

Underground Storage Tanks

APPENDIX A

UST1400

UST 1400 – Former Ammunition Storage (Site ID UST1400)

Site Location

Site UST1400 is located approximately 1,300 feet north of the middle of the runway.

Site Characteristics

Site features are shown on Figure A1-UST1400. Site UST1400 consists of the area surrounding the former site of Building 1400, which was used as an ammunition storage building (USAF, 1994, p. 1, para. 1). The area is currently an unoccupied gravel pad. The features of concern at Site UST1400 are a removed UST, two radiator heating tanks, and a septic system drain field.

Site Description and History

Building 1400 was used as an ammunition storage building and later as a police kennel facility. The site was investigated for Munitions and Explosives of Concern (MEC) and none were detected (USACE, March 2009). The building had an associated 1,700-gallon heating oil UST (USAF, 1994, p. 1, first para; USAF, February 2010). Building 1400 was demolished and the UST removed in 1993. Two radiator heating tanks located west of UST 1400 that contained ethylene glycol were cleaned and abandoned in place during UST removal activities in 1993 (USAF, 1994, p. 1, first para). Facility records (included in the attached supporting documentation) indicate that the former Building 1400 had a 4-inch-diameter pipeline connected to a septic tank and leaching well. The locations of the septic pipeline and drain field (approximated from the 1974 Sanitary Sewer Master Plan; USAF, 1974) are shown on Figure A1-UST1400.

Details on UST 1400 are below:

Capacity:	1,700 gallons
Contents:	DFA or DF-8
Construction:	Unknown
Condition:	Unknown
Use:	Heating Oil
Installation Date:	Unknown
Location	North side of Building 1400
Status:	Removed in 1993

Historical aerial photographs of Site UST1400, dated 1985 and 2002, are shown on Figure A2-UST1400.

Regulatory Status of USTs

UST 1400 was not registered with EPA or ADEC and does not have a current ADEC regulatory status. This UST is exempt from UST closure requirements according to 18 *Alaska*

Administrative Code (AAC) 78.005(e) (5), "tank used for storing heating oil for consumptive use on the premises where stored." However, 18 AAC 75 still applies at this site.

Summary of Previous Investigations

Historic sampling locations at Site UST1400 are shown on Figure A3-UST1400.

UST Removal Report (1993)

On August 30, 1993, UST 1400 was excavated. Photoionization detector (PID) readings and soil samples were collected from the top (3 feet bgs), sides (6 feet bgs), and bottom (9 feet bgs) of the excavation. PID readings indicated soil contained volatile compounds with results ranging between 20 and 350 parts per million (ppm). Eleven excavation soil samples and two duplicate samples were analyzed for DRO (by EPA Method 8100M) and GRO (by EPA Method 8015M). DRO was detected in soil at concentrations up to 6,300 milligrams per kilogram (mg/kg) and GRO was detected at concentration up to 2,295 mg/kg for GRO (USAF, 1994, p. 2, Tank 1 table). Soil along the northern side of the excavation appeared to be less contaminated than soil on the southern side.

Two monitoring wells downgradient of the tank location (MW-4 and MW-5) and two soil borings (TB003 and TB004) were subsequently installed and sampled. Soil borings TB003 and TB004 were installed to a depth of approximately 15 feet (where groundwater was encountered) and samples were collected at depth intervals of 0 to 4 feet bgs, 4 to 10 feet bgs, and 10 to 15 feet bgs. Soil samples were also collected at the same sampling intervals in Monitoring Well MW-4 and MW-5 pilot borings. Groundwater and soil samples from the borings and wells were analyzed for DRO only (by EPA Method 8100M) (USAF, 1994, p. 3, fourth and fifth para.).

Soil samples collected from Soil Boring TB003 had DRO concentrations less than 100 mg/kg from the surface to 15 feet bgs. Soil samples collected from Soil Boring TB004 had DRO at concentrations of 722 mg/kg at 2.5 to 4.5 feet bgs, 5,632 mg/kg at 5 to 7 feet bgs (soil duplicate sample of 18,929 mg/kg), 2,860 mg/kg at 7.5 to 9.5 feet bgs, 86.8 mg/kg at 10 to 12 feet bgs (soil duplicate sample of 714 mg/kg), and 9.8 mg/kg at 12.5 to 14.5 feet bgs. Soil samples collected from the Monitoring Well MW-5 pilot boring had DRO concentrations at 9,075 mg/kg between 7.5 and 9.5 feet bgs and DRO concentrations below detection limits in samples from 10 feet to 15 feet bgs. Soil samples collected from Monitoring Well MW-4 pilot boring had DRO concentrations at 2 to 3 mg/kg in the 0 to 4 feet bgs range, and DRO below detection limits in samples from 4.5 feet to 15 feet bgs.

Groundwater was encountered at approximately 15 feet bgs, and Monitoring Wells MW-4 and MW-5 were screened from 10 feet above to 10 feet below the water table (5 to 25 feet bgs). DRO concentrations in groundwater ranged from non-detect at Monitoring Well MW-5 to 80 micrograms per liter ($\mu\text{g/L}$) at Monitoring Well MW-4 (USAF, 1994, p. 11-15, data packages).

Results of the 1993 soil and groundwater sampling at Building 1400 indicated soils with concentrations of DRO and GRO exceeding ADEC Method 2 cleanup levels for migration to groundwater remaining at the site. The volume of fuel-contaminated soil associated with UST 1400 was estimated (at the time of the 1993 investigation) to be approximately 300 to

350 cubic yards (USAF, 1994, p. 7, second para.). Groundwater downgradient of the site did not have concentrations of DRO exceeding the ADEC Method 2 groundwater cleanup level (USAF, 1994, p. 7, third para.).

The 1993 UST removal investigation included sampling the contents of the radiator heating tanks, but did not indicate that sampling was conducted outside these tanks, which were cleaned and left in place (USAF, 1994, p. 3, third para.).

ADEC provided comments on the UST removal report stating that, "Additional site investigation will be necessary to adequately characterize the soils in the spill area. In addition, the groundwater at the site needs to be sampled for BTEX" (ADEC, April 1994).

October 2009 Site Visit Observations

An inspection of Site UST1400 was conducted in October 2009. The area is currently an unoccupied gravel pad. No visible stains or other evidence of contamination were noted. Figure A4-UST1400 shows the condition of Site UST1400 in 2009.

Target Analytes

Because of the UST release, target analytes are DRO and GRO. Other potential target analytes associated with the UST are BTEX and PAHs.

Potential target analytes associated with the radiator heating tanks include ethylene glycol, VOCs (including BTEX), and Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

Because septic systems have historically been found to be the source of contaminants as a result of improper disposal practices, potential target analytes are VOCs (including BTEX), semivolatile organic compounds (SVOC), and RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

Pesticides are not recommended for sampling at this site because pesticide storage, mixing, or disposal is not a function associated with the historical site use.

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST1400, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil

ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.

- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Ecological habitat around UST 1400 is of marginal quality, dominated by gravel with sparse, low grass. Ecological exposure pathways are potentially complete if chemicals of potential ecological concern (COPECs) are in surface soil or in groundwater that may daylight downgradient. Terrestrial ecological receptors will be evaluated for exposures onsite using site characterization data, and aquatic receptors will be evaluated downgradient if data and/or modeling indicate daylighting of groundwater may occur.

Conclusions

Building 1400 was used as an ammunition storage building and had an associated 1,700-gallon heating oil UST (USAF, 1994, p.1, first para.), two former radiator heating tanks, and a septic system. The building was demolished and the UST removed in 1993.

A previous investigation identified fuel-related contamination (DRO and GRO) in soil above ADEC Method 2 cleanup levels. Historic documentation indicates that Building 1400 has other potential sources of contamination (radiator heating tanks and septic system) that have not been examined. The site was investigated for MEC and none were detected (USACE, March 2009).

Recommendation: Site Characterization

Site UST1400 is recommended for an ADEC site characterization. Additional investigation is recommended at Site UST1400 to further define the nature and extent of fuel related contamination. Limited site inspection sampling will also be conducted for the former radiator heating tanks and the septic system drain field.

References

- Alaska Department Environmental Conservation (ADEC). April 28, 1994. Letter. "Removal Report for Two USTs at Buildings 1400 and 1401 Galena AFS dated March 16, 1994."
- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska.*
- U.S. Air Force (USAF). 1994. *Buildings 1400 and 1401 Removal of Tanks and Installation of Monitoring Wells and Test Bores, Galena Airport, Alaska.*

U.S. Air Force (USAF). 1974. *Alaskan Air Command Master Plan, Sanitary Sewerage System.*
Drawing G-2.

U.S. Army Corps of Engineers (USACE). March 2009. *Draft Report, Comprehensive Site
Evaluation Phase II, Galena Air Station, Alaska.*



LEGEND
 UST1400

Notes:
 1. Photography Dated 1985, Georeferenced.
 2. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

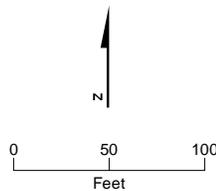
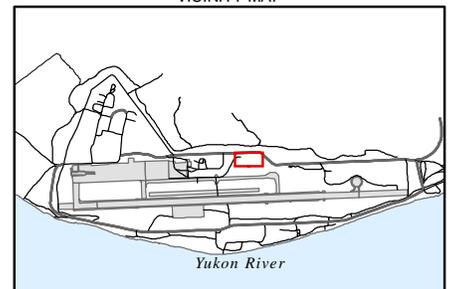
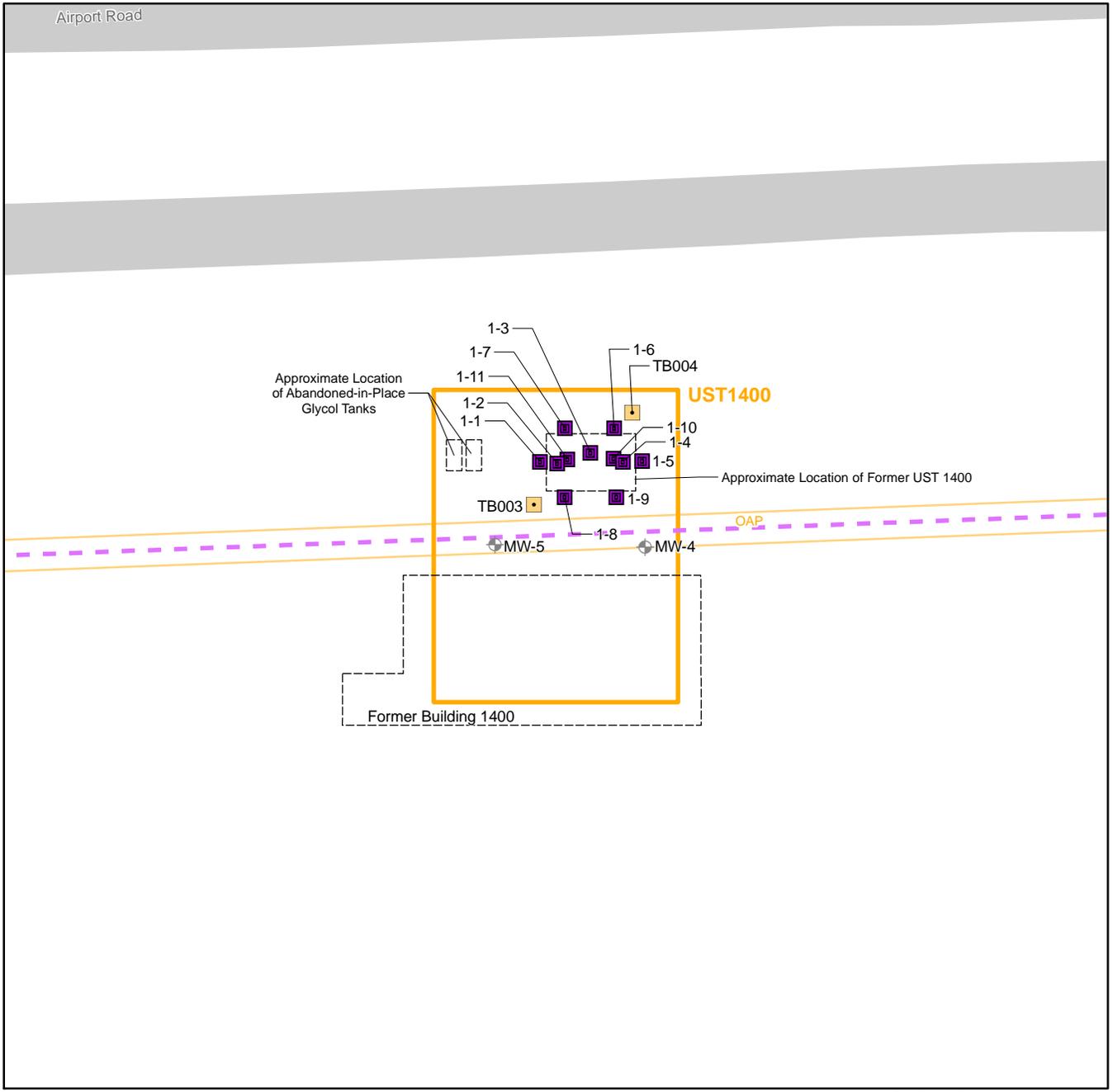


FIGURE A2-UST1400
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



- LEGEND**
- UST1400
 - Adjacent Site
 - Approximate Location of Former Feature
 - Road
 - Abandoned Fuel Line (1952)
- Historical Sample Location**
- Excavation Sample
 - Soil Boring
 - Abandoned Monitoring Well

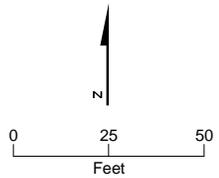
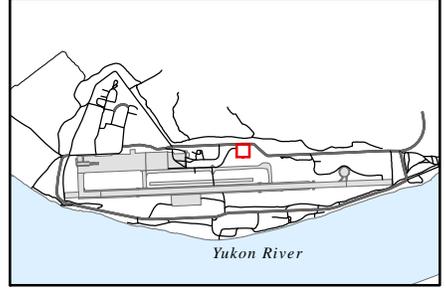


FIGURE A3-UST1400
Historical Sample Locations
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A4-UST1400
Former Location of Building 1400, October 2009

Supporting Documentation

GALENA AIRPORT		2034	AUG 62	AW33-03-45	2001	54220-1	1400
INSTALLATION NAME AND NO.		HPZW	DATE	DRAWING NO.	RP ACCOUNT NO.	CONTROL NO.	BUILDING NO.
DIMENSIONS (Width x length)							CODE
MAIN BUILDING	OFFSETS	WINGS	BASEMENTS		STATE		
19' x 73'6"					ALASKA		702
19' x 69'					ASSIGNMENT		
MATERIALS					TYPE OF CONSTRUCTION		
FOUNDATION	FLOOR	WALL	ROOF		PERMANENT		XP
PCC	PCC	PCC	PCC FLAT		CONOITION		1
HEATING					OCCUPANCY		
SOURCE	TYPE		FUEL		USAF		A
BOILER	STEAM		OIL		AIR FORCE INTEREST		1
NO. OF USABLE FLOORS		FIRE PROTECTION			UNIT OF MEASURE (Other than area)		
1		TYPE 3 FIRE ALARM BELL HAND EXTINGUISHER			QUANTITY		
UTILITY CONNECTIONS			BLDG EQPT NO.	TOTAL CAPACITY		NOMENCLATURE	
WATER 750 Gal Stor Tank			AIR CONDITIONING			MU-CUB MAG STOR, BSE, M/CUBIC MAG	
SEWER 1 - 4" Septic Tk & Leaching Well			EVAPORATIVE COOLING			CATEGORY	
ELECTRIC 120/208 V			MECHANICAL COOLING			422-253	
GAS			HOT WATER FACILITIES			REMARKS	
STEAM 2 1/2" (Inside Bldg)					ENGR MG C Inv 6704 OPR:C		
CONOENSATE 3/4"					Land - Owned (1)		17102

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	AREA UNIT		COST	TOTAL COST
				AMOUNT	TOTAL		
63-237	15 Aug 62	New Construction DA-1496 C-1-1496	1961	2,803	2,803	223,097 00	223,097 00
65-0551	1 Jun 65	W/O 55565 Inst over-hang on roof				2,320 00	225,417 00
66-0128	2 Aug 65	Inventory Adjustment		(78)	2,725		225,417 00
67-0528	27 Apr 67	1967 Inventory Adjustment		(17)	2,708		225,417 00
BALANCES FORWARDED							225,417 00

GALENA APT		HPZW	MAY 84	01-400		SCTY ALARM SYSTEM					
INSTALLATION NAME AND NO.		DATE	DRAWING NO.	FACILITY NO.	PLANT NO.	RP ACCOUNT NO	CONTROL NO.	NOMENCLATURE			
SYSTEM						STATE		CODE			
TYPE		CAPACITY	SOURCE		ALASKA						
Joint Service Interior Intrusion Detection Sys					ASSIGNMENT						
MAXIMUM HYDRANT PRESSURE		TYPE OF PRODUCT	TYPE OF DISPENSING		AAC						
					CONDITION						
					1						
MAINS						OCCUPANCY					
TYPE		DIAMETER (Inches)	PRESSURE (Lbs)		USAF owned						
					AIR FORCE INTEREST						
					1						
					UNIT OF MEASURE						
					EA						
ELECTRIC LINES						QUANTITY					
PRIMARY			SECONDARY			1					
CURRENT	VOLTAGE	CURRENT	VOLTAGE		CATEGORY						
					872-841 (X)						
ELECTRIC SERVICE LINES			STORAGE			REMARKS					
CURRENT	NO. OF LIGHTS	TYPE	CAPACITY								
SUB-STATIONS											
TYPE		CURRENT	CAPACITY								
FIELDS		PUMPS		OUTLETS							
TYPE	SIZE (Sq yds)	NO.	CAPACITY	NO.	CAPACITY						
VOUCHER NO.	DATE	DESCRIPTION			DATE COMPLETED	MAINS AND LINES (Ft)		COST			
						AMOUNT	TOTAL	AMOUNT	TOTAL		
840175	May 15, 1984	Install Joint Service Interior Intrusion Detection Systems			8312			10,084.	39	10,084.	39
980021		Change Ins Date to 8711			Nov 87						
91-0300	Jun 91	Site Inventory (vacant)			Jun 91						
940123	Sep 93	DISPOSAL									
BALANCES FORWARDED											

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	MAINS AND LINES (ft)		COST				
				AMOUNT	TOTAL	AMOUNT	TOTAL	AMOUNT	TOTAL	
		BALANCES FORWARDED								
BALANCES FORWARDED										

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	MAINS AND LINES (Pt)		COST				
				AMOUNT	TOTAL	AMOUNT			TOTAL	
		BALANCES FORWARDED								
BALANCES FORWARDED										

GALENA AIRPORT INSTALLATION NAME AND NO.		2034 HPZW	APR 67 DATE	1400 DRAWING NO.	PLANT NO.	2001 RP ACCOUNT NO	5000-6 CONTROL NO.	AUTO FIRE DETECTION SYS FR DIRECTN SYS NOMENCLATURE	
SYSTEM						580-221			CODE
TYPE 2 EA FIRE ALARM BELL 3 PULL BOX		CAPACITY		SOURCE		STATE ALASKA			702
MAXIMUM HYDRANT PRESSURE		TYPE OF PRODUCT		TYPE OF DISPENSING		ASSIGNMENT AAC			
MAINS						CONDITION USABLE CLASS A			1
TYPE		DIAMETER (Inches)		PRESSURE (Lba)		OCCUPANCY USAF			A
ELECTRIC LINES						AIR FORCE INTEREST OWNED			1
PRIMARY			SECONDARY			UNIT OF MEASURE EA			
CURRENT	VOLTAGE		CURRENT	VOLTAGE		QUANTITY 1			
ELECTRIC SERVICE LINES			STORAGE			CATEGORY X			880-221 880-213
CURRENT	NO. OF LIGHTS		TYPE	CAPACITY		REMARKS Inv 6704 ENGR MIG C OPR: B Land - owned (1) 57 EA n103			
SUB-STATIONS									
TYPE		CURRENT		CAPACITY					
FIELDS		PUMPS		OUTLETS					
TYPE	SIZE (Sq yds)	NO.	CAPACITY	NO.	CAPACITY				
VOUCHER NO.	DATE	DESCRIPTION			DATE COMPLETED	MAINS AND LINES INDEX		COST	
67-0528	27 Apr 67	1967 Inventory Adjustment, Estab Sys			1961	AMOUNT	TOTAL	AMOUNT	TOTAL
68-0249	8 Dec 67	AFM 300-4 change to category code and primary unit of measure					2708		1,800 00
		ACCOUNTABLE DATA SUMMA RIZED BY VOUCHER 702541 DATED 6/18/83							
		CONVERTED TO BEAMS							
880021		Change - base Date to 8711			1/01/87				
BALANCES FORWARDED									

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	MAINS AND LINES (Ft)		COST				
				AMOUNT	TOTAL	AMOUNT	TOTAL	AMOUNT	TOTAL	
		BALANCES FORWARDED								
91-0300	Jun 71	Site Inventory (Vacant)								
940123	Sep 93	Disposed								
BALANCES FORWARDED										

APPENDIX A

UST1401

UST 1401 – Former Ammunition Storage Area Guard Shack (Site ID UST1401)

Site Location

Site UST1401 is located approximately 1,300 feet north of the central portion of the runway.

Site Characteristics

Site features are shown on Figure A1-UST1401. Site UST1401 consists of the area surrounding the former site of UST 1401. The area is currently an unoccupied gravel pad. The features of concern at Site UST1401 are a former UST and a septic system drain field.

Site Description and History

UST 1401 stored heating oil for Building 1401, a guard shack which is associated with Building 1400, an ammunition storage building (USAF, 1994, p. 3, first para.; USAF, February 2010). Building 1401 was demolished in 1993 and UST 1401 was removed on August 30, 1993 (USAF, 1994, p. 1, first para.).

Facility records, included in the attached supporting documentation, indicate that former Building 1401 had a 4-inch-diameter pipeline to the septic tank. The locations of the septic pipeline and drain field (approximated from the 1974 Sanitary Sewer Master Plan; USAF, 1974) are shown on Figure A1-UST1401.

Details of UST 1401 are listed below:

Capacity:	1,700 gallons
Contents:	Heating oil
Construction:	Unknown
Condition:	Unknown
Use:	Heating
Installation Date:	Unknown
Location	West of Building 1401
Status:	Removed in 1993

Historical aerial photographs of Site UST1401, dated 1963, 1985, and 2002, are shown on Figure A2-UST1401.

Regulatory Status

USTs are regulated by ADEC according to 18 AAC 78 Underground Storage Tanks, as amended October 2006 and 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, revised October 9, 2008. Additional guidance on sampling procedures is provided in the *Underground Storage Tanks Procedures Manual* (ADEC, November 7, 2002) and *Draft Field Sampling Guidance* (ADEC, January 2010). The regulations contain UST closure requirements, including sampling and clean-up level requirements.

The investigation at Site UST1401 falls under the release investigation category, thus sampling requirements are regulated under 18 AAC 78.235 with the requirements of 18 AAC 75 incorporated by reference.

Summary of Previous Investigations

Historic sample locations at Site UST1401 are shown on Figure A3-UST1401.

Tank Removal (1993)

On August 30, 1993, soil contamination was found during the removal of UST 1401 (USAF, 1994). PID readings and soil samples were collected from the top (3 bgs), sides (6 feet bgs), and bottom (9 feet bgs) of the excavation. Ten excavation soil samples were analyzed for DRO (by EPA Method 8100M) and GRO (by EPA Method 8015M). Soil concentrations ranged from non-detect to 1,757 mg/kg for DRO and from non-detect to 83 mg/kg for GRO (USAF, 1994, p. 4, Tank 2 table).

Two soil borings (TB001 and TB002) were subsequently installed to approximately 15 feet bgs (where groundwater was encountered) and samples were collected from 4- to 6-foot intervals. Groundwater and soil samples from the borings were analyzed for DRO only (by EPA Method 8100M) (USAF, 1994, p.3, fourth and fifth para.). Results indicated DRO in soil ranged from non-detect to 53 mg/kg.

The volume of fuel-contaminated soil associated with UST 1401 was estimated at the time of the 1993 investigation to be approximately 100 to 150 cubic yards (USAF, 1994, p. 7, second para.).

ADEC provided comments on the UST removal report stating that, "Additional site investigation will be necessary to adequately characterize the soils in the spill area. In addition, the groundwater at the site needs to be sampled for BTEX" (ADEC, April 1994).

October 2009 Site Visit Observations

An inspection of Site UST1401 was conducted in October 2009. The area is currently an unoccupied gravel pad.

Target Analytes

Results of the 1993 soil sampling at Site UST1401 indicated that concentrations of DRO and GRO in soil exceeded ADEC Method 2 cleanup levels.

The existing data is limited to DRO and GRO. Because the UST likely contained DF-8 or DFA, additional target analytes include BTEX and PAHs.

Because septic systems have historically been found to be the source of contaminants as a result of improper disposal practices, potential target analytes are VOCs (including BTEX), SVOCs, and RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

Pesticides are not recommended for sampling at this site because pesticide storage, mixing, or disposal is not a function associated with the historical site use.

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST1401, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.
- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Ecological habitat around Site UST1401 is of marginal quality, and is dominated by gravel with sparse, low grass. Ecological exposure pathways are potentially complete if COPECs are in surface soil or in groundwater that may daylight downgradient. Terrestrial ecological receptors will be evaluated for exposures onsite using site characterization data, and aquatic receptors will be evaluated downgradient if data and/or modeling indicate daylighting of groundwater may occur.

Conclusions

Former UST 1401 was a 1,700-gallon, heating oil tank associated with Building 1401. In 1993, Building 1401 was demolished and UST 1401 was removed. During the UST removal action, 10 confirmation samples were collected and analyzed for DRO and GRO. DRO was detected in confirmation soil samples at concentrations exceeding the ADEC Method 2 cleanup levels. The site also includes a septic system drain field that has not been investigated.

Recommendation: Site Characterization

Site UST1401 is recommended for an ADEC site characterization. Additional investigation is recommended at Site UST1401 to further define the nature and extent of fuel-related contamination. Limited site inspection sampling will also be conducted for the former septic system drain field.

References

Alaska Department of Environmental Conservation (ADEC). January 2010. *Draft Field Sampling Guidance*.

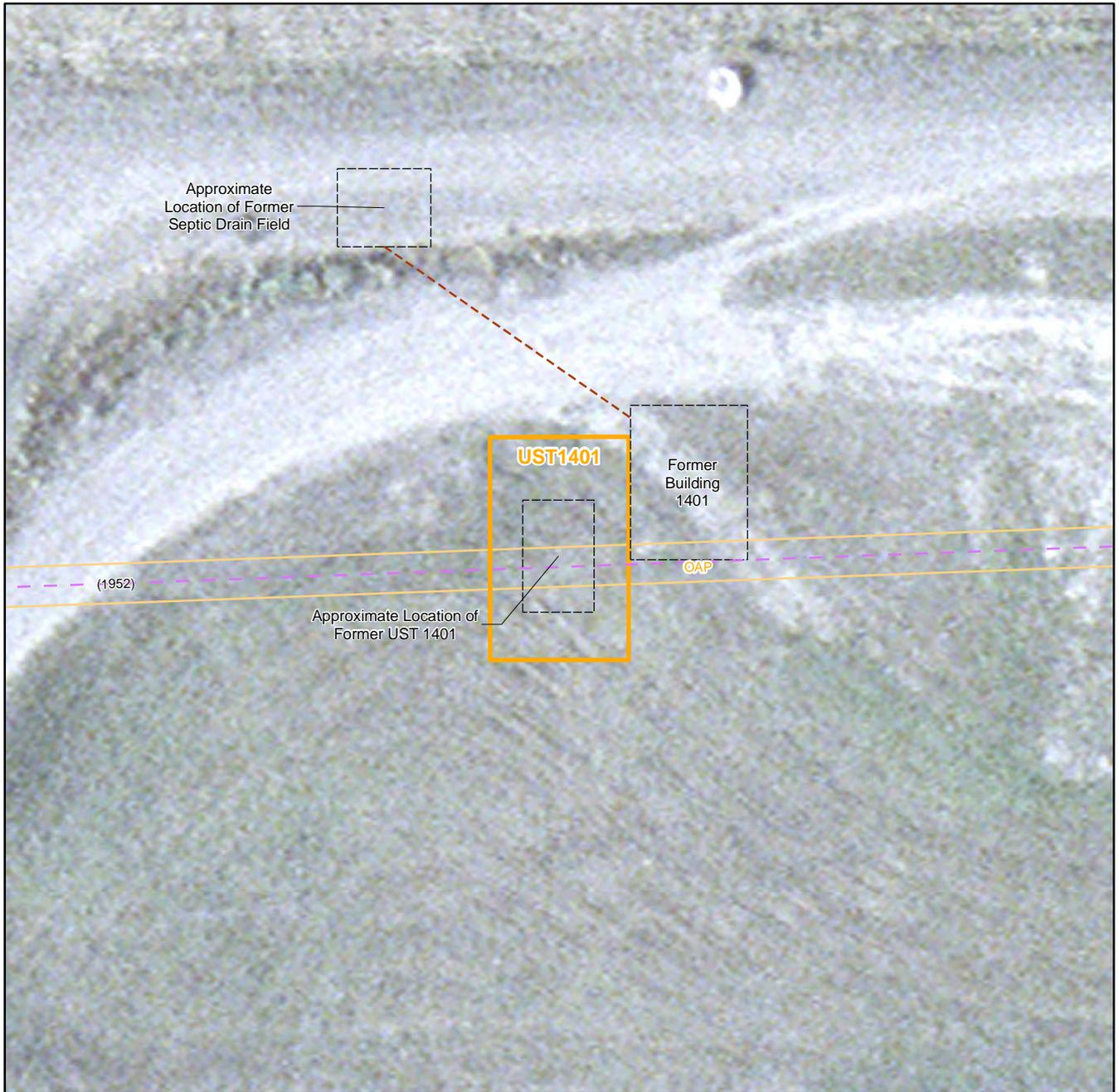
Alaska Department of Environmental Conservation (ADEC). November 7, 2002. *Underground Storage Tanks Procedures Manual, Guidance for Treatment of Petroleum-Contaminated Soil and Water and Standard Sampling Procedures*.

Alaska Department of Environmental Conservation (ADEC). April 28, 1994. Letter. "Removal Report for Two USTs at Buildings 1400 and 1401 Galena AFS dated March 16, 1994."

U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska*.

U.S. Air Force (USAF). 1994. Buildings 1400 and 1401 Removal of Tanks and Installation of Monitoring Wells and Test Bores, Galena Airport, Alaska.

U.S. Air Force (USAF). 1974. *Alaskan Air Command Master Plan, Sanitary Sewerage System*. Drawing G-2.

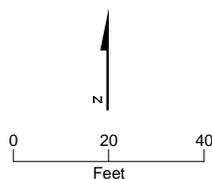
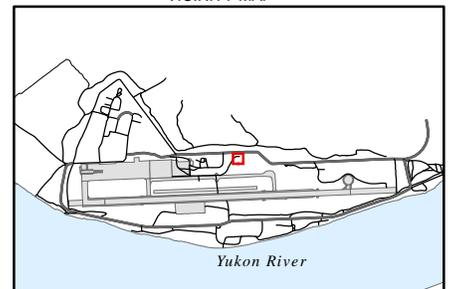


VICINITY MAP

LEGEND

- UST1401
- Adjacent Site
- Approximate Location of Former Feature
- Approximate Location of Former Septic Drain Pipe
- Abandoned Fuel Line (1952)

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meter



**FIGURE A1-UST1401
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



LEGEND
 UST1401

Notes:
 1. Photography Dated 9-4-1963, Georeferenced.
 2. Photography Dated 1985, Georeferenced.
 3. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

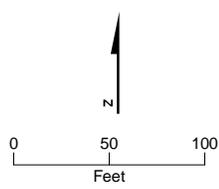
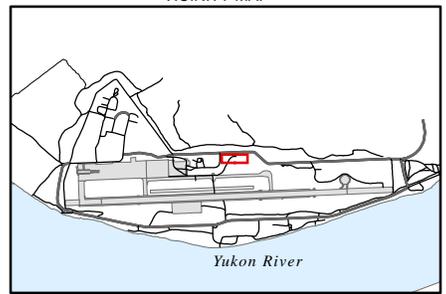
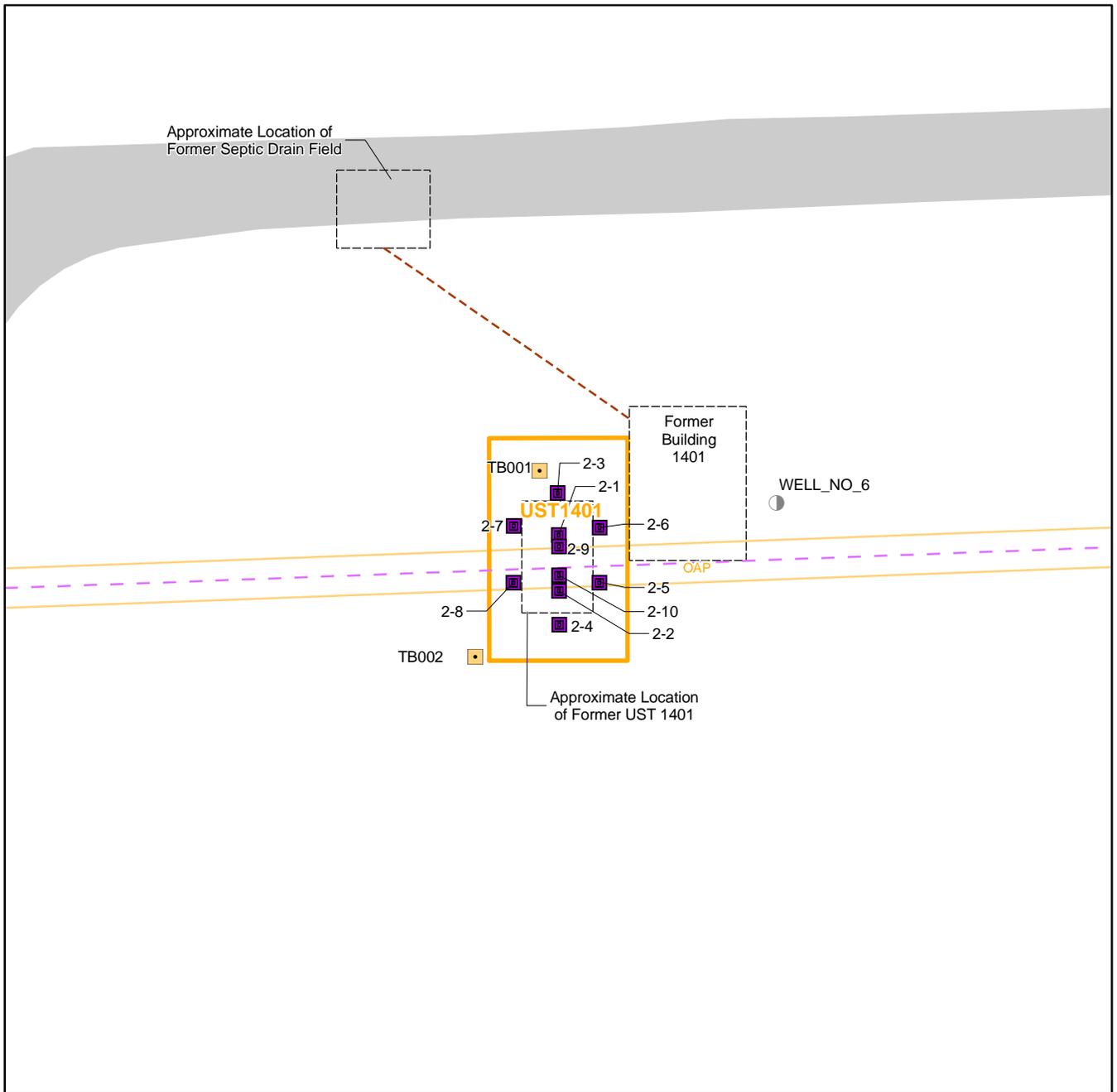


FIGURE A2-UST1401
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



VICINITY MAP

LEGEND

- UST1401
- Adjacent Site
- Road
- Approximate Location of Former Feature
- Approximate Location of Former Septic Drain Pipe
- Abandoned Fuel Line (1952)

Historical Sample Location

- Excavation Sample
- Soil Boring
- Abandoned Production Well

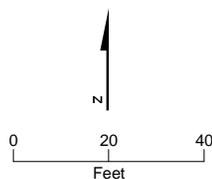
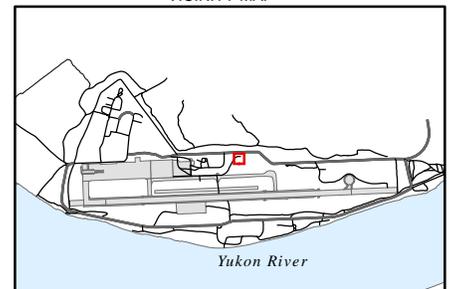


FIGURE A3-UST1401
Historical Sample Locations
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska

Supporting Documentation

GALENA APT INSTALLATION NAME AND NO.		2034 HP2W		AUG 62 DATE		AW27-02-09 DRAWING NO.		2001 RP ACCOUNT NO.		57301-1 CONTROL NO.		BUILDING NO.		1401			
DIMENSIONS (Width x length)												CODE					
MAIN BUILDING		OFFSETS		WINGS		BASEMENTS		STATE				ALASKA		702			
20' x 30'		8'6" x 12'						ASSIGNMENT				AAC					
MATERIALS												TYPE OF CONSTRUCTION		PERMANENT		XP	
FOUNDATION		FLOOR		WALL		ROOF		CONDITION				USABLE		CLASS A			
PCC		PCC		PCC		CORRUG METAL GABLE		OCCUPANCY				A					
HEATING												AIR FORCE INTEREST		OWNED		1	
SOURCE		TYPE				FUEL		UNIT OF MEASURE (Other than area)									
FURNACE		HOT AIR				OIL		QUANTITY									
NO. OF USABLE FLOORS		FIRE PROTECTION															
1		NO.		1		TYPE		2 ALARM BELL 3 PULL BOX HAND EXTINGUISHERS									
UTILITY CONNECTIONS				BLDG EQPT		NO.		TOTAL CAPACITY				NOMENCLATURE		3P ENTRY CON 1/2" 6 POLICE CONTROL & IDENT CON IDENT		A	
WATER				AIR								CATEGORY		730-837			
750 Gal Stor Tank				CONDITIONING								REMARKS		Ino-6744 ENGR MG C OPR: L Land-owned (1)		17102	
SEWER				EVAPORATIVE													
1 - 4" to septic tank				COOLING													
ELECTRIC				MECHANICAL													
120/208V				COOLING													
GAS				HOT WATER													
STEAM				FACILITIES													
CONDENSATE																	
VOUCHER NO.		DATE		DESCRIPTION				DATE COMPLETED		AREA UNIT		COST		TOTAL COST			
				C-1-1496						AMOUNT		TOTAL					
63-237		15 Aug 62		New Construction DA-1496				1961		840		840		94,798 00			
66-0128		2 Aug 65		Inventory Adjustment						(138)		702		94,798 00			
67-0171		24 Aug 66		AFM 170-5 establishes Ele Pwr Flt cost code								(4,272 00)		90,526 00			
				ACCOUNTABLE DATA SUMMA RIZED ON VOUCHER													
				DATED 6-183 702542													
				CONVERTED TO BEAMS BALANCES FORWARDED													

Galena Airport HPZW		May 72	1401	2001	58215	Htg Fl Oil Stor					
INSTALLATION NAME AND NO.		DATE	DRAWING NO.	FACILITY NO.	PLANT NO.	RP ACCOUNT NO	CONTROL NO.	NOMENCLATURE			
SYSTEM						STATE				CODE	
TYPE		CAPACITY		SOURCE		Alaska				702	
MAXIMUM HYDRANT PRESSURE		TYPE OF PRODUCT		TYPE OF DISPENSING		AAC					
						CONDITION				14	
						OCCUPANCY					
MAINS						USAF					
TYPE		DIAMETER (Inches)		PRESSURE (Lbs)		AIR FORCE INTEREST					
						Owned					
						UNIT OF MEASURE				Ga	
						QUANTITY					
ELECTRIC LINES						Ea					
PRIMARY			SECONDARY			CATEGORY				821-112	
CURRENT	VOLTAGE		CURRENT	VOLTAGE							
ELECTRIC SERVICE LINES			STORAGE			REMARKS					
CURRENT	NO. OF LIGHTS		TYPE	CAPACITY		Inv. breakout.					
SUB-STATIONS											
TYPE		CURRENT		CAPACITY							
FIELDS			PUMPS		OUTLETS						
TYPE	SIZE (Sq yds)	NO.	CAPACITY	NO.	CAPACITY						
VOUCHER NO.						DATE COMPLETED		MAINS AND LINES (Lt)		COST	
								AMOUNT		TOTAL	
May 72						Inv. adj.		2,000		3,920 00	
880021						Nov 87		2,000		3,920 00	
410300											
940122											
BALANCES FORWARDED											

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	MAINS AND LINES (Ft)		COST				
				AMOUNT	TOTAL	AMOUNT	TOTAL	AMOUNT	TOTAL	
		BALANCES FORWARDED								
BALANCES FORWARDED										

Galena Airport (HPZW) 9 Feb 76 1401 2001 WTRWELL
 INSTALLATION NAME AND NO. DATE DRAWING NO. FACILITY NO. RP ACCOUNT NO. CONTROL NO. NOMENCLATURE

TYPE	CAPACITY	STATE	CODE
FUEL USED	POWER SOURCE	Alaska	
SUPPLY SOURCE	NO. OF PUMPS	ASSIGNMENT AAC	
LIFT (Feet)	REFRIGERANT	CONDITION	X4
NO. OF BOILERS	OPERATING PRESSURE	OCCUPANCY USAF	
NO. OF RETORTS	PRIME MOVER	AIR FORCE INTEREST owned	
CURRENT CHARACTERISTICS		UNIT OF AREA MEASURE	KG
VOLTS	AMPERE	QUANTITY	60
PHASE	CYCLE	CATEGORY	841-166
		REMARKS	

RETIRED

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	UNIT OF MEASURE		COST	
				AMOUNT	TOTAL	AMOUNT	TOTAL
76-0500	Feb 76	DD 1354 (Found on Base)	Feb 76		60		1500 00
880021		vacant/ Cong cde-4 Change Inv Date 8711	Nov 87				
910300	Jun 91	Site Inventory (vacant)					
940122	SEP 93	DISPOSED					
BALANCES FORWARDED							

INSTALLATION NAME AND NO.		DATE	DRAWING NO.	FACILITY NO.	RP ACCOUNT NO.	CONTROL NO.	NOMENCLATURE		
TYPE		CAPACITY						CODE	
FUEL USED		POWER SOURCE			STATE				
SUPPLY SOURCE		NO. OF PUMPS			ASSIGNMENT				
LIFT (Feet)		REFRIGERANT			CONDITION				
NO. OF BOILERS		OPERATING PRESSURE			OCCUPANCY				
NO. OF RETORTS		PRIME MOVER			AIR FORCE INTEREST				
CURRENT CHARACTERISTICS				REMARKS				UNIT OF AREA MEASURE	
								VOLTS	
PHASE		CYCLE			QUANTITY				
CATEGORY									
REMARKS									
VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	UNIT OF MEASURE		COST			
				AMOUNT	TOTAL	AMOUNT		TOTAL	
BALANCES FORWARDED									

GALENA APT INSTALLATION NAME AND NO.		2034 HPZW	APR 67 DATE		1401 DRAWING NO.			PLANT NO.	2001 RP ACCOUNT NO.	58800-7 CONTROL NO.	FIRE DETECTION SYS NOMENCLATURE	
SYSTEM									588070			CODE
TYPE 2 ALARM BELL 3 Pull Box 1 TRANS PANEL 1 ANNUNCIATOR PANEL		CAPACITY		SOURCE		STATE			ALASKA			702
MAXIMUM HYDRANT PRESSURE		TYPE OF PRODUCT		TYPE OF DISPENSING		ASSIGNMENT			AAC			
						CONDITION			USABLE CLASS A			4 X
						OCCUPANCY			USAF			
						AIR FORCE INTEREST			OWNED			1
						UNIT OF MEASURE			E.A			
MAINS									QUANTITY			1
TYPE		DIAMETER (Inches)		PRESSURE (Lbs)		CONTROL CODE			E			
ELECTRIC LINES									CATEGORY			X 880-221 880-213
PRIMARY			SECONDARY			REMARKS			ENGR MG C Inv 6704 OPR: B Land-owned (1) 57 EA 17103			
CURRENT	VOLTAGE	CURRENT	VOLTAGE									
ELECTRIC SERVICE LINES			STORAGE									
CURRENT	NO. OF LIGHTS	TYPE	CAPACITY									
SUB-STATIONS												
TYPE		CURRENT		CAPACITY								
FIELDS			PUMPS		OUTLETS							
TYPE	SIZE (Sq yds)	NO.	CAPACITY	NO.	CAPACITY							
VOUCHER NO.	DATE	DESCRIPTION			DATE COMPLETED	MAINS AND LINES (P)		COST				
						AMOUNT	TOTAL	AMOUNT	TOTAL	AMOUNT	TOTAL	
67-0528	27 Apr 67	1967 Inv Adj, Establish System			1961	1	1	2,200	00	2,200	00	
68-0249	8 Dec 67	AFM 300-4 change to category code and primary unit of measure					702			2,200	00	
		ACCOUNTABLE DATA SUMMA										
		RISED ON VOUCHER 702545										
		DATED 67183										
		CONVERTED TO BEAMS										
		vacant/cond cde-4										
		Change Inv Date 8711			Nov 87							
		BALANCES FORWARDED										

GALENA APT INSTALLATION NAME AND NO.		2034 HPZW	AUG 66 DATE	1401 DRAWING NO.	2001 FACILITY NO.	58110 58115-8 CONTROL NO.	ELE EMERG POWR PLANT NOMENCLATURE		
TYPE 1 Continental Generator Set 1 Continental Generator Set		CAPACITY 35 KW			STATE ALASKA		CODE 702		
FUEL USED Diesel		POWER SOURCE			ASSIGNMENT AAC				
SUPPLY SOURCE		NO. OF PUMPS			CONDITION USABLE CLASS A		1		
LIFT (Feet)		REFRIGERANT			OCCUPANCY USAF				
NO. OF BOILERS		OPERATING PRESSURE			AIR FORCE INTEREST OWNED		1		
NO. OF RETORTS		PRIME MOVER			UNIT OF AREA MEASURE				
					QUANTITY				
					CONTROL CODE		X		
					CATEGORY		811-147		
					REMARKS		811-147		
CURRENT CHARACTERISTICS					Ino 6704 ENGR M/G C CPR: B Land-Owned (1)		17103		
VOLTS		AMPERE							
PHASE		CYCLE							
VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	UNIT OF MEASURE KW		COST			
				AMOUNT	TOTAL	AMOUNT		TOTAL	
67-0171	24 Aug 66	AFM 170-5 establishes cost code on Ele Powr Plant	1961	30	30	4,272	00	4,272	00
67-0528	27 Apr 67	1967 Inv Adj		5	35			4,272	00
		ACCOUNTABLE DATA SUMMARY							
		SIZED BY VOUCHER							
		DATED 6-183							
		CONVERTED TO BEAMS 782543							
81-0074	1981	GENERATOR WAS REMOVED							
		& INSTALLED IN BLOC 1556							
BALANCES FORWARDED									

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	UNIT OF MEASURE		COST	
				AMOUNT	TOTAL	AMOUNT	TOTAL
		BALANCES FORWARDED					
BALANCES FORWARDED							

APPENDIX A

UST1404

UST 1404 – Control Tower (Site ID UST1404)

Site Location

Site UST1404 is located at the former site of the control tower in Parcel Block 12, Lot 4, approximately 600 feet southeast of the main cantonment “triangle,” near the northern edge of the runway.

Site Characteristics

Site features are shown on Figure A1-UST1404. The site is a level-graded, gravel fill. The feature of concern at Site UST1404 is a former UST (UST 1404-2), which was located adjacent to the former control tower (Building 1404).

Site Description and History

The former control tower was a square, two-story building with a hexagonal, glassed observation room on top. It was constructed in 1986 to support civilian and military runway operations, and was demolished in 2007. The AF Form 1431, Real Property Accountable Records - Systems for the site indicated that a 500-gallon buried fuel/oil tank was part of the original construction (USAF, 1988). Table 3-3 of the 2010 EBS report (USAF, February 2010) lists UST 1404-2 as a removed 500-gallon diesel tank that was in service through 1992. UST 1404-2 is listed as Tank # 24 in ADEC records. In 1990, a weather facility was added to the control tower. Because the new building footprint covered the location of the original UST, the 500-gallon fuel/oil UST was removed and relocated to Room 4 on the first floor of the facility where it was used for aboveground fuel/oil storage. The reutilization of the UST as an AST inside the facility indicates that the UST was in good condition and likely did not leak during the 4 years it was in the ground.

Building 1404 was surveyed for LBP as part of the FOL-wide survey conducted in 2006. Table 3-6 of the 2010 EBS report indicates that LBP was detected in the generator used at this site before building demolition (USAF, February 2010). The generator was located inside Building 1404.

UST 1404-2 is described below:

Capacity:	500 gallons
Contents:	Diesel
Construction:	Welded steel
Condition:	Good
Use:	Fuel oil for control tower
Installation Date:	1986
Location:	Within Building 1404 footprint
Status:	Removed in 1990
ADEC Tank ID:	24
ADEC Status:	Permanently out of use

ADEC Closure Status:	Tank removed from ground
Leaking Underground Storage Tank (LUST) Status:	Not in LUST program

The May 17, 1988, Notification for USTs (EPA, May 17, 1988) included a description of UST 1404, a 3-year-old, 500-gallon UST containing diesel fuel. Additional Notifications for USTs at Galena were submitted in 1992, after the addition to the control tower, and state that UST 1404-2 was removed from the ground, which is consistent with the construction of the addition (EPA, January 17, 1992).

Historical aerial photographs of Site UST1404 dated 1963, 1985, and 2002, are shown on Figure A2-UST1404. The control tower is not shown in the 1963 photograph; however, it is in the 1985 and 2002 photographs.

Regulatory Status

Site UST1404 is regulated by ADEC according to 18 AAC 78 Underground Storage Tanks, as amended October 2006 and 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, revised October 9, 2008. This site is not in the LUST program. However, a release investigation has not been completed by USAF and is required to complete closure actions.

Summary of Previous Investigations

No previous investigations or sampling have been conducted at Site UST1404.

October 2009 Site Visit Observations

An inspection of Site UST1404 was conducted in October 2009. Figure A3-UST1404 shows the former control tower. Figure A4-UST1404 shows the site in 2009. Figure A5-UST1401 is a construction drawing, dated 1989, which identifies the location of the tank to be removed and relocated.

Target Analytes

Because the UST stored diesel fuel, potential target analytes are GRO, DRO, BTEX, and PAHs.

Lead is not a target analyte in any media based on the historical use of LBP at the site.

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST1404, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete

routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.

- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.
- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Site UST1404 is located adjacent to the airfield, surrounded by pavement or gravel, and has limited/no habitat. Terrestrial ecological exposure pathways are considered unlikely to be complete at the site. An aquatic ecological exposure pathway is unlikely complete because the site is located over 1,000 feet from the Yukon River. If subsurface contamination is detected, this pathway should be evaluated further.

Conclusions

UST 1404-2, a 500-gallon diesel UST, was originally installed as a UST to provide fuel storage for the control tower when it was constructed in 1986. In 1990, when the weather facility was added to the control tower, the new footprint covered the location of the original UST. Because the UST was only 4 years old, the tank was relocated inside the facility as an AST. The AST continued to provide fuel storage for the facility until approximately 2007. The reutilization of the UST as an AST inside the facility indicates that this UST was in good condition and likely did not leak during the 4 years it was in the ground. The location of the former 500-gallon UST can be approximated from the facility drawings (Figure A5-UST1404).

Recommendation: Site Inspection Sampling

Limited site inspection sampling is recommended to confirm the absence of contamination and complete closure of the UST in accordance with 18 AAC 78.

References

- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey, Air Force Property at Galena Airport, Alaska.*
- U.S. Air Force (USAF). May 2008. *Final Environmental Baseline Survey, Air Force Property at Galena Alaska, 611th Civil Engineer Squadron, Elmendorf AFB, AK.*
- U.S. Air Force (USAF). 1988. AF Form 1431, Real Property Accountable Records - Systems.

U.S. Environmental Protection Agency (EPA). January 17, 1992. Form 7530-1, Notification for Underground Storage Tanks.

U.S. Environmental Protection Agency (EPA). May 17, 1988. Form 7530, Notification for Underground Storage Tanks.

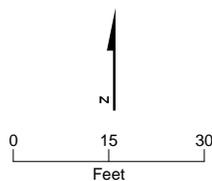
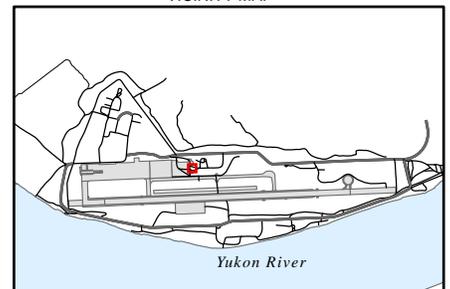


VICINITY MAP

LEGEND

-  UST1404
-  Adjacent Site
-  Approximate Location of Former Feature

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST1404
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



LEGEND
 UST1404

Notes:
 1. Photography Dated 9-4-1963, Georeferenced.
 2. Photography Dated 1985, Georeferenced.
 3. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

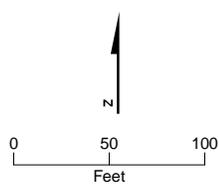
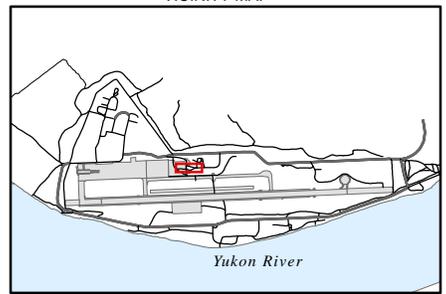


FIGURE A2-UST1404
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A3-UST1404
Air Force Facility 1404, Control Tower (Demolished in 2007)
Source: USAF, May 2008, Appendix B, Photo 1



FIGURE A4-UST1404
Site UST1404, October 2009

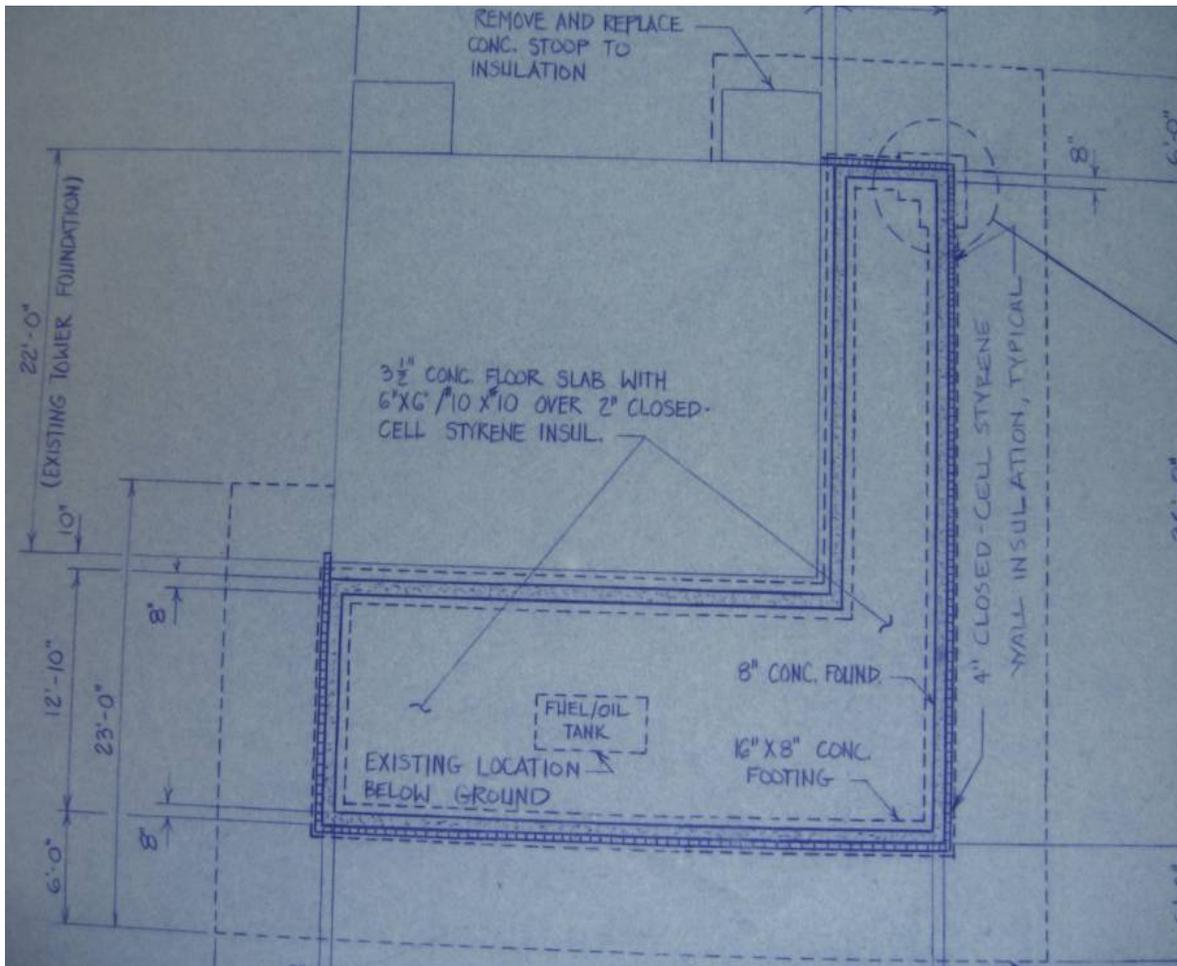


FIGURE A5-UST1404
Construction Drawing, Construct Galena Weather Facility, 1989

APPENDIX A

UST1428

USTs 1428 – Combat Alert Cell (Site ID UST1428)

Site Location

Site UST1428 is located immediately north of Building 1428, CAC, at the northwestern end of the runway in a portion of Parcel P.

Site Characteristics

Site features are shown on Figure A1-UST1428. Site UST1428 consists of two paved areas north of Building 1428. The features of concern at Site UST1428 are three decommissioned USTs. An AST is also located north of Building 1428 and is being investigated separately as Site AST1428.

Site Description and History

Building 1428 was built in 1957 and was historically used as a CAC hanger that housed alert fighter-interceptor aircraft. The building is currently vacant (AECOM, September 10, 2009). The USAF is the current owner of Building 1428.

Three decommissioned 10,000-gallon USTs (USTs 1428B, 1428-1, and 1428-2) are located at Site UST1428. Two of the USTs are located at the northwestern corner of the building, and one is located outside the mechanical room at the northern side of the building. Geophysical surveys conducted in 2009 confirmed these locations (ECA, October 2009). The USTs are unmarked and records have not been located that identify the USTs by location.

The three USTs were used to store diesel fuel before they were abandoned in place (USAF, February 2010). The two USTs located at the northwestern corner of the building may have contained glycol. Installation dates for each UST were estimated based on the EPA UST registration forms. The condition of the USTs is unknown. According to state UST records (ADEC, April 9, 2010), the tanks are constructed of steel.

The USTs are described below:

- UST 1428B

Capacity:	10,000 gallons
Contents:	Diesel fuel
Construction:	Steel
Condition:	Unknown
Use:	Unknown
Installation Date:	April 30, 1973
Location	Northern side of Building 1428
Status:	Abandoned in place, date unknown
ADEC Tank ID:	5
ADEC Status:	Permanently out of use
ADEC Closure Status:	Not listed
LUST Status:	Not in the LUST Program

- UST 1428-1

Capacity:	10,000 gallons
Contents:	Diesel fuel
Construction:	Steel
Condition:	Unknown
Use:	Unknown
Installation Date:	April 30, 1956
Location	Northern side of Building 1428
Status:	Abandoned in place in 1985
ADEC Tank ID:	8
ADEC Status:	Permanently out of use
ADEC Closure Status:	Tank removed from ground
LUST Status:	Not in the LUST Program

- UST 1428-2

Capacity:	10,000 gallons
Contents:	Diesel fuel
Construction:	Steel
Condition:	Unknown
Use:	Unknown
Installation Date:	May 1, 1971
Location	Northern side of Building 1428
Status:	Abandoned in place in 1992
ADEC Tank ID:	9
ADEC Status:	Permanently out of use
ADEC Closure Status:	Tank removed from ground
LUST Status:	Not in the LUST Program

Regulatory Status

Site UST1428 is regulated by ADEC according to 18 AAC 78 Underground Storage Tanks, as amended October 2006, and 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, revised October 9, 2008. Site UST1428 is not in the LUST tracking list. However, no ADEC post-closure form could be located to document the removals of USTs 1428-1 and 1428-2.

The ADEC database may be incorrect for USTs 1428-1 and 1428-2, as geophysical surveys conducted in July 2009 confirmed that tanks are present in the ground. These tanks may be UST 1428-1 and UST 1428-2, or they may be previously undocumented USTs.

A post-closure investigation has not been completed and a release investigation under 18 AAC 78.235 is required.

Historical aerial photographs of Site UST1428, dated 1963, 1985, and 2002, are shown on Figure A2-UST1428.

Summary of Previous Investigations

No investigations involving release verification sampling have been conducted at Site UST1428.

Geophysical Survey (2009)

In July 2009, Environmental Compliance Associates, LLC completed a geophysical survey using ground penetrating radar to confirm the locations of USTs at Building 1428. ECA concluded that the identified ground penetrating radar anomalies were consistent with the presence of two east-west oriented tanks at a depth of 5 feet at the northwestern corner of Building 1428, and one north-south oriented tank outside the mechanical room north of Building 1428.

October 2009 Site Visit Observations

An inspection of Site UST1428 was conducted in October 2009. The site is covered with pavement. Figures A3-UST1428 and A4-UST1428 show site conditions and the determined locations of the USTs at Site UST1428 in October 2009.

Target Analytes

Because the operational dates for the tanks cannot be confirmed and no soil or groundwater sample data have been collected at the USTs, the target analytes are GRO, DRO, RRO, BTEX, PAH, metals, EDB, 1,2 dichloroethane (EDC), and methyl 1 tert-butyl ether (MTBE).

The two USTs along the northwestern corner of Building 1428 may have contained glycol. Target analytes for samples in this area also include VOCs, glycol, and RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST1428, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.

- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Ecological exposure pathways are considered incomplete at Site UST1428. Pavement surfaces provide no viable habitat onsite. A potential exposure pathway could be complete if COPECs are identified in groundwater that daylight downgradient. Terrestrial ecological receptors will not be evaluated for this site, but aquatic receptors will be evaluated downgradient if site characterization data and/or modeling indicate daylighting of groundwater may occur.

Conclusions

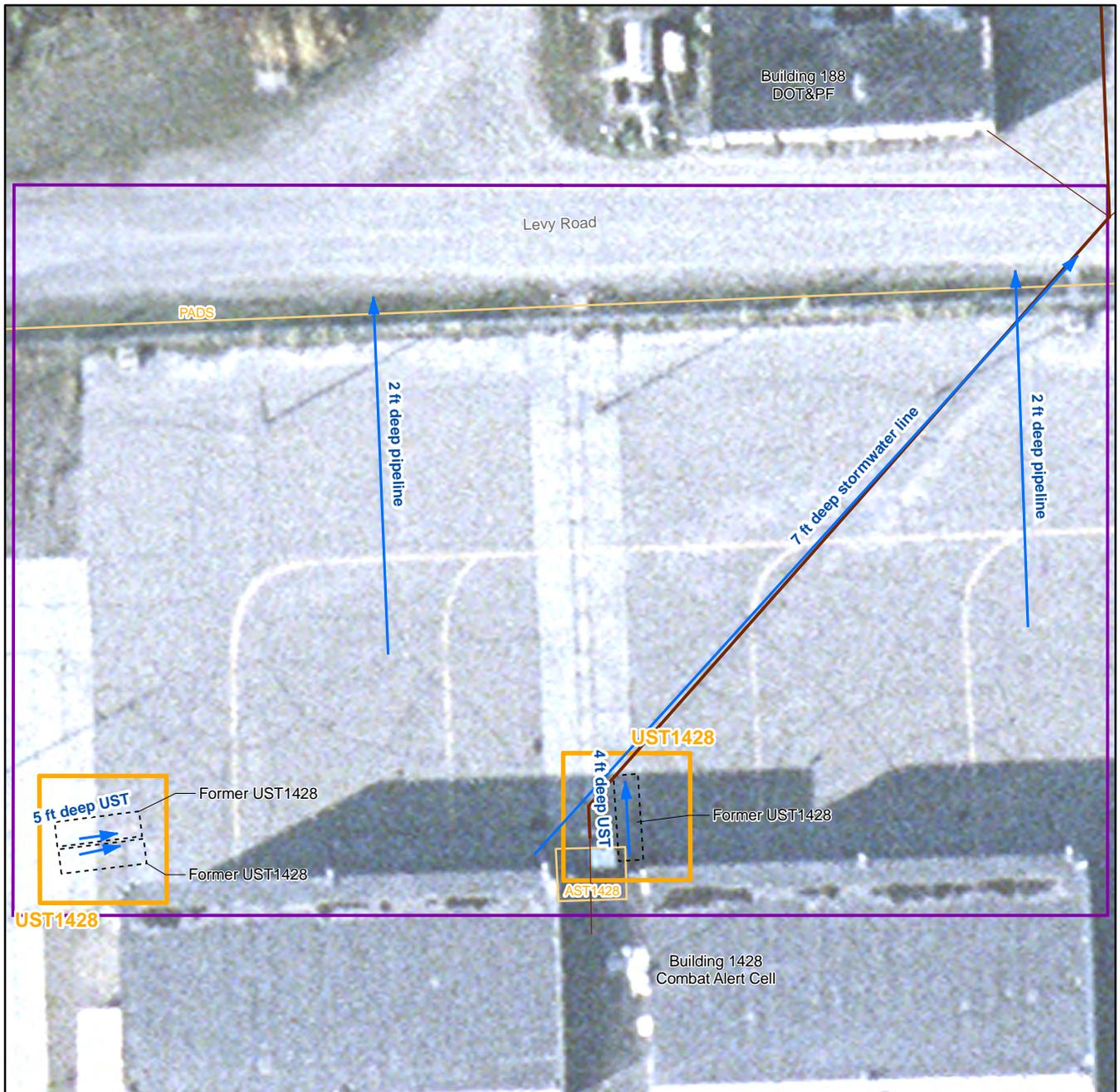
Three abandoned 10,000-gallon USTs are located north of Building 1428. The locations of the USTs were confirmed through a geophysical survey conducted in 2009. No investigations involving release verification sampling have been conducted at Site UST1428. The initial investigation should be completed in accordance with 18 AAC 78.090 and the *Underground Storage Tank Manual* (ADEC, November 7, 2002).

Recommendation: Site Inspection Sampling

Limited site inspection sampling is recommended to confirm the presence or absence of fuel-related contamination, VOCs, glycol, and RCRA metals in soil and groundwater. The abandoned USTs should be removed or closed in place.

References

- AECOM. September 10, 2009. David Jury, Project Manager. Letter to Mr. Robert Lopez, U.S. Department of the Air Force.
- Alaska Department of Environmental Conservation (ADEC). April 9, 2010. Alaska Underground Storage Tank Facility Summary Report: Facility: 640. 611 CES/CC (Elmendorf) - Galena Airport.
http://www.dec.state.ak.us/spar/ipp/ust/search/fac_report.asp?FacilityID=640. Accessed on April 9, 2010.
- Alaska Department of Environmental Conservation (ADEC). November 7, 2002. *Underground Storage Tank Manual, Guidance for Treatment of Petroleum-Contaminated Soil and Water and Standard Sampling Procedures*.
- Environmental Compliance Associates, LLC (ECA). October 2009. *Galena Air Force Base Geophysical Surveys*. Prepared for Earth Tech/AECOM.
- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska*.

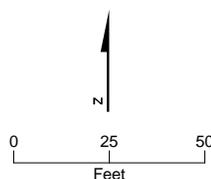
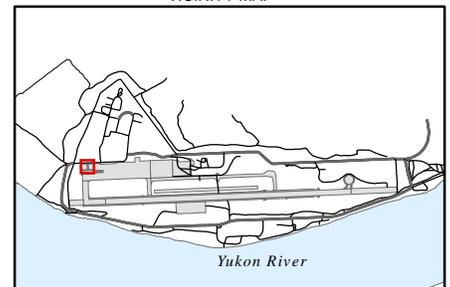


VICINITY MAP

LEGEND

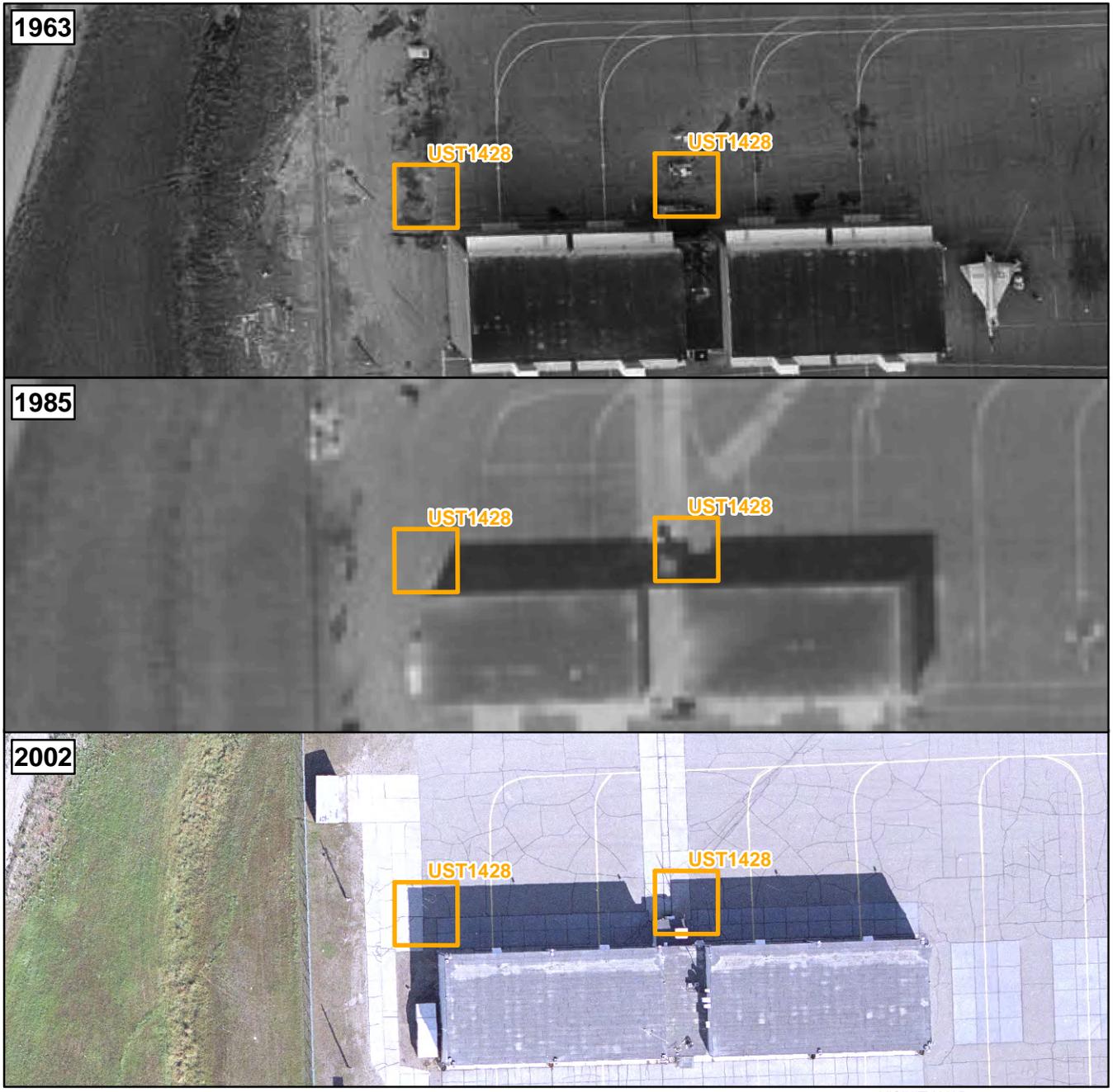
- UST1428
- Adjacent Site
- Approximate Location of Former Feature
- Geophysical Survey Limit
- Geophysical Survey Feature
- Main Wastewater Line
- Service Wastewater Line

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST1428
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



LEGEND
 UST1428

Notes:
 1. Photography Dated 9-4-1963, Georeferenced.
 2. Photography Dated 1985, Georeferenced.
 3. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

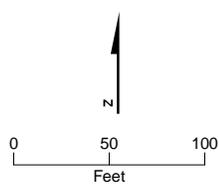
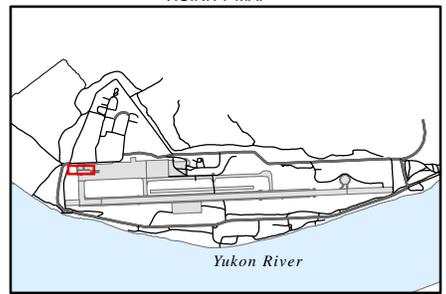


FIGURE A2-UST1428
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A3-UST1428
Location of USTs at Northwestern Corner of Building 1428, October 2009



FIGURE A4-UST1428
Location of UST North of Building 1428, October 2009

APPENDIX A

UST1429

UST 1429 - Former Guard Shack (Site ID UST1429)

Site Location

Site UST1429 is located in Parcel P near the CAC in the southern part of the cantonment "triangle," and west of the former location of Building 1429, the Guard Shack.

Site Characteristics

Site features are shown on Figure A1-UST1429. The surface of Site UST1429 is pavement. The feature of concern at the site is a possible UST.

Site Description and History

UST 1429 is a suspected heating-oil tank thought to have provided fuel for Building 1429. Building 1429 was constructed in 1963, and was used to regulate access to the runway near the CAC. In more recent years, the structure was used for warm storage by operations and maintenance personnel (CEMML, November 2008).

Building 1429 was demolished in 2009. No records of an underground tank associated with Building 1429 exist. However, similar guard shacks at the Former Galena FOL had associated heating-oil tanks. Central heating system records, dated 1974, indicate that Building 1429 was not connected to the central heating system. Table 3-3 of the 2010 EBS report (USAF, February 2010) lists a diesel fuel UST associated with former Building 1429. However, the details (capacity, years of operation, and status) regarding the tank are unknown.

During a site visit conducted in October 2009, ground cuts were observed in the pavement east of the former location of Building 1429 that may indicate the position of the UST and associated piping.

UST 1429 is described below:

Capacity:	Unknown
Contents:	Heating oil
Construction:	Unknown
Condition:	Unknown
Use:	Heating
Installation Date:	Approximately 1963
Location	West of Building 1429
Status:	Unknown

Historical aerial photographs of Site UST1429, dated 1963, 1985, and 2002 are shown on Figure A2-UST1429.

Regulatory Status

UST 1429 was not registered with EPA or ADEC and does not have a current ADEC regulatory status. This UST is exempt from UST closure requirements according to 18 AAC

78.005(e)(5), which exempts any “tank used for storing heating oil for consumptive use on the premises where stored.”

Summary of Previous Investigations

No previous investigations have been conducted at Site UST1429 to determine the presence or absence of a UST. No UST removal records have been located. No geophysical investigations have been conducted.

October 2009 Site Visit Observations

An inspection of Site UST1429 was conducted in October 2009. Figure A3-UST1429 shows Building 1429. Figure A4-UST1429 shows grouted cuts in the pavement (after Building 1429 was removed) that may have provided access to an underground tank.

Target Analytes

Target analytes for heating oil include GRO, DRO, RRO, BTEX, and PAHs.

Potential Human Receptors and Exposure Pathways

Based on current and reasonably anticipated potential future land uses at Site UST1429, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.
- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Site UST1429 has a pavement and concrete surface and was identified as having limited/no habitat. Terrestrial ecological exposure pathways are considered unlikely to be complete at the site and Site UST1429 will not be evaluated for ecological risk. An aquatic ecological exposure pathway is unlikely complete because the site is located over 1,000 feet from the

Yukon River. If subsurface contamination is detected, this pathway should be further evaluated.

Conclusions

A possible UST, used to store heating oil, was associated with Building 1429. No previous investigations have been conducted at Site UST1429.

Recommendation: Site Inspection Sampling

A geophysical investigation is recommended to determine if UST 1429 is still in place. Limited site inspection sampling is recommended to confirm the presence or absence of fuel-related contamination.

References

- Center for Environmental Management of Military Lands (CEMML). November 2008. *Integrated Cultural Resources Management Plan, Galena Airport, Alaska*. Colorado State University, Fort Collins, Colorado.
- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska*.
- U.S. Air Force (USAF). May 2008. *Final Environmental Baseline Survey, Air Force Property at Galena Alaska, 611th Civil Engineer Squadron, Elmendorf AFB, AK*.

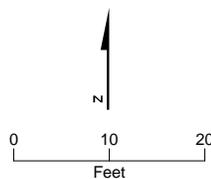
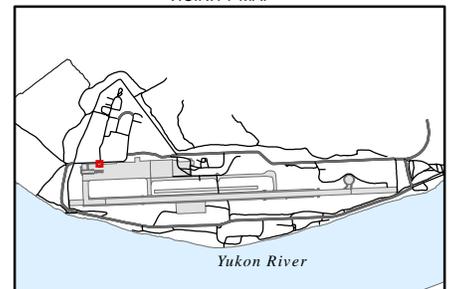


VICINITY MAP

LEGEND

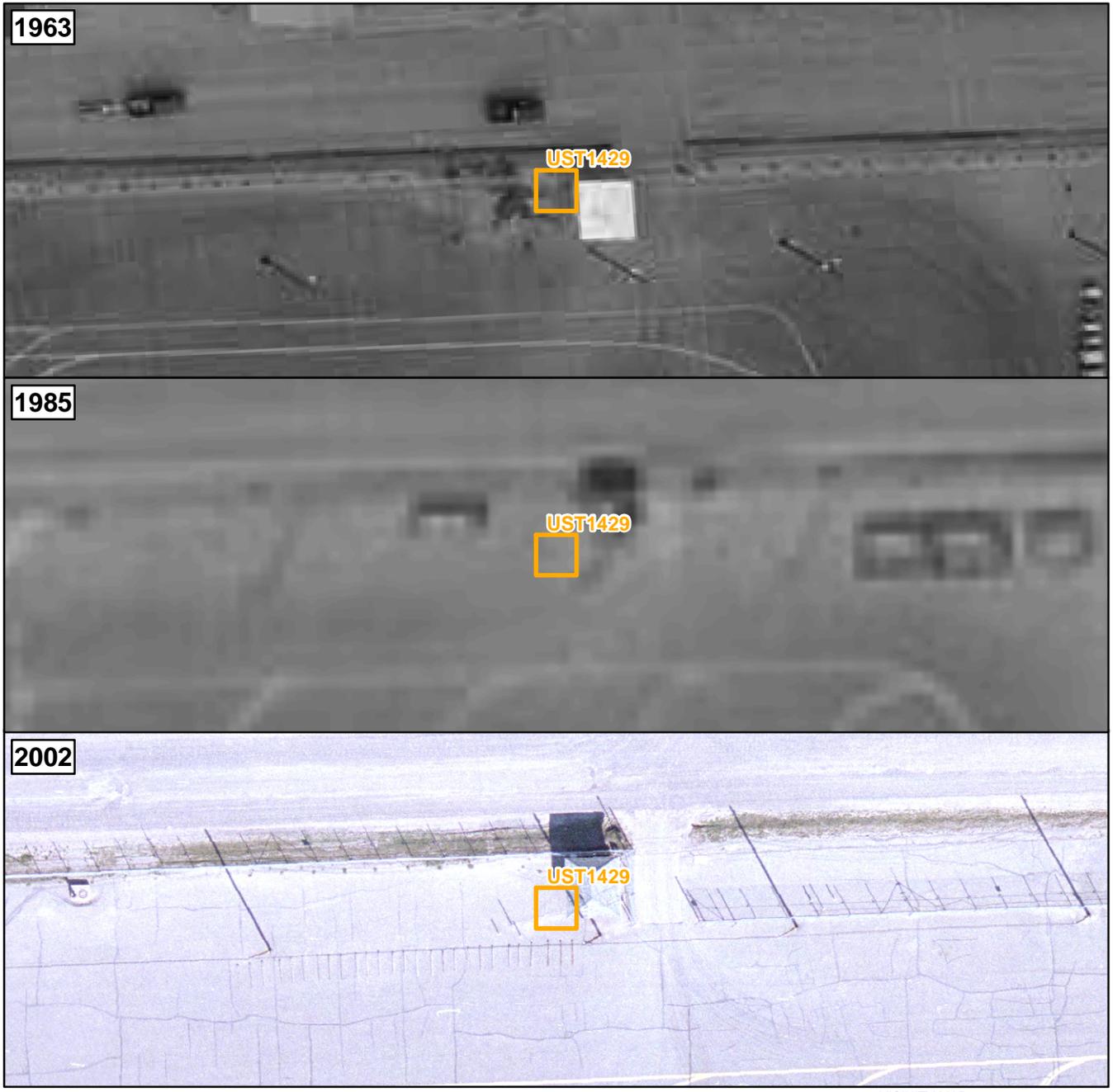
-  UST1429
-  Adjacent Site
-  Approximate Location of Former Feature
-  Fence
-  Possible Pipeline Associated with UST,
Based on 2009 Field Reconnaissance

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST1429
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



LEGEND
 UST1429

Notes:
 1. Photography Dated 9-4-1963, Georeferenced.
 2. Photography Dated 1985, Georeferenced.
 3. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

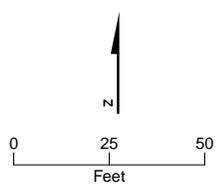
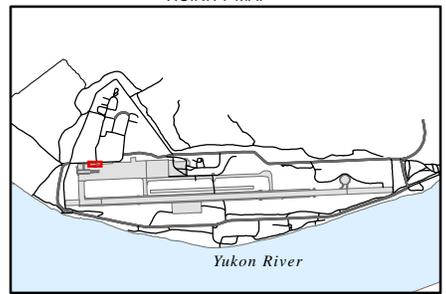


FIGURE A2-UST1429
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A3-UST1429
Air Force Facility 1429, Guard Shack (Demolished in 2007) (Source: USAF, May 2008, Appendix B, Photo 4)



FIGURE A4-UST1429
Grouted Cuts in the Pavement after Removing Building 1429, October 2009

APPENDIX A

UST1552

UST 1552 - Airfield Utility Vault (Site ID UST1552)

Site Location

Site UST1552 is located within Parcel Block 10, Lot 6 in an open field about 16 feet north of Building 1552, the Airfield Lighting Vault.

Site Characteristics

Site features are shown on Figure A1-UST1552. Site UST1552 consists of the area north of Building 1552. The area on the northern side of the building consists of pavement and grass, and a 12-foot-by-12-foot, 6-inch-thick concrete slab beneath an AST. The AST is being investigated separately as Site AST1552. The feature of concern at Site UST1552 is a removed UST (UST 1552).

Site Description and History

UST 1552, Tank 11 in ADEC records, was a 2,000-gallon cylindrical steel tank (5.5 feet by 12 feet) used to store diesel fuel for a standby generator at Building 1552 (USAF, December 2002; USAF, February 2010). UST 1552 was the original diesel fuel storage tank for emergency power generation in Building 1552, which was constructed in 1962. The USAF Form 1431 Real Estate Property Record - Systems indicated UST 1552 was a 1,000-gallon tank (USAF, 1972; included in the supporting documentation). In 1996, UST 1552 was listed as a 1,600-gallon UST containing DFA (USAF, June 1996, Table 3-6). The UST was removed in 1997.

UST 1552 is described below:

Capacity:	2,000 gallons
Contents:	DFA
Construction:	Unknown
Condition:	Unknown
Use:	Emergency generator
Installation Date:	1962
Location	Northern side of Building 1552
Status:	Removed in 1997
ADEC Tank ID:	11
ADEC Status:	Permanently out of use
ADEC Closure Status:	Tank removed from ground
LUST Status:	Active

Historical aerial photographs of Site UST1552, dated 1963, 1985, and 2002, are shown on Figure A2-UST1552.

Regulatory Status

UST 1552 is regulated by ADEC according to 18 AAC 78 Underground Storage Tanks, as amended October 2006, and 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, revised October 9, 2008. Site UST1552 is an “active” site and requires a release investigation under 18 AAC 78.235.

Summary of Previous Investigations

Historical sample locations are shown on Figure A3-UST1552.

The USAF removed UST 1552 in 1997. The surface area of excavation was 187 square feet (USAF, December 2002). No records of the excavation activities or tank condition were located. No confirmation samples were collected during the excavation of the UST.

Samples were collected during follow-on investigations in 1999 and in 2001.

Sampling (1999)

In 1999, three subsurface soil samples (and two duplicate samples) were collected at Site UST1552 and analyzed for DRO (RSE, August 1999). DRO was not detected at concentrations exceeding the ADEC Method 1 soil cleanup level of 200 mg/kg (RSE, August 1999, p. 11). The maximum detected concentration of DRO was 34 mg/kg. Figures showing sample locations (RSE, August 1999) and a table providing a summary of the analytical results (USAF, December 2002) are included in the supporting documentation.

Soil boring logs from the 1999 investigation revealed approximately 9.5 feet of gravelly sand backfill overlying native fine to coarse sandy gravel with a light to moderate petroleum odor (RSE, August 1999).

ADEC recommended additional investigation to test for GRO and BTEX, and further characterization of the extent of contamination at UST 1552 and its associated piping (ADEC, January 31, 2000; provided in supporting documentation).

Follow-on Investigation (2001)

In 2001, two soil borings (SB01 and SB02) were installed at the western and eastern ends of the former UST location. One soil sample was collected from each boring at depths of 10 to 11 feet. In addition, samples from various depth intervals were field-screened for evidence of contamination using a PID and Hanby test kit. The soil-boring samples were analyzed for DRO (Method AK102), GRO (Method AK101), RRO (Method AK103), and BTEX constituents (EPA Method 8021B). Soil Sample SB02 was also analyzed for PAHs (EPA Method 8270C).

Five hand-auger borings were installed along the inferred location of a former pipe that connected the western side of the UST with Building 1552. The samples were field-screened for evidence of contamination using a PID and Hanby test kit. One hand-auger soil sample, collected at a depth of 3 to 3.5 feet bgs at the location where the pipeline entered the building, was analyzed for DRO, GRO, RRO, VOCs, and metals (EPA Methods 6010B/6020).

Analytical results are presented in Tables A-1 through A-5 of the investigation report (provided in the supporting documentation) (USAF, December 2002). GRO was not detected (Table A-4). DRO concentrations ranged from 7 mg/kg to 420 mg/kg (Table A-4). Concentrations of DRO exceeded the ADEC soil cleanup criteria (250 mg/kg) in only one location (420 mg/kg at Soil Sample SB02 at 10 to 11 feet bgs). RRO concentrations ranged from non-detect to 100 mg/kg (Table A-4). VOCs, BTEX, and PAHs were not detected (Tables A-1, A-2 and A-3, respectively). With the exception of DRO at one location, concentrations of analytes in soil were below ADEC Method 2 soil cleanup levels. UST 1552 was recommended for No Further Action (USAF, December 2002).

Sampling (2007)

One location was sampled for soil gas and groundwater in 2007. Groundwater was analyzed using EPA Methods 8020 and 8260 and results were all non-detects with the exception of chloromethane (0.307 µg/L). This concentration is below the ADEC cleanup level for chloromethane in groundwater (66 µg/L) (USAF, December 2008).

October 2009 Site Visit Observations

An inspection of Site UST1552 was conducted in October 2009. The site was observed to consist of pavement and patches of grass. Figure A4-UST1552 shows Site UST1552 in October 2009.

Target Analytes

DRO is the only constituent detected at a concentration exceeding the ADEC Method 2 cleanup levels.

Potential Exposure Pathways and Receptors

Media at the site have not been significantly impacted. With the exception of DRO detected in one soil sample collected at a depth of 10 to 11 feet bgs, concentrations of analytes are below the ADEC Method 2 cleanup levels. Therefore, potential risk to human health from exposure to soil at the site is not significant.

Building 1552 is located adjacent to the airfield and is surrounded by pavement or gravel and the area provides no viable habitat. There are no potential ecological exposure pathways at the site.

Conclusions

UST 1552 was installed north of Building 1552 in 1962 to provide fuel to the emergency generator for the building. The UST was removed in 1997. Soil samples were collected at both ends of the former UST and along the former associated pipeline locations. Samples were analyzed for GRO, DRO, RRO, BTEX, VOCs, PAHs, and metals. DRO is the only analyte detected at a concentration slightly exceeding the ADEC Method 2 soil cleanup level (250 mg/kg) (420 mg/kg in one sample). No other analytes were detected at concentrations exceeding the ADEC Method 2 soil cleanup levels.

Recommendation: No Further Action

Based on the limited extent of DRO contamination at the location of the former UST, Site UST1552 is recommended for No Further Action and closure under 18 AAC 78.

References

- Alaska Department of Environmental Conservation (ADEC). January 31, 2000. Letter from ADEC to USAF, 611 CES/CEVC, Regarding ADEC/STP review of the August 1999, UST Sampling and Closure Report, Galena AS, Galena, Alaska. Facility ID 640, tanks AFIDs 1552 (ADEC # 11), AFID 1572 (ADEC # 12), AFID 1837 (ADEC # 21), AFID 1854 (ADEC # 22), and AFID 2541 (ADEC # 28).
- Restoration Science & Engineering (RSE). August 1999. *UST Sampling and Closure Report, Galena AS, Alaska, UST Nos 1552, 1572, 1837, 1854, 2541.*
- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska.*
- U.S. Air Force (USAF). December 2008. Technical Memorandum on Sampling Conducted in 2007 and 2008.
- U.S. Air Force (USAF). December 2002. *Follow-On Investigations at Former UST Sites.*
- U.S. Air Force (USAF). June 1996. *Final Installation-Wide Environmental Baseline Survey, Galena Alaska. 611th Civil Engineer Squadron, Elmendorf AFB, Alaska.*
- U.S. Air Force (USAF). 1972. AF Form 1431, Real Property Accountable Record - Systems, Facility No 1552.

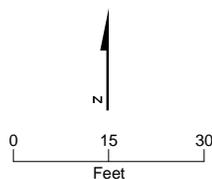
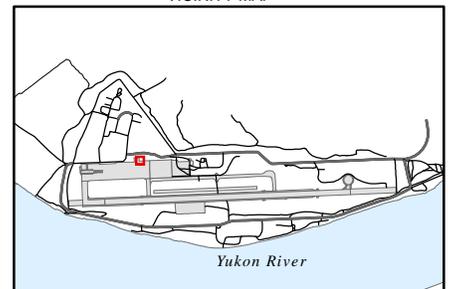


VICINITY MAP

LEGEND

- UST1552
- Adjacent Site
- Approximate Location of Former Feature
- Abandoned Fuel Line
- Main Fuel Line

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST1552
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



LEGEND

 UST1552

Notes:

1. Photography Dated 9-4-1963, Georeferenced.
2. Photography Dated 1985, Georeferenced.
3. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

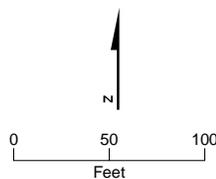
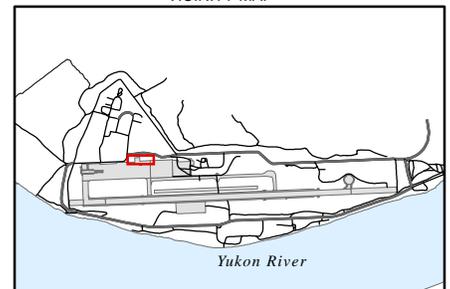


FIGURE A2-UST1552
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



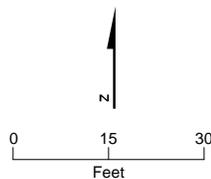
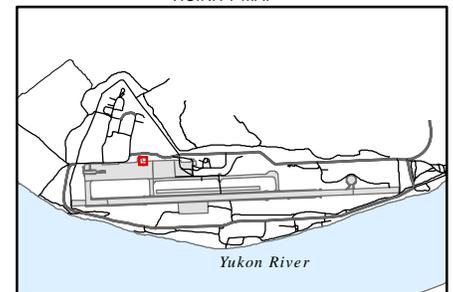
VICINITY MAP

LEGEND

- UST1552
- Adjacent Site
- Structure
- Airfield or Road
- Approximate Location of Former Feature
- Fence
- Abandoned Fuel Line
- Main Fuel Line

Historical Sample Location

- Soil Boring
- Hydro Punch



**FIGURE A3-UST1552
Historical Sample Locations**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



FIGURE A4-UST1552
Looking East, October 2009

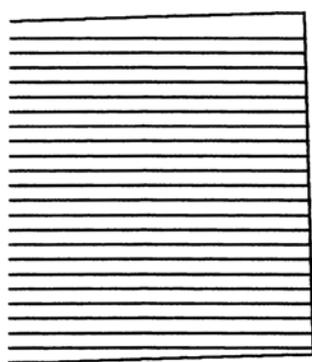
Supporting Documentation

Galena Airport HPZW INSTALLATION NAME AND NO.		May 72 DATE	1552 DRAWING NO.		2001 FACILITY NO.	51200 PLANT NO.	Op Stor Diesel RP ACCOUNT NO CONTROL NO. NOMENCLATURE		
SYSTEM						STATE		CODE	
TYPE		CAPACITY	SOURCE		Alaska		702		
MAXIMUM HYDRANT PRESSURE		TYPE OF PRODUCT		TYPE OF DISPENSING		ASSIGNMENT			
						AAC --			
						CONDITION			
						Usable		1	
MAINS						OCCUPANCY			
TYPE		DIAMETER (Inches)		PRESSURE (Lbs)		USAF			
						AIR FORCE INTEREST			
						Owned			
						UNIT OF MEASURE			
						Ga			
ELECTRIC LINES						QUANTITY			
PRIMARY			SECONDARY			Ea			
CURRENT	VOLTAGE		CURRENT	VOLTAGE		CATEGORY			
								X 124-134	
ELECTRIC SERVICE LINES			STORAGE			REMARKS			
CURRENT	NO. OF LIGHTS		TYPE	CAPACITY		Inv. breakout			
						1,000			
SUB-STATIONS						Ga			
TYPE		CURRENT		CAPACITY		+500 gal tank diesel underground			
						approx 100-130 gal day tank inside bldg			
						100			
FIELDS		PUMPS		OUTLETS					
TYPE	SIZE (Sq yds)	NO.	CAPACITY	NO.	CAPACITY				
VOUCHER NO.	DATE	DESCRIPTION			DATE COMPLETED	MAINS AND LINES (P)		COST	
						AMOUNT	TOTAL	AMOUNT	TOTAL
	May 72	Inv. adj.				1632	1632	1915 00	1915 00
880021	Jan 88	Change Inv Date 8711 Decrease GA by 532 1UG-1,000 - 1AG, 100GA DAY TANK			Nov 87		(532)		
920058771 910300	Jun 94	Site Inventory							
BALANCES FORWARDED									

Depth (BGS)	GENERALIZED SOIL LOG	SAMPLE	SP-1	SP-2	SP-3
3.0	Gravelly Sand Backfill	DEPTH (feet)	10 - 12	12 - 13	11.5 - 13
6.0		PID (ppm/v)	4.0	4.0	4.2
9.0	Sand, light brown, moist to wet, loose to med. dense, fine to med. grained, slight POL odor	DRO (mg/kg)	5.1 SP-1D=0	15	34 SP-3D=26
12.0					



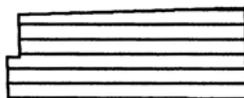
Building 1556



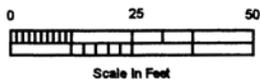
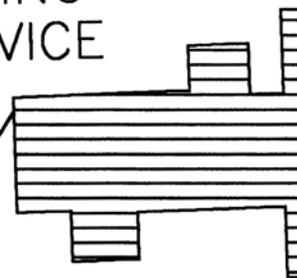
UST 1552



Building 1552



LARRY'S FLYING SERVICE



● Denotes Approximate Soil Probe Locations

FILE: Ust1552
 JOB NO.: 99-122 DATE: 8/99
 SCALE: Graphical
 REVISED: DRAWN BY: SAE

Figure 4
 Galena UST # 1552
 Soil Probe Location Map

RESTORATION
 SCIENCE & ENGINEERING
 911 West 8th Avenue, Suite 100
 Anchorage, Alaska 99501
 ph: (907) 278-1023 fax: (907) 276-8967

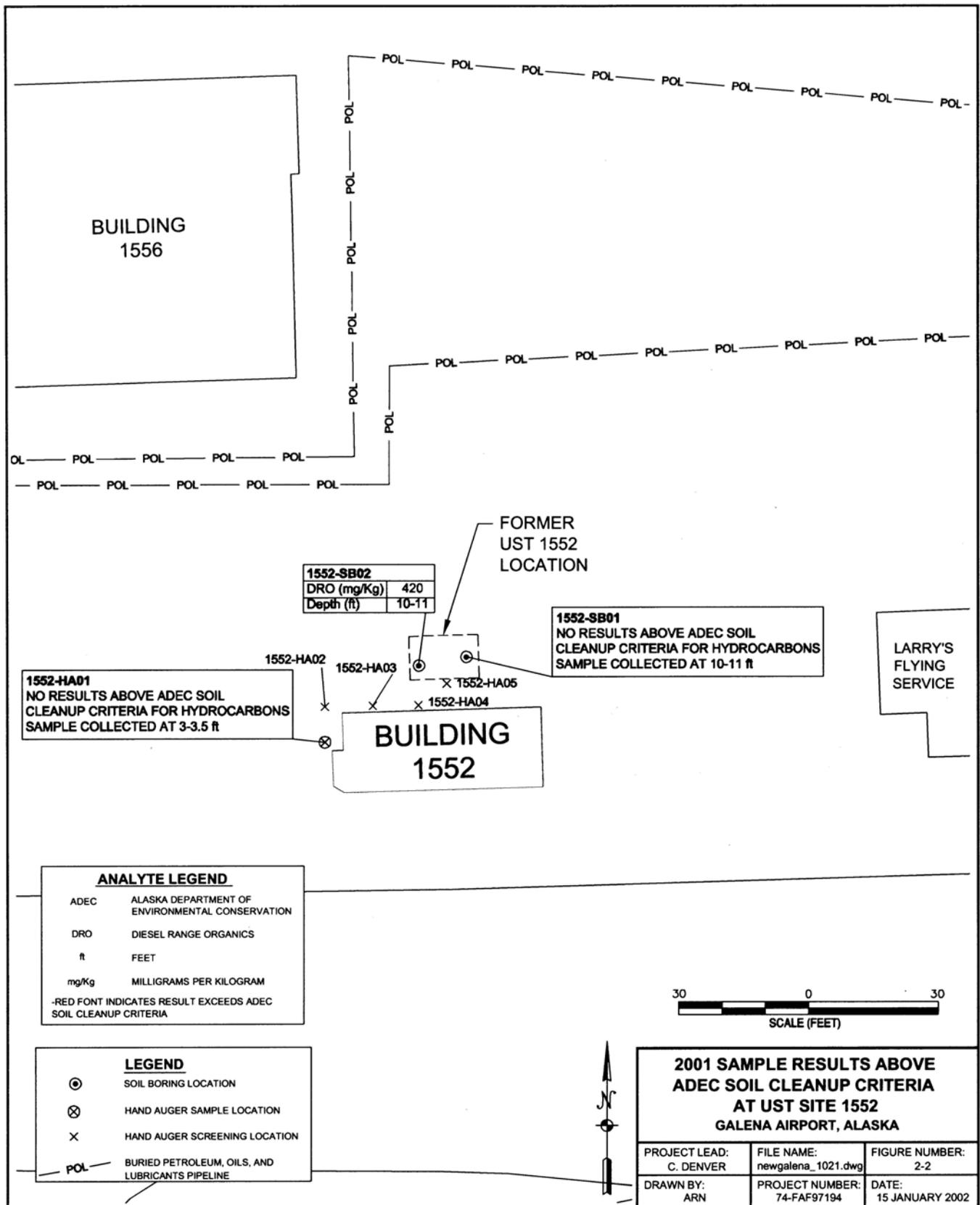


Figure 2-2. 2001 Sample Results Above ADEC Soil Cleanup Criteria At UST Site 1552, Galena Airport, Alaska.

Table 2-3

Summary of 1999 UST Analytical Results

Tank ID: USAF#/ADEC#	Cleanup Category ¹	Soil Cleanup Level for DRO (mg/kg) ¹	Sample Identification	Sample Depth (feet bgs)	DRO Concentration (mg/kg) ²
1552/11	B	200	1552-SP-1	10-12	5.1
			1552-SP-1D ³	10-12	ND [4.2]
			1552-SP-2	12-13	15
			1552-SP-3	11.5-13	34
			1552-SP-3D ³	11.5-13	26
1572/12	B	200	1572-SP-1	10-13	92
			1572-SP-1D ³	10-13	890
			1572-SP-2	9.5-11	49
			1572-SP-3	10-11.5	4.7
1837/21	B	200	1837-SP-1	9-12	7,100
			1837-SP-2	10-11	230
1854/22	B	200	1854-SP-1	9.5-11	15
			1854-SP-2	11-13	6.4
			1854-SP-3	10-12	ND [4.1]
2541/28	B	200	2541-SP-1B	9.5-10.5	10,000
			2541-SP-3A	10-11	41

Bolded results exceed ADEC Method One (Category B) Cleanup Level for DRO.

¹ Cleanup category and level derived from 18 AAC 75.341 (28 October 2000) Method One (Table A1) using score sheets from the *UST Sampling and Closure Report* (USAF, 1999).

² DRO was the only analyte sampled for at each UST site.

³ Duplicate samples.

[] - Method detection limit

ADEC - Alaska Department of Environmental Conservation

bgs - below ground surface

DRO - diesel range organics

ID - identification

mg/kg - milligram per kilogram

ND - not detected

USAF - United States Air Force

Prior to conducting the 2001 fieldwork at the five UST sites at the Galena Airport, the existing UST information was reviewed. Previous activities included removal of the five USTs during 1998 and a streamlined sampling program for site closure in 1999. During the 1999 sampling program, up to three soil borings were advanced and one soil sample was collected from each boring beneath the former UST at each site. These soil samples were submitted to an off-site laboratory for analysis of DRO following Alaska State Method AK102. Analytical results from the 1999 investigation were then compared to the ADEC Method One (Category B) Cleanup Criteria for DRO of 200 mg/kg. These activities were documented in the *1999 UST Sampling and Closure Report* (USAF, 1999).

Following the review of the *1999 UST Sampling and Closure Report* (USAF, 1999), ADEC requested that the USAF re-assess all five of the UST sites to determine the extent of contamination in the excavations and along the piping associated with each former UST. Tasks requested by ADEC included:

- Verifying the type(s) of product(s) previously stored in each UST;
- Collecting confirmation samples according to UST and Contaminated Sites regulations and procedures; analyzing samples for GRO, DRO, BTEX and other appropriate analytes (i.e., metals, VOCs and SVOCs) typically associated with fuel compounds and waste oil; and

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Storage Tank Program
Field Operations

555 Cordova Street
Anchorage, AK 99501
PHONE: (907) 269-7504
FAX: (907) 269-7507
<http://www.state.us.ak>

January 31, 2000

RECEIVED

Mr. Craig Valentine
United States Air Force
611 CES/CEVC
6900 9th Street, Suite 360
Elmendorf AFB, AK 99506-2270

FEB 01 2000

**CONTAMINATED
SITES
FAIRBANKS**

Re: ADEC/STP review of the August 1999, UST Sampling and Closure Report, Galena AS, Galena, Alaska. Facility ID 640, tanks AFIDs 1552 (ADEC # 11), AFID 1572 (ADEC # 12), AFID 1837 (ADEC # 21), AFID 1854 (ADEC # 22), and AFID 2541 (ADEC # 28).

Dear Mr. Valentine:

On September 7, 1999, The Alaska Department of Environmental Conservation, Storage Tank Program (ADEC) received a UST Sampling and Closure Report for five underground storage tanks (USTs) located at the Galena Air Station, Galena, Alaska. The ADEC has completed its review of the document and has the following comments:

General Comments:

- **Inadequate sampling analysis:** Because the site characterizations were conducted after the implementation of the January 22, 1999, Underground Storage Tanks (UST) and Contaminated Sites regulations, gasoline range organics (GRO), and Benzene, Toluene, Ethylbenzene and Xylene (BTEX) sampling is required, in addition to diesel range organics (DRO) sampling, if a UST contained arctic grade diesel. The site characterization reports only reported DRO sampling results. Please refer to page 49 of the UST Procedure Manual to determine the proper sampling and laboratory analysis requirements for soil and groundwater.
- **No piping assessments:** Piping associated with the former USTs was not assessed for contamination as part of the UST site characterization as required by 18 AAC 78.090(2)(B)(v); "at least one (confirmation) sample must be taken at points along the piping trench where contamination is most likely to be present".
- **PAH sampling:** It appears the Air Force has chosen to close the former UST sites using the ADEC Method 1 cleanup standards from 18 AAC 75.341, Table A1. If after reviewing the new regulations, the Air Force chooses to conduct cleanup and closure using another ADEC cleanup method, the ADEC will require the Air Force to collect PAH confirmation samples.

Specific Comments:

- **UST AFID 1552 (ADEC # 11)**, a 1,000-gallon diesel fuel tank, and **UST 1854 (ADEC# 22)**, a 2,000-gallon diesel UST: Because of the lack of appropriate analytical sampling, the ADEC is requesting the Air Force to re-assess the two former UST systems. The re-assessment shall include an investigation of the piping areas associated with the former USTs, and the collection and analysis of BTEX and GRO confirmation samples. If the Air Force can demonstrate, to ADEC's satisfaction, that the only product stored in the UST was non-arctic grade diesel ADEC would waive the GRO sampling requirement. If the Air Force chooses to do soil borings, the ADEC is requesting that the soil borings be sufficient in number to adequately assess the former UST excavation and piping run. Soil borings should be field screened every two feet and confirmation samples collected from the areas exhibiting a positive field screening result. If the Air Force chooses to re-excavate the former UST excavation, soil is required to be stockpiled in accordance with 18 AAC 78.274.
- **UST 1572 (ADEC # 12)**, a 3000-gallon diesel fuel tank. Because of the level of contamination found during the site characterization process, the ADEC is requesting the Air Force to conduct a release investigation of the former UST excavation and piping run to determine the full extent of the contamination found. The release investigation shall include an investigation of the former piping run and the former UST excavation. The Air Force is requested to collect confirmation samples for BTEX, GRO and DRO. If the Air Force can demonstrate, to the ADEC's satisfaction, that the only product stored in the UST was non-arctic grade diesel the ADEC would waive the GRO sampling requirement. If the Air Force chooses to do soil borings, the ADEC is requesting the soil be field screened every two feet and one confirmation sample collected from the areas exhibiting a positive field screening result. If the Air Force anticipates conducting cleanup of any contamination found using a cleanup method other than method 1, the ADEC is requesting the Air Force collect confirmation samples for PAH in addition to DRO, GRO and BTEX. Pending the results of the additional requested sampling this site could be closed based on new data and the data presented in this report.
- **UST 1837 (ADEC# 21)**, a 500-gallon gasoline/used oil UST. Because of the level of contamination found during the site characterization process, the ADEC is requesting the Air Force to conduct a release investigation of the former UST excavation and piping run to determine the full extent of the contamination found. If soil is excavated and stockpiled it must be done in compliance with 18 AAC 78.274. A review of the ADEC's UST database found the UST was registered as containing both gasoline and used oil. The laboratory analysis performed as part of the site characterization was only for diesel. Please verify the product stored in the former UST. If a review finds the tank held either gasoline or used oil the ADEC is requesting the former UST excavation be resampled and analyzed for the appropriate analysis. A review of the field screening and confirmation sampling data for sample SP-2 found an unusually high variance between the field screening results and the confirmation sample results. The wide variance may be a result of gasoline contamination.
- **UST 2541 (ADEC# 28)**, a 1,500-gallon UST. (The ADEC's UST database indicates it is a 2,000-gallon UST, containing multiple grades of petroleum, JP4, gasoline & diesel). Because of the level of contamination found during the site characterization process, the

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ADEC is requesting the Air Force to conduct a release investigation of the former UST excavation and piping run to determine the full extent of the contamination found. If soil is excavated and stockpiled it must be done in compliance with 18 AAC 78.274. A review of the field screening and confirmation sampling data for sample SP-3A found an unusually high variance between the field screening results and the confirmation sample results. The wide variance may be a result of gasoline or JP4 contamination rather than diesel contamination.

If you have question regarding the ADEC/STP comments, please call me at 269-7538.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy Stevens", is written over a horizontal line that extends to the left and right.

Timothy Stevens
Environmental Specialist

TSS D:611th\Galena AS, 5 tank closure SA report

cc: Teresa Boston, ADEC/STP, Anchorage
~~Gretchen Pikul~~, ADEC/SPAR, Anchorage
PATRICE BUCK,

TABLE A-1

Volatile Organic Compound Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Analyte	Field Sample ID			G01-1552-HA01-1001			G01-1572-HA01-1001			G01-1572-SB01-1001		
	Method	Units	MCL	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag
1,1,1,2-Tetrachloroethane	8260B	mg/Kg		ND	0.012		ND	0.012		ND	0.012	
1,1,1-Trichloroethane (TCA)	8260B	mg/Kg	1.0	ND	0.012		ND	0.011		ND	0.012	
1,1,2,2-Tetrachloroethane	8260B	mg/Kg	0.017	ND	0.015		ND	0.015		ND	0.015	
1,1,2-Trichloroethane	8260B	mg/Kg	0.017	ND	0.010		ND	0.010		ND	0.011	
1,1-Dichloroethane (1,1-DCA)	8260B	mg/Kg	12	ND	0.009		ND	0.009		ND	0.010	
1,1-Dichloroethene (1,1-DCE)	8260B	mg/Kg	0.03	ND	0.012		ND	0.012		ND	0.013	
1,1-Dichloropropene	8260B	mg/Kg		ND	0.013		ND	0.013		ND	0.014	
1,2,3-Trichlorobenzene	8260B	mg/Kg		ND	0.005		ND	0.004		ND	0.005	
1,2,3-Trichloropropane	8260B	mg/Kg		ND	0.022		ND	0.022		ND	0.023	
1,2,4-Trichlorobenzene	8260B	mg/Kg	2	ND	0.021		ND	0.021		ND	0.022	
1,2,4-Trimethylbenzene	8260B	mg/Kg		ND	0.015		ND	0.014		0.027	0.015	F
1,2-Dibromo-3-chloropropane (DBCP)	8260B	mg/Kg		ND	0.11		ND	0.11		ND	0.11	
1,2-Dibromoethane (EDB)	8260B	mg/Kg		ND	0.008		ND	0.007		ND	0.008	
1,2-Dichlorobenzene	8260B	mg/Kg	7	ND	0.009		ND	0.009		ND	0.009	
1,2-Dichloroethane (EDC)	8260B	mg/Kg	0.015	ND	0.012		ND	0.012		ND	0.012	
1,2-Dichloropropane	8260B	mg/Kg	0.017	ND	0.013		ND	0.013		ND	0.013	
1,3,5-Trimethylbenzene	8260B	mg/Kg		ND	0.013		ND	0.013		ND	0.013	
1,3-Dichlorobenzene	8260B	mg/Kg		ND	0.011		ND	0.011		ND	0.011	
1,3-Dichloropropane	8260B	mg/Kg		ND	0.008		ND	0.008		ND	0.008	
1,4-Dichlorobenzene	8260B	mg/Kg	0.8	ND	0.009		ND	0.009		ND	0.009	
1-Chlorohexane	8260B	mg/Kg		ND	0.013		ND	0.013		ND	0.013	
2,2-Dichloropropane	8260B	mg/Kg		ND	0.018		ND	0.018		ND	0.019	
2-Chlorotoluene	8260B	mg/Kg		ND	0.012		ND	0.012		ND	0.012	
4-Chlorotoluene	8260B	mg/Kg		ND	0.009		ND	0.009		ND	0.010	
4-Isopropyltoluene	8260B	mg/Kg		ND	0.013		ND	0.013		ND	0.014	
Benzene	8260B	mg/Kg	0.02	ND	0.011		ND	0.011		ND	0.011	
Bromobenzene	8260B	mg/Kg		ND	0.011		ND	0.010		ND	0.011	
Bromochloromethane	8260B	mg/Kg		ND	0.014		ND	0.013		ND	0.014	
Bromodichloromethane	8260B	mg/Kg		ND	0.009		ND	0.009		ND	0.009	
Bromoform	8260B	mg/Kg	0.38	ND	0.029		ND	0.029		ND	0.030	
Bromomethane	8260B	mg/Kg		ND	0.023		ND	0.022		ND	0.023	
Carbon Tetrachloride	8260B	mg/Kg	0.03	ND	0.013		ND	0.013		ND	0.013	
Chlorobenzene	8260B	mg/Kg	0.6	ND	0.010		ND	0.010		ND	0.010	
Chloroethane	8260B	mg/Kg		ND	0.018		ND	0.018		ND	0.019	
Chloroform	8260B	mg/Kg	0.34	ND	0.010		ND	0.010		ND	0.010	
Chloromethane	8260B	mg/Kg		ND	0.014		ND	0.014		ND	0.015	
cis-1,2-Dichloroethene	8260B	mg/Kg	0.2	ND	0.012		ND	0.012		ND	0.013	
cis-1,3-Dichloropropene	8260B	mg/Kg	0.02	ND	0.008		ND	0.008		ND	0.009	
Dibromochloromethane	8260B	mg/Kg	0.2	ND	0.008		ND	0.008		ND	0.009	
Dibromomethane	8260B	mg/Kg		ND	0.010		ND	0.010		ND	0.011	
Dichlorodifluoromethane (CFC 12)	8260B	mg/Kg		ND	0.017	R	ND	0.017	R	ND	0.018	R
Dichloromethane (Methylene Chloride)	8260B	mg/Kg	0.015	ND	0.020		ND	0.020		ND	0.021	
Ethylbenzene	8260B	mg/Kg	5.5	ND	0.011		ND	0.010		ND	0.011	
Hexachlorobutadiene	8260B	mg/Kg		ND	0.039		ND	0.039		ND	0.041	
Isopropylbenzene	8260B	mg/Kg		ND	0.007		ND	0.007		ND	0.007	
m,p-Xylenes	8260B	mg/Kg	78	ND	0.020		ND	0.019		ND	0.020	
Naphthalene	8260B	mg/Kg	43	ND	0.007		ND	0.007		0.0098	0.008	F
n-Butylbenzene	8260B	mg/Kg		ND	0.023		ND	0.023		ND	0.024	
n-Propylbenzene	8260B	mg/Kg		ND	0.010		ND	0.010		ND	0.011	
o-Xylene	8260B	mg/Kg	*	ND	0.008		ND	0.008		0.0087	0.009	F
sec-Butylbenzene	8260B	mg/Kg		ND	0.013		ND	0.013		ND	0.014	
Styrene	8260B	mg/Kg		ND	0.010		ND	0.010		ND	0.010	
tert-Butylbenzene	8260B	mg/Kg		ND	0.013		ND	0.013		ND	0.013	
Tetrachloroethene (PCE)	8260B	mg/Kg	0.03	ND	0.011		ND	0.011		ND	0.012	
Toluene	8260B	mg/Kg	5.4	ND	0.010		ND	0.010		0.013	0.011	F
trans-1,2-Dichloroethene	8260B	mg/Kg	0.4	ND	0.015		ND	0.015		ND	0.015	
trans-1,3-Dichloropropene	8260B	mg/Kg		ND	0.009		ND	0.009		ND	0.009	
Trichloroethene (TCE)	8260B	mg/Kg	0.027	ND	0.012		ND	0.012		ND	0.013	
Trichlorofluoromethane (CFC 11)	8260B	mg/Kg		ND	0.014		ND	0.013		ND	0.014	
Vinyl Chloride	8260B	mg/Kg	0.009	ND	0.022		ND	0.022		ND	0.023	

TABLE A-2

Volatile Organic Compound Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Client Sample ID Collection Date Matrix				G01-1552-SB01-1001 6/15/2001 Soil			G01-1552-SB02-1001 6/15/2001 Soil			G01-1854-SB01-1001 6/15/2001 Soil			G01-1854-SB02-1001 6/15/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag									
Benzene	8021B	mg/Kg	0.02	ND	0.013		ND	0.014		ND	0.013		ND	0.013	
Ethylbenzene	8021B	mg/Kg	5.5	ND	0.012		ND	0.012		ND	0.011		ND	0.011	
m,p-Xylenes	8021B	mg/Kg	78	ND	0.021		ND	0.022		ND	0.020		ND	0.020	
o-Xylene	8021B	mg/Kg	*	ND	0.014		ND	0.015		ND	0.014		ND	0.014	
Toluene	8021B	mg/Kg	5.4	ND	0.009		ND	0.010		ND	0.009		0.011	0.009	F

TABLE A-3

Semi-volatile Organic Compound Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Client Sample ID Collection Date Matrix				G01-1552-SB02-1001 6/15/2001 Soil			G01-1572-SB01-1002 6/22/2001 Soil			G01-1572-SB02-1002 6/22/2001 Soil			G01-1572-SB03-1002 6/26/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag									
Acenaphthene	8270C	mg/Kg		ND	0.031		ND	0.026		ND	0.029		ND	0.031	
Acenaphthylene	8270C	mg/Kg		ND	0.030		ND	0.025		ND	0.028		ND	0.030	
Anthracene	8270C	mg/Kg	1.6	ND	0.018		ND	0.019		ND	0.017		ND	0.018	
Benzo(a)anthracene	8270C	mg/Kg	6	ND	0.028		ND	0.024		ND	0.026		ND	0.028	
Benzo(a)pyrene	8270C	mg/Kg	3	ND	0.025		ND	0.021		ND	0.023		ND	0.024	
Benzo(b)fluoranthene	8270C	mg/Kg	20	ND	0.036		ND	0.030		ND	0.034		ND	0.036	
Benzo(g,h,i)perylene	8270C	mg/Kg		ND	0.028		ND	0.024		ND	0.027		ND	0.028	
Benzo(k)fluoranthene	8270C	mg/Kg	200	ND	0.038		ND	0.032		ND	0.036		ND	0.038	
Chrysene	8270C	mg/Kg	620	ND	0.032		ND	0.027		ND	0.030		ND	0.031	
Dibenz(a,h)anthracene	8270C	mg/Kg	88	ND	0.045		ND	0.037		ND	0.042		ND	0.044	
Fluoranthene	8270C	mg/Kg	2,100	ND	0.031		ND	0.015		ND	0.029		ND	0.031	
Fluorene	8270C	mg/Kg	270	ND	0.032		ND	0.026		0.15	0.030	F	ND	0.032	
Indeno(1,2,3-cd)pyrene	8270C	mg/Kg	54	ND	0.037		ND	0.031		ND	0.034		ND	0.036	
Naphthalene	8270C	mg/Kg	43	ND	0.034		0.05	0.029		1.2	0.032		0.48	0.034	
Phenanthrene	8270C	mg/Kg		ND	0.022		ND	0.027		0.03	0.021	F	ND	0.022	
Pyrene	8270C	mg/Kg	1,500	ND	0.062		ND	0.052		ND	0.058		ND	0.062	

Client Sample ID Collection Date Matrix				G01-1572-SB05-1002 6/26/2001 Soil			G01-1837-SB02-1001 6/16/2001 Soil			G01-1837-SB03-1002 6/18/2001 Soil			G01-1837-SB04-1002 6/18/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag									
Acenaphthene	8270C	mg/Kg		ND	0.30		0.83	0.32	F	ND	0.032		ND	0.033	
Acenaphthylene	8270C	mg/Kg		ND	0.29		ND	0.31		ND	0.031		ND	0.032	
Anthracene	8270C	mg/Kg	1.6	0.03	0.017	F	0.06	0.019	F	ND	0.019		ND	0.019	
Benzo(a)anthracene	8270C	mg/Kg	6	0.03	0.027	F	ND	0.029		ND	0.029		ND	0.029	
Benzo(a)pyrene	8270C	mg/Kg	3	ND	0.024		ND	0.026		ND	0.025		ND	0.026	
Benzo(b)fluoranthene	8270C	mg/Kg	20	ND	0.035		ND	0.037		ND	0.037		ND	0.038	
Benzo(g,h,i)perylene	8270C	mg/Kg		ND	0.027		ND	0.030		0.04	0.029	F	ND	0.030	
Benzo(k)fluoranthene	8270C	mg/Kg	200	ND	0.037		ND	0.040		ND	0.040		ND	0.040	
Chrysene	8270C	mg/Kg	620	0.03	0.031	F	ND	0.033		ND	0.033		ND	0.033	
Dibenz(a,h)anthracene	8270C	mg/Kg	88	ND	0.043		ND	0.047		ND	0.046		ND	0.047	
Fluoranthene	8270C	mg/Kg	2,100	0.12	0.030	F	0.08	0.033	F	ND	0.032		ND	0.033	
Fluorene	8270C	mg/Kg	270	0.51	0.31	F	3.6	0.33	F	ND	0.033		ND	0.034	
Indeno(1,2,3-cd)pyrene	8270C	mg/Kg	54	ND	0.035		ND	0.038		ND	0.038		ND	0.039	
Naphthalene	8270C	mg/Kg	43	12	0.33		52	0.36		ND	0.035		ND	0.036	
Phenanthrene	8270C	mg/Kg		0.13	0.021	F	0.67	0.023		ND	0.023		ND	0.023	
Pyrene	8270C	mg/Kg	1,500	0.09	0.060	F	0.08	0.065	F	ND	0.064		ND	0.066	

TABLE A-4

Petroleum Hydrocarbon Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Field Sample ID Collection Date Matrix				G01-1552-HA01-1001 07/02/01 Soil			G01-1552-SB01-1001 06/15/01 Soil			G01-1552-SB02-1001 06/15/01 Soil			G01-1572-HA01-1001 07/02/01 Soil			G01-1572-SB01-1001 06/22/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	ND	3.1		ND	3.7		ND	3.9		ND	3.1		ND	3.2	
Diesel Range Organics (DRO)	AK102	mg/Kg	250	53	1.5		7	1.8	F	420	1.9		16	1.5		8	1.6	F
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	100	9.7	F	ND	12		14	13	F	ND	9.6		ND	11	

Field Sample ID Collection Date Matrix				G01-1572-SB01-1002 06/22/01 Soil			G01-1572-SB02-1001 06/22/01 Soil			G01-1572-SB02-1002 06/22/01 Soil			G01-1572-SB03-1001 06/26/01 Soil			G01-1572-SB03-1002 06/26/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	ND	3.2		ND	3.2		53	3.6	M	190	4.0		21	3.8	
Diesel Range Organics (DRO)	AK102	mg/Kg	250	3	1.6	F	9	1.6	F	2,100	1.8		1,300	1.9		350	1.9	
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	ND	11		21	11	F	ND	12		38	13	F	14	12	F

Field Sample ID Collection Date Matrix				G01-1572-SB04-1001 06/26/01 Soil			G01-1572-SB04-1002 06/26/01 Soil			G01-1572-SB05-1001 06/26/01 Soil			G01-1572-SB05-1002 06/26/01 Soil			G01-1837-HA01-1001 07/02/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	130	4.0	M	150	3.8	M	140	4.0		810	14		ND	3.2	
Diesel Range Organics (DRO)	AK102	mg/Kg	250	1,800	1.9		3,100	1.9		2,000	2.0		3,100	1.8		8	1.6	F
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	32	13	F	ND	12		34	13	F	38	12	F	70	9.9	F

Field Sample ID Collection Date Matrix				G01-1837-SB01-1001 06/16/01 Soil			G01-1837-SB01-1002 06/16/01 Soil			G01-1837-SB02-1001 06/16/01 Soil			G01-1837-SB02-1002 06/16/01 Soil			G01-1837-SB03-1001 06/18/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	820	17		ND	3.8		3,300	22		2,700	18		5	3.8	
Diesel Range Organics (DRO)	AK102	mg/Kg	250	39	1.9		6	1.9	F	16,000	20		7,100	1.9		42	1.9	
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	38	13	F	ND	12		74	13	F	78	12	F	250	12	

Field Sample ID Collection Date Matrix				G01-1837-SB03-1002 06/18/01 Soil			G01-1837-SB04-1001 06/18/01 Soil			G01-1837-SB04-1002 06/18/01 Soil			G01-1837-SB05-1001 06/18/01 Soil			G01-1837-SB05-1002 06/18/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	ND	4.0		ND	3.1		ND	4.1		ND	4.1	R	ND	3.8	R
Diesel Range Organics (DRO)	AK102	mg/Kg	250	10	1.9	F	130	1.5		12	2.0	F	12	2.0	F	13	1.9	F
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	25	13	F	77	9.8	F	64	13	F	130	13	F	26	12	F

TABLE A-5

Metal Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Client Sample ID Collection Date Matrix				G01-1552-HA01-1001 7/2/2001 Soil			G01-1572-HA01-1001 7/2/2001 Soil			G01-1572-SB01-1001 6/22/2001 Soil			G01-1572-SB01-1002 6/22/2001 Soil			G01-1572-SB02-1001 6/22/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag
Barium, Total	6010B	mg/Kg	1,100	116	0.1		66.6	0.1		79.5	0.1		57.2	0.1		64.6	0.1	
Cadmium, Total	6010B	mg/Kg	5	1.2	0.5		0.7	0.5	F	ND	0.5		ND	0.5		ND	0.5	
Chromium, Total	6010B	mg/Kg	26	21	0.7		13	0.7	F	16	0.8	F	10	0.8	F	11	0.8	F
Lead, Total	6010B	mg/Kg		68	4		10	4	F	ND	4		ND	4		5	4	F
Nickel, Total	6010B	mg/Kg	87	19	3.1		17	3.1		21	3.2		13	3.2		15	3.2	
Vanadium, Total	6010B	mg/Kg	3,400	26	1.0		22	1.0		20	0.5		12	0.5		16	0.5	
Arsenic, Total	6020	mg/Kg	2	14.1	0.2		2.9	0.2		3.4	0.1		4.3	0.1		4.2	0.1	

Client Sample ID Collection Date Matrix				G01-1572-SB02-1002 6/22/2001 Soil			G01-1572-SB03-1001 6/26/2001 Soil			G01-1572-SB03-1002 6/26/2001 Soil			G01-1572-SB04-1001 6/26/2001 Soil			G01-1572-SB04-1002 6/26/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Barium, Total	6010B	mg/Kg	1,100	76.9	0.1		158	0.1		104	0.1		217	0.1		77.9	0.1	
Cadmium, Total	6010B	mg/Kg	5	ND	0.6		0.6	0.6	F	ND	0.5		0.7	0.6	F	ND	0.5	
Chromium, Total	6010B	mg/Kg	26	9	0.8	F	19	0.8	F	13	0.7	F	22	0.8	F	11	0.7	F
Lead, Total	6010B	mg/Kg		ND	5		8	4	F	7	4	F	14	4		5	4	F
Nickel, Total	6010B	mg/Kg	87	13	3.6		25	3.3		19	3.2		30	3.3		15	3.2	
Vanadium, Total	6010B	mg/Kg	3,400	15	0.6		32	0.6		23	0.5		33	0.6		18	0.5	
Arsenic, Total	6020	mg/Kg	2	3.3	0.1		5.7	0.1		4.3	0.1		7.7	0.1		3.5	0.1	

Client Sample ID Collection Date Matrix				G01-1572-SB05-1001 6/26/2001 Soil			G01-1572-SB05-1002 6/26/2001 Soil			G01-1837-HA01-1001 7/2/2001 Soil			G01-1837-SB01-1001 6/16/2001 Soil			G01-1837-SB01-1002 6/16/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag
Barium, Total	6010B	mg/Kg	1,100	194	0.1		160	0.1		74.3	0.1		158	0.3		80.5	0.3	
Cadmium, Total	6010B	mg/Kg	5	ND	0.6		ND	0.6		ND	0.5		1.3	0.5		ND	0.5	
Chromium, Total	6010B	mg/Kg	26	22	0.8	F	19	0.9	F	12	0.7	F	18	0.8	F	13	0.7	F
Lead, Total	6010B	mg/Kg		8	4	F	11	5	F	9	4	F	8	4	F	6	4	F
Nickel, Total	6010B	mg/Kg	87	30	3.4		26	3.7		17	3.2		25	3.3		17	3.2	
Vanadium, Total	6010B	mg/Kg	3,400	34	0.6		30	0.6		19	1.0		27	0.5		21	0.5	
Arsenic, Total	6020	mg/Kg	2	8.3	0.1		6.2	0.1		4.6	0.2		6.9	0.2		3.8	0.2	

APPENDIX A

UST1769

UST 1769 - Supply Warehouse (Site ID UST1769)

Site Location

Site UST1769 is located at the southeastern corner of Building 1769, the Supply Warehouse.

Site Characteristics

Site features are shown on Figure A1-UST1769. Site UST1769 consists of the area predominantly covered with gravel and grasses at the southeastern corner of Building 1769. The feature of concern at the site is a possible UST.

Site Description and History

Building 1769 was constructed in 1956. Based on a description of the building, UST 1769 is suspected of being located near the southeastern corner of Building 1769. AF Form 1430 Real Property Accountable Records – Buildings for Building 1769 (included in the supporting documentation) indicates that the building was heated by fuel oil (USAF, August 1960). As specified in Table 3-3 of the Final EBS report (USAF, February 2010), the UST contained diesel and was in service from 1956 (date of building construction) through 1970. It is unknown whether the tank was abandoned or removed.

UST 1769 is described below:

Capacity:	Unknown
Contents:	Diesel fuel
Construction:	Unknown
Condition:	Unknown
Use:	Unknown
Installation Date:	Approximately 1956
Location	Southeastern corner of Building 1769
Status:	Unknown

Historical aerial photographs of Site UST1769, dated 1963, 1978, and 2002 are shown on Figure A2-UST1769. Building 1769 is shown on all three photographs.

Regulatory Status

UST 1769 was not registered with EPA or ADEC and does not have a current ADEC regulatory status. While this UST may be exempt from UST closure requirements according to 18 AAC 78.005(e)(5) “tank used for storing heating oil for consumptive use on the premises where stored,” there is not enough documentation available to support a heating oil exemption. Therefore, the requirements for a closure assessment under 18 AAC 78 Underground Storage Tanks, as amended October 2006, are applicable.

Summary of Previous Investigations

No investigations involving release verification sampling have been conducted at Site UST1769. No UST removal records have been located. No geophysical investigations have been conducted.

October 2009 Site Visit Observations

An inspection of Site UST1769 was conducted in October 2009. The site was observed to be predominantly gravel and grass. Figure A3-UST1769 depicts Site UST1769 in October 2009.

Target Analytes

Because the UST stored diesel fuel, potential target analytes are GRO, DRO, BTEX, and PAHs.

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST1769, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.
- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Site UST1769 is in an area with a pavement and concrete surface, and was identified as having only marginal habitat. Terrestrial ecological exposure pathways are considered unlikely to be complete and the site will not be evaluated for ecological risk. An aquatic ecological exposure pathway is unlikely complete because the site is located over 1,000 feet from the Yukon River. If subsurface contamination is detected, this pathway should be evaluated further.

Conclusions

Historical use of UST 1769 may have resulted in spilled or leaked diesel. It is not clear whether the tank was abandoned in place or removed. No previous investigation of fuel contamination has been conducted at Site UST1769. The initial investigation should be completed in accordance with 18 AAC 78.090 and the UST Procedures Manual (ADEC, November 7, 2002).

Recommendation: Site Inspection Sampling

A geophysical investigation is recommended to determine if UST 1769 is still in place. Limited site inspection sampling is recommended to confirm the presence or absence of fuel-related contamination.

References

- Alaska Department Environmental Conservation (ADEC). November 7, 2002. *Underground Storage Tanks Procedures Manual, Guidance for Treatment of Petroleum-Contaminated Soil and Water and Standard Sampling Procedures.*
- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska.*
- U.S. Air Force (USAF). August 1960. AF Form 1430, Real Property Accountable Record – Buildings, Building 1769.

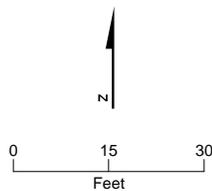
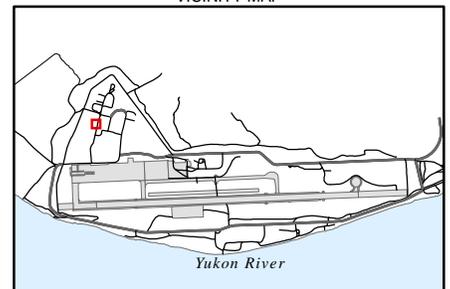


VICINITY MAP

LEGEND

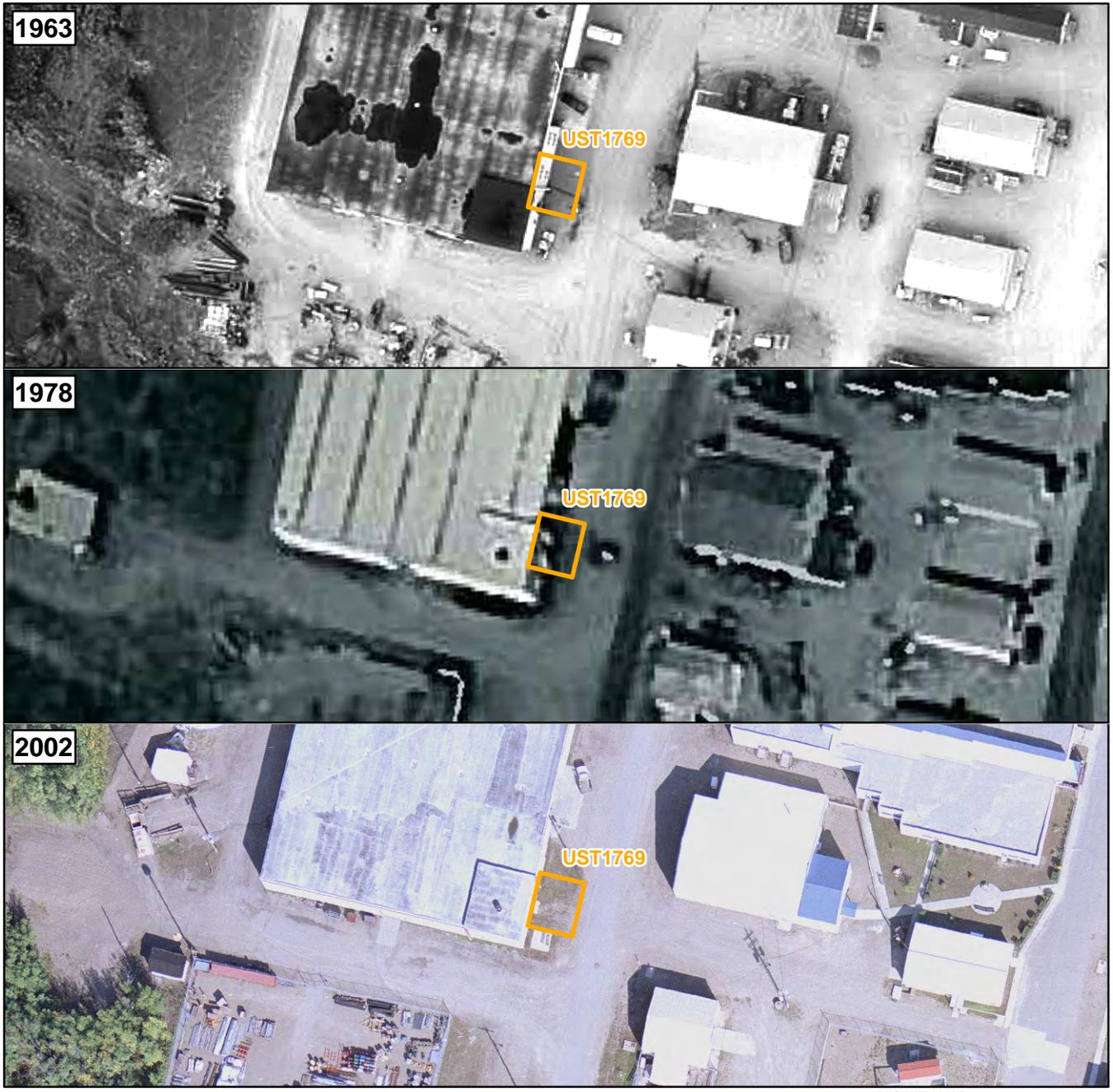
- UST1769
- Adjacent Site
- Fence
- Abandoned Wastewater Line
- Main Wastewater Line

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST1769
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



LEGEND
 UST1769

Notes:
 1. Photography Dated 9-4-1963, Georeferenced.
 2. Photography Dated 5-30-1978, Georeferenced.
 3. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

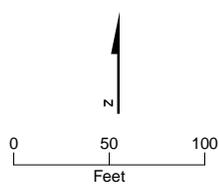
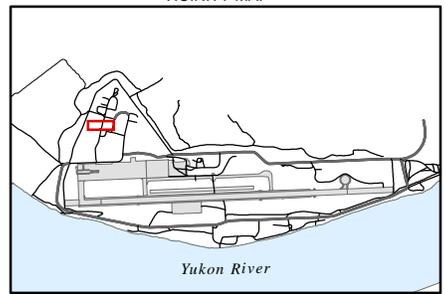


FIGURE A2-UST1769
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A3-UST1769
Looking West at Tank Location (Near Southeastern Corner of Building 1769), October 2009

Supporting Documentation

GALENA APT 2034 AUG 60 AF 33-02-81 2001 54050 1769
 INSTALLATION NAME AND NO. DATE DRAWING NO. RP ACCOUNT NO. CONTROL NO. BUILDING NO.

DIMENSIONS (Width x length)				STATE		CODE
MAIN BUILDING	OFFSETS	WINGS	BASEMENTS	ALASKA		702
166'6" x 200'	mezzanine 36'x43'			ASSIGNMENT		
MATERIALS				TYPE OF CONSTRUCTION		
FOUNDATION	FLOOR	WALL	ROOF	PERMANENT		XP
CONCRETE	CONC & WOOD	WOOD	BUILT-UP FLAT & SHED	CONDITION		3 2 P
HEATING				OCCUPANCY		
SOURCE	TYPE		FUEL	USAF		
CENTRAL	STEAM		OIL	AIR FORCE INTEREST		1
NO. OF USABLE FLOORS	FIRE PROTECTION			UNIT OF MEASURE (Other than area)		
1	NO.	TYPE		QUANTITY		
		HOSE STANDS & EXTINGUISHERS				
UTILITY CONNECTIONS		BLDG EQPT	NO.	TOTAL CAPACITY		
WATER		AIR CONDITIONING				NOMENCLATURE
3"						WHSE SUP & EQUIP BSE
SEWER						WHSE SUP & EQP, BSE
6"						CATEGORY
ELECTRIC		EVAPORATIVE COOLING				442-758
120/208						REMARKS
GAS		MECHANICAL COOLING				Ino 6744
						OPRIC
STEAM		HOT WATER FACILITIES				Concrete Driveway SLAB 26'x40'x6" in rear of Bldg.
CONDENSATE						17102
1-2 1/2"						

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	AREA UNIT		COST		TOTAL COST	
				AMOUNT	TOTAL				
D161-58	31 Jan 58	Original Building	1956	32,932	32,932	417,380	00	417,380	00
61-0044	31 Aug 60	AAC G041 Trfd frm 11th AD(D) Acct						417,380	00
63-0619	18 Oct 62	W055018-2 Concrete driveway slab				832	00	418,212	00
63-724	27 Nov 62	W054092-2 Instl Water Sampler				365	00	418,577	00
63-843	7 Jan 63	Cap Military Labor Per AFM 170-5C				58	00	418,635	00
BALANCES FORWARDED					32,932			418,635	00

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	AREA UNIT		COST	TOTAL COST	
				AMOUNT	TOTAL			
		BALANCES FORWARDED	1956		32,932			418,635 00
63-1188	29 May 63	1962 Site Inventory		402	33,334			418,635 00
65-0102	6 Jul 64	Repair & Replacement Eng 1824						418,635 00
66-0128	2 Aug 65	Inventory Adjustment		1,514	34,848			418,635 00
66-0395	27 Dec 65	Add of CF to breakout, cold stor						418,635 00
67-0550	19 May 67	AF 123, add dorm, amn space						418,635 00
68-0274	13 Dec 67	Delete "D", Item - Dorm Amn Change to Rated Man Capacity						418,635 00
69-0111	29 Nov 68	DACA85-69-C-0001 Replace steam con- densate lines & etc (EXP\$5,595.00)						418,635 00
69-6439	29 Apr 69	1358.25 DA-0001 Final Cost Adj Exp XXXXX 5						
		ACCOUNTABLE DATA SUMMA RIZED ON VOUCHER DATED 6/183 702586 CONVERTED TO BEAMS						
71-0051	22 Sep 70					1300 80		411,985 00
71-0051	22 Sep 70					1683 28		421,618 60
71-0051	30 Sep 70			(144)	34,704			421,618 60
	MAY 72	INVENTORY AMT		(720)	33,984	(12,186 00)		409,432 60
74-0490	29 JAN 74	DACA 85-71-C-0017 CHG. FROM B TO A - ITEM			34,344			411,847 90
74-0627	8 MAR 74	CHG FROM A TO B - ITEM			34,344			411,847 90
		BALANCES FORWARDED						

GALENA APT INSTALLATION NAME AND NO.		2034 HPZW	APR 67 DATE	1769 DRAWING NO.	FACILITY NO.	PLANT NO.	2001 RP ACCOUNT NO	58070 58000-10 CONTROL NO.	AUTO DETECTN SYS FIRE DETECTION SYS NOMENCLATURE		
SYSTEM										CODE	
TYPE PROTECTOWIRE 4 FIRE Bell 1 Pull Box 3 Hose RACKS		CAPACITY		SOURCE			STATE ALASKA		702		
MAXIMUM HYDRANT PRESSURE		TYPE OF PRODUCT		TYPE OF DISPENSING			ASSIGNMENT AAC				
							CONDITION USABLE		Class a 1		
MAINS							OCCUPANCY USAF				
TYPE		DIAMETER (Inches)		PRESSURE (Lbs)			AIR FORCE INTEREST OWNED		1		
							UNIT OF MEASURE		EA		
ELECTRIC LINES							QUANTITY		1		
PRIMARY			SECONDARY				CATEGORY		"X" 880-221 880-213		
CURRENT		VOLTAGE		CURRENT		VOLTAGE					
ELECTRIC SERVICE LINES			STORAGE				REMARKS				
CURRENT		NO. OF LIGHTS		TYPE		CAPACITY		Inv 6704 ENGR MG C Hand-owned (1) OPR: B 57 EA			
SUB-STATIONS											
TYPE		CURRENT			CAPACITY						
FIELDS		PUMPS			OUTLETS						
TYPE	SIZE (Sq yds)	NO.	CAPACITY		NO.	CAPACITY					
VOUCHER NO.	DATE	DESCRIPTION			DATE COMPLETED	MAINS AND LINES (P)		COST		17103	
						AMOUNT	TOTAL	AMOUNT	TOTAL		
67-0528	27 Apr 67	1967 Inventory Adj, Establish System			1956	1	1	4,234	00	4,234	00
68-0219	8 Dec 67	AFM 300-4 change to category code and primary unit of measure					34848			4,234	00 #1
70-6367	10 Rec 69	ACCOUNTABLE DATA SUMMA w/ B26187 SIZED BY VOUCHER DATED 62183 702588 CONVERTED TO BEAMS						112	77	4346	77
	MAY 72	INDICATORY ADT				(560)	34188				
BALANCES FORWARDED											

Galena Arpt INSTALLATION NAME AND NO.		HPZW	MAR 88 DATE	1769 DRAWING NO.	PLANT NO.	2001 RP ACCOUNT NO	CONTROL NO.	A/C Window NOMENCLATURE	Units
SYSTEM						STATE		CODE	
TYPE	CAPACITY	SOURCE		STATE		ASSIGNMENT		CONDITION	
MAXIMUM HYDRANT PRESSURE	TYPE OF PRODUCT	TYPE OF DISPENSING		ALASKA		AAC			
MAINS						OCCUPANCY			
TYPE	DIAMETER (Inches)	PRESSURE (Lbs)		AIR FORCE INTEREST		UNIT OF MEASURE			
ELECTRIC LINES						QUANTITY			
PRIMARY			SECONDARY			CATEGORY			
CURRENT	VOLTAGE	CURRENT	VOLTAGE	ELECTRIC SERVICE LINES		STORAGE		(X) 890-126	
CURRENT	NO. OF LIGHTS	TYPE	CAPACITY	SUB-STATIONS		REMARKS		in computer room	
TYPE	CURRENT	CAPACITY		FIELDS		PUMPS		OUTLETS	
TYPE	SIZE (Sq yds)	NO.	CAPACITY	NO.	CAPACITY	SF		TN	
VOUCHER NO.	DATE	DESCRIPTION			DATE COMPLETED	MAINS AND LINES (Ft)		COST	
BB-0021	28 JAN 88	Galena Facilities Inventory				AMOUNT	TOTAL	AMOUNT	TOTAL
920058/71	Jun 91	Site Inventory							
910300									
BALANCES FORWARDED									

VOUCHER NO.	DATE	DESCRIPTION	DATE COMPLETED	MAINS AND LINES (Ft)		COST				
				AMOUNT	TOTAL	AMOUNT			TOTAL	
		BALANCES FORWARDED								
BALANCES FORWARDED										

WO

Parent

Cntl

Journal #	Parent Journal #	Type	Install	Facility	Instl	WO #	Create Dt	Create User
2003005537	2003006090	Facility	HPZW	1772			04-APR-2003	CATHI_MOODY
2003005536	2003006088	Facility	HPZW	1771			04-APR-2003	CATHI_MOODY
2003005535	2003006086	Facility	HPZW	1769			04-APR-2003	CATHI_MOODY
2003005534	2003006084	Facility	HPZW	1768			04-APR-2003	CATHI_MOODY
2003005533	2003006082	Facility	HPZW	1719			04-APR-2003	CATHI_MOODY
2003005532	2003006080	Facility	HPZW	1700			04-APR-2003	CATHI_MOODY
2003005531	2003006078	Facility	HPZW	1579			04-APR-2003	CATHI_MOODY
2003005530	2003006076	Facility	HPZW	1578			04-APR-2003	CATHI_MOODY

GLA Info

Misc

Install: Command: GLA: Fund Code:
 Title:
 Credit/Debit: GLA Amount: \$0. Prorated %: 0.
 Comment: The Facility.interest_code old value was '1' and the new value is '7'
 Additional Remarks:

Last Journal Seq #: 2003005621

Year	Prime	Capital					
Install	Built	Facility	IC	Category	Category Name	Heritage	Lease
HPZW	1956	01769	A	442758	WHSE SUP&EQUIP BSE	N	N

Cost Basis:	\$445,279.00	Book Value:	\$0.00
Exp Impr:	\$0.00	Estimated Value:	\$0.
Heritage Ref:		Last Inventory:	01-JUN-1991
Total Rent Recv:	\$0.00	Rent Paid:	\$0.00
Rent Paid Note:			
Interest Code:	7 - AF Owned On Leased Land	Lease Nbr:	
Type Constr:	P - Permanent		

- Find Facility
- Usages
- Capitalizati...
- Inventories
- Managers
- Haz Loc
- Agreements
- FY Fac Cost
- Validation

APPENDIX A

UST1770

UST 1770 - Former Incinerator (Site ID UST1770)

Site Location

Site UST1770 is located on the eastern side of the cantonment "triangle."

Site Characteristics

Site features are shown on Figure A1-UST1770. Site UST1770 consists of the area surrounding the former site of Building 1770, the Incinerator Building. The surface of Site UST1770 currently consists of a gravel pad. The features of concern at Site UST1770 are two removed USTs. Potential contamination from the incinerator at Building 1770 is being investigated separately as Site B1770.

Site Description and History

Building 1770 was constructed in 1974. Two USTs associated with the building were in operation from 1974 until approximately 1993 and were removed in 1997 (USAF, February 2010). UST 1770-1 was a 1,000-gallon, fuel-oil tank that supplied the furnace and incinerator building, and UST 1770-2 was a 1,000-gallon waste-oil tank.

The USTs are described below:

- UST 1770-1

Capacity:	1,000 gallons
Contents:	DFA
Construction:	Unknown
Condition:	Unknown
Use:	Incinerator fuel
Installation Date:	1974
Location	Southern side of Building 1770
Status:	Removed in 1997
ADEC Tank ID:	13
ADEC Status:	Permanently out of use
ADEC Closure Status:	Tank removed from ground
LUST Status:	Active

- UST 1770-2

Capacity:	1,000 gallons
Contents:	Waste oil
Construction:	Unknown
Condition:	Unknown; possibly incinerator fuel
Use:	Unknown
Installation Date:	1974
Location:	Southern side of Building 1770
Status:	Removed in 1997

ADEC Tank ID:	14
ADEC Status:	Permanently out of use
ADEC Closure Status:	Tank removed from ground
LUST Status:	Active

Historical aerial photographs of Site UST1770, dated 1963, 1978, 1985, and 2002 are shown on Figure A2-UST1770.

Regulatory Status

Site UST1770 is regulated by ADEC according to 18 AAC 78 Underground Storage Tanks, as amended October 2006, and 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, revised October 9, 2008. Site UST1770 is an “active” site and requires a release investigation under 18 AAC 78.235.

Summary of Previous Investigations

Soil Investigation (1997)

One soil investigation was conducted in 1997 during the tank removal action. Historical sample locations are shown on Figure A3-UST1770.

Remedial Action Report (1997)

USTs 1770-1 and 1770-2 were excavated in 1997. Both USTs were empty upon excavation and did not require special handling and disposal (HLA/Wilder J.V., October 9, 2001, p. 5, seventh para.). Eight soil samples were collected from the UST excavation and analyzed for DRO by Method AK102, GRO by Method AK101, and BTEX by EPA Method 8020 (HLA/Wilder J.V., October 9, 2001, p. 7, fourth para.). Three samples, including one quality assurance/quality control (QA/QC) sample, had detections of DRO ranging from 26,700 to 42,800 mg/kg; GRO from 650 to 760 mg/kg; and total BTEX from 25.9 to 33.9 mg/kg. Soils with DRO, GRO, and BTEX above ADEC Category B cleanup levels remain along the northern and southern excavation sidewalls. The soil samples were also analyzed for metals, RRO, PCBs, and VOCs, but concentrations were not detected above the applicable cleanup levels (HLA/Wilder J.V., October 9, 2001, p. 8, second and third para.).

Concentrations of DRO and GRO detected in soil are provided in the supporting documentation (HLA/Wilder J.V., October 9, 2001, Figure 8).

October 2009 Site Visit Observations

An inspection of Site UST1770 was conducted in October 2009. The site appeared to have been regraded in the recent past and gravel may be stockpiled in the area. With the addition of gravel and recent regrading, the existing ground surface no longer represents the ground surface when the incinerator building was in operation.

Figures A4-UST1770 and A5-UST1770 show Site UST 1770 in October 2009 (note the digital date displayed on the photo in Figure A4-UST1770 is incorrect, as the photographer was unaware that the camera had the wrong date settings). Figure A6-UST1770 is an undated photo of Building 1770.

Target Analytes

Former USTs 1770-1 and 1770-2 stored DFA and waste oil. Target analytes for Site UST1770 include GRO, DRO, RRO, VOCs (including BTEX, EDB, and 1,2-DCA), PAHs, metals (arsenic, barium, cadmium, chromium, lead, nickel, and vanadium), and PCBs.

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST1770, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.
- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Gravel surfaces provide no viable habitat onsite, but a wooded drainage area borders the site to the west and south (Figures A4-UST1770 and A5-UST1770). Ecological exposure pathways are considered unlikely to be complete at UST 1770-1 and UST 1770-2 but possible if COPECs are in surface soil or in groundwater that may daylight downgradient. Modeling or additional information is needed to determine if complete. Therefore, terrestrial ecological receptors will be evaluated for exposures west and south of the site using site characterization data, and aquatic receptors will be evaluated downgradient if data and/or modeling indicate daylighting of groundwater may occur.

Conclusions

Two USTs were associated with Building 1770, the incinerator. The USTs were installed in 1974 and removed in 1997. One 1,000-gallon UST stored DFA and one 1,000-gallon UST stored waste oil.

During the UST removal conducted in 1997, fuel related constituents (DRO, GRO, and BTEX) were detected in soil above ADEC Method 2 cleanup levels.

Recommendation: Site Characterization

Previous investigations identified fuel related contamination in soil above ADEC Method 2 cleanup levels. Additional investigation is required to define the extent of fuel and waste oil related contamination and close the USTs in accordance with ADEC regulations.

References

HLA/Wilder J.V. October 9, 2001. *Remedial Action Report, Galena Tank Removal and Soil Remediation, Galena Air Force Station, Alaska, Volume I of IV.*

U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska.*

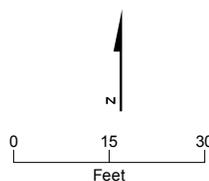
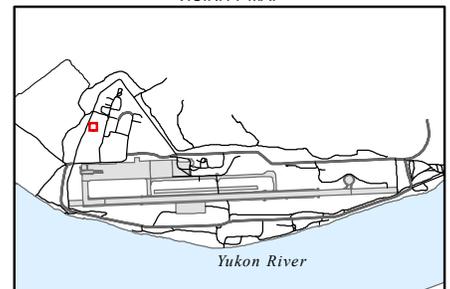


LEGEND

- UST1770
- Adjacent Site
- Approximate Location of Former Feature
- Abandoned Wastewater Line

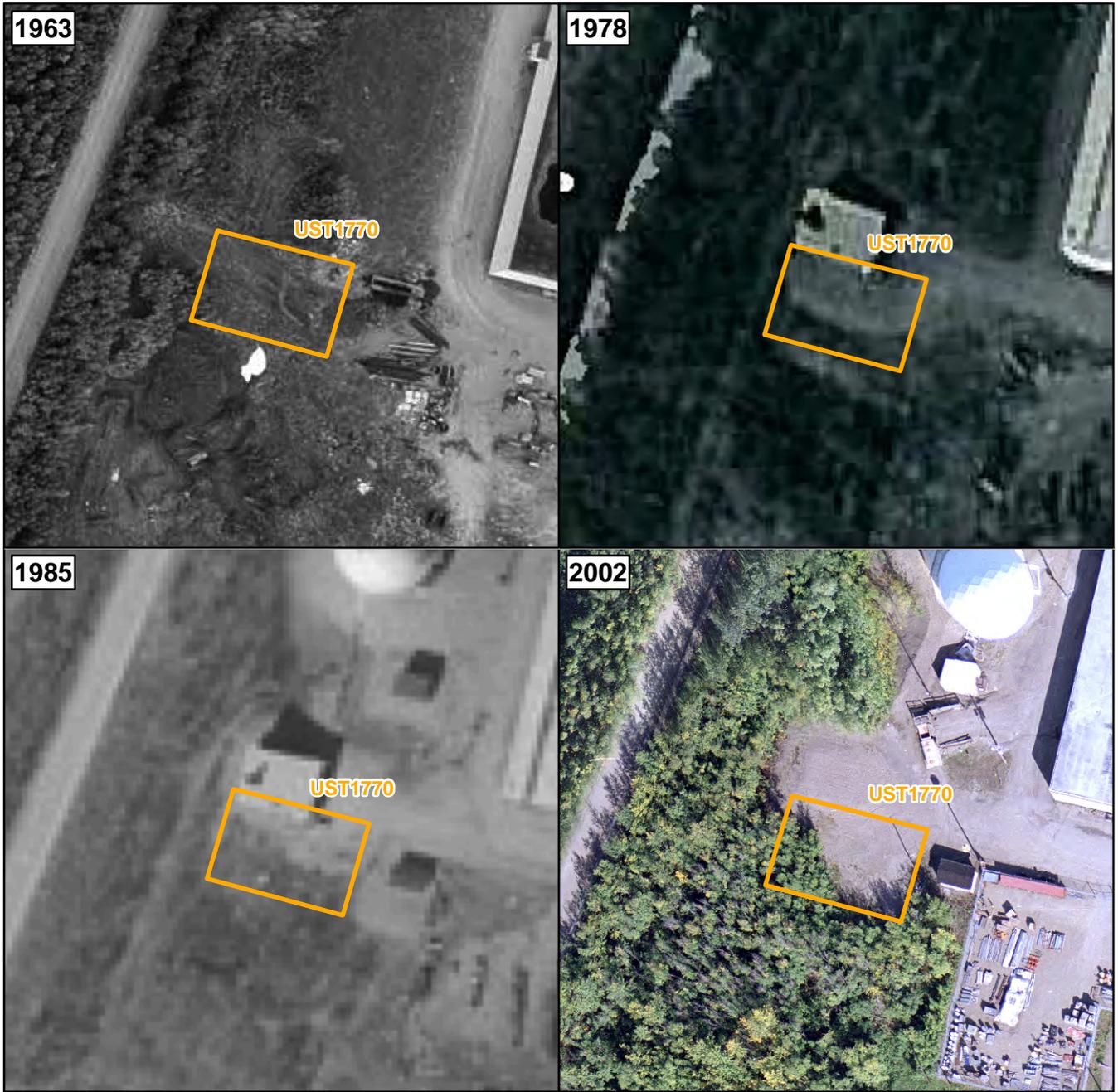
Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.

VICINITY MAP



**FIGURE A1-UST1770
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



VICINITY MAP

LEGEND

 UST1770

- Notes:
1. Photography Dated 9-4-1963, Georeferenced.
 2. Photography Dated 5-30-1978, Georeferenced.
 3. Photography Dated 1985, Georeferenced.
 4. Imagery August, 2002. Pixel size 0.075 meters.

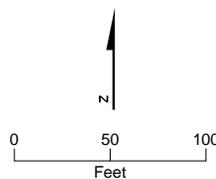
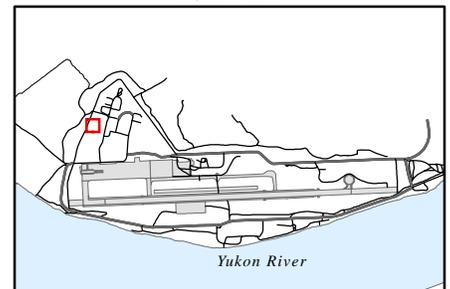
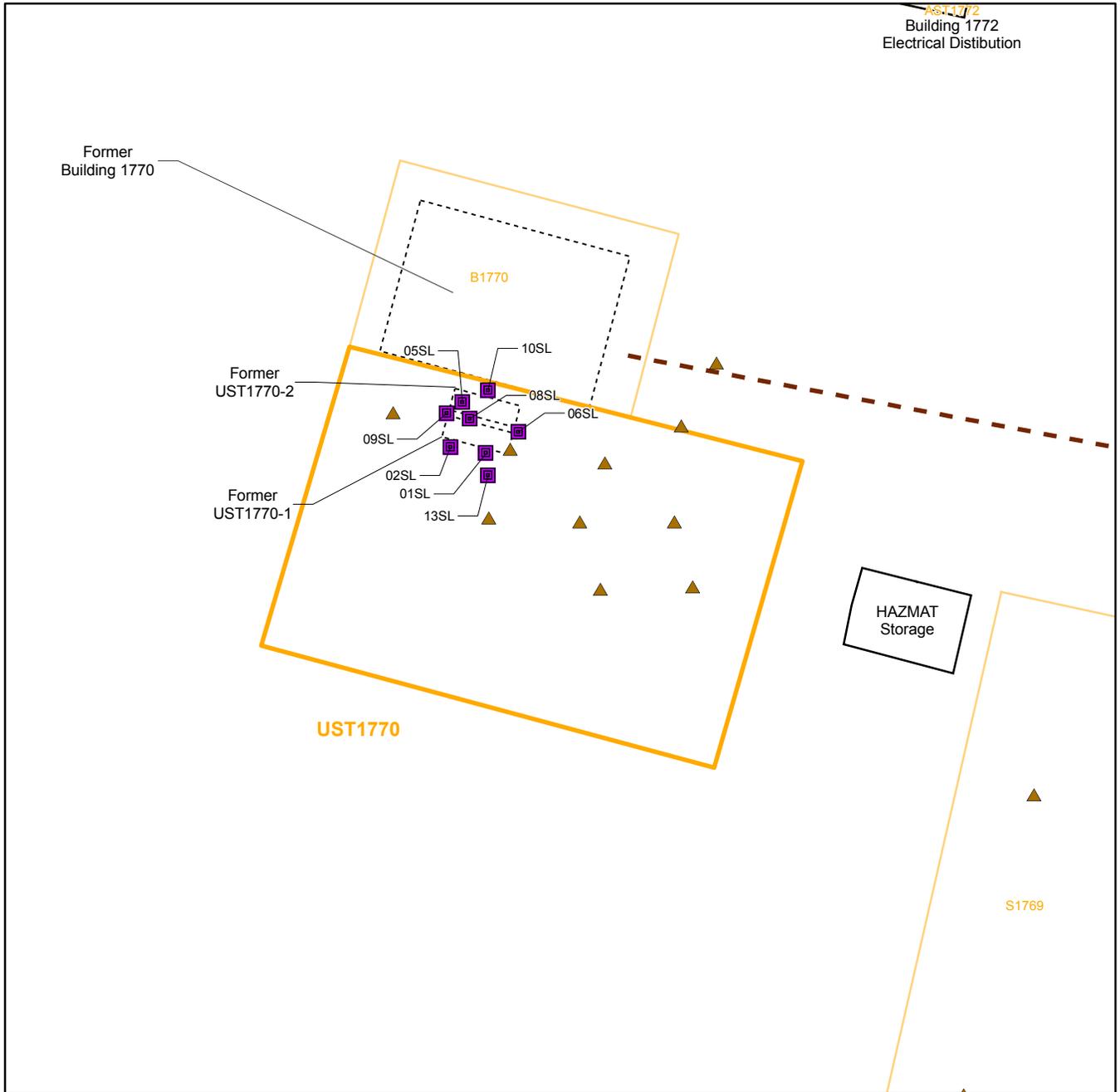


FIGURE A2-UST1770
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



LEGEND

- UST1770
- Adjacent Site
- Structure
- Approximate Location of Former Feature
- Abandoned Wastewater Line

Historical Sample Location

- Excavation Sample
- ▲ Soil Vapor Sample

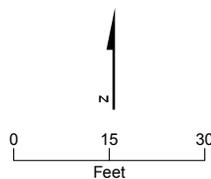
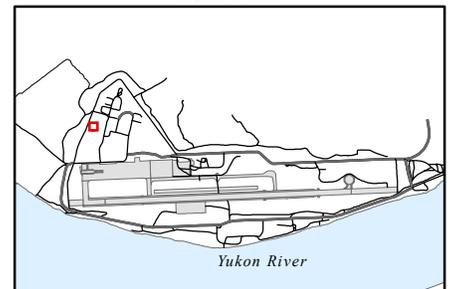


FIGURE A3-UST1770
Historical Sample Locations
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A4-UST1770

Gravel Pad at Former Location of Building 1770, October 2009

Note: The digital date displayed on the photo above is incorrect; the photographer was unaware that the camera had the wrong date settings.



FIGURE A5-UST1770

Surrounding Area, October 2009

Galena Airport
Air Force Building No. 1770, Solid Waste Disposal Facility
Constructed: 1974
Square feet: 1,440
Type construction: Concrete foundation and floor, corrugated
steel walls and roof.



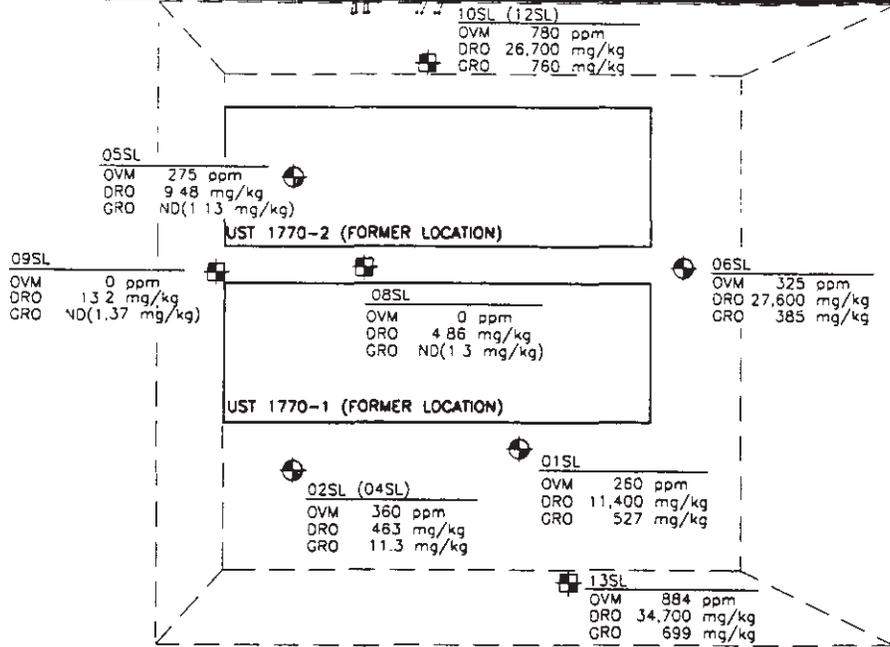
FIGURE A6-UST1770
Facility before Demolition, Undated Air Force Real Property Agency (AFRPA) document

Supporting Documentation



FORMER SUPPLY, RETURN, AND VENT PIPING
(CUT AND CAPPED NEAR BLDG. FOUNDATION)

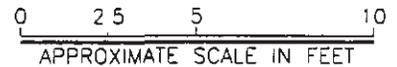
BUILDING 1770



APPROXIMATE LIMITS OF EXCAVATION

LEGEND

- ⊕ INITIAL EXCAVATION SOIL SAMPLE.
QC SAMPLE NUMBER IN PARENTHESES
(97GARM LEFT OFF FOR BREVITY)
- ⊕ ADDITIONAL EXCAVATION SOIL SAMPLE.
QC SAMPLE NUMBER IN PARENTHESES
(97GARM LEFT OFF FOR BREVITY)
- DRO DIESEL-RANGE ORGANICS
- GRO GASOLINE-RANGE ORGANICS
- mg/kg MILLIGRAMS PER KILOGRAM
- ND NOT DETECTED
- OVM ORGANIC VAPOR MONITOR
- ppm PARTS PER MILLION



Harding Lawson Associates/
Wilder Construction Company
Joint Venture

Tanks 1770-1 and 1770-2
Sample Locations

Galena Tank Removal and Soil Remediation
Galena Air Force Station, Alaska

FIGURE

8

DRAWN	PROJECT NUMBER	APPROVED	DATE	FILE NAME
JP	36625	W TL	12/98	899j

APPENDIX A

UST1854

UST 1854 – Headquarters Building (Site ID UST1854)

Site Location

Site UST1854 is located about 15 feet north of Building 1854, Headquarters Building.

Site Characteristics

Site features are shown on Figure A1-UST1854. Site UST1854 consists of a graveled area with patches of grass located north of the northeastern corner of Building 1854. The feature of concern at Site UST1854 is the site of a removed UST. An AST is also located north of Building 1854 and is being investigated separately as Site AST1854.

Site Description and History

UST 1854 was a 2,000-gallon steel tank (USAF, May 17, 1988; USAF, February 2010) 5.5 feet in diameter and 12 feet long (USAF, December 2002, Table 2-1, p. 2-1). The UST was used to store diesel fuel from 1986 until it was removed in 1998 (USAF, February 2010).

A September 21, 1993 spill of unknown volume because of a rupture line is included in the “History of Reported Oil Spills Greater than 50 Gallons” table in the ODPCP (USAF, October 2004, p. G-1). It is unclear if this reported spill was associated with the AST located within Building 1854 or with the UST.

A Notification of Post Closure was filed with ADEC after the tank was removed (USAF, September 28, 1998; included in the supporting documentation).

UST 1854 is described below:

Capacity:	2,000 gallons
Contents:	Diesel fuel
Construction:	Steel
Condition:	Unknown
Use:	Emergency generator
Installation Date:	1962
Location:	Northern side of Building 1854
Status:	Removed in 1998
ADEC Tank ID:	22
ADEC Status:	Permanently out of use
ADEC Closure Status:	Tank Removed from ground
LUST Status:	Not in LUST program

UST 1854 is regulated by ADEC according to 18 AAC 78 Underground Storage Tanks, as amended October 2006, and 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, revised October 9, 2008. Site UST1854 is not in the LUST program and a release investigation for the site has been completed by the USAF.

Historical aerial photographs of Site UST1854, dated 1963 and 2002, are shown on Figure A2-UST1854.

Summary of Previous Investigations

Historical sample locations are shown on Figure A3-UST1854.

No confirmation samples were collected from the excavation when the UST was removed. Samples were collected during follow-on investigations in 1999 and 2001.

Details of the UST removal are presented in two sampling and closure reports (RSE, August 1999; USAF, December 2002).

Sampling (1999)

In 1999, three soil samples were collected from 9.5 feet to 13 feet bgs outside the western (SP-1), eastern (SP-2), and northern (SP-3) boundaries of a buried concrete tie-down slab at Site UST1854 (RSE, August 1999). The samples were analyzed for DRO by Method AK102. DRO was detected in soil samples at the western and eastern ends of the slab at concentrations of 15 mg/kg and 6.4 mg/kg, respectively (RSE, 1999, Table 1, p. 6). Results were below ADEC Method 1 screening levels (RSE, August 1999). Figures showing sample locations (RSE, August 1999) and a table providing a summary of the analytical results (USAF, December 2002) are included in the supporting documentation.

ADEC recommended additional investigation of Site UST1854 to test for GRO and BTEX, and further characterization of the extent of contamination at UST 1584 and its associated piping (ADEC, January 2000; provided in the supporting documentation).

Follow-on Investigation (2001)

In 2001, two soil borings (SB01 and SB02) were installed in the location of the former UST at the west and east ends (USAF, December 2002). One soil sample was collected from each boring from depths of 12 to 13 feet bgs at Soil Boring SB01 and 10 to 11 feet bgs at Soil Boring SB02. In addition, samples from various depth intervals were field-screened for evidence of contamination using a PID and Hanby test kit. The soil boring samples were analyzed for DRO (Method AK102), GRO (Method AK101), RRO (Method AK103), BTEX constituents (Method 8021B), and SVOCs (Method 8270C).

One hand-auger boring was installed at the inferred location of a former pipe that connected the western side of the UST with Building 1854. One soil sample was collected from the hand-auger boring at a depth of 3 to 3.5 feet bgs. The hand-auger soil sample was analyzed for DRO, GRO, RRO, VOCs, and metals (Methods 6010B/6020).

Analytical results are presented in Tables A-1 through A-5 of the investigation report (provided in the supporting documentation; USAF, December 2002). GRO was not detected (Table A-4). DRO concentrations ranged from 6 mg/kg to 23 mg/kg (Table A-4). RRO concentrations ranged from 31 mg/kg to 89 mg/kg (Table A-4). VOCs and PAHs were not detected (Tables A-1 and A-3). BTEX was not detected, with the exception of toluene, which was detected at a concentration of 0.11 mg/kg at Soil Boring SB02 (Table A-2). All

concentrations were below ADEC soil Method 2 cleanup levels. UST 1854 was recommended for No Further Action (USAF, December 2002).

October 2009 Site Visit Observations

An inspection of Site UST1854 was conducted in October 2009. The site consists of gravel and patches of grass. Figure A4-UST1854 shows Site UST1854 in October 2009.

Target Analytes

No contaminants (GRO, DRO, RRO, BTEX, VOCs, PAH, and metals) were detected above the ADEC Method 2 cleanup levels.

Potential Exposure Pathways and Receptors

Media at Site UST1854 have not been significantly impacted. Concentrations of analytes detected at the site are below the ADEC Method 2 cleanup levels. Therefore, potential risk to human health from exposure to soil at the site is not significant.

Site UST1854 is paved and the area provides no viable habitat. There are no potential ecological exposure pathways at the site.

Conclusions

UST 1854 was installed north of Building 1854 in 1986 to provide fuel to the emergency generator for the building. The UST was removed in 1998. Soil samples were collected at both ends of the former UST and along the former associated pipeline. Samples were analyzed for GRO, DRO, RRO, BTEX, VOCs, PAHs, and metals. No analytes were detected at concentrations exceeding the ADEC Method 2 soil cleanup levels.

Recommendation: No Further Action

Because concentrations of constituents in soil are below the ADEC Method 2 soil cleanup levels, Site UST1854 is recommended for No Further Action and closure under 18 AAC 78.

References

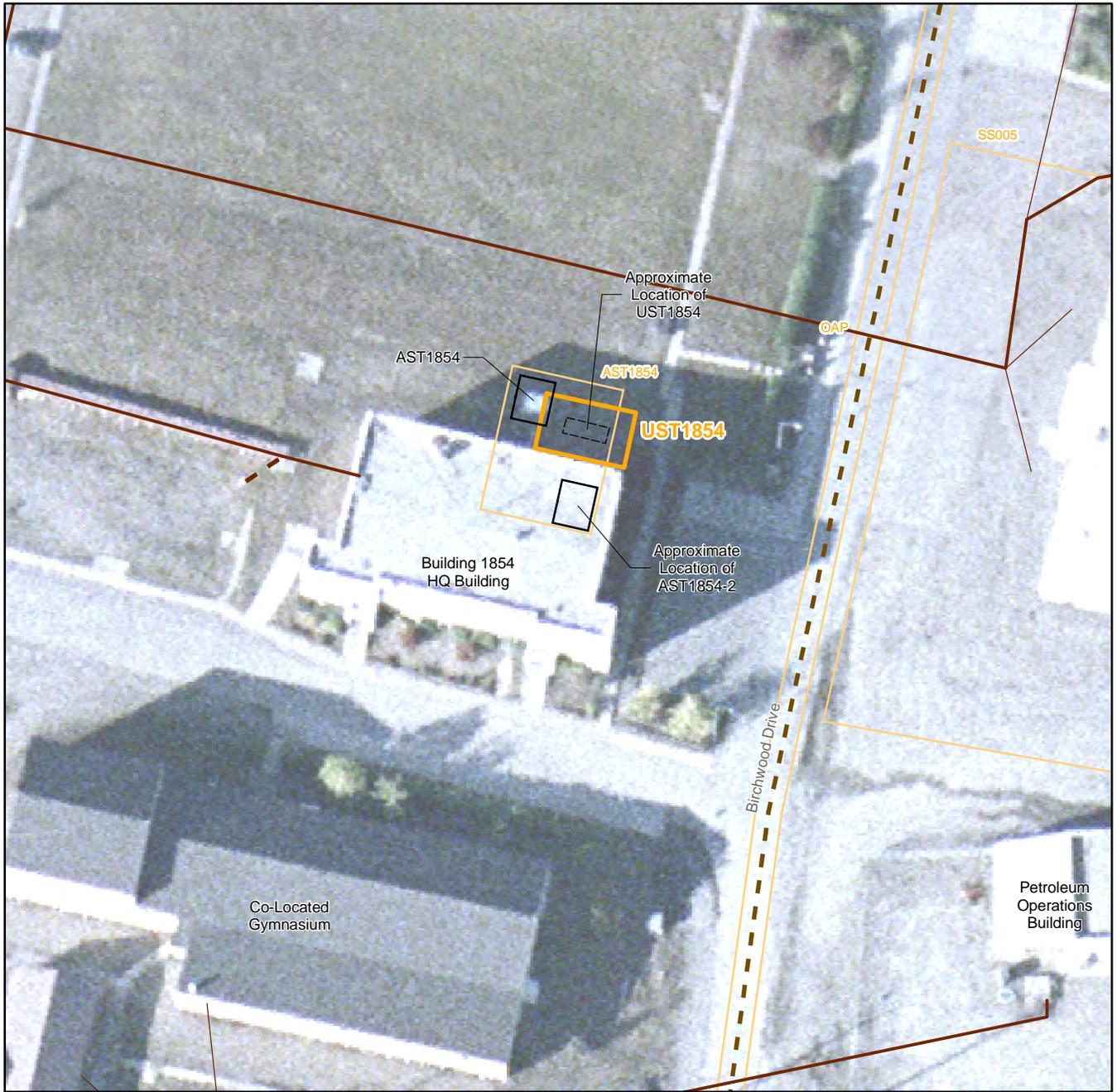
- Alaska Department of Environmental Conservation (ADEC). January 2000. Letter from ADEC to USAF Regarding ADEC/STP review of the August 1999, UST Sampling and Closure Report, Galena AS, Galena, Alaska. Facility ID 640, tanks AFIDs 1552 (ADEC # 11), AFID 1572 (ADEC # 12), AFID 1837 (ADEC # 21), AFID 1854 (ADEC # 22), and AFID 2541 (ADEC # 28).
- Restoration Science and Engineering (RSE). August 1999. *1999 UST Sampling and Closure Report, UST Nos. 1552, 1572, 1837, 1854 and 2541, Galena Air Station, Alaska.*
- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska.*
- U.S. Air Force (USAF). May 2008. *Final Environmental Baseline Survey, Air Force Property at Galena Alaska, 611th Civil Engineer Squadron, Elmendorf AFB, Alaska.*

U.S. Air Force (USAF). October 2004. *Galena Air Station Oil Discharge Prevention and Contingency Plan*. Revision 5. 611th Air Support Group, 611th Civil Engineer Squadron, Elmendorf AFB, Alaska.

U.S. Air Force (USAF). December 2002. *Follow-On Investigations at Former UST Sites*.

U.S. Air Force (USAF). September 28, 1998. Craig A. Valentine, Environmental Engineer. *Notification of Post Closure, Underground Storage Tanks*, to Alaska Department of Environmental Conservation.

U.S. Air Force (USAF). May 17, 1988. Warren Page, Base Civil Engineer. *Notification for Underground Storage Tanks*, to Alaska Department of Environmental Conservation.

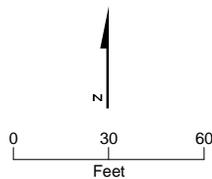
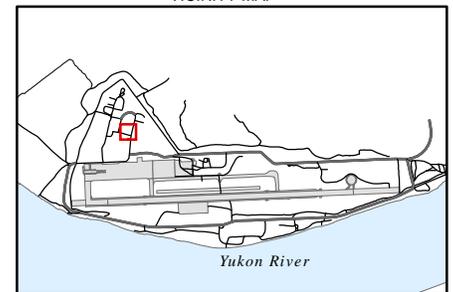


VICINITY MAP

LEGEND

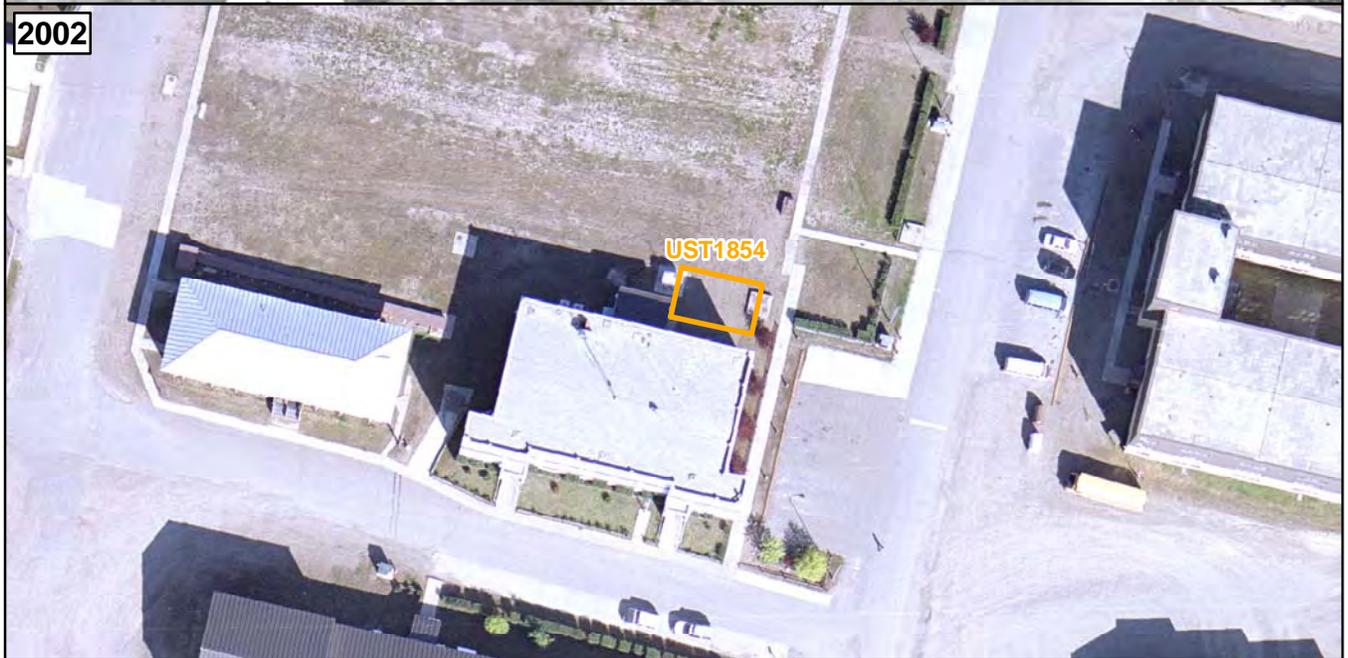
- UST1854
- Adjacent Site
- Structure
- Approximate Location of Former Feature
- Abandoned Fuel Line (1962)
- Abandoned Wastewater Line
- Main Wastewater Line
- Service Wastewater Line

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST1854
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



VICINITY MAP

LEGEND

 UST1854

- Notes:
1. Photography Dated 9-4-1963, Georeferenced.
 2. Imagery August, 2002. Pixel size 0.075 meters.

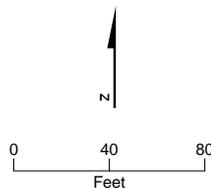
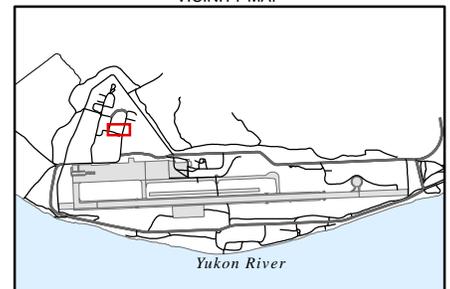
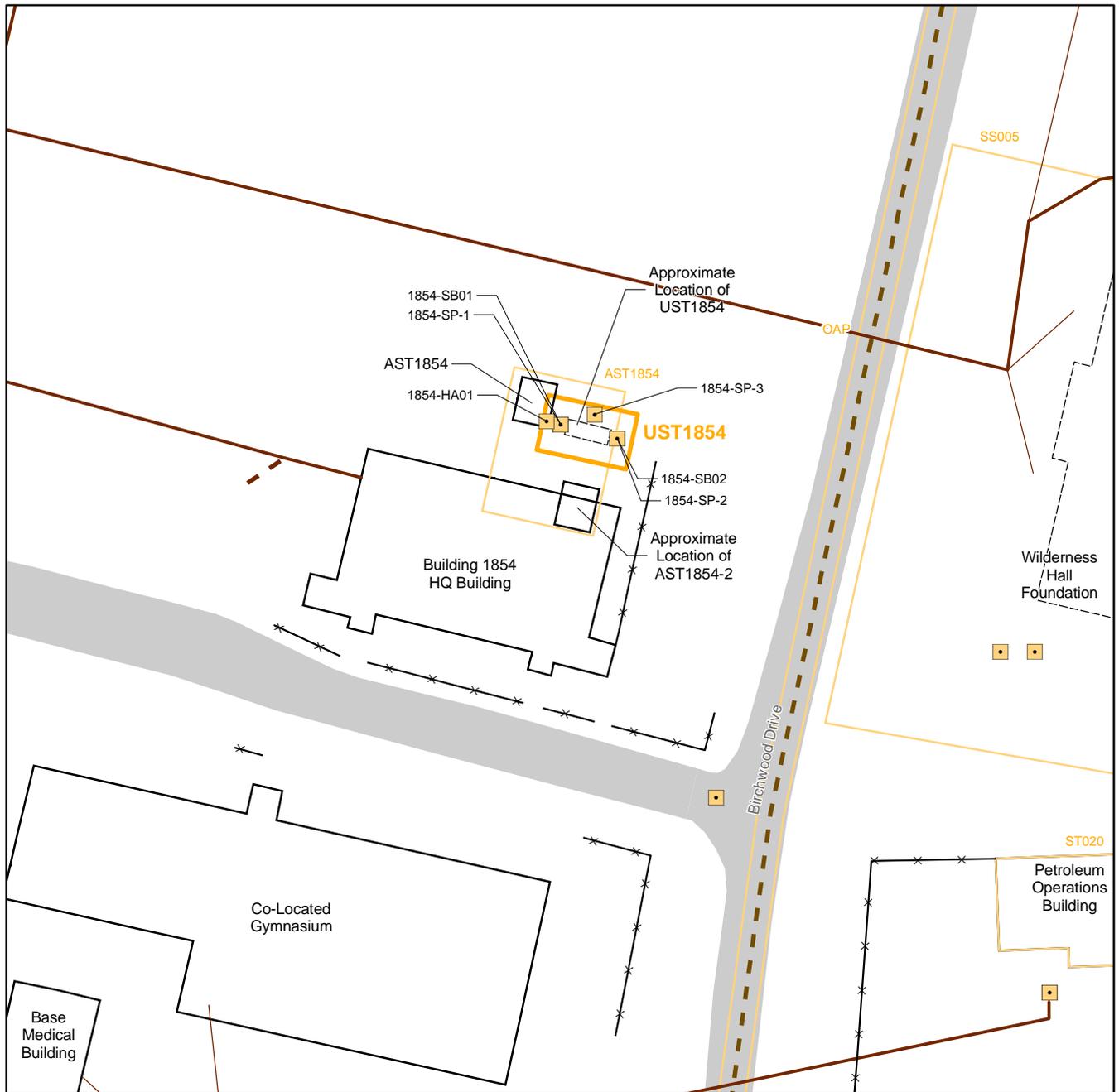


FIGURE A2-UST1854
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



LEGEND

- UST1854
- Adjacent Site
- Road
- Structure
- Approximate Location of Former Feature
- Fence
- Abandoned Fuel Line (1962)
- Abandoned Wastewater Line
- Main Wastewater Line
- Service Wastewater Line

Historical Sample Location

- Soil Boring

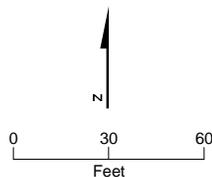
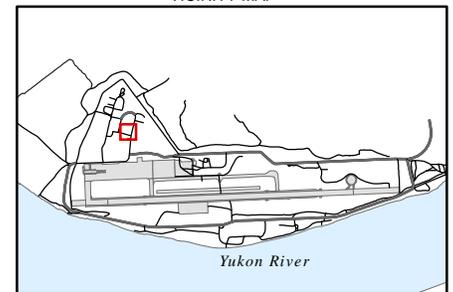


FIGURE A3-UST1854
Historical Sample Locations

Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A4-UST1854
Exterior AST 1854 is Located in Same Location as the Former UST
Source: USAF, May 2008, Photo 56

Supporting Documentation



ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION



NOTIFICATION OF POST-CLOSURE UNDERGROUND STORAGE TANKS

Post-Closure information is required 30 days after UST closure or change in service. See 18 AAC 78.085 (f).
The Owner/Operator or his/her representative must fill out and sign Page 1.
The Certified worker who performed or supervised the closure must fill out and sign Page 2.

0089

Facility - Location (Do not use P.O. Box.)

Tank Owner

Name USAF
Address Galena Arpt
City Galena
State/Zip 99741
Phone/Fax 552-9408/552-9409

Name 611 CES/CC
Address 6900 9th St, Ste 360
City Elmendorf AFB
City/State AK/99506-2270
Phone/Fax (907) 552-2217 / (907) 552-7128

Facility ID # 640

TANKS REMOVED OR CLOSED IN-GROUND

POSTED

Tank#	Tank Size	Removed or Closed In-ground	Date Product Last Stored	Contamination Found?	ALT-ID
<u>11</u>	<u>1500</u>	<u>REMOVED</u>	<u>DPS</u>	<u>NO</u>	<u>#1552</u>
<u>21</u>	<u>500</u>	<u>REMOVED</u>	<u>DPS</u>	<u>NO</u>	<u>1837</u>
<u>22</u>	<u>2000</u>	<u>REMOVED</u>	<u>DFA</u>	<u>NO</u>	<u>1859</u>
<u>See note</u>	<u>3000</u>	<u>REMOVED</u>	<u>DPS</u>	<u>NO</u>	<u>1570-X</u>
<u>(?)</u>	<u>2000</u>	<u>REMOVED</u>	<u>DFA</u>	<u>NO</u>	<u>2541-1</u>

CLOSURE:

Performed By: (Person) CHARLES M. STRATTON (Company) 611 CES/CEVO (UST License #) 242

Date Completed: 24 AUG 98

PERSON WHO PERFORMED/SUPERVISED CLOSURE MUST FILL OUT BACK PAGE.

SITE ASSESSMENT/RELEASE INVESTIGATION:

Performed by: (Person) _____ (Company) _____

SITE ASSESSMENT REPORT MUST BE SUBMITTED TO LOCAL ADEC OFFICE WITH 60 DAYS AFTER CLOSURE. RELEASE INVESTIGATION REPORT MUST BE SUBMITTED TO ADEC WITHIN 45 DAYS AFTER CLOSURE.

Was the closed tank replaced by a new UST? Yes _____ No
 If yes, please submit a new Registration form containing information on the new tanks.

Submitted by: Owner Operator Other _____
Craig A. Valentine Environmental Engineer
(Please Print Name) (Title)
Craig A. Valentine 552-4486 28 Sep 98
(Signature) (Date)

RECEIVED

Return Completed Form to:

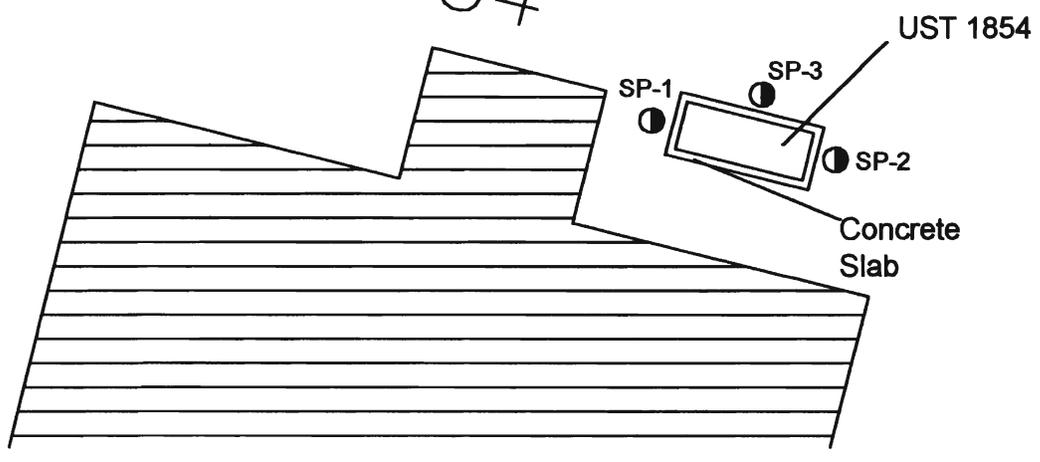
ADEC, Storage Tank Program Attn: Dave Allen
555 Cordova Street
Anchorage, AK 99501
FAX # (907) 269-7507

OCT 20 1998

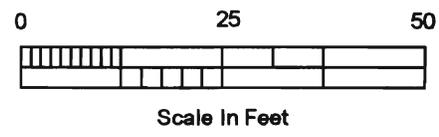
Depth (BGS)	GENERALIZED SOIL LOG	SAMPLE	SP-1	SP-2	SP-3
3.0	Sandy Gravel Backfill	DEPTH (feet)	9.5 - 11	11 - 13	10 - 12
6.0		PID (ppm/v)	4.0	1.7	0.3
12.0	Sand w/silt lenses, brown/dark gray, moist, medium dense, fine to coarse sand, some gravel, slight POL odor	DRO (mg/kg)	15	6.4	0



Building 1854



● Denotes Approximate Soil Probe Location



FILE: <u>Ust1854</u>
JOB NO.: <u>99-122</u> DATE: <u>8/99</u>
SCALE: <u>Graphical</u>
REVISED: _____ DRAWN BY: <u>SAE</u>

Figure 5
Galena UST # 1854
Soil Probe Location Map

RESTORATION
SCIENCE & ENGINEERING
911 West 8th Avenue, Suite 100
Anchorage, Alaska 99501
ph: (907) 278-1023 fax: (907) 276-8967

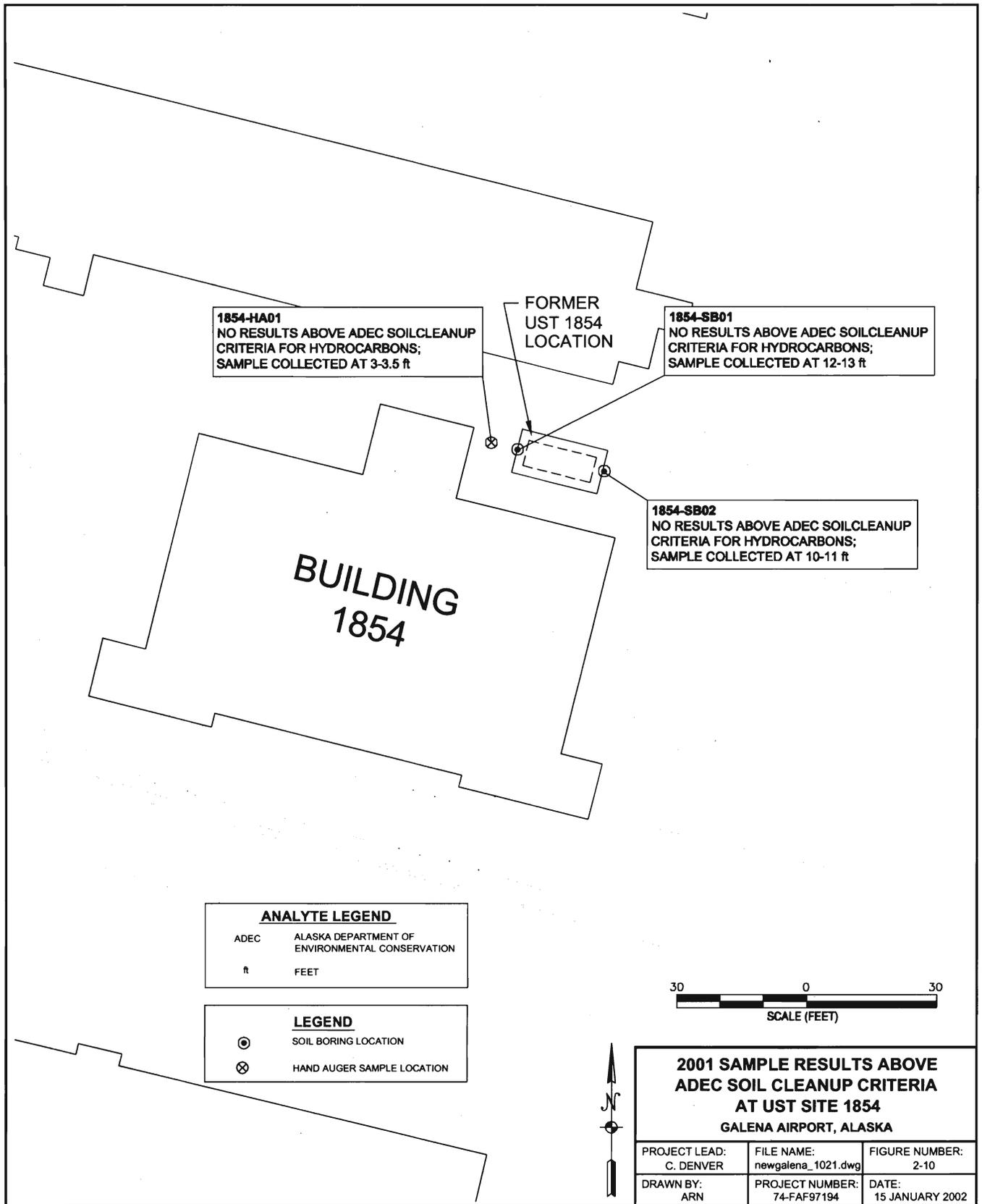


Figure 2-10. 2001 Soil Results Above ADEC Soil Cleanup Criteria at UST Site 1854, Galena Airport, Alaska.

Table 2-3

Summary of 1999 UST Analytical Results

Tank ID: USAF#/ADEC#	Cleanup Category ¹	Soil Cleanup Level for DRO (mg/kg) ¹	Sample Identification	Sample Depth (feet bgs)	DRO Concentration (mg/kg) ²
1552/11	B	200	1552-SP-1	10-12	5.1
			1552-SP-1D ³	10-12	ND [4.2]
			1552-SP-2	12-13	15
			1552-SP-3	11.5-13	34
			1552-SP-3D ³	11.5-13	26
1572/12	B	200	1572-SP-1	10-13	92
			1572-SP-1D ³	10-13	890
			1572-SP-2	9.5-11	49
			1572-SP-3	10-11.5	4.7
1837/21	B	200	1837-SP-1	9-12	7,100
			1837-SP-2	10-11	230
1854/22	B	200	1854-SP-1	9.5-11	15
			1854-SP-2	11-13	6.4
			1854-SP-3	10-12	ND [4.1]
2541/28	B	200	2541-SP-1B	9.5-10.5	10,000
			2541-SP-3A	10-11	41

Bolded results exceed ADEC Method One (Category B) Cleanup Level for DRO.

¹ Cleanup category and level derived from 18 AAC 75.341 (28 October 2000) Method One (Table A1) using score sheets from the *UST Sampling and Closure Report* (USAF, 1999).

² DRO was the only analyte sampled for at each UST site.

³ Duplicate samples.

[] - Method detection limit

ADEC - Alaska Department of Environmental Conservation

bgs - below ground surface

DRO - diesel range organics

ID - identification

mg/kg - milligram per kilogram

ND - not detected

USAF - United States Air Force

Prior to conducting the 2001 fieldwork at the five UST sites at the Galena Airport, the existing UST information was reviewed. Previous activities included removal of the five USTs during 1998 and a streamlined sampling program for site closure in 1999. During the 1999 sampling program, up to three soil borings were advanced and one soil sample was collected from each boring beneath the former UST at each site. These soil samples were submitted to an off-site laboratory for analysis of DRO following Alaska State Method AK102. Analytical results from the 1999 investigation were then compared to the ADEC Method One (Category B) Cleanup Criteria for DRO of 200 mg/kg. These activities were documented in the *1999 UST Sampling and Closure Report* (USAF, 1999).

Following the review of the *1999 UST Sampling and Closure Report* (USAF, 1999), ADEC requested that the USAF re-assess all five of the UST sites to determine the extent of contamination in the excavations and along the piping associated with each former UST. Tasks requested by ADEC included:

- Verifying the type(s) of product(s) previously stored in each UST;
- Collecting confirmation samples according to UST and Contaminated Sites regulations and procedures; analyzing samples for GRO, DRO, BTEX and other appropriate analytes (i.e., metals, VOCs and SVOCs) typically associated with fuel compounds and waste oil; and

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Storage Tank Program
Field Operations

555 Cordova Street
Anchorage, AK 99501
PHONE: (907) 269-7504
FAX: (907) 269-7507
<http://www.state.us.ak>

January 31, 2000

RECEIVED

Mr. Craig Valentine
United States Air Force
611 CES/CEVC
6900 9th Street, Suite 360
Elmendorf AFB, AK 99506-2270

FEB 01 2000

**CONTAMINATED
SITES
FAIRBANKS**

Re: ADEC/STP review of the August 1999, UST Sampling and Closure Report, Galena AS, Galena, Alaska. Facility ID 640, tanks AFIDs 1552 (ADEC # 11), AFID 1572 (ADEC # 12), AFID 1837 (ADEC # 21), AFID 1854 (ADEC # 22), and AFID 2541 (ADEC # 28).

Dear Mr. Valentine:

On September 7, 1999, The Alaska Department of Environmental Conservation, Storage Tank Program (ADEC) received a UST Sampling and Closure Report for five underground storage tanks (USTs) located at the Galena Air Station, Galena, Alaska. The ADEC has completed its review of the document and has the following comments:

General Comments:

- **Inadequate sampling analysis:** Because the site characterizations were conducted after the implementation of the January 22, 1999, Underground Storage Tanks (UST) and Contaminated Sites regulations, gasoline range organics (GRO), and Benzene, Toluene, Ethylbenzene and Xylene (BTEX) sampling is required, in addition to diesel range organics (DRO) sampling, if a UST contained arctic grade diesel. The site characterization reports only reported DRO sampling results. Please refer to page 49 of the UST Procedure Manual to determine the proper sampling and laboratory analysis requirements for soil and groundwater.
- **No piping assessments:** Piping associated with the former USTs was not assessed for contamination as part of the UST site characterization as required by 18 AAC 78.090(2)(B)(v); "at least one (confirmation) sample must be taken at points along the piping trench where contamination is most likely to be present".
- **PAH sampling:** It appears the Air Force has chosen to close the former UST sites using the ADEC Method 1 cleanup standards from 18 AAC 75.341, Table A1. If after reviewing the new regulations, the Air Force chooses to conduct cleanup and closure using another ADEC cleanup method, the ADEC will require the Air Force to collect PAH confirmation samples.

Specific Comments:

- **UST AFID 1552 (ADEC # 11)**, a 1,000-gallon diesel fuel tank, and **UST 1854 (ADEC# 22)**, a 2,000-gallon diesel UST: Because of the lack of appropriate analytical sampling, the ADEC is requesting the Air Force to re-assess the two former UST systems. The re-assessment shall include an investigation of the piping areas associated with the former USTs, and the collection and analysis of BTEX and GRO confirmation samples. If the Air Force can demonstrate, to ADEC's satisfaction, that the only product stored in the UST was non-arctic grade diesel ADEC would waive the GRO sampling requirement. If the Air Forces chooses to do soil borings, the ADEC is requesting that the soil borings be sufficient in number to adequately assess the former UST excavation and piping run. Soil borings should be field screened every two feet and conformation samples collected from the areas exhibiting a positive field screening result. If the Air Force chooses to re-excavate the former UST excavation, soil is required to be stockpiled in accordance with 18 AAC 78.274.
- **UST 1572 (ADEC # 12)**, a 3000-gallon diesel fuel tank. Because of the level of contamination found during the site characterization process, the ADEC is requesting the Air Force to conduct a release investigation of the former UST excavation and piping run to determine the full extent of the contamination found. The release investigation shall include an investigation of the former piping run and the former UST excavation. The Air Force is requested to collect confirmation samples for BTEX, GRO and DRO. If the Air Force can demonstrate, to the ADEC's satisfaction, that the only product stored in the UST was non-arctic grade diesel the ADEC would waive the GRO sampling requirement. If the Air Force chooses to do soil borings, the ADEC is requesting the soil be field screened every two feet and one confirmation sample collected from the areas exhibiting a positive field screening result. If the Air Force anticipates conducting cleanup of any contamination found using a cleanup method other than method 1, the ADEC is requesting the Air Force collect confirmation samples for PAH in addition to DRO, GRO and BTEX. Pending the results of the additional requested sampling this site could be closed based on new data and the data presented in this report.
- **UST 1837 (ADEC# 21)**, a 500-gallon gasoline/used oil UST. Because of the level of contamination found during the site characterization process, the ADEC is requesting the Air Force to conduct a release investigation of the former UST excavation and piping run to determine the full extent of the contamination found. If soil is excavated and stockpiled it must be done in compliance with 18 AAC 78.274. A review of the ADEC's UST database found the UST was registered as containing both gasoline and used oil. The laboratory analysis performed as part of the site characterization was only for diesel. Please verify the product stored in the former UST. If a review finds the tank held either gasoline or used oil the ADEC is requesting the former UST excavation be resampled and analyzed for the appropriate analysis. A review of the field screening and confirmation sampling data for sample SP-2 found an unusually high variance between the field screening results and the confirmation sample results. The wide variance may be a result of gasoline contamination.
- **UST 2541 (ADEC# 28)**, a 1,500-gallon UST. (The ADEC's UST database indicates it is a 2,000-gallon UST, containing multiple grades of petroleum, JP4, gasoline & diesel). Because of the level of contamination found during the site characterization process, the

January 31, 2000

ADEC is requesting the Air Force to conduct a release investigation of the former UST excavation and piping run to determine the full extent of the contamination found. If soil is excavated and stockpiled it must be done in compliance with 18 AAC 78.274. A review of the field screening and confirmation sampling data for sample SP-3A found an unusually high variance between the field screening results and the confirmation sample results. The wide variance may be a result of gasoline or JP4 contamination rather than diesel contamination.

If you have question regarding the ADEC/STP comments, please call me at 269-7538.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy Stevens". The signature is written in a cursive style with a large, looping initial "T".

Timothy Stevens
Environmental Specialist

TSS D:611th\Galena AS, 5 tank closure SA report

cc: Teresa Boston, ADEC/STP, Anchorage
~~Gretchen Pikel~~, ADEC/SPAR, Anchorage
PATRICE BUCK,

TABLE A-1

Volatile Organic Compound Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Field Sample ID Collection Date Matrix				G01-1837-SB05-1001 6/18/2001 Soil			G01-1837-SB05-1002 6/18/2001 Soil			G01-1854-HA01-1001 7/2/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag
1,1,1,2-Tetrachloroethane	8260B	mg/Kg		ND	0.015		ND	0.014		ND	0.012	
1,1,1-Trichloroethane (TCA)	8260B	mg/Kg	1.0	ND	0.015		ND	0.014		ND	0.012	
1,1,2,2-Tetrachloroethane	8260B	mg/Kg	0.017	ND	0.019		ND	0.018		ND	0.015	
1,1,2-Trichloroethane	8260B	mg/Kg	0.017	ND	0.014		ND	0.013		ND	0.011	
1,1-Dichloroethane (1,1-DCA)	8260B	mg/Kg	12	ND	0.013		ND	0.012		ND	0.010	
1,1-Dichloroethane (1,1-DCE)	8260B	mg/Kg	0.03	ND	0.016		ND	0.015		ND	0.013	
1,1-Dichloropropene	8260B	mg/Kg		ND	0.018		ND	0.016		ND	0.014	
1,2,3-Trichlorobenzene	8260B	mg/Kg		ND	0.006		0.013	0.006	F	ND	0.005	
1,2,3-Trichloropropane	8260B	mg/Kg		ND	0.030		ND	0.027		ND	0.023	
1,2,4-Trichlorobenzene	8260B	mg/Kg	2	ND	0.028		ND	0.025		ND	0.022	
1,2,4-Trimethylbenzene	8260B	mg/Kg		ND	0.019		ND	0.018		ND	0.015	
1,2-Dibromo-3-chloropropane (DBCP)	8260B	mg/Kg		ND	0.14		ND	0.13		ND	0.11	
1,2-Dibromoethane (EDB)	8260B	mg/Kg		ND	0.010		ND	0.009		ND	0.008	
1,2-Dichlorobenzene	8260B	mg/Kg	7	ND	0.012		ND	0.011		ND	0.009	
1,2-Dichloroethane (EDC)	8260B	mg/Kg	0.015	ND	0.016		ND	0.015		ND	0.013	
1,2-Dichloropropane	8260B	mg/Kg	0.017	ND	0.017		ND	0.016		ND	0.014	
1,3,5-Trimethylbenzene	8260B	mg/Kg		ND	0.017		ND	0.015		ND	0.013	
1,3-Dichlorobenzene	8260B	mg/Kg		ND	0.014		ND	0.013		ND	0.011	
1,3-Dichloropropane	8260B	mg/Kg		ND	0.011		ND	0.010		ND	0.008	
1,4-Dichlorobenzene	8260B	mg/Kg	0.8	ND	0.012		ND	0.011		ND	0.009	
1-Chlorohexane	8260B	mg/Kg		ND	0.016		ND	0.015		ND	0.013	
2,2-Dichloropropane	8260B	mg/Kg		ND	0.024		ND	0.022		ND	0.019	
2-Chlorotoluene	8260B	mg/Kg		ND	0.015		ND	0.014		ND	0.012	
4-Chlorotoluene	8260B	mg/Kg		ND	0.012		ND	0.011		ND	0.009	
4-Isopropyltoluene	8260B	mg/Kg		ND	0.018		ND	0.016		ND	0.014	
Benzene	8260B	mg/Kg	0.02	0.040	0.015		ND	0.013		ND	0.012	
Bromobenzene	8260B	mg/Kg		ND	0.013		ND	0.012		ND	0.011	
Bromochloromethane	8260B	mg/Kg		ND	0.017		ND	0.016		ND	0.014	
Bromodichloromethane	8260B	mg/Kg		ND	0.012		ND	0.011		ND	0.009	
Bromofornu	8260B	mg/Kg	0.38	ND	0.038		ND	0.035		ND	0.030	
Bromomethane	8260B	mg/Kg		ND	0.030	R	ND	0.028	R	ND	0.023	
Carbon Tetrachloride	8260B	mg/Kg	0.03	ND	0.017		ND	0.016		ND	0.013	
Chlorobenzene	8260B	mg/Kg	0.6	ND	0.013		ND	0.012		ND	0.010	
Chloroethane	8260B	mg/Kg		ND	0.024		ND	0.022		ND	0.019	
Chloroform	8260B	mg/Kg	0.34	ND	0.013		ND	0.012		ND	0.011	
Chloromethane	8260B	mg/Kg		ND	0.019		ND	0.017		ND	0.015	
cis-1,2-Dichloroethene	8260B	mg/Kg	0.2	ND	0.016		ND	0.015		ND	0.012	
cis-1,3-Dichloropropene	8260B	mg/Kg	0.02	ND	0.011		ND	0.010		ND	0.009	
Dibromochloromethane	8260B	mg/Kg	0.2	ND	0.011		ND	0.010		ND	0.009	
Dibromomethane	8260B	mg/Kg		ND	0.014		ND	0.013		ND	0.011	
Dichlorodifluoromethane (CFC 12)	8260B	mg/Kg		ND	0.023		ND	0.021	R	ND	0.018	R
Dichloromethane (Methylene Chloride)	8260B	mg/Kg	0.015	0.037	0.027	F	ND	0.024		ND	0.021	
Ethylbenzene	8260B	mg/Kg	5.5	ND	0.013		ND	0.012		ND	0.011	
Hexachlorobutadiene	8260B	mg/Kg		ND	0.052		ND	0.048		ND	0.041	
Isopropylbenzene	8260B	mg/Kg		ND	0.009		ND	0.009		ND	0.007	
m,p-Xylenes	8260B	mg/Kg	78	ND	0.026		ND	0.024		ND	0.020	
Naphthalene	8260B	mg/Kg	43	ND	0.010		ND	0.009		ND	0.008	
n-Butylbenzene	8260B	mg/Kg		ND	0.031		ND	0.028		ND	0.024	
n-Propylbenzene	8260B	mg/Kg		ND	0.013		ND	0.012		ND	0.011	
o-Xylene	8260B	mg/Kg	*	ND	0.011		ND	0.010		ND	0.008	
sec-Butylbenzene	8260B	mg/Kg		ND	0.018		ND	0.016		ND	0.014	
Styrene	8260B	mg/Kg		ND	0.013		ND	0.012		ND	0.011	
tert-Butylbenzene	8260B	mg/Kg		ND	0.017		ND	0.016		ND	0.013	
Tetrachloroethene (PCE)	8260B	mg/Kg	0.03	ND	0.015		ND	0.014		ND	0.012	
Toluene	8260B	mg/Kg	5.4	0.027	0.013	F	ND	0.012		ND	0.011	
trans-1,2-Dichloroethene	8260B	mg/Kg	0.4	ND	0.019		ND	0.018		ND	0.015	
trans-1,3-Dichloropropene	8260B	mg/Kg		ND	0.012		ND	0.011		ND	0.009	
Trichloroethene (TCE)	8260B	mg/Kg	0.027	ND	0.016		ND	0.015		ND	0.013	
Trichlorofluoromethane (CFC 11)	8260B	mg/Kg		ND	0.018		ND	0.017		ND	0.014	
Vinyl Chloride	8260B	mg/Kg	0.009	ND	0.029		ND	0.027		ND	0.023	

TABLE A-2

Volatile Organic Compound Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Client Sample ID Collection Date Matrix				G01-1552-SB01-1001 6/15/2001 Soil			G01-1552-SB02-1001 6/15/2001 Soil			G01-1854-SB01-1001 6/15/2001 Soil			G01-1854-SB02-1001 6/15/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag									
Benzene	8021B	mg/Kg	0.02	ND	0.013		ND	0.014		ND	0.013		ND	0.013	
Ethylbenzene	8021B	mg/Kg	5.5	ND	0.012		ND	0.012		ND	0.011		ND	0.011	
m,p-Xylenes	8021B	mg/Kg	78	ND	0.021		ND	0.022		ND	0.020		ND	0.020	
o-Xylene	8021B	mg/Kg	*	ND	0.014		ND	0.015		ND	0.014		ND	0.014	
Toluene	8021B	mg/Kg	5.4	ND	0.009		ND	0.010		ND	0.009		0.011	0.009	F

TABLE A-3

Semi-volatile Organic Compound Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Client Sample ID Collection Date Matrix				G01-1837-SB05-1002 6/18/2001 Soil			G01-1854-SB01-1001 6/15/2001 Soil			G01-1854-SB02-1001 6/15/2001 Soil			G01-2541-SB01-1001 6/20/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag									
Acenaphthene	8270C	mg/Kg		ND	0.031		ND	0.029		ND	0.029		0.20	0.034	F
Acenaphthylene	8270C	mg/Kg		ND	0.030		ND	0.027		ND	0.028		ND	0.032	
Anthracene	8270C	mg/Kg	1.6	ND	0.018		ND	0.016		ND	0.017		0.31	0.019	M
Benzo(a)anthracene	8270C	mg/Kg	6	ND	0.028		ND	0.026		ND	0.026		0.41	0.030	F
Benzo(a)pyrene	8270C	mg/Kg	3	ND	0.024		ND	0.023		ND	0.023		0.15	0.027	F
Benzo(b)fluoranthene	8270C	mg/Kg	20	ND	0.035		ND	0.033		ND	0.033		0.25	0.039	F
Benzo(g,h,i)perylene	8270C	mg/Kg		ND	0.028		ND	0.026		ND	0.026		0.06	0.031	F
Benzo(k)fluoranthene	8270C	mg/Kg	200	ND	0.038		ND	0.035		ND	0.036		0.23	0.042	F
Chrysene	8270C	mg/Kg	620	ND	0.031		ND	0.029		ND	0.029		0.56	0.034	M
Dibenz(a,h)anthracene	8270C	mg/Kg	88	ND	0.044		ND	0.041		ND	0.041		ND	0.048	
Fluoranthene	8270C	mg/Kg	2,100	ND	0.031		ND	0.029		ND	0.029		1.7	0.034	M
Fluorene	8270C	mg/Kg	270	ND	0.031		ND	0.029		ND	0.030		0.40	0.034	F
Indeno(1,2,3-cd)pyrene	8270C	mg/Kg	54	ND	0.036		ND	0.033		ND	0.034		0.06	0.040	F
Naphthalene	8270C	mg/Kg	43	ND	0.034		ND	0.031		ND	0.032		2.7	0.037	M
Phenanthrene	8270C	mg/Kg		ND	0.022		ND	0.020		ND	0.021		1.7	0.024	M
Pyrene	8270C	mg/Kg	1,500	ND	0.061		ND	0.057		ND	0.058		1.3	0.067	M

Client Sample ID Collection Date Matrix				G01-2541-SB03-1001 6/20/2001 Soil			G01-2541-SB05-1002 6/21/2001 Soil			G01-2541-SB10-1001 6/22/2001 Soil			G01-2541-SB11-1001 6/22/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag									
Acenaphthene	8270C	mg/Kg		0.77	0.034		ND	0.13		ND	0.032		1.0	0.32	F
Acenaphthylene	8270C	mg/Kg		ND	0.033		ND	0.13		ND	0.031		ND	0.31	
Anthracene	8270C	mg/Kg	1.6	0.51	0.019		ND	0.015		ND	0.018		ND	0.018	
Benzo(a)anthracene	8270C	mg/Kg	6	0.53	0.030		ND	0.024		ND	0.029		ND	0.029	
Benzo(a)pyrene	8270C	mg/Kg	3	0.18	0.027	F	ND	0.021		ND	0.025		ND	0.025	
Benzo(b)fluoranthene	8270C	mg/Kg	20	0.35	0.039	F	ND	0.030		ND	0.037		ND	0.037	
Benzo(g,h,i)perylene	8270C	mg/Kg		0.07	0.031	F	ND	0.024		ND	0.029		ND	0.029	
Benzo(k)fluoranthene	8270C	mg/Kg	200	0.32	0.042	F	ND	0.033		ND	0.039		ND	0.039	
Chrysene	8270C	mg/Kg	620	0.67	0.034		ND	0.027		ND	0.033		ND	0.033	
Dibenz(a,h)anthracene	8270C	mg/Kg	88	ND	0.048		ND	0.038		ND	0.046		ND	0.046	
Fluoranthene	8270C	mg/Kg	2,100	3.0	0.034		ND	0.027		ND	0.032		ND	0.032	
Fluorene	8270C	mg/Kg	270	1.7	0.035		0.28	0.14	F	ND	0.033		2.0	0.33	F
Indeno(1,2,3-cd)pyrene	8270C	mg/Kg	54	0.09	0.040	F	ND	0.031		ND	0.038		ND	0.038	
Naphthalene	8270C	mg/Kg	43	6.7	0.037		9.1	0.15		ND	0.035		68	0.36	
Phenanthrene	8270C	mg/Kg		3.0	0.024		0.10	0.019	F	ND	0.023		0.70	0.023	
Pyrene	8270C	mg/Kg	1,500	1.8	0.068		ND	0.053		ND	0.064		ND	0.064	

TABLE A-4

Petroleum Hydrocarbon Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Field Sample ID Collection Date Matrix				G01-1854-RA01-1001 07/02/01 Soil			G01-1854-SB01-1001 06/15/01 Soil			G01-1854-SB02-1001 06/15/01 Soil			G01-2541-SB01-1001 06/20/01 Soil			G01-2541-SB01-1002 06/20/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	ND	3.2	R	ND	3.5		ND	3.6		3,200	28		92	4.0	
Diesel Range Organics (DRO)	AK102	mg/Kg	250	6	1.6	F	8	1.7	F	23	1.8		7,000	2.0		4,200	2.0	
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	41	10	F	31	11	F	89	12	F	120	14	F	50	13	F

Field Sample ID Collection Date Matrix				G01-2541-SB03-1001 06/20/01 Soil			G01-2541-SB03-1002 06/20/01 Soil			G01-2541-SB04-1001 06/20/01 Soil			G01-2541-SB05-1001 06/21/01 Soil			G01-2541-SB05-1002 06/21/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	120	4.2	M	7	3.8		ND	4.1	R	61	3.1		1,200	10	
Diesel Range Organics (DRO)	AK102	mg/Kg	250	5,600	2.0		18	1.9		4	2.0	F	500	1.5		3,100	1.6	
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	82	14	F	23	12	F	22	13	F	15	9.8	F	13	11	F

Field Sample ID Collection Date Matrix				G01-2541-SB08-1001 06/21/01 Soil			G01-2541-SB09-1001 06/22/01 Soil			G01-2541-SB10-1001 06/22/01 Soil			G01-2541-SB11-1001 06/22/01 Soil			G01-2541-SB11-1002 06/22/01 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	ND	3.9		11	4.1		ND	4.0	M	3,000	25		130	4.1	M
Diesel Range Organics (DRO)	AK102	mg/Kg	250	4	1.9	F	37	2.0		2	1.9	F	17,000	19		10,000	2.0	
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	29	13	F	110	13	F	ND	13		73	13	F	49	13	F

Field Sample ID Collection Date Matrix				G01-2541-SB13-1001 06/27/01 Soil			G01-2541-SB14-1001 06/27/01 Soil			G01-2541-SB15-1001 06/28/01 Soil			G01-Trip Blank 06/22/01 Trip Blank			Trip 1 06/18/01 Trip Blank		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	ND	4.2	M	ND	3.8		ND	3.6		ND	3.0		ND	3.0	
Diesel Range Organics (DRO)	AK102	mg/Kg	250	7	2.0		ND	1.9		ND	1.8							
Residual Range Organics (RRO)	AK103	mg/Kg	11,000	46	13	F	14	12	F	ND	12							

Field Sample ID Collection Date Matrix				Trip 2 06/16/01 Trip Blank			Trip 3 06/22/01 Trip Blank			Trip 4-21077 06/26/01		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag
Gasoline Range Organics (GRO)	AK101	mg/Kg	300	ND	3.0		ND	3.0		ND	3.1	
Diesel Range Organics (DRO)	AK102	mg/Kg	250									
Residual Range Organics (RRO)	AK103	mg/Kg	11,000									

TABLE A-5

Metal Results for June 2001 UST Soil Sampling Event
Galena Airport, Alaska

Client Sample ID Collection Date Matrix				G01-1837-SB02-1001 6/16/2001 Soil			G01-1837-SB02-1002 6/16/2001 Soil			G01-1837-SB03-1001 6/18/2001 Soil			G01-1837-SB03-1002 6/18/2001 Soil			G01-1837-SB04-1001 6/18/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Barium, Total	6010B	mg/Kg	1,100	250	0.3		217	0.3		202	0.3		171	0.3		93.5	0.3	
Cadmium, Total	6010B	mg/Kg	5	1.0	0.6	F	1.0	0.5	F	0.6	0.5	F	0.8	0.6	F	ND	0.5	
Chromium, Total	6010B	mg/Kg	26	29	0.8		26	0.7		25	0.7		21	0.8	F	16	0.7	F
Lead, Total	6010B	mg/Kg		17	5		17	4		14	4		12	4		12	4	
Nickel, Total	6010B	mg/Kg	87	36	3.4		32	3.2		32	3.2		27	3.3		17	3.1	
Vanadium, Total	6010B	mg/Kg	3,400	47	0.6		40	0.5		41	0.5		36	0.6		20	0.5	
Arsenic, Total	6020	mg/Kg	2	6.9	0.2		7.9	0.2		5.7	0.2		5.6	0.2		3.7	0.2	

Client Sample ID Collection Date Matrix				G01-1837-SB04-1002 6/18/2001 Soil			G01-1837-SB05-1001 6/18/2001 Soil			G01-1837-SB05-1002 6/18/2001 Soil			G01-1854-HA01-1001 7/2/2001 Soil			G01-2541-SB01-1001 6/20/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag	Result	Detection Limit	Data Flag
Barium, Total	6010B	mg/Kg	1,100	248	0.3		214	0.3		142	0.3		267	0.1		265	0.3	
Cadmium, Total	6010B	mg/Kg	5	1.0	0.6	F	0.9	0.6	F	0.7	0.5	F	ND	0.5		1.1	0.2	
Chromium, Total	6010B	mg/Kg	26	26	0.8		27	0.8		17	0.7	F	14	0.7	F	29	0.6	
Lead, Total	6010B	mg/Kg		14	5		16	5		11	4		8	4	F	24	3	
Nickel, Total	6010B	mg/Kg	87	33	3.4		32	3.4		26	3.2		16	3.2		37	0.5	
Vanadium, Total	6010B	mg/Kg	3,400	42	0.6		42	0.6		27	0.5		20	1.0		47	0.8	
Arsenic, Total	6020	mg/Kg	2	10.6	0.2		9.3	0.2		5.8	0.2		5.8	0.2		10.3	0.2	

Client Sample ID Collection Date Matrix				G01-2541-SB01-1002 6/20/2001 Soil			G01-2541-SB03-1001 6/20/2001 Soil			G01-2541-SB03-1002 6/20/2001 Soil			G01-2541-SB04-1001 6/20/2001 Soil			G01-2541-SB05-1001 6/21/2001 Soil		
Analyte	Method	Units	MCL	Result	Detection Limit	Data Flag												
Barium, Total	6010B	mg/Kg	1,100	215	0.3		268	0.3		202	0.3		183	0.3		84.5	0.3	
Cadmium, Total	6010B	mg/Kg	5	0.7	0.2		1.0	0.2		0.3	0.2	F	0.5	0.2	F	ND	0.2	
Chromium, Total	6010B	mg/Kg	26	24	0.6		30	0.6		19	0.5	F	18	0.6	F	14	0.5	F
Lead, Total	6010B	mg/Kg		10	3	F	16	3		7	3	F	7	3	F	9	3	F
Nickel, Total	6010B	mg/Kg	87	30	0.4		38	0.5		22	0.4		24	0.5		14	0.4	
Vanadium, Total	6010B	mg/Kg	3,400	42	0.8		50	0.8		37	0.7		36	0.8		18	0.7	
Arsenic, Total	6020	mg/Kg	2	9.0	0.2		9.2	0.2		5.6	0.2		6.2	0.2		3.4	0.2	

APPENDIX A

UST1859

UST 1859 - Dining Facility (Site ID UST1859)

Site Location

Site UST1859 is located within Parcel Block 3, on the eastern side of the cantonment "triangle."

Site Characteristics

Site features are shown on Figure A1-UST1859. Site UST1859 is an area covered in pavement and gravel near the southwestern corner of Building 1859, the Dining Facility. The feature of concern at Site UST1859 is the site of a potentially removed UST.

Site Description and History

Building 1859 was built in 1956 and, as indicated by AF Form 1430, Real Property Record, heating was provided by oil-fuel boilers (USAF, 1960). The building Real Property Records are included in the supporting documentation.

Building 1859 was heated with an individual boiler until 1969, when Building 1499 was built to replace individual boilers at Buildings 1428, 1769, and 1859. A 1962 map of the installation shows a pipeline beneath the main road that leads to Building 1859. From the termination of this pipeline, it appears that a UST may be located near the southwestern corner of Building 1859. Fuel supply was reported to have been supplied to a 27,000-gallon UST at Building 1859 through a 3-inch-diameter pipeline regulated at Valve Pit "B," located west of the former Truck Fill Stands (ERP Site SS017). Table 3-3 of the 2010 EBS (USAF, February 2010) lists a diesel fuel UST associated with Building 1859. However, the details (capacity, years of operation, and status) regarding the tank are unknown.

Mr. Burgett, Galena resident and UST removal contractor, stated he removed the UST in 1995 and did not perform any closure assessment. An AST was placed in the same location as the former UST (Burgett, April 2010).

Details on UST 1859 are below:

Capacity:	27,000 gallons
Contents:	Fuel oil (likely diesel)
Construction:	Unknown
Condition:	Unknown
Use:	Boiler fuel
Installation Date:	Unknown, likely 1956
Location:	Southwestern corner of Building 1859
Status:	Removed from ground

This UST was not registered with EPA or ADEC and does not have a current ADEC regulatory status. This UST may be exempt from UST closure requirements set forth in 18 AAC 78.005(e)(5) - "tank used for storing heating oil for consumptive use on the premises

where stored.” Historical aerial photographs of Site B1859 and Building 1859, dated 1963, 1978, 1985, and 2002, are shown on Figure A2-UST1859.

Summary of Previous Investigations

No investigations involving release verification sampling occurred at Site UST1859.

Geophysical Surveys (2009)

In July 2009, Environmental Compliance Associates, LLC (ECA, October 2009) completed a geophysical survey using ground penetrating radar (GPR) to evaluate the presence of buried features at Building 1859. ECA concluded that the identified GPR anomalies were consistent with the presence of one north-south trending pipeline at 3 feet bgs, one east-west trending pipeline at 3 feet bgs, one east-west trending sewer at 3 feet bgs, one north-south-trending communications/electric line at 7.5 feet bgs, one east-west vault at 2 feet bgs, and one east-west vault at 4 feet bgs. No anomalies consistent with a UST were identified; however, it appears the GPR survey did not cover the location of the former UST.

October 2009 Site Visit Observations

An inspection of Site UST1859 was conducted in October 2009. The surface was observed to be pavement and gravel. No evidence of fill or vent pipes for a UST was observed.

Figure A3-UST1859 shows Site UST1859 in October 2009.

Target Analytes

Fuel oil (likely diesel) was stored in the UST. Target analytes are DRO, GRO, BTEX, and PAHs.

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST1859, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.
- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil

ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Site UST1859 is covered by pavement and gravel, and the area provides no viable habitat. No potential ecological exposure pathways exist at the site, so no ecological receptors were identified and Site UST1859 will not be evaluated for ecological risk.

Conclusions

Records indicate that a UST was used to store heating oil at Building 1859. Mr. Burgett, Galena resident and UST removal contractor, stated he removed the UST in 1995 and did not perform any closure assessment (Burgett, April 2010).

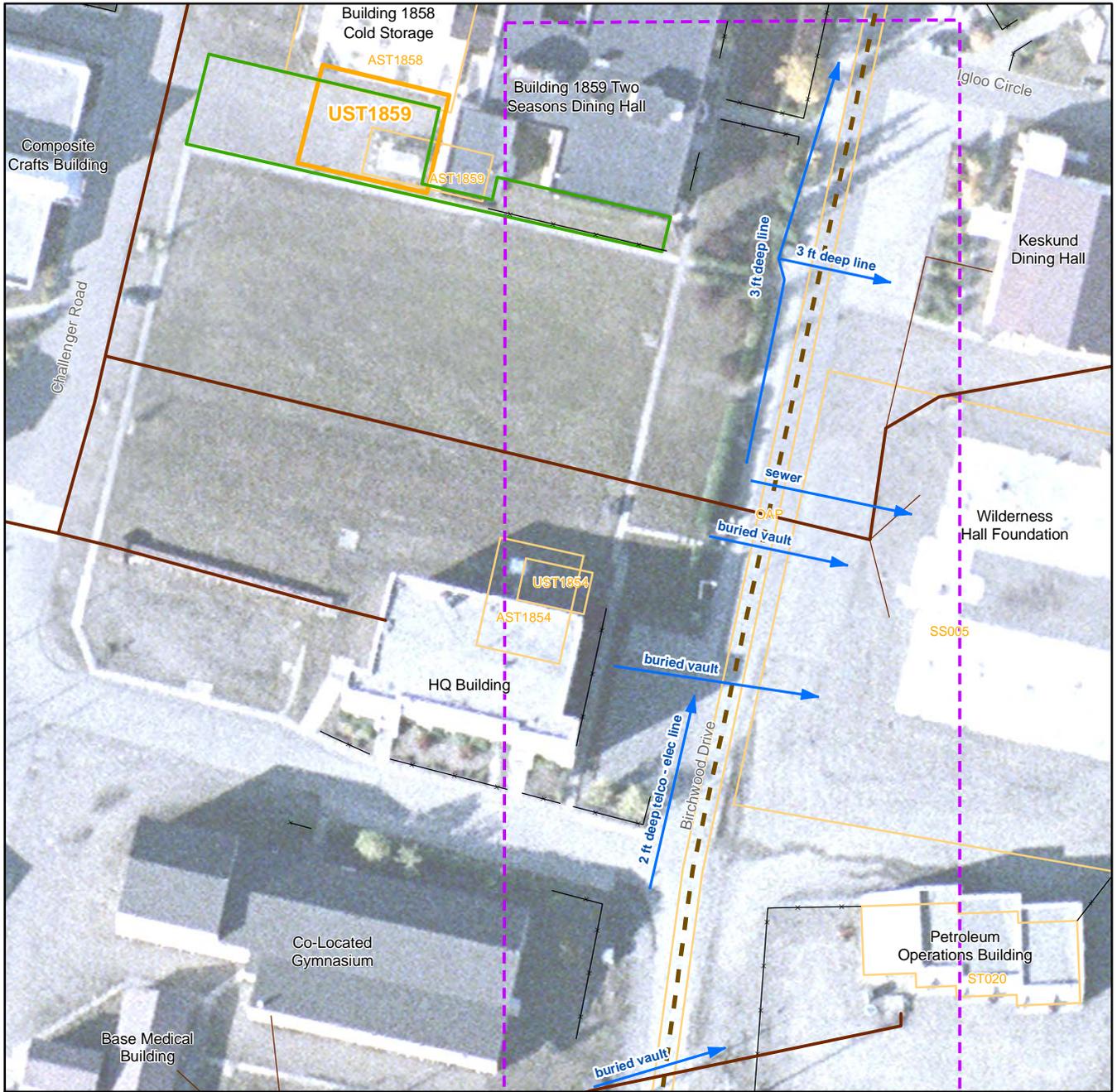
Recommendation: Site Inspection Sampling

Limited site inspection sampling is recommended to confirm the presence or absence of fuel-related constituents (DRO, GRO, BTEX, and PAHs) in soil at SITE UST1859 on the southern side of the Building 1859.

A geophysical survey is recommended to be performed at Site UST1859 to verify the location of any underground utilities and determine whether UST 1859 and associated pipelines were abandoned in place or were excavated (as previously reported).

References

- Burgett. April 2010. Mr. Burgett, Galena resident and UST removal contractor. Personal communication with Win Westervelt/CH2M HILL.
- Environmental Compliance Associates, LLC (ECA). October 2009. *Galena Air Force Base Geophysical Surveys*. Prepared for Earth Tech/AECOM.
- U.S. Air Force (USAF). February 2010. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska*.
- U.S. Air Force (USAF). 1960. Air Force Form 1430 Real Property Accountable Record-Building, Building 1859.

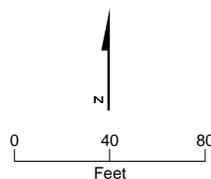
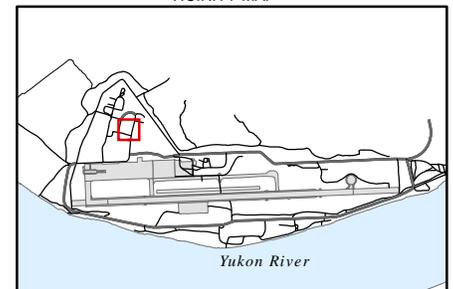


VICINITY MAP

LEGEND

- UST1859
- Adjacent Site
- Geophysical Survey Limit (2009)
- Proposed Geophysical Survey Area
- ➔ Geophysical Survey Feature (2009)
- Fence
- Abandoned Fuel Line (1962)
- Main Wastewater Line
- Service Wastewater Line

Note:
1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST1859
Site Layout**

Preliminary Assessment Report
Former Galena Forward Operating Location, Alaska



LEGEND

 UST1859

Notes:

1. Photography Dated 9-4-1963, Georeferenced.
2. Photography Dated 5-30-1978, Georeferenced.
3. Photography Dated 1985, Georeferenced.
4. Imagery August, 2002. Pixel size 0.075 meters.

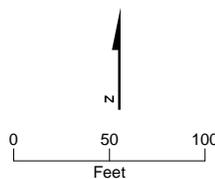
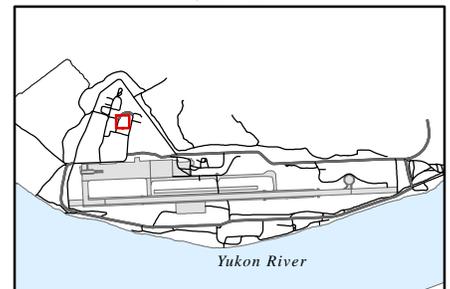


FIGURE A2-UST1859
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



FIGURE A3-UST1859
Building 1859 Dining Hall, AST in location of former UST, October 2009

APPENDIX A

UST15783

UST 1578-3 — Water Treatment Plant (Site ID UST15783)

Site Location

Site UST15783 is located in Block 8, Lot 8, in the south-central portion of the cantonment “triangle,” north of Building 1578.

Site Characteristics

Site features are shown on Figure A1-UST15783. Site UST15783 consists of the former location of UST 1578-3 and the area surrounding it. The UST is the feature of concern at the site.

Site Description and History

UST 1578-3 was located beneath a gravel driveway, north of Building 1578, the Water Treatment Plant.

Building 1578 was surveyed for LBP as part of the FOL-wide survey conducted in 2006. Table 3-6 of the 2010 EBS report indicates that LBP was detected in “*wall, ladder, tank*” (USAF, February 2010b). The “*tank*” is likely AST 1578, as UST 1578-3 was removed in 1997.

Abandoned Water Well 2 (WW2-WP) was located within Building 1578, southeast of Site UST15783. The status of the 210-foot-deep, 8-inch-diameter water well was listed in the 2010 EBS report as abandoned. However, the date of abandonment is unknown (USAF, February 2010a). Existing Water Well 7 (WW7-WP) is currently located in the southeast corner of Building 1578. Water Well 7 was constructed in 1990 (USAF, February 2010a). This 198-foot-deep, 8-inch-diameter water well has a capacity of 100 gallons per minute (gpm) and is used as a potable water supply.

UST 1578-3 is also referred to as Tank #6 in ADEC UST records (USAF, October 13, 1998). According to UST information filed with ADEC, UST 1587-3 had a capacity of 500 gallons and was used to store leaded gasoline until November 15, 1993 (USAF, October 23, 1996; June 13, 1997; October 13, 1998). The age of the tank is unknown (USAF, June 13, 1997). The gasoline stored in the tank was reportedly used for a standby water pump at the water treatment plant (Earth Tech, June 2008, Section 13.1, p. 13-1, first para.). A closure notice, filed in 1998, indicates that the UST was removed on July 25, 1997, and that contamination was found (USAF, October 13, 1998; included in the supporting documentation).

Details of UST 1578-3 are listed below:

Capacity:	500 gallons
Contents:	Leaded gasoline
Construction:	Unknown
Condition:	Unknown
Use:	Standby water pump
Installation Date:	Unknown
Location:	North of Building 1578
Status:	Removed in 1997

ADEC Tank ID:	6
ADEC Status:	Permanently out of use
ADEC Closure Status:	Tank removed from ground
LUST Status:	Active

Historical aerial photographs of Site UST15783, dated 1963, 1985, and 2002, are shown on Figure A2-UST15783.

Regulatory Status

USTs are regulated by ADEC according to 18 AAC 78 Underground Storage Tanks, as amended October 2006, and 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, revised October 9, 2008.

Site UST15783 is an “active” site and requires a release investigation under 18 AAC 78.235.

Summary of Previous Investigations

Historic sample locations at Site UST15783 are shown on Figure A3-UST15783.

Tank Removal Sampling (1997)

A Work Plan completed in 2008 and submitted to the USAF included a summary of six soil samples that were collected in 1997 after the UST was removed (Earth Tech, June 2008). The source document with the original data could not be located in available records. However, the sample naming convention is similar to a Remedial Action report done in 1999 (Harding Lawson, February 8, 1999) which references a 1998 document that may provide the original sample data. The summary in the 2008 Work Plan shows that three soil samples and one QA/QC sample were collected from the excavation after the UST was removed. The samples were analyzed for GRO, DRO, BTEX, and lead (Earth Tech, June 2008, Section 13). Sample depths are unknown.

Maximum detected concentrations were 1,180 mg/kg for DRO, 136 mg/kg for GRO, 6.41 mg/kg total for BTEX, and 12.4 mg/kg for lead. DRO concentrations exceed ADEC Method 2 cleanup levels. A figure from the 2008 Work Plan (Earth Tech, June 2008) presenting the analytical results is provided in the supporting documentation.

Groundwater Monitoring

Groundwater samples were collected from Monitoring Well 06-MW-13 (screened from 35 to 45 feet bgs), located approximately 10 feet west of the former UST 1587-3 excavation site (Figure A3-UST15783), in June 2004. The samples were analyzed for DRO (AK102), metals (SW6010/SW6020), VOCs (SW8260B), total organic carbon (SW9060), and natural attenuation parameters (E300.0 and RSK175). There were exceedances of ADEC Method 2 cleanup levels for DRO, arsenic, barium, and benzene; however, all results were estimated. According to the Draft Environmental Well Inventory Report (USAF, February 2010a), Monitoring Well 06-MW-13 has been destroyed.

Groundwater samples were collected from Water Well 7 in July and August 2009. Samples were analyzed for VOCs by Method SW8260B (July) and a limited VOC list by Method

SW8021 (August). The following VOCs were detected: 1,2,4-trimethylbenzene (0.16 µg/L), benzene (0.18 µg/L), and chloromethane (0.78 µg/L). Concentrations of these analytes were below ADEC Method 2 cleanup levels.

October 2009 Site Visit Observations

An inspection of Site UST15783 was conducted in October 2009. The surface of the site was observed to be gravel. No evidence of contamination was observed.

Target Analytes

The target analytes for leaded gasoline include GRO, BTEX, PAH, EDB, 1,2-DCA, and lead. However, because DRO, arsenic, and barium are present at levels above ADEC Method 2 cleanup levels, these are also target analytes.

Potential Exposure Pathways and Receptors

Based on current and reasonably anticipated potential future land uses at Site UST15783, potential human receptors and potentially complete exposure pathways include the following:

- **Excavation/Construction Workers:** Potential exposure to chemicals in soil to 15 feet bgs and shallow groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind or during onsite excavation activities. Potentially complete routes of exposure to shallow groundwater include dermal contact with groundwater and inhalation of ambient vapors from groundwater.
- **Future Occupational Workers:** Potential exposure to chemicals in surface soil to 2 feet bgs. Potentially complete routes of exposure to surface soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Vapor intrusion from VOCs in environmental media migrating into current or future occupational buildings is also a potentially complete exposure route.
- **Hypothetical Future Residents:** Potential exposure to chemicals in soil to 15 feet bgs and groundwater. Potentially complete routes of exposure to soil include incidental soil ingestion, dermal contact with soil, and inhalation of ambient vapors or dust generated from wind. Potentially complete routes of exposure to groundwater include ingestion, dermal contact, and inhalation of VOCs during showering or other household activities. Vapor intrusion from VOCs in environmental media migrating into current or future residences is also a potentially complete exposure route.

Ecological exposure pathways are considered incomplete at Site UST15783. Graveled surfaces provide no viable habitat onsite. A potential exposure pathway could be complete if COPECs are identified in groundwater that daylights downgradient. Terrestrial ecological receptors will not be evaluated for this site, but aquatic receptors will be evaluated downgradient if site characterization data and/or modeling indicate daylighting of groundwater may occur.

Conclusions

UST 1578-3 was a 500-gallon, leaded-gasoline tank associated with Building 1578. UST 1578-3 was removed in 1997. During the UST removal action, five confirmation samples were collected and analyzed for DRO and GRO. DRO was detected in confirmation soil samples at concentrations exceeding the ADEC Method 2 cleanup levels.

Recommendation: Site Characterization

Additional site characterization is recommended to fully delineate the extent of fuel contamination in soil to complete a release investigation in accordance with 18 AAC 78.235 and the UST Procedures Manual (ADEC, November 7, 2002).

The need for further protective measures for existing potable water supply wells will be based on the determination of the nature and extent of groundwater contamination per the groundwater specific FSPs. The USAF has already installed an air stripper as part of the current water treatment system as an interim protective measure pending completion of the investigations.

References

- Alaska Department Environmental Conservation (ADEC). November 7, 2002. *Underground Storage Tanks Procedures Manual, Guidance for Treatment of Petroleum-Contaminated Soil and Water and Standard Sampling Procedures.*
- Harding-Lawson Associates. February 8, 1999. *Remedial Action Report Galena Tank Removal and Soil Remediation. Galena Air Force Station, Alaska, Volume I of IV.*
- Earth Tech, Inc. June 2008. *Work Plan for Site Investigations at Galena Airport, Alaska.*
- U.S. Air Force (USAF). February 2010a. *Draft Environmental Well Inventory Report Galena Air Station, Alaska.*
- U.S. Air Force (USAF). February 2010b. *Final Environmental Baseline Survey Air Force Property at Galena Airport, Alaska.*
- U.S. Air Force (USAF). October 13, 1998. Craig A. Valentine, Environmental Engineer. Notification of Post Closure to Alaska Department of Environmental Conservation (ADEC).
- U.S. Air Force (USAF). June 13, 1997. Craig A. Valentine, Environmental Engineer. Closure Notice to ADEC.
- U.S. Air Force (USAF). October 23, 1996. Lt. Col. David T. Peters. Signed Affidavit to the State of Alaska 3rd Judicial District.

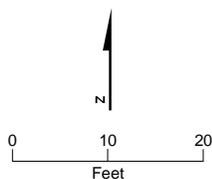
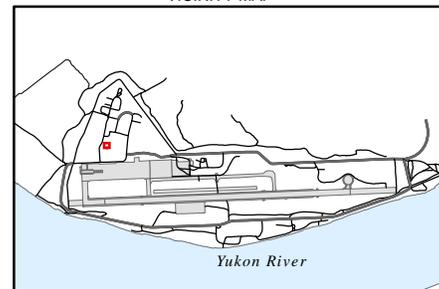


VICINITY MAP

LEGEND

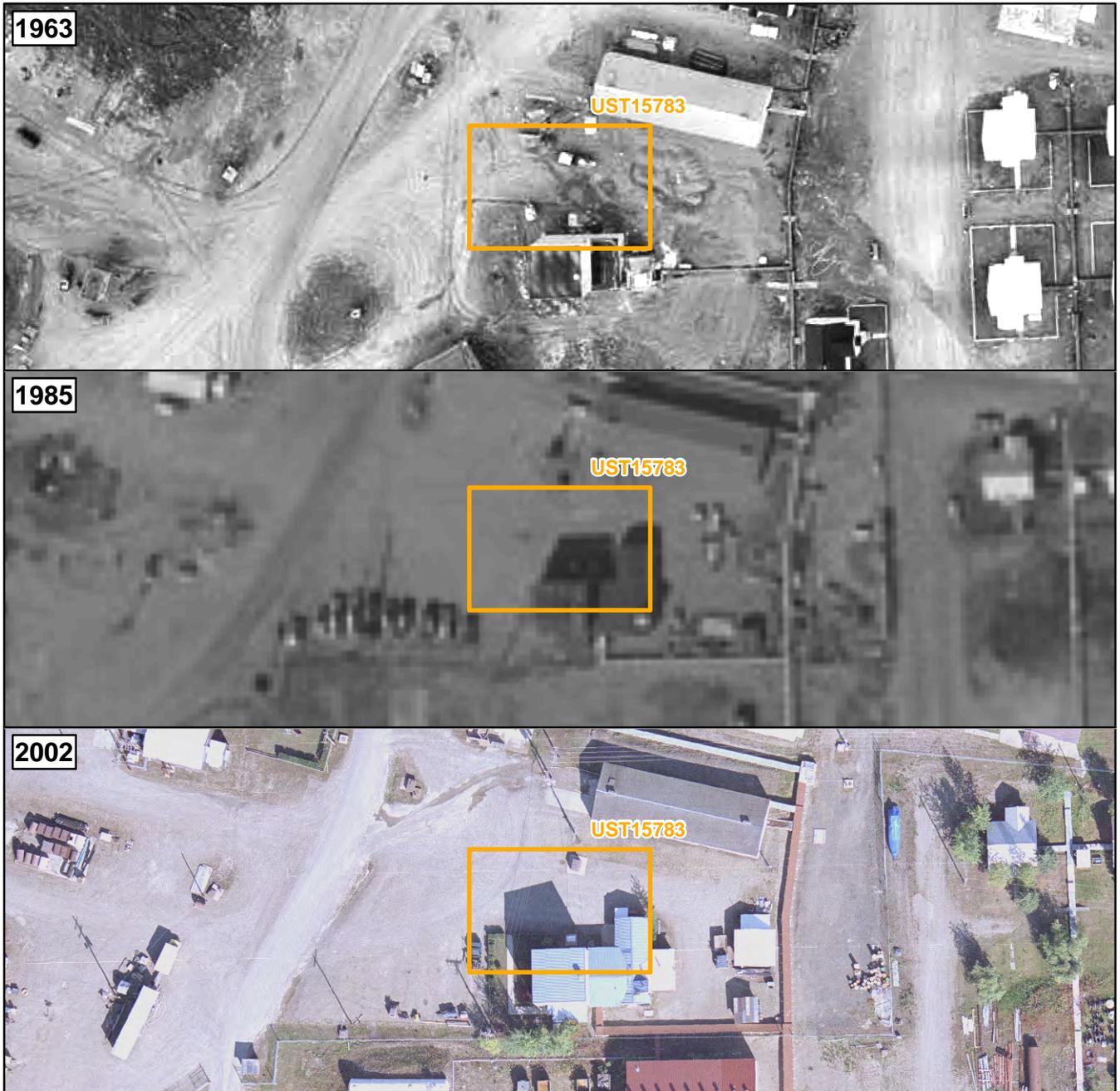
-  UST15783
-  Adjacent Site
-  Approximate Location of Former Feature
-  Main Wastewater Line
-  Service Wastewater Line

Note:
 1. Imagery September 4, 2009. Pixel size 0.25 meters.



**FIGURE A1-UST15783
 Site Layout**

Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



LEGEND
 UST15783

Notes:
 1. Photography Dated 9-4-1963, Georeferenced.
 2. Photography Dated 1985, Georeferenced.
 3. Imagery August, 2002. Pixel size 0.075 meters.

VICINITY MAP

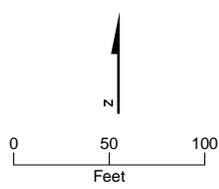
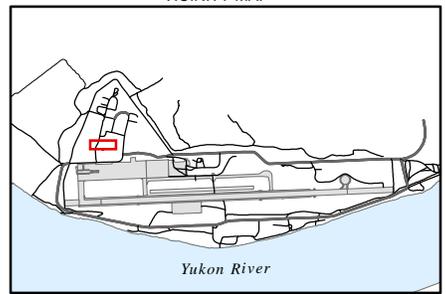
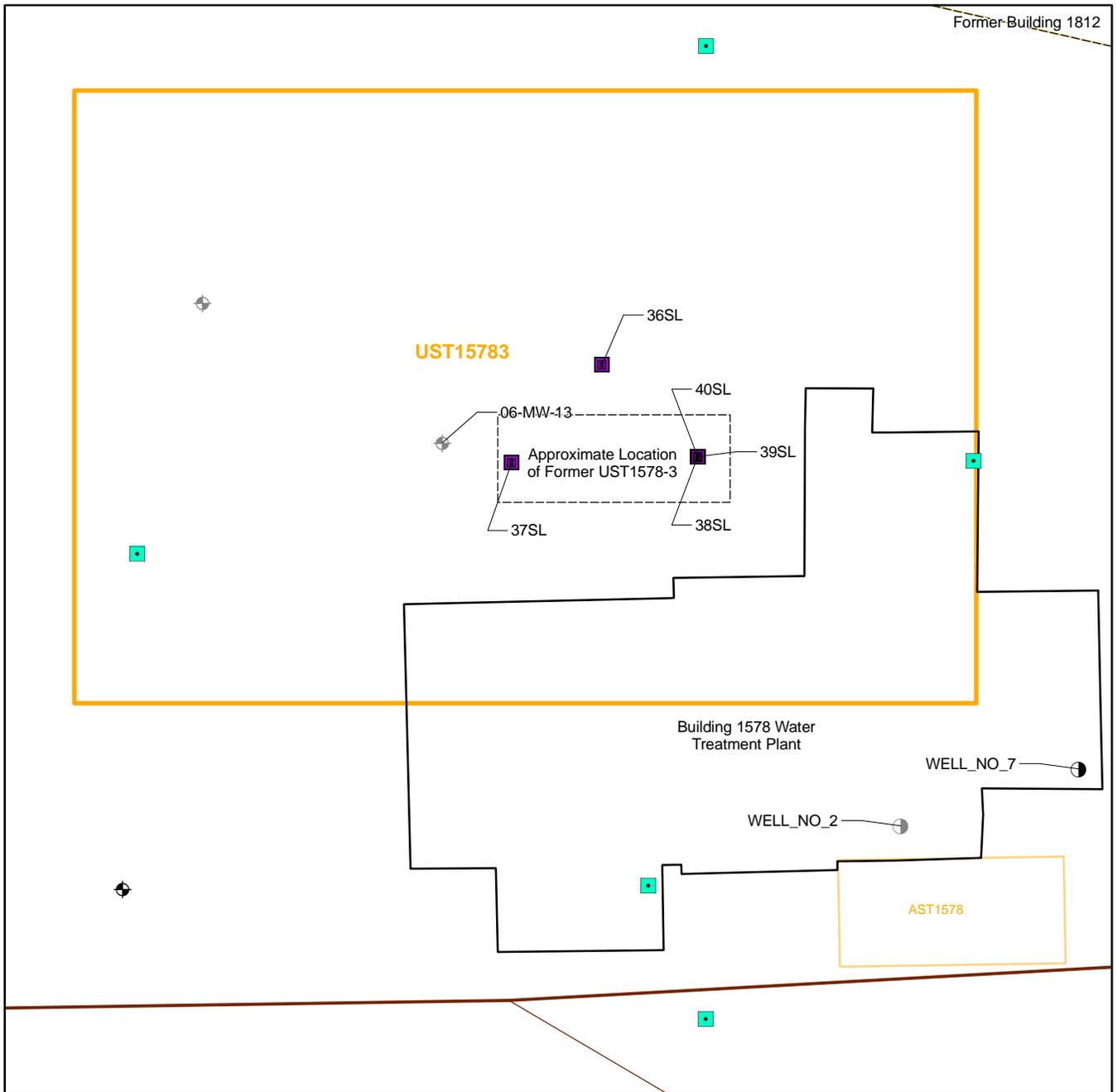


FIGURE A2-UST15783
Historical Aerial Photography
 Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska



LEGEND

- UST15783
- Adjacent Site
- Approximate Location of Former Feature
- Structure
- Main Wastewater Line
- Service Wastewater Line

Historical Sample Location

- Excavation Sample
- Surface Soil Sample
- + Monitoring Well
- + Abandoned Monitoring Well
- Production Well
- ◐ Abandoned Production Well

VICINITY MAP

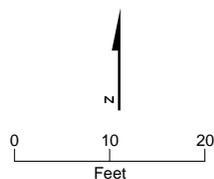
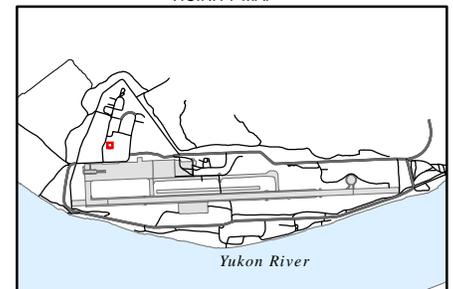


FIGURE A3-UST15783
Historical Sample Locations

Preliminary Assessment Report
 Former Galena Forward Operating Location, Alaska

Supporting Documentation

IN THE MATTER OF UNDERGROUND STORAGE TANK USAGE

0042

STATE OF ALASKA)
3rd JUDICIAL DISTRICT)

SWORN AFFIDAVIT OF LT COL DAVID T. PETERS

I, Lt Col David T. Peters, upon my sworn oath, do state as follows:

1. I am the operator of Facility #640, located at Galena Airport.
2. On 15 Nov 93 use of Tank # 1578-3 was permanently discontinued because the tank was no longer required.
3. On 27 Aug 96, Tank # 1578-3 was determined to be empty by Capt John P. Dewine who based this determination upon manual gauging.
4. On 27 Aug 96, Capt Dewine measured the contents of Tank # 1578-3 and verified that it contained less than one inch of product.
5. To the best of my knowledge and belief, no product has been placed into any tank since the date referenced in paragraph 4, above. The last time any product was placed into the tank was on or about Nov 93.
6. I have taken the following measures to secure the tanks so that no person may use it without authorization: Galena AFS has restricted access and no person may enter without prior notification and approval.
7. I have read and understand the "Instructions" sheet attached to this affidavit.

Further Affiant sayeth naught.

(Date) 001 23 (Signature of Affiant) 

On 001 23 (Date), Lt Col David T. Peters, who is known to me (or proved his identity to me on the basis of satisfactory evidence), personally appeared before me and executed the foregoing document in my presence.

WITNESS my hand and official seal.



FRED STA. MARIA, TSgt, USAF
My Commission Expires: Paralegal, Authorized under 10 U.S.C. 1044a

L.S.

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NOTIFICATION OF CLOSURE
UNDERGROUND STORAGE TANKS

Notice of Closure is required for any tank and/or piping removed, closed in-ground, or changed in service. See 18 AAC 70.085(a). "Change in service" means to change the use of a UST from containing a regulated substance to a non-regulated substance (such as heating oil).

0056

Facility - Location (Do not use P.O. Box)	Tank Owner
Name <u>Galena Air Force Station</u>	Name <u>U.S. Air Force, 611th CES/CEVC</u>
Address <u>Galena, Alaska</u>	Address <u>Environmental Compliance Section</u>
City _____	City <u>Building 6-900, 9th Street, Suite 360</u>
State/Zip _____	State/Zip <u>Elmendorf Air Force Base, Alaska 99506-2270</u>
Phone/Fax <u>(907) 446-3340</u>	Phone/Fax <u>(907) 552-4532</u>

Facility ID Number: 640
Scheduled Date for Closure: July 7, 1997

This form MUST be completed and sent to ADEC at the address listed below at least 15 and no more than 60 days prior to closure.
Alaska Statute 46.03.376 requires those who supervise a UST closure be certified by the State of Alaska for Decommissioning.
A UST with a confirmed release must be permanently removed from the ground. In-place closure or change in service is not allowed.
A Site Assessment or Release Investigation in accordance with 18 AAC 70.090 must be performed at time of closure by an impartial third party using "Qualified" persons under a Standard Sampling Procedures Manual (SSPM).

Person to Perform Closure: Charles Croley, Harding Lawson Associates UST Worker License #: 172
Person and Company to Perform Site Assessment or Release Investigation: Bryan D. Lund, Harding Lawson Associates
Is the Person "Qualified" and on file with ADEC? Yes

Method of Closure: Removal X
In-Ground _____ (If so, See Discussion on Reverse Side)
Change in Service _____ (If so, what is new fuel usage?) _____

Is there a leak/spill at this site? unknown (if so, please notify the closest ADEC office)
Have you contacted the local fire department of your intent to close the tank(s)? Fire department will be notified during mobilization in July 1997.

Where are the tank, piping, equipment, and sludge to be disposed? Tank steel will be turned over to the U.S. Air Force for recycling; piping will be disposed of in the Galena landfill; sludge disposal will be based on waste characterization.

Closure for (please check):				
	<input checked="" type="checkbox"/> Tanks and Piping	<input type="checkbox"/> Tanks only	<input type="checkbox"/> Piping only	
Tank Number	Tank Age (years)	Tank Size (gallons)	Last Product Stored	Date Last Used
<u>6</u> (USAF 1578-3)	Unknown	500	Leaded gas	Unknown
<u>10</u> (USAF 1551-1)	33	550	Diesel	Unknown
<u>15</u> (USAF 1700-1)	33	550	Oil/water separator waste	In use
<u>16</u> (USAF 46)	51	25,000	Diesel	In use
<u>17</u> (USAF 47)	51	25,000	Diesel	In use
<u>18</u> (USAF 48)	51	12,000	Diesel	In use
<u>19</u> (USAF 49)	51	12,000	Diesel	In use
<u>25</u> (USAF 1556-2)	26	300	Oil/water separator waste	In use
Unknown (USAF 1499-3)	Unknown	100	Oil/water separator waste	In use

Closure Notice Submitted By: Owner Operator Other Contractor
William T. Hawley, P.E. Delivery Order Manager
(Please print name) (Title)
William T. Hawley (Signature) 6/23/97 (Date)

Return Completed Form to: Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, Alaska 995013
FAX # (907) 269-7507

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

000062

NOTIFICATION OF POST-CLOSURE UNDERGROUND STORAGE TANKS

Post-Closure information is required 60 days after UST closure or change in service. See 18 AAC 76.065 (j). The Owner/Operator or his/her representative must fill out and sign Page 1. The Certified worker who performed or supervised the closure must fill out and sign Page 2.

Facility - Location (Do not use P.O. Box.)

Tank Owner

Name Galena Air Force Station
Address Galena, Alaska
City
State/Zip
Phone/Fax (907) 448-3340

Name U.S. Air Force, 611 CES/CEVC
Address Environmental Compliance Section
City Building 8-900, 9th Street, Suite 380
State/Zip Elmendorf Air Force Base, Alaska 99506-2270
Phone/Fax (907) 852-4532

Facility ID Number: 640

TANKS REMOVED OR CLOSED IN GROUND

Table with 5 columns: Tank #, Tank Size, Removed or Closed In Ground, Date Product Last Stored, Contamination Found? Rows include tanks 6, 10, 15, 16, 17, 18, 19, 20, and Unknown.

CLOSURE

Performed By: (Person) Joseph W. McElroy (Company) Harding Lawson Associates (UST License #) 401
Date Completed: July 28, 1997

PERSON WHO PERFORMED/SUPERVISED CLOSURE MUST FILL OUT BACK PAGE.

SITE ASSESSMENT/RELEASE INVESTIGATION

Performed By: (Person) Joseph W. McElroy (Company) Harding Lawson Associates

SITE ASSESSMENT REPORT MUST BE SUBMITTED TO LOCAL ADEC OFFICE WITH 60 DAYS AFTER CLOSURE. RELEASE INVESTIGATION REPORT MUST BE SUBMITTED TO ADEC WITHIN 45 DAYS AFTER CLOSURE.

Was the closed tank replaced by a new UST? Yes No X
If yes, please submit a new Registration form containing information on the new tanks.

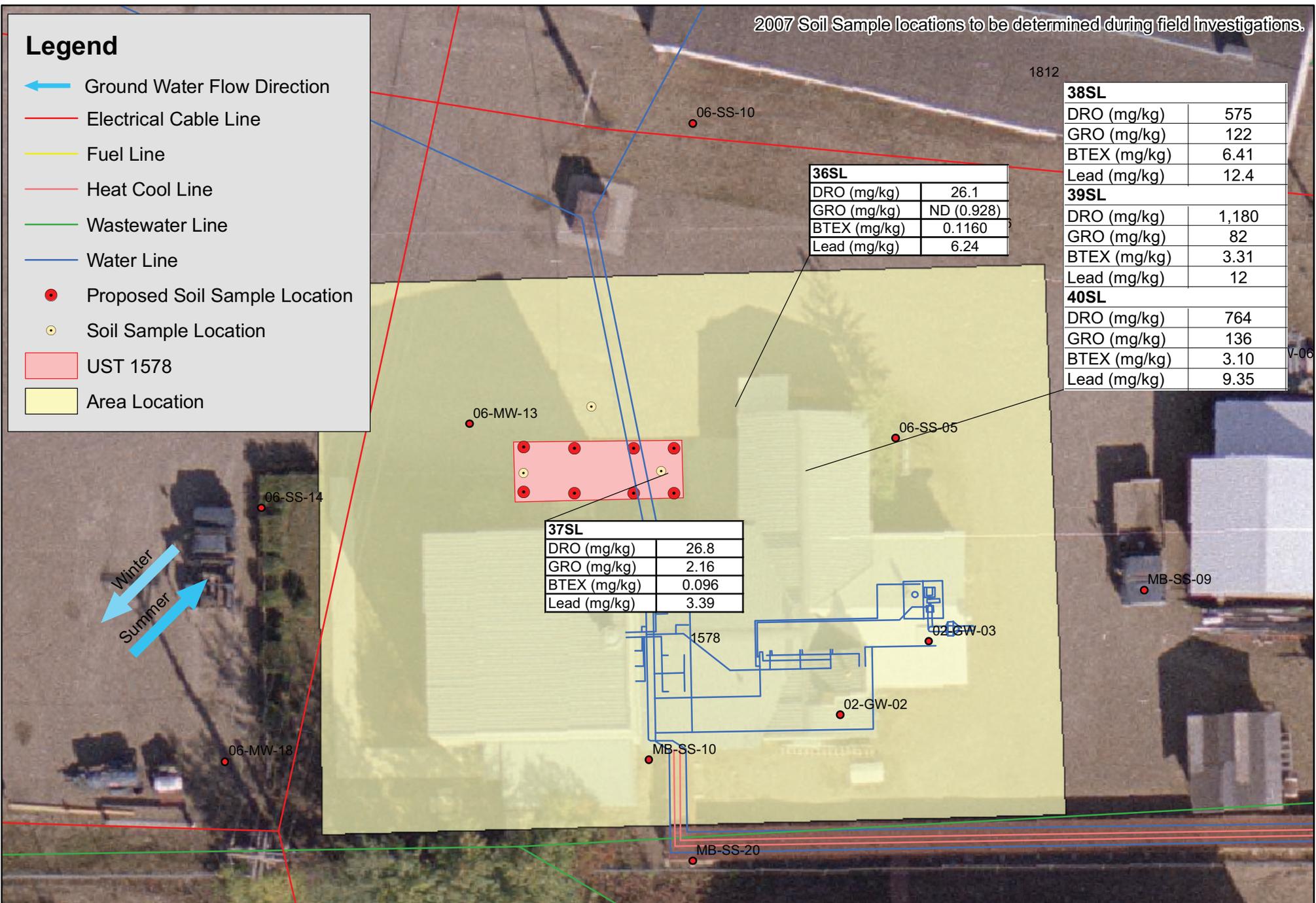
Submitted by: [X] Owner [] Operator [] Other
Craig A. Valentine 611 CES Environmental Engineer
(Please Print Name) (Title)
Craig A. Valentine 13 October 1998
(Signature) (Date)

Return Completed Form to: ADEC, Storage Tank Program
655 Cordova Street
Anchorage, Alaska 99501
FAX # (907) 266-7807

2007 Soil Sample locations to be determined during field investigations.

Legend

-  Ground Water Flow Direction
-  Electrical Cable Line
-  Fuel Line
-  Heat Cool Line
-  Wastewater Line
-  Water Line
-  Proposed Soil Sample Location
-  Soil Sample Location
-  UST 1578
-  Area Location



36SL	
DRO (mg/kg)	26.1
GRO (mg/kg)	ND (0.928)
BTEX (mg/kg)	0.1160
Lead (mg/kg)	6.24

38SL	
DRO (mg/kg)	575
GRO (mg/kg)	122
BTEX (mg/kg)	6.41
Lead (mg/kg)	12.4

39SL	
DRO (mg/kg)	1,180
GRO (mg/kg)	82
BTEX (mg/kg)	3.31
Lead (mg/kg)	12

40SL	
DRO (mg/kg)	764
GRO (mg/kg)	136
BTEX (mg/kg)	3.10
Lead (mg/kg)	9.35

37SL	
DRO (mg/kg)	26.8
GRO (mg/kg)	2.16
BTEX (mg/kg)	0.096
Lead (mg/kg)	3.39



611th AIR SUPPORT GROUP
 611th CIVIL ENGINEER SQUADRON
 ELMENDORF AFB, ALASKA

Figure 13-1
 Water Treatment Plant
 (UST) 1578-3 - (1997 Data)

