

## Request for No Further Remedial Action Planned

**Site:** Former Alaska Dormitory, also known as Two Party Agreement (TPA) Site 9h and National Oceanic and Atmospheric (NOAA) Site 23

**Location:** St. Paul Island, Alaska is approximately 800 miles southwest of Anchorage in the Bering Sea. On the island, the Former Alaska Dormitory (A-dorm) and the associated underground storage tank (UST) are located along the north side of Haul Road (57° 7' 22.93" N latitude, 170° 16' 48.50" W longitude; Figure 1).

**Legal Property Description:** The structures and area of excavation are located in the central portion of Tract 46, Township 35 South, Range 132 West, of the Seward Meridian, Alaska, as shown on the dependent resurvey of a portion of U.S. Survey No. 4943, Alaska, Tract "A", St. Paul Townsite, officially filed June 3, 1997 (Figure 2). The federal government currently owns the surface and subsurface property of Tract 46.

**Type of Release:** Potential sources and release mechanisms include: 1) spills occurring during UST fueling; and 2) leaks occurring from the UST or its associated piping.

### History and Background:

During the 1940s, an UST was installed on the site property to store heating oil for the Former Alaska Dormitory (also known locally as the Aleutian Bunkhouse), which served as government employee housing. NOAA proposed to remove the UST in anticipation of the transfer of the real property to Aleut Native American entities under the Transfer of Property Agreement (TOPA; NOAA 1984). NOAA prepared a Corrective Action Plan (CAP; NOAA 2002) for the removal of the UST at the Alaska Dormitory, implemented the CAP in October 2002, and provided a Corrective Action Report (CAR; NOAA 2003).

### Summary of Site Investigations:

In the summer of 2000, monitoring wells were installed and soil borings taken in the City of St. Paul (Columbia Environmental Sciences, Inc. 2001). Surface staining adjacent to and/or near the UST indicated fuel contamination was present in the soil. Soil borings confirmed these observations. Borings indicated that levels of diesel-range organic compounds (DRO) varied from 6,800 mg/kg at the surface to 5,000 mg/kg at 4 to 10 feet below ground surface (bgs).

NOAA contractors conducted quarterly groundwater monitoring from September 2000 to September 2001 and from October 2003 to July 2004 in the vicinity of the Former Alaska Dormitory (Figure 3). During 2000-2001 sampling events, no ADEC Table C exceedances were detected in the well nearest to the area of excavation (MW46-11), although DRO were detected at a maximum concentration of 380 µg/l (IT Alaska Inc. 2002). DRO, gasoline-range organic compounds (GRO), and benzene were detected above their Table C cleanup levels in a down gradient well (MW46-10). During the first three quarters of 2003-2004 sampling, DRO were detected above their ADEC Table C cleanup level in well MW46-11, with a maximum concentration of 1,800 µg/l. MW46-10 was not sampled; however, DRO Table C cleanup levels were not exceeded in two other wells (MW46-31 and MW46-15)

located down gradient from MW46-11. A full report on 2003-2004 sampling events will be available late in 2004. [Note that NOAA's contractor for the 2001 sampling analyzed for residual-range organic compounds (RRO) by adapting soil analytical method AK103. The adapted method was never approved by ADEC, and no ADEC approved method exists. Thus, although the contractor reported detecting RRO in some wells, ADEC has indicated it does not consider this data to be valid, and the results are not included herein.]

Mitretek Systems (2002) evaluated the 2000-2001 groundwater data for the St. Paul Village area, which includes the Former Alaska Dormitory. The Mitretek report demonstrated that groundwater in the vicinity of St. Paul Village has high total dissolved solids and can be brackish. Consequently, the groundwater in the area is not suitable for drinking water. The evaluation, in part, provided a rationale for using alternative groundwater cleanup levels that are protective of human health and the environment where the groundwater is not potable. Mitretek concluded in accordance with 18 Alaska Administrative Code (AAC) 75.350 (ADEC 2000) that groundwater in the Village area is not currently used and does not afford any potential future use as a drinking water source. These findings provided the basis for the application of the Ten Times Rule discussed below.

**Summary of Applied Cleanup Levels:**

NOAA employed ADEC Method Two cleanup criteria, discussed at 18 AAC 75.341(c) (ADEC 2000). Alternative cleanup levels were also applied for some compounds. For benzene, under the TPA, NOAA had the option to cleanup to the less stringent State of Alaska cleanup level in effect in 1991 (ADEC 1991). Additionally, NOAA proposed and ADEC approved the use of alternative cleanup levels under 18 AAC 75.345 and 18 AAC 75.350, commonly referred to as the Ten Times Rule (ADEC 2002, Mitretek Systems 2002). According to these regulations, if groundwater beneath a site contains contaminant concentrations above the cleanup levels provided in ADEC Table C, then the soil may be remediated to levels ten times higher than those provided in Method Two Tables B1 and B2 for the migration to groundwater pathway for those contaminants found in groundwater at concentrations above the cleanup levels provided in ADEC Table C; however, if the inhalation or ingestion pathway values are more stringent than the migration to groundwater pathway, then the more stringent value is to be applied. ADEC uses 15 feet bgs to define subsurface soil to which residents will have a reasonable potential to be exposed through the inhalation or ingestion pathways (ADEC 2000; 18 AAC 75.340 (j)(2)). Therefore NOAA is not obligated to excavate contaminated soil occurring at depths deeper than 15 feet to address the inhalation and ingestion pathways. Cleanup criteria were applied to the maximum extent practicable (18 AAC 75.325 (f), 18 AAC 75.990).

**Summary of Cleanup Actions:**

Site cleanup actions started on October 30, 2002. Bering Sea Eccotech (BSE) personnel directed by a PSI Environmental and Instrumentation (PSI) engineer used an excavator to remove soils covering the UST (Figures 4 and 5). The top of the UST was encountered at approximately 3.5 feet bgs.

After exposing the top of the UST, approximately 1,400 gallons of diesel fuel was pumped from it into a tank truck provided by Delta Western. The fuel was in good condition and was donated to the Village of St. Paul.

The UST was then fully exposed and removed from the ground by attaching a cable to its lifting ring and the excavator bucket. The excavator lifted the UST from the excavation and placed it directly on a flat bed truck for transport to the BSE garage facility at the St. Paul airport.

After removing the UST, gray soil with a strong petroleum odor was discovered at the bottom of the excavation (Figure 6). Contaminated soils were removed to the greatest extent practicable. Maintaining the integrity of the nearby building foundation was a factor in the extent of excavation. Also, groundwater intrusion occurred at approximately 8 feet bgs (Figures 7). Because the rate of groundwater seepage was relatively slow, the excavation continued to a depth of 10 feet in order to remove as much contaminated soil as possible before the water volume caused the soils to become too fluid for effective removal.

Excavated soils were placed in dump trucks and transported to the Blubber Dump petroleum-contaminated soil (PCS) stockpile. At this location, the soil was placed on a lined cell pending treatment in NOAA's enhanced thermal conduction (ETC) system (BSE 2003). Approximately 160 cubic yards (yd<sup>3</sup>) of soil were removed from the UST excavation.

While removing contaminated soil at the east end of the UST excavation, the excavator bucket broke a 2-inch underground water line that was not identified during the utility locate performed prior to project startup. After consulting with the city's Public Works Department, the shutoff valve was located and closed about 80 minutes after the water line was broken.

Six confirmation samples were collected and analyzed at a fixed laboratory for benzene, toluene, ethylbenzene, total xylenes (BTEX); DRO; GRO; RRO; and selected polynuclear aromatic hydrocarbons (PAHs; Tables 1 and 2). Results indicated DRO concentrations varied from not detected to 13,800 mg/kg. Four samples exceeded the ADEC Method Two cleanup level of 250 mg/kg DRO and also exceeded the alternative cleanup level of 2,500 mg/kg. These samples were collected from the bottom of the excavation at the level of the water table. NOAA is not required by ADEC to excavate into the water table (18 AAC 75.325 (f)). Concentrations for all other contaminants were below the ADEC Method Two cleanup levels. Laboratory reporting limits were below applicable cleanup levels for all analyses except for three PAHs (Table 2). The benzene reporting limit was below its alternative cleanup level of 0.5 mg/kg, though above its ADEC Method Two cleanup level of 0.02 mg/kg.

The removed UST was cleaned with soap and water and cut into manageable pieces for recycling. In accordance with Section 6.2.6 in the CAP, the rinsate generated during UST cleaning was transported to the Blubber Dump PCS stockpile and discharged onto the stockpile and ultimately treated.

The UST excavation was backfilled with clean fill material obtained from the scoria quarry at Telegraph Hill on St. Paul Island. The fill was placed in the excavation, compacted with the excavator bucket, and the site restored to grade.

**Recommend Action:**

In accordance with paragraph 59 of the Two Party Agreement (NOAA 1996), NOAA requests written confirmation that NOAA completed all appropriate corrective actions at the Former Alaska Dormitory, TPA Site 9h/Site 23 in accordance with the Agreement and that Alaska Department of Environmental Conservation (ADEC) requires no further remedial action plan from NOAA.

**References:**

Alaska Department of Environmental Conservation (ADEC). 1991. *Interim Guidance for Non-UST Contaminated Soil Cleanup Levels, Contaminated Sites Program*. July 17, 1991.

ADEC. 2000. Title 18 of the *Alaska Administrative Code* 75, Articles 3 and 9. *Oil and Hazardous Substances Pollution Control Regulations*. State of Alaska. Amended through October 28, 2000.

ADEC. 2002. Letter from Louis Howard, Project Manager, Alaska Department of Environmental Conservation, to John Lindsay, Project Manager, NOAA Pribilof Project Office regarding ADEC conditional approval for applying the Ten Times Rule. May 30.

Bering Sea Eccotech. 2003. *Enhanced Thermal Conduction Yearly Report, St. Paul Island, Draft*. Bering Sea Eccotech. February 2003.

Columbia Environmental Sciences, Inc. 2001. *Draft Site Characterization Report, Tract 46 and Vicinity (TPA Site 9), St. Paul Island, Alaska*. Version 2.1 December 16, 2001. Kennewick, WA.

Mitretek Systems. 2002. *Groundwater Use and Classification in the Vicinity of Tract 46, St. Paul Island, Pribilof Islands, Alaska*. Prepared by Mitretek Systems, for the National Oceanic and Atmospheric Administration. June 5.

National Oceanic and Atmospheric Administration (NOAA). 1984. *Transfer of Property Agreement*.

NOAA. 1996. *Pribilof Islands Environmental Restoration Two-Party Agreement*, Attorney General's Office File No. 66 1-95-0126. National Oceanic and Atmospheric Administration. January 26, 1996.

NOAA. 2002. *Corrective Action Plan, UST Removals, Selected U.S. Government Sites, St Paul Island, Alaska*. August 13, 2002.

**Request for NFRAP  
Former Alaska Dormitory  
TPA 9h/Site 23  
St. Paul Island, Alaska**

---

NOAA. 2003. *Draft UST Removal and Corrective Action Report TPA Site 9-H Former Alaska Dormitory, St. Paul Island, Alaska.* March 31, 2003

Request for NFRAP  
Former Alaska Dormitory  
TPA 9h/Site 23  
St. Paul Island, Alaska

---

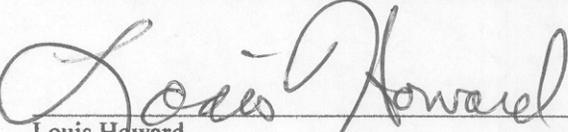
**For the National Oceanic and Atmospheric Administration**

  
\_\_\_\_\_  
John Lindsay  
NOAA, Pribilof Project Office

9/16/04  
\_\_\_\_\_  
Date

**Approvals:** In accordance with Paragraph 59 of the Two Party Agreement, this is to confirm that all corrective action has been completed at the Former Alaska Dormitory, TPA Site 9h/Site 23, in accordance with the Agreement and that no plan for further remedial action is required.

**For the Alaska Department of Environmental Conservation**

  
\_\_\_\_\_  
Louis Howard  
Alaska Department of Environmental Conservation  
Remedial Project Manager

9/17/04  
\_\_\_\_\_  
Date

## **Tables and Figures**

Table 1. Petroleum Hydrocarbon Analytical Data Summary for Confirmation Samples from the Former Alaska Dormitory-TPA 9h/Site 23, St. Paul Island, Alaska

Sample #	Sample Depth (feet)	GRO (AK101)	Benzene (EPA 8021B)	Toluene (EPA 8021B)	Ethylbenzene (EPA 8021B)	Total Xylene (EPA 8021B)	DRO (AK102)	RRO (AK103)
SNPT46DMSS01	8	64.2	ND(0.159)	1.580	0.794	5.640	13,900	1,480
SNPT46DMSS02	8	44.2	ND(0.0137)	0.189	0.171	1.101	3,620	ND(257)
SNPT46DMSS03	8	76.6	ND(0.0131)	ND(0.0876)	0.13	1.909	4,440	ND(231)
SNPT46DMSS04	8	86.7	ND(0.0296)	ND(0.118)	0.126	1.786	3,340	ND(235)
SNPT46DMSS05	6	ND(2.86)	ND(0.0143)	ND(0.0571)	ND(0.0571)	ND(0.0571)	ND(21.8)	ND(21.8)
SNPT46DMSS06	7	ND(3.61)	ND(0.0181)	ND(0.0723)	ND(0.0723)	ND(0.0723)	ND(21.8)	ND(21.8)
SNPTB01	Trip blank	ND(2.58)	ND(0.0129)	ND(0.0516)	ND(0.0516)	ND(0.0516)	NA	NA

NOTES:

- analytical results in milligrams per kilogram.
- ND=non-detect. The number provided in parentheses is the practical quantitation limit.
- NA=not analyzed
- Red text indicates analytical result above the applicable cleanup level.

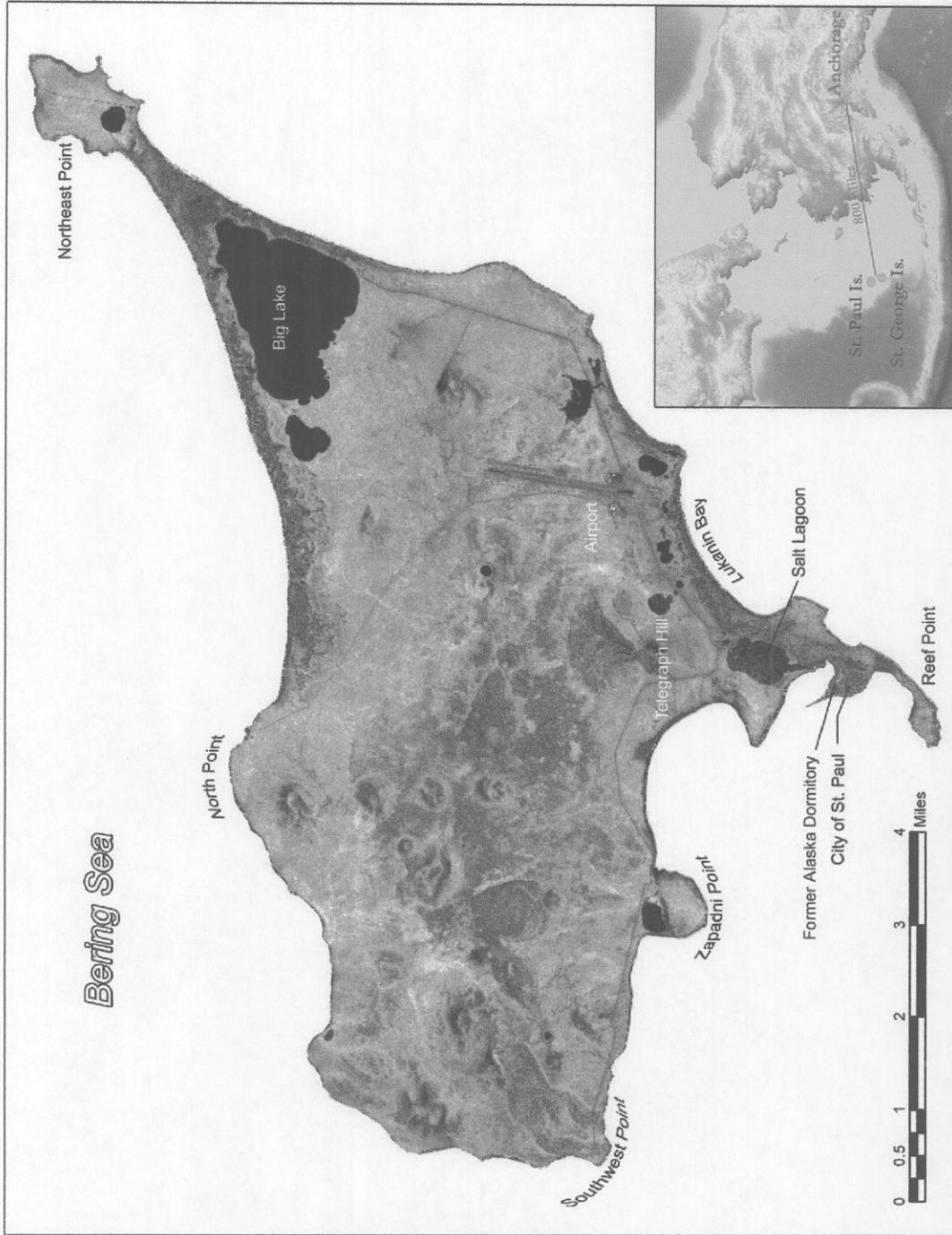
Table 2. Polynuclear Aromatic Hydrocarbon Analytical Data Summary for Confirmation Samples from the Former Alaska Dormitory- TPA 9h/Site 23, St. Paul Island, Alaska

Sample #	Sample Depth (feet)	Benzo(a) Anthracene	Benzo(a) pyrene	Benzo(b) Fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Fluorene	Indeno (1,2,3-c,d) pyrene	Naphthalene
SNPT46DMSS01	8	ND(6.55)	ND(6.55)	ND(6.55)	ND(13.1)	ND(6.55)	ND(9.17)	ND(6.55)	ND(6.55)	ND(9.17)
SNPT46DMSS02	8	ND(0.646)	ND(0.646)	ND(0.646)	ND(1.29)	ND(0.646)	ND(0.905)	ND(0.646)	ND(0.646)	ND(0.905)
SNPT46DMSS03	8	ND(0.582)	ND(0.582)	ND(0.582)	ND(1.16)	ND(0.582)	ND(0.815)	ND(0.582)	ND(0.582)	ND(0.815)
SNPT46DMSS04	8	ND(0.592)	ND(0.592)	ND(0.592)	ND(1.18)	ND(0.592)	ND(0.828)	ND(0.592)	ND(0.592)	ND(0.828)
SNPT46DMSS05	6	ND(0.546)	ND(0.546)	ND(0.546)	ND(1.09)	ND(0.546)	ND(0.764)	ND(0.546)	ND(0.546)	ND(0.764)
SNPT46DMSS06	7	ND(0.544)	ND(0.544)	ND(0.544)	ND(1.09)	ND(0.544)	ND(0.762)	ND(0.544)	ND(0.544)	ND(0.762)
SNPTB01	Trip blank	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:

- analytical results in milligrams per kilogram.
- ND=non-detect. The number provided in parentheses is the practical quantitation limit (PQL).
- Shading indicates instances when the PQL is higher than applicable cleanup limits.
- NA=not analyzed

Request for NFRAP  
 Former Alaska Dormitory  
 TPA 9h/Site 23  
 St. Paul Island, Alaska

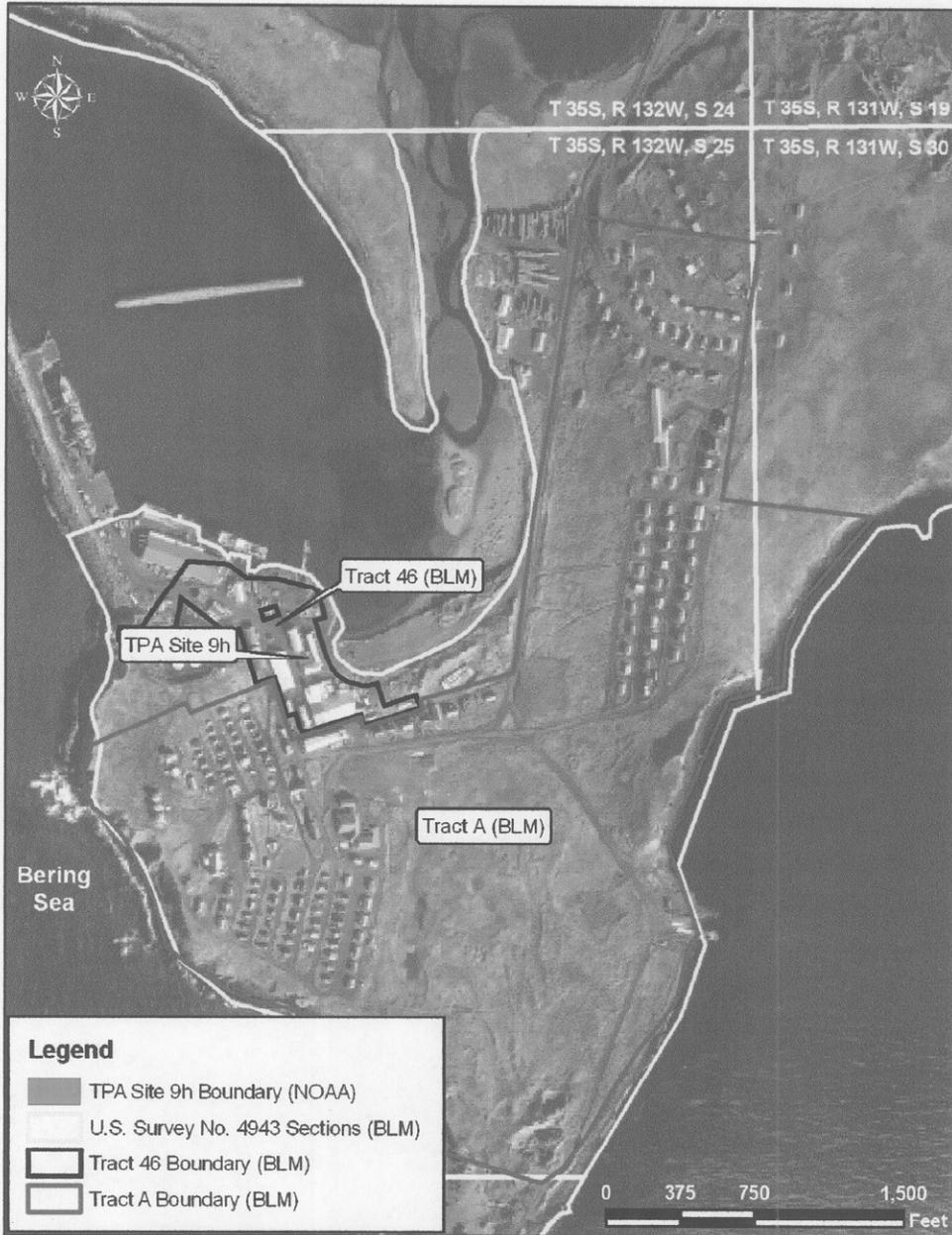


**Figure 1**  
 St. Paul Island Vicinity Map  
 Former Alaska Dormitory  
 NOAA Site 23/TPA Site 9h  
 St. Paul Island, Alaska

Source: Ikonos Satellite Imagery, 2001



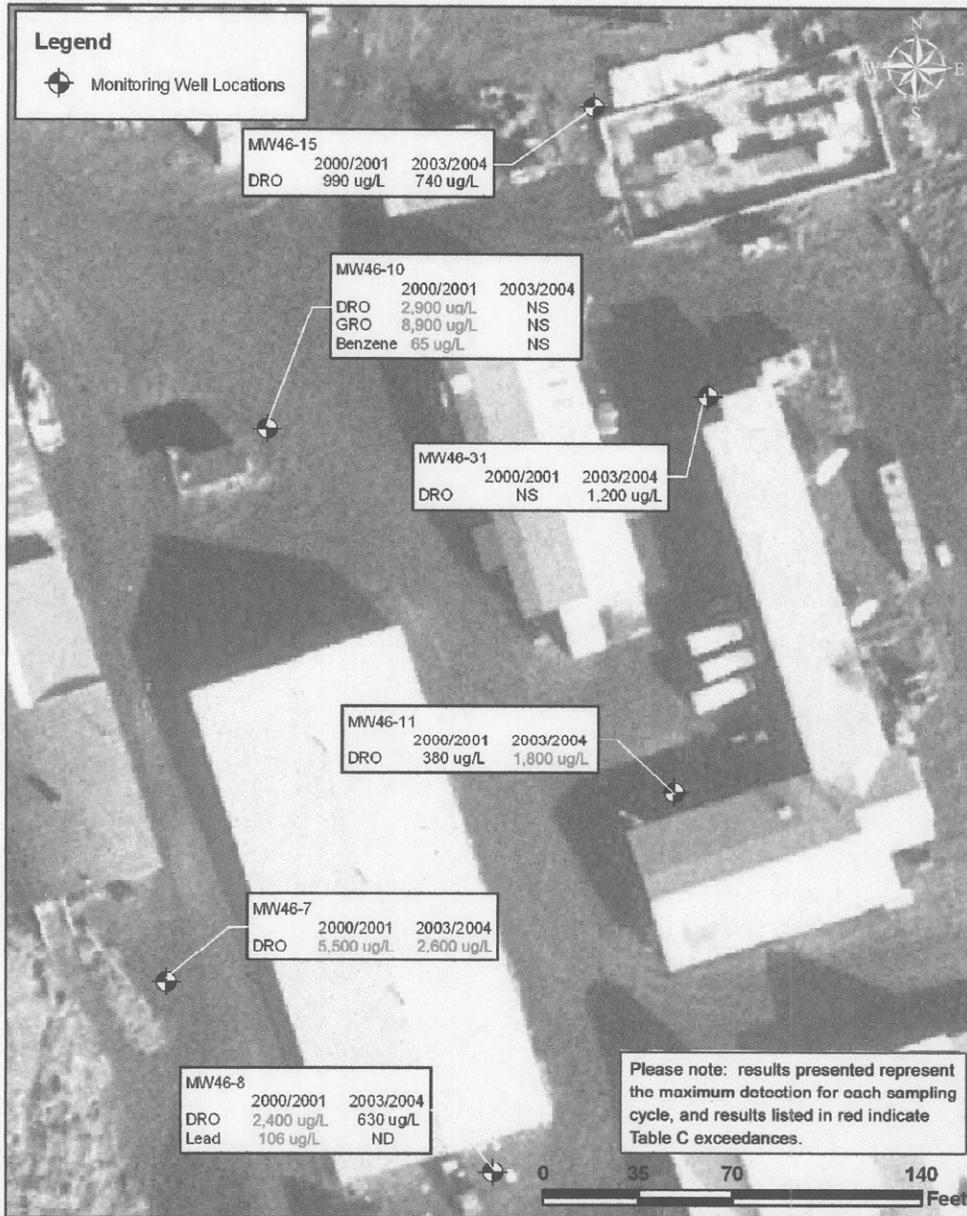
Request for NFRAP  
 Former Alaska Dormitory  
 TPA 9h/Site 23  
 St. Paul Island, Alaska



<p>Figure 2</p>	<p>Legal Property Description Map          Former Alaska Dormitory          NOAA Site 23/TPA Site 9h          St. Paul Island, Alaska</p>	<p>Sources: BLM Tracts (BLM MTPs 1983), TPA 9h Boundary (NOAA GIS 2004), Aerial Photo (Aeromap US 1996).</p>
---------------------	---	--



**Request for NFRAP  
Former Alaska Dormitory  
TPA 9h/Site 23  
St. Paul Island, Alaska**



**Figure**  
3

**Groundwater Sampling Results  
Former Alaska Dormitory  
NOAA Site 23/TPA Site 9h  
St. Paul Island, Alaska**

Sources: Well Locations (NOAA GPS 2004), Aerial Photo (Aeromap IIS 1996).





Figure 4. General view, UST site at Former Alaska Dormitory

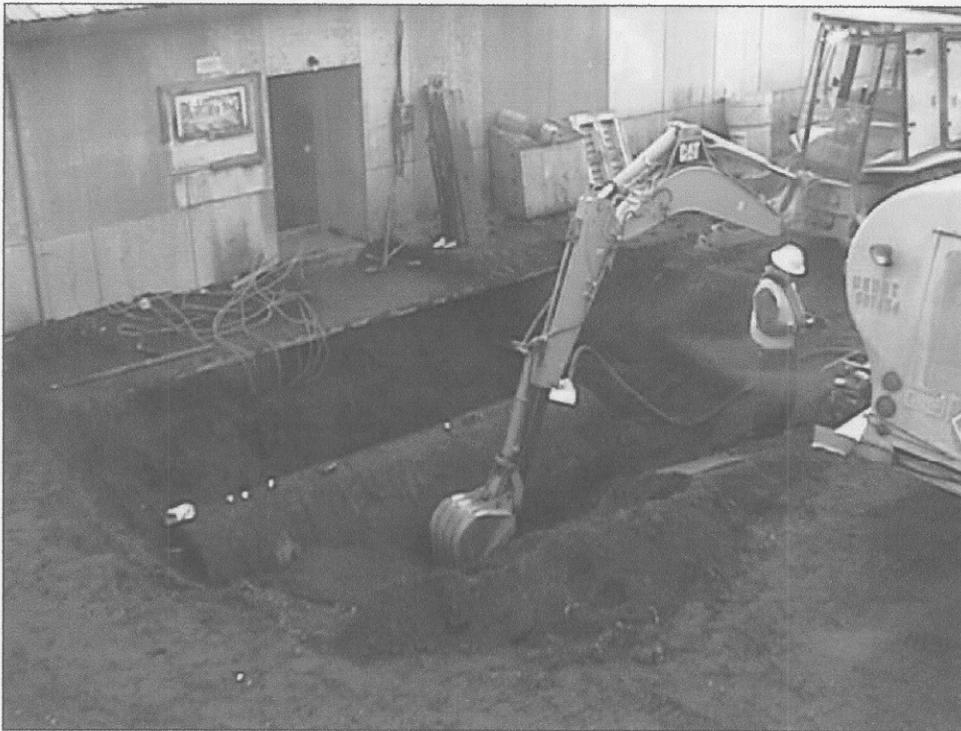


Figure 5. Excavator exposing 2000-gallon UST



Figure 6. Gray soil containing petroleum contamination



Figure 7. Excavation containing 2 feet of groundwater

Request for NFRAP  
 Former Alaska Dormitory  
 TPA 9h/Site 23  
 St. Paul Island, Alaska

