



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

**Department of
Environmental Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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April 5, 2018

John C. Barnett
Environmental Impact Analyst
DOT&PF, Southeast Region
6860 Glacier Hwy.
P.O. Box 112506
Juneau, Alaska 99811-2506

Re: Decision Document - ADOT&PF Klawock Airport Helipad
Cleanup Complete Determination

Dear Mr. Barnett:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has reviewed the environmental records associated with the Alaska Department of Transportation and Public Facilities (ADOT&PF) Klawock Airport Helipad site in Klawock. Based on the information provided to date, ADEC determined that the contaminant concentrations remaining on site, the approximate perimeter of which is shown on **Figure 1** below, do not pose an unacceptable risk to human health or the environment. No further remedial action will be required unless new information becomes available that indicates residual contaminants may pose an unacceptable risk, or if additional contamination is discovered in the future, and particularly during planned airport upgrades that encompass the area of the site. As noted in the Decision section of this letter, ADEC recommends that ADOT&PF submit an environmental management plan to the Contaminated Sites Program for review and approval prior to undertaking work that will disturb media at the site.

This Cleanup Complete decision for the ADOT&PF Klawock Airport Helipad site is based on the administrative record located in the ADEC office in Anchorage, Alaska. This decision summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:

ADOT&PF Klawock Airport Helipad
On Airport Access Road from
Big Salt Lake Road
Klawock, AK 99925

ADEC Site Identifiers

File No.: 1517.38.016
Hazard ID.: 25368

Name and Mailing Address of Contact Party:

John C. Barnett
Environmental Impact Analyst
DOT&PF, Southeast Region
6860 Glacier Hwy.
P.O. Box 112506
Juneau, Alaska 99811-2506

Regulatory Authority for Determination

18 AAC 75

Site Description and Background

In summer 2007 surface water samples collected by ADEC's division of water in an area south of the Klawock Airport Helipad site (site) contained toluene concentrations exceeding the Total Aromatic Hydrocarbons (TAH) water quality standard of 10 ug/L. ADEC collected the samples to determine whether precipitation draining through large volumes of recently placed fill into wetlands and an anadromous stream could adversely affect water quality. The fill is comprised of waste wood chips and was later determined not to be the source of toluene contamination.

In an effort to identify the source of the contamination, ADOT&PF excavated 28 test pits and collected and field screened soil samples in the area of the site, with elevated field screening results observed at several locations. No analytical samples were collected. The numerical results of the field screening results were not documented.

ADOT&PF's response and mitigation actions included monitoring water quality at three points (MP-1, MP-2 and MP-3 shown on Figure 1) on a quarterly basis for a total of 22 consecutive sampling events from July 2012 through December 2017. Samples were analyzed for volatile organic compounds (VOCs) and other water quality parameters. During the five year sampling period, toluene was the only VOC detected at concentrations above the TAH standard and was only detected during one sampling event on April 8, 2014, from the MP-2 location on the west side of the runway. ADEC does not consider this exceedance to be associated with contamination that may be present within fill at the site identified on Figure 1.

The MP-1 through MP-3 sampling locations were selected to capture water quality at culvert inflow or outflow locations and in the case of MP-3 on the airport side of a culvert that drains surface water off-property. The 2007 sampling locations do not coincide with the

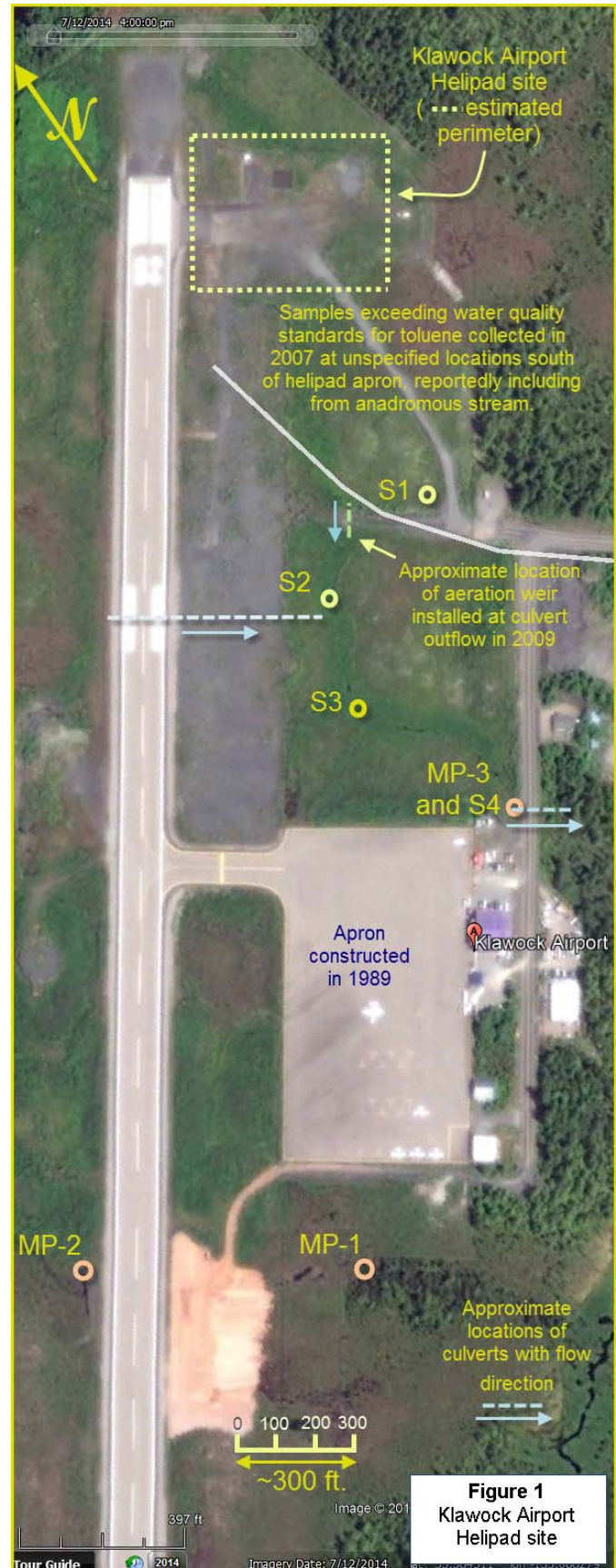


Figure 1
Klawock Airport
Helipad site

later sampling events because the sampling locations were either not documented or the record has been lost. ADOT&PF has stated that it did not receive the data deliverables, sampling locations and other relevant data from the 2007 sampling events, therefore it was not possible in subsequent years to resample the 2007 sampling locations.

The location and extent of potentially contaminated fill that may be the source of the surface water quality exceedances in 2007 and 2014 by toluene was never confirmed; however, available data documents ADOT&PF's supposition that the source of the toluene may be the potentially contaminated fill underlying the old apron area (former helipad shown on Figure 1) based on the past use of the pad and buried commercial and industrial debris encountered during investigative trenching. Water quality standards for TAH were not exceeded for the last 15 of a total of 22 consecutive monitoring events at the MP-1, MP-2 and MP-3 surface water monitoring locations, with monitoring discontinued in December 2017.

Contaminants of Concern

During the site characterization activities at this site, samples were collected from surface water and analyzed for Volatile Organic Compounds (VOCs) (EPA Method 624), Ammonia, Biochemical Oxygen Demand (BOD), color, Semivolatile Organic Compounds (SVOCs) (EPA Method 625), total metals (EPA Method 200.8), dissolved metals (EPA Method 200.8), and pH. Metals, and specifically arsenic, exceeded water quality standards in some samples but was determined to be a naturally occurring compound within background levels. Note that oversight of contaminants and water quality standards was transferred to the Contaminated Sites Program by the Water Quality Division and therefore data for all compounds was submitted to the CS Program.

Based on the above analyses, toluene was detected above the applicable TAH water quality standard and is considered a Contaminant of Concern at the site.¹ Toluene concentrations in surface water did not exceed the 18 AAC 75.345 Table C Groundwater Cleanup Levels drinking water standard of 1,100 ug/L. Based on the incomplete record of 2007 sampling, it appears that the maximum level of toluene in 2007 surface water samples was 98.4 ug/L, exceeding the 10 ug/L TAH water quality standard. During the 22 consecutive quarters of surface water sampling of three monitoring points from 2012 to 2017, toluene concentrations exceeded the TAH water quality standard during a single sampling event in April 2014, at one sampling point (MP-2) with a concentration of 17 ug/L.

Table 1 – Approved Cleanup Levels

Contaminant (Toluene)	Soil (mg/kg)	Groundwater (mg/L)	Surface Water (ug/L)
TAqH	N/A	N/A	15.0
TAH	N/A	N/A	10.0

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

ug/L = micrograms per liter

¹ Applicable regulations are 18 AAC 70 Water Quality Standards as amended February 5, 2017, Water Quality Standards for Designated Uses – Pollutant & Water Use; (5) Petroleum hydrocarbons, oils and grease, for fresh water uses and (17) Petroleum hydrocarbons, oils and grease, for marine water uses, stating in part that for aquaculture water supply, and growth and propagation of fish, shellfish, other aquatic life, and wildlife, Total aqueous hydrocarbons (TAqH) in the water column may not exceed 15 µg/L. Total aromatic hydrocarbons (TAH) in the water column may not exceed 10 µg/L. TAH and TAqH are calculated values.

Characterization and Cleanup Activities

Surface water from a stream and wetland area fed by precipitation runoff from the former helipad site was sampled in summer and fall 2007 by Alaska Fish and Game staff on behalf of the ADEC division of water. Toluene levels in surface water exceeded TAH water quality standards during at least two sampling events, in July and October 2007. There may have been one or more additional sampling events; however, the record is incomplete with respect to the total number of sampling events and dates of those events. One file document provides the results of samples collected on July 23, 2007, with two of eight samples exceeding TAH water quality standards for toluene with results of 90.7 ug/L and 98.4 ug/L. The sampling locations were described as being from a salmon stream trending south from the former helipad site but were otherwise not described.² The purpose of the water quality sampling was to determine whether precipitation draining through large volumes of recently placed fill into wetlands and an anadromous stream could adversely affect water quality. The fill placed in recent years is comprised of waste wood chips and was later determined not to be the source of toluene contamination. The former helipad is comprised of a mixture of waste wood chips and inorganics reportedly placed during the 1970s and 1980s and is suspected but not definitively identified as the source of the elevated toluene in the surface water that drains precipitation from the surfaces of, and through the unpaved helipad, access road and runway.

After initial sampling initiated by ADEC's water quality division was completed in 2007, oversight authority of monitoring and remedial actions by ADOT&PF was transferred to ADEC's Contaminated Sites Program. In fall 2007, ADOT&PF excavated 28 test pits to depths of 4-5 ft below ground surface in the locations shown on **Figure 2** and collected and field screened 44 soil samples using a MiniRAE 2000 PID (photoionization detector).³ ADOT&PF found the highest VOC screening results were in the immediate vicinity of a hangar formerly located on the helipad site, however the numerical values of the screening results are not documented. The toe of the slope on the south side of the helipad site contained metal wastes such as hydraulic lines, exhaust parts, and at least one old drum. Soil samples collected at the toe of an area of new fill had elevated field screening levels, with numeric results undocumented. No analytical samples were collected. ADOT&PF also noted that during the investigation two soil samples collected on the west side of the runway, up-drainage and upslope from the new fill area, also had elevated VOC values by field screening similar to those encountered down-gradient at the toe of the new wood waste fill.

ADEC advised ADOT&PF of its responsible party status as owner and/or operator of the site in a letter dated March 17, 2009. Follow up by ADOT&PF included modifying the outflow of water draining through the site and monitoring water quality at three monitoring points over a five-year period.

ADOT&PF modified the culvert outflow that drained the helipad site by raising the culvert and constructing a weir and stepdown riffle that serves to reduce VOCs by aerating the water as it exits a culvert to the west of S1, shown on Figure 1. The S1, S2, S3 and S4 locations shown on Figure 1 were sampled once in 2009 for water quality parameters that did not include VOCs; they are included as reference points.

ADOT&PF collected samples from three monitoring points (MP-1, MP-2 and MP-3, shown on Figure 1) on a quarterly basis for a total of 22 sampling events from July 2012 through December 2017 in accordance with a plan dated August 22, 2012.⁴

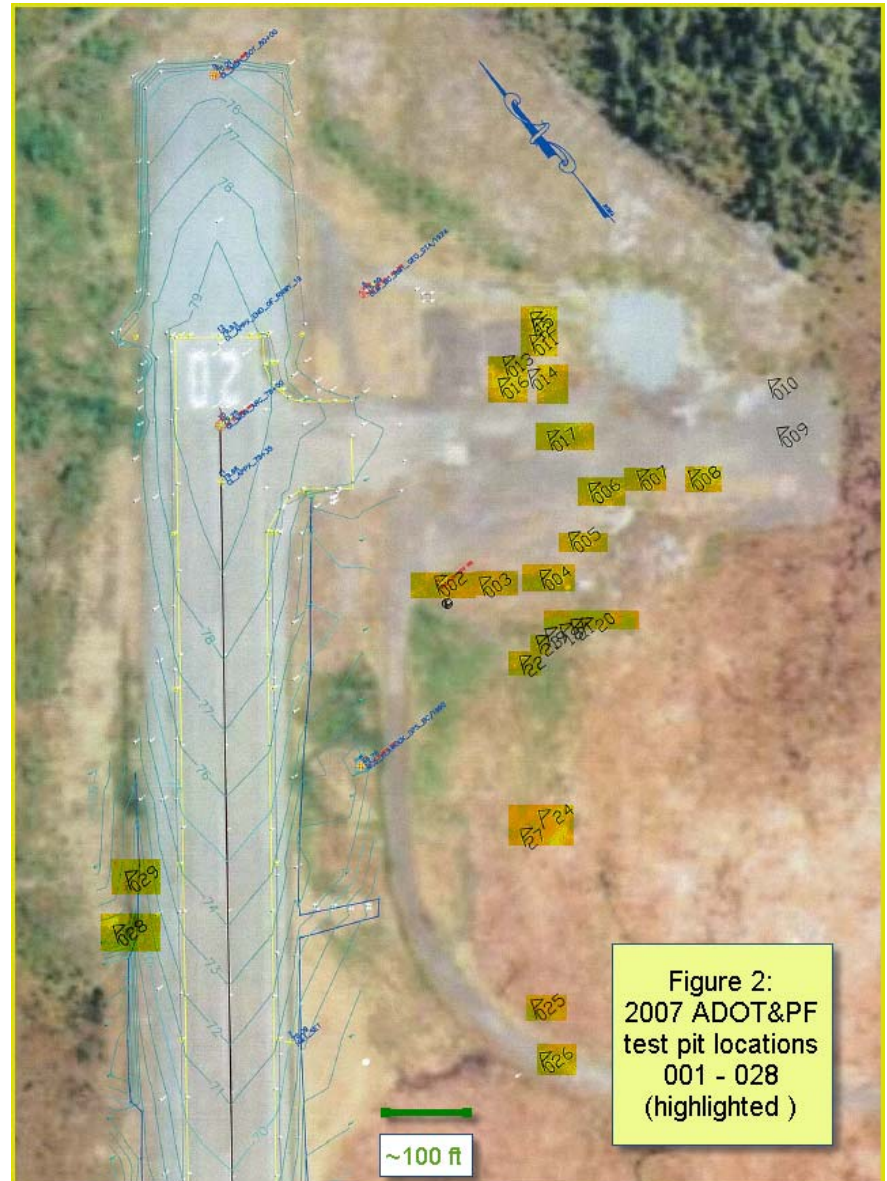
² See email by ADEC staff on file dated March 12, 2009, for sampling results.

³ Figure 2 modified from 2007 figure provided by ADOT&PF; see email on file dated November 20, 2007.

⁴ See *Monitoring and Quality Assurance Project Plan for the Klawock Inlet Viking Lumber Airport Fill*.

Samples were analyzed for volatile organic compounds (VOCs) and other water quality parameters. During the five year sampling period, toluene was the only VOC detected at concentrations above the TAH standard and was only detected during one sampling event on April 8, 2014, from the MP-2 location on the west side of the runway. ADEC does not consider this exceedance to be associated with contamination that may be present within the site identified on Figure 1.

The MP-1 through MP-3 sampling locations were selected to capture water quality at culvert outflow locations and on the airport side of a culvert that drains surface water off-property (MP-3). The 2007 sampling locations do not coincide with the later sampling events because the 2007 sampling locations were either not documented or the record has been lost. ADOT&PF has stated that it did not receive the data deliverables, sampling locations and other relevant data from the 2007 sampling events, therefore it was not possible in subsequent years to resample the 2007 sampling locations.

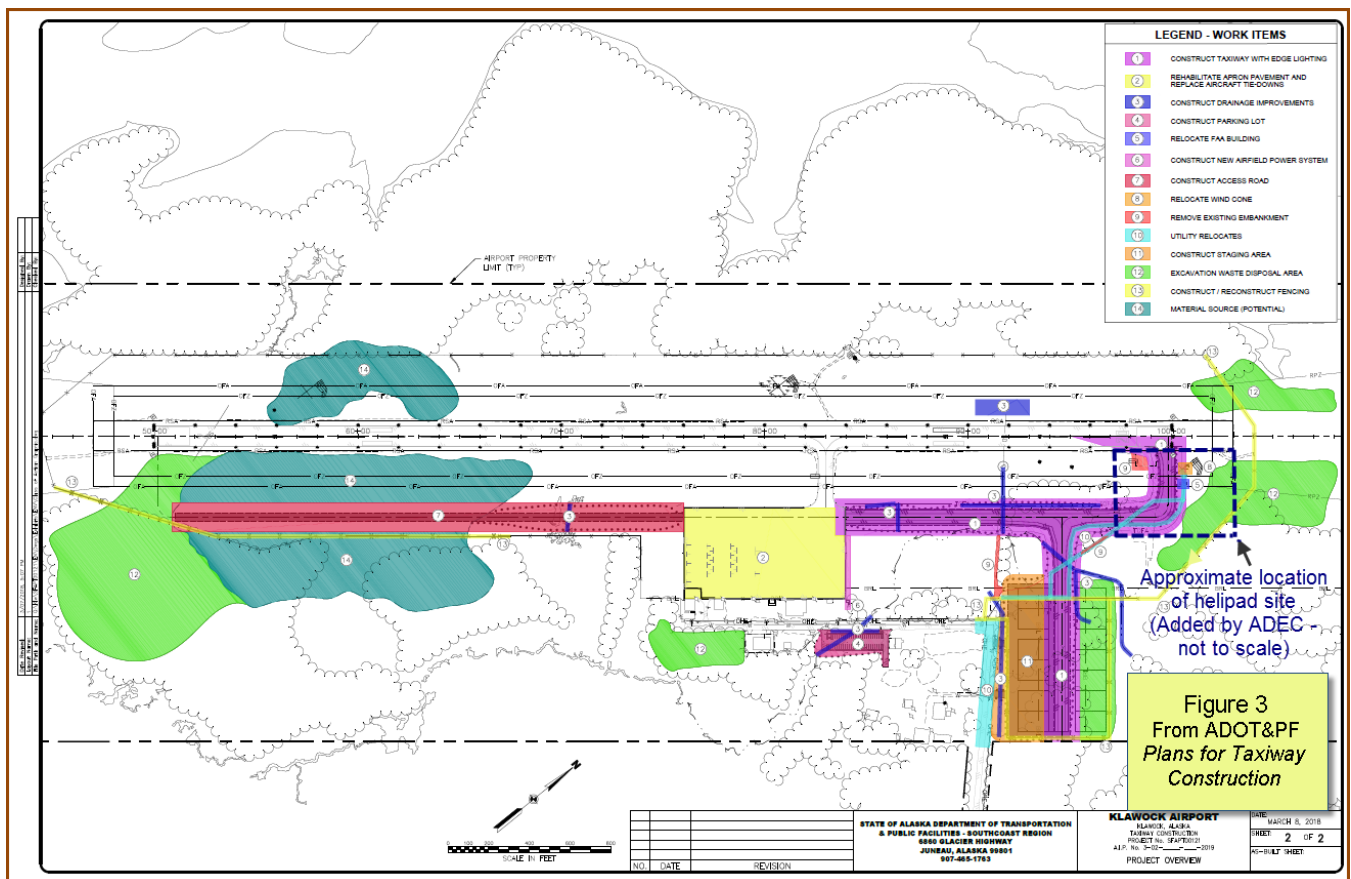


The location and extent of potentially contaminated fill that may be the source of the surface water quality exceedances in 2007 and 2014 by toluene was never confirmed; however, available data documents ADOT&PF's supposition that the source of the toluene may be the potentially contaminated fill underlying the old apron area (former helipad shown on Figure 1) based on the past use of the pad as a staging area for a helicopter logging operation and other commercial aviation uses, and on the discovery of yard waste (wood scrap fill from lumber yards, sawdust, trash, hydraulic lines, drums, etc.) on the south side of the former helipad. Fill operations in the area of the former helipad may have begun as early as the 1970s, with expansion by a private joint venture reportedly taking place in the 1980s.

POA-1985-M2 Submitted to fulfill certain requirements of Alaska Regulation 18 AAC 70 dated August 22, 2012, and included as Appendix 4 of the Site Assessment Report, Klawock Airport, Klawock, Alaska, February 8, 2018, (on file) prepared by Nortech Environmental Health and Safety (NORTECH).

As noted in the Contaminants of Concern section above, based on the incomplete record of 2007 sampling, it appears that the maximum level of toluene in 2007 surface water samples was 98.4 ug/L, exceeding the 10 ug/L TAH water quality standard. During the 22 consecutive quarters of surface water sampling of three monitoring points from 2012 to 2017, toluene concentrations exceeded the TAH water quality standard during a single sampling event in April 2014, at one sampling point (MP-2) with a concentration of 17 ug/L. Water quality standards for TAH were not exceeded for the last 15 of the 22 consecutive monitoring events at the MP-1, MP-2 and MP-3 surface water monitoring locations, with monitoring discontinued in December 2017.⁵

ADOT&PF provided a copy of the *Plans for Taxiway Construction*⁶ that identifies the location of airport improvements including upgrades to the access road and taxiway construction within the area of the site as shown on **Figure 3**. The runway, access roads and taxiway will be paved, limiting migration of surface water through potentially contaminated fill.



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-

⁵ See *Site Assessment Report, Klawock Airport, Klawock, Alaska, February 8, 2018* (on file).

⁶ See email dated 3/31/2018, with attached *Plans for Taxiway Construction, Project No. SFAP001121, A.I.P. No. 3-02-____-____-2019*, on file.

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	De Minimis Exposure	Soil or other fill materials are potentially contaminated based on past TAH water quality violations for toluene but no analytical testing of soil has been done and contamination is not confirmed. New fill has been added to the pad over time.
Sub-Surface Soil Contact	De Minimis Exposure	Soil or other fill materials are potentially contaminated based on past TAH water quality violations for toluene but no analytical testing of soil has been done and contamination is not confirmed
Inhalation – Outdoor Air	De Minimis Exposure	Toluene concentrations exceeded water quality standards during past sampling events; based on low concentrations in surface water, toluene that may be present in fill or soil at the site would not be expected to be present at levels that would approach outdoor air inhalation cleanup levels. Contamination in soil has not been confirmed.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	Ground water is not believed to be impacted. Recent surface water results show that water quality standards are being met.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not used as a drinking water source in the vicinity of the site. Groundwater is not believed to have been impacted.
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of the site. Recent surface water results show that water quality standards are being met.
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	De Minimis Exposure	Contamination exceeding TAH water quality standards was not detected in surface water that discharges to an anadromous stream and the marine environment during the most recent 15 consecutive surface water sampling events. During the 22 monitoring events, TAH was exceeded for toluene at one monitoring location during an April 2014 sampling event.

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

Closure is granted based on completion of long-term surface water quality monitoring of three appropriately placed monitoring points; that is, at culvert inflow or outflow locations that discharge water from fill areas through culverts to wetlands and/or the anadromous stream south of the former helipad. Sampling was done for 22 consecutive quarters, ending in December 2017. Results were either non-detect results or below the Total Aromatic Hydrocarbon (TAH) water quality standard for the contaminant of concern, toluene, for the 15 most recent consecutive monitoring events. ADEC determined that under current conditions there is little risk there will be future exceedances of the water quality standards.

ADOT&PF plans airport upgrades in the near future that include constructing a taxiway parallel to and east of the runway that will encompass the location of the former helipad area (shown on **Figure 3**) and will entail excavating unsuitable material including fill within the site. The runway, access roads and taxiway will be paved, limiting migration of surface water through potentially contaminated fill. Given the past water quality results that exceeded TAH for toluene and the presence of buried debris encountered during soil trenching at the site, ADEC recommends that ADOT&PF submit an environmental management plan for ADEC Contaminated Sites Program approval before beginning work in the project area that includes the site. ADEC recommends that the plan include monitoring work at the site and recording field screening results and other field observations during excavation, with stockpiling and analytical sampling included as contingencies if contaminated media are encountered.

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. (See Figure 1).
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, 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 20 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) 269-7527 or email at Eileen.Olson@alaska.gov

Sincerely,

A handwritten signature in blue ink that reads "Eileen Olson". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Eileen Olson
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit