

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

REQUEST FOR CONDITIONAL CLOSURE

Site:

The site is known as St Paul Landfill Cell B, Two-Party Agreement (TPA, NOAA 1996) Site 5c, and as National Oceanic and Atmospheric Administration (NOAA) Site 7.

Location:

St. Paul Island, Alaska is approximately 800 miles southwest of Anchorage in the Bering Sea. The St Paul Landfill is approximately 1.5 miles northeast of the City of St. Paul (Figure 1). NOAA arbitrarily divided the St. Paul municipal solid waste (MSW) landfill into three areas or cells in 2000 for discussion and closure planning purposes. Cells A and B are currently located on property owned by the City of St. Paul. Cell B (3.949 acres) is within the property called the Ataqaq Subdivision (Figure 2). Cell C is located within Tract 42, a 5.78 acre parcel owned by NOAA. In 2003, NOAA sited a short-term, petroleum contaminated soil (PCS) stockpile upon Tract 42.

Legal Property Description:

The legal description for Cell B is: Township 35 South, Range 131 West, Section 17, of the Seward Meridian, Alaska as shown on the plat of rectangular survey officially filed May 14, 1986 (Figure 2). The City of St. Paul is the surface estate owner of Cell B and the greater Ataqaq Subdivision. The Aleut Corporation is the subsurface estate owner.

Type of Release:

Cell B, located north and west of Tract 42, contained primarily MSW associated with historical disposal activities on St. Paul Island. In 1994, NOAA counted 774 drums or barrels at the landfill site. NOAA found many of these drums empty, although it is unknown how many leaked their contents through holes NOAA observed in the drums during the removal action (Oil Spill Consultants 1995). During later excavation work at the site, NOAA encountered and removed several more buried drums in Cell B that were either empty or contained varying amounts of petroleum.

History and Background:

The landfill area has been used as the primary landfill for the Island of St. Paul since the 1940s (CESI 2001a). Cell B was described as inactive in the Site Characterization Report (Tetra Tech 2000), with much of the area apparently used for the disposal of all types of “residential, commercial, and industrial wastes...” as well as exposed and partially buried drums containing petroleum wastes, and lead acid batteries. NOAA surveyed the site in 1990 and several times thereafter to assess the magnitude of contamination at the site as described below in the Summary of Site Investigations. NOAA removed the drums scattered about the landfill surface

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

in 1994. They shipped 774 off island disposal (Oil Spill Consultants 1995). In 1996, NOAA agreed in the TPA to close the landfill.

In a closure plan dated April 2, 2002, NOAA proposed to close Cell B by relocating all the solid waste to the Tract 42 Cell C, owned by NOAA (Polarconsult 2002). The closure plan was approved by the Alaska Department of Environmental Conservation (ADEC) on August 7, 2002 (ADEC 2002). On June 30, 2003, NOAA submitted a Draft Corrective Action Plan (CAP) for closure of the landfill (NOAA 2003a), which contained Addendum 1, proposing certain changes to the original closure plan. The CAP proposed to remove PCS identified by Tetra Tech (2000) in 3 areas within Cell B to the depth of groundwater, or to refusal.

During the summer of 2003, NOAA and ADEC agreed to modify the CAP's proposed removal of PCS at the site (NOAA 2003b), after NOAA proposed to remove PCS only to a depth of 2 feet below ground surface (bgs), due to the following reasons:

- The long term use of the site as a landfill created a potentially random distribution of petroleum waste disposed throughout the landfill during its active life, resulting in a great difficulty of characterizing the landfill and finding all potential minor deposits of petroleum wastes.
- The City of St. Paul will continue to use the Ataqan Subdivision as a permitted MSW disposal facility.
- The facility is unlikely to ever be used for residential purposes, and therefore, it is unlikely that residential exposure will occur at the site.
- Given that residential exposure is not likely to occur, site cleanup levels should reflect exposure of site workers via the ingestion and inhalation pathways, rather than the much lower cleanup levels associated with the migration to groundwater pathway.
- Groundwater in the vicinity of the site did not exhibit petroleum contamination and the threat to the drinking water supply is minimal.
- The City of St. Paul constructed an approximate 21 feet (ft) above ground surface sand and scoria pad for its MSW operations; this pad would further bury much of the Cell B area of concern.

ADEC suggested that NOAA remove PCS to a depth of 5 ft bgs, but agreed to allow the excavation of PCS only to a depth of 2 ft bgs subject to the potential installation of additional groundwater monitoring wells in the area of PCS contamination.

Summary of Site Investigations:

In 1983, ADEC investigated waste disposal practices on St. Paul Island including the St. Paul Landfill. They reported the disposal of many drums of petroleum and other wastes at the landfill area (Harmon 1983).

In 1990, NOAA conducted an environmental compliance survey (Buckel 1990), and reported 5 groups of drums along the unmaintained access road into the north end of the landfill (Cell B).

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

In September and October 1992, NOAA contractor Harding Lawson Associates (HLA) conducted a Phase I environmental assessment that included an inventory and characterization of approximately 650 drums located at the landfill, mostly in or near Cell B. The assessment identified the presence 191 drums of concern, which were assigned to the following groups: solid grease (1 drum); nonflammable oil and water mixtures (174 drums); flammable oil and water mixtures (8 drums); water (4 drums); non-flammable mixtures of antifreeze, oil, and water (1 drum); and polychlorinated biphenyls (PCB) at concentrations greater than 50 parts per million (3 drums) (HLA 1993). Following this assessment, NOAA staged all drums on site pending future decisions.

In 1992, Ecology and Environment, Inc. (E&E) conducted a preliminary assessment and reported six to seven drum groups spread over 1.5 acres at the sanitary landfill site (E&E 1993). They reported, “NOAA reportedly disposed of drums along an east-west-oriented road at the north end of the landfill. The City of St. Paul reportedly collected NOAA drums from the Power Plant and Machine Shop and transported them to the landfill”. The report went on to state, “Once the drums are removed, petroleum-contaminated soils will be the remaining source.”

In 1993 and 1994, NOAA contractor Woodward-Clyde Consultants, Inc. (Woodward-Clyde) conducted a site inspection at the landfill that included the segregation of drums located at Cell B. Observations made during the inspection noted leaking and deteriorated drums, soil staining, and a strong petroleum odor. They classified many of the drums as empty. Soil samples collected by Woodward-Clyde from depths up to 5 feet bgs indicated the presence of volatile organic compounds, semi-volatile organic compounds, polynuclear aromatic hydrocarbons (PAH), and metals; however, these analytes were present at concentrations below ADEC Method Two cleanup levels. In addition, analytical data for sediment and surface water samples collected from the pond in the eastern portion of the landfill did not recognize any contaminants of concern (Woodward-Clyde 1994).

During the fall of 1994, NOAA contractor Oil Spill Consultants (1995) collected 774 drums from the landfill and disposed them off island. The project report did not specify the location of these drums within the landfill area.

In 1996, NOAA contractor Hart Crowser, Inc. (Hart Crowser) installed five monitoring wells at the landfill, including two in the vicinity of Cell B (MW1 and MW2, Figure 3). Although analytical data for groundwater samples collected from these wells indicated the presence of toluene and lead, they did not find these compounds at concentrations above cleanup levels (Figure 3). Hart Crowser concluded that landfill operations did not significantly impact groundwater quality (Hart Crowser 1996).

Between August and October 1999, NOAA contractor Tetra Tech conducted site characterization activities at Cell B, including the collection of soil and groundwater samples (Figure 3). Analytical soil data indicated the presence of PCS with diesel-range organic compounds (DRO) and residual-range organic compounds (RRO) at concentrations above cleanup levels at 4 locations in and near the north end of Cell B (Figure 3). The areas corresponded with areas of drums identified during previous investigations (Tetra Tech 2000). NOAA also collected groundwater samples from 4 boreholes in and around Cell B (05GW1 through 05GW04, Figure

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

3), and from two monitoring wells (MW1 and MW2, Figure 3) that had been sampled by Hart Crowser in 1996. Analytical data for the groundwater samples showed no analytes above the ADEC Table C levels.

During the spring and summer of 2000, NOAA contractor Nortech Environmental and Engineering Consultants (Nortech) conducted excavations and removals of buried drums during three different field visits (Nortech 2001). Nortech removed approximately 50 buried barrels from Cells A and B during the initial visit, then removed an unspecified number of buried drums in two following visits. During this fieldwork, Nortech also dug 25 test trenches around Cell B to delineate the extent of solid waste disposal.

During the summer of 2000, NOAA contractor CESI installed nine groundwater monitoring wells in the vicinity of Cell B; they screened the wells in both the upper and lower aquifers. Although analytical data for groundwater samples collected from the landfill revealed the presence of DRO (Figure 4), the data did not identify any analytes at concentrations above cleanup levels (CESI 2001b).

NOAA contractors conducted quarterly groundwater monitoring from June 2000 to September 2001 (IT 2002) and from October 2003 to July 2004 (report scheduled to be submitted in May 2005) including as many as 12 monitoring wells in the landfill area, most of which are upgradient, within, or downgradient of Cell B (Figure 4). The results are summarized below.

During 2000-2001 quarterly sampling events, NOAA did not detect DRO above the ADEC Table C cleanup level of 1,500 ug/l in the 12 wells sampled (MWSNPLF 1, MWSNPLF 2, MWSNPLF 4 through MWSNPLF 9, and HC-2 through HC-5) with one exception. During the last quarter, the sample from well MWSNPLF-1 indicated the presence of DRO at 4,200 ug/l, (Figure 4), along with GRO, benzene, and 13 other VOCs. According to NOAA's contractor, IT Alaska Inc., this sample was part of a "highly suspect analytical data package and should be viewed with caution" (IT Alaska Inc. 2002). The groundwater samples from the same well during earlier quarters did not exceed the cleanup levels. The City of St. Paul MSW burn crew staged their igniter materials in close proximity to this well prior to and during the sampling event.

During the 2003-2004 sampling, only five wells were sampled by NOAA because seven of the original twelve wells had been decommissioned to allow construction of the City of St. Paul's MSW facility. None of the samples exceeded the Table C cleanup levels, including those from MWSNPLF-1, the only landfill well ever to yield a sample with analytes exceeding cleanup levels. This data supports the contention that the contamination found in MWSNPLF-1 was due to lab error or cross contamination, and not to the presence of contamination in the well. Later in 2004, NOAA decommissioned an eighth well in the vicinity of the landfill (MWSNPLF-8), and installed four new monitoring wells (MWSNPLF 10 through MWSNPLF 13). Results from sampling of these wells are not yet published, but preliminary data did not reveal any analytes above cleanup levels.

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

In summary, groundwater monitoring results for the St. Paul landfill have consistently shown that the groundwater does not contain analytes exceeding the Table C cleanup levels.

Summary of Applied Cleanup Levels:

The State of Alaska provides TPA oversight through the ADEC. Under the TPA, NOAA is required to comply with State of Alaska regulations in effect in 1991 (NOAA 1996, ADEC 1991); however, with ADEC agreement, NOAA chose to follow more current regulations whenever possible.

ADEC uses 15 ft bgs to define subsurface soil to which residents will have a reasonable potential for exposure through the inhalation or ingestion pathways (ADEC 2000). Therefore, NOAA is not obligated to excavate contaminated soil occurring at depths deeper than 15 ft. Due to unique site circumstances as discussed above, ADEC approved a waiver to this requirement, allowing NOAA to halt excavation at 2 ft bgs provided additional area groundwater monitoring wells were installed and monitored at the site.

Summary of Corrective and Closure Actions:

Drum Removal Area

During closure activities (Tetra Tech 2004), NOAA identified numerous buried drums in the hillside of a sand dune located in the northern portion of Cell B (Figures 5 and 7). NOAA recovered a total of 76 drums from the dune, including 33 drums containing a suspected petroleum based tar. NOAA found forty-three (43) drums either empty or containing only residual tar or waste oil. NOAA recovered a total of approximately 190 gallons of liquid oil into secure salvage drums. NOAA placed several drums containing solid material or material that could not be pumped directly into salvage drums. Subsequent characterization analysis confirmed the tar material as a petroleum substance. NOAA arranged for the off-island shipment and disposal of the tar and oily wastes. According to manifest documentation, the shipper (Northland) received the conex boxes containing the tar and oily waste containers on January 9, 2004, and the disposal facility (Onyx Environmental Services, LLC) confirmed receipt on February 18, 2004.

In addition, NOAA excavated approximately 300 cubic yards (CY) of tar-contaminated soil from the vicinity of the buried drums (Figures 5, 6 and 7). NOAA incorporated these soils into its short-term PCS stockpile at Tract 42, based on characterization sample results taken from a drum waste sample (SP07-CS-927). NOAA did not take soil confirmation samples at this location. Figure 7 shows the Drum Removal Area in relation to a subsequently constructed earthen pad of sand and scoria. The earthen pad main serves the City of St. Paul's municipal solid waste (MSW) burn box. Figure 5 shows that the original elevation of the area of drum removal ranged from 3 to 6 meters (9.7 to 19.4 feet) above mean sea level (MSL). Figure 6 shows the drum removal area with the addition of the earthen pad that increased the ground elevation up to 6.4 meters above MSL (20.7 feet).

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

PCS Areas

NOAA removed approximately 1,108 CY of PCS from two locations, north and northwest areas, along a small access road [since covered by the City of St. Paul's earthen pad] passing into Cell B. NOAA transported the PCS directly to its short-term stockpile at Tract 42. PCS excavations focused at the north and northwest area sites (Figures 5 and 6). PCS remained around 6 sample locations within the north area at depths ranging from 4 ft bgs to 11 ft bgs; these depths are greater than the minimum 2 ft bgs agreed to with ADEC. No PCS remained at the northwest area site.

NOAA collected twenty-one confirmation samples, one field duplicate sample, and one waste sample during corrective action activities at the Cell B drum dump.

Tables 1, 2, and 3 provide a summary of the confirmation samples collected during this corrective action. Figure 6 illustrates the sampling locations. NOAA analyzed all samples for the following constituents (Table 1):

- BTEX by U.S. Environmental Protection Agency (EPA) SW-846 (EPA 1996) Method 8021B
- DRO by Method AK102
- GRO by Method AK101
- RRO by Method AK103

In accordance with the CAP (NOAA 2003a), NOAA conducted the following analysis on approximately 20% of the confirmation samples collected at Cell B, and the tar like waste material (see Table 2):

- PAHs by EPA SW-846 (EPA 1996) Method 8270C Selected Ion Monitoring

In addition, NOAA conducted the following analysis on the tar like waste material (see Table 3):

- PCBs by EPA SW-8082 (EPA 1996)

Confirmation samples from the excavations at Cell B indicated DRO concentrations varied from not detected to 6,100 mg/kg. Six of the 21 confirmation samples contained concentrations of DRO above the ADEC Method Two cleanup level threat to groundwater pathway of 250 mg/kg; concentrations did not exceed the threat to inhalation or ingestion pathways. Four of these six samples revealed RRO concentrations above the ADEC Method Two threat to groundwater pathway cleanup level of 10,000 mg/kg. Figure 6 illustrates the distribution of DRO and RRO concentrations.

GRO concentrations varied from not detected to 61 mg/kg in confirmation samples, which is below the ADEC Method Two cleanup level of 300 mg/kg.

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

None of the 21 confirmation samples collected by NOAA from this area contained concentrations of BTEX above the ADEC Method Two cleanup levels, although analysis detected toluene up to 0.4 mg/kg.

Confirmation samples did not detect PAHs in any of the soil samples. Two PAH analytes were detected in the tar-like waste sample, but neither of these exceeded their respective PAH cleanup levels.

No PCBs were detected in the tar-like waste sample.

The north and northwest excavation areas were backfilled to original grade as shown in Figure 5. The major portion of the two excavation areas was subsequently covered by the sideslope of the earthen pad, thereby resulting in deeper burial of residual PCS. Figure 5 shows that the original elevation of the PCS excavation area ranged from approximately 2.8 to 4.8 meters (9 to 15.5 ft) above mean sea level (MSL). With the addition of the earthen pad, Figure 6 shows that much of the PCS excavation area was backfilled to greater than the original grade. The earthen pad now covers the area where the original elevation was lowest thereby raising ground elevation to 4 to 6.4 meters (12.9 to 20.7 ft). The west end of the north PCS excavation was backfilled up to the original grade and was not covered with additional soil. Four of the confirmation samples taken in this area show RRO exceeding the threat to groundwater pathway. This area was backfilled to its original elevation, such that the shallowest confirmation sample location (SP07-CS-908-040) is covered with at least 4 ft of backfill. The presence of some contamination at depths less than 15 ft bgs and above groundwater represents a deviation from the CAP. NOAA and ADEC discussed the practicality of leaving some contamination in place because of the relative high cost of removal to the low potential risk. NOAA and ADEC agreed that long-term groundwater monitoring at up to eight wells [MWSNPLF-1, MWSNPLF-9, MWSNPLF-10, MWSNPLF-11, MWSNPLF-12, MWSNPLF-13, HC-4 and HC-5] for petroleum analytes would serve to evaluate leaving in place PCS exceeding the risk to groundwater pathway. The long-term groundwater sampling schedule will be subsequently negotiated between NOAA and ADEC as part of NOAA's long-term operations and maintenance responsibility.

Recommended Action:

In accordance with paragraph 59 of the Two Party Agreement (NOAA 1996), NOAA requests written confirmation that NOAA completed all appropriate corrective and closure action, to the maximum extent practicable, at the St Paul Landfill Cell B (Drum Dump), TPA Site 5c, NOAA Site 7 in accordance with the TPA, and that ADEC grant a conditional closure that will not require further remedial action from NOAA. NOAA should conduct groundwater monitoring at eight established wells around the landfill; NOAA should negotiate the periodicity of this sampling with ADEC during 2005. 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.

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

References:

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

ADEC. 2000. Title 18 of the *Alaska Administrative Code* 75, 18 AAC 75, Articles 3 and 9. Oil and Hazardous Substances Pollution Control Regulations. State of Alaska. Effective date January 30, 2003.

ADEC 2002. Certified Mail # 7001 2510 0002 7773 2912 Re: Approval for Saint Paul Landfill Closure Plan, #0225-PR001. Letter from Leslie F. Simmons, ADEC Solid Waste Program Coordinator, Southcentral and Western Alaska to John Lindsay, U.S. Department of Commerce, National Oceanic and Atmospheric Administration. August 7.

Buckel, S. 1990. Environmental Compliance Survey Report, Pribilof Islands, Alaska. Facilities and Logistics Division, Western Administrative Support Center.

Colombia Environmental Sciences, Inc. (CESI). 2001a. Final Interim Removal Action Report, St. Paul Island, Alaska, Drum Dump, Cell A of the Former Landfill. March 28.

CESI. 2001b. Draft Groundwater Characterization Report. March 15.

Ecology and Environment, Inc. (E&E). 1993. Preliminary Assessment of the National Oceanic and Atmospheric Administration Sites, Pribilof Islands, Alaska. Final. February.

U.S. Environmental Protection Agency (EPA). 1996. *Test Methods for Evaluating Solid Waste*. EPA/SW-846. Third Edition and Updates. December

Harmon, C. H. 1983. Field and Project Report, Waste Disposal St. Paul Island. State of Alaska, Department of Environmental Conversation. File No. 10-1-1983.

Harding Lawson Associates (HLA). 1993. Final Report, Phase I Environmental Assessment, Pribilof Islands, Alaska. March 5.

Hart Crowser, Inc. 1996. *Groundwater Monitoring Well Installation and Sampling Analysis, St. Paul Landfill Closure Plan*. January.

IT Alaska Corporation. 2002. *Draft Annual Groundwater Monitoring Report 2001, St. Paul Island, Alaska*. March.

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.

NOAA. 2003a *Draft Corrective Action Plan St. Paul Landfill Closure*. June 30

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

NOAA. 2003b. Record of Email originating from Greg Gervais of NOAA PPO, sent October 14, 2003, responded to by Louis Howard of ADEC on the same day.

Nortech Environmental and Engineering Consultants (Nortech). 2001. *Site Cleanup Report – Initial Draft, St. Paul Landfill Drums and Debris Removal (Two-Party Agreement Site 5)*. April 12.

Oil Spill Consultants. 1995. *Final Report for St. Paul Island Drum Removal Project, St. Paul Island, Alaska*. January 31.

Polarconsult Alaska, Inc. (Polarconsult). 2002. *Landfill Closure Plan St. Paul Landfill St. Paul Island, Alaska*. April 2.

Tetra Tech EM Inc. (Tetra Tech). 2000. *Site Characterization Report St. Paul Landfill Cell B (Two-Party Agreement Site No. 5) Pribilof Islands Site Restoration St. Paul Island, Alaska*. December.

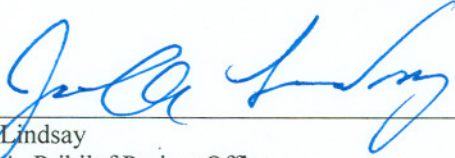
Tetra Tech 2004. *Draft Closure Report Site 6/TPA Site 5b – St. Paul Landfill Cell A Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump) Site 8/TPA Site 5d – St. Paul Landfill Cell B (Solid Waste) St. Paul Island, Alaska*. October 28.

Woodward-Clyde Consultants, Inc. (Woodward-Clyde). 1994. *Site Inspection Report, St. Paul Island, Alaska*. November.

Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)

St. Paul Island, Alaska

For the National Oceanic and Atmospheric Administration



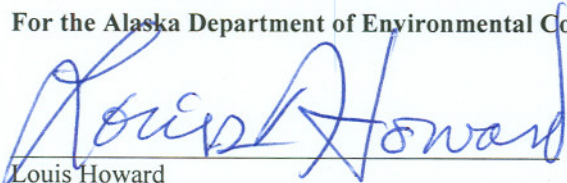
John Lindsay
NOAA, Pribilof Project Office

3/30/05

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 Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump) 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

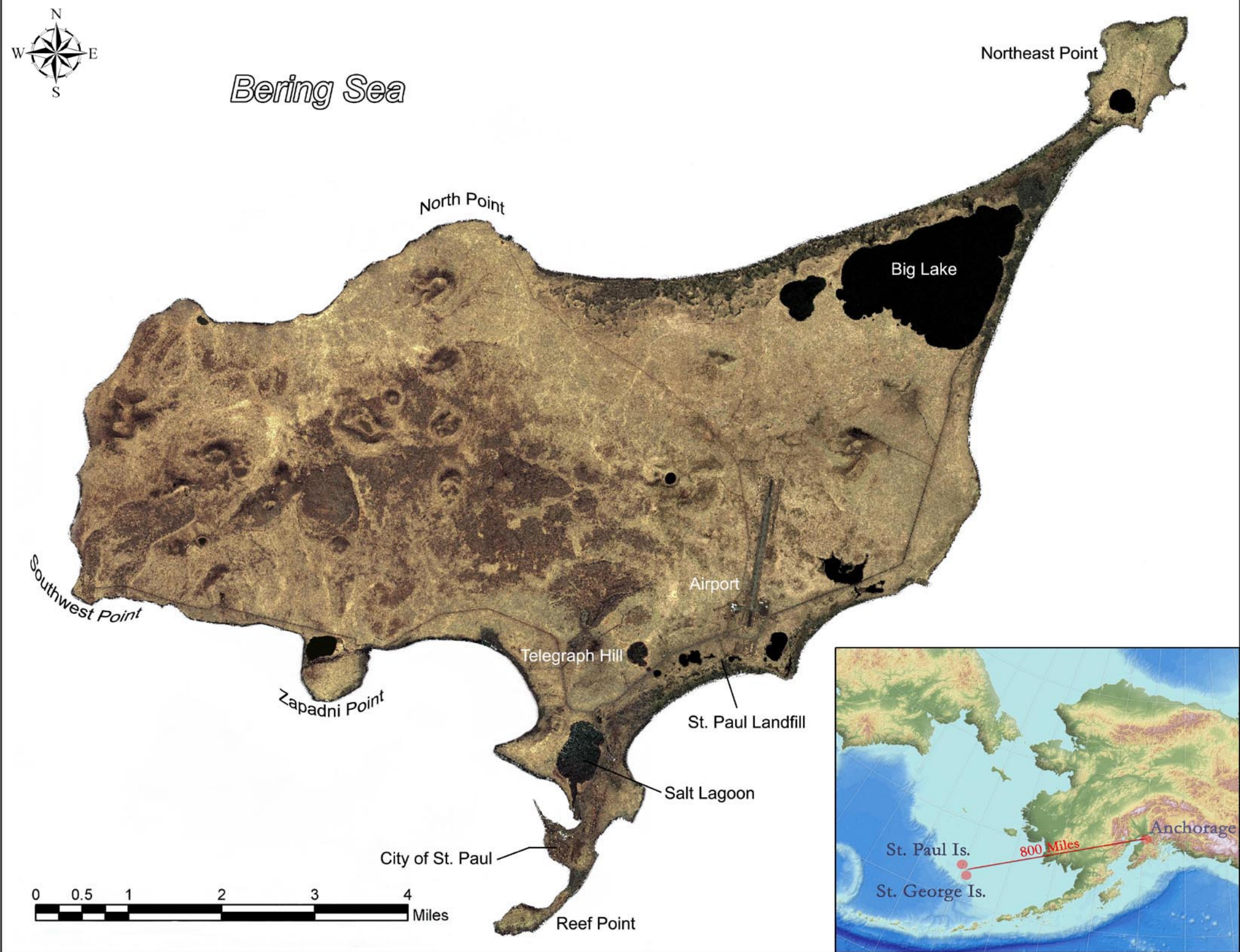
4-11-05

Date

**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

FIGURES



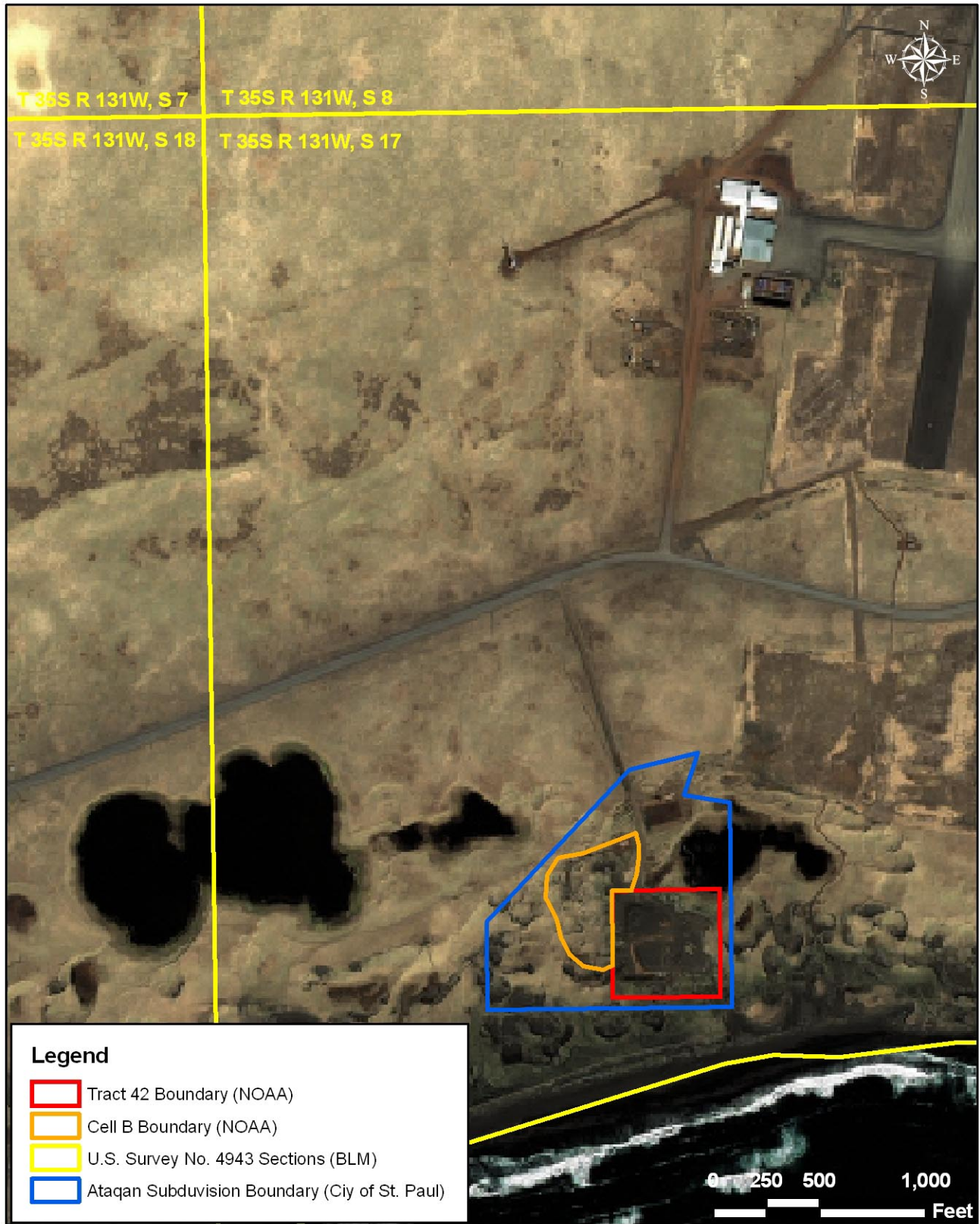
Figure

1

St. Paul Island Vicinity Map
 St. Paul Landfill Cell B (Drum Dump)
 NOAA Site 7/TPA Site 5c
 St. Paul Island, Alaska

Source: Ikonos Satellite
 Imagery, 2001





Legend

- Tract 42 Boundary (NOAA)
- Cell B Boundary (NOAA)
- U.S. Survey No. 4943 Sections (BLM)
- Ataqaq Subdivision Boundary (City of St. Paul)

Figure
2

Legal Property Description Map
St. Paul Landfill Cell B(Drum Dump)
 NOAA Site 7/TPA Site 5c
 St. Paul Island, Alaska

Sources: Tract 42 Boundary and Land Survey Sections (BLM MTPs 1983), Ataqaq Subdivision Boundary (Polarconsult 1997), Cell B Boundary (NOAA GIS 2004), Satellite Imagery (Ikonos 2001).



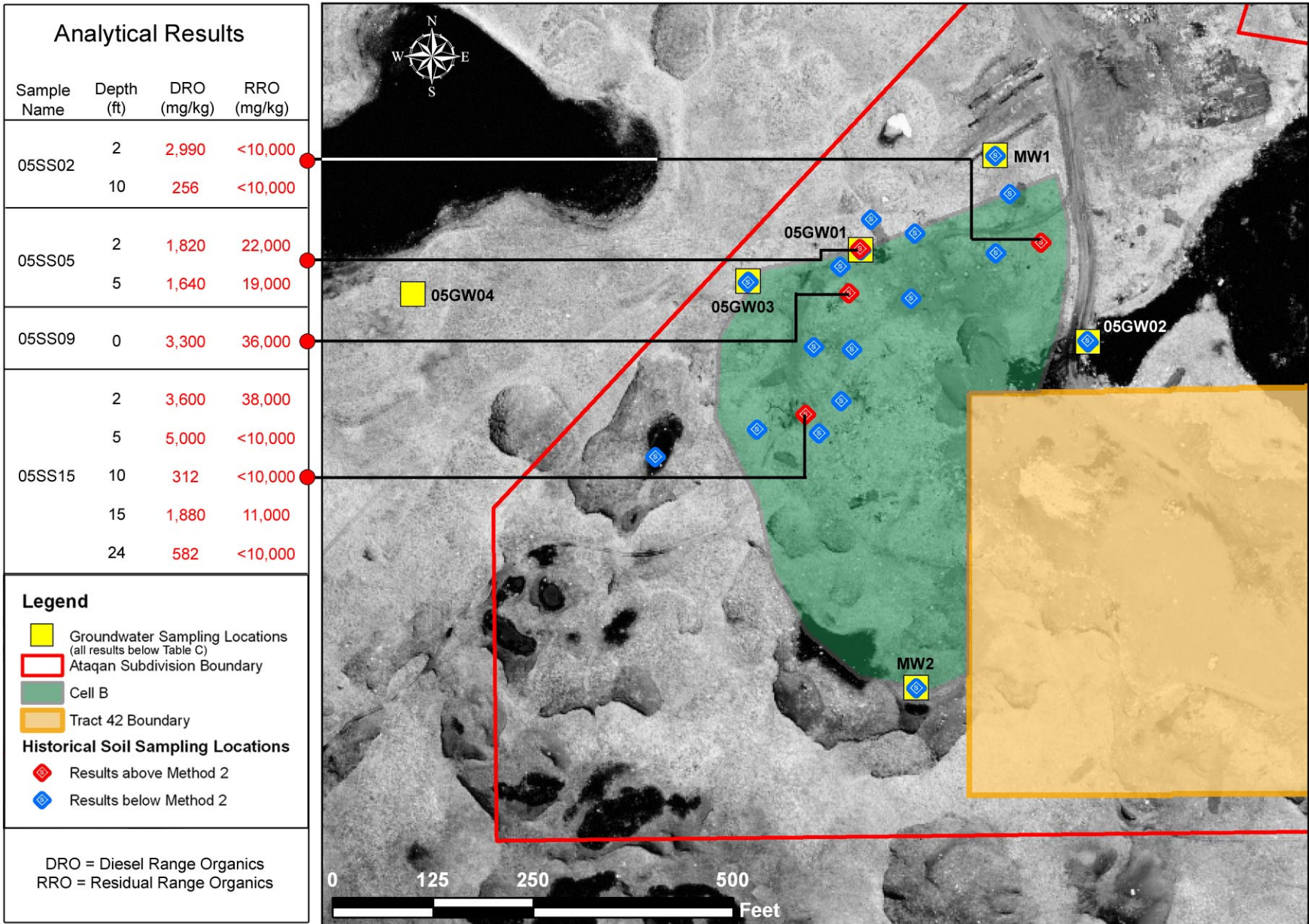


Figure
3

Historical Soil Sampling Results
St. Paul Landfill Cell B (Drum Dump)
NOAA Site 7/TPA Site 5c
St. Paul Island, Alaska

Sources: Ataqan Subdivision Boundary (Polarconsult 1997), Cell B Boundary (NOAA GIS 2004), Tract 42 Boundary (BLM MTPs 1983), Historical Sampling Locations and results (Pribilof Project Database 2004), Aerial Photo (Davis 2000).



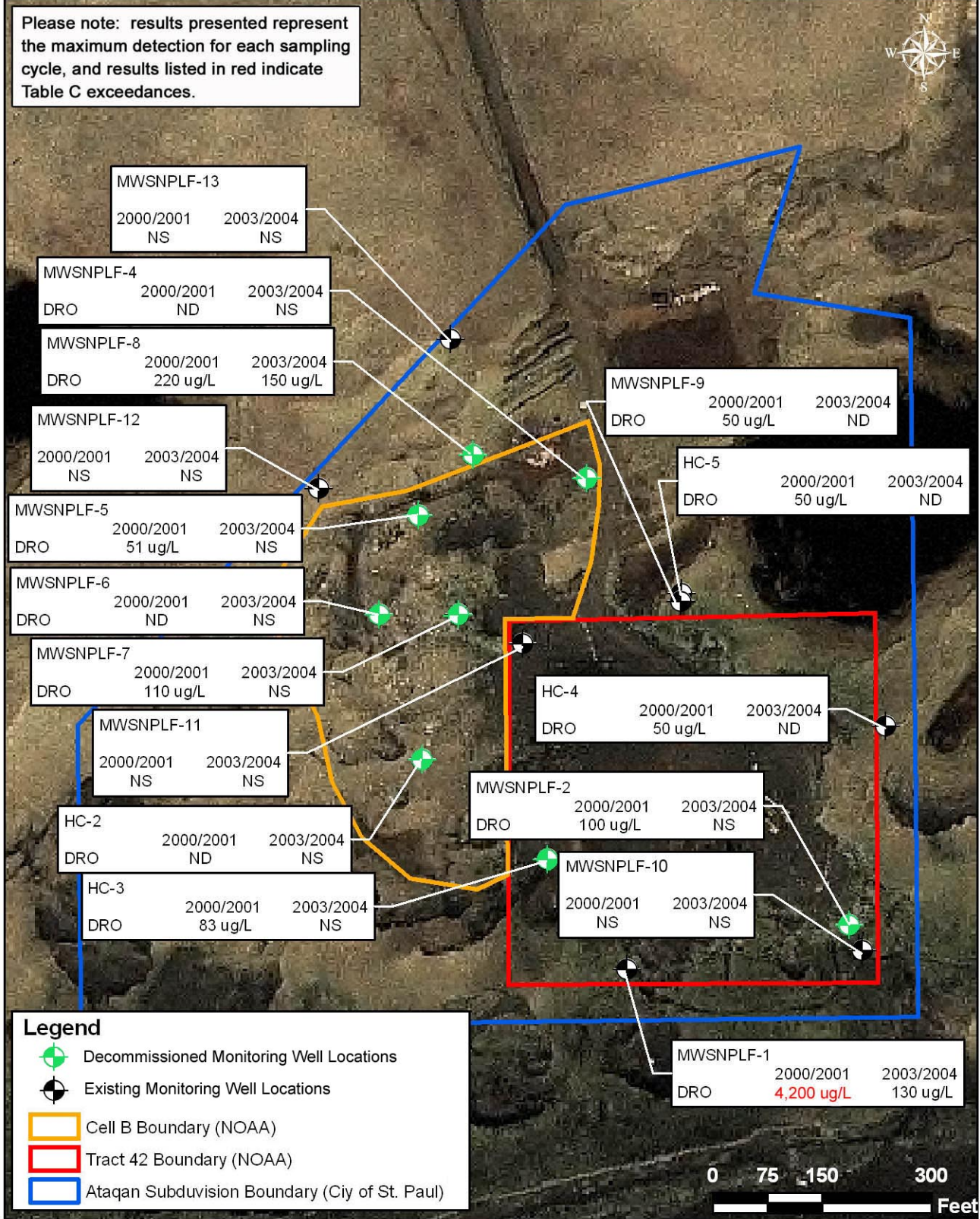


Figure
4

Groundwater Sampling Results
St. Paul Landfill Cell B (Drum Dump)
NOAA Site 7/TPA Site 5c
St. Paul Island, Alaska

Sources: Tract 42 Boundary (BLM MTPs 1983), Ataqaq Subdivision Boundary (Polarconsult 1997), Cell B Boundary (NOAA GIS 2004), Well Locations (NOAA GPS 2004), Satellite Imagery (Ikonos 2001).



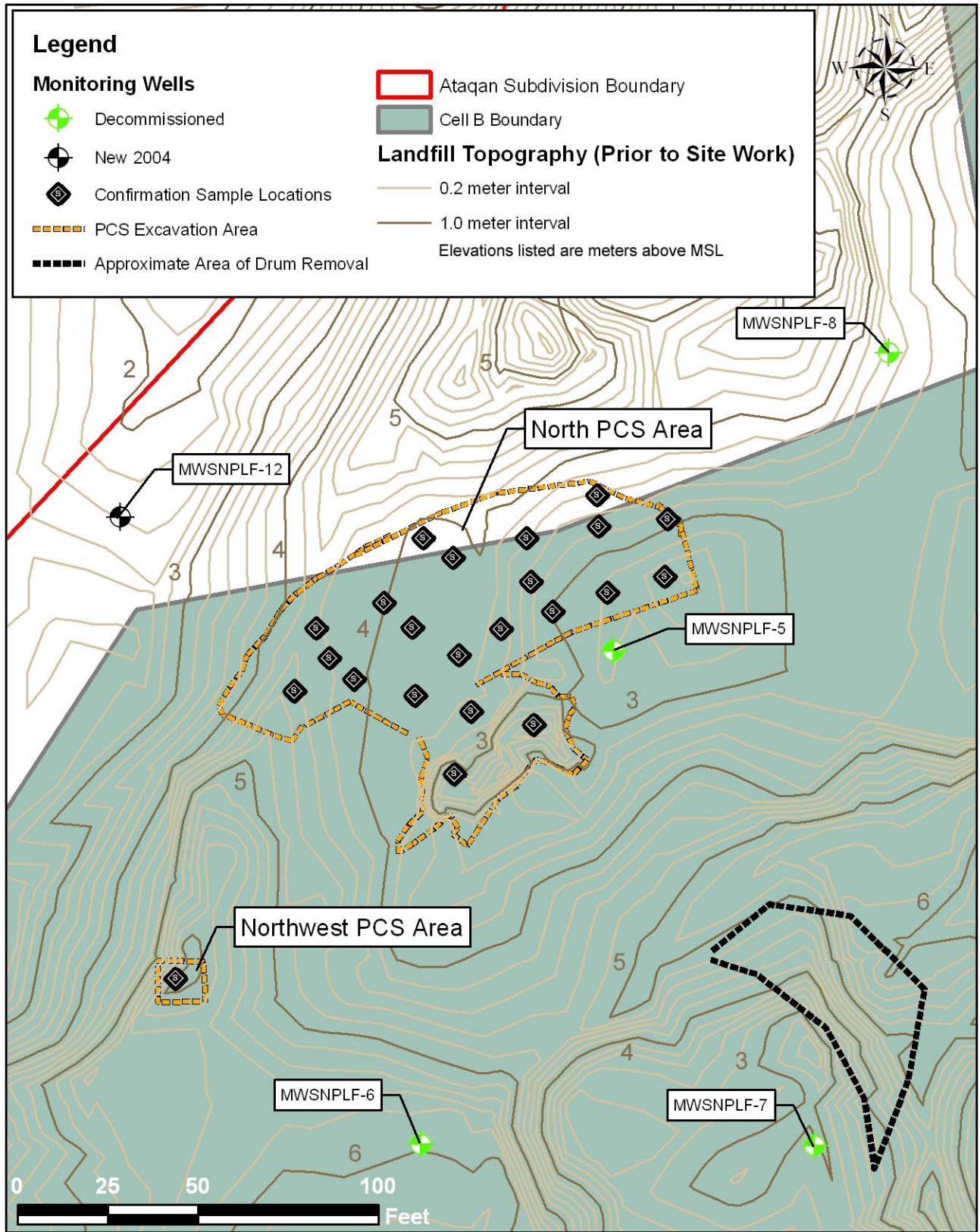


Figure
5

PCS/Drum Removal Areas
St. Paul Landfill Cell B (Drum Dump)
Site 7/TPA Site 5c
St. Paul Island, Alaska

Sources: Excavation Areas, and Confirmation Sample Locations (NOAA GPS 2003), Ataqan Subdivision Boundary and Cell B Boundary (NOAA GIS 2004).



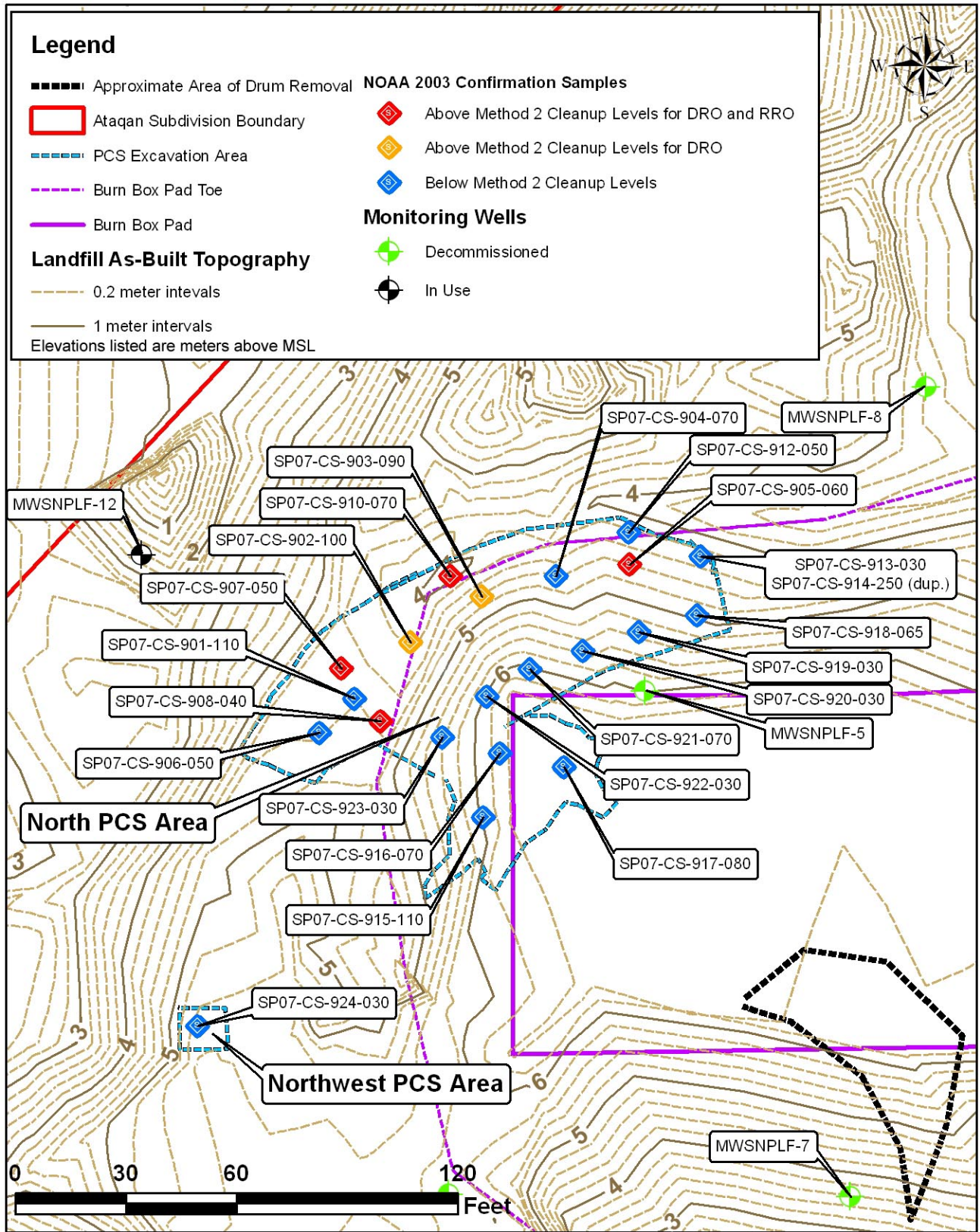
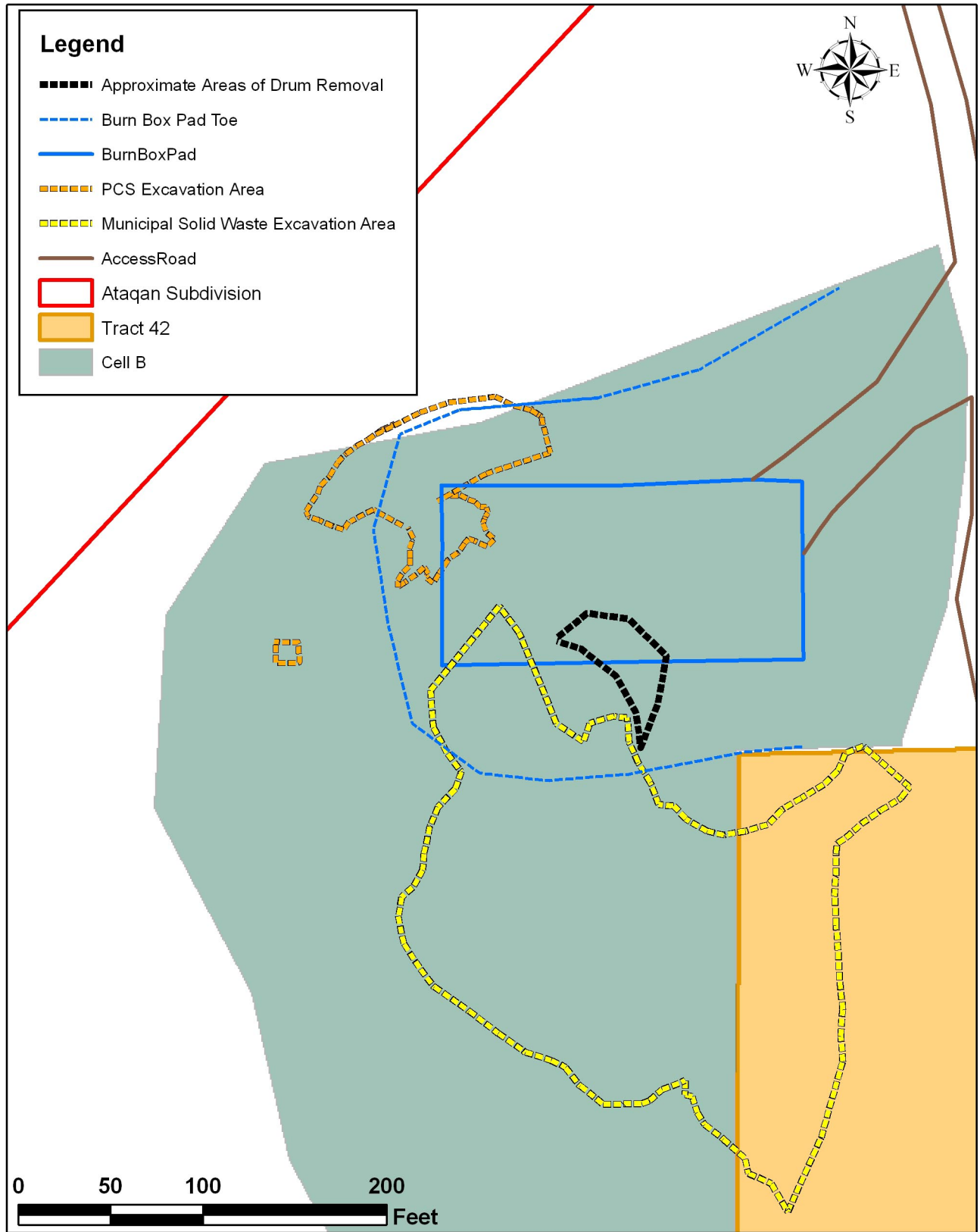


Figure 6
 6
 Sampling Locations and Final Elevations
 St. Paul Landfill Cell B (Drum Dump)
 Site 7/TPA Site 5c
 St. Paul Island, Alaska

Sources: Excavation Areas, and Confirmation Sample Locations (NOAA GPS 2003), Ataqan Subdivision Boundary and Cell B Boundary (NOAA GIS 2004), Satellite Imagery (Ikonos 2001).





<p>Figure 7</p>	<p>Drum Removal and PCS Excavation Area St. Paul Landfill Cell B (Drum Dump) Site 7/TPA Site 5c St. Paul Island, Alaska</p>	<p>Source: Pribilof Project GIS (2004)</p>
---------------------	---	--



**Request for Conditional Closure
Site 7/TPA Site 5c – St. Paul Landfill Cell B (Drum Dump)**

St. Paul Island, Alaska

TABLES

TABLE 1

**ANALYTICAL DATA SUMMARY - BTEX, GRO, DRO, AND RRO
ST. PAUL LANDFILL CELL B, DRUM DUMP
ST. PAUL ISLAND, ALASKA**

(Page 1 of 3)

Sample Number	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Gasoline-range Organics (mg/kg)	Diesel-range Organics (mg/kg)	Residual-range Organics (mg/kg)
Cell B Confirmation Samples									
SP07-CS-901-110 ^a	09/03/03	11	0.03 U	0.04	0.03 U	0.06	2 U	15	200
SP07-CS-902-100 ^a	09/03/03	10	0.03 U	0.03 U	0.03 U	0.03 U	2 U	280	3,500
SP07-CS-903-090 ^a	09/03/03	9	0.02 U	0.02	0.02 U	0.03	2	820	130
SP07-CS-904-070 ^a	09/03/03	7	0.02 U	0.02 U	0.02 U	0.02 U	1 U	50	480
SP07-CS-905-060 ^a	09/03/03	6	0.05 U	0.05 U	0.05 U	0.05 U	61	6,100	14,000
SP07-CS-906-050 ^a	09/03/03	5	0.02 U	0.02 U	0.02 U	0.02 U	1 U	10 U	50 U
SP07-CS-907-050 ^a	09/03/03	5	0.10 U	0.10 U	0.10 U	0.10 U	5 U	3,000	15,000
SP07-CS-908-040 ^a	09/03/03	4	0.06 U	0.06 U	0.06 U	0.06 U	3 U	1,600	15,000
SP07-CS-910-070 ^a	09/03/03	7	0.03 U	0.03 U	0.03 U	0.03 U	2 U	1,900	16,000
SP07-CS-912-050 ^a	09/03/03	5	0.03 U	0.03 U	0.03 U	0.03 U	2 U	10 U	50 U
SP07-CS-913-030 ^a	09/03/03	3	0.03 U	0.03 U	0.03 U	0.03 U	2 U	10 U	50 U
SP07-CS-914-250 ^b	09/03/03	3	0.03 U	0.03 U	0.03 U	0.03 U	2 U	10 U	50 U
SP07-CS-915-110 ^c	09/08/03	11	0.03 U	0.03 U	0.03 U	0.03 U	2 U	56	380
SP07-CS-916-070 ^c	09/15/03	7	0.05 U	0.05 U	0.05 U	0.05 U	3 U	10 U	50 U
SP07-CS-917-080 ^c	09/15/03	8	0.10 U	0.10 U	0.10 U	0.10 U	5 U	120	930
SP07-CS-918-065 ^{a,d}	09/25/03	6.5	0.06 U	0.06 U	0.06 U	0.06 U	3 U	10 U	75
SP07-CS-919-030 ^a	09/16/03	3	0.03 U	0.03 U	0.03 U	0.03 U	2 U	14	190
SP07-CS-920-030 ^a	09/16/03	3	0.05 U	0.05 U	0.05 U	0.05 U	3 U	10 U	50 U
SP07-CS-921-070 ^a	09/25/03	7	0.04 U	0.04 U	0.04 U	0.04 U	2 U	10 U	50 U
SP07-CS-922-030 ^a	09/16/03	3	0.03 U	0.03 U	0.03 U	0.03 U	2 U	10 U	50 U
SP07-CS-923-030 ^a	09/16/03	3	0.04 U	0.04 U	0.04 U	0.04 U	2 U	10 U	50 U
SP07-CS-924-030 ^{d,g}	09/25/03	3	0.06 U	0.06 U	0.06 U	0.06 U	3 U	10 U	110
Waste Sample									
SP07-CS-927 ^e	10/24/03	--	1.7 J	3.7 J	6.0 J	11 J	510 J	1,600	7,500
Trip Blank Samples									

TABLE 1

**ANALYTICAL DATA SUMMARY - BTEX, GRO, DRO, AND RRO
ST. PAUL LANDFILL CELL B, DRUM DUMP
ST. PAUL ISLAND, ALASKA**

(Page 2 of 3)

Sample Number	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Gasoline-range Organics (mg/kg)	Diesel-range Organics (mg/kg)	Residual-range Organics (mg/kg)
Trip blank	09/04/04	--	0.02 U	0.02 U	0.02 U	0.02 U	1 U	--	--
Trip blank	09/17/03	--	0.02 U	0.02 U	0.02 U	0.02 U	1 U	--	--
<i>ADEC Method Two Cleanup Level^f</i>			<i>0.02^g</i>	<i>5.4</i>	<i>5.5</i>	<i>78</i>	<i>300</i>	<i>250</i>	<i>10,000</i>

TABLE 1

**ANALYTICAL DATA SUMMARY - BTEX, GRO, DRO, AND RRO
ST. PAUL LANDFILL CELL B, DRUM DUMP
ST. PAUL ISLAND, ALASKA**

(Page 3 of 3)

Notes

bold	Indicates a concentration exceeding soil cleanup level. Although reporting limits for benzen sometimes exceeded the ADEC Method Two cleanup level, no reporting limits exceeded the 1991 cleanup level of 0.5 mg/kg identified under the TPA.
ADEC	Alaska Department of Environmental Conservation
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
DRO	Diesel-range organic compounds
GRO	Gasoline-range organic compounds
J	The analyte was positively identified, but the numerical value is an estimated concentration.
mg/kg	Milligram per kilogram
--	Not analyzed
NA	Not available
PAH	Polynuclear aromatic hydrocarbon
PCS	Petroleum-contaminated soil
RRO	Residual-range organic compounds
TPA	Two-Party Agreement
U	The analyte was analyzed for, but not detected above the sample reporting limit.
a	Sample collected from the PCS excavation in the north portion of Cell B.
b	Duplicate of sample number SP07-CS-913-030.
c	Sample collected from the buried drum excavation in the north portion of Cell B.
d	Sample collected from PCS excavation in the northwest portion of Cell B.
e	Sample collected from tar material identified in drums removed from Cell A and Cell B.
f	Cleanup level is obtained from Title 18 of the <i>Alaska Administrative Code</i> 75 "Oil and Hazardous Substances Pollution Control Regulations," published by the State of Alaska and amended through October 28, 2000. Contaminants of concern for this site are limited to BTEX, GRO, DRO, RRO, and select PAHs.
g	Under the TPA, NOAA is required to comply with the 1991 ADEC cleanup level for benzene (0.5 mg/kg); however, whenever possible, NOAA has attempted to remove all contamination above the current ADEC Method Two cleanup level (0.02 mg/kg).

TABLE 2

**ANALYTICAL DATA SUMMARY - POLYNUCLEAR AROMATIC HYDROCARBONS
ST. PAUL LANDFILL CELL B, DRUM DUMP
ST. PAUL ISLAND, ALASKA
(Page 1 of 1)**

Sample Number	Sample Date	Sample Depth (feet bgs)	Naphthalene (mg/kg)	Acenaphthylene (mg/kg)	Acenaphthene (mg/kg)	Fluorene (mg/kg)	Phenanthrene (mg/kg)	Anthracene (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	Benzo(a)anthracene (mg/kg)	Chrysene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Benzo(a)pyrene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)
Cell B Confirmation Samples																		
SP07-CS-901-110 ^a	09/03/03	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-902-100 ^a	09/03/03	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-903-090 ^a	09/03/03	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-904-070 ^a	09/03/03	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-905-060 ^a	09/03/03	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-906-050 ^a	09/03/03	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-907-050 ^a	09/03/03	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-908-040 ^a	09/03/03	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-910-070 ^a	09/03/03	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-912-050 ^a	09/03/03	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
SP07-CS-913-030 ^a	09/03/03	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-914-250 ^b	09/03/03	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-915-110 ^c	09/08/03	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-916-070 ^c	09/15/03	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-917-080 ^c	09/15/03	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-918-065 ^{a,d}	09/25/03	6.5	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP07-CS-919-030 ^a	09/16/03	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-920-030 ^a	09/16/03	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-921-070 ^{a,e}	09/25/03	7	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
SP07-CS-922-030 ^a	09/16/03	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-923-030 ^a	09/16/03	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP07-CS-924-030 ^d	09/25/03	3	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Waste Sample																		
SP07-CS-927 ^e	10/24/03	--	38	2.5 U	2.5 U	2.5 U	4.2	2.5 U	2.5 U	3.5	2.5 U	8	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
<i>ADEC Method Two Cleanup Level ⁱ</i>			43	NA	210	270	NA	4,300	NA	1,500	6	620	11	110	1	11	1	NA

Notes

- bgs Below ground surface
- mg/kg Milligram per kilogram
- Not analyzed
- NA Not available
- PCS Petroleum-contaminated soil
- U The analyte was analyzed for, but not detected above the sample reporting limit.

- a Sample collected from the PCS excavation in the north portion of Cell B.
- b Duplicate of sample number SP07-CS-913-030.
- c Sample collected from the buried drum excavation in the north portion of Cell B.
- d Sample collected from PCS excavation in the northwest portion of Cell B.
- e Sample collected from tar material identified in drums removed from Cell A and Cell B.
- j Duplicate of sample number SP07-SS-910.
- ⁱ Regulations," published by the State of Alaska and amended through October 28, 2000.

TABLE 3

**ANALYTICAL DATA SUMMARY - POLYCHLORINATED BIPHENYLS
ST. PAUL LANDFILL CELL B, DRUM DUMP
ST. PAUL ISLAND, ALASKA
(Page 1 of 1)**

Sample Number	Sample Depth (feet bgs)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Aroclor 1262 (mg/kg)
Drum Contents Confirmation Samples									
SP07-CS-927 ^a	--	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
<i>ADEC Method Two Cleanup Level ^b</i>		<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>

Notes

- bgs Below ground surface
- mg/kg Milligram per kilogram
- Not analyzed
- NA Not available
- U The analyte was analyzed for, but not detected above the sample reporting limit.

- a Sample collected from tar material identified in drums removed from Cell A and Cell B.
- b Cleanup level is obtained from Title 18 of the *Alaska Administrative Code* 75 "Oil and Hazardous Substances Pollution Control Regulations," published by the State of Alaska and amended through October 28, 2000.