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: 2621.38.004

May 23, 2018

Robert Johnston
AFCEC/CZOP
10471 20th Street, Suite 347
JBER, AK 99506-2201

Re: **Decision Document: Nikolski RRS SS006 Former Drum Storage Area Cleanup Complete Determination – Institutional Controls**

Dear Mr. Johnston:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with SS006 (Former Drum Storage Area) located at the former Nikolski Radio Relay Station (RRS), Nikolski, Alaska. SS006 has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under [18 AAC 75, Article 3. Based on the information provided to date, it has been determined by ADEC, in accordance with 18 AAC 75.325 – 390 site cleanup rules, that the contaminant concentrations remaining at SS006 does not pose an unacceptable risk to human health or the environment. No further remedial action will be required by ADEC at the Former Drum Storage Area as long as the institutional controls are maintained, effective and no new information becomes available that indicates residual contamination poses an unacceptable risk to human health, safety, welfare, or the environment.

This Cleanup Complete with Institutional Controls (ICs) determination by ADEC for SS006 is based on the administrative record which is located in the offices of the ADEC in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions, regulatory decisions, and specific conditions required to effectively manage remaining contamination at this site.

Site Name and Location:
Nikolski RRS SS006 Former Drum Storage Area
Section 25; Township 083 South;
Range 136 West; Seward Meridian
Nikolski, Alaska

Name and Mailing Address of Contact Party:
Robert Johnston
AFCEC/CZOP
10471 20th Street, Suite 347
JBER, AK 99506-2201

ADEC Site Identifiers:
File No.: 2621.38.004
Hazard ID.: 135

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background

Nikolski RRS is an inactive United States Air Force (USAF) installation established on lands withdrawn from public domain by Public Land Order 2374. Nikolski RRS was deactivated in 1977 and all facility buildings and most of the structures were demolished or removed in 1980, and the remainder in 1998. Site SS006 is one of 13 sites at Nikolski RRS, located at Umnak Island in the Aleutian Island chain, approximately 900 air miles from Anchorage, Alaska. Nikolski RRS encompasses approximately 435 acres on the southwest end of Umnak Island. SS006 is located near the beach on Nikolski Bay, west of the airstrip, known as the Former Drum Storage Area (See Figure 1).

Figure 1. General Location Map for SS006
SS006 is underlain by shale/mudstone and bedrock. Surrounding features indicate that the shale/mudstone layer is thin, and impermeable andesite bedrock appears to lie beneath the shale/mudstone. Even if bedding layers below the site are capable of conducting water, and even if they are oriented away from the coastline, the distance that water could travel is limited by the presence of the underlying impermeable rock.

Current land use of the former Nikolski RRS land is primarily for recreational purposes which is less usage than commercial/industrial land use. Public Land Order 2374, issued in 1961 by the U.S. Department of the Interior (DOI), withdrew public domain lands on Umnak Island, Alaska, for use by the USAF as the Nikolski RRS. A groundwater use determination has been made for SS006, per 18 AAC 75.350 in the approved final 2002 Remedial Investigation (RI) report and subsequent 2004 risk assessment. The major permanent surface water feature in the vicinity of SS006 is Nikolski Bay. Bedrock is encountered at 1.5 to 5 feet below ground surface (bgs). The immediate area of the two wells is a slight depression in the bedrock surface that collects local groundwater (e.g. "pit water") when it is present.

Contaminants of Concern
There have been several investigations and cleanup actions have occurred at the SS006 (see Characterization section below). After analyzing for fuels, metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCBs), the only remaining contaminants are diesel range organics (DRO) and residual range organics (RRO) in soil.

There is no known current use for surface water. There are no private or public drinking water systems at SS006, and the public water supply for the village of Nikolski is located 1 mile away from the site. The layer of groundwater found at SS006 is both thin and discontinuous. The following petroleum-related contaminants were detected above the applicable cleanup levels listed in 18 AAC 75.341(d) (as amended November 7, 2017) and are considered contaminants of concern in soil:

- Diesel Range Organics (DRO)
- Residual Range Organics (RRO)

Cleanup Levels
DRO and RRO were detected in soil at SS006 above the ingestion cleanup level for DRO and RRO (Table B2 Method Two, Over 40 Inch Zone 18 AAC 75, as amended November 7, 2017).

Table 1 – Approved Cleanup Levels (Over 40 Inch Zone)

Contaminant	Soil (mg/kg)
DRO	8,250[1]
RRO	8,300[1]

1 – Ingestion pathway, Method 2 (18 AAC 75 Table B2 2017)

Characterization and Cleanup Activities
Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 1995. These activities are described below.

In 1995, as part of a preliminary assessment/site investigation (PA/SI), approximately 200 drums were observed in the vicinity of the Drum Storage Area. While some of the drums had evidence of surface soil staining, this area was not sampled in 1995.

In 1996, as part of an additional PA/SI, three soil samples were collected from areas of stained surface soil at SS006 and analyzed for fuels, metals, VOCs, pesticides and PCBs. DRO was the only contaminant detected. The maximum detected result was 21,000 mg/kg. No other contaminants were above cleanup levels.

In 1997, a drum removal effort was initiated at SS006. Approximately 181 drums, many of which were in various stages of corrosion, were removed as part of this effort. All original drums were steam cleaned (if necessary), crushed, and buried in a pit just southeast of the asbestos cell. Unused oil and lubricants were consolidated into nine new drums and taken to the local power plant. All drums containing hazardous and non-hazardous waste were shipped to Anchorage and relinquished to Burlington Environmental. The nonhazardous waste was then relinquished to Alaska Energy Recovery for recycling. 23 soil samples were collected from the perimeter of the area and analyzed for GRO, DRO, VOCs, SVOCs, PCBs, pesticides, and metals. Soil samples were collected from at least 6 inches bgs before the drum removal began.

Additionally, eight groundwater samples were collected via temporary monitoring points after drum removal efforts were completed and analyzed for the same parameters. DRO was detected in all soil samples, ranging from 5.62 mg/kg to 2,160 mg/kg. Additionally, No VOCs, SVOCs, pesticides and PCBs were detected in soils above cleanup levels. Trichloroethylene (TCE) was detected in every groundwater sample, ranging from 2.23 ug/L to 14,500 ug/L; the maximum hit corresponds to the location of the drum of chlorinated solvents.

In 2001, two monitoring wells were installed at SS006. Monitoring wells SS6-MW04 and SS6-MW-05 were sampled the same year, resulting in groundwater exceedances of TCE at both locations ranging from 0.0264 to 0.0441 milligrams per liter (mg/L). All other fuel related analytical results were below cleanup levels.

In 2001, a RI was conducted at the facility which included site SS006. Soil samples from the surface soils had maximum detection for DRO at 37,700 mg/kg and TCE collocated with DRO at 5.72 mg/kg and RRO at 222,000. All other analytes (PCBs, metals, SVOCs, other VOCs) were below cleanup levels. Groundwater ("pit water") detected TCE at 0.0441 mg/L. All other analytes (other VOCs, SVOCs, PCBs, metals, fuels) were below cleanup levels. A total of three marine sediment samples were collected at the former drum storage area and analyzed for fuels, VOCs and metals. The data collected indicates that Nikolski Bay (~250 feet from SS006) is not impacted by site contaminants. A groundwater use determination (e.g. 18 AAC 75.350) in the RI, concluded that the site contamination poses no threat to current or reasonably expected future sources of drinking water.

In 2012, the Proposed Plan and supporting documents for SS006 were made available to the public in September 2012, and the public review and comment period for the Proposed Plan was September 25 to October 25, 2012. A public meeting on the Proposed Plan for SS006 was conducted on October 4, 2012. The USAF received no written or oral comments during the public comment period on the Proposed Plan.

In 2013, a Record of Decision (ROD) was signed by the 611th Air Support Group and ADEC for SS006. The selected remedy was removal action to address contaminated soils and long-term monitoring and

institutional controls to prevent residential use, prevent access to contaminated groundwater and restrict excavation of soil.

The ROD documented that a groundwater use determination has been made for SS006, per 18 AAC 75.350. The ROD stipulated that groundwater monitoring would continue once a year for TCE and its breakdown products (e.g. cis-1,2-dichloroethylene (DCE), trans-1,2-DCE, vinyl chloride) until the plume is at steady state or decreasing and the contaminant concentrations are decreasing for three (3) consecutive monitoring events. Three consecutive monitoring events in 2015, 2016, and 2017 have demonstrated decreasing concentrations and all contaminants have not exceeded cleanup levels during this time (See Table 2 below).

Table 2: SS006 Groundwater Sample Results (ug/L) from the 2015, 2016 and 2017 Monitoring Reports

Well	Year	TCE	Cis-1,2-DCE	Trans-1,2-DCE	Vinyl Chloride
WP-04R	2015	2.07	9.81	0.50 U	0.075 U
	2016	0.68	3.89	0.50 U	0.075 U
	2017	1.74	3.93	0.50 U	0.075 U
WP-05R	2015	0.50 U	0.62 J	0.50 U	0.075 U
	2016	0.50 U	0.50 U	0.50 U	0.075 U
	2017	0.50 U	0.50 U	0.50 U	0.075 U
Table C Groundwater Cleanup levels		2.8	36	360	0.19

J – Result is detected below the reporting limit and/or is an estimated concentration based on data assessment.
U – Analyte analyzed for but undetected at the corresponding laboratory LOD or quantitation limit.

In 2015, approximately 1,500 tons of POL-contaminated soil was excavated from the four sub-sites during the 2015 remedial action (RA) and transported off-site for disposal. Analytical samples collected following the excavation effort indicated that the extent of the contaminated soil above the respective soil cleanup levels had been removed from three of the four sub-site locations. The RA effort was unable to fully remove the DRO and RRO-contaminated soil at sub-site 1B/2, which extended beneath the access road (See Table 3 below).

Table 3: Sample results following 2015 excavation

16NIK073SL20SS006	2.0 ft. bgs	DRO	19,400 mg/kg
		RRO	45,800 mg/kg

In 2016, land use control (LUC) signage was installed at the site to notify site visitors of the residual soil contamination and it was observed that revegetation efforts have been successful at the site.

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. With just DRO and RRO remaining in the soil at the SS006, a cumulative risk cannot be calculated and therefore, 18 AAC 75.325(g) is not applicable. Groundwater at SS006 is not a drinking water source based on a groundwater use determination approved as part of the 2013 ROD and therefore the groundwater pathway is incomplete.

The site's current land use is recreational with no groundwater or surface water used as drinking water at the site. Fuel contamination identified in the soil does not appear to be migrating into surface water offsite based on site conditions documented in the 2002 RI report. The ingestion exposure pathway for soil is de minimis as the remaining contamination at the site and institutional controls are in place to prevent exposure to soil without prior ADEC approval.

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 4.

Table 4 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Exposure Controlled	Contamination is present in surface soil (0 to 2 feet below ground surface) but land use controls limits exposure.
Sub-Surface Soil Contact	Pathway Incomplete	Contamination is not present in the sub-surface greater than 2 feet.
Inhalation – Outdoor Air	Pathway Incomplete	Contamination remains in the surface, but contaminants do not pose an inhalation risk.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	No structures exist and contaminants do not pose an inhalation risk.
Groundwater Ingestion	Pathway Incomplete	No contamination present and groundwater is not a drinking water source.
Surface Water Ingestion	Pathway Incomplete	No contamination present and 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	Contamination is only present in the sub-surface and determined not to be risk to plants or animals.

Notes to Table 2: "Pathway Incomplete" means that in ADEC's judgment contamination has no potential to contact receptors. "Exposure Controlled" means there is an institutional control in place limiting land or groundwater use and there may be a physical barrier in place that prevents contact with residual contamination.

ADEC Decision

Petroleum contamination remains in the surface soils above levels suitable for unrestricted future use; however, residual contaminant concentrations do not appear to migrating off-site or into groundwater. An 18 AAC 75.350 determination has been approved for the site. Land use controls have been established by the USAF in 2016 to limit potential future exposure and risk to human health or the environment at SS006 (See Figure 2 below).

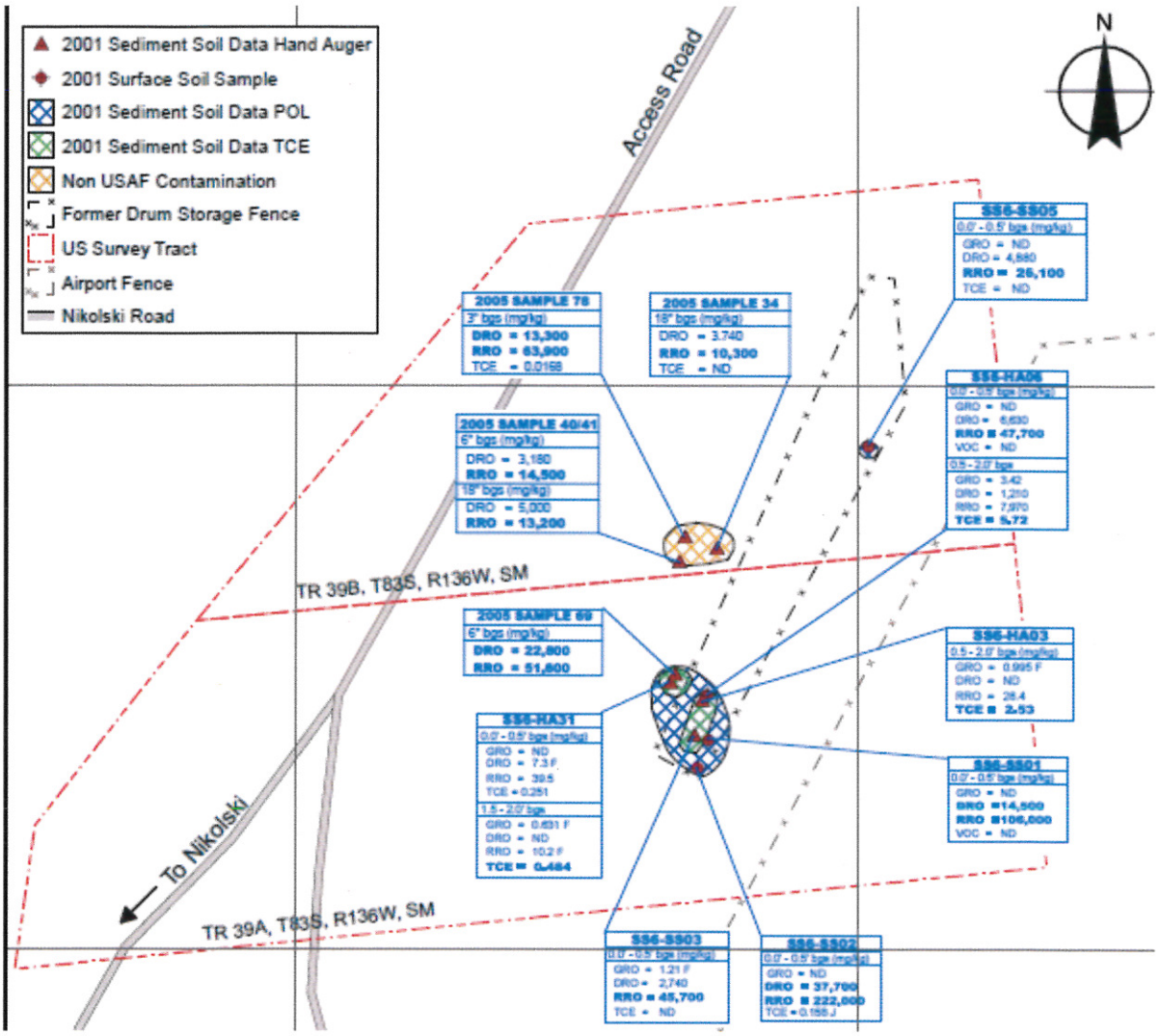

Figure 2 Site Map for SS006 (dashed red lines= boundaries for the institutional controls/land use controls)

A Notice of Environmental Contamination and Institutional Controls (NEC-IC) has been submitted by the USAF and will be recorded in the land records maintained by the Alaska Department of Natural Resources no later than December 31, 2018. If the USAF transfers, sells, assigns, leases or subleases the property or any portion of the property covered by the institutional controls, the USAF shall incorporate a copy of the NEC-IC into the documents of transfer, sale, assignment, lease or sublease.

Based on existing information, ADEC has determined the residual petroleum contamination in soil does not pose an unacceptable risk to human health, welfare, safety or the environment at SS006.

Institutional controls necessary to support this closure determination includes:

- ICs will be used by the USAF to prevent residential use and restrict surface excavation at SS006.

- The USAF will provide notice to ADEC as soon as practicable, but no later than 10 days, after discovery of any activity that is inconsistent with the LUC requirements, objectives or controls, or any action that may interfere with the effectiveness of the land use controls (LUCs). The USAF will include in such notice, a list of corrective actions taken or planned to address such deficiency or failure.

- The USAF will obtain prior concurrence from ADEC to terminate the LUCs

Standard site closure conditions that apply to all sites include:

- ADEC approval is required prior to moving any soil or groundwater off any site that is, or has been, subject to the site cleanup rules [see 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. In the future, if soil will be excavated, it must be characterized and managed following regulations applicable at that time and ADEC approval must be obtained before moving the soil off the property.

- Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

ADEC has determined the cleanup is complete as long as the ICs, as described in figure, are properly implemented timely and no new information becomes available that indicates residual contamination may pose an unacceptable risk at SS006.

The ADEC Contaminated Sites Database will be updated to reflect the change in site status for the Former Drum Disposal Area (SS006) to "Cleanup Complete with Institutional Controls" and will include a description of the contamination remaining at the site.

The ICs will be removed in the future if documentation is provided that shows concentrations of all residual hazardous substances remaining at the SS006 are below the levels that allow for unrestricted exposure to, and use of, the contaminated media and that the site does not pose a potential unacceptable risk to human health, safety or welfare, or to the environment. Standard conditions above will remain in effect after ICs are removed.

This determination does not preclude ADEC from requiring additional assessment and/or cleanup action, under (18 AAC 75.325-.390 or 18 AAC 78 Article 2), if the institutional controls are determined to be ineffective or if new information indicates that contaminants at the SS006 may pose an unacceptable risk to human health or 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, PO 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) 269-7552 or email at louis.howard@alaska.gov.

Sincerely,

Louis Howard
Project Manager

cc: Kim DeRuyter via email