THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, AK 99811-1800
Phone: 907-465-5390
Fax: 907-465-5218
www.dec.alaska.gov

File: 1517.26.006
March 17, 2017

Via Electronic Mail
Mr. Adam Zenger
Maintenance & Operations
AK Dept. Transportation & Public Facilities
PO Box 112500 MS-2500
Juneau AK 99811-0690

Re: Decision Document: ADOT&PF Klawock Maintenance Station UST #1
Cleanup Complete Determination

Dear Mr. Zenger:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the ADOT&PF Klawock Maintenance Station UST #1 located on Airport Road in Klawock, Alaska. 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 ADOT&PF Klawock Maintenance Station UST #1, which is located in the DEC 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:
ADOT&PF Klawock Maintenance Station UST #1
Klawock Airport Road
Klawock, AK 99925
Latitude 55.579833 Longitude -133.066511

Name and Mailing Address of Contact Party:
Adam Zenger
ADOT&PF Maintenance & Operations
PO Box 112500 MS-2500
Juneau AK, 99811-0690

DEC Site Identifiers:
File No.: 1517.26.006
Hazard ID.: 26297

Regulatory Authority for Determination:
18 AAC 78

Site Description and Background
The Alaska Department of Transportation and Public Facilities (ADOT&PF) Klawock Maintenance Facility is located approximately a quarter mile southwest of the Klawock Airport, approximately two miles north of the village of Klawock and one half mile west of Klawock Inlet. The nearest water body is an unnamed salmon stream flowing south approximately 950 feet southeast of the Site. The inferred direction of groundwater flow is in the general direction of the unnamed stream. The Maintenance Facility stores and maintains heavy equipment for use on existing roads in and around Klawock and Craig to the south.

Underground storage tank (UST) #1 is a 5,000 gallon fiberglass tank used to provide fuel to the emergency generator, which is located in a separate smaller building immediately adjacent to and north of the Maintenance Building. The UST database indicates that the tank was installed in 1986 and is the fourth of five regulated tanks to be permanently closed by removal at the facility.

In July 2014, Nortech completed a UST site assessment (SA) during the closure by removal of tank #1 performed by ADOT&PF. In August, Nortech submitted the post closure form and in September submitted the Site Assessment & Release Investigation (SARI) summary form to the DEC UST Program. The UST Program noted the petroleum release and submitted the case to the Contaminated Sites (CS) Program where the site was entered into the CS Database and assigned a project manager.

Contaminants of Concern
During the site characterization and cleanup activities at this site, samples were collected from soil and groundwater and were analyzed for diesel range (DRO) hydrocarbons and benzene, toluene, ethylbenzene, and total xylenes (BTEX) and polycyclic aromatic hydrocarbon (PAH) compounds. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Diesel Range Organics (DRO)
- Benzene

Cleanup Levels
DEC has developed cleanup regulations for oil and other hazardous substances called the "site cleanup rules" under 18 AAC 75.325- 18 AAC 75.390. The most stringent levels of all applicable pathways under Method Two soil cleanup levels for the over 40-inch precipitations zone, established in 18 AAC 75.341(c), Table B1, and 18 AAC 75.341 (d), Table B2 apply to the site.

The groundwater criteria list in Table C at 18 AAC 75.345(b)(1) also apply, and surface water as referenced in 18 AAC 75.345(f) must meet the Water Quality Standards found in 18 AAC 70. Groundwater was investigated for contamination and soil cleanup levels protective of migration to groundwater apply. Table 1 below displays the contaminants of concern cleanup levels for completed pathways at this site:

Table 1 – Approved Cleanup Levels

Contaminant (mg/kg)	Soil (mg/kg)	Groundwater (mg/L)
DRO	230	1.5
Benzene	0.025	0.005

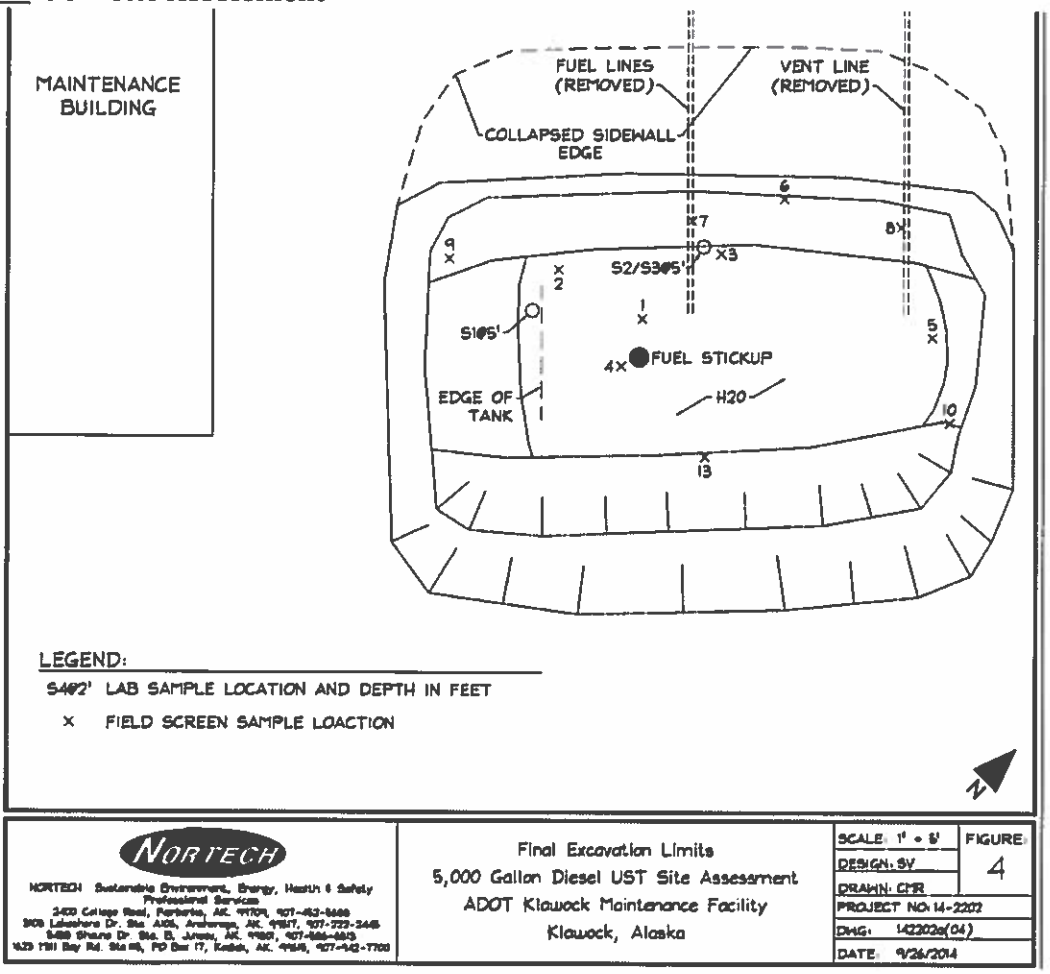
mg/kg = milligrams per kilogram
mg/L = milligrams per liter

Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in October, 2014, when DEC approved the SARI Report. These activities are described below.

During the tank closure and SARI, Nortech collected field screen samples and photoionization detector (PID) readings in accordance with the DEC 2010 Field Sampling Guidance (FSG) headspace methodology. Twenty screening samples were collected adjacent to and below the fill and vent pipes, from at least every ten feet of the excavation sidewalls, and from at least one every ten linear feet below the fuel lines. PID readings ranged from zero to eleven parts per million. Laboratory confirmation samples were collected at the visible soil/groundwater interface according to volatility, and were submitted to SGS Laboratory.

Site Figure 1 UST Site Assessment



The depth of the excavation reached five and one half feet below ground surface (BGS) at which point groundwater entered the pit and the sidewalls began to slough. Sample S1 was collected from the south sidewall and sample S2 and duplicate S3 were collected from the west sidewall at five feet BGS at the soil/water interface. Samples SP1 and SP2 were collected from the estimated volume of 30 cubic yards soil stockpile before it was placed back into the unstable pit excavation. Sample S4 was collected from under the vent fill pipe next to the building.

DRO was detected in four of the five primary samples. The west side sample (S2 and duplicate S3) results were non-detect for DRO and BTEX compounds at or above the laboratory limits of quantitation (LOQ). The highest DRO sample (stockpile sample SP1) result was 922 milligrams per kilogram (mg/kg), above the DEC cleanup level. The second highest result was from sample S1 at 503 mg/kg, collected from the south sidewall existing soil/groundwater interface at five feet BGS. The other two samples with detected DRO concentration had results below the cleanup level.

Stockpile sample SP1 had detected levels of BTEX concentrations, with benzene detected at 0.0356 mg/kg, above the DEC cleanup level. Other samples had one or more BTEX components detected, but all were below cleanup levels. PAH parameters tested in sample S1 were non-detect at or above the LOQ. The LOQs for all the samples were below DEC cleanup levels.

A visible sheen was observed on groundwater in the excavation after the tank was removed. The bottom of the excavation was submerged and the concrete pad holding down the UST was assumed to remain. Instability of the excavation due to the shallow groundwater table and proximity to the two buildings made backfilling the excavation as soon as possible an immediate concern. After confirmation sampling, the estimated 30 cubic yard volume of overburden was returned to the excavation. DRO and benzene were detected above the cleanup level in one of the two samples collected from the stockpile.

Table 1 displays the highest levels detected in soil remaining at the site, the sample depth, and the Method Two (M2) Migration to Groundwater (MTG) cleanup levels. Levels shown in bold are above the applicable cleanup levels and represent the contaminant(s) of concern.

Table 2 - Greatest levels of analytes detected in remaining soil at the site.

Hydrocarbon range and compounds of concern	Greatest level in soil mg/kg	Sample name and depth below the ground surface	M2 MTG Cleanup Levels mg/kg
DRO	**922**	S1 at 5 feet (south sidewall)	230
Benzene	**0.0356**	SP1 at 2 feet (overburden stockpile)	0.025

In December, 2015, DEC approved a Nortech workplan to install groundwater monitoring wells and collect samples to characterize groundwater at the site for DRO, BTEX and Resource Conservation and Recovery Act (RCRA) metals. Nortech installed three monitoring wells to depths averaging five and one half feet BGS with casing annulus finished in concrete at the surface extending three feet above the ground surface.

Table 3 Detectable Groundwater Sampling Results

Analyte	MW-1	MW-D	MW-2	MW-3
DRO (mg/L)	0.289	0.250	0.207	0.303
Toluene (ug/L)	0.310	0.500 U	NA	NA
Arsenic (ug/L)	2.50	1.82	NA	NA
Barium (ug/L)	101	100	NA	NA
Lead (ug/L)	0.864	0.665	NA	NA

In accordance with the workplan and the DEC March 2016 Field Sampling Guidance, Nortech developed the wells, purged three well volumes, and collected water samples that were sent for laboratory analyses. The report was submitted to DEC in February, 2017. The Report concluded that water samples submitted for analyses were either below the laboratory reporting limits or below the respective groundwater cleanup levels. Data quality objectives were met and any laboratory quality assurance criteria that were not met did not significantly impact the sample data. DEC concurred with the Report conclusions and recommendation to decommission the wells and close the site.

Cumulative Risk Evaluation

Pursuant to 18 AAC 78.600(d), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways. Based on a review of the environmental record, DEC has determined that residual contaminant concentrations meet the human health cumulative risk criteria for residential land use.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using DEC'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 3.

Table 4 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De Minimis Exposure	Contamination in surface soil is below the human health cleanup levels.
Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface, but is below ingestion cleanup levels.
Inhalation – Outdoor Air	De Minimis Exposure	Contamination remains in the sub-surface, but is below inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	Subsurface contamination is above soil cleanup levels but groundwater test results indicate contamination is not migrating from soil to groundwater in levels exceeding Table C cleanup levels.
Groundwater Ingestion	Pathway Incomplete	Groundwater concentrations are below Table C values. Water and sewer to the facility are provided by Klawock Public Works.
Surface Water Ingestion	Pathway Incomplete	Contaminants of concern in subsurface soil do not have the potential to impact surface water.
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	Ecological receptors are not present at the site and petroleum does not bioaccumulate in plants/animals.

Notes to Table 4: "De Minimis Exposure" means that in DEC'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.

DEC Decision

Soil and groundwater contamination at the site have been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. 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 DEC approval in accordance with 18 AAC 78.600(h). A "site" [as defined by 18 AAC 78.995(134)] 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 78.276(f) and does not preclude DEC 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) 465-5210, or email me at bruce.wanstall@alaska.gov

Sincerely,

Bruce Wanstall

Bruce Wanstall
Project Manager

cc: Sally Schlichting, Unit Manager, Contaminated Sites Program, via email
DEC Spill Prevention and Response, Cost Recovery Unit, via email