard conditions.

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 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 Ave, 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) 451-2881, or email at shonda.oderkirk@alaska.gov.

Sincerely,

Shonda Oderkirk

Shonda Oderkirk
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit
Melinda Brunner, ADEC
Nick Waldo, ADEC
Jamie McKellar, ADEC
Andrea Jacuk, CIRI