

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**Division of Spill Prevention and Response**  
**Contaminated Sites Program**  
**RECORD OF DECISION**  
**For the**  
**AKARNG Former Bethel Army Aviation Operating Facility (AAOF)**

**Site Location:** the Area of Concern is (AOC) is located adjacent to an existing aboveground storage tank (AST) off the northeast corner of the former Bethel AAOF. It is located in Section 13 of Township 8 North, Range 72 West, Seward Meridian, Bethel, Alaska.

**Street Address:** Former AKARNG Hangar (AAOF), Bethel Airport, Bethel, AK 99559.

**Legal Description:** Lot 9A and 10, block 4, Airport Subdivision, Bethel, Alaska.

**Database Hazard ID:** 3048.

**File Number:** 2407.38.024.

**Responsible Person:** Alaska Army National Guard (AKARNG).

**Property Owner:** State of Alaska Department of Transportation and Public Facilities – Aviation.

**Contaminants of Concern/Media Impacted:** Gasoline-range organics (GRO) and diesel-range organics (DRO) occur in subsurface soil ranging approximately 8-10 feet below ground surface (bgs). Groundwater was not encountered at the site.

**Regulatory Authorities:** Clean-up Rule (18 AAC 75.341).

**Other Relevant Guidance/Policy:** Alaska Department of Environmental Conservation (ADEC), Guidance for Cleanup of Petroleum Contaminated Sites (May 2010).

**Site Information:** the AOC is located adjacent to an existing AST off the northeast corner of the former Bethel AAOF. Approximately 90 gallons of diesel fuel were spilled during the filling of a former AST in 1997. The AOC is approximately 100 square feet (SF).

**Investigative Efforts Conducted To Date:** The combination of results from the 1999 corrective action, as well as the 2011 and 2012 subsurface investigations jointly delineate the magnitude, depth, and lateral extent of impact from the diesel fuel spill.

- **1999 Corrective Action.** In 1999, the AKARNG excavated 107 cubic yards (CY) of impacted soil originating from the 1997 diesel fuel spill. The AKARNG collected five soil samples from the excavation. The samples were analyzed for DRO exclusively. Four samples were below the method detection limit. One sample, collected from the west wall of the excavation at 6 feet bgs, was reported at 7,890 mg/kg. Before backfilling the excavation with clean fill, a 20 mil liner was placed along the west wall. This liner acted as a restrictive barrier between clean backfill and remaining DRO-contaminated soil. The area outside of the liner was the AOC investigated in 2011 and 2012. Groundwater was not encountered during this corrective action.
- **2011 Subsurface Investigation.** In 2011, the AKARNG advanced three hand auger borings to 8 feet bgs in the AOC. The borings were screened using a PID at 5 and 8 feet bgs. Representative samples from each of the three borings were submitted to SGS' laboratory in Anchorage, Alaska for analysis. Concentrations of GRO, DRO, benzene, toluene, ethylbenzene, and xylenes (BTEX),

and select polycyclic aromatic hydrocarbons (PAH) were below the respective method detection limits in two of the borings. The representative sample from the third boring, located in the vicinity of the 1999 DRO-elevated sample, had a concentration of GRO of 303 mg/kg and 337 mg/kg, for the original and duplicate, respectively. The concentration of DRO in the same sample was 9,230 mg/kg and 10,200 mg/kg, for the original and duplicate, respectively. As this sample was collected from the bottom of the boring, the investigation was not conclusive as to the vertical extent of contamination. Groundwater was not encountered during this investigation.

- **2012 Subsurface Investigation.** In 2012, the AKARNG advanced three hand borings to 12 feet bgs. For all three borings, the concentrations of GRO, BTEX, and select PAHs were reported at concentrations below the ADEC cleanup levels referenced in this Decision Document. DRO concentrations were reported below method detection limits for two of the borings. DRO ranged between 2,410 mg/kg and 5,380 mg/kg in one of the three borings. This latter boring was located in the vicinity of the GRO- and DRO-elevated samples from the previous investigations. Groundwater was not encountered during this investigation.

**Maximum Reported Onsite Contaminant Concentrations in Soil:**

- GRO: 337 mg/kg
- DRO: 10,200 mg/kg
- Benzene: below method detection limits (< 0.0175 mg/kg)
- Toluene: below method detection limits (< 0.0443 mg/kg)
- Ethylbenzene: below method detection limits (< 0.0443 mg/kg)
- Total Xylenes: below method detection limits (< 0.0885 mg/kg)
- Select PAHs: maximum concentrations below their respective method detection limits. Method detection limits are below their respective ADEC cleanup levels.

**Cleanup Method:** 18 AAC 75.341; ADEC Method Two, Under the 40-inch Zone, Tables B1 for Direct Contact and Table B2 for Ingestion.

**Completed Routes of Exposure:** The exposure pathways for direct contact and inhalation are complete routes of exposure if the subsurface is exposed such as during future excavation activities. These pathways are not considered significant at this time as the contamination appears to be limited to depths ranging between 8 to 10 feet bgs and limited to a small area of less than 100 SF in an industrial setting.

The exposure pathway for migration to groundwater is incomplete. The FAA reports that permafrost in the vicinity of the airport is approximately 29 feet below ground surface (bgs) (WELTS). Permafrost ranges up to several hundred feet thick in the Bethel area (USGS). The sources for public drinking water are from two deep groundwater wells that draw water from depths below permafrost: one is approximately 2 miles northeast of the AOC at a depth of 420 feet bgs and one is approximately 2.5 miles northeast of the AOC at a depth of 490 feet bgs (City of Bethel). A review and local inquiry did not indicate private drinking water wells are in use in the immediate vicinity of the airport (City of Bethel). Drinking water is delivered by vehicle to the existing building and stored on site (Ryan Air).

**Cleanup Levels Selected/Basis:** ADEC Method Two, Under the 40-inch Zone, Tables B1 for Direct Contact and Table B2 for Ingestion:

- Benzene: 11 mg/kg
- Toluene: 220 mg/kg
- Ethylbenzene: 10,100 mg/kg
- Total Xylenes: 20,300 mg/kg
- Select PAHs: cleanup levels vary
- GRO: 1,400 mg/kg
- DRO: 10,250 mg/kg

**Cleanup Alternatives Analyzed:** Several cleanup alternatives were analyzed by the AKARNG. Remedial alternatives evaluated for the site included (1) cleanup complete under ADEC 18 AAC 75, Method 2 Under 40-Inch Zone for Direct Contact and Ingestion, (2) bioremediation, and (3) over-excavation.

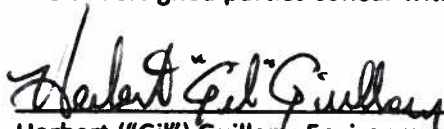
**Cleanup Alternative Selected/Basis:** A preliminary list of cleanup alternatives for soil was initially screened based on their effectiveness, implementation, and cost. The proposed remedial approach was developed by evaluating appropriate combinations of cleanup alternatives that might be applicable. Each remedial approach was evaluated with respect to nine criteria (protectiveness, compliance with Federal and State applicable or relevant and appropriate requirements [ARARs], short- and long-term effectiveness, overall reduction of toxicity, mobility, and mass through treatment, implementation, cost, agency acceptance, and community acceptance) in accordance with the National Contingency Plan and the EPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA*.

The proposed remedial approach for the site is cleanup complete under the ADEC cleanup levels referenced in this Decision Document. This is the best alternative for short- and long-term effectiveness; satisfies the CERCLA remedy evaluation criteria; and is protective of human health, safety, welfare and the environment.

**Proposed Cleanup Plan:** No further action necessary.

**Review of Cleanup Action after Site Closure:** Under 18 AAC 75.380(d)(1), ADEC may require additional cleanup action if new information is discovered which leads ADEC to make a determination that the cleanup describe in this Record of Decision is not protective of human health, safety, and welfare or the environment.

The undersigned parties concur with this Record of Decision for the former Bethel AAOF.

  
Herbert ("Gil") Guillory, Environmental Manager  
Alaska Army National Guard

  
Date

  
Debra Caillouet, Environmental Specialist  
ADEC Contaminated Sites Program

  
Date