THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 1521.38.012

November 30, 2016

Mr. Steven J. Mattson
US Air Force
10471 20th Street, Suite 341
JBER, Alaska 99506-2201

Re: Duncan Canal Radio Relay Station – Operable Units SS001, SS002, and SS003
Cleanup Complete Determination

Dear Mr. Mattson:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with three (3) operable units located at the beach facility at the Duncan Canal Radio Relay Station (RRS) site near Petersburg, Alaska; specifically, SS001: Barrel Dump site; SS002: Generator Building; and SS003: Fuel Pump House and Rock Quarry. 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 former Duncan Canal Radio Relay Station which is located in the DEC office in Haines. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:
Duncan Canal Radio Relay Station
Duncan Canal, Tongass National Forest
Near Petersburg, Alaska

Name and Mailing Address of Contact Party:
US Air Force
10471 20th Street, Suite 341
JBER, Alaska 99506-2201

DEC Site Identifiers:
File No.: 1521.38.012
Hazard ID.: 26

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background

The Duncan Canal RRS is located on Lindenburg Peninsula on Kupreanof Island in Southeast Alaska near Petersburg. It is located within the Tongass National Forest on land managed by the United States Forest Service (USFS). The RRS facility consists of two (2) operable units on the mountain top and four (4) operable units near the beach. The mountain top facility is accessed using a 5-mile gravel logging road (USFS Road #6325) which is maintained by the USFS.

The Duncan Canal RRS was constructed by the United States Air Force (USAF) in 1960 and used as a radio link between the Smuggler's Cove and Hoonah RRS facilities. The mountain top facility consisted of a composite building, radio relay building, two billboard antennas, water reservoir and tank, septic tank, and fuel aboveground storage tanks (ASTs) and underground storage tanks (USTs). The beach facility consisted of a barge landing dock and seaplane ramp, fuel pump station, and one (1) AST. The Duncan Canal RRS was deactivated in 1976. All of the facility building and structures were demolished or removed in 1986, and the land was returned to USFS management in 1987. AT&T Alascom, Inc. currently operates a commercial communications facility at the mountain top facility.

This site closure letter encompasses three (3) operable units located at the beach facility, specifically SS001: Barrel Dump site; SS002: Generator Building; and SS003: Fuel Pump House and Rock Quarry. The SS001: Barrel Dump site is located adjacent to three (3) privately-owned recreational use cabins. In 2000, numerous empty drums were removed from several locations within the general area of the cabins. Site SS002: Generator Building consists of the former generator building that supplied power for lighting and a nearby fuel pump house. Site SS003: Fuel Pumphouse and Rock Quarry is further broken down into two (2) locations with the first being located adjacent to Site SS002, and is the former location of a Fuel Pumphouse which was used to transfer fuel from a former 130,000-gallon AST to fuel trucks for transport to the mountain top facility. The Fuel Pumphouse was reportedly demolished in 1986. Site SS003b: Rock Quarry is located at the adjacent rock quarry where two areas of surface debris were found. Approximately 23 55-gallon empty drums of lubricating and gear oil and antifreeze, and a length of heavy cable were identified at this location.

Contaminants of Concern

During the 2006 *Preliminary Assessment/Site Inspection (PA/SI)* and 2009 *Site Investigation (SI)* and 2009 *Remedial Investigation (RI)*, soil samples were collected and analyzed for gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, herbicides, and Resource Conservation and Recovery Act (RCRA) metals. Groundwater samples were collected at the SS001: Barrel Dump site; SS002: Generator Building; and SS003: Fuel Pump House and Rock Quarry and analyzed for GRO, DRO, RRO, VOCs, PAHs, and metals.

Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- DRO
- Benzene
- Benzo(a)pyrene
- Dibenzo(a,h)anthracene

- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Methylene Chloride

Cleanup Levels

The cleanup levels for operable units SS001, SS002, and SS003 were approved by ADEC on April 19, 2013. The soil cleanup levels for the petroleum hydrocarbon ranges of GRO, DRO, and RRO were developed using a method three calculation with a site-specific concentration of total organic carbon, as allowed under 18 AAC 75.340(e), as amended through April 8, 2012. Soil cleanup levels for other COCs were based upon the default method two cleanup levels of 18 AAC 75.341, Table B1 for the Over 40-Inches of Precipitation Climate Zone, and groundwater cleanup levels were set using 18 AAC 75.345, Table C values, as amended through April 8, 2012.

Table 1 – Approved Cleanup Levels for SS001: Barrel Dump Site

Contaminant	Soil (mg/kg)	Groundwater (mg/L)
DRO	880	n/a
Methylene Chloride	0.016	n/a
Benzo(a)pyrene	n/a	0.0002

mg/kg = milligrams per kilogram
mg/L = milligrams per liter

Table 2 – Approved Cleanup Levels for SS002: Generator Building

Contaminant	Soil (mg/kg)	Groundwater (mg/L)
DRO	1,100	1.5
Benzene	0.025	n/a
Methylene Chloride	0.016	n/a
1-Methylnaphthalene	6.2	n/a
2-Methylnaphthalene	6.1	n/a

Table 3 – Approved Cleanup Levels for SS003: Fuel Pump House and Rock Quarry

Contaminant	Soil (mg/kg)	Groundwater (mg/L)
DRO	1,100	1.5
Benzene	0.025	n/a
Benzo(a)pyrene	2.1	0.0002
Dibenzo(a,h)anthracene	0.4	n/a
Methylene Chloride	0.016	n/a

Characterization and Cleanup Activities
The USAF conducted a PA/SI in 2006 and a concurrent SI and RI in 2009 to identify and fully characterize the contamination present at the entire RRS facility. A Feasibility Study which evaluated several different remedial alternatives was completed and approved by ADEC in 2010. As no COCs regulated under CERCLA were found at these three (3) operable units, a Decision Document was developed by the USAF and signed by the USAF and ADEC in January 2014. The selected remedy for soil was excavation with off-site disposal and for groundwater was natural attenuation with long-term monitoring. The Remedial Action Plan/Quality Assurance Project Plan (QAPP) was approved by ADEC on July 3, 2014, and the USAF mobilized to the field on July 7th.

Field work began in 2014 and was completed in 2015. The *Final Summary of 2014-2015 Field Activities Report for Remedy Implementation*, dated July 2016, documents that all of the contaminated soil was removed and cleanup levels were achieved at SS001, SS002, and SS003. During the cleanup activities at SS001, a small amount of lead-contaminated soil, approximately 32 tons, was found and excavated, in addition to an estimated 906 tons of petroleum-contaminated soil. The highest concentrations of the residual COCs at SS001 were: DRO – 690 mg/kg and lead – 28 mg/kg. The contaminant plumes of SS002 and SS003 merged and created one larger excavation area where an estimated total of 520 tons of petroleum-contaminated soil was removed. The highest concentrations of residual COCs at the combined SS002 and SS003 were: DRO – 610 mg/kg, 1-methylnaphthalene – 0.041 mg/kg, and 2-methylnaphthalene. All confirmation sample results for benzene, benzo(a)pyrene, and dibenzo(a,h)anthracene were non-detect. A total of 177 tons of petroleum contaminated soil was removed from SS003b. The highest concentrations of residual COCs for SS003b were: DRO – 640 mg/kg and RRO – 550 mg/kg. All of the excavation holes were backfilled with clean soil. The contaminated soil was transported for disposal at Waste Management's Columbia Ridge Landfill and Recycling Center in Arlington, Oregon.

Groundwater monitoring wells which had been removed during the excavation activities were replaced during the 2014 and 2015 field activities. In 2015 and 2016, groundwater samples were collected from those wells where sample results had previously shown concentrations of COCs above the cleanup levels. The *Final 2016 Long Term Monitoring Report*, dated October 2016, documented that analytical samples from all of the groundwater monitoring wells met the approved cleanup levels for two (2) successive annual monitoring events, as outlined in the Decision Document. All of the monitoring wells, 11 located at SS001 and four (4) at the combined SS002/SS003, will be removed by the USAF in 2017.

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 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 means by which contamination may reach human or ecological receptors. ETM results show all pathways to be considered "Pathway Incomplete", indicating that, in ADEC's judgment, the contamination has no potential to contact potential human or ecological receptors. A summary of this pathway evaluation is included in Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Following the cleanup action, contamination is not present in surface soil (0 to 2 feet below ground surface) at concentrations above the approved cleanup levels.
Subsurface Soil Contact	Pathway Incomplete	Following the cleanup action, contamination is not present in the subsurface soil (more than 2 feet below ground surface) at concentrations above the approved cleanup levels.
Inhalation: Outdoor Air	Pathway Incomplete	Following the cleanup action, contamination is not present at concentrations above the approved cleanup levels.
Inhalation: Indoor Air (vapor intrusion)	Pathway Incomplete	Following the cleanup action, contamination is not present at concentrations above the approved cleanup levels.
Groundwater Ingestion	Pathway Incomplete	Sample results from 2014 and 2015 demonstrate that concentrations of COCs in groundwater are below the approved cleanup levels.
Surface Water Ingestion	Pathway Incomplete	Surface water in the vicinity of the site is marine water.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Following the cleanup action, contamination is not present at concentrations above the approved cleanup levels.
Exposure to Ecological Receptors	Pathway Incomplete	Following the cleanup action, contamination is not present at concentrations above the approved cleanup levels.

ADEC Decision
Soil and groundwater contamination at operable units SS001, SS002, and SS003 have been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. The highest residual concentrations of COCs at SS001, SS002, and SS0003 have been compared to the 18 AAC 75.341, Tables B1 and B2 cleanup levels, effective October 6, 2016. All of the remaining concentrations and the detection limits of the non-detect results are below these default values.

Although the entire RRS facility will not be granted site closure until all of the operable units are cleaned up, a notation that these areas have received a "Cleanup Complete" designation will be made on the Contaminated Sites Database, subject to the following standard conditions.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 75.325(i).

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 made 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 about this closure decision, please feel free to contact me by phone at (907) 766-3184 or via email at annemarie.palmieri@alaska.gov.

Sincerely,

Anne Marie Palmieri

Digitally signed by Anne Marie Palmieri
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Date: 2016.11.30 16:40:20 -09'00'

Anne Marie Palmieri
Project Manager

cc: Kim DeRuyter, ADEC-CSP, Fairbanks
Michael Wilcox, USFS
Tim Chittenden, USFS

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