THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

410 Willoughby Ave Suite 303
PO Box 11180
Juneau, Alaska 99811-1800
Phone: (907) 465-5210
Fax: (907) 465-5218
www.dec.alaska.gov

File No: 1516.26.023

July 5, 2012

Mr. Al Clough
Regional Director
Alaska Dept of Transportation & Public Facilities
PO Box 112506
Juneau, Alaska 99811-2506

Re: Decision Document; ADOT&PF Main Shop Ketchikan
Corrective Action Cleanup Complete Determination

Dear Mr. Clough,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the ADOT&PF Main Shop Ketchikan regulated leaking underground storage tank (LUST) contaminated site located at 5150 North Tongass Highway in Ketchikan. Based on the information provided to date, the DEC has determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment, and this site will be closed.

This decision is based on the ADOT&PF Main Shop Ketchikan LUST Contaminated Site administrative record, which is located in the offices of the DEC in Juneau, 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 Cleanup Complete Determination.

Site Name and Location
ADOT&PF Main Shop Ketchikan
5150 North Tongass Highway
Ketchikan, Alaska 99901
USS 2270 Block B

Address of Contact Party
Mr. Al Clough, Southeast Regional Director
Dept. Transportation & Public Facilities
PO Box 112506
Juneau, Alaska 99811-2506

Mr. Al Clough
re: ADOT&PF Main Shop Ketchikan

July 5, 2012

DEC Site Identifiers

Hazard ID: 23177
File: 1516.26.023
Reckey: 2000130001201

Regulatory Authority for Determination

Title 18 Alaska Administrative Code 78

Site Background

The facility at Mile 4.5 North Tongass Highway provides an office, a vehicle maintenance shop and an assortment of structures for equipment storage for the ADOT&PF Highways Division. The property is on the lower slope of a mountain located to the northeast and is approximately 700 feet from the shoreline of Tongass Narrows. Small, year-round drainage streams border the property to the northwest and southeast. Groundwater is not present at the center of the property but does appear in some locations near the drainages along the property lines. Local groundwater in a few areas in Ketchikan may be of sufficient quality and volume to use as a drinking water source but the predominant supply of drinking water is provided either by the City of Ketchikan or by individual household rain catchment systems. The depth to bedrock on the property averages ten feet below ground surface.

Multiple underground storage tanks, both regulated and unregulated, have served the facility and been closed over the years. They have included two 1,000-gallon regulated tanks, a 1,100-gallon non-regulated heating oil tank, and two 2000-gallon regulated tanks (this closure determination).

In June 1993, site activity resulted in the closure in-place of two 1,000-gallon regulated underground storage tanks (USTs) under a drive-through awning structure (see file: 1516.26.012). Based on the UST site assessment report dated January 12, 1994, the tanks were emptied and filled with concrete. A small volume of soil contaminated with fuel was recovered and then remediated off-site. This site has been closed.

In 1999, a 1,100-gallon heating oil UST (non-regulated) located between the driveway awning and the door to the office of the Department of Public Safety was closed by removal (see file: 1516.38.031). The depth of the excavation reached bedrock without signs of groundwater and all contaminated soil was removed and stored on-site between liners except for a minor volume left under a utility corridor next to the office building. No volatile hydrocarbons were detected in the five soil confirmation samples. This site has been closed.

Soil samples at the site have been analyzed for benzene, ethylbenzene, toluene, total xylenes (BTEX) and gasoline (GRO) and diesel (DRO) range petroleum hydrocarbons.

Site Characterization and Corrective Action Activities

In December 1999, a closure-by-removal Site Assessment was conducted at the site for two 2,000-gallon regulated USTs registered with the DEC; one stored gasoline and the other diesel. The tank dispensers under the awning structure were decommissioned then the piping was drained and closed in place. In the excavation to remove the tanks, soil contaminated with fuel was identified eight feet below the ground surface (bgs). The DEC Underground Storage Tank Program assigned the site release Event ID# 2598 and approved a plan for Corrective Action.

Fuel staining was observed just below the surface in soil under the vent and fill pipes. Darkened soil extended to bedrock at eight feet bgs. Contaminated soil was removed to the vertical and horizontal limits and placed between liners on site; the volume was estimated at forty cubic yards. A sample collected from the soil stockpile before it was shipped off site and remediated had DRO levels of 13,000 mg/kg and GRO levels of 610 mg/kg. Water was evident in the excavation and oil sheen was observed.

Confirmation samples were collected from each of the four walls of the excavation just above the water level at seven feet bgs. A total of five samples and a field duplicate were analyzed for BTEX compounds, GRO, DRO, and total lead. Lead levels detected in each of the six soil samples were below the Method Two

Migration to Groundwater cleanup criteria in 18 AAC 75.341 Table B1 and within the normal range for soil in the area.

In one sample (CL-06) collected from the wall under the UST piping that was left closed in place at the site, DRO was detected at levels above the Method Two, Human Health soil ingestion cleanup level. All of the remaining five confirmation samples had DRO levels below the human health standard and only three of the five had DRO levels above the migration to groundwater cleanup level. GRO was above the migration to groundwater cleanup level in sample CL-03.

The following table displays the highest levels detected in soil remaining at the site, the depth that the sample was taken, and the Method Two Migration to Groundwater (M2 MTG) soil cleanup levels in 18 AAC 75.341 Table B1 and Table B2 that are applicable to this site. Those levels in bold are above the applicable cleanup levels and represent the contaminant(s) of concern for the site.

Table 1: Highest Concentrations Detected in Remaining Soil

Hydrocarbon range and compounds of concern	Greatest level in soil mg/kg	Sample name and depth	M2 MTG Cleanup Levels mg/kg
GRO	**1000**	CL-03 at 7 feet	260
DRO	**12,000**	CL-06 at 7 feet	230
Benzene	**0.68**	CL-03 at 7 feet	0.025
Toluene	0.50	CL-03 at 7 feet	6.5
Ethylbenzene	3.4	CL-03 at 7 feet	6.9
Total Xylenes	4.6	CL-03 at 7 feet	63

In 2007, Release Investigation site activity included installing and developing three groundwater monitoring wells to monitor groundwater contamination at the two regulated-USTs excavation site. The locations for wells MW-1, MW-2 and MW-3 are in a line through the site of the former USTs following the southeast property boundary approximately ten feet from the drainage stream.

The groundwater sample analysis for BTEX compounds and GRO, DRO and residual (RRO) range hydrocarbons found the levels in each sample for each analyte were below 18 AAC 75.345 Table C cleanup levels.

The monitoring of groundwater contamination resumed in August, 2010. Samples were collected from each well and were analyzed for BTEX, GRO, DRO and RRO. Results indicated that DRO levels in samples from wells MW-1 and MW-2 and RRO

levels in the sample from well MW-1 were above the Table C cleanup levels. Turbidity observed in the samples indicated that naturally-occurring organic constituents may be contributing to the levels of hydrocarbons detected in the DRO and RRO analysis.

The remaining analytes in the samples were either below instrument detection or were at levels below the applicable cleanup levels. Well MW3 contained a benzene concentration of 0.00215 milligrams per liter (mg/L), below the 0.005 mg/L cleanup level.

Table 2: Highest Concentrations of Contaminants Detected in Groundwater

Greatest Concentration COC remaining at site	Groundwater level in mg/L	Table C groundwater cleanup levels in mg/L	Monitor well and Year
GRO	0.345	2.2	MW-4 in 2007
DRO	**3.83**	1.5	MW-1 in 2010
RRO	**22.4**	1.1	MW-1 in 2010
Benzene	0.000192	0.0025	MW-4 in 2007
Toluene	0.0136	1.0	MW-4 in 2007
Ethylbenzene	0.0130	0.7	MW-4 in 2007
Total Xylenes	0.1037	10	MW-4 in 2007

The groundwater in MW-1, MW-2, and MW-3 was sampled again on July 22, 2011. Groundwater was analyzed for DRO and RRO with a parallel silica gel cleanup procedure to determine if there were biogenic contributions to the contaminant levels. DRO or RRO was not detected in any of the three well samples with and without the silica gel treatment. The level of DRO and RRO in all three wells was below the Table C cleanup levels.

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 Attachment A to this letter.

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. With data currently available, the DEC has determined that petroleum compounds remaining at the referenced site following cleanup are in concentrations that do not present a cumulative risk to human health.

DEC Decision

The cleanup actions to date have served to excavate and adequately remove contaminated soil from the site. Based on the information available, DEC has determined no further assessment or cleanup action is required. There is no longer a risk to human health or the environment, and this site will be designated as closed on the Department's database.

Although a Corrective Action Complete has been granted, DEC approval is required for off-site soil disposal in accordance with 18 ACC 78.600(h). 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 ACC 75.276(f) 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.

Approved By:

Sally Schlichting
Environmental Manager

Recommended By

Bruce Wanstall
Environmental Program Specialist

Attachment A: Exposure Pathway Evaluation

Table 1 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-Minimis exposure	There is no surface soil contamination remaining at the site above the direct contact cleanup levels.
Sub-Surface Soil Contact	De-minimis exposure	Remaining contamination is may be above human health levels but is de minimis in volume and is confined below ground.
Inhalation – Outdoor Air	Pathway Incomplete	No volatile hydrocarbons have been detected in samples from soil remaining in the excavation.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Buildings are present and no volatile hydrocarbons have been detected in samples from soil remaining in the excavation.
Groundwater Ingestion	De-Minimis exposure	Groundwater was encountered during the tank assessment, but now meets Table C cleanup levels.
Surface Water Ingestion	Pathway Incomplete	There is no surface water influenced by the site hydrology being currently used as or with any potential to become a future drinking water source.
Wild Foods Ingestion	Pathway Incomplete	There are no contaminants of concern with the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	There are no threatened or high value species at the site or in the area.

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.