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: 1514.38.005

December 13, 2017

Sent via electronic mail only
Mr. Brandon Shaw
Inside Passage Electric Co-op
12480 Mendenhall Loop Rd
Juneau, AK 99801

Re: Decision Document: Kake Power Plant
Cleanup Complete Determination

Dear Mr. Shaw:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Kake Power Plant located on Eagle Street in Kake. 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 Kake Power Plant, 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:
Kake Power Plant
508 Eagle St.
Kake, AK 99830

Name and Mailing Address of Contact Party:
Brandon Shaw
Inside Passage Electric Co-op
12480 Mendenhall Loop Rd
Juneau, AK 99801

DEC Site Identifiers:
File No.: 1514.38.005
Hazard ID.: 2711

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background

The Kake Tlingit-Haida Regional Electric Authority (THREA) power plant and tank farm were constructed in the early 1970's and are located on Eagle Street across from the Kake city dock. The power plant has 3 diesel generators that supply electric power to the community of Kake. The former tank farm, located uphill from the power plant, consisted of two 20,000-gallon and two 12,000-gallon aboveground storage tanks. The tank farm fuel containment area consisted of a plastic liner under a concrete base pad surrounded by an earthen dike. A 4 inch (in.) drain line extends through the dike and daylights near the northwest corner of the power plant. A valve at the end of the pipe is used to dewater the containment area. The tanks were filled via a 4 in. line running underneath Keku Road to the city dock where the fuel barge unloads. THREA shares a fuel line header at the dock with Kake Tribal Fuels. A separate fill line extends to the tank farm.

The Kake Power Plant was added to the ADEC Contaminated Sites database in August of 1997 following a site visit by the ADEC in which petroleum spills/leaks were noted. On September 5, 1997, the valve to bulk fuel tank #2 was inadvertently left open during fuel transfer operations and the tank was overfilled with diesel fuel. In addition, the valve on the water drain line from the earthen containment area had an internal crack which caused it to fail. The faulty valve allowed fuel to drain from the earthen containment area onto the ground at the northwest corner of the power plant, down a culvert to a roadside ditch, and eventually, to marine waters. The spill was estimated to be approximately 800 gallons of #2 diesel fuel. Records indicate that an estimated 10-30 gallons of fuel reached marine waters, as much of the fuel was recovered from the containment area and roadside ditch by emergency spill responders using sorbent materials at the time of the spill. Shortly thereafter, the spill occurred.

Contaminants of Concern

During the site characterization and cleanup activities at this site, samples were collected from soil and analyzed for gasoline range organics (GRO), diesel range organics (DRO), and residual range organics (RRO) using Alaska Methods 101, 102, and 103, respectively. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- DRO

Cleanup Levels

DRO was detected in soil above the migration to groundwater cleanup level for the over-40 inch precipitation zone established in 18 AAC 75.341(d), Table B2 that applies to this site. Cleanup levels for this site were approved in November of 1998.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)
DRO	230

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

The investigation into the petroleum soil contamination was conducted in September 1997 and is documented in the *Site Assessment and Site Cleanup Kake Power Generation Facility Kake, Alaska,* prepared by Smith Bayliss LeResche Inc, and dated December 1, 1997. Since the power plant is situated between the bulk fuel tank farm and the marine shoreline, 5 test pits were advanced on the west (town side) of the power plant building and 2 test pits were advanced on the north side (between the tank farm and building). Seven of the test pits investigated the oil spill and the eighth test pit was completed to investigate the power plant breather tube exhaust contaminating soil at the northwest corner of the building. A photoionization detector (PID) was used to field screen soils. One-hundred and sixty-five cubic yards of contaminated soil was excavated from the Kake Power Plant and placed in a stockpile/bioremediation cell next to the power plant. Fourteen soil samples were collected from the test pits and 9 samples were collected from the contaminated soil stockpile/bioremediation cell. Confirmation samples collected post-excavation on the power plant property all contained GRO, DRO, and RRO concentrations below the laboratory detection limits with the exception of the east sidewall which contained a DRO concentration of 32 mg/kg. Samples collected from the biocell showed a maximum DRO concentration of 9,400 mg/kg.

In March 1998, the ADEC approved asphalt encapsulation of 90 of the 165 yd^3 of soil within the biocell leaving approximately 75 yd^3 in the cell. In 2001, soil sample results submitted by THREA that were collected from the biocell contained DRO concentrations ranging from 290-1,900 mg/kg. In 2015, the biocell was sampled by Carson Dorn Inc. and the samples were analyzed for DRO and RRO. The results indicated that RRO in the biocell were found at concentrations below ADEC cleanup levels, but the DRO was detected at 2,000 mg/kg which was above the ADEC cleanup level.

During the summer of 2016, the Alaska Energy Authority (AEA) began planning to build a new tank farm at the City of Kake storage yard where the biocell was located. The ADEC coordinated with AEA and HDL Engineering Consultants to use the biocell soil as fill below the new tank farm. AEA submitted a work plan to ADEC outlining this proposed action and the work plan was approved on June 2, 2016. The fill material was then capped with an impermeable liner and the tank farm construction has been completed as documented in the November 15, 2017 letter to ADEC from the Inside Passage Electric Cooperative.

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. However, the department does not require that gasoline, diesel, and residual range petroleum hydrocarbon fractions be included in cumulative risk calculations, since selected individual compounds from the fractions are accounted for in Table B1 and Table C of 18 AAC 75.340. As a result of the only COCs at this site being DRO and RRO, ADEC evaluated this site using the Method Two Table B2 cleanup levels. 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. The land is currently used for commercial/industrial purposes, and not used residentially.

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, Exposure Controlled, 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 the surface soils.
Sub-Surface Soil Contact	Exposure Controlled	Contamination below human health cleanup levels is present underneath the liner for the tank farm.
Inhalation – Outdoor Air	De-Minimis	Contamination below inhalation cleanup levels is present underneath the liner for the tank farm.
Inhalation – Indoor Air (vapor intrusion)	De-Minimis	Contamination below inhalation cleanup levels is present underneath the liner for the tank farm.
Groundwater Ingestion	Pathway Incomplete	Groundwater was not impacted and groundwater is not used for drinking water in the City of Kake.
Surface Water Ingestion	Pathway Incomplete	Surface water was not affected by the spill.
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 did not affect ecological receptors and the site is not used for subsistence or farming purposes.

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 partially remediated and has been placed as fill beneath the liner of the new tank farm in Kake. 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.

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.

Sincerely,

Danielle Duncan
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit