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- Appendix 2: Site Photographs
- Appendix 3: Daily Reports
- Appendix 4: Laboratory Analytical Reports – not prepared for this debris site
- Appendix 5: Site Video Documentation



### **3.2.2 Geology and Soil**

St. Paul Island is composed of basaltic lava flows and sills overlain by a thin veneer of tuffaceous and scoriaceous material, glacial sediment, and sandy material that has formed dunes on the eastern portion of the island. A number of cinder cones rise to a maximum elevation of 665 feet. The cones are moderately steep-sided, with several having craters at their summits. A gently rolling topography, averaging 200 feet in elevation, occurs between the cones.

The shoreline along the Bering Sea ranges from rocky sea cliffs and headlands to short, steep beaches and is generally composed of cobbles, gravel, and sand. The shoreline of the western portion of the island is generally rocky sea cliffs and headlands, with beach shoreline and back dunes present in other portions.

### **3.2.3 Surface Water and Groundwater**

Many lakes are located on St. Paul Island, but no streams are known to exist. The largest lake, Big Lake, is located on the northeastern part of the island. Sheep Lake is located west of Big Lake. Other smaller lakes are located in the southern portion of the island. The lakes with direct estuarine connection to the Bering Sea (for example, the Salt Lagoon) tend to be brackish; the remaining lakes are freshwater. Much of the surface of the island is composed of sandy or scoriaceous material that allows for rapid infiltration of water.

The City of St. Paul obtains its municipal water supply from four wells located about 1.5 miles north-northeast of the city and immediately east of Telegraph Hill (Fredreka I, Fredreka II, south well, and north well). A fifth well serves the USCG station. These wells are reportedly completed within the basalt aquifer. The four municipal wells are connected by pipelines that supply three 200,000-gallon water storage tanks located on a hill above the city.

## **3.3 Site Description**

The Dune Vehicle Boneyard is classified as a debris site under the TPA, namely TPA #4. It is located in the north-central area of the island, about 0.25 miles south of the Bering Sea shoreline (Figure 1, Appendix 1).

Several abandoned vehicles were located within the large dunes directly north of Little Polovina Hill. A small ridge somewhat separated two areas of abandoned vehicles. The first site was directly east of a road leading into the dunes and contained three stripped-down vehicle chassis. These trucks were badly rusted, and only the frames and tires remained. No stressed vegetation or visibly stained soil was located near these trucks. A gas canister (later

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acquired the Pribilof Islands in 1867, when Alaska was purchased from Russia. In 1869, the United States made the Pribilof Islands a federal reservation. From 1869 to 1909, the United States contracted fur seal harvesting and pelt processing to private companies. From 1910 to 1979, the federal government was the sole operator and administrator of the Pribilof Islands. In 1971, the Alaska Native Claims Settlement Act passed, which provided for the transfer of property and management of the islands to Alaskan Native regional and village corporations.

The only major landowners on St. Paul Island are the Tanadgusix Corporation (TDX) and the federal government. The federal government currently retains title to about 1,515 acres on St. Paul Island, which consist of seal rookeries managed by the National Marine Fisheries Service, a U.S. Coast Guard (USCG) LORAN station, two scoria pits, a portion of the current Landfill, and a National Weather Service station. The island's airport, which consists of about 67 acres of land, was conveyed to the State of Alaska in 1989.

### **3.2 Island Environmental Setting**

St. Paul Island is located between latitude 57° 06' and 57° 15' North and longitude 170° 05' and 170° 25' West. It is surrounded by the Bering Sea, and is about 800 miles west-southwest of Anchorage and 300 miles north-northwest of Dutch Harbor, Alaska. The island is about 44 square miles in area (Figure 1). About 27 centerline miles of road bisect the island north-south and east-west. The City of St. Paul is located on the southern peninsula of the island; its 1998 population included 761 people (ADL 1999). St. Paul Island has many sand dunes and is vegetated with grasses and small forbes over the majority of its area. The vegetation is broadly classified as moist tundra. Some common plant species present on the island include blue lupine, arctic poppy, beach wild rye, and sea beach sandwort.

St. Paul Island serves as a nesting area for a great number of seabirds and a rookery area for fur seals. Commercial crab harvesting areas are located within 15 miles of the island. Major harvest species are the Tanner crab and Korean Hair crab.

#### **3.2.1 Climate**

The climate of the island is classified as subpolar. Maritime weather conditions prevail on the island, with predominantly cloudy, foggy, and windy conditions. Total annual precipitation averages 23.3 inches, with most occurring between the months of April and October. The mean monthly temperature ranges from 22.4°F in winter to 47.8°F in summer, with a mean annual temperature of 34.8°F. Wind speeds range from 12.2 to 20.6 miles per hour, with an average of 17.2 miles per hour (NCDC 1999).

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Under Contract No. 52ABNA500049, Task Order 56ABNA703706, *NORTECH* Environmental and Engineering Consultants (*NORTECH*) has prepared this Site Closure Report for the Dune Vehicle Boneyard, TPA Site #4, to report on the debris removal and environmental assessment activities which occurred during the 2000 fieldwork season.

## **2.1 Objectives**

The overall objective for the St. Paul Debris Removal project undertaken by *NORTECH* was to develop a written plan of action, have it approved by NOAA and ADEC, and execute it for each TPA and non-TPA site. At each removal area we were to accomplish the acts necessary to gain a no-further-action designation from ADEC, or else gain an understanding of the corrective action efforts that could eventually lead to proper site closure.

## **2.2 Methodology and Applicable Regulations**

In order to meet the project objective, *NORTECH* developed a draft Corrective Action Plan and an array of Sampling & Analysis Plans (SAPs) in March 2000 for eleven designated St. Paul debris sites. They were reviewed and approved by NOAA and ADEC, fieldwork was begun in mid-April, and essentially completed in late November 2000. The fieldwork was performed in accordance with the Corrective Action Plan, the site's SAP, and the 1996 Two Party Agreement (TPA) between ADEC and NOAA including the following 1991 versions of ADEC's regulations and associated guidance documents, as referenced in the TPA, particularly sections 21 to 28, 59, and 103 which call for the application of:

- 18 Alaska Administrative Code (AAC) 70 - Water Quality Standards
- 18 AAC 75 - Oil and Hazardous Substances Pollution Control
- Underground Storage Tank Procedures Manual, Guidance for Treatment of Petroleum Contaminated Soil and Water and Standard Sampling Procedures

## **3.0 SITE BACKGROUND**

This section provides a brief discussion of the location and history of the Pribilof Islands, weather and environmental conditions on St. Paul Island, a site description, and a summary of previous investigations we are aware of at this specific St. Paul debris removal site.

### **3.1 Island Historical Information**

Russia first discovered St. Paul Island and its seal rookeries in 1786. In the 1820s, Russia established a settlement on St. Paul Island to support fur seal harvesting. The United States

## 1.0 EXECUTIVE SUMMARY

The Dune Vehicle Boneyard, which is Two Party Agreement (TPA) Site #4, is located within the bowl of a large dune directly north of Little Polovina Hill, near the northern shore of St. Paul Island. This site held the rusted remains of large trucks, abandoned decades ago.

**NORTECH** Environmental and Engineering Consultants and Bering Sea Eccotech mobilized personnel and equipment to the Dune Vehicle Boneyard at St. Paul Island, Alaska, and administered a program of debris removal from June 14 to June 17, 2000. Sixteen trucks, and an array of associated metal and other debris was excavated, loaded, and hauled away for disposal and recycling off-island. Based on a review and analysis of available project photographs, Daily Reports, and limited field screening data, **NORTECH** arrived at the following environmental conclusions:

- The only soils at the Dune Vehicle Boneyard site which were suspected of being contaminated at a level greater than the applicable ADEC soil cleanup standards were removed from the site during the cleanup process. Less than 0.1 CY of material was transported to the Blubber Dump, for remediation along with other petroleum hydrocarbon-impacted soils previously stockpiled there for thermo-volatilization treatment.
- Groundwater contamination is considered to be unlikely at this debris removal site, given the probable depth of groundwater and lack of any evidence of significant spills, leaks, or other petroleum hydrocarbon releases.

Based on these conclusions, **NORTECH** recommends the following:

- No Further Action at this debris removal site, and the preparation of a letter by ADEC acknowledging this status for the Dune Vehicle Boneyard site.

## 2.0 INTRODUCTION

The National Oceanic and Atmospheric Administration (NOAA), Office of Remediation and Restoration, is responsible for site restoration activities at the St. Paul and St. George Islands, Alaska. Collectively, these islands are part of a five-island archipelago known as the Pribilof Islands. Petroleum contamination has been identified or potentially may exist at a number of properties currently and formerly owned and operated by NOAA. Affected properties are described in a two-party agreement (TPA) between NOAA and the Alaska Department of Environmental Conservation (ADEC) dated January 26, 1996 (NOAA 1996). Under State of Alaska environmental regulations and in accordance with the TPA, NOAA has undertaken an array of site characterization and restoration activities on St. Paul and St. George Islands. Additional work must be conducted to satisfy the TPA, including limited site characterization, remediation, confirmation sampling, and site restoration (NOAA 1996).



remediation by Foster Wheeler and BSE. No other Hanby Kit samples were run at the Dune Vehicle Boneyard, nor were any viewed as necessary since no staining or evidences of spills or past fluid releases from the truck bodies were observed. The trucks were engulfed in sand, but the sand was not discolored nor did it seem to have been impacted.

After all of the truck bodies, truck beds, metal and miscellaneous debris (tires, wood, bits of auto parts, etc.) were removed from the site, Clark Milne toured the entire area on the afternoon of June 17 with a PhotoVac MicroTip HL-2000 Photo-Ionization Detector (PID) with a 10.6 EV lamp, to randomly search the area for volatile signs of soil contamination. Mr. Milne is an ADEC-listed Qualified Person for such field screening of soils.

After selecting and examining approximately 20 separate, random fieldscreening locations, during which time the PID readout consistently held steady at a reading of 0.0 ppm on the PID screen (there were no deflections or any volatile readings above background for this debris removal site), the equipment and manpower were demobilized and debris removal work was terminated for the Dune Vehicle Boneyard site.

## **5.0 DEBRIS DISPOSAL & RECYCLING**

The metal debris removed from the Dune Vehicle Boneyard site was temporarily placed (staged) at the NOAA compound, as part of a large pile of metal debris behind the Garco warehouse and Combine Building, just off the Polovina Turnpike, near the Post Office. This metal debris was later reloaded and hauled in mid-September 2000 to a large walled barge at the St. Paul dock (Appendix 2: Site Photographs), which sailed to Seattle and was unloaded at the Seattle Iron & Metals yard on the Duwamish River at the end of September 2000. All tires and rubber had been stripped from the truck chassis and recycled separately, while the steel, copper, and aluminum were processed and recycled by the salvage yard. The small amount of wood retrieved from the Dune Vehicle Boneyard was stacked up with a large amount of other wooden debris and burned at the St. Paul Landfill in August and September 2000.

## **6.0 ANALYSIS**

**NORTECH** has completed the removal of all visible solid wastes, abandoned trucks, and debris found above the ground surface at the Dune Vehicle Boneyard, north of Little Polovina Hill on St. Paul Island, Alaska. The cleanup objectives outlined in the Corrective Action Plan

#### **4.0 FIELDWORK ACTIVITIES**

##### **4.1 Debris Removal**

After visiting the site and assessing the fieldwork circumstances on June 14, 2000, *NORTECH* mobilized BSE workmen and suitable heavy equipment to the sand dune bowl of the Dune Vehicle Boneyard on the afternoon of June 14<sup>th</sup> and began loading truck parts to be hauled away. (Appendix 2: Site Photographs and Appendix 3: Daily Reports) Debris removal work proceeded on each of the next three days, until June 17<sup>th</sup>, when the site cleanup was completed and all field activities ended.

A Hitachi 150 excavator on tracks was used to break up, lift and remove pieces of the sixteen abandoned trucks exposed or uncovered, carrying them over the dune edge to the adjacent road. As necessary, a cutting torch was used to cut the larger, heavier items into pieces that could be handled by the excavator. A flatbed truck and end-dump truck were used to haul the debris from the site overland to the solid waste/debris staging area at NOAA's "compound", south of the Polovina Turnpike, near the Post Office.

During the debris removal operations, a constant watch was kept to assure that there were no remaining trapped automotive fluids or contaminants to be spilled from these vehicles. Some trapped water was noted in the bed of one truck (Appendix 2: Photos A040537F0 and A040538F0), some oil was removed from an oil pan and properly disposed of, and hydraulic fluid was observed to squirt from a truck-bed cylinder once (the potentially impacted soils were promptly collected and added to the contaminated soils stockpile operated by Foster Wheeler for NOAA). As noted in the contemporaneous Daily Reports, no other soil staining was observed at this site, and there were no evidences or odors leading us to believe that the soils at the site had been contaminated with petroleum hydrocarbons or other contaminants due to the presence of the abandoned trucks.

##### **4.2 Soil and Groundwater Sampling**

The only analytical sampling performed for this site was a single field-screening Hanby Extraction Leaching Process Kit (Hanby Kit) sample performed in the field on a suspect soil sample collected from below a truck body. The sample was processed by Mike Cheek on June 16, 2000, and yielded a light tan-colored result, at about the color and intensity of 100+ ppm of Diesel Range Organics. The limited zone of suspect soils that this sample was collected from were removed and taken to NOAA's contaminated soil stockpile for

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confirmed to be a fire extinguisher) of unknown contents was observed adjacent to one of the vehicles during a 1992 preliminary assessment conducted by Ecology & Environment, Inc. (E&E 1993). The second site was located about a hundred yards away on the northern side of the ridge, adjacent to the first site but much less easily accessible. This older federal "vehicle boneyard" contained "at least ten dump trucks" that were very rusted and either partially or totally buried in the sandy bowl of the dune.

### 3.3.1 Geology and Soil

The site is located in a sand dune environment, heavily scoured by winds. The thickness of the sand and the depth to bedrock are not known.

### 3.3.2 Surface Water and Groundwater

The nearest surface water body is the Bering Sea, which is about 0.25 mile north of the site, TPA #4. No freshwater bodies are located at or near the site. Depth to groundwater at the site is not known, but is presumed to be close to sea level.

## 3.4 Previous Investigations And Other Activities

Ecology & Environment, Inc. (E&E) conducted a 1992 preliminary assessment at the Dune Vehicle Boneyard (E&E 1993). During the preliminary assessment, E&E performed a visual inspection of the site, noting the conditions described in Section 3.3 above. In addition, field observations made at the site where the dump trucks were located noted that one dump truck piston was covered with a tar-like substance. Photoionization detector (PID) readings from the piston area ranged from 0.6 parts per million (ppm) to 2 ppm (E&E 1993).

In November 2000, Tetra Tech EM Inc. (TTEMI) submitted a Closure Confirmation Report to NOAA for the Dune Vehicle Boneyard, which described the results of their fieldwork efforts during 1999; including: a limited geophysical survey, small and road-accessible vehicle debris and limited stained soils removal, draining of accessible vehicle fluids, soil sampling and analytical results, and their conclusions and recommendations. The three vehicle frames and miscellaneous automobile parts were removed from the first, accessible site and were staged nearby at the Big Polovina scoria pit for the planned 2000 mass debris removal program. During this event, two soil samples were collected at the most heavily stained locations observed by TTEMI, the results of which easily met the applicable ADEC soil cleanup levels. The highest DRO reading obtained was 26 mg/Kg, with an assumed soil cleanup level of 100 mg/Kg.

for the Pribilof Islands Site Restoration Project and in Section 2.1 above were met, and it is anticipated that there are no contaminated soils or groundwater left behind at the cleanup site.

The single Hanby Kit soil sample collected and analyzed during the prosecution of the debris removal effort showed very little evidence of contamination, approximately 100 ppm DRO, and the limited soils – less than one-tenth cubic yard of sand – represented by that field screening sample were removed from the site for remediation at the Blubber Dump thermo-volatilization facility. PID screening of the site determined that volatile hydrocarbon contaminants were not detected in any of the site's soils, and that soil sampling for laboratory analysis was not indicated, in accordance with the Corrective Action Plan and the ADEC guidance that soils should be sampled and analyzed when contamination was evidenced by any field screening above background levels.

Care was taken to avoid spills or releases of automotive fluids at the Dune Vehicle Boneyard site, and it is anticipated that the soil contamination present at the site was limited to the very small quantity of soils containerized and removed from the site. Given the apparent absence of soil or attendant groundwater contamination, it does not appear that any further excavation or cleanup activities are considered necessary at this time.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

*NORTECH* Environmental and Engineering Consultants and Bering Sea Eccotech mobilized personnel and equipment to the Dune Vehicle Boneyard at St. Paul Island, Alaska, and administered a program of debris removal from June 14 to June 17, 2000. Sixteen trucks, and an array of associated metal and other debris was excavated, loaded, and hauled away for disposal and recycling off-island. Based on a review and analysis of available project photographs, Daily Reports, and limited field screening data, *NORTECH* arrived at the following environmental conclusions:

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- Groundwater contamination is considered to be unlikely at this debris removal site, given the probable depth of groundwater and lack of any evidence of significant spills, leaks, or other petroleum hydrocarbon releases.

NOAA NOS OR&R  
**(DRAFT)**  
Pribilof Project Office  
**Boneyard**  
January 12, 2001  
**Alaska**

## **Site Closure Report**

**Dune Vehicle**

**TPA Site #4, St. Paul Island,**

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Based on these conclusions, *NORTECH* recommends the following:

- No Further Action at this debris removal site, and the preparation of a letter by ADEC acknowledging this status for the Dune Vehicle Boneyard site.

### **8.0 LIMITATIONS AND NOTIFICATIONS**

*NORTECH* provides a level of service that is performed within the standards of care and competence of the environmental engineering profession. However, it must be recognized that limitations exist within any site assessment and cleanup operation. This report provides results based on a specific, debris removal work scope and from the analysis and observation of a limited number of samples. Therefore, while it is our opinion that these limitations are reasonable and adequate for the purposes of this report, actual site conditions may differ.

Specifically, the unknown nature of exact subsurface physical conditions, sampling locations, the analytical procedures' inherent limitations, as well as financial and time constraints are limiting factors. The report is a record of observations and measurements made on the subject site as described. The data should be considered representative only of the time the site investigation was completed. No other warranty or presentation, either expressed or implied, is included or intended.

This report is prepared for use by the National Oceanic and Atmospheric Administration, and the ADEC. If it is made available to others, it should be for information on factual data only, and not as a warranty of conditions, such as those which could be interpreted from the results presented or discussed in the report. It is understood that a copy of this report will be submitted to the ADEC, and arranged under the TPA between NOAA and ADEC.

We certify that except as specifically noted in this report, all statements and data appearing in this report are in conformance with ADEC's Standard Sampling Procedures. *NORTECH* has performed the work, made the findings cited, and proposed the recommendations described in this report in accordance with generally accepted environmental engineering practices.



NOAA NOS OR&R  
**(DRAFT)**  
Pribilof Project Office  
**Boneyard**  
January 12, 2001  
**Alaska**

## Site Closure Report

**Dune Vehicle**

**TPA Site #4, St. Paul Island,**

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### 9.0 QUALIFICATIONS & SIGNATURES OF ENVIRONMENTAL PROFESSIONAL (S)

**Clark Milne, PE**, is a registered Civil Engineer, with extensive field experience as a heavy construction superintendent, a consulting civil and environmental design engineer, and a project manager. He has worked for both the Fairbanks North Star Borough and ADOT&PF in senior management roles, and is familiar with the applicable ADEC regulatory requirements for site closure. Clark has designed and/or administered a wide range of environmental projects, and has over 25 years of experience in Alaska, of which 21 years have been spent in Fairbanks.

Clark Milne, PE  
Senior Engineer

**L. Michael Cheek, PhD**, is **NORTECH**'s Staff Professional Chemist, and has over 20 years of laboratory and field experience. He is well versed in both the EPA and Alaska Department of Conservation methods for collecting and analyzing for petroleum hydrocarbons and hazardous wastes, and has purchased, stored, used, and disposed of radioactive materials, as well as carcinogenic, lethal, toxic, corrosive, and caustic substances in compliance with appropriate regulations. He is an ADEC-listed Qualified Person for environmental sampling of soils and water, and has been responsible for laboratory and construction site safety and industrial hygiene. His industrial service includes regulatory compliance, hazardous materials sampling and remediation, and environmental monitoring.

L. Michael Cheek, PhD  
Staff Professional Chemist