



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: 2407.38.002

August 24, 2016

Sent via electronic and regular mail

2LT Jennifer Nutt  
Alaska Army National Guard  
Construction Facilities Management Office  
PO Box 5800  
JBER, AK 99505-0800

Re: Decision Document: AKARNG Bethel OMS  
Cleanup Complete Determination

Dear Ms. Nutt:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the AKARNG Bethel OMS located at 470 4<sup>th</sup> Avenue in Bethel. 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 AKARNG Bethel OMS, which is located in the ADEC office in Juneau, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

**Site Name and Location:**

AKARNG Bethel OMS  
470 4<sup>th</sup> Avenue  
Bethel, Alaska 99559

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

2LT Jennifer Nutt  
Alaska Army National Guard  
PO Box 5800  
JBER, AK 99505-0800

**DEC Site Identifiers:**

File No.: 2407.38.002  
Hazard ID.: 3049

**Regulatory Authority for Determination:**

18 AAC 75

### **Site Description and Background**

A 1,000-gallon underground storage tank (UST) located east of the Alaska Army National Guard (AKARNG) Organizational Maintenance Shop (OMS), now called the Facility Maintenance Shop (FMS), was excavated and removed on September 16, 1992 by Shannon and Wilson Inc. (S&W). At the time, approximately 90 cubic yards of contaminated soil was excavated from the vicinity of the tank. Soil samples collected from the base of the excavation indicated that petroleum constituents were present in concentrations above ADEC cleanup levels. The contaminated soil was placed inside a 20-mil polyethylene liner and returned to the excavation.

The release was reported to ADEC in January of 1998 following a Preliminary Assessment/Site Investigation prepared by Ogden Environmental and Energy Services Co., Inc. on behalf of the AKARNG. The site was added to the ADEC Contaminated Sites Program database in April of 1998.

### **Contaminants of Concern**

During site investigation and cleanup activities at the site, samples were collected from soil and analyzed for diesel range organics (DRO), residual range organics (RRO), gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs).

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

- DRO
- RRO
- GRO
- BTEX
- 1-methylnaphthalene
- 2-methylnaphthalene
- Benzo(g,h,i)perylene

### **Cleanup Levels**

The Record of Decision for the site dated December 3, 2012 identified the Contaminants of Concern and cleanup levels for the site. The approved cleanup levels for the site are the ADEC Method 2, under 40-inch zone, for the most stringent of direct contact or outdoor inhalation pathways in Table B1 and ingestion or inhalation in Table B2 of 18 AAC 75.341. The migration to groundwater pathway is incomplete because there is permafrost at the site and no groundwater has been found to 30 feet below ground surface. There have been no impacts to surface water.

**Table 1 – Approved Cleanup Levels**

Contaminant	Soil (mg/kg)
Benzene	11
Toluene	220
Ethylbenzene	110
Total xylenes	63
GRO	1,400
DRO	10,250
RRO	10,000
1-methylnaphthalene	280
2-methylnaphthalene	280
Benzo(g,h,i)perylene	1,400

mg/kg = milligrams per kilogram

### **Characterization and Cleanup Activities**

A site characterization under 18 AAC 75.335 was conducted in 1994 and soil samples collected from the vicinity of the UST had GRO and BTEX above ADEC cleanup levels (S&W 1994). The contaminated soil appeared to extend up to 50 feet from the UST and at a depth of up to 5 feet below ground surface. No soils were excavated at this time. The water well on site that supplies non-potable water for hygiene purposes was also sampled for petroleum products and no target analytes were detected.

In 1996, a Preliminary Investigation/Site Assessment was performed at the site (Ogden Inc. 1998). Soil samples were collected from surface soil (up to 1 foot below ground surface) at 10 locations at the OMS facility and the results of analyses indicated that DRO and total petroleum hydrocarbons were present in surface and shallow subsurface soils in concentrations greater than ADEC cleanup levels. The source of the contamination was assumed to be associated with above ground storage tanks (ASTs). One soil sample was collected from the UST footprint at a depth of 1 foot below ground surface and field screened using a field-portable IR spectrophotometer. The field screening result was 63.5 ppm total petroleum hydrocarbons. No analytical sample from the UST location was collected. The investigation found no evidence that petroleum contamination had migrated off-site.

A second investigation occurred in October of 1996 involving an excavation at the footprint of the UST removed in 1992 (Montauk Environmental Engineering 1996). Approximately 155 cubic yards of GRO and BTEX contaminated soil was excavated and thermally treated. The surface area of the excavation was about 960 square feet and the depth was 6 feet. No groundwater was encountered during the excavation, but there was some perched water presumably due to permafrost thawing. Following field-screening, fifteen confirmation soil samples from the excavation and 1 water sample from the facility water well were sent to the laboratory for analysis of GRO and BTEX. There were no contaminants of concern detected in the well water. Confirmation soil sampling post-excavation indicated that not all of the contaminated soil had been removed and that there was remaining soil with concentrations of GRO and BTEX above ADEC cleanup levels.

Further remediation activities in the vicinity of the UST footprint occurred in 1998 (BNCI 1998). Approximately 290 cubic yards of overburden and 840 cubic yards of contaminated soil were excavated and thermally remediated in Bethel. Sampling post-excavation indicated that contaminated soils remained near

the water line. The maximum DRO and GRO concentrations post-excavation were 2,140 and 120 mg/kg respectively.

A diesel spill of approximately 18-23 gallons from a day tank inside the armory building was reported to the ADEC on December 13, 2010. Approximately 4,000 pounds of potentially impacted ice and snow were removed from the spill area outside of the armory and taken to an oil-water separator. On June 2, 2011, the spill site was investigated (Ahtna 2011). Nineteen borings were advanced on site and soils were field screened using a PID. Nine soil samples were collected and analyzed for DRO and RRO. A subset of samples were also analyzed for BTEX. All of the samples were collected from the ground surface to 1 foot below. The results of the analyses indicated that the remainder of the petroleum contamination from the day tank spill was at concentrations below ADEC cleanup levels.

A site characterization was completed in September of 2012 at the location of the former UST and at 3 ASTs (BGES Inc. 2012). Twenty-two soil borings were advanced at various locations on site and soil samples collected from them at depths up to 30 feet below ground surface. Samples were screened in the field using a PID and analytical samples were submitted for the analysis of GRO, BTEX, DRO, RRO, and PAHs. All of the soil samples with the exception of one soil sample having a DRO concentration of 11,200 mg/kg had petroleum constituents below ADEC cleanup levels.

A final excavation of the remaining soil contamination originating from the removed UST was completed in 2015 (Brice Environmental Services Corporation). Before excavation activities began, about 30 cubic yards of clean overburden was removed from the UST site. Field screening using a PID guided the excavation and confirmation samples were collected from the base and sidewalls once screening results identified clean soils. Approximately 9 cubic yards of contaminated soil from just over 5 feet below ground was excavated from the site and stored in Super Sacks prior to disposal at the Columbia Ridge Landfill. Nine confirmation samples were analyzed for DRO, RRO, GRO, and BTEX. Ten percent of the samples were also analyzed for PAHs. Analytical results for the confirmation samples collected from the excavation limits indicated that all of the remaining contaminant concentrations were less than the ADEC-approved cleanup levels.

### **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 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 ingestion cleanup levels.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the sub-surface, but is below inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De-Minimis Exposure	Contamination remains at depths from 3-5 feet below ground surface at levels below 500 mg/kg DRO and GRO. These concentrations are not expected to pose an indoor inhalation hazard.
Groundwater Ingestion	Pathway Incomplete	Supra-permafrost groundwater is not a potential drinking water source.
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	Contamination is not negatively impacting ecological receptors.

**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. “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

Soil contamination at the site has been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. This site 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 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.
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.

August 24, 2016

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 about this closure decision, please feel free to contact me at (907) 465-5207, or email at [danielle.duncan@alaska.gov](mailto:danielle.duncan@alaska.gov).

Sincerely,



Danielle Duncan  
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit, via electronic mail  
Anne Marie Palmieri, Environmental Program Specialist IV, ADEC, via electronic mail