



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of Environmental
Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

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File No: 1508.38.017

March 17, 2014

Via Electronic and Regular Mail

Mr. Carlos Jimenez, Director
Haines Borough Public Works
Post Office Box 1209
Haines, Alaska 99827

RE: Decision document: Cleanup Complete Determination
Haines Borough Elementary School UST Contaminated Site

Dear Carlos,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has reviewed the environmental records for the referenced site. This decision letter explains the site history, cleanup activity and specific conditions required to effectively manage any remaining contamination. No additional remedial action is required as long as compliance with these conditions is maintained.

Site Name and Location

Haines Borough Elementary School
Haines Borough Offices
Haines, Alaska 99827
Haines Borough Tract A-2, Lot 8
Primary School Subdivision Plat 2008-21

Address of Contact Party

Carlos Jimenez
Haines Borough Public Works
P.O. Box 1209
Haines, AK

DEC Site Identifiers

Hazard ID: 26215
File: 1508.38.017

Regulatory Authority for Determination

Title 18 Alaska Administrative Code 75

Site Description and Background

The Haines Borough (HB) Elementary School building was located on the corner of Main Street and Third Avenue in downtown Haines. The properties surrounding this area consist of municipal, commercial and residential land use. The nearest large surface water body is Portage Cove of Chilkoot Inlet, located about 0.3 miles to the west.

The referenced property is situated in an area of the Chilkat River floodplain that has a fine glacial till (clay) layer that constitutes a confining layer separating shallow groundwater from deep groundwater. The deep groundwater aquifer below the confining layer has a peizometric pressure gradient and may be of sufficient supply and quality to become a drinking water source. Shallow groundwater above the confining layer appears intermittently depending on rainfall and snowmelt from the mountains north of the Haines. Due to the influence of surface water the shallow aquifer is not of sufficient quality for use as a drinking water source. During summer shallow groundwater is often not present for months at a time.

The Haines Borough provides drinking water to the area under a local public health ordinance that requires residents within 200 feet to make connection to the system. Site investigation has shown that subsurface water elevation on the properties varies seasonally between 8.5 and 13 feet below ground surface (BGS). Depth to bedrock in downtown Haines has been found less than twenty feet BGS. The predominant direction of groundwater flow on the properties is southwest, toward the Chilkat River. Soil types on the properties consist of alluvial and glacial sand and gravel under imported construction fill.

In 2005, the Haines Borough (HB) was planning to decommission an underground storage tank (UST) that supplied heating oil to the boiler at four active school buildings. In advance of the project, HB investigated soil around each UST for contamination. In October 2005, Carson Dorn Inc. (CD) advanced test pits around the Elementary School building UST. CD collected analytical samples from each test pit to characterize subsurface soil for diesel range (DRO) hydrocarbon contamination. Although CD reported that DRO concentrations in soil around the Elementary School UST were below laboratory reporting limits and regulatory screening levels, DEC requested additional site assessment sampling be completed in conjunction with decommissioning the UST. In February 2006, CS listed the Elementary school UST with the other three schools as one site on the department database of contaminated sites.

Contaminants of Concern

The following petroleum contaminants of concern (COCs) are those above cleanup levels that were identified during the course of the site investigations summarized in the Characterization and Cleanup Activities section of this decision letter.

- Diesel Range Hydrocarbons (DRO)
- 2-methylnaphthalene

Cleanup Levels

Site investigation sampling detected elevated concentrations of DRO in confirmation samples of subsurface soil remaining at the site. The migration to groundwater soil cleanup levels are applicable in this situation to limit DRO soil contamination from migrating into shallow groundwater. As previously stated, groundwater was not consistently present at the site and so was not investigated for contamination. Surface water is not present at the site and was not investigated for contamination.

The cleanup level requirements for heating oil contamination in soil and groundwater on the property are those established in 18 AAC 75.341(b)(2) Method Two for soil with chemicals listed on 18 AAC 75.341(c) Table B1 and petroleum hydrocarbon ranges listed on 18 AAC 75.341(d) Table B2 for the over 40 inch rainfall zone for soil. The following table displays the contaminant of concern cleanup levels for completed pathways at this site:

Table 1 – Approved Cleanup Levels

Chemical	Soil (mg/kg) Migration to Groundwater
DRO	230
2-methylnaphthalene	6.1

mg/kg = milligrams per kilogram

Site Characterization and Cleanup Activity

Site Investigation and Cleanup activities conducted under the regulatory authority of the Contaminated Sites Program (DEC) began in 2006. By letter in March 2006, DEC approved a Site Investigation Report for the limited site activity in 2005 by Carson Dorn (CD) and agreed to allow the Haines Borough (HB) to delay cleanup activities until school buildings were no longer in-use by the School District. These cleanup activities are described below.

In October 2011, Nortech Environmental Inc. (Nortech) performed site investigation sampling in conjunction with the closure-by-removal of a 1,000-gallon heating oil UST at the Elementary School building. The tank was in poor condition with obvious corrosion holes and fuel-stained soil contamination was observed. Since the interim removal of contaminated soil was scheduled to follow demolition of the school building, Nortech collected confirmation samples and returned soil to the excavation in the order in which it was removed. Out of the five analytical confirmation samples from the excavation, the greatest DRO concentration in soil was 17,300 mg/kg in sample CZ03 collected at a depth of ten feet BGS. Later in the fall of 2011, HB dismantled the Elementary School building.

In August 2012, Chilkat Environmental (Chilkat) advanced seven site investigation test pits on the referenced property. The pit locations were oriented radially in three directions ranging in distance between five and thirteen feet from the former UST site. Approximately ten feet west of the former UST site, a former foundation concrete wall extended into the subsurface site to a depth of ten feet BGS, thus hindering sampling in that direction. Similar to the neighboring Primary School property, a gray, silty-clay, soil layer common to the area was observed at a depth of ten feet BGS. Out of seven analytical samples collected from the test pits, three found contamination. The greatest DRO concentration detected in soil was 12,000 mg/kg in sample E1-8 collected between seven and eight feet BGS. DRO concentrations in samples collected in four of the seven test pits were below laboratory reporting limits. In the report Chilkat estimated a volume of five cubic yards of contaminated soil remained at the site.



In July 2013, DEC approved a work plan for HB to perform an interim removal of contaminated soil at the former Elementary School property. The plan approved loading contaminated soil directly into trucks for transport and temporarily stockpiling at the Haines Borough Wastewater Treatment Plant (WTP) in a bermed and lined soil cell.



First excavation: looking west at the foundation wall and south at the tree hindering excavation.

In August 2013, DEC observed as HB began excavating contaminated soil at the former UST site. Stakes clearly marked the location of previous subsurface investigation. Based on observation and field screen sample readings, Chilkat directed the transfer of contaminated soil into trucks for transport to the WTP soil storage site. The vertical extent of contaminated soil in the first excavation began in brown sandy gravel at depths between five and seven feet BGS and reached nine feet BGS where contamination diminished in thickness as the excavation expanded laterally outward from the former UST site. Water seeping into the bottom of the excavation prevented sample collection at the vertical extent and the concrete foundation wall prevented sample collection at the lateral extent west of the former UST site.

When the practical limits of accessing the contaminated layer were reached, Chilkat collected ten confirmation samples from remaining soil in the sidewalls at the water interface. Based on the highest field screen readings Chilkat chose five samples for laboratory confirmation samples. The highest DRO concentration in remaining soil of 8,100 mg/kg was collected from the south sidewall under the tree at a depth of eight feet BGS. Hydrocarbon compound concentration in soil analytical samples were below laboratory reporting limits and regulatory screening levels except for 2-methylnaphthalene that exceeded the migration to groundwater cleanup level in one sample by less than one tenth.

The lateral extent of excavation in the south direction was hindered by a tree. HB advanced a second excavation on the south side of the tree to a depth of ten feet BGS. Soil field screen and observation by Chilkat and DEC confirmed that the interim removal reached the limit of contamination south of the former UST just beyond the tree. DEC verbally approved returning all soil to the second excavation without confirmation sampling.



In the foreground of the photo looking north is the second excavation south of the tree.

Workers estimated the volume of contaminated soil transported from the interim removal site to the WTP biocell site at twenty cubic yards. In November 2013, DEC approved HB loading the soil into containers for barge transport for remediation at the Bicknell Soil Treatment Facility in Juneau. Since the removal action was successful at extracting contaminated soil to the practicable extent and remaining contamination is limited to a two-inch thick de minimis lens positioned at the groundwater interface eight feet BGS, the Chilkat site investigation report recommended closure with no property restrictions.

Cumulative Health Risk Calculation

Pursuant to 18 AAC 75.325 (g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be calculated. The risk from hazardous substances must not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative non-carcinogenic 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 do not pose a cumulative human health risk.

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 2 below.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	There is no soil contamination remaining at the surface on the site above the direct contact cleanup levels.
Sub-Surface Soil Contact	De minimis exposure	Soil contamination remains not accessible in the subsurface at levels between Method Two Table B2 Migration to Groundwater and human health ingestion levels and future excavation is not planned.
Inhalation – Outdoor Air	Pathway Incomplete	Hydrocarbon compound concentrations in soil analytical samples were below outdoor inhalation screening levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Buildings are not present and any remaining volatile petroleum compound concentrations in soil are below outdoor inhalation screening levels.
Groundwater Ingestion	De minimis exposure	No DW wells are present and groundwater in the area at the depth of the UST is seasonally intermittent and of poor quality. The Haines Borough provides drinking water to the area under a local public health ordinance that requires residents within 200 feet to make connection to the system.
Surface Water Ingestion	Pathway Incomplete	No surface water body is present on-site or nearby.
Wild Foods Ingestion	Pathway Incomplete	The site and the urban area are not a wild foods harvest area and none of the contaminants have potential to bioaccumulate in flora or fauna.
Exposure to Ecological Receptors	Pathway Incomplete	Aquatic and terrestrial exposure routes are not present on-site or in the downtown area of Haines.

Notes to Table 1: “De-minimis exposure” means that in DEC’s judgment receptors are unlikely to be affected by the minimal volume of remaining contamination. “Pathway incomplete” means that in DEC’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.

DEC Decision

In accordance with 18 AAC 75.335 (b)(2), the concentration and extent of contamination has been determined to the maximum extent practicable at the site referenced in this decision document. The volume of remaining soil contamination at the former Elementary School UST site (Lot 8) is to de minimis extent and presents no unacceptable risk to human health or the environment. This site will receive a "Closed" 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 7.325(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.

This determination is in accordance with 18 AAC 75.380 and does not preclude DEC 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 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 the DEC project manager, Bruce Wanstall at (907) 465-5210.

Sincerely,



Bruce Wanstall
Remedial Project Manager
State & Private Contaminated Sites Program

cc: Julie Cozzi, Interim Borough Manager, Haines, via email, jcozzi@haines.ak.us
Sally Schlichting, DEC Project Manager, via email