



February 27, 2019

Rebecca Roth, Managing Partner
Crabtree Surber, LLC
1100 West Dimond Boulevard
Anchorage, AK 99515

Re: **Decision Document: Youngs Firehouse
Cleanup Complete Determination - Institutional Controls**

Dear Ms. Roth:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Youngs Firehouse, 1090 West Dimond Boulevard, Anchorage. 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 as long as the institutional controls are maintained and effective and no new information becomes available that indicates residual contamination poses an unacceptable risk.

This Cleanup Complete with Institutional Controls (ICs) determination is based on the administrative record for the Site Name which is located in the offices of the ADEC in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions, regulatory decisions, and specific conditions required to effectively manage remaining contamination at this site.

Site Name and Location:

Youngs Firehouse
1090 West Dimond Blvd.
Anchorage, AK 99515

Name and Mailing Address of Contact Party:

Rebecca Roth, Managing Partner
Crabtree Surber, LLC
1100 West Dimond Blvd.
Anchorage, AK 99515

ADEC Site Identifiers:

File No.: 2100.26.222
Hazard ID.: 23861

Regulatory Authority for Determination:

18 AAC 78 and 18 AAC 75

Site Description and Background

On May 9, 1990 a broken turbine pump on top of one of the two 12,000 gallon underground storage tanks (UST) caused the release of gasoline to the ground surface and into the soil and shallow groundwater around the UST. Subsequently in July 1990 the 12,000 gallon leaded gasoline UST, the 12,000 gallon unleaded gasoline UST, the UST vent piping, and the product piping to the central and east dispenser islands were removed. The piping to the three southern dispenser islands were left in-place and not assessed at this time.

Contaminants of Concern

During the various investigation activities at the site, soil and groundwater samples were collected and analyzed for residual range organics (RRO), diesel range organics (DRO), gasoline range organics (GRO), volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX), total lead, and polynuclear aromatic hydrocarbons (PAHs). Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Benzene
- Ethylbenzene
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Naphthalene
- Toluene
- Xylenes
- Gasoline Range Organics (GRO)
- Diesel Range Organics (DRO)

Cleanup Levels

Soil cleanup levels applicable to the site are found in 18 AAC 75.341(c), Table B1, and 18 AAC 75.341 (d), Table B2 for the human health pathway. Groundwater cleanup levels applicable to the site are found in 18 AAC 75.345(b), Table C. Approved cleanup levels for the contaminants of concern is listed below in Table 1.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)	Groundwater (µg/l)
Benzene	11	4.6
Ethylbenzene	49	15
1-Methylnaphthalene	68	11
2-Methylnaphthalene	310	36
Naphthalene	2,000	1.7
Toluene	200	1,100
Xylenes	57	190
GRO	1,400	2,200
DRO	10,250	1,500

mg/kg = milligrams per kilogram

µg/l = micrograms per liter

Characterization and Cleanup Activities

During the July 1990 UST removal 1,000 gallons of contaminated water was pumped from the excavation into an above ground tank to be stored and treated on-property and 600 cubic yards of contaminated soil was excavated and was placed in a lined land farm constructed on the southern portion of the property. In September 1990 three monitoring wells were installed and sampled to help define the extent of the soil and groundwater contamination at this site. The groundwater at the site has been encountered between two to seven feet below ground surface and generally flows to the west by northwest.

In August 2014 soil samples were collected along the piping to the three southern dispenser islands that had been left in-place and not assessed during the UST removal in 1990. Water samples were also collected from the two nearby drinking water wells (DW-1 and DW-2), both of which are within 50 feet of soil and groundwater contamination areas at the site. The samples collected from these drinking water wells did not contain petroleum contamination. Drinking water well DW-1 was installed at the car wash building in 1977 and is 67 feet deep with the bottom 10 feet (57 to 67 feet) containing a stainless steel well screen. Drinking water well DW-2 was installed in 1970 near the fire house building is 172 feet deep with the bottom 5 feet (167 to 172 feet) containing a stainless steel well screen and is reported to be a flowing artesian well. Later in 2014 one damaged monitoring well was decommissioned (MW-3) and one new monitoring well (MW-4) was installed in the location of the former USTs.

In May 2015 fifteen soil borings were sampled to help define the nature and extent of the contamination remaining at the site. Soil contamination over ADEC's soil cleanup levels were identified at several of the borings. In June 2015 the drinking water well at the car wash building (DW-1) was sampled and no petroleum was detected.

In September 2015 and October 2015 a total of 430 cubic yards of contaminated soil was excavated and transported off site for thermal treatment. The confirmation soil samples collected from the excavation documented that some soil remained in the excavation above human health cleanup levels. Later in October 2015 two soil borings (B16 and B17) were sampled and completed as monitoring wells (MW5 and MW6). The soil samples collected from those two soil borings were all below soil cleanup levels.

In October 2015 and March 2016 indoor air samples were collected at the 1100 West Dimond Boulevard Young's Firehouse building. All of the air samples met ADEC commercial indoor air target levels.

In May 2016 an additional eight cubic yards of contaminated soil was excavated to remove the remaining soil above human health cleanup levels at the site. In July 2016 the soil samples collected at the land farm area located on the south portion of the property demonstrated that those soils had been successfully treated. In August 2016 the land farm area soils were approved for reuse on the property.

In May 2017 the two nearby drinking water wells (DW-1 and DW-2) were sampled and they continued to be free of petroleum contamination.

Between September 1990 and November 2018 groundwater samples were collected from selected site monitoring wells. As of November 2018 the only monitoring well exceeding Table C groundwater cleanup levels was monitoring well MW-7A, which had 36.6 µg/l benzene. In October 2018 in accordance with an ADEC approved work plan all of the site monitoring wells except for MW-7A were decommissioned.

After the cleanup activities at the site the maximum concentrations in soil remaining at the site above the migration to groundwater cleanup levels found in 18 AAC 75.341(c), Table B1, and 18 AAC 75.341 (d), Table B2 are listed below in Table 2.

Table 2 – Maximum Soil Concentrations Remaining Over Migration to Groundwater Cleanup Levels

Contaminant	Maximum Soil Concentration Remaining (mg/kg)	Soil Migration to Groundwater Cleanup Levels (mg/kg)
Benzene	4.68	0.022
Ethylbenzene	9.29	0.13
Naphthalene	0.674	0.038
Toluene	17.2	6.7
Xylenes	23.5	1.5
GRO	365	300
DRO	732	250

mg/kg = milligrams per kilogram

Cumulative Risk Evaluation

Pursuant to 18 AAC 78.600(d), 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 non-carcinogenic 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 associated with the UST 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 3.

Table 3 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-Minimis Exposure	Contamination remains in surface soil (0 to 2 feet below ground surface), but is below human health and ingestion cleanup levels.
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in sub-surface soil, but is below human health and ingestion cleanup levels.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the surface and sub-surface, but is below human health and inhalation cleanup levels.

Inhalation – Indoor Air (vapor intrusion)	De-Minimis Exposure	Indoor air samples collected inside the Youngs Firehouse building confirmed that concentrations were below indoor air target levels.
Groundwater Ingestion	Exposure Controlled	Residual groundwater contamination is still present, but the nearest drinking water wells located on the property and the adjacent up gradient property have been sampled and had no detectable petroleum contamination. An NEC has been recorded restricting installation of additional water wells without prior ADEC approval.
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of the site.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Wild or farmed foods are not collected at the site.
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors are not expected to be exposed to contamination at the site.

Notes to Table 3: “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

Petroleum contamination remains in surface and sub-surface soil and in the groundwater above levels suitable for unrestricted future use; however ADEC has approved the use of institutional controls to limit potential future exposure and risk to human health or the environment. A Notice of Environmental Contamination and Institutional Controls (NEC-IC) has been recorded in the land records maintained by the Alaska Department of Natural Resources and a copy is attached to this letter.

Groundwater meets the applicable cleanup levels at the approved points of compliance at the property boundaries of Lot 1 A-1, shown in the figure included in the attached NEC-IC Agreement, the groundwater contaminant plume has been demonstrated to be shrinking and the contaminant concentrations are decreasing. Therefore, ADEC has determined the residual soil contamination does not pose an unacceptable migration to groundwater concern while it remains at its current location.

ADEC has determined the cleanup is complete as long as the institutional controls are properly implemented and no new information becomes available that indicates residual contamination may pose an unacceptable risk.

The ADEC Contaminated Sites Database will be updated to reflect the change in site status to “Cleanup Complete with Institutional Controls” and will include a description of the contamination remaining at the site.

The institutional controls will be removed in the future if documentation is provided that shows concentrations of all residual hazardous substances remaining at the site are below the levels that allow for unrestricted exposure to, and use of, the contaminated media and that the site does not pose a potential unacceptable risk to human health, safety or welfare, or to the environment. Standard conditions 1 through 4 below will remain in effect after ICs are removed.

The following institutional controls and standard conditions shall be maintained:

Institutional Controls

1. The Landowner agrees to notify ADEC prior to any sale or transfer of the property and shall report to ADEC every 5 years to document the status of compliance with the institutional controls described in this notice. Such notice and the reports should be sent to the ADEC at:

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
Contaminated Sites Program
Attention: IC Unit
P.O. Box 111800
Juneau, AK 99811-1800
or be submitted electronically to CS.Submittals@alaska.gov.

2. No groundwater wells shall be installed on the Property without prior ADEC approval. Nothing in this prescription disallows use of the wells currently existing on the Property.
3. Monitoring well MW-7A shall be maintained so that it does not create a pathway for water to flow into the well from the ground surface.
4. Unless an extension is approved by ADEC, monitoring well MW-7A will be decommissioned by June 1, 2024 in accordance with an ADEC approved work plan.

Standard Conditions

1. 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 characterization and treatment may be required to ensure the water is suitable for its intended use.
2. ADEC approval is required prior to moving any soil or groundwater off the Property, regardless of property ownership. In the future, if soil will be excavated or groundwater will be brought to the surface (for example to dewater in support of construction) it must be characterized and/or managed following regulations applicable at that time and ADEC approval must be obtained before moving the soil or water off the Property or before recharging the water into the Property.
3. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

4. Any notification to ADEC shall be addressed to:

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
Contaminated Sites Program
Attention: IC Unit
P.O. Box 111800
Juneau, AK 99811-1800
or be submitted electronically to CS.Submittals@alaska.gov.

This determination is in accordance with 18 AAC 78.276(f) 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) 269-7525, or email at robert.weimer@alaska.gov.

Sincerely,



Robert Weimer
Project Manager

Note: This letter is being transmitted to you in electronic format only. If you require a paper copy, let us know and we will be happy to provide one to you. In the interest of reducing file space, the Division of SPAR/Contaminated Sites Program is transitioning to electronic transmission of project correspondence.

Enclosures: Recorded NEC-IC Agreement which includes site figure(s) showing the extent of residual soil/groundwater contamination and boundary of the area covered by the ICs.

cc: Spill Prevention and Response, Cost Recovery Unit