

STATE OF ALASKA

SARAH PALIN, GOVERNOR

**DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM**

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File: # 330.38.033

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April 29, 2008

Jan Shifflet
Alyeska Pipeline Service Company
Mail Stop 507
PO Box 196660
Anchorage, AK 99519-6660

Re: Alyeska PS 01 Tank 111
Record of Decision

Dear Mr. Shifflet:

The Alaska Department of Environmental Conservation (ADEC), Contaminated Sites Program, reviewed the environmental records associated with site Pump Station 1 Tank 111. This site had been contaminated by the release of a hazardous substance; however, based on the information provided to date, ADEC has determined that no further remedial action is required, and that Pump Station 1 Tank 111 can be closed subject to the conditions outlined in this document. The hazardous substance contamination has been adequately addressed and does not pose an unacceptable risk to human health or the environment.

This decision is based on the administrative record for this site which is located in the offices of the ADEC in Anchorage, Alaska. This letter summarizes the decision process used to determine the environmental status of this site and provides a summary of the regulatory issues considered in the ADEC determination.

Introduction

Site Name and Location

Alyeska PS 01 Tank 111
Pipeline Mile 0
Spine Road
Prudhoe Bay, AK

Name and Mailing Address of Contact Party:

Jan Shifflet
Alyeska Pipeline Service Company
900 East Benson Blvd
Anchorage, AK 99519

Database Record Key and CS file number:

ADEC Reckey # 1990730132701
CS file # 330.38.033

Regulatory authority under which the site is being cleaned up:

18 AAC 75 and 18 AAC 70

Background

The site is an active gravel pad. The base of Tank 111 rests on a two-foot gravel pad which is underlain by a continuous vapor barrier and 6 inches of rigid, polystyrene insulation. Soil/gravel beneath the insulation is kept frozen by lines that circulate refrigerant brine. In November 1990, crude oil was observed entering into a service vault located along the west side of Tank 111. Visually contaminated soil was excavated where the structural integrity of the tank would not be compromised.

On June 12, 1991 a regional manager of the State Pipeline Coordinator's Office approved backfill of excavation. During 2003 facility maintenance activity at PS 01, crude oil was discovered west of Tank 111 and assumed to be related to the more than 10 year old release as there were no other documented releases in the area.

Site Characterization

In 1991, soil samples were collected in order to delineate contamination directly underneath Tank 111 by way of cutting holes in the bottom of the tank. It was determined that there was a sharp boundary between visibly contaminated soil and soil with total petroleum hydrocarbons (TPH) less than 100 mg/kg. Visibly contaminated soil was analyzed only using the Toxicity Characteristic Leaching Procedure (TCLP) with results exceeding 0.5 mg/L benzene characteristic of hazardous waste.

In 2004, the extent of contamination outside the Tank 111 footprint was investigated. Results from ten soil borings contained concentrations up to 866 mg/kg diesel range organics (DRO) and 11,300 mg/kg residual range organics (RRO). Benzene, toluene, ethylbenzene, and xylenes (BTEX), gasoline range organics (GRO), and polynuclear aromatic hydrocarbons (PAH) were found to be below both ADEC Method One and Method Two cleanup levels. Monitoring wells were installed and a sampling program including pad pore water and surface water samples to further assess the magnitude and migration of contaminants. Pad pore water results historically over three years have not exceeded the Table C values used as guidelines and surface water samples have contained no detectable petroleum hydrocarbons.

Contaminants of Concern

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

Cleanup Levels

The cleanup levels for petroleum hydrocarbon-contaminated soil on manmade gravel pads and roads in the Arctic Zone are established in 18 AAC 75.341 Method One, Table A2 and 18 AAC 75.341 Method Two Tables B1 and B2.

A number of factors are considered by ADEC when evaluating site specific cleanup levels in the Arctic Zone including:

- human health (ingestion/inhalation);
- ecological impacts (contamination impacting ecological species other than humans);
- water (ground and surface) quality;
- presence of free phase product; and
- any other factors that might cause a deleterious impact to the environment.

In the Arctic Zone, the migration to surface water pathway is evaluated as the primary migration pathway since the migration to groundwater pathway is not considered applicable due to the presence of continuous permafrost.

The 18 AAC 75.341 Method Two Table B2 regulations also limit soil hydrocarbon concentrations to a “maximum allowable concentration”. This concentration was established based on a specific soil type in which hydrocarbon product may become mobile as a separate phase and migrate in the soil. If a petroleum hydrocarbon exceeds a soil saturation limit, there may be an increased risk of migration off the gravel pad to surface water or tundra that has to be evaluated when making environmental decisions. Therefore, the soil type must be evaluated when establishing cleanup levels in the Arctic Zone to ensure the petroleum hydrocarbon does not exceed the residual saturation levels and pose a risk by migrating.

ADEC has evaluated the current site specific information regarding North Slope soil types and considers a coarse gravel soil type to be representative of those gravel pads rather than a fine sandy silt soil that was considered when establishing the Table B2 Arctic Zone levels. The diesel range saturation point in a coarse gravel material is 2,200 mg/kg; the gasoline range saturation point is 950 mg/kg with residual range being 4,800 mg/kg.

NOTE: Even though the migration to groundwater pathway is not complete in the Arctic Zone, the soil cleanup levels established for the migration to groundwater pathway in the Over 40 inch Zone are considered to be the most stringent cleanup levels, and protective of human health and the environment. If these cleanup levels are achieved at an Arctic Zone site, it will allow for unrestricted closure. In addition, the 18 AAC 75.341 Method One Table A2 cleanup levels may also be considered when making a final closure determination. Either Method One or Method Two migration to groundwater cleanup levels are considered protective to allow full site closure. The guidance document, “Policy for Establishing Cleanup Levels for Sites in the

Arctic Zone in Accordance With 18 AAC 75, Article 3,” provides additional information for management of residual contamination in the Arctic Zone.

Pathway Evaluation

The human health (HH) exposure and migration pathways that were evaluated for this decision document included: inhalation of outdoor air; ingestion of soil; dermal contact with soil; and ingestion of groundwater. The inhalation and ingestion pathways may be complete, however, DRO, RRO, and benzene contaminant concentrations do not exceed 18 AAC 75.341 Table B2, Method Two risk based cleanup levels for either ingestion or inhalation. Therefore, the HH exposure risk is considered acceptable for inhalation, ingestion of soil, and dermal contact with soil.

In the Arctic Zone, the migration to surface water pathway is evaluated as a possible risk to HH (drinking water source) and/or for compliance with Alaska Water Quality standards (18 AAC 70). Any surface water adjacent to this pad is not a drinking water source; therefore, the human exposure pathway is not considered complete.

In addition, the migration to surface water is evaluated as a possible exposure pathway for ecological receptors because of the tundra wetland ecosystem that exists throughout the Arctic region. The migration to surface water pathway may be complete but the remaining contamination is below tundra grade and covered with overburden, and is not anticipated to impact ecological receptors.

The exposure pathway analysis above was supported by the most recent ADEC Exposure Tracking Model (ETM) ranking. The ETM results showed all pathways to be one of the following: De Minimis Exposure, Exposure Controlled, or Pathway Incomplete.

ADEC Decision

There is contamination remaining above established cleanup levels at Alyeska Pump Station 01 Tank 111 but ADEC has determined there is no unacceptable risk to human health or the environment, and this site will be conditionally closed.

This decision is subject to the following conditions:

1. A Notice of Environmental Contamination will be recorded on the ADEC database to document that there is residual contamination remaining on site above the most stringent ADEC cleanup levels;
2. Any proposal to transport soil off site requires ADEC approval in accordance with 18 AAC 75.370 (b)

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.

Site closure (without conditions) can be achieved when soil sampling confirms that all soil meets the most stringent ADEC cleanup levels.

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 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 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 ADEC Project Manager Keather McLoone at (907) 269-7526.

Sincerely,



Linda Nuechterlein
Environmental Manager

cc: Scott Rose, SLR
Gary Schultz, ADNR Fairbanks

Alyeska Pipeline Services Company agrees to the terms of this conditional closure as discussed above.

Jan Shifflet
Response and Remediation SME, Alyeska Pipeline Services Company