Request for Conditional Closure

Site: Former Fuel Storage Area Site, also known as Two-Party Agreement (TPA) Site 18 and National Oceanic and Atmospheric (NOAA) Site 18. The site is referred to as the "site" herein.

Location: St. George Island, Alaska is approximately 800 miles southwest of Anchorage in the Bering Sea. On the island, the site is located within the City of St. George, approximately 50 feet southeast of the village store and 260 feet southeast of the Bering Sea (56° 36' 7.22" N latitude, 169° 32' 55.60" W longitude; Figures 1 and 2). The site is also directly south of the Old Power Plant, TPA Site 9, southwest of the St. George Russian Orthodox Church, and west of the Aikow Hotel.

Legal Property Description: The Former Fuel Storage Area is located in Tract 52, Township 41 South, Range 129 West, Section 29 of the Seward Meridian, Alaska, as shown on the plat of rectangular net survey, officially filed February 15, 1985 (Figure 2). The City of St. George owns the surface estate.

Type of Release: Petroleum products released from drums or pipes during past operations at the site and mercury from unknown sources and activities.

History and Background:
Beginning in the late 1930s, drums of diesel, gasoline, and lubricating oil were stored on the hillside west of the hotel on a concrete support berm (Polarconsult 2004). Fuel from the drums was piped via steel, aboveground piping to eleven 1,000-gallon aboveground storage tanks (ASTs) formerly located west of the Old Power Plant, TPA Site 9 (NOAA 2004). Fuel distribution to the ASTs operated on a gravity feed system. The ASTs and fuel distribution system were incrementally removed with final removal completed by 1967 (BLM 1967, NOAA 1961).

Anecdotal information indicates that the site was used as a rookery and fur seal killing ground prior to the development of the City of St. George (Polarconsult 2004). Prior to the development of the Old Power Plant, the site also served as a fenced pasture and the location of one of the guyed radio antennas from the St. George Island U.S. Navy Radio Station (*circa* 1914-1917; USNRS 1917).

Site investigations, as discussed below, have detected mercury contamination in site soils. No documentation has been found to identify a potential source of mercury at this site or on St. George Island with the possible exceptions of thermometers and other scientific or medical instrumentation.

Summary of Site Investigations:
In 1993, Ecology and Environment, Inc. (E&E) conducted a preliminary assessment on St. George Island. E&E made no observations of contamination at the Former Fuel Storage Area. Based on historical uses of the site, E&E recommended soil sampling to determine the nature and extent of contamination should it exist (E&E 1993).

In 1996, Hart Crowser conducted an expanded site investigation that included the Former Fuel Storage Area Site (Hart Crowser 1997). Hart Crower took surface soil samples and excavated test pits in the vicinity of the site to determine whether petroleum releases occurred and, if so, the nature and extent of contamination (Figure 3). [Note: Hart Crowser's investigation of the Former Fuel Storage Area Site included land that NOAA now considers part of the Old Power Plant Site. Only samples collected from the south side of the road, in the area NOAA currently defines as the Former Fuel Storage Area Site, are discussed herein (Figure 2).] Basalt bedrock encountered 2 to 5 ft below ground surface (bgs) limited the depth of test pits. Hart Crowser analyzed samples for gasoline range organics (GRO), diesel range organics (DRO), and residual range organics (RRO). Field and project laboratory data indicated DRO exceeded the ADEC 1991 cleanup level of 200 mg/kg in 12 of the 22 soil samples with a maximum concentration of 10,000 mg/kg. RRO did not exceed the ADEC 1991 cleanup level of 2,000 mg/kg, though it was detected in 9 of 29 samples with a maximum concentration of 1,400 m/kg. GRO was not detected in any of the soil samples. Hart Crowser recommended removal of an estimated 1,700 cubic yards (yd^3) of diesel-contaminated soil.

Tetra Tech EM, Inc. (Tetra Tech) collected 19 samples from 14 soil borings at the Former Fuel Storage Area Site during a 2001 site characterization effort (Tetra Tech 2002; Figure 4). [Note: Tetra Tech's site characterization included the collection of additional samples from land that NOAA now considers part of the Old Power Plant Site. Only samples collected from the south side of the road, in the area NOAA currently defines as the Former Fuel Storage Area Site, are discussed herein.] Samples were analyzed for DRO, RRO, GRO, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals, including lead, mercury, selenium, chromium, arsenic, and barium.

DRO exceeded the Method Two cleanup level of 250 mg/kg in 12 samples from 6 locations with a maximum concentration of 32,000 mg/kg (Figure 4). GRO and RRO did not exceed their Method Two cleanup criteria of 300 mg/kg and 10,000 mg/kg, respectively, at any of the 14 sampling locations. The maximum GRO value was 24 mg/kg. The maximum RRO value was 750 mg/kg. Mercury concentrations were at or above the Method Two cleanup criterion of 1.4 mg/kg at three locations. Arsenic, chromium, and selenium concentrations also exceeded Method Two cleanup levels; however, the concentrations were within background levels determined for St. George Island (Tetra Tech 2002). VOCs and SVOCs did not exceed Method Two cleanup criteria.

Tetra Tech estimated 600 yd^3 of soil exceeded the Method Two DRO cleanup level of 250 mg/kg. This estimate included approximately 50 yd^3 of soils that NOAA now considers part of the Old Power Plant Site. Tetra Tech also estimated there were 46 yd^3 of mercury-contaminated soil within the site.

In 2001, Tetra Tech installed three groundwater monitoring wells in the vicinity of the site. Wells TPA18-MW-1 and TPA18-MW-2 are down gradient of the site, and TPA11-MW-1 is up gradient of the site (Figure 2). Tetra Tech sampled these wells during September 2001 and October 2002 (Tetra Tech 2002, 2003). No ADEC Table C exceedances occurred in the three wells. GRO and VOCs were not detected above reporting limits in any of the wells. DRO was detected in TPA18-MW-1 in 2001 but not 2002. DRO was detected in TPA18-MW-2 in 2001

and 2002. Bis(2-Ethylhexyl)phthalate, detected in TPA11-MW-1 and TPA18-MW-2, was the only SVOC detected. Barium and selenium were detected in all three wells. Lead was detected in TPA11-MW-1 in 2001 but not 2002.

Tetra Tech (2002) prepared a preliminary groundwater flow net for the City of St. George. Groundwater contours indicated that groundwater flow by the Former Fuel Storage Area Site is northwesterly. Groundwater in the city is subjected to tidal influences.

Tetra Tech conducted quarterly groundwater monitoring on St. George Island from August 2003 to May 2004 (Tetra Tech 2004). The three wells in the vicinity of the Former Fuel Storage Area Site were sampled four times during this period. No ADEC Table C exceedances occurred in the three wells. GRO and VOCs were not detected above reporting limits in any of the wells. In TPA18-MW-1, DRO was detected in two quarters. In TPA18-MW-2, DRO was detected in one quarter. With the exception of bis(2-Ethylhexyl)phthalate, SVOCs were not detected. Barium, chromium, mercury, and selenium were detected in some or all of the wells.

Summary of Applied Cleanup Levels:
NOAA employed ADEC Method Two cleanup criteria, discussed at 18 AAC 75.341(c) (ADEC 2003) when evaluating site conditions relative to the need for remedial action. Cleanup criteria were applied to the maximum extent practicable (18 AAC 75.325(f), 18 AAC 75.990).

Summary of Cleanup Actions:
Cleanup actions at the site were carried out in accordance with the site's corrective action plan (NOAA 2003) and are documented in detail in the site's corrective action report (Polarconsult 2004).

Initial site activities commenced on August 12, 2003 and involved determining the sampling locations documented during previous investigations, performing utility locates, and recovering mercury-contaminated soil. Mercury-contaminated soil was excavated from three locations at the site (Figure 5). The removal process involved recovery of approximately 1 yd^3 from each location and placement directly into polyethylene-lined, flexible individual bulk containers (lined FIBCs) for off-island disposal. An additional margin of approximately 1 to 3 yd^3 of surrounding soil was excavated and stockpiled prior to the collection of confirmation samples from the excavations.

On September 4, 2003, excavation of petroleum-contaminated soil (PCS) was initiated following receipt of analytical data indicating the successful recovery of mercury-contaminated soil. Recovery of PCS continued vertically downward and horizontally outward until soil exceeding the cleanup levels was no longer evident (as determined by field screening or interim confirmation sampling) or until the excavator encountered refusal, roads, or utilities. Thin layer chromatography (TLC) was the primary field screening method. PCS was transported directly to NOAA's long-term PCS stockpile (Figure 1). At the conclusion of the excavation process on October 3, 2003, a total volume of 2,426 yd^3 of contaminated soil had been removed from the site (Figure 6). Final excavation depth at refusal varied between 5 and 11 feet bgs.

This project required temporary staging of the potentially mercury-contaminated soil prior to placement back into the excavation or packaging for off-island disposal. This process resulted in the creation of three stockpiles with a total volume of approximately 9 yd^3. All soil was placed

onto impermeable plastic membrane. The stockpiles were sampled and analyzed for petroleum and mercury contaminants. Based on laboratory analyses, one stockpile exceeded the cleanup levels for mercury and DRO, and one exceeded the cleanup level for mercury. These soils were placed in lined FIBCs. The third stockpile was used to backfill the excavation. A total of 15 lined FIBCs containing mercury-contaminated soil were collected from the excavations and associated soil stockpiles.

One soil sample was analyzed for leachable mercury in accordance with the U.S. Environmental Protection Agency (EPA) Toxicity Characteristic Leaching Procedure (TCLP). This sample was selected because it had been identified as having the highest total mercury level at the site. The results were used to determine whether mercury-contaminated soil from the site is a characteristic hazardous waste. It was determined that the mercury-contaminated soil is not a characteristic hazardous waste.

Excavation activities near the northwest edge of the site required the removal of approximately 50 linear feet of abandoned, 6-inch nominal diameter, asbestos-concrete sewer line. The sewer pipe remnants were placed into two lined FIBCs.

During the excavation process, several areas of unusually discolored blue-tinted soil were discovered at the site. The areas were primarily located on the northwest and southeast corners of the site. The distinct blue coloration would appear after the soil was exposed to the air, indicating an oxidation reaction. On September 15, 2003, one location (SG-18-CH-021-030) at the southeast corner of the site was sampled. Results for metal analyses indicated the presence of arsenic, chromium, and selenium above ADEC Method Two cleanup levels and background levels (as determined during the 2001 site characterization [Tetra Tech 2002]). Despite these exceedances, ADEC determined that metals in the site's soil (with the exception of mercury) may be considered background concentrations and that no action is needed for the arsenic, chromium, and selenium (ADEC 2004).

Following the removal of contaminated soil to the extent practicable, Polarconsult collected 26 confirmation samples from the final extent of the excavation and analyzed them for benzene, toluene, ethylbenzene, and xylenes (BTEX), DRO, and polycyclic aromatic hydrocarbons (PAHs). Only two of the samples were collected from the floor of the excavation due to the absence of available soil and the inability to remove 18 inches of overlying material from the basalt flow. Confirmation sample results indicated that DRO remains above the ADEC Method Two cleanup level of 250 mg/kg along the east excavation wall, along the southern portion of the northwest excavation wall, and on the excavation bottom (Table 1, Figure 6). DRO remaining above its cleanup level ranges from 467 mg/kg to 21,000 mg/kg. Along the eastern wall, the presence of a road and associated stability concerns limited excavation. Along the northwestern wall, the presence of a power line inhibited further excavation. On the excavation bottom, refusal was encountered using available equipment. Confirmation sample results did not reveal Method Two exceedances for any other constituents.

After consultation with the City of St. George, the site was restored to grade, stabilized, and revegetated following excavation and confirmation sampling activities. Additionally, basalt boulders were placed along the north side of the site. At the request of island residents, a clean scoria footpath was emplaced across the site.

The FIBCs of mercury-contaminated soil and asbestos-concrete pipe were respectively shipped off St. George Island to Chemical Waste Management of the Northwest (Arlington, OR) and Waste Management Inc. (Arlington, OR) for disposal in August 2004 with final disposition occurring in November 2004 (CWMNW 2004a, CWMNW 2004b, WM 2005). The PCS removed from the site remains at NOAA's long-term PCS stockpile, awaiting final disposition.

Recommended Action:
In accordance with paragraph 59 of the Two Party Agreement (NOAA 1996), NOAA requests written confirmation that NOAA completed all appropriate corrective action, to the maximum extent practicable, at the Former Fuel Storage Area Site, TPA Site 18/Site 18 in accordance with the Agreement and that ADEC grant a conditional closure not requiring further remedial action from NOAA. NOAA understands ADEC will/may require additional containment, investigation, or cleanup if subsequent information indicates that the level of contamination that remains does not protect human health, safety, or welfare, or the environment.

References:
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U.S. Naval Radio Station (USNRS). 1917. *Site Plan, U.S. Naval Radio Station, St. George Village, St. George Island, (Territory of) Alaska*. Drawing *circa* 1911-1917. Revised in 1918.

Waste Management Inc. dba Columbia Ridge Landfill (WM). 2005. Certificate of Disposal, manifest TUK04060. Landfill of 2,240 pounds asbestos-concrete material, November 10, 2004. Arlington, Oregon. April 8.

For the National Oceanic and Atmospheric Administration

John Lindsay
NOAA, Pribilof Project Office

4/14/05
Date

Approvals: In accordance with Paragraph 59 of the Two Party Agreement, this is to confirm that all corrective action has been completed to the maximum extent practicable at the Former Fuel Storage Area Site, TPA Site 18/Site 18 in accordance with the Agreement and that no further remedial action is required as a part of this conditional closure granted by ADEC.

For the Alaska Department of Environmental Conservation

Louis Howard
Alaska Department of Environmental Conservation
Remedial Project Manager

4/18/05
Date

Tables and Figures

Table 1. Soil Analytical Results for the Former Fuel Storage Area, TPA Site 18 Corrective Action (page 1 of 4)

Method/Analyte		Method Two Cleanup Level	units	SG18-CS-001-030	SG18-CS-002-030	SG18-CS-004-060	SG18-CS-005-060	SG18-CS-006-025	SG18-CS-007-030	SG18-SS-008-015	SG18-SS-009-015	SG18-SS-010-015	SG18-SS-011-015	SG18-SS-011-020	SG18-SS-012-015	SG18-SS-013-015	SG18-SS-013-020	SG18-SS-014-015	SG18-SS-015-015	SG18-SS-015-020
				8/12/02	8/12/02	8/12/02	8/12/02	8/12/02	8/12/02	8/13/03	8/13/03	8/13/03	8/13/03	8/13/03	8/13/03	8/13/03	8/13/03	8/14/03	8/14/03	8/14/03
BTEX																				
AK101	Benzene	0.02	mg/Kg	-	-	-	-	-	-	0.0153 (J)	0.00813 (UJ)	**0.0517**	0.0107 (UJ)	0.0115 (UJ)	0.00925 (UJ)	0.0126 (J)	0.0106 (UJ)	-	-	-
AK101	Ethylbenzene	5.5	mg/Kg	-	-	-	-	-	-	0.0474 (J)	0.0440 (J)	0.155 (U)	0.133 (U)	0.144 (U)	0.116 (U)	0.150 (U)	0.132 (U)	-	-	-
AK101	o-Xylene	0	mg/Kg	-	-	-	-	-	-	0.0665 (J)	0.0654 (J)	0.155 (U)	0.133 (U)	0.144 (U)	0.116 (U)	0.150 (U)	0.132 (U)	-	-	-
AK101	P & M -Xylene	0	mg/Kg	-	-	-	-	-	-	0.0959	0.0731 (J)	0.0516 (J)	0.133 (U)	0.0443 (J)	0.116 (U)	0.150 (U)	0.132 (U)	-	-	-
AK101	Toluene	5.4	mg/Kg	-	-	-	-	-	-	0.0465 (J)	0.0498 (J)	0.0800 (J)	0.0800 (J)	0.0756 (J)	0.0467 (J)	0.270	0.0747 (J)	-	-	-
AK101	Total Xylene	78	mg/Kg	-	-	-	-	-	-	0.162	0.139 (J)	0.207 (J)	0.266 (U)	0.188 (J)	0.232 (U)	0.300 (U)	0.264 (U)	-	-	-
GRO																				
AK101	Gasoline-Range Organics	300	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DRO																				
AK102	Diesel-Range Organics	250	mg/Kg	-	-	-	-	-	-	**2,580**	**1,630**	87.3	65.9	61.0	204	107	63.5	-	-	-
AK102 SILICA GEL - DRO Silica Gel		250	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	63.8	-	-	-	-	-
RRO																				
AK103	Residual-Range Organics	10,000	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAH SIM																				
EPA 8270	Acenaphthene	210,000	ug/Kg	-	-	-	-	-	-	108	69.6	14.2 (U)	11.1 (U)	13.3 (U)	126 (U)	127 (U)	118 (U)	-	-	-
EPA 8270	Acenaphthylene	-	ug/Kg	-	-	-	-	-	-	15.9 (U)	9.20 (U)	14.2 (U)	11.1 (U)	4.13 (J)	126 (U)	127 (U)	118 (U)	-	-	-
EPA 8270	Anthracene	4,300,000	ug/Kg	-	-	-	-	-	-	21.2	11.8	5.88 (J)	3.72 (J)	5.18 (J)	44.5 (J)	127 (U)	118 (U)	-	-	-
EPA 8270	Benzo(a)Anthracene	6,000	ug/Kg	-	-	-	-	-	-	20.0	19.1	21.7	15.1	16.6	88.9 (J)	75.6 (J)	78.5 (J)	-	-	-
EPA 8270	Benzo[a]pyrene	1,000	ug/Kg	-	-	-	-	-	-	24.1	33.5	23.4	14.2	17.0	72.1 (J)	57.0 (J)	73.7 (J)	-	-	-
EPA 8270	Benzo[b]Fluoranthene	11,000	ug/Kg	-	-	-	-	-	-	88.2	87.8	67.9	44.0	48.9	210	186	239	-	-	-
EPA 8270	Benzo[g,h,i]perylene	-	ug/Kg	-	-	-	-	-	-	60.5	69.2	50.7	22.8	27.1	95.3 (J)	66.3 (J)	101 (J)	-	-	-
EPA 8270	Benzo[k]fluoranthene	110,000	ug/Kg	-	-	-	-	-	-	15.9 (U)	9.20 (U)	22.0	9.95 (J)	14.2	126 (U)	127 (U)	118 (U)	-	-	-
EPA 8270	Chrysene	620,000	ug/Kg	-	-	-	-	-	-	58.0	30.9	66.0	32.0	31.5	128	97.1 (J)	115 (J)	-	-	-
EPA 8270	Dibenzo[a,h]anthracene	1,000	ug/Kg	-	-	-	-	-	-	8.52 (J)	8.98 (J)	10.6 (J)	5.14 (J)	6.33 (J)	126 (U)	127 (U)	118 (U)	-	-	-
EPA 8270	Fluoranthene	2,100,000	ug/Kg	-	-	-	-	-	-	55.6	41.4	32.9	24.6	29.8	157	119 (J)	131	-	-	-
EPA 8270	Fluorene	270,000	ug/Kg	-	-	-	-	-	-	600	318	4.34 (J)	11.1 (U)	13.3 (U)	59.5 (J)	127 (U)	118 (U)	-	-	-
EPA 8270	Indeno[1,2,3-c,d] pyrene	11,000	ug/Kg	-	-	-	-	-	-	41.5	48.6	27.8	16.1	19.3	68.9 (J)	56.6 (J)	82.3 (J)	-	-	-
EPA 8270	Naphthalene	43,000	ug/Kg	-	-	-	-	-	-	259	138	22.9	11.7	25.0	69.1 (J)	127 (U)	52.1 (J)	-	-	-
EPA 8270	Phenanthrene	-	ug/Kg	-	-	-	-	-	-	987	473	29.7	19.4	26.3	188	69.1 (J)	96.3 (J)	-	-	-
EPA 8270	Pyrene	1,500,000	ug/Kg	-	-	-	-	-	-	95.7	60.3	42.4	29.4	30.1	199	128	146	-	-	-
Metals																				
SW6020	Arsenic	2	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Barium	1,100	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Cadmium	5	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Chromium	26	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Lead	400	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Selenium	2	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Silver	21	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury																				
SW7470A	TCLP - Mercury by Cold Vapor (TCLP)	0.2	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00114 (J)	-
SW7471A	Mercury by Cold Vapor	1.4	mg/Kg	0.168	0.128	0.0665	0.679	0.966	0.193	**2.10**	**2.95**	0.692	0.822	0.876	**1.92**	1.08	1.13	**1.83**	**8.95**	**2.44**

Table 1. Soil Analytical Results for the Former Fuel Storage Area, TPA Site 18 Corrective Action (page 2 of 4)

Method/Analyte		Method Two Cleanup Level	units	SG18-SS-016-015	SG18-SS-017-015	SG18-SS-018-015	SG18-CH-019-015	SG18-CH-020-015	SG18-CH-021-030	SG18-CS-022-030	SG18-CS-023-030	SG18-CS-024-030	SG18-CS-025-030	SG18-CS-027-020	SG18-CS-028-020	SG18-CS-029-030	SG18-CS-030-025	SG18-CS-030-030
				8/14/03	8/14/03	8/14/03	9/4/03	9/4/03	9/15/03	9/19/03	9/19/03	9/19/03	9/19/03	9/19/03	9/19/03	9/22/03	9/22/03	9/22/03
BTEX																		
AK101	Benzene	0.02	mg/Kg	-	-	-	0.0117 (U)	0.0129 (U)	-	0.0142 (U)	0.0144 (U)	0.0128 (U)	0.0129 (U)	0.0106 (U)	0.0113 (U)	0.0140 (U)	0.0157 (U)	0.0146 (U)
AK101	Ethylbenzene	5.5	mg/Kg	-	-	-	0.0162 (J)	0.0515 (U)	-	0.0569 (U)	0.126	0.0511 (U)	0.0517 (U)	0.0423 (U)	0.0451 (U)	0.0561 (U)	0.0626 (U)	0.0584 (U)
AK101	o-Xylene	0	mg/Kg	-	-	-	0.0361 (J)	0.0540	-	0.0569 (U)	0.0901	0.0511 (U)	0.0517 (U)	0.0423 (U)	0.0451 (U)	0.0561 (U)	0.0626 (U)	0.0584 (U)
AK101	P & M -Xylene	0	mg/Kg	-	-	-	0.0321 (J)	0.0165 (J)	-	0.0275 (J)	0.0793	0.0305 (J)	0.0517 (U)	0.0423 (U)	0.0451 (U)	0.0561 (U)	0.149	0.102
AK101	Toluene	5.4	mg/Kg	-	-	-	0.0168 (J)	0.0515 (U)	-	0.0243 (J)	0.0424 (J)	0.0265 (J)	0.0216 (J)	0.0423 (U)	0.0451 (U)	0.0561 (U)	0.0626 (U)	0.0584 (U)
AK101	Total Xylene	78	mg/Kg	-	-	-	0.0682 (J)	0.0705	-	0.0844 (J)	0.169	0.0816 (J)	0.103 (U)	0.0846 (U)	0.0902 (U)	0.112 (U)	0.212	0.160
GRO																		
AK101	Gasoline-Range Organics	300	mg/Kg	-	-	-	2.34 (U)	2.58 (U)	-	-	-	-	-	-	-	-	-	-
DRO																		
AK102	Diesel-Range Organics	250	mg/Kg	-	-	-	3.44 (J)	3.98 (J)	-	**556**	**2,090**	11.0 (J)	9.14 (J)	16.4 (J)	11.3 (J)	**3,300**	**17,500**	**14,200**
AK102	SILICA GEL - DRO Silica Gel	250	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RRO																		
AK103	Residual-Range Organics	10,000	mg/Kg	-	-	-	7.43 (J)	14.0 (J)	-	-	-	-	-	-	-	-	-	-
PAH SIM																		
EPA 8270	Acenaphthene	210,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	240	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	756	809
EPA 8270	Acenaphthylene	-	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Anthracene	4,300,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	73.3 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	163	109
EPA 8270	Benzo(a)Anthracene	6,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	6.00 (J)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Benzo[a]pyrene	1,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Benzo[b]Fluoranthene	11,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Benzo[g,h,i]perylene	-	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	3.70 (J)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Benzo[k]fluoranthene	110,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Chrysene	620,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	19.3	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	109	114
EPA 8270	Dibenzo[a,h]anthracene	1,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	2.58 (J)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Fluoranthene	2,100,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	309	312
EPA 8270	Fluorene	270,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	1,080	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	4,220	4,300
EPA 8270	Indeno[1,2,3-c,d] pyrene	11,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	88.7 (U)	80.9 (U)
EPA 8270	Naphthalene	43,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	465	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	2,530	2,560
EPA 8270	Phenanthrene	-	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	72.6 (U)	2,670	2,860
EPA 8270	Pyrene	1,500,000	ug/Kg	-	-	-	5.47 (U)	5.57 (U)	-	5.81 (U)	7.33 (U)	6.44 (U)	6.30 (U)	8.31 (U)	7.16 (U)	98.7	385	367
Metals																		
SW6020	Arsenic	2	mg/Kg	-	-	-	-	-	**18.1**	-	-	-	-	-	-	-	-	-
SW6020	Barium	1,100	mg/Kg	-	-	-	-	-	52.4	-	-	-	-	-	-	-	-	-
SW6020	Cadmium	5	mg/Kg	-	-	-	-	-	0.520 (U)	-	-	-	-	-	-	-	-	-
SW6020	Chromium	26	mg/Kg	-	-	-	15.8	**26.5**	**187**	-	-	-	-	-	-	-	-	-
SW6020	Lead	400	mg/Kg	-	-	-	0.414	0.799	10.4	-	-	-	-	-	-	-	-	-
SW6020	Selenium	2	mg/kg	-	-	-	0.529 (U)	0.519 (U)	**4.14**	-	-	-	-	-	-	-	-	-
SW6020	Silver	21	mg/Kg	-	-	-	-	-	0.248 (J)	-	-	-	-	-	-	-	-	-
Mercury																		
SW7470A	TCLP - Mercury by Cold Vapor (TCLP)	0.2	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW7471A	Mercury by Cold Vapor	1.4	mg/Kg	0.542	1.06	**3.88**	0.0412 (U)	0.0427 (U)	0.260	-	-	-	-	-	-	-	-	-

Table 1. Soil Analytical Results for the Former Fuel Storage Area, TPA Site 18 Corrective Action (page 3 of 4)

Method/Analyte		Method Two Cleanup Level	units	SG18-CS-034-050	SG18-CS-035-025	SG18-CS-035-110	SG18-CS-036-100	SG18-CS-037-060	SG18-CS-038-030	SG18-CS-039-040	SG18-CS-040-020	SG18-CS-041-045	SG18-CS-042-050	SG18-CS-043-070	SG18-CS-044-040
				9/22/03	9/22/03	9/22/03	9/22/03	9/26/03	9/29/03	9/29/03	9/29/03	9/29/03	9/29/03	10/1/03	10/1/03
BTEX															
AK101	Benzene	0.02	mg/Kg	0.00886 (U)	0.00613 (U)	0.00531 (U)	0.00620 (U)	0.0105 (U)	0.0169 (U)	0.00955 (U)	0.0143 (U)	0.0113 (U)	0.00329 (J)	0.00750 (U)	0.00875 (U)
AK101	Ethylbenzene	5.5	mg/Kg	0.0354 (U)	0.0245 (U)	0.0257	0.0248 (U)	0.0420 (U)	0.0412 (J)	0.0476	0.0572 (U)	0.0451 (U)	0.0364 (J)	0.0300 (U)	0.0350 (U)
AK101	o-Xylene	0	mg/Kg	0.0413	0.0245 (U)	0.0212 (U)	0.0248 (U)	0.0137 (J)	0.600	0.156	0.172	0.0881	0.0512	0.0300 (U)	0.0142 (J)
AK101	P & M -Xylene	0	mg/Kg	0.130	0.0245 (U)	0.0212 (U)	0.0248 (U)	0.0420 (U)	0.232	0.0554	0.211	0.0336 (J)	0.0182 (J)	0.0300 (U)	0.0485
AK101	Toluene	5.4	mg/Kg	0.117	0.0446	0.0457	0.0564	0.0146 (J)	0.0667 (J)	0.0417	0.154	0.115	0.0336 (J)	0.0300 (U)	0.0122 (J)
AK101	Total Xylene	78	mg/Kg	0.171	0.0490 (U)	0.0424 (U)	0.0496 (U)	0.0557 (J)	0.832	0.211	0.383	0.122	0.0694	0.0600 (U)	0.0627
GRO															
AK101	Gasoline-Range Organics	300	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
DRO															
AK102	Diesel-Range Organics	250	mg/Kg	**635**	**489**	**467**	**753**	**1,550**	**21,000**	**1,560**	**4,140**	**2,550**	7.63 (J)	103	5.47 (J)
AK102 SILICA GEL - DRO Silica Gel		250	mg/Kg	-	-	-	-	**1,140**	-	-	-	-	-	-	-
RRO															
AK103	Residual-Range Organics	10,000	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
PAH SIM															
EPA 8270	Acenaphthene	210,000	ug/Kg	5.47 (U)	8.65	8.28	5.68 (U)	64.1 (U)	104 (U)	68.8	68.2 (J)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Acenaphthylene	-	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	64.1 (U)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Anthracene	4,300,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	64.1 (U)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Benzo(a)Anthracene	6,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	35.9 (J)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Benzo[a]pyrene	1,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	36.2 (J)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Benzo[b]Fluoranthene	11,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	34.3 (J)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Benzo[g,h,i]perylene	-	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	35.8 (J)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Benzo[k]fluoranthene	110,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	42.2 (J)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Chrysene	620,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	8.13	44.9 (J)	50.8 (J)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Dibenzo[a,h]anthracene	1,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	40.3 (J)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Fluoranthene	2,100,000	ug/Kg	5.47 (U)	6.33	6.43	12.9	40.6 (J)	125	33.6 (J)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Fluorene	270,000	ug/Kg	5.47 (U)	37.5	35.8	19.7	64.1 (U)	104 (U)	405	418	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Indeno[1,2,3-c,d] pyrene	11,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	37.2 (J)	104 (U)	60.4 (U)	84.1 (U)	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Naphthalene	43,000	ug/Kg	5.47 (U)	5.60 (U)	5.51 (U)	5.68 (U)	64.1 (U)	104 (U)	79.8	84.1 (U)	59.2 (U)	5.56 (U)	2.07 (J)	2.13 (J)
EPA 8270	Phenanthrene	-	ug/Kg	5.47 (U)	29.6	29.2	15.2	47.1 (J)	104 (U)	570	447	59.2 (U)	5.56 (U)	5.36 (U)	5.44 (U)
EPA 8270	Pyrene	1,500,000	ug/Kg	5.47 (U)	8.84	9.26	18.2	58.4 (J)	169	33.3 (J)	32.4 (J)	30.7 (J)	5.56 (U)	5.36 (U)	5.44 (U)
Metals															
SW6020	Arsenic	2	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Barium	1,100	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Cadmium	5	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Chromium	26	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Lead	400	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Selenium	2	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-
SW6020	Silver	21	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-
Mercury															
SW7470A	TCLP - Mercury by Cold Vapor (TCLP)	0.2	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
SW7471A	Mercury by Cold Vapor	1.4	mg/Kg	-	-	-	-	-	-	-	-	-	-	-	-

Table 1. Soil Analytical Results for the Former Fuel Storage Area, TPA Site 18 Corrective Action (page 4 of 4)

Method/Analyte		Method Two Cleanup Level	units	SG18-CS-045-020	SG18-CS-045-100	SG18-CS-046-090	SG18-CS-047-090	SG18-CS-048-050	SG18-CS-049-030	SG18-CS-050-020	SG18-CS-051-050	SG18-CS-052-040
				10/1/03	10/1/03	10/1/03	10/1/03	10/2/03	10/2/03	10/2/03	10/3/03	10/3/03
BTEX												
AK101	Benzene	0.02	mg/Kg	0.00710 (U)	0.00778 (U)	0.00662 (U)	0.00906 (U)	0.00849 (U)	0.0194 (U)	0.0168 (U)	0.00684 (U)	0.00633 (U)
AK101	Ethylbenzene	5.5	mg/Kg	0.0284 (U)	0.0311 (U)	0.0265 (U)	0.0362 (U)	0.0340 (U)	0.0775 (U)	0.0672 (U)	0.0274 (U)	0.0253 (U)
AK101	o-Xylene	0	mg/Kg	0.0284 (U)	0.0311 (U)	0.0265 (U)	0.0362 (U)	0.0115 (J)	0.0775 (U)	0.0672 (U)	0.0274 (U)	0.0253 (U)
AK101	P & M -Xylene	0	mg/Kg	0.0206 (J)	0.0330	0.0255 (J)	0.0362 (U)	0.0327 (J)	0.0381 (J)	0.0672 (U)	0.0274 (U)	0.0253 (U)
AK101	Toluene	5.4	mg/Kg	0.00941 (J)	0.0107 (J)	0.0265 (U)	0.0362 (U)	0.0120 (J)	0.0775 (U)	0.0672 (U)	0.0274 (U)	0.0253 (U)
AK101	Total Xylene	78	mg/Kg	0.0490 (J)	0.0641	0.0520 (J)	0.0724 (U)	0.0442 (J)	0.116 (J)	0.134 (U)	0.0548 (U)	0.0506 (U)
GRO												
AK101	Gasoline-Range Organics	300	mg/Kg	-	-	-	-	-	-	-	-	-
DRO												
AK102	Diesel-Range Organics	250	mg/Kg	30.5	20.7 (J)	4.20 (J)	36.7	73.0	45.1	10.6 (J)	5.24 (J)	106
AK102	SILICA GEL - DRO Silica Gel	250	mg/Kg	-	-	-	-	-	-	-	-	-
RRO												
AK103	Residual-Range Organics	10,000	mg/Kg	-	-	-	-	-	-	-	-	-
PAH SIM												
EPA 8270	Acenaphthene	210,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Acenaphthylene	-	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Anthracene	4,300,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	2.78 (J)
EPA 8270	Benzo(a)Anthracene	6,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Benzo[a]pyrene	1,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Benzo[b]Fluoranthene	11,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Benzo[g,h,i]perylene	-	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	2.47 (J)	2.98 (J)	3.63 (J)	6.44 (U)	6.12 (U)
EPA 8270	Benzo[k]fluoranthene	110,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	2.52 (J)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Chrysene	620,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Dibenzo[a,h]anthracene	1,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Fluoranthene	2,100,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Fluorene	270,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Indeno[1,2,3-c,d] pyrene	11,000	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Naphthalene	43,000	ug/Kg	2.25 (J)	2.53 (J)	1.76 (J)	1.75 (J)	2.68 (J)	3.41 (J)	2.47 (J)	2.17 (J)	1.85 (J)
EPA 8270	Phenanthrene	-	ug/Kg	5.45 (U)	5.53 (U)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
EPA 8270	Pyrene	1,500,000	ug/Kg	5.45 (U)	1.85 (J)	5.43 (U)	5.47 (U)	6.38 (U)	7.89 (U)	7.80 (U)	6.44 (U)	6.12 (U)
Metals												
SW6020	Arsenic	2	mg/Kg	-	-	-	-	-	-	-	-	-
SW6020	Barium	1,100	mg/Kg	-	-	-	-	-	-	-	-	-
SW6020	Cadmium	5	mg/Kg	-	-	-	-	-	-	-	-	-
SW6020	Chromium	26	mg/Kg	-	-	-	-	-	-	-	-	-
SW6020	Lead	400	mg/Kg	-	-	-	-	-	-	-	-	-
SW6020	Selenium	2	mg/kg	-	-	-	-	-	-	-	-	-
SW6020	Silver	21	mg/Kg	-	-	-	-	-	-	-	-	-
Mercury												
SW7470A	TCLP - Mercury by Cold Vapor (TCLP)	0.2	mg/L	-	-	-	-	-	-	-	-	-
SW7471A	Mercury by Cold Vapor	1.4	mg/Kg	-	-	-	-	-	-	-	-	-

Notes to Table 1

Units shown in mg/kg except as noted.

D	Following sample ID indicates duplicate sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
GRO	gasoline-range organics
DRO	diesel-range organics
RRO	residual-range organics
BTEX	benzene, toluene, ethylbenzene, xylenes
PAH	polynuclear aromatic hydrocarbons
EPA	U.S. Environmental Protection Agency
TCLP	Toxicity Characteristic Leaching Procedure

Result in **red** (bold) type exceeds ADEC Method Two cleanup levels.

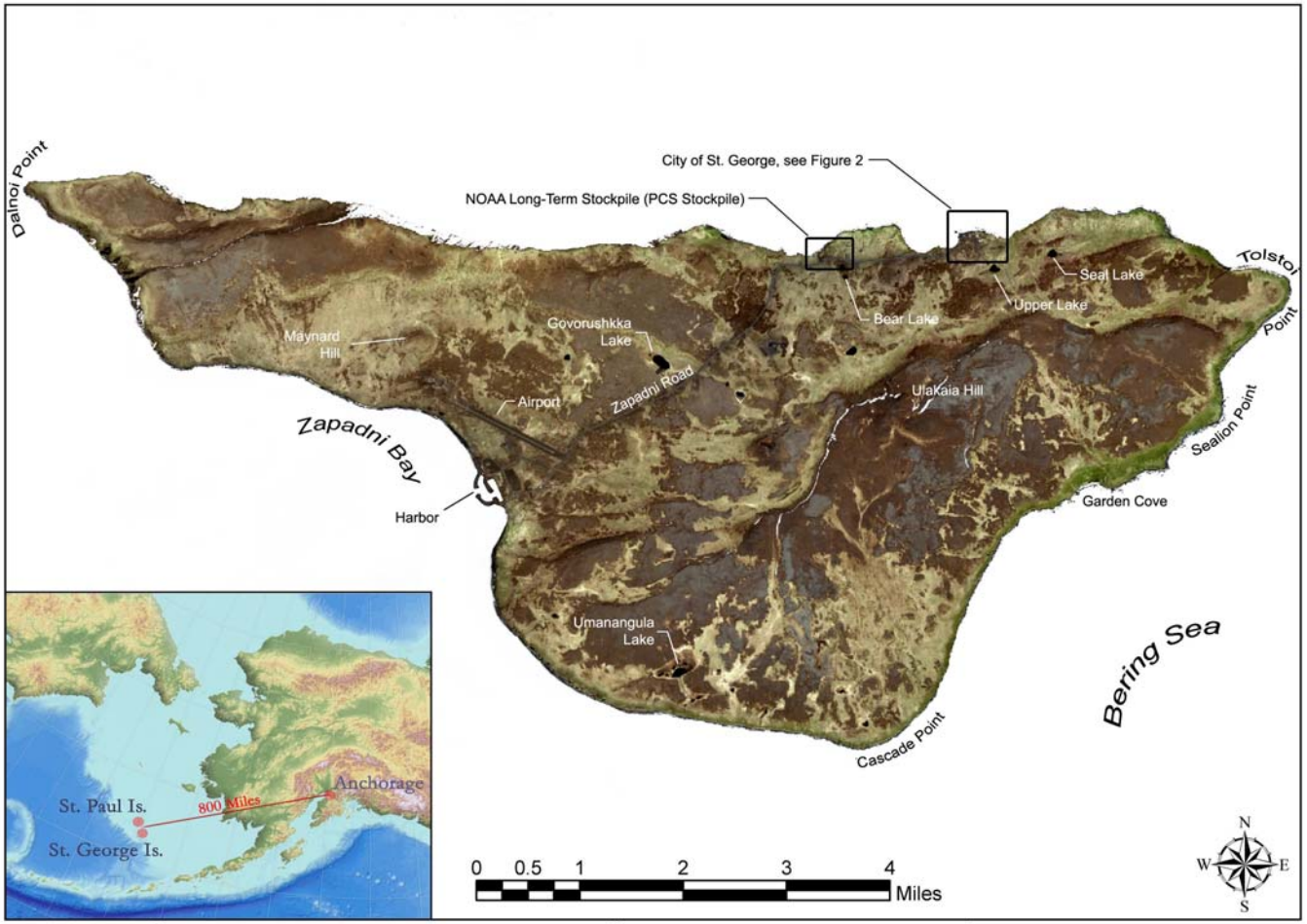

Figure 1	**Island and Vicinity Map Former Fuel Storage Area TPA Site 18/Site 18 St. George Island, Alaska**	Source: Ikonos 2001 Satellite Image

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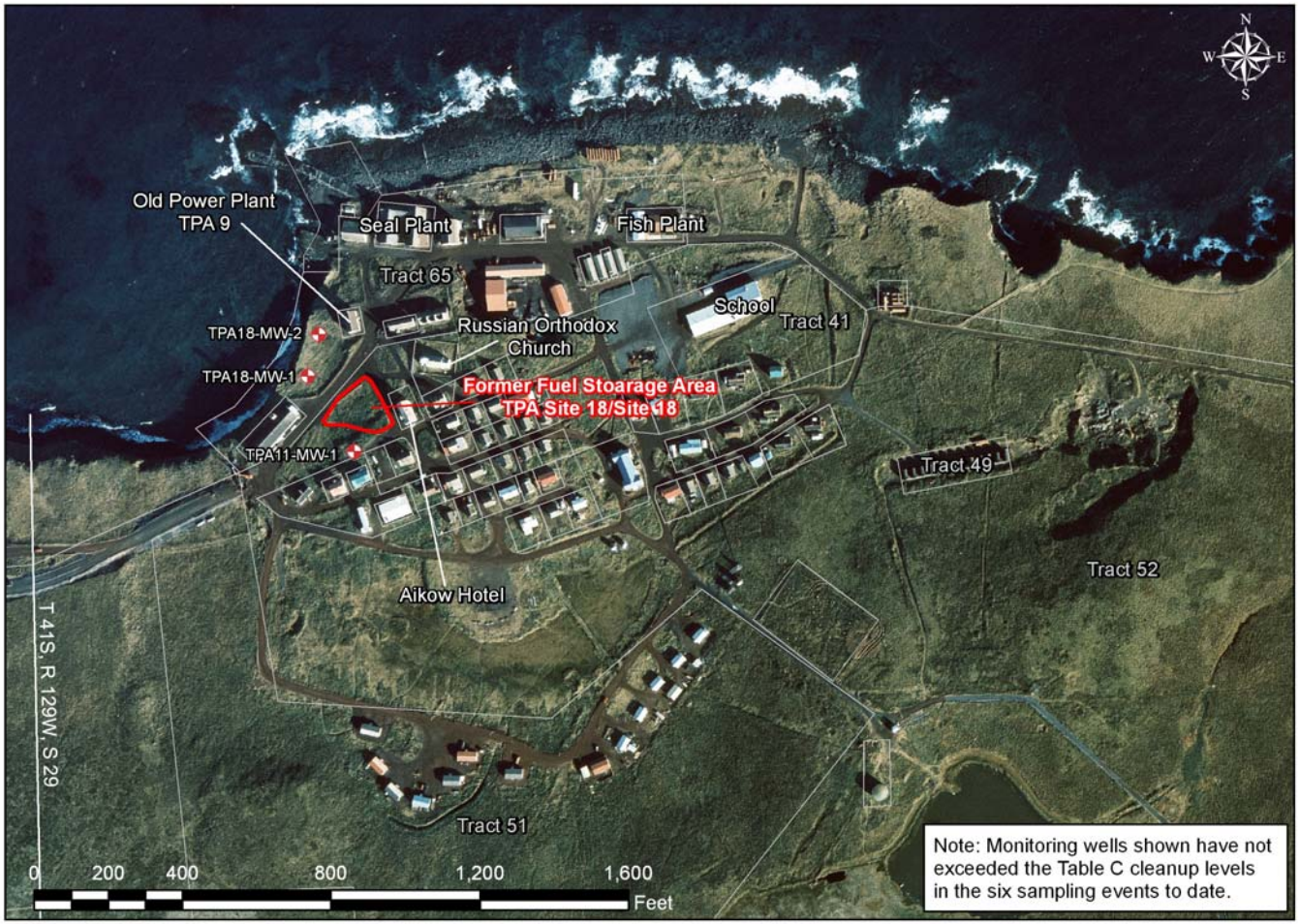

Figure 2	**Legal Property Description Map** **Former Fuel Storage Area** **TPA Site 18/Site 18** **St. George Island, Alaska**	Source: AeroMap U.S. 9/28/96 Aerial Photograph;Bureau of Land Management Land Survey Filed Febuary 15, 1985

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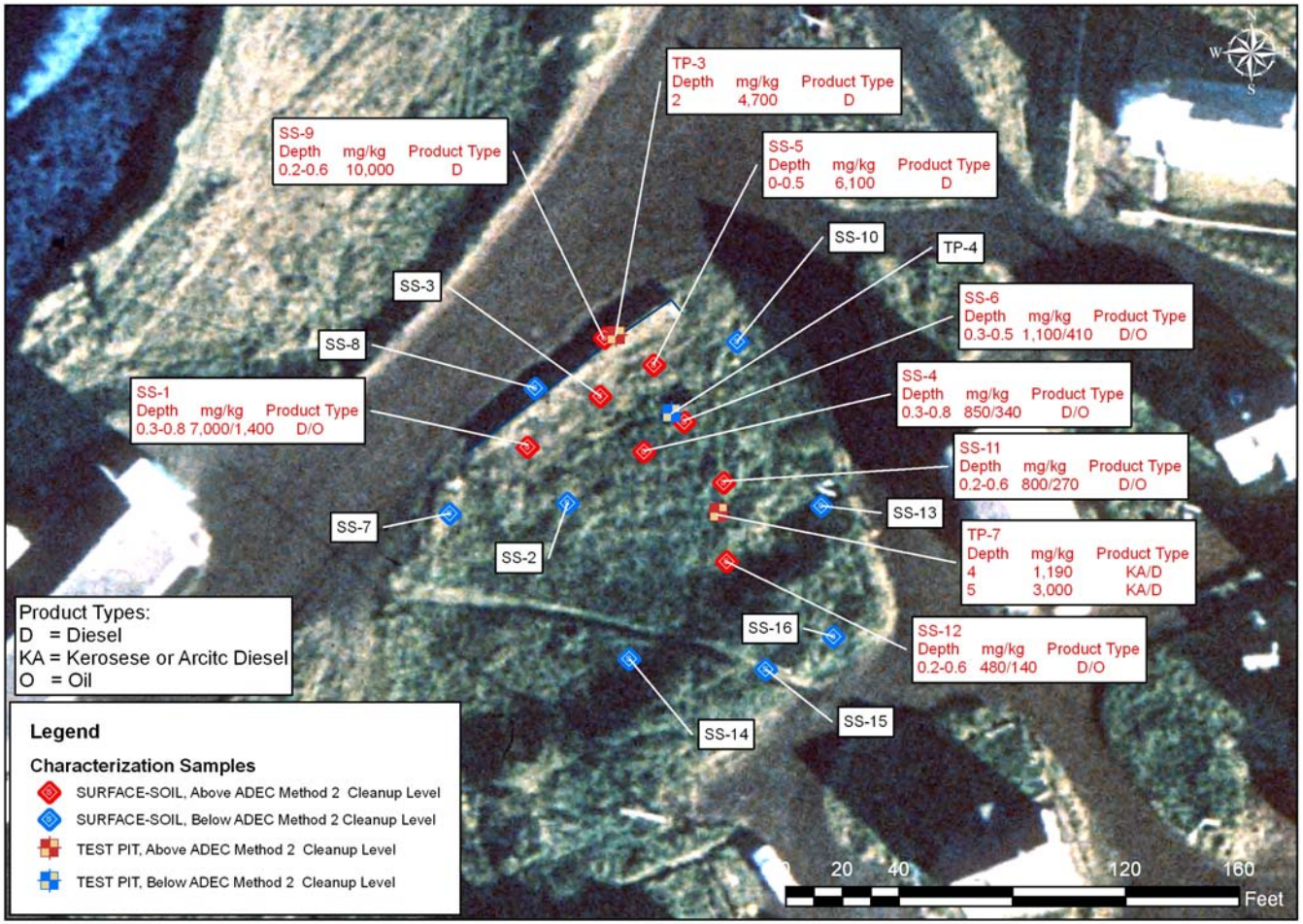

Figure 3	**Expanded Site Inspection Hart Crowser 1996 Former Fuel Storage Area TPA Site 18/Site 18 St. George Island, Alaska**	Source: Arero Map US 1996 Aerial Photograph; Expanded Site Inspection St. George. Hart Crowser Jan. 1997. Note: Hart Crowser's investigation included additional samples from test pits on land that NOAA now considers part of the Old Power Plant Site, TPA Site 9.

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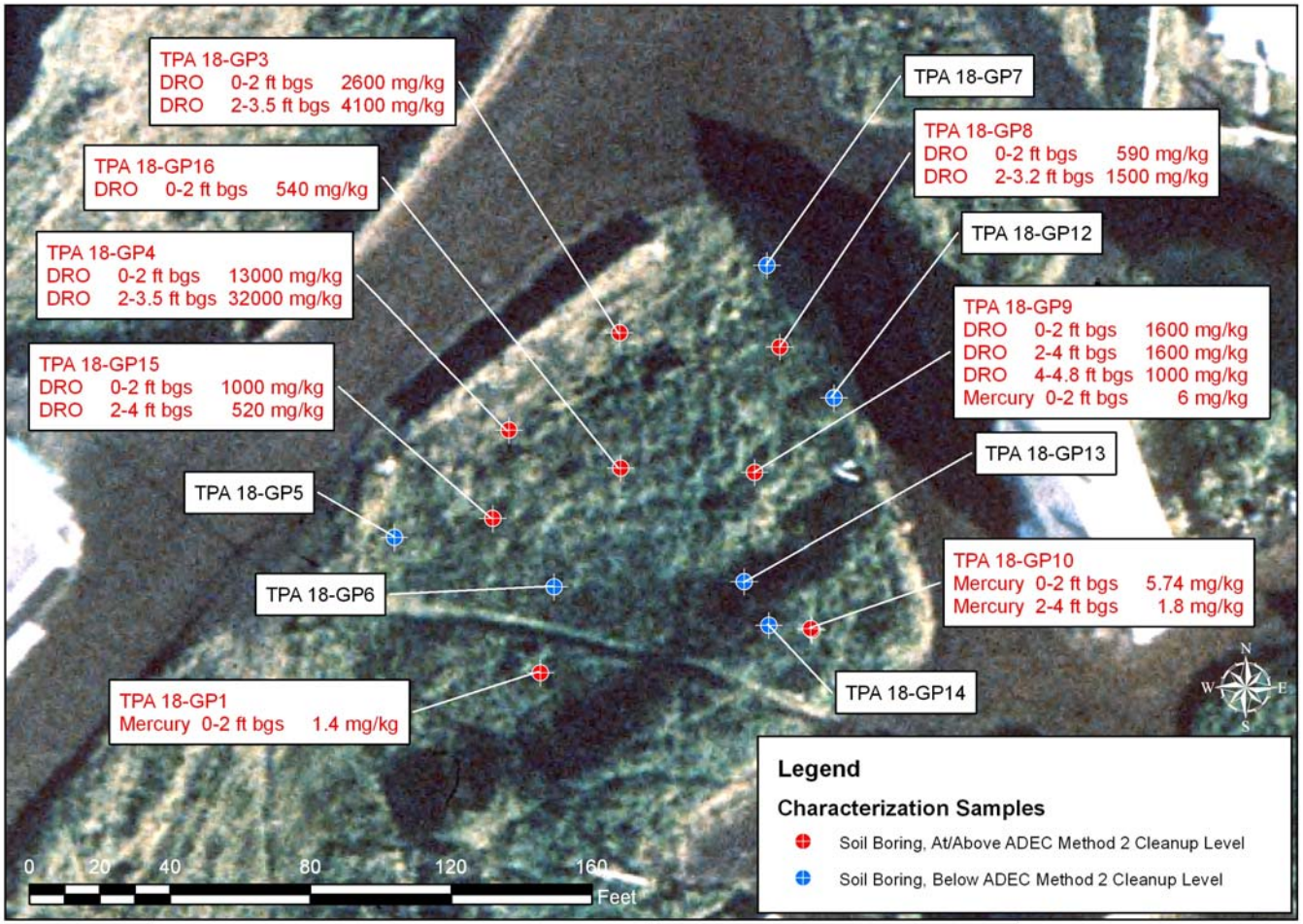

Figure 4	**Site Characterization Tetra Tech 2001 Former Fuel Storage Area TPA Site 18/Site 18 St. George Island, Alaska**	Source: Aero Map U.S. 1996 Aerial Photograph; Survey Data from Pribilof Project Database. Note: Tetra Tech's site characterization included the collection of additional samples from land that NOAA now considers part of the Old Power Plant Site, TPA Site 9.

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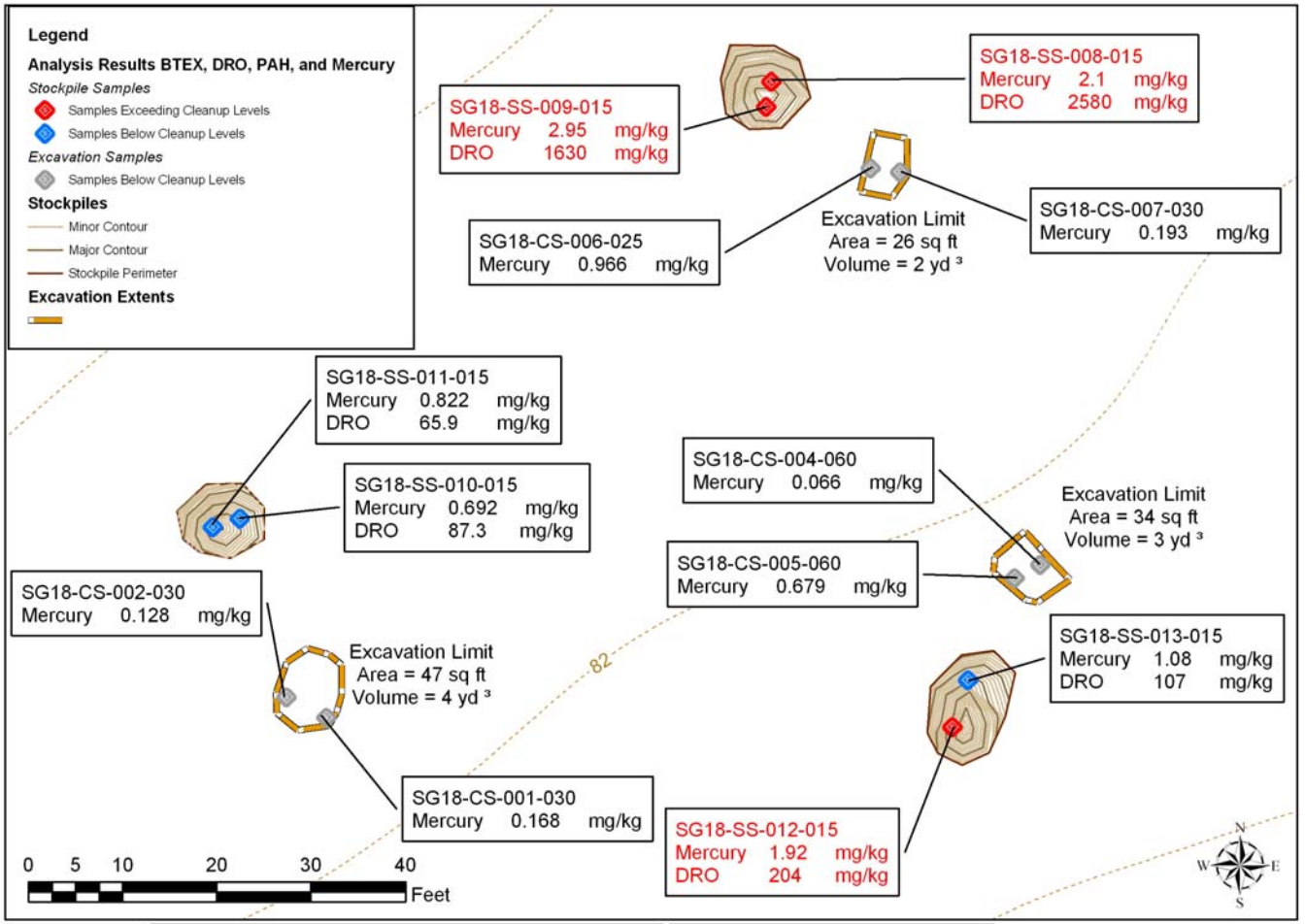

Figure 5	**Mercury-Contaminated Soil Removal** **Former Fuel Storage Area** **TPA Site 18/Site 18** **St. George Island, Alaska**	Source: Survey data from Pribilof Project database. Note: Contours in feet above mean sea level; Mercury concentrations shown are total mercury.

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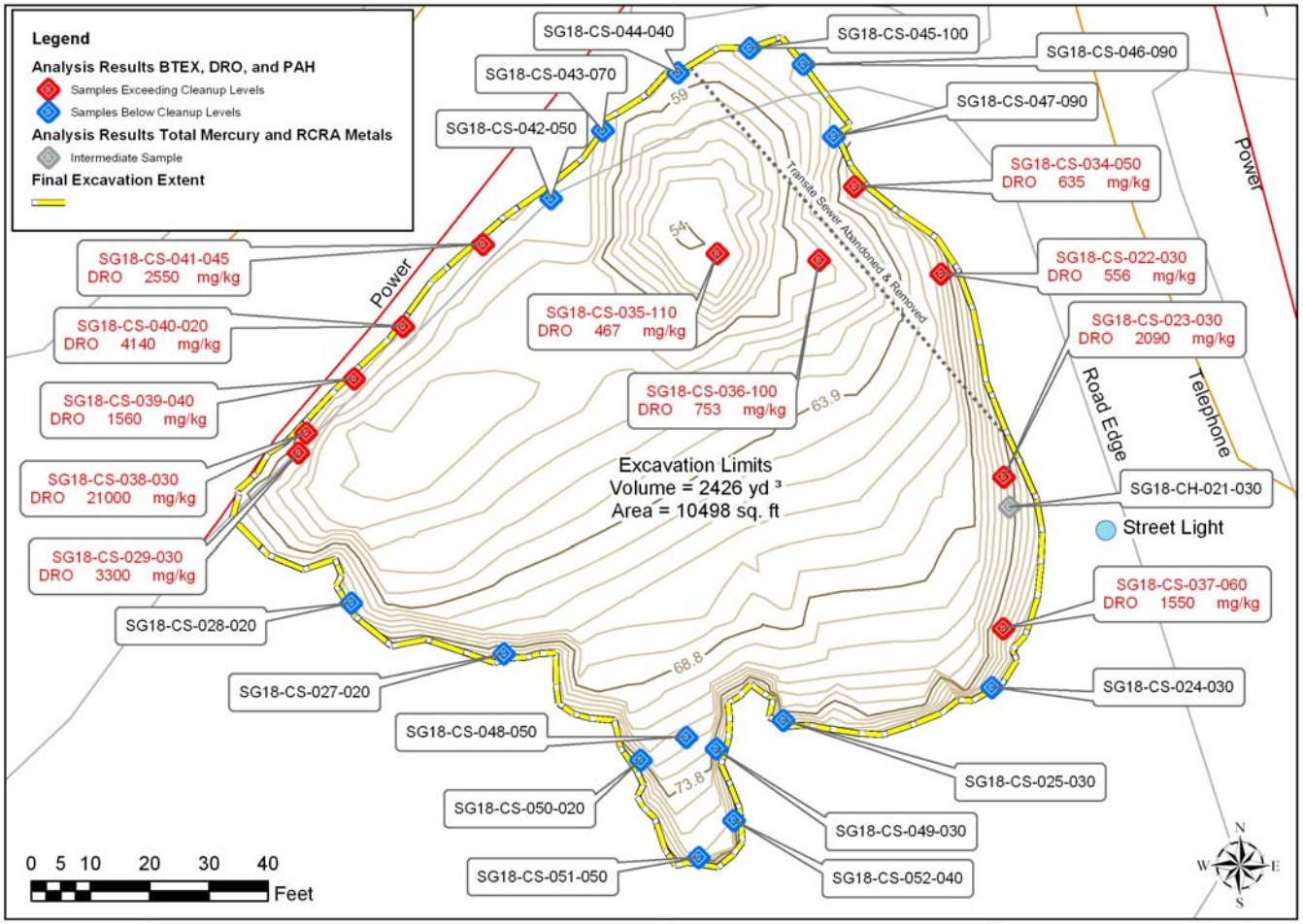

Figure 6	**Final Excavation Extent & Confirmation Sample Results** **Former Fuel Storage Area** **TPA Site 18/Site 18** **St. George Island, Alaska**	Source: Survey data from Pribilof Project database Note: Contours in feet above mean sea level

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