THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation
DIVISION OF SPILL PREVENTION & RESPONSE
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File No: 2101.38.065

June 26, 2014

Donna Baumler
AFCEC/OLAJ
6346 Arctic Warrior Drive
JBER, AK 99506-3221

Re: Cleanup Complete Determination for JBER-Elmendorf ST061 Classic Owl

Dear Ms. Baumler;

The Alaska Department of Environmental Conservation (ADEC) has reviewed the environmental records for the referenced site. This decision document memorializes the site history, cleanup actions, cleanup complete determination, and standard conditions for long-term site management for CS DB Hazard ID 2747 and file number 2101.38.065.

Site Name and Location
JBER-Elmendorf ST061 Classic Owl
One-third of a mile south of Hillberg Lake
East of Fairchild Avenue and west of Building 21309
JBER, Alaska 99506

Regulatory Authority for Determination: 18 AAC 75

Site Description and Background
ST061 is the former location of a 1,000-gallon heating oil underground storage tank (UST) that was located east of a former vehicle maintenance facility (Building 52-140). The vehicle maintenance facility was demolished, and the UST and associated piping were decommissioned in 1992. During the removal of the former UST, it was noted that the tank was in poor condition, with corrosion along the bottom. The existing Building 21309 was constructed on the site in 1992.

Contaminants of Concern
Diesel Range Organics (DRO)
Gasoline Range Organics (GRO)

Cleanup Levels
The cleanup level for soils at ST061 containing DRO contamination is 10,250 mg/kg in the Under 40-inch Zone based on the ingestion pathway within the 0 to 15' interval below ground surface (bgs).

The cleanup level for soils at ST061 containing GRO concentrations is 1,400 mg/kg in the Under 40-inch Zone based on the ingestion pathway within the 0 to 15' interval below ground surface.

Modeling using the Hydrocarbon Risk Calculator, in accordance with Method 3 under 18 AAC 75.340, demonstrated that residual petroleum contaminants in soil do not pose a migration to groundwater risk/concern.

Characterization and Cleanup Activities
In 1990 and 1991, the U.S Army Corps of Engineers (USACE) drilled seven soil borings and two monitoring wells (AP-3602 and AP-3606) at the site. In February 1991, USACE drilled an additional soil boring and two additional monitoring wells (AP-3566 and AP- 3567) to assist in this investigation. Analyses of soil samples collected indicated low levels of BTEX compounds and DRO; DRO was present in groundwater at concentrations above the site cleanup standards.

In 1992, the 1,000-gallon heating oil UST was decommissioned and excavation samples were collected. The tank was in poor condition, with corrosion along the bottom. Extractable petroleum hydrocarbon (EPH) results from soil samples collected from the tank excavation ranged from 5,300 to 14,000 mg/kg. During the decommissioning and excavation of the foundation for the new building, a clay pipe was encountered. The clay pipe and a dry well that received drainage from a floor drain in the oil changing pit were investigated and addressed as SS063 under a separate LFI.

In 1993, two monitoring wells and three soil borings were drilled near the UST. One boring was installed as part of a separate bioventing treatability study. The bioventing system was operated from 1993 until 2007.

In 2000, three boreholes were drilled near the former UST location to assess remedial progress. Analytical results from the 2000 soil sampling event at ST061 indicated that GRO, BTEX, and polynuclear aromatic hydrocarbon (PAH) constituents were not detected above the site closure criteria. DRO, however, was present at concentrations above the site cleanup standards.

In 2004, two borings were drilled and three analytical samples were collected from each boring to assess remedial progress. The results of the 2004 soil samples confirmed that DRO concentrations in soil still exceed the cleanup standard 10 feet bgs.

In 2007, the bioventing system was shut down. Data collected during the 2000 and 2004 site investigations showed that the bioventing system had successfully remediated the vadose zone and that most of the remaining soil contamination was confined to the water table smear zone.

In 2012 and 2013, additional site characterization work was conducted. The average and 95% UCL DRO concentrations within the NAPL source area are approximately 2,345 and 3,189 mg/kg, respectively. The average and 95% UCL GRO concentrations were determined to be 202.3 and 1,468 mg/kg, based on inclusion of the maximum 1993 result of 1,800 mg/kg GRO in a sample collected 10' below ground surface.

Although the maximum measured GRO concentration in 1993, and the recently calculated 95% UCL on the mean GRO concentration, exceed the maximum allowable concentration listed in Table B-2 (1,400 mg/kg GRO), ADEC agrees that intrinsic remediation has likely occurred over the past 21 years. This is supported by the facts data from soil borings located in close proximity to the locations of the highest GRO result in 1993 have been non-detect or very low concentrations for GRO and there have not been any groundwater exceedances for GRO at ST061

Groundwater levels are interpreted to vary seasonally between approximately 13 to 18 feet below ground surface (bgs). Groundwater from ST061 is interpreted to flow towards Knik Arm, which is approximately one mile to the northwest.

Cumulative Risk Evaluation

The HRC was used to evaluate risk from petroleum contamination at ST061. The HRC is designed for sites with petroleum contamination—specifically the petroleum fractions, BTEX, PAHs, and other compounds dissolved in petroleum—with the intention and purpose of assessing human health risk from this type of contamination.

The estimated rounded cumulative cancer risk at ST061 for the current industrial and hypothetical residential exposure scenarios, across all exposure pathways, (4×10^{-7} and 1×10^{-6} respectively) is below the regulatory risk standard of 1×10^{-5} for petroleum hydrocarbons.

The estimated cumulative noncancer HI at ST061 for the current industrial and hypothetical residential exposure scenarios, across all exposure pathways, (0.0 and 0.01 respectively) is below the regulatory risk standard of 1. ST061 meets the ADEC risk criteria [18 AAC 75.325(g)] for petroleum hydrocarbons. The risk posed by the DRO aromatic and aliphatic surrogate fractions meets the risk standard for each exposure pathway, assuming a residential land use scenario.

An ecoscoping form was completed for ST061 and no observed surface soil staining, no impacted vegetation, no surface water or sediment runoff from the site. The ecoscoping form indicates that a more in-depth risk evaluation is not needed and that the ST061 site conditions are protective of the environment.

Pathway	Result	Explanation
Direct Contact with Surface Soil	Pathway Incomplete	No contamination present in surface soil
Direct Contact with Subsurface Soil:	Exposure Controlled	Contamination remains in the sub-surface soil, but is below ingestion cleanup levels.
Outdoor Air Inhalation:	Pathway Incomplete	Contamination remains in the sub-surface, but is below inhalation cleanup levels.
Groundwater Ingestion:	Pathway Incomplete	Groundwater is not used as a drinking water source in the vicinity of the site.
Surface Water Ingestion:	Pathway Incomplete	Surface water is not present at the site.

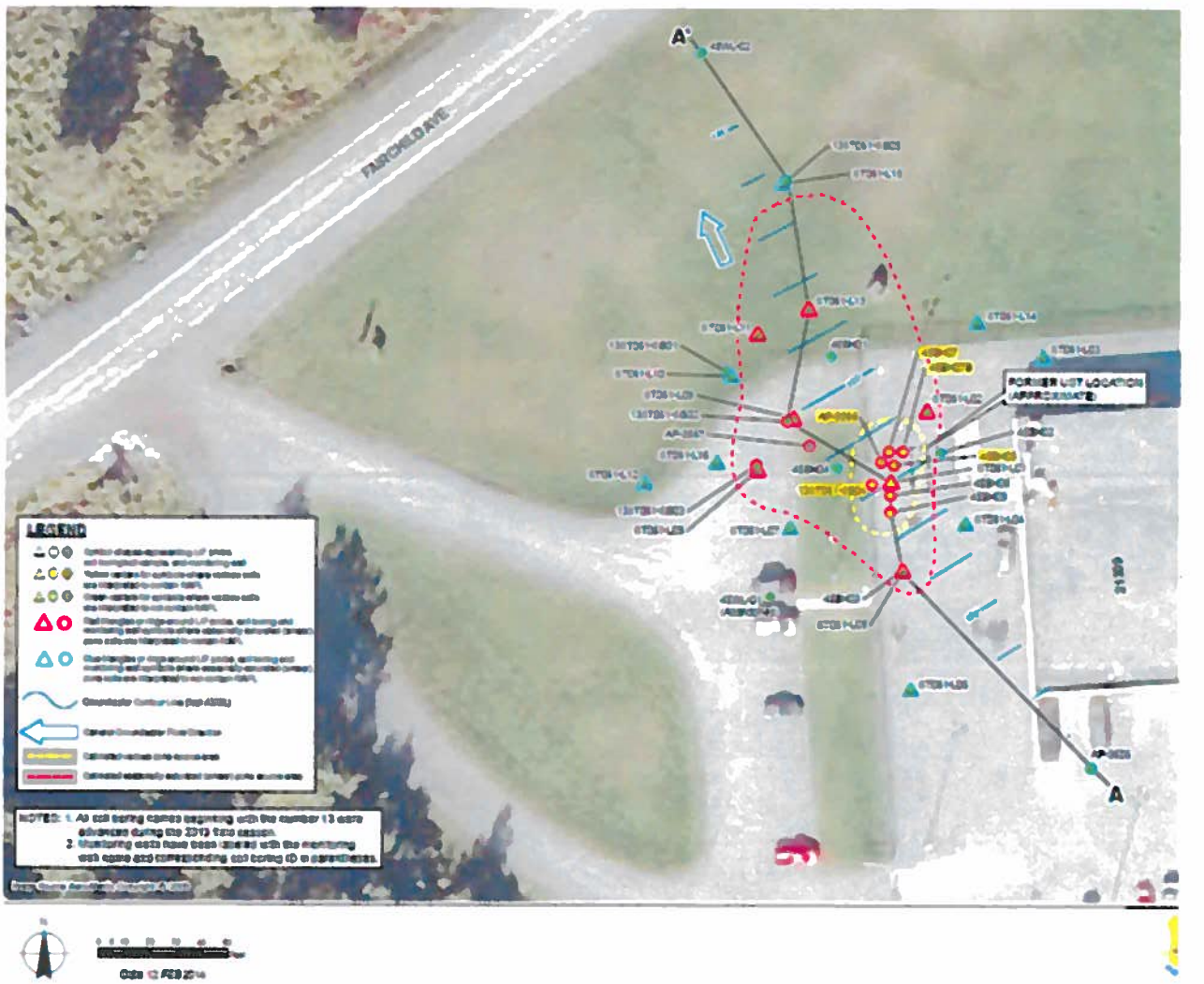
Wild or Farmed Foods Ingestion:	Pathway Incomplete	Contaminants of concern do not have the potential to bioaccumulate in plants or animals. .
Indoor Air Inhalation (Vapor Intrusion):	Pathway Incomplete	No soil or groundwater contaminants exceed VI screening criteria or cumulative risk levels
Ecological:	Pathway Incomplete	No visible surface staining, no distressed plants, no sediment transport to surface water.

ADEC Decision

Based on a review of the environmental records, ADEC has determined that ST061 has been adequately characterized and has achieved the applicable requirements under the site cleanup rules. ADEC is issuing this written determination that cleanup is complete, subject to a future department determination that the cleanup is not protective of human health, safety, welfare, or of the environment [18 AAC 75.380(d)]. A "cleanup complete" designation will be entered for ST061 in 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. 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 figure below).



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. Notations of these requirements shall be made on the Environmental Restoration map/ Base General Plan which will show up during a dig permit review/work clearance request process.

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, 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.

Sincerely,

Louis Howard
Environmental Program Specialist