



THE STATE
of **ALASKA**

GOVERNOR SEAN PARNELL

**Department of
Environmental Conservation**

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

555 Cordova Street
Anchorage, Alaska 99501
Phone: 907.269.7503
Fax: 907.269.7649
dec.alaska.gov

File No: 330.38.012

Return Receipt Requested

Article No.: 7010 2780 0000 2178 4186

May 2, 2013

Mr. Jan Shifflett
Alyeska Pipeline Service Company
Mail Stop 507
P.O. Box 196660
Anchorage, AK 99519

Re: Decision Document; Alyeska PS 12 Fuel Island Area; Cleanup Complete Determination

Dear Mr. Shifflett;

The Alaska Department of Environmental Conservation (ADEC), Contaminated Sites Program (CSP) has completed a review of the environmental records associated with Alyeska Pump Station 12 Fuel Island Area, which is located at Milepost 64.7, Richardson Highway. Based on the information provided to date, ADEC has determined that the remaining contaminant concentrations and disposition do not pose unacceptable risks to human health or the environment, and this site will be closed.

This decision is based on the project files for the subject site, which are located in ADEC's offices in Anchorage, Alaska. This letter summarizes the decision process used to determine the site's environmental status and provides a summary of the regulatory issues considered in this Cleanup Complete determination.

Site Name and Location:

Alyeska PS 12 Fuel Island Area
Milepost 64.7 Richardson Highway
Copper Center, Alaska 99573

DEC Site Identifiers:

File No.: 330.38.012
ADEC Reckey: 1992720130107
Hazard ID: 1739
Source ID: 78305

Name and Mailing Address of Contact Party:

Mr. Jan Shifflett, Response & Remediation SME
Alyeska Pipeline Services Company
Mail Stop 507
P.O. Box 196660
Anchorage, AK 99519-6660

Regulatory Authority for Determination:

18 AAC 75

Background

Pump Station 12 is located in a semi-remote, rural area approximately 45 miles northeast of Valdez, Alaska on the east side of the Richardson Highway at Milepost 64.7 (Figure 1). The nearest community (Tonsina, Alaska; population 89) is approximately 12.5 miles north of Pump Station 12, which has been isolated from the Trans Alaska Pipeline System and is no longer active or staffed. Access to this industrial facility is restricted by signage and security fencing. An inactive non-community (formerly Class C) drinking water well is located approximately 260 ft. east southeast of the source area, and groundwater is first encountered approximately 30 ft. Below Ground Surface (BGS) near the fuel transfer area.

Soil impacted by Turbine fuel and diesel fuel was identified within the fuel handling area at Pump Station 12 (Figure 1) during a site assessment on July 1, 1992. Remediation efforts began immediately thereafter, and approximately 900 cubic yards of contaminated soil was excavated and thermally remediated at Organic Incineration Technologies in North Pole, Alaska between July 1st and 9th, 1992.

Contaminants of Concern

Analytical methods in use during this release categorized petroleum constituents into different hydrocarbon fractions than contemporary (2013) methods, but regulatory changes in September 2000 updated the analytical methods and reporting criteria. For example, samples collected in 1992 and 1993 were analyzed for Volatile Petroleum Hydrocarbons (VPH), Extractable Petroleum Hydrocarbons (EPH), Total Residual Petroleum Hydrocarbons (TRPH; C₆-C₇₀ minus TPH-G and TPH-D), and benzene, toluene, ethylbenzene, and xylenes (BTEX); whereas contemporary methods analyze and report analogous compounds as Gasoline Range Organics (GRO), Diesel Range Organics (DRO), and Residual Range Organics (RRO), as shown in Table 1.

Table 1.

Historical Carbon Fractions		Contemporary (2013) Carbon Fractions	
VPH	C ₅ -C ₁₂ Aliphatics	GRO	C ₆ - C ₁₀ Aliphatics
	C ₆ -C ₁₀ Aromatics		C ₆ - C ₁₀ Aromatics
EPH	C ₉ - C ₃₆ Aliphatics	DRO	C ₁₀ - C ₂₅ Aliphatics
	C ₁₁ - C ₂₂ Aromatics		C ₁₀ - C ₂₅ Aromatics
TRPH	C ₆ - C ₇₀ minus VPH and EPH	RRO	C ₂₅ - C ₃₆ Aliphatics
			C ₂₅ - C ₃₆ Aromatics

Notes to Table 1. Contemporary (2013) techniques using AK Methods 101 for GRO, 102 for DRO, and 103 for RRO do not report aliphatic compounds separate from aromatic compounds.

Based on analysis of soil and water samples, the following Contaminant of Concern (COC) was identified:

- EPH / DRO

Cleanup Levels

Contemporary soil cleanup levels for DRO at this site are established in 18 AAC 75.341, Method Two, Table B2, using the Direct Contact, Inhalation, and Migration to Groundwater pathways in the *Under 40 Inch Zone* and are presented in Table 2. Contaminants of concern were not detected in groundwater, so associated cleanup levels are not depicted.

Table 2

Contaminants of Concern	Medium	Method Two, Direct Contact*	Method Two, Inhalation*	Method Two, Migration to Groundwater*
DRO	Soil	10,250	12,500	250

Notes to Table 2. *All soil contaminant concentrations are presented as mg/Kg.

Site Characterization and Cleanup Activities

Maximum DRO concentrations reached 22,000 mg/Kg in soil that was excavated from 2 ft. BGS. Contaminant concentrations then rapidly decreased with depth. Excavated soil, totaling approximately 900 cubic yards, was transported to Organic Incineration Technologies (OIT) in North Pole, Alaska for thermal remediation. Confirmation samples collected from the floor and sidewalls of the excavation near fixed structures contained up to 4,670 mg/Kg DRO at 6 ft. BGS. Further lateral excavation was deemed to be impractical due to concerns over the structural integrity of fuel pipelines, fixed utilities, and the fuel offloading building's foundation. An estimated 80 cubic yards of potentially contaminated soil was left in place near these structures. Therefore, contaminated soil was excavated to the maximum extent practical before a liner was installed to reduce the impact of potential future releases. The excavation was later backfilled with clean gravel.

Five additional soil borings were advanced around the former excavation's perimeter in 1993 to maximum depths ranging from 30.5 to 37 ft. BGS. Groundwater was encountered at approximately 30 ft. BGS in all borings. The highest DRO concentration detected in soil samples reached 240 mg/Kg, which exceeded historic DRO cleanup levels (200 mg/Kg) but is below contemporary DRO cleanup levels (250 mg/Kg). Contamination was not detected in groundwater samples.

Pathway Evaluation

Following investigation and cleanup at this site, exposure to remaining contaminants were evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are conduits by which contamination may reach human and/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 evaluation is depicted in Table 3.

Table 3 – Exposure Pathway Evaluation

Exposure Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Soil was excavated to 2-6 ft. below ground surface and replaced with clean fill over a liner. Therefore, this pathway is considered to be incomplete.
Sub-Surface Soil Contact	Exposure Controlled	Contamination may remain beneath an impervious liner and beneath fixed structures, but it has been subjected to 21 years of natural attenuation processes. Thus, access and exposure to contamination that may remain is controlled by the liner and fixed structures.
Inhalation – Outdoor Air	Pathway Incomplete	Confirmation samples show that contaminant concentrations are well below applicable cleanup levels for outdoor air inhalation.

Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	This pump station is unmanned and has been isolated from the pipeline. Contamination has not been detected in groundwater or within 5 vertical feet of any building. Site visitations are likely to be rare and brief. Therefore, risk via this pathway is considered to be de minimis.
Groundwater Ingestion	Pathway Incomplete	Contamination has not been detected in groundwater samples, and last known soil concentrations were below migration to groundwater cleanup levels. Therefore, this pathway is incomplete.
Surface Water Ingestion	Pathway Incomplete	Contamination has not been detected in surface waters. Therefore, this pathway is considered to be incomplete.
Wild Foods Ingestion	Pathway Incomplete	This site is located within a fence-secured, industrial pump station where wild foods are not harvested.
Exposure to Ecological Receptors	Pathway Incomplete	Site is within a fence secured, industrial facility with no evidence of ecological damage. Therefore, this pathway is considered to be incomplete.

Notes to Table 3: “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal volume of contamination that remains. “Pathway Incomplete” means that in ADEC’s judgment, contamination has no potential to contact receptors. “Exposure Controlled” means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination.

ADEC Decision

The cleanup actions to date have served to excavate and adequately remove contaminated soil from the site. Based on the information available, ADEC has determined that no further assessment or cleanup action is required. There is no longer an unacceptable risk to human health or the environment, and this site will be designated as “Cleanup Complete” in the Department’s database.

Although a Cleanup Complete determination is being granted, ADEC approval is required for off-site soil disposal in accordance with 18 AAC 75.325(i). It should be noted that movement or use of potentially contaminated soil in a manner that results in a violation of 18 AAC 70 water quality standards is unlawful. This determination is in accordance with 18 AAC 75.380(d) and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that this site 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, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the Department’s decision. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, 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 contact me by phone at (907) 269-7546 or by e-mail at rick.bernhardt@alaska.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rick R. Bernhardt", with a stylized flourish at the end.

Richard R. Bernhardt, PhD
Environmental Program Specialist

Cc: Scott Rose, SLR International

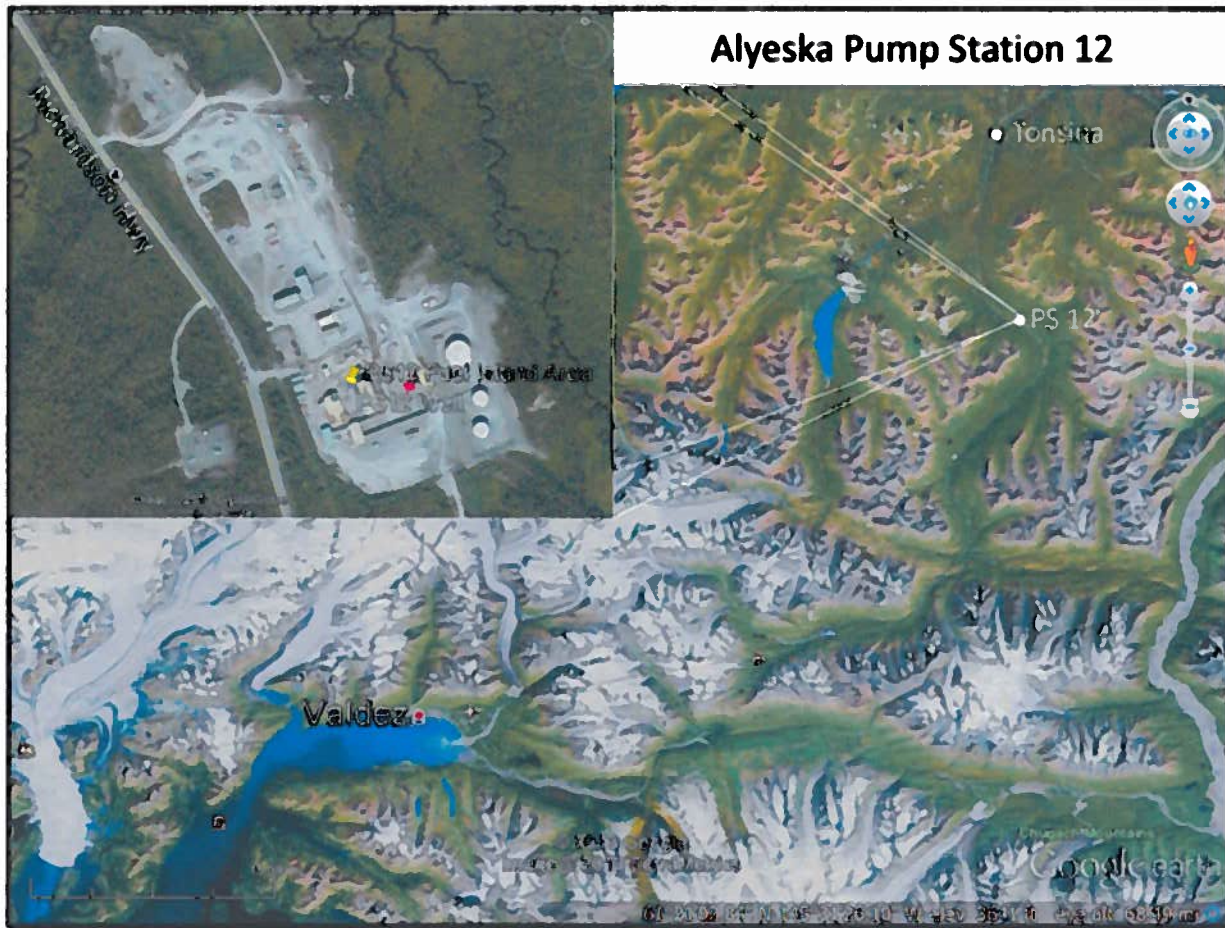


Figure 1. Alyeska PS 12 Fuel Island Area. Soil contaminated with diesel fuel and turbine fuel (Therminol) was discovered within the Fuel Transfer Area at Pump Station 12 during a site assessment in July 1992. Impacted soil was excavated to the maximum extent practical and thermally remediated in North Pole, Alaska. Inaccessible contamination beneath fixed structures has been subjected to 21 years of natural attenuation processes.