THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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DEC File No: 2320.38.051

July 11, 2024

Jamie Grant
US Army Corps of Engineers, Alaska District
P.O. Box 6898
JBER AFB, AK 99506-0898

Re: Decision Document: Wildwood AFS Main Complex Area UST 502-1
Cleanup Complete Determination

Dear Ms. Grant,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Wildwood AFS Main Complex Area UST 502-1 located at Mile 3.5 North Kenai Road in Kenai, 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 Wildwood AFS Main Complex Area UST 502-1 maintained by DEC. This decision letter summarizes the site history, cleanup actions and levels, and site closure conditions that apply.

Site Name and Location:
Wildwood AFS Main Complex Area
UST 502-1
Mile 3.5 North Kenai Road
Kenai, Alaska 99611

Name and Mailing Address of Contact Party:
Jamie Grant
US Army Corps of Engineers
P.O. Box 6898
JBER AFB, AK 99506-0898

DEC Site Identifiers:
File No.: 2320.38.051
Hazard ID.: 25200

Regulatory Authority for Determination:
18 Alaska Administrative Code (AAC) 75 and 18 AAC 78

Site Description and Background
Wildwood Air Force Station (AFS), originally named Seward Station, was constructed as a communications station and activated in 1953 by the United States Army. The total area of the station was approximately 5,300 acres, however, military construction was confined to a 125-acre tract. In May 1954, the station was renamed Wildwood Station, and in 1966 the property was transferred to the U.S. Air Force (USAF). Wildwood AFS was closed by the USAF in July 1972. The former Wildwood AFS is located 3.5 miles northwest of Kenai, Alaska on the Kenai Peninsula. Underground storage tank (UST) 502-1 was a 500 gallon tank associated with a former guard shack (Building 502). The tank was installed in 1957 in the southwest corner of the Wildwood AFS Main Complex Area, and held diesel fuel (see Figure 2 Project Vicinity and Sites for tank location). During removal of UST 502-1 in 1994, contamination above cleanup levels was identified at the base of the excavation confirming there was a release.

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

- DRO

Cleanup Levels
Soil cleanup levels applicable to the site are the most stringent Method 2 cleanup levels for the under 40-inches of precipitation climate zone found in 18 AAC 75.341(d), Table B2. Groundwater cleanup levels applicable to this site are found in 18 AAC 75.345, Table C.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)	Groundwater (µg/L)
DRO	250	1,500

Notes:
1. mg/kg = milligrams per kilogram
2. µg/L = micrograms per liter

Characterization and Cleanup Activities
In 1994 a 500-gallon UST (approximately 6 feet long and 4 feet in diameter) was removed and approximately 20 cubic yards of surrounding soil was excavated and stockpiled onsite. Excavation dimensions were about 7 feet by 10 feet by 8.5 feet deep after UST removal. During the removal, the UST was observed to have moderate corrosion. Groundwater was not encountered during excavation activities. Analytical data collected from the base of the excavation at about 8.5 feet below ground surface (bgs) identified DRO concentrations ranging from 670 to 11,000 milligrams per kilogram (mg/kg) with the highest concentrations being detected right below the base of the UST. The stockpiled soil was sampled and had a maximum DRO concentration of 680 mg/kg. All the soil was used as backfill for the excavation.

To further characterize the site, nine Rapid Optical Screening Tool/Laser Induced Florescence (ROST/LIF) probes were advanced to depths ranging from 26 to 41 feet bgs during a 2005 investigation. Results of the ROST/LIF confirmed petroleum contamination remained in the subsurface from approximately 14 to 27.5 feet bgs. Three soil samples were collected and sent for laboratory analysis with the sample collected from the highest ROST/LIF screening location indicating DRO at a concentration of 6,510 mg/kg, which is

above migration to groundwater but below human health levels (see Figure 5-1 for the ROST/LIF boring location). The ROST/LIF investigation delineated the soil contamination laterally and vertically.

In 2020, one groundwater monitoring well (MW-1) was installed at the source to a depth of 40 feet bgs to assess groundwater impacts (see Figure 6 for monitoring well location). Groundwater was sampled for three consecutive years with monitoring results from all three years below cleanup levels for DRO. A soil sample collected at 17-18 feet bgs during well installation detected DRO at a concentration of 2,200 mg/kg. Soil contamination remains in the subsurface and based on the groundwater sampling at MW-1 indicating concentrations below Table C cleanup levels for three consecutive years, and confirming the remaining soil contamination is not a risk to groundwater.

Per 18 AAC 75.380(c)(1), a 95% upper confidence limit (UCL) was calculated using laboratory analytical soil sample results from 1994 and 2005 (See enclosed ProUCL Calculations). The 95% UCL indicated that subsurface soil residual DRO contamination is 6,888 mg/kg which is below the DEC Method Two Cleanup Level for Ingestion and remaining concentrations of DRO are considered de minimis and all below human health cleanup levels.

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 a 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	De Minimis Exposure	UST 502-1 has been removed and no contaminants of concern remain in the top two feet of soil.
Sub-Surface Soil Contact	De Minimis Exposure	Concentrations remaining in the subsurface (2-15 feet below ground surface) are below human health ingestion and inhalation cleanup levels in 18 AAC 75.341 Table B2.
Inhalation – Outdoor Air	Pathway Incomplete	Concentrations remaining in the subsurface (2-15 feet below ground surface) are below human health and inhalation cleanup levels in 18 AAC 75.341 Table B2.

Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Concentrations remaining in the subsurface (2-15 feet below ground surface) are below human health and inhalation cleanup levels in 18 AAC 75.341 Table B2.
Groundwater Ingestion	De Minimis Exposure	Contaminants of concern in the groundwater are below cleanup levels in 18 AAC 75.345 Table C.
Surface Water Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to migrate to surface water bodies. The nearest surface water body is greater than ¼ mile, and contamination in groundwater is below cleanup levels in 18 AAC 75.345 Table C.
Wild and Farmed Foods Ingestion	Pathway Incomplete	There are no contaminants of concern that will bioaccumulate in plants and/or animals.
Exposure to Ecological Receptors	Pathway Incomplete	There are no contaminants of concern expected to affect ecological receptors.

Notes:

1. "De Minimis Exposure" means that, in DEC's judgment, the receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination.
2. "Pathway Incomplete" means that, in DEC's judgment, the contamination has no potential to contact receptors.

DEC Decision

Soil and groundwater 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.

DEC approval is required for movement and disposal of soil subject to the Site Cleanup Rules, in accordance with 18 AAC 78.600(h). Please contact DEC for information about applicable regulations and requirements. A "site", as defined by 18 AAC 78.995, means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.

Movement or use of contaminated material in an ecologically sensitive area or in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited. Furthermore, 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. If, in the future, groundwater from this site is to be used for other purposes, 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 75.276(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) 269-4702, or email at brian.watts@alaska.gov.

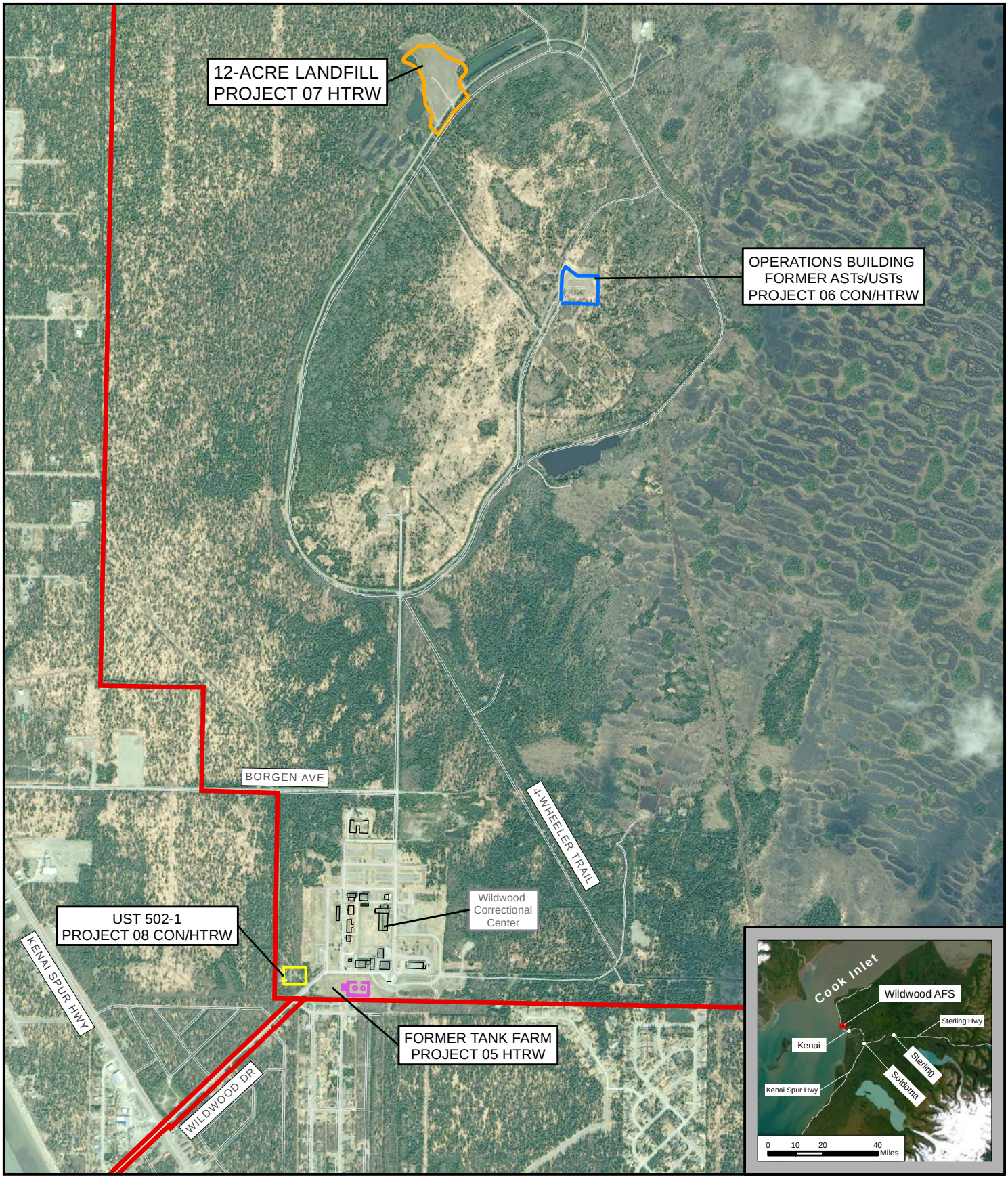
Sincerely,

Digitally signed by Brian Watts
Date: 2024.07.11 15:00:20 -08'00'

Brian Watts
Project Manager

Enclosures: Figure 2 Project Vicinity and Sites
Figure 17 Sampling Plan UST 502-1
Figure 5-1 Former UST 502-1 Maximum LIF Percent
Figure 6 UST 502-1 Project 08 CON-HTRW
ProUCL Calculations

cc: DEC, Division of Spill Prevention and Response, Cost Recovery Unit
Erica Blake, DEC
Kyrstyn Kelly, DNR (landowner)



Document Path: O:\EN\Public\Engineer\Projects\FUDS_NEW_PROPERTIES\WILDWOOD_AFS_F10AK025111_MXD\2022_GW_Sampling_Report\02_Loc_Vic_Map.mxd

Coordinate System: NAD 1983 2011 StatePlane Alaska 4 FIPS 5004 Feet

Project Sites (Number)

- Operations Building Former ASTs/USTs (06)
- Former Tank Farm (05)
- 12-acre Landill (07)
- UST 502-1 (08)
- Road
- Structure
- FUDS Property

Acronym:
UST: Underground Storage Tank
AST: Aboveground Storage Tank

Project Vicinity and Sites

WILDWOOD AFS, KENAI, ALASKA
F10AK0251

Imagery: Main Dataframe- DigitalGlobe Multispec Satellite Imagery, 2019-05-04
(Inset- ESRI Basemap Imagery)

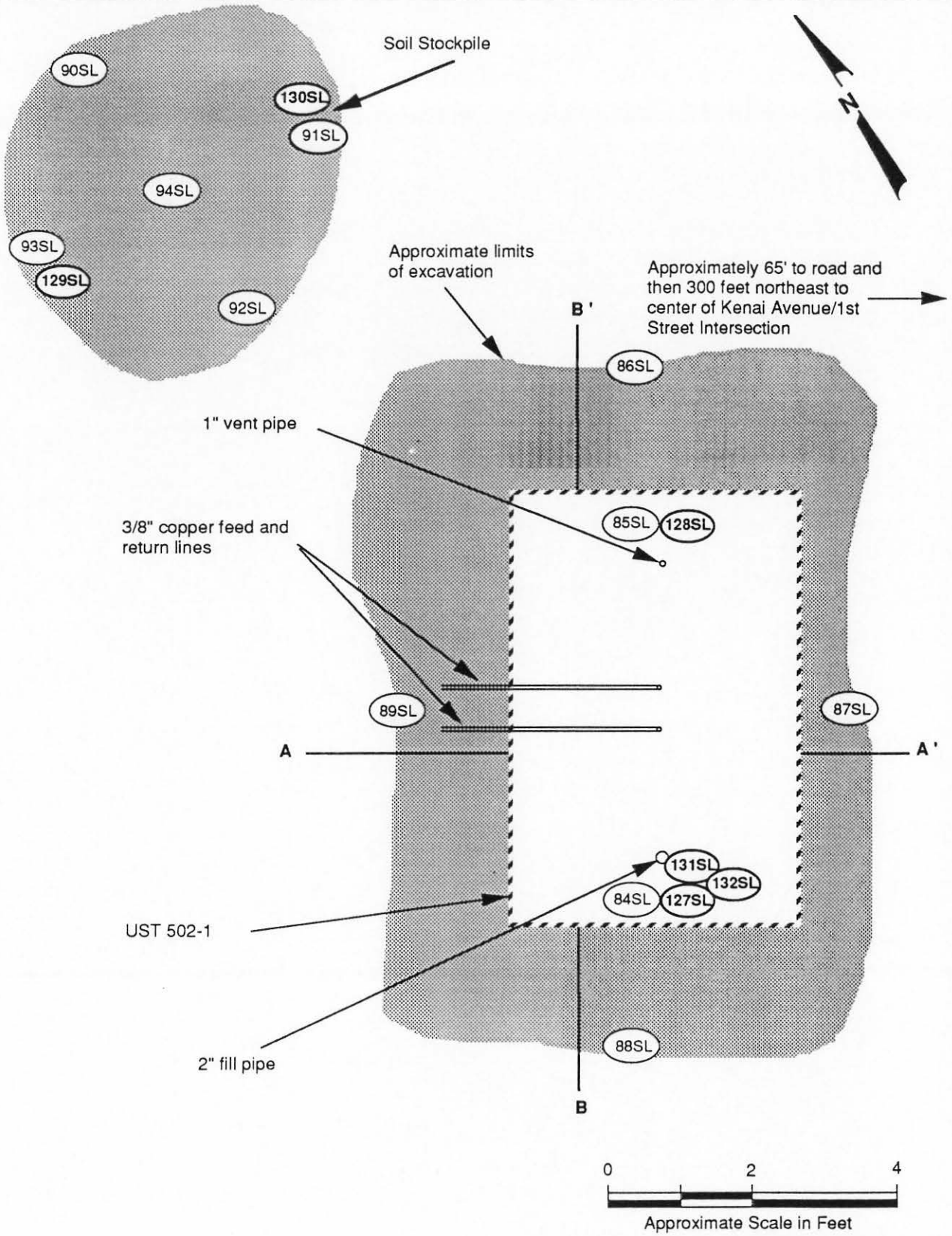
1 inch = 0.32 miles
1:20,000

0 1,000 2,000 4,000
Feet

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT

DATE: 2/9/2023
PM: J.G

FIGURE: **2**



(85SL) Soil sample collected by Shannon & Wilson, Inc. July, 1994. Bold type indicates analytical sample. (See Table 1)

Note: The full designation for sample 85SL is 94WILD085SL. This convention is used for all the soil samples depicted on this sampling plan.

Wildwood Air Force Station
Kenai, Alaska

SAMPLING PLAN
UST 502-1

March 1995

Y-5377

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

Fig. 17

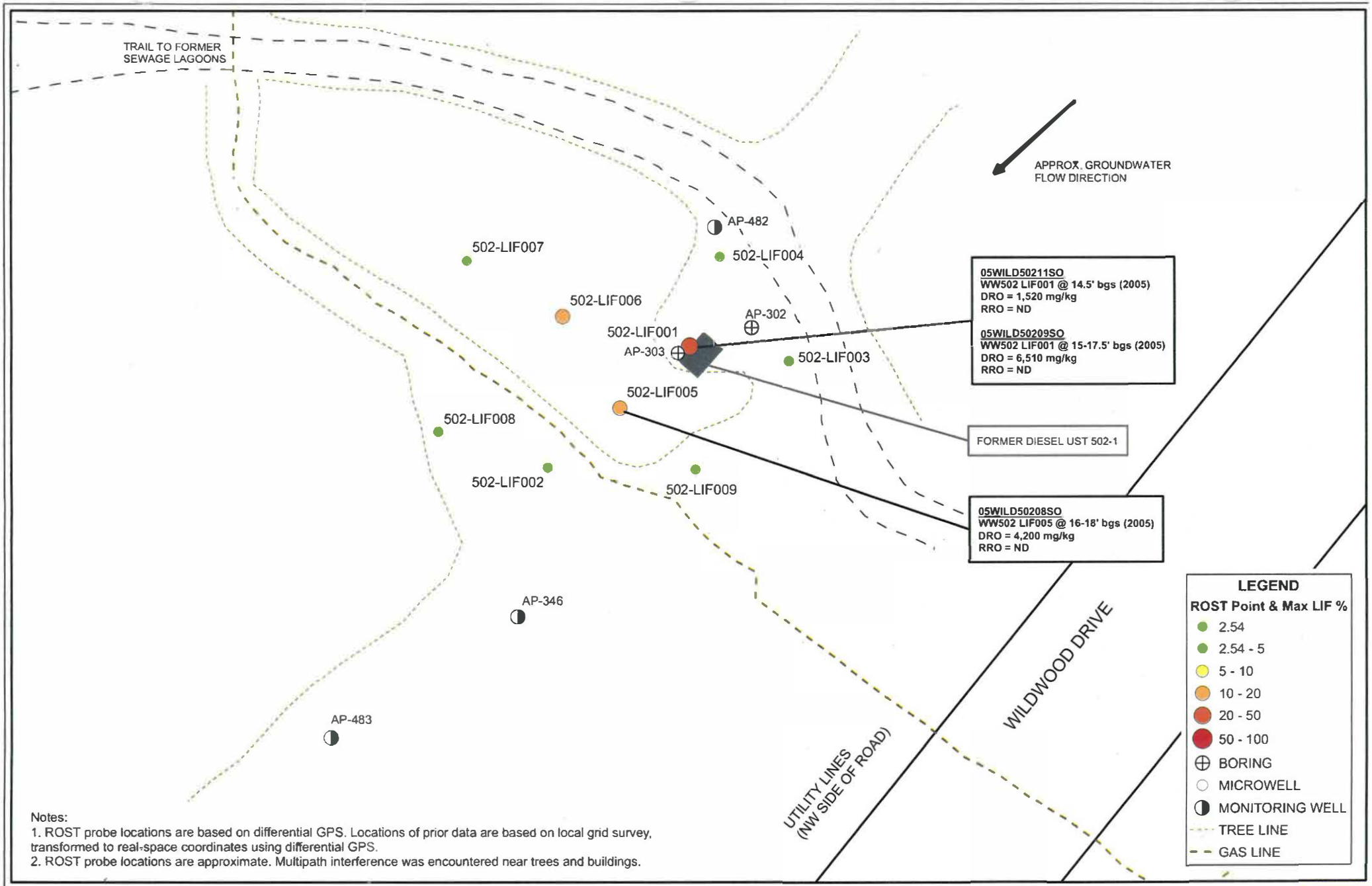
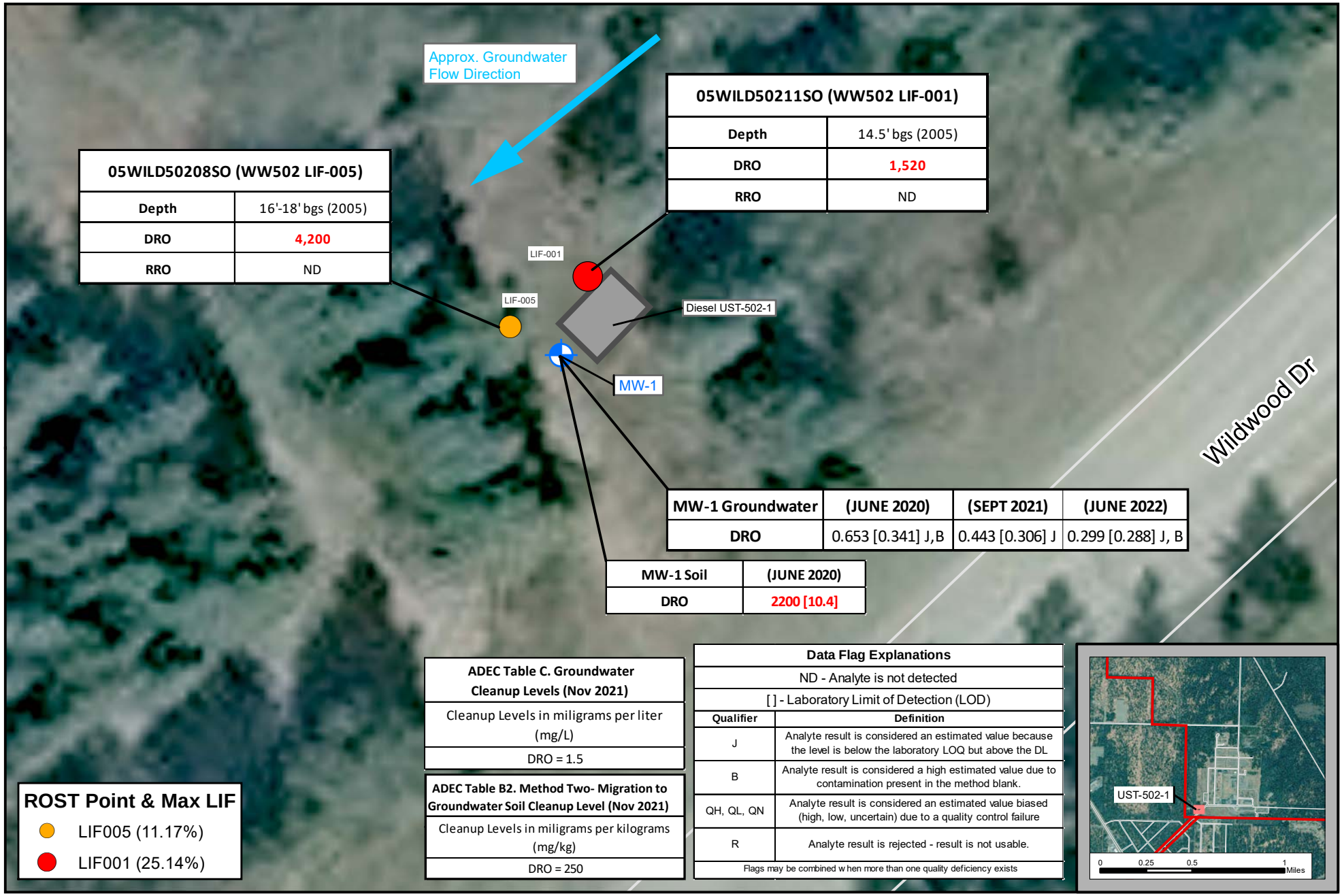


FIGURE 5-1
FORMER UST 502-1 Maximum LIF Percent
Former Wildwood AFS
Kenai, Alaska



05WILD50208SO (WW502 LIF-005)	
Depth	16'-18' bgs (2005)
DRO	4,200
RRO	ND

05WILD50211SO (WW502 LIF-001)	
Depth	14.5' bgs (2005)
DRO	1,520
RRO	ND

MW-1 Groundwater	(JUNE 2020)	(SEPT 2021)	(JUNE 2022)
DRO	0.653 [0.341] J,B	0.443 [0.306] J	0.299 [0.288] J, B

MW-1 Soil	(JUNE 2020)
DRO	2200 [10.4]

ROST Point & Max LIF

- LIF005 (11.17%)
- LIF001 (25.14%)

ADEC Table C. Groundwater Cleanup Levels (Nov 2021)
Cleanup Levels in miligrams per liter (mg/L)
DRO = 1.5

ADEC Table B2. Method Two- Migration to Groundwater Soil Cleanup Level (Nov 2021)
Cleanup Levels in miligrams per kilograms (mg/kg)
DRO = 250

Data Flag Explanations	
ND - Analyte is not detected	
[ ] - Laboratory Limit of Detection (LOD)	
Qualifier	**Definition**
J	Analyte result is considered an estimated value because the level is below the laboratory LOQ but above the DL
B	Analyte result is considered a high estimated value due to contamination present in the method blank.
QH, QL, QN	Analyte result is considered an estimated value biased (high, low, uncertain) due to a quality control failure
R	Analyte result is rejected - result is not usable.
Flags may be combined when more than one quality deficiency exists	

Coordinate System: NAD 1983 2011 StatePlane Alaska 4 FIPS 5004 Feet

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- Monitoring Well
- Road
- UST 502-1 (Diesel)

Notes:
1. Well, boring and road layers represents approximate locations of features.
2. ROST probe location are approximate, multipath interference was encountered near trees and buildings. Locations based on differential GPS.
3. Concentrations exceeding ADEC (Nov 2021) cleanup levels are shown in **RED**.

Acronyms:
DRO: Diesel Range Organics
RRO: Residual Range Organics
BGS: Bellow Ground Surface
ROST: Rapid Optical Screening Tool
LIF: Laser-Induced Fluorescence
UST: Underground Storage Tank
ND: Not Detected

0 10 20 40
Feet

1 inch = 20.83 feet
1:250

Imagery: DigitalGlobe Multispec Satellite Imagery (2019-05-04)

UST 502-1 PROJECT 08 CON/HTRW

WILDWOOD AFS, KENAI, ALASKA

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT

F10AK0251-08

DATE: 2/9/2023 PM: J.G.

FIGURE: 6

1	**UCL Statistics for Uncensored Full Data Sets**											
2												
3			User Selected Options									
4			Date/Time of Computation	ProUCL 5.2 6/27/2024 11:14:46 AM								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Number of Bootstrap Operations	2000								
9												
10												
11	**DRO Wild 502-1**											
12												
13	**General Statistics**											
14					Total Number of Observations	9			Number of Distinct Observations	9		
15									Number of Missing Observations	0		
16					Minimum	670			Mean	4631		
17					Maximum	11000			Median	4200		
18					SD	3641			Std. Error of Mean	1214		
19					Coefficient of Variation	0.786			Skewness	0.517		
20												
21	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**											
22	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**											
23	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**											
24	**The Chebyshev UCL often results in gross overestimates of the mean.**											
25	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**											
26												
27	**Normal GOF Test**											
28					Shapiro Wilk Test Statistic	0.924			**Shapiro Wilk GOF Test**			
29					1% Shapiro Wilk Critical Value	0.764			Data appear Normal at 1% Significance Level			
30					Lilliefors Test Statistic	0.165			**Lilliefors GOF Test**			
31					1% Lilliefors Critical Value	0.316			Data appear Normal at 1% Significance Level			
32	**Data appear Normal at 1% Significance Level**											
33	**Note GOF tests may be unreliable for small sample sizes**											
34												
35	**Assuming Normal Distribution**											
36					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
37					95% Student's-t UCL	6888			95% Adjusted-CLT UCL (Chen-1995)	6851		
38									95% Modified-t UCL (Johnson-1978)	6923		
39												
40	**Gamma GOF Test**											
41					A-D Test Statistic	0.326			**Anderson-Darling Gamma GOF Test**			
42					5% A-D Critical Value	0.736			Detected data appear Gamma Distributed at 5% Significance Level			
43					K-S Test Statistic	0.19			**Kolmogorov-Smirnov Gamma GOF Test**			
44					5% K-S Critical Value	0.285			Detected data appear Gamma Distributed at 5% Significance Level			
45	**Detected data appear Gamma Distributed at 5% Significance Level**											
46	**Note GOF tests may be unreliable for small sample sizes**											
47												
48	**Gamma Statistics**											
49					k hat (MLE)	1.399			k star (bias corrected MLE)	1.007		
50					Theta hat (MLE)	3310			Theta star (bias corrected MLE)	4600		
51					nu hat (MLE)	25.18			nu star (bias corrected)	18.12		
52					MLE Mean (bias corrected)	4631			MLE Sd (bias corrected)	4615		

53							Approximate Chi Square Value (0.05)					9.48
54					Adjusted Level of Significance	0.0231					Adjusted Chi Square Value	8.195
55												
56					**Assuming Gamma Distribution**							
57					95% Approximate Gamma UCL	8854					95% Adjusted Gamma UCL	10242
58												
59					**Lognormal GOF Test**							
60					Shapiro Wilk Test Statistic	0.9	**Shapiro Wilk Lognormal GOF Test**					
61					10% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 10% Significance Level					
62					Lilliefors Test Statistic	0.193	**Lilliefors Lognormal GOF Test**					
63					10% Lilliefors Critical Value	0.252	Data appear Lognormal at 10% Significance Level					
64					**Data appear Lognormal at 10% Significance Level**							
65					**Note GOF tests may be unreliable for small sample sizes**							
66												
67					**Lognormal Statistics**							
68					Minimum of Logged Data	6.507	Mean of logged Data	8.042				
69					Maximum of Logged Data	9.306	SD of logged Data	1.056				
70												
71					**Assuming Lognormal Distribution**							
72					95% H-UCL	19079	90% Chebyshev (MVUE) UCL	10463				
73					95% Chebyshev (MVUE) UCL	12940	97.5% Chebyshev (MVUE) UCL	16378				
74					99% Chebyshev (MVUE) UCL	23133						
75												
76					**Nonparametric Distribution Free UCL Statistics**							
77					**Data appear to follow a Discernible Distribution**							
78												
79					**Nonparametric Distribution Free UCLs**							
80					95% CLT UCL	6627	95% BCA Bootstrap UCL	6814				
81					95% Standard Bootstrap UCL	6566	95% Bootstrap-t UCL	7521				
82					95% Hall's Bootstrap UCL	7007	95% Percentile Bootstrap UCL	6591				
83					90% Chebyshev(Mean, Sd) UCL	8272	95% Chebyshev(Mean, Sd) UCL	9921				
84					97.5% Chebyshev(Mean, Sd) UCL	12210	99% Chebyshev(Mean, Sd) UCL	16706				
85												
86					**Suggested UCL to Use**							
87					95% Student's-t UCL	6888						
88												
89	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
90	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
91	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
92												

	0	1	2
	DRO 502-1		
1	6300		94WILD127SL
2	11000		94WILD128SL
3	680		94WILD129SL
4	670		94WILD130SL
5	8300		94WILD131SL
6	2500		94WILD132SL
7	1520		05WILD50211SO
8	6510		05WILD50209SO
9	4200		05WILD50208SO