



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

**Department of Environmental
Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, AK 99709-3643
Phone: 907-451-2143
Fax: 907-451-2155
www.dec.alaska.gov

File: 2542.38.023
Hazard ID: 2886

October 6, 2023

Rena Flint
USACE, Alaska District
PO Box 6898
JBER, AK 99506-0809

Re: Decision Document: Dutch Hbr-Unalaska Vly UST 2965
Cleanup Complete Determination

Dear Ms. Flint,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Dutch Hbr-Unalaska Vly UST 2965, located on upper East Broadway Avenue in Unalaska, Alaska. 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 information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Dutch Hbr-Unalaska Vly UST 2965, which is located in the DEC office in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:

Dutch Hbr-Unalaska Vly UST 2965
Former Bldg 2965
Upper East Broadway Avenue
Unalaska, AK, 99685

Name and Mailing Address of Contact Party:

Rena Flint
USACE, Alaska District
PO Box 6898
JBER, AK 99506-0809

DEC Site Identifiers:

File No.: 2542.38.023
Hazard ID.: 2886

Regulatory Authority for Determination:

18 AAC 78 and 18 AAC 75

Site Description and Background

Underground Storage Tank (UST) 2965 was associated with the remnants of a former latrine, Building 2965, located on upper East Broadway Avenue in Unalaska, Alaska. During a Remedial Investigation

and interim removal actions (IRA) in 1997, a single-walled steel 300-gallon UST with heavy corrosion was located on the north side of the former building. The UST and 15 cubic yards (cy) were removed from the site in August and September 1997. Three confirmation samples were collected from the base of the excavation at the bedrock interface to characterize the site. Diesel range organics (DRO) was the only analyte that exceeded DEC Method Two Cleanup Levels, at a concentration of 3,100 milligrams per kilogram (mg/kg) in one sample.

Contaminants of Concern

During the site characterization and cleanup activities at this site, samples were collected from soil and analyzed for DRO, residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs). Based on these analyses, the following contaminant was detected above the default DEC cleanup levels and is considered a Contaminant of Concern at this site:

- DRO

Cleanup Levels

The applicable cleanup levels at the site are the calculated method three site-specific alternative cleanup level (ACL) under 18 AAC 75.340 (e). A site-specific organic carbon content of soil (foc) value of 0.045 grams per gram (g/g) was used in the Petroleum Cleanup Level Calculator, as opposed to the default Method Two foc value of 0.001 g/g.

Table 1 – Approved Cleanup Levels

Contaminant	Soil ¹ (mg/kg)
DRO	8,300

¹ Alternative Cleanup Level based on approved site-specific soil data and the equations set out in the department's *Procedures for Calculating Cleanup Levels*, dated February 1, 2018. The most stringent ACL value for DRO is the Human Health Ingestion Cleanup Level.

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

In the mid 1990's, the Formerly Used Defense Sites (FUDS) program conducted site inspections in Unalaska to find and dispose of remaining debris, USTs, and other potential contaminant sources. During a Remedial Investigation (RI) and interim removal activities in 1997, a single-walled steel 300-gallon UST with heavy corrosion and containing approximately 1350 gallons of water was identified at the northern corner of the former latrine building 2965. The tank, water, and fuel piping were removed from the site in August 1997.

No evidence of contamination was observed in the top two feet of soil covering the UST, however staining was observed down along the side of the tank to bedrock at 8.5 feet below ground surface (bgs). Approximately 15 cy of presumed contaminated soil was removed from the 240 square foot excavation and transported offsite for treatment. Three analytical soil samples were collected from the bottom of the excavation, at approximately 7.0 to 8.5 ft bgs, to characterize the soil remaining in place. All samples were submitted for DRO, RRO, and BTEX analysis, and two of the three samples were analyzed for PAHs.

RRO was detected in two of the three soil samples, at concentrations of 15 and 200 mg/kg. Ethylbenzene and total xylenes were detected in one of three soil samples at concentrations of 0.0267 mg/kg and 0.1479 mg/kg, respectively. PAHs were detected in one of the two samples, however none of the detected concentrations exceeded DEC cleanup levels. DRO was detected in two of three samples at concentrations of 52 and 3,100 mg/kg, with one of the samples exceeding DEC cleanup levels. The location of the DRO exceedance was collected from the soil/fractured bedrock interface beneath the former UST. Observations made in the field suggest that the location for placement of UST UV-2965 was blasted into bedrock, and that the POL contaminants moved vertically rather than laterally. No groundwater was encountered during excavation activities therefore no groundwater samples were collected. The excavation was backfilled with clean soil. The site layout and sample locations are shown in Figures 1 and 2.

Following the 1997 RI, the UST 2860 site was recommended by the FUDS program for no further action, supported by the following factors:

- The primary (i.e., 300-gallon storage tank) and secondary sources (approximately 15 cy of soil) of contamination were removed.
- There was no recorded history of spills associated with the site, and any spills would not be of significant volume based on the small size of the storage tank (300 gallons).
- Additional excavation to remove the localized area of residual DRO contamination is not a viable option due to the presence of bedrock underlying the site.
- Based on field notes, field screening results (visual observation and photoionization detector (PID) readings, and analytical sampling indicate residual contamination is isolated to a small area on the south-southeastern portion of the excavation, and possible contaminant contribution through fractured bedrock to groundwater would be minimal.

In 2009, because one historical DRO sample results were above DEC Method Two migration to groundwater cleanup level, a Method Three alternative cleanup level of 8,300 mg/kg was calculated and approved in the *Final Soil Sampling and Statistical Analysis for Background Concentrations and Alternative Cleanup Levels*, dated August 2009. All DRO sample results are below this DEC Method Three alternative cleanup level as well as DEC ingestion and inhalation cleanup levels. The Method Three Alternative Cleanup Level calculations are shown in Figure 3.

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 noncarcinogenic risk standard at a hazard index of one across all exposure pathways.

Based on a review of the environmental record, DEC 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 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 Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contamination is not present in surface soil (0-2 ft bgs).
Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface (>2 ft bgs) but is below the ingestion cleanup level.
Inhalation – Outdoor Air	De Minimis Exposure	Contaminants in soil are volatile, however they are present at low levels 7 to 8 feet below clean backfill and at concentrations below outdoor inhalation action levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	There are no occupied buildings at the site.
Groundwater Ingestion	De Minimis Exposure	Contaminants in soil are below the site-specific calculated migration to groundwater cleanup levels. Site is underlaid by bedrock and groundwater was not present at the site. Groundwater in the vicinity of the site is not currently used as a drinking water source.
Surface Water Ingestion	De Minimis Exposure	Contaminants in soil are below the site-specific Method Three Migration to Groundwater cleanup levels for the site and contamination is not expected to migrate to surface water. A small drainage is located 400 feet east of the site.
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	Contaminants are not present in surface soil and does not have the potential to migrate to surface water.

Notes to Table 2: “De Minimis Exposure” means that in DEC’s judgment receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in DEC’s judgment contamination has no potential to contact receptors.

DEC Decision

Soil contamination at the site have been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. 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 78.600(h). A “site” [as defined by 18 AAC 78.995(134)] 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 78.276(f) and does not preclude DEC from requiring additional assessment and/or cleanup action if information indicates that contaminants at this site may pose an unacceptable risk to human health, safety, or welfare or to the environment.

Informal Reviews and Adjudicatory Hearings

A person authorized under a provision of 18 AAC 15 may request an informal review of a contested decision by the Division Director in accordance with 18 AAC 15.185 and/or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. See DEC’s “Appeal a DEC Decision” web page <https://dec.alaska.gov/commish/review-guidance/> for access to the required forms and guidance on the appeal process. Please provide a courtesy copy of the adjudicatory hearing request in an electronic format to the parties required to be served under 18 AAC 15.200. Requests must be submitted no later than the deadline specified in 18 AAC 15.

If you have questions about this closure decision, please feel free to contact me at (907) 451-2181, or email at cascade.galasso-irish@alaska.gov.

Sincerely,



Cas Galasso
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit

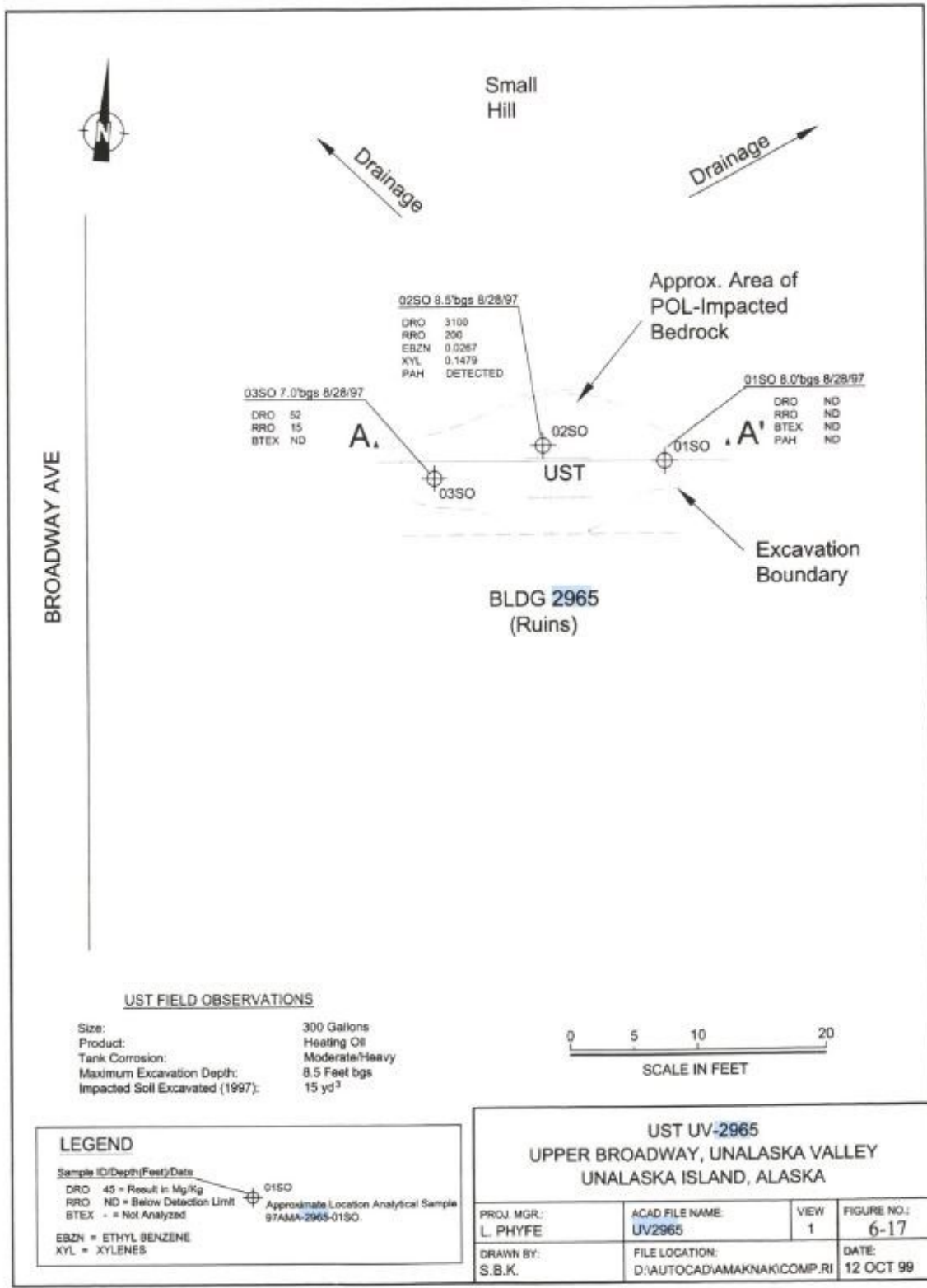
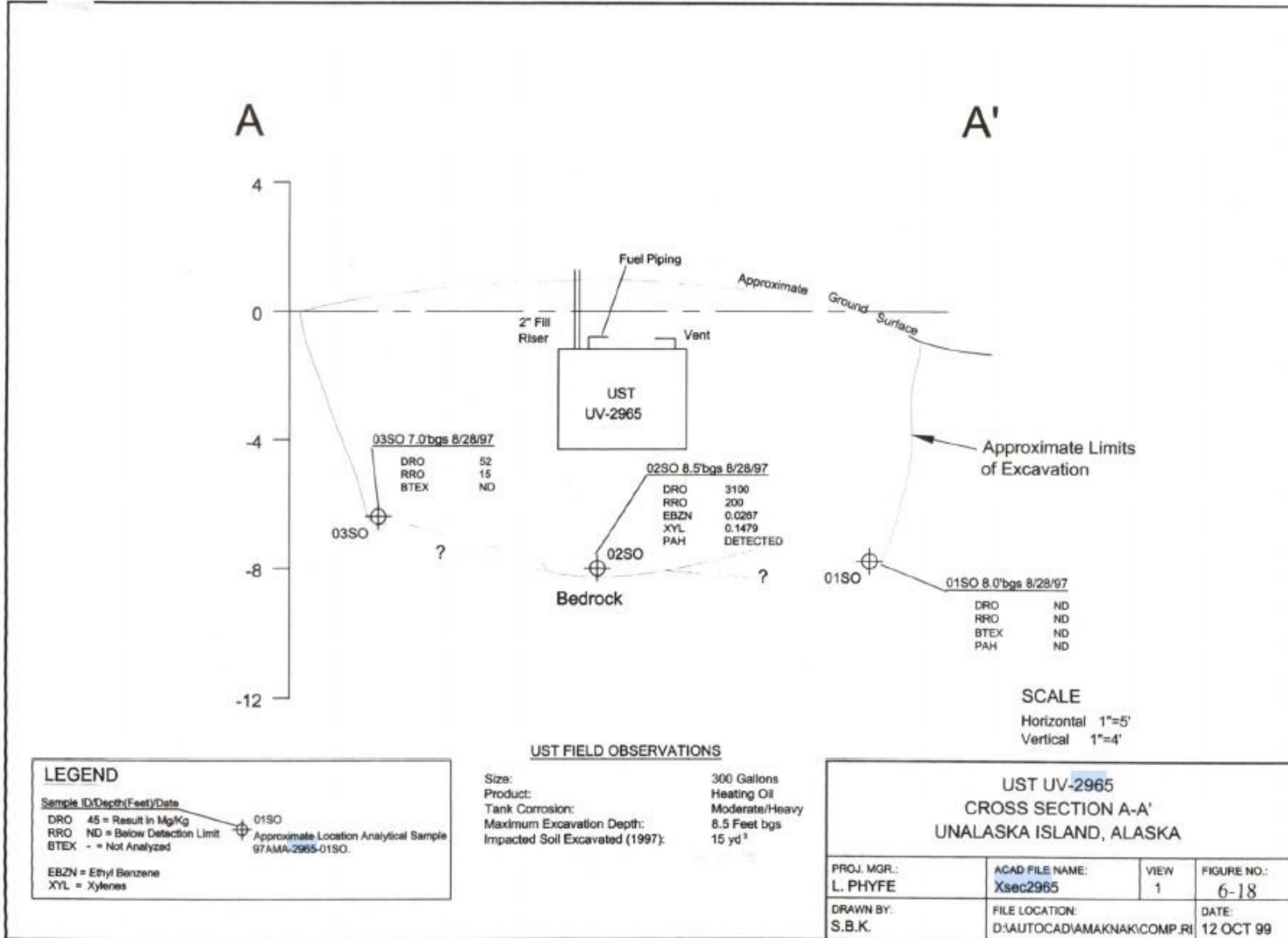


Figure 1 - Site figure of sampling locations and results from the 1997 Remedial Investigation



6-113

Figure 2 - Profile of sampling locations from the 1997 Remedial Investigation

Division of Spill Prevention and Response Contaminated Sites Program

State of Alaska > DEC > SPAR > Contaminated Sites Program > Method Three & Cumulative Risk Calculator > Step Four

Method Three & Cumulative Risk Calculator

Site Name: (For viewing on printout.)

Site zone and exposure scenario: Over 40-inch Zone - Residential Exposures

Cleanup Level Calculations

8/12/2009

Chemical	CAS	Type	Calculations
DRO (Total)		Organic Non-Carcinogenic Petroleum	Ingestion Cleanup Level: 8300 mg/kg
			Inhalation Cleanup Level: 98500 mg/kg
			Groundwater Cleanup Level: 1.5 mg/L
			Migration to Groundwater: 9800 mg/kg

Please Note

Chemical	Notes
DRO (Total)	The Maximum Allowable DRO concentration is 12500 mg/kg

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The parameters used to calculate the above cleanup levels and the parameters' default values are as follows:

Volatilization Pathway Parameters

Symbol	Description	Value	Default	Units
ρ_b	Dry soil bulk density	1.5	1.5	g/cm ³
n	Total soil porosity	0.434	0.434	L _{pore} /L _{soil}
Θ_w	Water-filled soil porosity	0.15	0.15	L _{water} /L _{soil}
Θ_a	Air-filled soil porosity	0.284	0.284	L _{air} /L _{soil}
w	Average soil moisture content	0.1	0.1	g _{water} /g _{soil}
f_{OC}	Organic carbon content of soil	0.045	0.001	g/g

Groundwater Pathway Parameters

Figure 3 - Unalaska Valley UST 2965 Method 3 Alternative Cleanup Level calculations