THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

SPILL PREVENTION & RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, Alaska 99709
Main: 907.451.2143
Fax: 907.451.2155
www.dec.alaska.gov

File Nos.: 860.26.002
860.38.005

November 25, 2020

Electronic Delivery Only
Christiana Hewitt
AFCEC/CIBE
2261 Hughes Ave., Suite 155
JBSA Lackland, TX 78236-9853

Subject: **DECISION DOCUMENT: CLEANUP COMPLETE DETERMINATION**
Galena AFS / Airport – ST020 UST 1837

Dear Ms. Hewitt:

The Alaska Department of Environmental Conservation (ADEC) has completed a review of the environmental records associated with the site, Galena AFS / Airport – ST020 UST 1837, located in Galena, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining at Site ST020 do not pose an unacceptable risk to human health or the environment. No further remedial action will be required at Site ST020 unless information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Former Galena Forward Operating Location (FOL), which is located in the ADEC offices in Fairbanks, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:
Site ST020 UST 1837
Galena, Alaska
64°44'26.17"N, 156°57'3.54"W

Name and Mailing Address of Contact Party:
Christiana Hewitt
AFCEC/CIBW
2261 Hughes Ave., Suite 155
JBSA Lackland, TX 78236-9853

DEC Site Identifiers:
File No.: 860.26.002
Hazard ID: 23151

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background:
Site ST020 is located in the eastern portion of the cantonment "triangle" on less than one acre owned by the City of Galena. Building 1837 is located within Site ST020. The area is within a fence that surrounds the adjacent Site ST005 POL Tank Farm. The site location and historical features are shown on **Figure 1** (inset and attached).

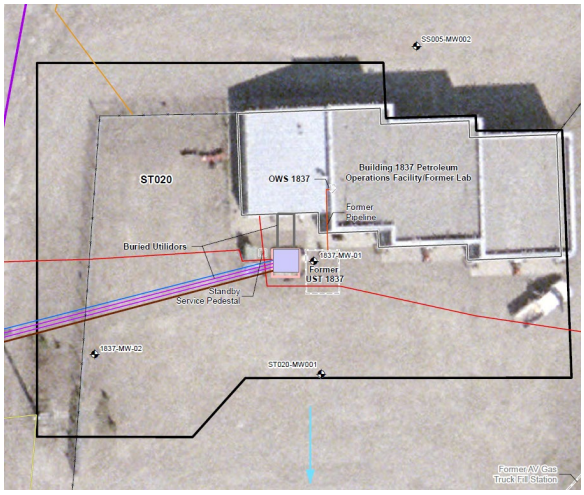


Figure 1. Site ST020 Layout

Building 1837 was formerly used as the Petroleum Operations Facility. It had five wash/maintenance bays, an oil-water separator (OWS 1837), floor drains, and a 500-gallon waste collection underground storage tank (UST) known as UST 1837. The waste oil tank has been removed and the floor drains have been filled with concrete. The oil-water separator is integral to the floor, so it was left in place and not filled with concrete. The source of contamination at the site was subsurface releases from UST 1837, which received waste oil, diesel, and gasoline from the former floor drains in Building 1837. UST 1837 was removed in 1998.

Contaminants of Concern
The following contaminants of concern (COCs) in soil have been identified for Site ST020:

- C_{10}-C_{25} Diesel-range organics (DRO)
- C_6-C_{10} Gasoline-range organics (GRO)
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- Benzene
- n-Butylbenzene
- sec-Butylbenzene
- Dibromochloromethane
- Ethylbenzene
- Ethylene Dibromide
- Isopropylbenzene
- Naphthalene
- n-Propylbenzene
- Toluene
- Xylenes

Groundwater samples collected in 2007, 2010, 2011, 2013, and 2014 did not exceed 18 AAC 75.345 Table C cleanup levels (CULs).

Cleanup Levels
The following 18 AAC 75 soil and groundwater cleanup levels apply at Site ST020:

- Table B1 and B2 Method Two Migration to Groundwater soil cleanup levels
- Table B1 Under 40-Inch Zone Human Health soil cleanup levels
- Table B2 Maximum Allowable Concentrations for soil
- Table C groundwater cleanup levels

The approved cleanup levels and residual concentrations for Site ST020 are presented in **Table 1**, below.

Table 1 – Approved Cleanup Levels and Remaining Contaminant Concentrations

Contaminant	Method Two Human Health or Maximum Allowable Soil Cleanup Level (mg/kg)	Method Two Migration to Groundwater Soil Cleanup Level (mg/kg)	Maximum Remaining Soil Concentration (mg/kg)
GRO	1400	300	680
DRO	10,250	250	5800
1-Methylnaphthalene	68	0.41	1.6
2-Methylnaphthalene	310	1.3	0.93
1,2,4-Trimethylbenzene	43	0.61	23
1,3,5- Trimethylbenzene	37	0.66	19
Benzene	11	0.022	0.0917
n-Butylbenzene	20	23	2.3
sec-Butylbenzene	28	42	0.14
Dibromochloromethane	110	0.0027	0.04
Ethylbenzene	49	0.13	1.55
Ethylene Dibromide	0.42	0.00024	0.000782
Isopropylbenzene	54	5.6	0.018
Naphthalene	29	0.038	4.2
n-Propylbenzene	52	9.1	0.14
Toluene	200	6.7	1.57
Xylenes-total	57	1.5	12

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

The nature and extent of contamination in soil was determined during site characterization (SC) and supplemental SC fieldwork completed in 2011 and 2013, respectively. Soil samples were analyzed for GRO, DRO, residual-range organics (RRO), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), metals, and polychlorinated biphenyls (PCBs). Site characterization efforts through 2013 found DRO and VOCs exceeding Migration to Groundwater CULs in a 40-foot by 85-foot area extending to a depth of 15 feet in the vadose zone.

Source area groundwater samples were collected in 2014 and downgradient groundwater samples were collected in 2013 and 2014. Groundwater samples were analyzed for GRO, DRO, RRO, VOCs, PAHs, metals, and PCBs. All analytes were either non-detect or below Table C CULs.

The cleanup approach for Site ST020 was soil vapor extraction (SVE), as detailed in the June 2016 *Subsurface Aeration (Vertical Well) Cleanup Plan for Sites ST020, SS005, CST014, CST011 Area 2, and TU001.* An SVE system with five closely spaced wells screened from 8-18 feet bgs was installed during summer 2016 and operated over the following three winters (November through April). After three years of seasonal SVE operation, all soil sample results were below the ADEC 2018 Method Two Human Health CULs. Confirmation soil borings in 2018 and 2019 confirmed that remaining contamination exceeding Migration to Groundwater CULs was limited to depths from 3-15 feet bgs. Maximum remaining contaminant concentrations for the Site ST020 source area are presented in **Table 1**. Sufficient site characterization has been completed, and ADEC has determined that residual contaminants in soil have achieved steady-state equilibrium and will not migrate to groundwater.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains onsite, 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 non-carcinogenic risk standard at a hazard index of one across all exposure pathways. Cumulative risk is calculated using all contaminant concentrations remaining on site at concentrations above 1/10th the cleanup level, per 18 AAC 75.340(k).

A human health risk evaluation using the HRC and the online Method Three Cumulative Risk Calculator under DEC Method Three (18 AAC 75.340(f)) was undertaken. The report: *ADEC Method Three Risk and Cleanup Complete Report for Site ST020*, Former Galena Forward Operating Location, Alaska (CH2M, June 2020), presents the methods, input data and results of the risk calculations. Maximum concentrations of remaining soil, soil gas, and groundwater samples were used in the HRC evaluation. The results of the risk calculations are summarized below:

- The non-carcinogenic hazard index (HI) was 0.1, below the regulatory risk standard of 1 for direct contact/ingestion, outdoor air inhalation, vapor intrusion, and groundwater ingestion pathways.
- Carcinogenic risk was 3.0×10^{-6}, below the regulatory risk standard of 1.0×10^{-5} for direct contact/ingestion, outdoor air inhalation, vapor intrusion, and groundwater ingestion pathways.
- Potential Hazard Quotients posed by the GRO, DRO, and RRO aromatic and aliphatic fractions are below the regulatory risk standard of 1 for each potentially complete exposure pathway (direct contact/ingestion, outdoor air inhalation, vapor intrusion, and groundwater ingestion) for the hypothetical residential exposure scenario.

Exposure Pathway Evaluation

Following investigation 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 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	There is no contamination in surface soil (0 to 2 ft. bgs) at this site.
Sub-Surface Soil Contact	De Minimis Exposure	Residual subsurface contamination does not exceed the Table B1/B2 Human Health cleanup levels.
Outdoor Air Inhalation	De Minimis Exposure	Residual subsurface contamination does not exceed the Table B1/B2 Human Health cleanup levels.
Groundwater Ingestion	Pathway Incomplete	There are no exceedances of the Table C cleanup levels at Site SS020.
Surface Water Ingestion	Pathway Incomplete	There is no surface water at Site ST020. The nearest surface water body is the Yukon River, approximately 1,300 feet south of the site. Groundwater is not impacted, and contamination is not expected to migrate to surface water.
Wild and Farmed Foods Ingestion	Pathway Incomplete	The site is covered with gravel and is not located in area that would be expected to be used for wild or farmed foods.

Pathway	Result	Explanation
Indoor Air Inhalation (Vapor Intrusion)	De Minimis Exposure	Residual contamination is below the Human Health cleanup levels. Cumulative risk does not exceed the carcinogenic or non-carcinogenic thresholds.
Exposure to Ecological Receptors	Pathway Incomplete	There are no concerns about other ecological pathways.

Notes to Table 2: "De Minimis Exposure" means that in ADEC's judgement receptors are unlikely to be affected by the minimum volume or concentration of remaining contamination. "Pathway Incomplete" means that in ADEC's judgement contamination has no potential to contact receptors.

ADEC Decision

ADEC has reviewed the environmental records associated with Site ST020 and determined that residual contamination does not pose a risk to human health or the environment. Site ST020 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 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, 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.

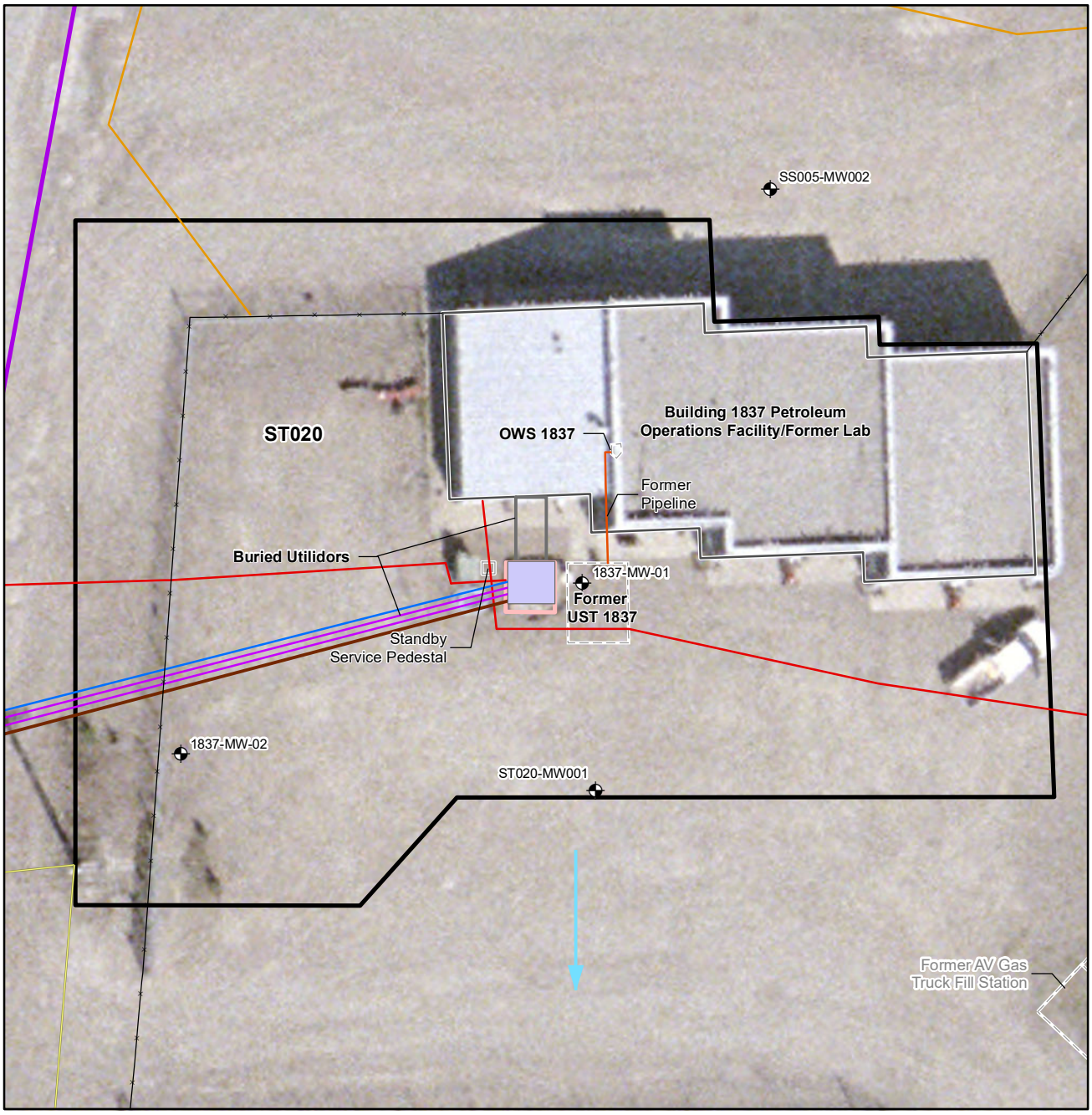
If you have questions about this closure decision, please contact the ADEC Project Manager at (907) 451-5175, or via email at jamie.mckellar@alaska.gov.

Sincerely,

Jamie McKellar
Environmental Program Specialist

Enclosure: Figure 1 – Site ST020 Location Map

cc, via email: Donna Kozak, BAH
Win Westervelt, CH2M/Jacobs
Ed Heyse, Parsons
Bruce Henry, Parsons
Shanda Huntington, City of Galena, via email
Eric Breitenberger, DEC
Bill O'Connell, DEC



LEGEND

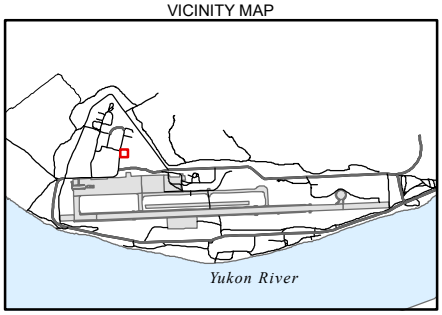
- Monitoring Well
- Fence
- Electrical Line
- Heating/Cooling Line
- Water Line

Underground Utility Locates - 2010

- Communications Line
- Electrical Line
- 1952 and 1962 Underground Pipeline (Not Visible on Aerials)

- Approximate Groundwater Flow Direction
- Utility Valve Pit
- Concrete Pad
- Site ST020 Boundary
- Structure

VICINITY MAP



Note:
1. Aerial photography courtesy of the Alaska Department of Commerce, Community and Economic Development, Division of Community and Regional Affairs. July 7, 2009. Pixel size 6 inch.

N

0 15 30

Feet

FIGURE 1
Site ST020 Layout
Cleanup Complete Letter
Former Galena Forward Operating Location, Alaska