



THE STATE
of **ALASKA**
GOVERNOR MICHAEL J. DUNLEAVY

**Department of
Environmental Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 100.38.205

November 20, 2019

University of Alaska – EHSRM Office
ATTN: Mr. Thadd Williamson
P.O. Box 758145
Fairbanks, AK 99775

Re: Decision Document: Residence - 6295 Steese Highway HHOT
Cleanup Complete Determination

Dear Mr. Williamson:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Residence - 6295 Steese Highway HHOT, located at 6295 Steese Highway, Fairbanks, AK 99701. 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 Residence - 6295 Steese Highway HHOT, which is located in the ADEC office 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:

Residence - 6295 Steese Highway HHOT
6295 Steese Highway
Fairbanks, AK 99701

Name and Mailing Address of Contact Party:

Thadd Williamson
University of Alaska – EHSRM Office
P.O. Box 758145
Fairbanks, AK 99775

ADEC Site Identifiers:

File No.: 100.38.205
Hazard ID.: 4312

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

This site is located at a private residence near the Poker Flat Research Range at Mile 32 of the Steese Highway. The Chatanika River is north of the site and Captain Creek is to the east (Figure 1). In 2003, contaminated surface soils were observed in the vicinity of a 500 gallon above ground storage tank. The cause of the surface staining was believed to have originated from leaking supply fittings or several 55 gallon drums located in the area. In 2006, the UAF Environmental Health, Safety, and Risk Management Department (UAF EHSM) conducted interim removal and characterization activities. After excavation commenced, a 500 gallon underground storage tank (UST) was discovered approximately 2.5 feet below ground surface (ft bgs) and 4 feet from the house. The UST and approximately 100 cubic yards of contaminated soil were removed down to the water table at 8 ft bgs. UAF EHSM estimated that 18 to 22 cubic yards of petroleum impacted soil may remain below the slab-on-grade concrete foundation of the house.

Contaminants of Concern

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

- DRO
- Benzene
- Ethylbenzene
- Total Xylenes
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Naphthalene

Cleanup Levels

Benzene, ethylbenzene, total xylenes, DRO, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were detected in soil above the Method 2 migration to groundwater cleanup levels established in 18 AAC 75.341 Tables B1 and B2. Ethylbenzene and total xylenes were detected in groundwater, but were below the most stringent cleanup levels established in 18 AAC 75.345 Table C.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)	Groundwater (µg/L)
DRO	250	1,500
Benzene	0.022	4.6
Ethylbenzene	0.13	15
Total Xylenes	1.5	190
1-Methylnaphthalene	0.41	11
2-Methylnaphthalene	1.3	36
Naphthalene	0.038	1.7

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 2006. These activities are described below.

Site characterization under 18 AAC 75.335 conducted in 2006 included excavating 100 cubic yards of impacted soil and transporting it offsite for thermal remediation and removing the 500 gallon UST. Five soil samples and one duplicate were taken from the excavation and analyzed for DRO, BTEX, and PAHs. Two of the five samples contained contaminants above ADEC's soil cleanup levels, including: benzene (0.0526 mg/kg), ethylbenzene (11.1 mg/kg), total xylenes (47.0 mg/kg), DRO (7,540 mg/kg), 1-methylnaphthalene (6.59 mg/kg), 2-methylnaphthalene (8.71 mg/kg), and naphthalene (3.670 mg/kg). Based on the sampling locations and results, UAF EHSRM determined the excavated areas successfully removed all contaminated soils except for approximately 18-22 cubic yards of impacted soil remaining under the foundation of the house at the southwest corner.

On September 12, 2008, a groundwater sample was collected from the well on site. The well was approximately 70 feet northeast of the project excavation limits. These samples were analyzed for DRO and BTEX. No analytes were detected above their practical quantitation limit.

In June and July 2010, UAF personnel returned to the site to conduct additional excavation at the source area to reach the groundwater table at a depth of 6.5 to 7 ft bgs and obtain a groundwater sample for analysis. The groundwater sample had detections of ethylbenzene (3.85 µg/L) and xylenes (18 µg/L) but were well below cleanup levels.

In 2019, groundwater was sampled from the well and from the excavation and were analyzed for BTEX, GRO, DRO, and RRO. No contaminants were detected in either sample.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g) 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, ADEC 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 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, 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	Pathway Incomplete	Contamination is not present in surface soil (0 to 2 feet below ground surface).
Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface, but is below health-based cleanup levels.
Inhalation – Outdoor Air	De Minimis Exposure	Contamination remains in the sub-surface, but is below health-based cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	Volatile contaminants may remain beneath the house; however, the house will be demolished and the area will be included in Poker Flats Rocket Range.
Groundwater Ingestion	De Minimis Exposure	All analytical groundwater samples are below cleanup levels.
Surface Water Ingestion	Pathway Incomplete	Analytical results demonstrate contamination is not migrating to 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	Contamination has not impacted the nearby Chatanika River or Captain Creek where aquatic life could be affected, as demonstrated by groundwater samples collected at the source area and nearby well.

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

Soil and groundwater contamination at the site have been cleaned up to concentrations below the approved cleanup levels suitable for residential land use, with the exception of some soil contamination remaining under the foundation of the house at the southwest corner. It has been determined that the remaining impacted soil does not present an unacceptable risk to human health or the environment. Analytical groundwater samples collected in 2008, 2010, and 2019 have demonstrated that groundwater has not been impacted above cleanup levels.

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 from a site that is subject to the site cleanup rules or for which a written determination from the department has been made under 18 AAC 75.380(d)(1) that allows contamination to remain at the site above method two soil cleanup levels or groundwater cleanup levels listed in Table C 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 attached site figure.)
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 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) 451-2144, or email at rebekah.reams@alaska.gov.

Sincerely,

Rebekah Reams
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit
Janice Wiegers, DEC
Frances Isgrigg, UAF EHSRM

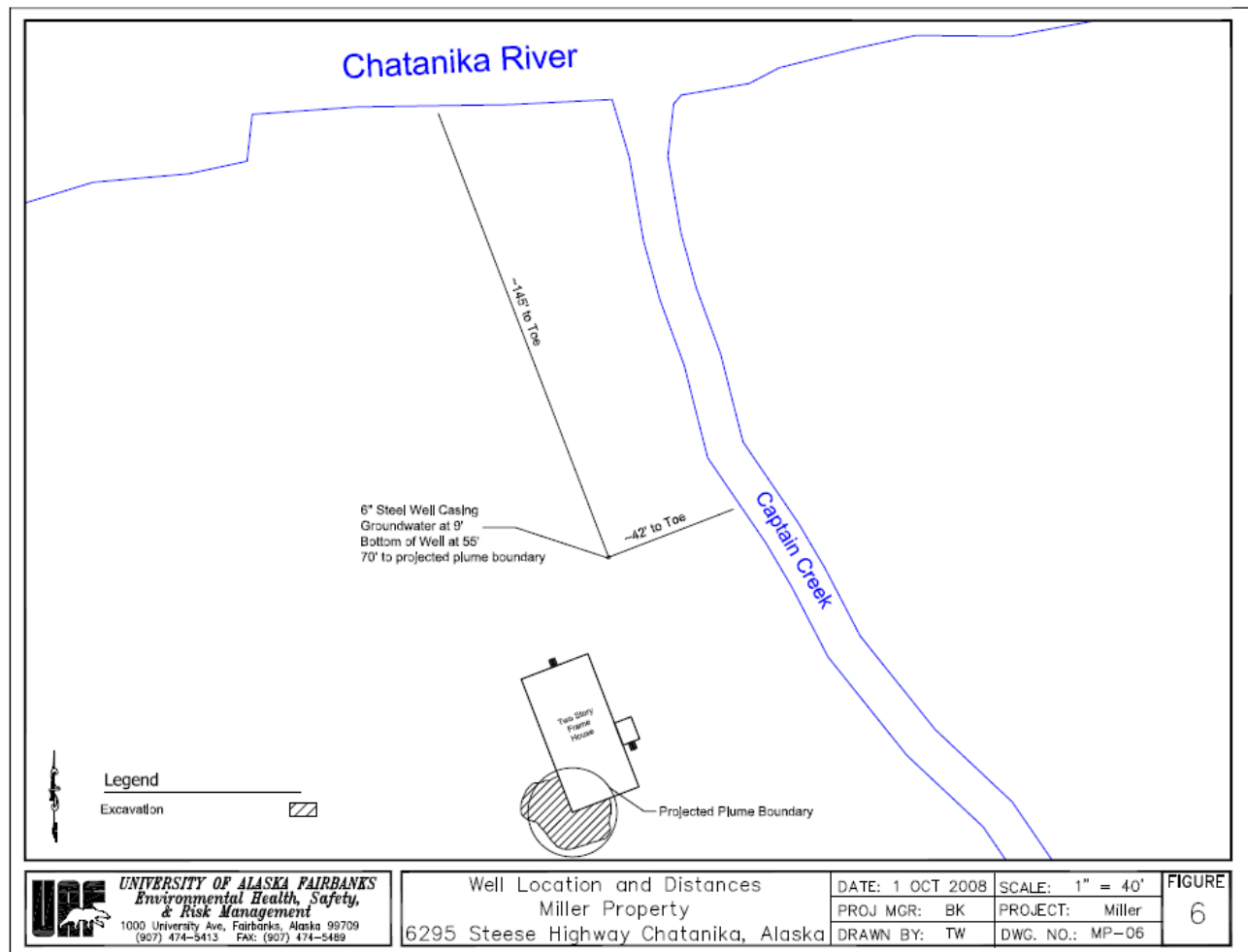


Figure 1: 6295 Steese Highway Residence Site Layout

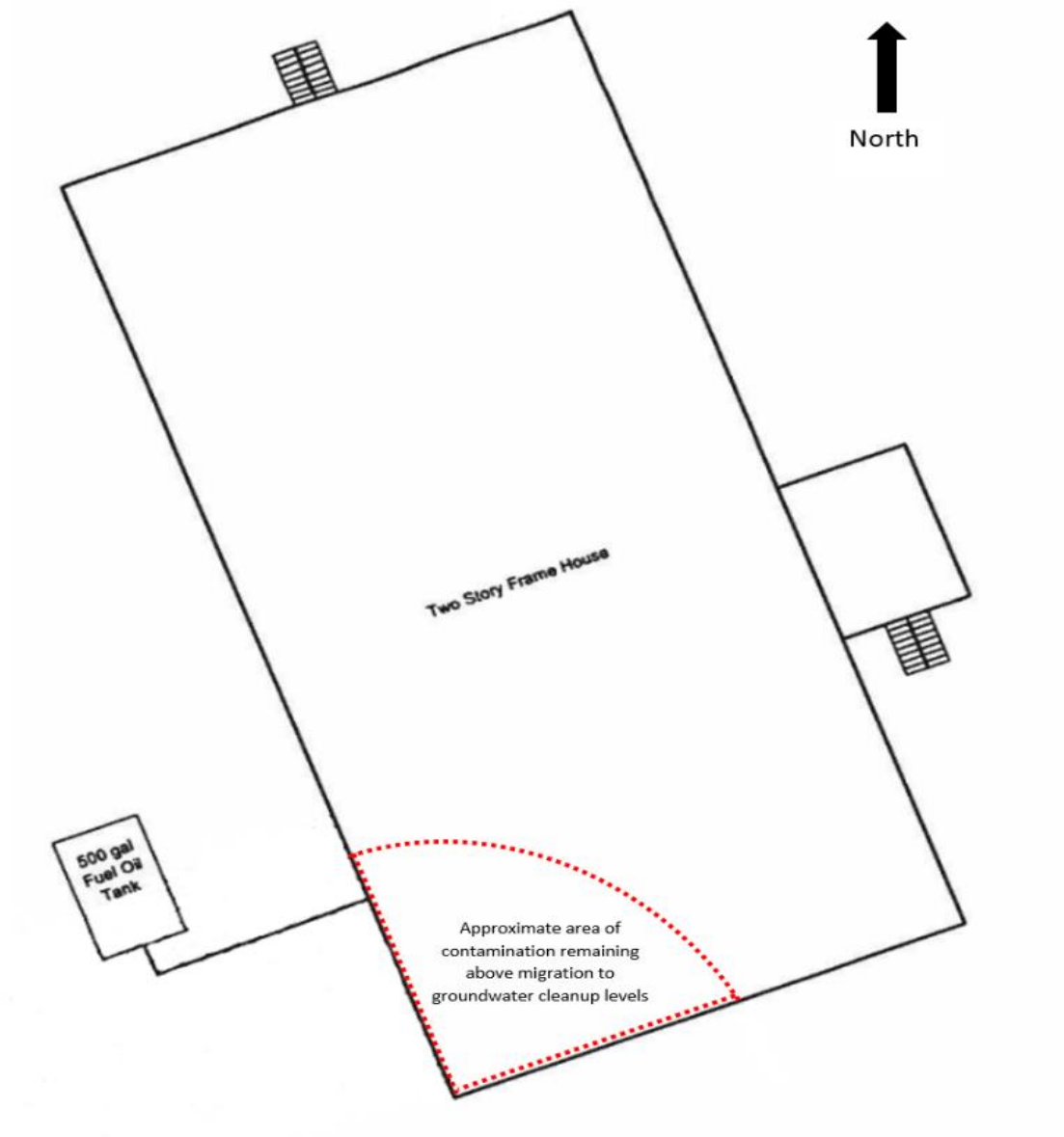


Figure 2: Approximate boundary of contamination remaining above cleanup levels. Figure modified by DEC from original image in *Excavation, Stockpiling, and Remediation of DRO Contaminated Soils at 6295 Steese Highway Chatanika, Alaska* (2006).