U.S. Army Corps of Engineers
Alaska District

FIRST PERIODIC REVIEW REPORT

SITE 7 CARGO BEACH ROAD LANDFILL
NORTHEAST CAPE FUDS
ST. LAWRENCE ISLAND, ALASKA

Formerly Used Defense Site No. F10AK0969-05

FINAL
FEBRUARY 2015

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APPROVED BY: **DATE:**

Christopher D. Lestochi
Colonel, Corps of Engineers
District Commander

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
AAC	Alaska Administrative Code
AC&WS	Aircraft Control and Warning Station
ACAT	Alaska Community Action on Toxics
ADEC	Alaska Department of Environmental Conservation
ARAR	applicable or relevant and appropriate requirements
bgs	below ground surface
Bristol	Bristol Environmental Remediation Services, LLC
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
CON/HTRW	containerized hazardous, toxic, or radioactive wastes
COPC	contaminant of potential concern
DD	decision document
DHHS	U.S. Department of Health and Human Services
DRO	diesel-range organics
EPA	U.S. Environmental Protection Agency
FUDS	Formerly Used Defense Site
GRO	gasoline-range organics
HWAP	hazardous waste accumulation point
Jacobs	Jacobs Engineering Group Inc.
LUC	land use controls
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MOC	Main Operations Complex
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
POL	petroleum, oil, and lubricants
RAB	Restoration Advisory Board
RAO	removal action objective
RCRA	Resource Conservation and Recovery Act
RecKey	record key
RI	remedial investigation
ROD	Record of Decision
RRO	residual-range organics
TAH	total aromatic hydrocarbon

ACRONYMS AND ABBREVIATIONS (Continued)

TAqH	total aqueous hydrocarbon
TBC	to be considered
USACE	U.S. Army Corps of Engineers
WACS	White Alice Communications System

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers contracted Jacobs Engineering Group Inc. to conduct the first Periodic Review of the selected remedy for Site 7 Cargo Beach Road Landfill (Site 7) at the Northeast Cape Formerly Used Defense Site on St. Lawrence Island, Alaska, in September 2013. This Report presents the results of the review.

The purpose of this review is to ensure the remedy selected in *Decision Document: Site 7 Cargo Beach Road Landfill, Containerized Hazardous, Toxic, and Radioactive Waste (CON/HTRW) Project #F10AK0969-05* (USACE 2009a), signed 19 June 2009, has been put into action, is performing effectively, and continues to be protective of human health and the environment. Data considered during this review included sample results and site inspections available as of April 2014. The Summary Form on the following pages presents the issues that were identified during the review, associated recommendations, follow-up actions, and the protectiveness statement.

Overall, this Periodic Review found the selected remedy for Site 7 will be protective when remedy implementation is complete.

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PERIODIC REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Site 7 Cargo Beach Road Landfill, Northeast Cape (St. Lawrence Island) **FUDS ID:** F10AK0969-05		
EPA ID: AK9799F2999		
Region: 10	**State:** Alaska	**City/County:** St. Lawrence Island

SITE STATUS	
NPL Status: Non-NPL Site	
Multiple OUs? No	**Has the site achieved construction completion?** No

REVIEW STATUS
Lead agency: Other Federal Agency **If "Other Federal Agency" was selected above, enter Agency name:** USACE
Author name (Federal or State Project Manager): Jacobs Engineering Group Inc. on behalf of USACE, Alaska District Federal Project Manager Valerie Palmer
Author affiliation: Contractor
Review period: September 2009 – April 2014
Date of site inspection: 13 September 2013 – 15 September 2013
Type of review: Periodic Review
Review number: 1 (one)
Triggering action date: 19 June 2009
Due date *(five years after triggering action date)*: 19 June 2014

ISSUES/RECOMMENDATIONS				
Site: 7	**Issue Category:** Remedy Completion			
	Issue: Land use controls to limit groundwater use and prevent construction of buildings on top of the landfill are not implemented.			
	Recommendation: Implement LUCs following completion of the remedial action field work as described in the DD.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Regulatory Party**	**Milestone Date**
No	Yes	USACE	ADEC	2018
Site: 7	**Issue Category:** Remedy Implementation			
	Issue: The 2013 site inspection identified debris protruding from the landfill cap.			
	Recommendation: Remove debris protruding from the landfill cap.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Regulatory Party**	**Milestone Date**
No	No	USACE	ADEC	2018
Site: 7	**Issue Category:** Remedy Implementation			
	Issue: The 2013 site inspection identified metal and wood debris in and around ponds adjacent to the landfill cap.			
	Recommendation: Remove debris identified in and around ponds adjacent to the landfill cap.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Regulatory Party**	**Milestone Date**
No	No	USACE	ADEC	2018

PROTECTIVENESS STATEMENT		
Site: Site 7 Cargo Beach Road Landfill	*Protectiveness Determination:* Will be Protective	*Addendum Due Date (if applicable):*
Protectiveness Statement: The remedy at Site 7 is expected to be protective of human health and the environment upon completion. In the interim, no exposure pathways that could result in unacceptable risks have been noted.		

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) contracted Jacobs Engineering Group Inc. (Jacobs) to conduct the first Periodic Review of the selected remedy at Site 7 Cargo Beach Road Landfill (Site 7) at Northeast Cape on St. Lawrence Island, Alaska (Figure A-1), in September 2013.

1.1 PURPOSE OF THIS REVIEW

The purpose of this Periodic Review is twofold: to evaluate the implementation and performance of the remedial action that was selected for Site 7 and to determine if this action is protective of human health and the environment. The methods, findings, and conclusions of this Periodic Review identify issues found through an examination of the data collected over the past five years and provide recommendations to address them. This is the first Periodic Review for Site 7.

The Periodic Review process for Site 7 was triggered by the signing of *Decision Document: Site 7 Cargo Beach Road Landfill, CON/HTRW Project #F10AK0969-05* (USACE 2009a), 19 June 2009.

1.2 RESPONSIBILITIES

USACE, Alaska District, is the lead agency for remedial actions at Site 7, located within the Northeast Cape Formerly Used Defense Site (FUDS). USACE contracted Jacobs to conduct and prepare this Periodic Review Report. The selected final remedial actions for Site 7 were chosen in accordance with the Defense Environmental Restoration Program, United States Code, Title 10, Section 2701, et seq.

Per FUDS Program Policy ER 200-3-1 (USACE 2004a), containerized hazardous, toxic, or radioactive wastes projects involving tanks, transformers, and other containers generally are not regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. However, this project has followed the CERCLA process as

a matter of administrative consistency to foster community trust and preserve good public relations with an ongoing project at the same location (USACE 2009a).

The primary concern at Site 7 is drums and other containers containing petroleum, oil, and lubricants (POL). However, with any unpermitted dump site, there is the potential for unknown hazardous wastes to be discovered. If an actual or threatened release of a CERCLA hazardous substance, pollutant, and/or contaminant is identified during the performance of this CON/HTRW cleanup, the situation will need to be assessed to determine if the project needs to transition to a CERCLA response action. An evaluation will be made, in accordance with CERCLA and the National Contingency Plan, to determine if a removal action is warranted to protect human health and the environment.

1.3 OVERVIEW

The Periodic Review was conducted with all data available in the information repositories as of February 2014. The project team consisted of the USACE project manager, technical representatives, and contracted environmental engineering support. This effort included a review of the decision document (DD) requirements and work that has been done to satisfy those requirements, current and past monitoring data, and the current status of the remedy and the physical condition of the site. The general public was notified of the review with public notices placed in the *Nome Nugget* on 18 and 19 August 2013. In addition, a flyer containing the same information was mailed to community members and Alaska Department of Environmental Conservation (ADEC) in September 2013. Site 7 was visited and a site inspection was performed on 13 September 2013.

2.0 SITE CHRONOLOGY

Important events and relevant dates for Northeast Cape are shown in Table 2-1.

Table 2-1
Chronology of Site Events

Event	Date
Northeast Cape site acquired by the U.S. Air Force	1952
Aircraft Control and Warning Station constructed	1951-1952
WACS constructed	1954
Aircraft Control and Warning Station operations terminated	1969
WACS operations terminated	1972
Bureau of Land Management obtained ownership of Northeast Cape	August 1975
Alaska Native Claims Settlement Act transferred land ownership to Sivuqaq, Inc. and Kukulget, Inc.	June 1979
Environmental Assessment conducted	1985
Site Assessment conducted	1991 and 1992
Phase I RI conducted	1994
All electrical transformers removed	1994
Phase II RI/Feasibility Study and Human Health and Ecological Risk Assessment drafted	1996
Remedial Action conducted to remove communications wire and cable on the tundra	1997
Phase II RI/Feasibility Study finalized	September 1998
Site Assessment conducted	1999
Debris, hazardous waste, aboveground storage tank, and fuel pipeline removed	2000
Underground storage tanks, PCB- and POL-contaminated soil removed, buildings demolished	2001
Phase III Remedial Investigation conducted	2001 – 2002
30 buildings and utilidor demolished; drums, communication poles, and wire removed	2003
Human Health and Environmental Risk Assessment finalized	2004
Feasibility Study prepared	2007
Groundwater Use Determination (18 AAC 350) submitted to ADEC	April 2007
ADEC comments on the Northeast Cape 350 Determination received (ADEC 2007b)	May 2007

Table 2-1
Chronology of Site Events (Continued)

Event	Date
DD selecting remedy for Sites 1 through 6 and 8 through 34 approved by HQ USACE	September 2009
DD selecting remedy for Site 7 approved by USACE-POA	June 2009
Remedial action begun to implement remedy for Site 7	June 2009
Bristol requested landfill closure by ADEC for Site 7	November 2009
Site 7 Landfill Cap Construction Report prepared	May 2010
EPA evaluated USACE Cleanup of FUDS at Northeast Cape and Gambell	February 2013
Public notice of Five-Year Review published and public comment period opened	August 2013
Five-Year Review site visit	September 2013
Public comment period closed	February 2014

Note:
For definitions, see the Acronyms and Abbreviations section.

3.0 BACKGROUND

This is the first Periodic Review for Site 7. The section below is intended to describe the general conditions of the Northeast Cape Site in its entirety; the individual Site 7 history, physical characteristics, and land uses are discussed in detail in Section 3.2.1.

3.1 NORTHEAST CAPE

The project number for Site 7, located within the Northeast Cape FUDS is F10AK0969-05. The ADEC contaminated sites record key (RecKey) number for the entire Northeast Cape Site is 198532X917901. Site 7 is tracked with a separate RecKey (198532X917907) and File Number (475.38.013). The ADEC Hazard ID number for Site 7 is 213. The Environmental Protection Agency (EPA) site identification number for Northeast Cape is AK9799F2999. The Northeast Cape FUDS is not listed on the National Priorities List.

3.1.1 Physical Characteristics

The Northeast Cape FUDS is located on St. Lawrence Island, Alaska, in the western portion of the Bering Sea, approximately 135 air-miles southwest of Nome (Figure A-1). It is 9 miles west of the northeastern cape of St. Lawrence Island at 63°19' north, 168°58' west. The Northeast Cape property originally encompassed approximately 4,800 acres (7.5 square miles) and is bounded by Kitnagak Bay to the northeast, Kangighsak Point to the northwest, and the Kinipaghulghat Mountains to the south.

The Northeast Cape FUDS consists mainly of rolling tundra, which rises from the Bering Sea toward the base of the Kinipaghulghat Mountains. These mountains rise abruptly to an elevation of approximately 1,800 feet above sea level roughly 3 miles from the coastline. The Northeast Cape FUDS is not connected to other permanent communities on the island by road and is only accessible by air, water, or all-terrain vehicle trails. The Village of Savoonga, the closest community, is located approximately 60 miles to the northwest (Figure A-1). Savoonga has a subarctic maritime climate with some continental influences during the winter. Summer temperatures average between 40 to 51 degrees Fahrenheit (°F) and winter

temperatures average between -7 to 11 °F. Temperature extremes have been recorded at -34 and 67 °F. Average annual precipitation is 10 inches, with 58 inches of snowfall. The island is subject to prevailing winds, averaging 18 miles per hour.

3.1.2 Geology

As presented in the DDs (USACE 2009a, b), St. Lawrence Island consists of isolated bedrock highlands of igneous, metamorphic, and older sedimentary rocks surrounded by unconsolidated surficial deposits overlying a relatively shallow erosional bedrock surface. The main area of operation, known as the Main Operations Complex (MOC), is located at an elevation of approximately 100 feet. In the area of the MOC, shallow, unconsolidated surficial materials overlie quartz monzonitic rocks of the Kinipaghulghat Pluton (Patton and Csejtey 1980). The pluton forms the mountainous area south of the Northeast Cape FUDS, which includes Kangukhsam Mountain. The Suqitughneq River drainage in the Kinipaghulghat Pluton has created an erosional valley and alluvial fan of unconsolidated sediments. The Northeast Cape FUDS is located on this alluvial fan, which protrudes north from the mountain front toward the Bering Sea. Granitic bedrock materials are exposed at the coast north of the site at Kitnagak Bay, which suggests the quartz monzonitic bedrock underlies the unconsolidated materials at a relatively shallow depth on a wave-cut erosional platform.

In general, the native soil stratigraphy at Northeast Cape is characterized by silts near the surface, overlying more sand-dominated soils at depth. The silt contains varying quantities of clay/sand/gravel, and varies from 0 to 10 feet in thickness. The silt is dark brown to dark green and sometimes exhibits a mottled texture. In some areas, the silt exhibits an aqua-green or blue color. Dark brown silts are observed in outcrops. The sand at depth contains varying degrees of silt/gravel/cobbles that range from 2 feet to greater than 20 feet in thickness. These deeper, coarse-grained materials generally are unsorted and likely to be of glaciofluvial origin. The depth to bedrock at the Northeast Cape FUDS is unknown (USACE 2009a, b).

3.1.3 Land and Resource Use

St. Lawrence Island residents from the villages of Gambell and Savoonga engage in subsistence fishing, hunting, and gathering in the Northeast Cape FUDS area year-round. Currently, there are not any permanent residents of the Northeast Cape area; however, representatives of the Native Village of Savoonga have indicated a desire to re-establish a permanent residential community at the site in the future.

St. Lawrence Island supports habitats for the following endangered or threatened species: the polar bear (threatened); spectacled eider (endangered); Steller's eider (threatened); and the Western Distinct Population Segment of Steller sea lion (endangered). Walrus are protected under the Marine Mammal Protection Act. The area of Northeast Cape FUDS is used for the collection of berries and subsistence hunting of reindeer. The Suqitughneq River, which is located within the Northeast Cape FUDS, is used for subsistence fishing. The ocean surrounding the Northeast Cape FUDS is used extensively for subsistence activities, including fishing and hunting of whales, walrus, seals, and sea birds.

3.2 NORTHEAST CAPE SITE HISTORY

The Northeast Cape FUDS was constructed as an Aircraft Control and Warning Station (AC&WS) during 1950 and 1951 to provide radar coverage and surveillance for the Alaskan Air Command, and later for the North American Air Defense Command, as part of the Alaska Early Warning System. The site was activated in 1952 and a White Alice Communications System (WACS) station was added to the site in 1954. The AC&WS and WACS operations supported 212 personnel and were terminated in 1969 and 1972, respectively. The majority of military personnel were removed from the site by the end of 1969.

The Northeast Cape site included areas for housing site personnel, power plant facilities, fuel storage tanks, distribution lines, maintenance shops, wastewater treatment facilities, and landfills. The buildings and majority of furnishings and equipment related to the AC&WS were abandoned in place initially due to the high cost of off-island transport.

In 1971, the villages of Gambell and Savoonga opted out of the Alaska Native Claims Settlement Act, which allowed for title to 1.136 million acres of land in the former St. Lawrence Island Reindeer Reserve established in 1903. The Gambell Native Corporation and Savoonga Native Corporation (now known as Sivuqaq, Inc. and Kukulget, Inc., respectively) received titles to all of St. Lawrence Island (except U.S. Surveys 4235, 4237, 4340, 4369, 3728) by Interim Conveyance No. 203 dated 21 June 1979. In 1982, the Navy obtained approximately 26 acres of land containing the former WACS. The land transfer later was deemed invalid and property ownership was reverted to Sivuqaq, Inc., and Kukulget, Inc.

3.2.1 History of Contamination

Environmental investigations at Northeast Cape FUDS began in the mid-1980s, and subsequent phased remedial investigations (RI) were conducted between 1994 and 2004. The studies divided the concerns at Northeast Cape among 34 separate sites (USACE 2009a, b). One of these sites, Site 7, is an unpermitted landfill that was used as the installation's primary solid waste disposal area from 1965 until closure in 1974. Site 7 is located 0.8 miles south of Cargo Beach, midway between the MOC and the beach at Kitnagak Bay. The dump contains a variety of unknown materials. The landfill appears to have been created by dumping debris off the sides of a topographic mound. The debris then was covered by grading soil out from the top of the mound.

Environmental sampling activities at Site 7 have included the collection of soil, sediment, surface, and shallow groundwater samples. Detected analytes were compared to background concentration and the most conservative ADEC Method Two cleanup levels to determine the contaminants of concern (COC) (USACE 2009a). Chemical analyses were conducted for petroleum-related compounds, volatile organic compounds, semivolatile organic compounds, metals, pesticides, and polychlorinated biphenyls (PCB). Based on the results of the phased RIs, contaminants exceeding action levels in soil were identified in a limited amount of soil and included diesel-range organics (DRO), residual-range organics (RRO), PCBs, arsenic, chromium, and lead.

In soil, the maximum DRO concentration was detected approximately 75 feet east of Cargo Beach Road at a concentration of 32,000 milligrams per kilogram (mg/kg) (USACE 2009a). At all other sampling locations, DRO concentrations ranged from nondetect to 2,300 mg/kg, which is below the site-specific cleanup level of 9,200 mg/kg. PCBs were detected in soil along the southeastern edge of the landfill at concentrations ranging from nondetect to 50.8 mg/kg (USACE 2009a). In 2005, six locations with PCBs concentrations greater than 1 mg/kg were excavated and disposed offsite. Confirmation sampling results demonstrated that PCBs were successfully removed to concentrations below 1 mg/kg at four of the six locations. Two locations (7A and 7E), located on the southeastern slope of the landfill, still may contain PCB concentrations greater than 1 mg/kg between 2 and 3.5 feet below ground surface (bgs).

In sediment, chromium and PCBs were detected above cleanup levels at one location (SD301) with concentrations of 100 mg/kg and 1.78 mg/kg, respectively (USACE 2009a). DRO were detected at location SD301 at a maximum concentration of 4,900 mg/kg (USACE 2009a). In surface water, DRO were detected in one sample (SW101) northeast of the landfill in 1994 with an average triplicate concentration of 8.9 milligrams per liter (mg/L). No other exceedances were detected in surface water in 1994.

During the Phase I RI in 1994, four boreholes were placed around the landfill in an attempt to locate groundwater and characterize migration of contaminants around the landfill. Boreholes were drilled to a maximum depth of 31 feet and one borehole was terminated at 15 feet bgs and converted to monitoring well MW7-4 located east of the landfill and adjacent to a pond (USACE 2009a). Groundwater was not encountered at the other three boreholes. The lack of groundwater in these boreholes was attributed to frozen soil conditions. A thin layer of perched groundwater may be present immediately above the frozen soil during the warmer summer months (USACE 2009a). In 2001, several temporary well points were advanced in the areas surrounding the landfill. These well points generally confirmed the lack of groundwater. One location (WP7-1), located west of the landfill, contained anomalous levels of several metals, including arsenic, chromium, and lead, as well as low levels of DRO and RRO. The water samples were not filtered and turbid, suggesting the metals detected were

likely originating from the suspended sediments in the water column and are not representative of dissolved phase shallow groundwater conditions at the site. Groundwater also was collected from temporary well point WP7-3, which did not identify contaminants greater than cleanup levels (USACE 2009a). Groundwater migration from the site likely is limited because of the low permeability of the shallow, partially frozen soils. Groundwater probably remains in a relatively localized area with any migration occurring in a northeasterly direction, corresponding to surface topography.

Sampling of shallow groundwater is problematic at Site 7 due to the tundra/wetland environment, and sample collection is difficult because water is intermittent, slow to recharge, and highly turbid. Groundwater exposure at Site 7 is incomplete because there is not a sufficient quantity of water produced to be considered a reasonable potential future source for drinking water.

3.2.2 Initial Response

Several non-time-critical interim removal actions were performed throughout Northeast Cape to address the removal of containerized hazardous/toxic waste items, buildings and miscellaneous debris, and hotspots of contaminated soils (USACE 2009a). Remedial actions specific to Site 7 are as follows:

- In 2000, more than 6,000 55-gallon drums were removed from the surrounding area.
- In 2003, 15 tons of scrap metal were removed from the area east of Cargo Beach Road.
- In 2005, approximately 14 tons of PCB-contaminated soil from six areas along the southeastern edge of the landfill, as well as exposed drums and miscellaneous debris from the landfill perimeter edges were removed (USACE 2009a).
- In 2007, a geophysical survey (USACE 2007a) was conducted to map the extent of buried metallic anomalies. The geophysical data were consistent with side-cast debris around the edges of a natural topographic mound. Most of the remaining debris identified was located at the northwest and southeast edges of the topographic mound. Buried debris was not identified to extend beneath Cargo Beach Road.

3.2.3 Basis for Taking Action

The response actions selected in the DD are necessary to protect the public health and welfare or the environment from actual or threatened releases of hazardous substances into the environment, including unknown liquid contents of buried and partially exposed drums (USACE 2009a).

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4.0 SITE 7 REMEDIAL ACTIONS

Removal action objectives (RAO) and the selected remedy are presented in this section. Details regarding the initial plans, remedy implementation, and current status of the remedy are provided.

4.1 REMEDY SELECTION

The DD addressing Site 7 was approved on 19 June 2009 (USACE 2009a). The goal of the Defense Environmental Restoration FUDS Program is to reduce the risk resulting from past military activities to safe levels, in a timely, cost-effective manner.

4.1.1 Removal Action Objectives

Specific response action alternatives were developed and evaluated for Site 7. The RAOs for Site 7 are as follows:

- Reduce threats to human health, safety, and the environment.
- Remove drums containing POL, hazardous substances, pollutants, or contaminants, as necessary, to reduce the likelihood of future spillage, leakage, and exposure to humans, animals, and the food chain.
- Prevent current and future exposure to humans by ingestion, inhalation, and dermal contact with contaminated soils at levels above risk-based cleanup levels.
- Prevent exposure to ecological receptors by direct contact with contaminated soils/sediment above risk-based cleanup levels.

Cleanup levels for identified COCs in various media at Site 7 established in the DD are presented in Table 4-1. Soil cleanup levels were developed based on the Human Health and Ecological Risk Assessment (USACE 2004b) to be protective of future permanent residents with an assumed lifetime exposure to contaminated soils through incidental ingestion, inhalation, or dermal contact. Sediments that are intermittently submerged (i.e., ephemeral ponds, wet tundra) are considered soil, including all areas adjacent to Site 7. Surface water must meet water quality standards promulgated by the State of Alaska under Title 18 of the Alaska Administrative Code (AAC), Section 70 (18 AAC 70). The water quality criteria for

petroleum hydrocarbons, oil, and grease are described in 18 AAC 70.020(b) and stipulate these compounds may not cause a visible sheen upon the surface of the water. In addition, the regulations provide acceptable levels for total aromatic hydrocarbons (TAH) and total aqueous hydrocarbons (TAqH).

Table 4-1
Northeast Cape Cleanup Levels

Contaminant of Concern	Soil (mg/kg)	Surface Water (mg/L)
Arsenic	11[a]	--
PCBs	1[b]	--
DRO	9,200[c]	no sheen
GRO	--	no sheen
RRO	9,200[c]	no sheen
TAH[1]	--	0.010
TAqH[2]	--	0.015

Notes:
-- Cleanup level not specified in the DDs (USACE 2009b)
[1] TAH is the sum of BTEX.
[2] TAqH is the sum of BTEX and PAH.
[a] Site-specific background value
[b] 18 AAC 75, Table B1, over 40 inch Zone, direct contact pathway (as updated 9 October 2008)
[c] Risk-based cleanup level derived from site-specific risk assessment, ingestion/inhalation pathways, future residential use (USACE 2009b).

4.1.2 Selected Remedy

Response action alternatives considered for Site 7 included: no further action; land use controls (LUC); natural attenuation; long-term monitoring; capping; and excavation and offsite disposal (USACE 2009a). Alternatives were evaluated for their ability to provide overall protection of human health and the environment; compliance with risk-based standards; short- and long-term effectiveness and performance; reduction in toxicity, mobility, and volume; implementability; and cost (USACE 2009a). The selected remedy for Site 7 contains several components and includes capping with intrusive removal action and incidental removal of contaminated soil. The selected remedial components for Site 7 and their current status are presented in Table 4-2.

Table 4-2
Site 7 Selected Remedies and Current Status

Remedial Component	Status
Expose underlying drums/debris by disturbing the upper approximately 1 foot of fill across the areas with mapped metallic anomalies (estimated 150,000 square feet) to determine if near-surface drums are present.	Completed in 2009. Ten test pits (10 feet by 10 feet by 4 feet) and 72 shallow potholes were advanced at Site 7 (USACE 2010a).
Excavate test pits or trenches distributed across the areas of known metallic anomalies to determine if large caches of drums are present.	Completed in 2009. Excavation during drum removal overlapped the areas with magnetic anomalies (129,000 square feet). Final excavation depth was not reported (USACE 2010a).
Remove or drain identified drums with liquid content; characterize the waste contents; transport offsite for proper disposal.	Completed in 2009. 182 drums located in the test pits and potholes were drained, cleaned, and crushed before burial under the landfill cap. Drum contents were comingled and sent to an offsite disposal facility (USACE 2010a).
Remove incidental contaminated soils associated with identified drums to the extent grossly stained soils are determined by the contractor and USACE Quality Assurance Representative; characterize the soil for disposal; transport offsite for proper disposal.	Completed in 2009. 100 tons of soil was removed from 1 to 2 feet below the drums during excavation and sent to an offsite disposal facility (USACE 2010a).
Cap the debris with a minimum 2 feet of fill.	Completed in 2009. Landfill cap material (28,994 cubic yards) was transported to the site from a local borrow source and spread across the site USACE 2010a).
Re-vegetate the site.	Initiated in 2009 (USACE 2010a).
Survey the landfill boundary with map and text description.	Completed in 2009 (USACE 2010a).
Deed notation	Not yet completed.
Implement LUCs to limit groundwater use and prevent construction of buildings on top of the landfill.	LUCs to limit groundwater use and prevent construction of buildings on top of the landfill have not been implemented.
Visual monitoring of the cap for settlement and erosion over a period of 5 years, with additional periodic reviews as necessary.	Ongoing. Conducted in 2011, 2012, and 2013 (Craner 2011; Shewman 2012; Geist 2013).

4.2 REMEDY IMPLEMENTATION

This section presents a brief description of the selected remedy, its implementation history, current status, and operations and maintenance plan.

4.2.1 Remedy Implementation and Status

The DD-selected remedy for Site 7 was to excavate test pits across the areas of known metallic anomalies to expose underlying drums and debris, remove or drain near-surface drums, install a landfill cap, conduct periodic visual monitoring for settlement and erosion over a period of five years, survey the landfill boundary, and implement LUCs to limit groundwater use and prevent construction of buildings on top of the landfill.

Remedy implementation was initiated in 2009. Metallic anomalies identified by geophysical investigation in 2007 were located by survey and investigated. The top 1 foot of soil was uncovered to locate drums within the shallow subsurface. Excavations included 73 shallow "potholes" across the surface of the landfill, 10 test pits (at least an area of 100 square feet and a depth of 4 feet), and previously delineated magnetic anomaly areas covering approximately 129,000 square feet (USACE 2010a). Excavation efforts encountered and disposed of approximately 201 pounds of PCB light ballasts, 350 pounds of lead batteries, 4,100 pounds of lead debris, and approximately 10 gallons of antifreeze. Contents recovered from drums at Site 7 (approximately 2,150 gallons) were containerized and shipped offsite for disposal. Approximately 100 tons of petroleum-stained soil encountered during excavation efforts was excavated and containerized for offsite disposal.

At the conclusion of the 2009 field season, approximately 136 tons of nonhazardous waste, 2.7 tons of hazardous waste, and 182 filled drums were removed from the landfill (USACE 2010a). Fifty of the filled drums were transported offsite after being emptied and cleaned and more than 1,000 empty drums were cleaned, crushed, and returned to the landfill.

Waste encountered at Site 7 was consolidated and cleaned at a Hazardous Waste Accumulation Point (HWAP) on the gravel pad at Site 6. Drums containing liquid product

were transported to the HWAP, cut open, and pumped of their contents. Drums then were washed with a high-pressure hot water rinse within an open-top container express unit. Waste streams processed at the HWAP included DRO-contaminated soil, oil waste, PCB light ballasts, batteries, lead debris, antifreeze, and wash-water (USACE 2010a).

A 2-foot minimum landfill cap was constructed using material from an on-island borrow source south of Site 31. The cap was graded to promote surface runoff and prevent erosion. The landfill cap boundaries are shown on Figure A-6. Locations where debris was not encountered are noted as potentially having less than a 2-foot cap in order to maintain grade (USACE 2010a). On 20 November 2009, site closure was requested (Bristol Environmental Remediation Services [Bristol] 2009). On 7 December 2009, site closure was considered premature and denied by ADEC (USACE 2010a). In 2011, Site 7 was re-seeded and fertilized to assist vegetation growing on the surface of the landfill cap. A stabilization analysis was conducted by Bristol and determined the landfill cap met non-vegetative permanent stabilization requirements established in the 2011 Alaska Construction General Permit (USACE 2012).

In 2013, surface water was collected from three locations adjacent to the landfill cap and submitted to an offsite analytical laboratory for analysis of gasoline-range organics (GRO), DRO, RRO, benzene, toluene, ethylbenzene, and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAH), PCBs, and both dissolved phase and total Resource Conservation and Recovery Act (RCRA) metals with nickel and zinc. The collection of shallow groundwater samples was attempted using a screened drive point and hand tools. Refusal was met between 1 and 3 feet bgs at four different locations northeast of the landfill cap. Surface water and attempted groundwater locations are shown on Figure A-6. Surface water sample results were compared to the applicable surface water criteria (18 AAC 70) listed in the DD for TAH, TAqH, and no sheen (USACE 2009a). No exceedances of the criteria were found (USACE 2014b). Furthermore, the surface water results for metals, PCBs, VOCs, and PAHs did not exceed any screening criteria for drinking water.

At the time of this review, LUCs to limit groundwater use and prevent construction of buildings on top of the landfill had not been implemented.

4.2.2 Operations and Maintenance

Visual monitoring of the landfill cap by the USACE quality assurance representative occurred in September 2011, July 2012, and August 2013; observations are noted in the 2011, 2012, and 2013 Site Inspection Checklists (Craner 2011; Shewman 2012; Geist 2013). During site inspections, ponded water was observed against the north, west, and south sides of the landfill cap. Vegetative cover was estimated at 70 percent on the cap surface and 60 percent on the side slopes. The cap was noted as appearing structurally sound and stable with no visible erosion, leakage, or debris. Grass seed was spread by Bristol on 13 September 2011 to encourage vegetative re-growth in areas noted as bare (Craner 2011). A visual inspection of the landfill cap also was conducted as part of this review in September 2013 and is described in Section 6.9.

5.0 PROGRESS SINCE THE LAST REVIEW

This is the first Periodic Review for Site 7.

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6.0 PERIODIC REVIEW PROCESS

As previously stated, this site is not regulated under CERCLA; however, to maintain administrative consistency, this Periodic Review was conducted using the following guidelines:

- EPA *Comprehensive Five-Year Review Guidance* (EPA 2001)
- *Clarifying the Use of Protectiveness Determinations for CERCLA Five-Year Reviews*. (EPA 2012b)
- EPA Five-Year Review Summary Form Template (EPA 2001)

6.1 ADMINISTRATIVE COMPONENTS OF THE PERIODIC REVIEW PROCESS

USACE notified potentially interested parties of the occurrence of the review using newspaper notices, emails, and distribution of a fact sheet (described in Section 6.2) in the fall of 2013. The Periodic Review team consisted of individuals from USACE with technical support provided by Jacobs. The Periodic Review included the following components: document reviews; site inspection; interviews with the state regulatory agency and community members; an assessment of protectiveness of the remedies; community notification and involvement; and development of this Periodic Review Report. Documentation of the site inspection is located in Appendices C and D. Interview documentation is included in Appendix E.

6.2 COMMUNITY NOTIFICATION AND INVOLVEMENT

Public participation has been an important component of the remediation process at the Northeast Cape FUDS. A Restoration Advisory Board (RAB), comprised of community members and other interested parties, was established January 2000. Biannual RAB meetings are held to keep the public informed of ongoing project activities at the Northeast Cape FUDS. In the past, RAB meetings have been held more frequently, as needed. Detailed minutes are recorded and distributed following each meeting. Under the Technical Assistance for Public Participation program, the RAB is served by a technical advisor to provide

technical guidance and comments on work plans, reports, proposed remedies, and potential environmental and human health impacts.

The community was notified of, and given opportunity to provide input to, the Periodic Review. The general public was notified of the Periodic Review with public notices placed in the *Nome Nugget*, 18 and 19 August 2013. In addition, a flyer containing the same information was mailed to select community members and ADEC in September 2013. The public notices and flyer included information regarding the simultaneous Five-Year Reviews and Periodic Reviews occurring at 17 other Northeast Cape sites.

Community interviews for this Periodic Review were conducted (in conjunction with community interviews for the simultaneous Periodic Reviews and Five-Year Reviews) by Jacobs personnel at the first 2014 RAB meeting, 15 and 16 January. Additional phone interviews were conducted by Jacobs personnel, 4 and 6 February 2014. The interview concerns related specifically to Site 7 or describing sitewide concerns are summarized in Section 6.10. The complete interview record, public notices, and flyer are provided in Appendices E and F.

Following USACE signature of the final review and distribution of the final report, a second fact sheet describing the findings of the review will be distributed in combination with the results of the Periodic Review. A copy of this Periodic Review Report will be added to three information repositories (Sivuqaq Corporation Building (Lodge) in Gambell, Alaska; Savoonga City Hall, Savoonga, Alaska; Alaska Resource Library and Information Services, Anchorage, Alaska).

6.3 DOCUMENT REVIEW

The DD for Site 7 was reviewed for the site history and to identify RAOs, contaminants of potential concern (COPC), COCs, and cleanup levels. The potential for changes to standards identified as applicable requirements in the DD and/or newly promulgated standards that may affect the protectiveness of the remedies are evaluated in Appendix B and discussed in

Section 7.0. The following documents were reviewed for updates to applicable requirements and new toxicity information:

- ADEC 18 AAC 75, *Oil and Other Hazardous Substances Pollution Control* (ADEC 2012)
- ADEC *Cleanup Levels Guidance* (ADEC 2008)
- EPA Integrated Risk Information System retrieved from http://www.epa.gov/iris/ (EPA 2013)

In addition to the documents mentioned above, the following documents also were reviewed to assess the protectiveness of the remedy:

- RI/feasibility study reports (when necessary to clarify information in the DD)
- The *Human Health and Ecological Risk Assessment* (USACE 2004b)
- Removal action report
- Monitoring reports

Key documents referenced during this Periodic Review are listed in Section 12.0 of this Report.

6.4 DATA REVIEW

The remedy at Site 7 is to expose underlying drums/debris by disturbing the upper approximately 1 foot of fill across the areas with mapped metallic anomalies to determine if near-surface drums are present, remove identified drums and incidental contaminated soils, cap the landfill, conduct periodic visual monitoring of the cap for settlement and erosion for five years, and implement LUCs. The remedy was initiated in 2009. During drum removal efforts, several waste streams were encountered. Waste characterization samples were collected from excavated soil and drums containing drilling cuttings and recovered product. Waste characterization sample results were reviewed to identify any previously unidentified contaminants and/or changes in maximum detected concentrations of known COCs.

6.5 RECOVERED PRODUCT WASTE CHARACTERIZATION

A total of 24 liquid-containing accumulation drums resulted from the removal activities at Site 7. Each drum was field screened using CLOR-D-TECT test kits and results greater than 1,000 parts per million required fixed laboratory analysis. Three drums failed the field screening test and one primary and one duplicate sample were composited for analysis. Sample results identified lead at 200 mg/kg. The three drums were classified as hazardous waste due to lead results and the presence of chlorinated paraffins in excess of 1,000 mg/kg. A fourth drum was verified to contain nearly 100 percent ethylene glycol antifreeze.

In addition to liquid wastes, oil sludge and kitty litter contaminated with oil were managed at the HWAP. Three primary samples and one duplicate sample were collected from a combination of two oil sludge drums and 17 drums of kitty litter contaminated with oil. These samples indicated the presence of Aroclor 1248 up to 2.4 mg/kg and Aroclor 1254 at 1.1 mg/kg.

6.6 EXCAVATED SOIL

COPCs in soil at Site 7 identified in the DD include DRO, arsenic, chromium, lead, and PCBs. At the time of the DD (USACE 2009a) these contaminants were believed to be limited and were planned to be capped or removed as grossly contaminated soils. Grossly contaminated soils encountered during drum removal efforts were excavated in 2009. Confirmation samples were not collected following removal of grossly stained soils (USACE 2010a). Table 6-1 presents maximum known concentrations at the time of the DD and the maximum concentrations detected in excavated soil waste accumulated at the HWAP.

Table 6-1
Site 7 Maximum Detected Concentrations in Excavated Soil

Analyte	Cleanup Level[a]	Unit	DD Maximum Concentration	Maximum Concentration in Excavated Soil
DRO	9,200	mg/kg	**32,000**	**11,000**
Arsenic	11	mg/kg	**17.3**	0.0052 J
Chromium	50	mg/kg	**75**	0.0053 J
Lead	400	mg/kg	**460**	1.4
PCBs	1	mg/kg	**> 0.5**	1 J

Notes:
[a] Cleanup level reported in the DD (USACE 2009a)
BOLD = result exceeds cleanup level
J = The analyte was positively identified; the quantitation is an estimation

6.7 SURFACE WATER

The COC in surface water is DRO. In 1994, DRO was detected in a collocated surface water and sediment sample at concentrations of 8.9 mg/L (average of triplicate samples) and 4,900 mg/kg, respectively (USACE 2007c). Groundwater grab samples collected in 2001, approximately 200 feet downgradient of the surface water exceedance, did not contain DRO greater than cleanup levels.

In 2013, additional surface water sampling was conducted to evaluate existing surface water conditions at Site 7 (USACE 2014b). The 1994 surface water sampling location was not available for resampling in 2013 because the area previously had been covered by the landfill cap in 2009. As an alternative, site surface water was collected from three ponds located near the base of the landfill cap. The locations were selected as a representative subset of site surface water. Surface water sampling locations are shown in Figure A-2. Surface water samples were analyzed for DRO, RRO, GRO, BTEX, PAHs, PCBs, RCRA metals, nickel, and zinc. Analytical results did not exceed the surface water criteria for TAH/TAqH and no sheen specified in the DD. Furthermore, the surface water results for metals, PCBs, VOCs, and PAHs did not exceed any screening criteria for drinking water (USACE 2014b).

6.8 GROUNDWATER

RRO, chromium, lead, and nickel previously have been detected in shallow groundwater above ADEC drinking water standards at Site 7 (USACE 2009a). The DD did not include a remedy for groundwater contamination at Site 7 because shallow groundwater at Site 7 was not a current or reasonably expected potential future source for drinking water. At the time of this Periodic Review, LUCs to limit groundwater use and prevent construction of buildings on top of the landfill had not been implemented. In 2013, groundwater sampling was attempted northeast of the landfill cap (USACE 2014b). Drive point refusal was encountered at depths ranging from 6 to 30 inches bgs, due to large rocks. Groundwater was not encountered during the attempts, and it is not clear whether groundwater is present onsite.

Historically, sampling groundwater at this site has been difficult. Previous efforts to install temporary well points were successful at location WP 7-1 in 2001, yet required approximately three days before sampling could take place due to a low groundwater production rate. In some cases, the sampling points purged dry after 48 hours, without producing the required sampling volume (USACE 2007c). Two groundwater grab samples (WP7-2 and WP7-3) collected in 2001 were obtained by digging "pits" 36 to 40 inches bgs and allowing them to fill with water prior to sampling.

Significant effort will be required to install and maintain permanent monitoring wells at Site 7. The use of a tracked drill rig, in addition to air rotary or sonic drilling methods, likely would be needed for the successful installation of a monitoring well at this location. Walking the needed drill rig to boring locations would subject the fragile tundra and surface vegetation to disturbance. Additionally, any monitoring wells likely would be subject to frost jacking due the extreme variability of seasonal conditions.

6.9 RECOMMENDATIONS FOR SITE 7

The site inspection for this Periodic Review was conducted on 13 September 2013. The site inspection team consisted of USACE consultants from Jacobs. The team did not identify any

active monitoring wells, signs of site disturbance (such as excavations), or changes in land use from those described in the DD. The site inspection checklist is located in Appendix C.

The site inspection team made the following recommendations:

- Implement LUCs to limit groundwater use and prevent construction of buildings on top of the landfill as described in the DD (USACE 2009a) within five years of this review. The timeframe for implementing this milestone will coincide with the remedy implementation of LUCs at other Northeast Cape sites.
- Conduct an additional Periodic Review to evaluate remedy implementation no later than five years from the date of this review. The second Periodic Review could occur sooner if removal of the debris protruding through the surface of the southeastern edge of the landfill and the implementation of LUCs occurs. The second Periodic Review will make recommendations regarding future periodic reviews as Site 7.

The landfill cap at Site 7 was observed in good condition with no apparent signs of erosion or cracking. The soil used for vegetative cover was observed to be very coarse, making vegetative growth difficult and sparse. There was a small amount of debris protruding from the cap on the southern side of the cap near the armored rock (Photo No. 15, Appendix D). Several metal items were observed in ponds located immediately north of the landfill cap (Photo Nos. 6, 7, 9, 10, 11, 18, and 19, Appendix D). A few rusted open drums were observed in ponds located to the north and southeast of the landfill cap (Photo Nos. 6 and 19, Appendix D). Bentonite was observed on the ground surface and thought to be an abandoned monitoring well southeast of the landfill cap (Photo No. 17, Appendix D).

6.10 INTERVIEWS

During the course of this Periodic Review, interviews were conducted with representatives from several agencies and community members associated with the Northeast Cape FUDS to incorporate all sites within Northeast Cape requiring a Five-Year Review or Periodic Review. Concerns related specifically to Site 7 are summarized below. The complete Interview Record Forms are provided in Appendix E.

Five members of the Kukulget Inc. Board of Directors provided responses to interview questions in a group format. Their general impressions of the cleanup efforts at the Northeast Cape FUDS were good, but they had several remaining questions, concerns, and suggestions. Issues discussed during this group interview are summarized by topic below.

- Landfills were capped and reseeded with what was referred to as "local grass." The community members expressed concern with the lack of vegetative re-growth on the landfill cap and stated, "Grass can't grow on rocks."
- One member, who previously had worked with Bristol during the remedial actions at Site 7 in 2009, said engines, an airplane, transformers, batteries, a road grader, and barrels were all seen beneath the area that was excavated. He indicated excavation efforts were limited to the surface, and these items remain onsite beneath the cap. He stated he did not understand the rationale behind removing large amounts of contaminated soil throughout Northeast Cape while significant quantities of potentially hazardous debris in the landfills remained and recommended opening up the cap to remove all remaining debris, as well as changing the cap material to soil, where vegetation can grow.
- Several members suggested adding signage to the perimeter of the landfills to notify site visitors of the presence of the landfill. They also suggested adding monitoring wells to landfills and the MOC for continued groundwater monitoring and requested the monitoring wells be well marked to avoid being hit during the winter months when visibility of the stickup mounts may be obscured by snow.

Alaska Community Action on Toxics (ACAT) and Native Village of Savoonga Tribal Member Executive Director (Pamela Miller) and Environmental Health and Justice Program Director (Vi Waghiyi) provided responses to interview questions via email. Ms. Miller and Ms. Waghiyi indicated the tribe should be an official signatory to the DDs. Their general impression was that cleanup efforts at Northeast Cape were far from complete and, additionally, not protective of the health of the people living on the island. They had several additional questions, concerns, and suggestions, which are summarized by topic below.

- Ms. Miller and Ms. Waghiyi stated they believed contamination to persist beneath the landfill caps installed at Sites 7 and 9. They indicated this is of great concern for human health and expressed worry regarding leachate from the landfills affecting the Suqitughneq River watershed, fish and wildlife, and human health.
- Long-term monitoring of groundwater is requested to occur at sites where monitoring wells have been removed, as well as installation of new monitoring wells at key locations, such as downgradient of the MOC and landfill sites.

Various other community members also voiced concerns. Issues discussed during these individual interviews related specifically to Site 7 are summarized below.

- Mitchell Kiyuklook, President of the Native Village of Savoonga: Mr. Kiyuklook indicated the Northeast Cape FUDS has had significant impacts on the surrounding community, including increased incidences of cancer, high blood levels of PCBs, and decreases in the number of seals on the island and fish in the Suqitughneq River. Mr. Kiyuklook had concerns regarding remedies identified in the DDs, including the site-specific cleanup levels established for petroleum hydrocarbons and capping the Site 7 landfill while it still contains a large number of remaining buried drums. Mr. Kiyuklook indicated materials were collected from the Northeast Cape FUDS for construction around the island. Thus, contaminants may be present throughout St. Lawrence Island. Mr. Kiyuklook did not feel as though he was well informed about the activities and progress at Northeast Cape. He indicated that, although the information may have been presented at meetings, the community required a better explanation of what the regulations mean and how the cleanup levels were established. He suggested information be provided to the community before the reports are finalized, which can sometimes be up to a year after work has been completed. Mr. Kiyuklook requested reindeer on the island be re-sampled for levels of PCBs now that PCB cleanup efforts have been completed. Lastly, Mr. Kiyuklook mentioned a recent conference call with Native American Lands Environmental Mitigation Program, ACAT, and Ron Scurdato, during which was discussed trace levels of radiation that were identified on metals shipped from Northeast Cape for recycling. He indicated he would like this new information investigated further.

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7.0 TECHNICAL ASSESSMENT

The protectiveness of the selected remedy is analyzed in this technical assessment, which was completed by answering three questions, as described below.

7.1 QUESTION A

Question A: Is the remedy functioning as intended by the DD?
Answer: Yes.

This question was answered by considering the remedy's implementation status outlined in Section 4.0 and available information reviewed in Section 6.0 and comparing the remedy to the requirements in the DD. Remedial action performance, monitoring, LUCs, and indicators of potential problems were assessed as applicable.

Remedial Action Performance

The selected remedy for Site 7 has several components, including drum removal and installation of a 24-inch minimum soil cap. The site inspection, conducted on 13 September 2013, verified the construction of a landfill cap and noted the integrity of the cap was in good condition without evidence of erosion or cracking. A small amount of debris was identified protruding through the surface of the southeastern edge of the landfill. The site inspection also identified metal debris in several surface water bodies adjacent to the landfill cap that may pose safety risks to future site visitors.

System Operations and Maintenance

An additional visual inspection event is recommended for the Site 7 landfill cap. The inspection is recommended to occur following the removal of the identified debris protruding through the surface of the southeastern edge of the landfill and implementation of LUCs. The second event is recommended to occur within five years of this review. Additional monitoring events should be documented within the second Periodic Review, at which time, the need for future reviews will be evaluated.

Implementation of Institutional Controls and Other Measures

The selected remedy for Site 7 included the implementation of LUCs to limit groundwater use and prevent construction of buildings of top of the landfill. At the time of this review, LUCs had not been implemented.

Opportunities for Optimization

Identified debris on the surface of the southeastern edge of the landfill cap should be removed. Metal debris identified in adjacent water bodies should be removed.

Early Indicators of Potential Issues

None.

7.2 QUESTION B

Question B: *Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid?*
Answer: *Yes.*

Question B was answered by evaluating the effects of cleanup level or action limit changes in applicable requirements and exposure assumptions that were used at the time of remedy selection that may affect its protectiveness. In addition, COCs listed in the applicable DD were evaluated to determine whether new standards or new data obtained after the DDs were signed to become COPCs (Appendix B).

This evaluation was completed according to EPA's guidance for applicable or relevant and appropriate requirements (ARAR) (EPA 2001):

> *"Generally you should only consider changes in standards that were identified as ARARs in the Record of Decision (ROD), then identify any newly promulgated standards for COPCs, and TBCs* [To Be Considered] *identified in the ROD that bear on the protectiveness of the remedy. As such, you should review any newly promulgated standards, including revised chemical-specific requirements (such as MCLs* [maximum contaminant levels]*, ambient water quality criteria), revised action and location-specific requirements, and state standards if there were considered ARARs in the ROD. In evaluating a change*

in a standard that was identified as an ARAR in the ROD, or a newly promulgated standard or TBC, you should establish whether the new requirement indicates that the remedy is no longer protective."

The evaluation of new or changed standards was accomplished by first identifying the applicable standard and then comparing it to the current standard. Potential cleanup levels for COPCs not identified in the DD were compared to current applicable state cleanup standards. Table B-1 in Appendix B summarizes the evaluation of COCs and COPCs.

Changes in Standards and To Be Considered

The DD listed 18 AAC 75.341 as the applicable requirement for soil and 18 AAC 75.345 and 18 AAC 70.020(b) for groundwater. For those compounds listed as COCs, the cleanup level either has not changed or the site-specific values were calculated using a Method Four risk assessment.

Changes in Exposure Pathways

None identified.

Changes in Toxicity and Other Contaminant Characteristics

None identified.

Changes in Risk Assessment Methods

None identified.

Expected Progress Toward Meeting Removal Action Objectives

RAOs are expected to be met following removal of debris identified during the 2013 Site Inspection and the implementation of LUCs to limit groundwater use and prevent construction of buildings on top of the landfill.

7.3 QUESTION C

Question C: *Has any other information come to light that could call into question the protectiveness of the remedy?*
Answer: *No.*

This question was answered by considering whether ecological risks have been addressed adequately at the site, if the site is subject to natural disasters, and any plans for potential land use or land use changes.

7.4 TECHNICAL ASSESSMENT SUMMARY

Attainment of RAOs is measured through collection of empirical data, and data were compared against applicable requirements. The remedy selected for Site 7 is functioning as intended by the DD, but implementation is not yet complete. It is expected to be protective upon completion.

8.0 ISSUES

This section summarizes issues and concerns related to current site operations, conditions, or activities that were identified during this Periodic Review. Issues were evaluated to determine whether they affected the current or future protectiveness of the associated remedy. Table 8-1 summarizes issues identified that affect the protectiveness of the remedy (Issue 1) and issues identified as not affecting the protectiveness of the remedy (Issues 2 and 3). Unresolved concerns raised by the community also are summarized and discussed.

Table 8-1
Issues Identified

Issue No:	Issue	Reference	Affects Current Protectiveness? (Yes/No)	Affects Future Protectiveness? (Yes/No)
1	LUCs to limit drinking water use and prevent construction of buildings on top of the landfill have not been implemented.	USACE 2009a USACE 2009b	No	Yes
2	The 2013 site inspection identified debris protruding from the landfill cap.	2013 Site Inspection (Appendix C)	No	No
3	The 2013 site inspection identified metal and wood debris in and around ponds adjacent to the landfill cap.	2013 Site Inspection (Appendix C)	No	No

8.1 COMMUNITY ISSUES

Issues raised by the community regarding cleanup activities at Northeast Cape FUDS were identified through community interviews, RAB meeting minutes, public meeting minutes, and letters to the EPA. Issues related specifically to Site 7 or describing sitewide concerns have been summarized below with their current status.

The communities of St. Lawrence Island would like the tribes instituted as official signatories/Parties to any RODs (ACAT 2009; Community Interview 2013, Appendix E)

The Corps cannot seek Tribal signatures on RODs because the tribe does not have jurisdiction over the land itself. CERCLA regulations require that Indian tribes have jurisdiction over the site in order to be afforded substantially the same treatment as states (USACE 2010b).

Lichen is prominent throughout the site and has not been sampled for contaminants. Reindeer populations frequent this area and are used for subsistence (RAB 2012a).

Lichen has not been evaluated for contaminants at Northeast Cape. The U.S. Department of Health and Human Services (DHHS) performed a health consultation in 2001 and determined reindeer exposures to site-related contaminants are low. Detectable health effects are not expected in individuals consuming reindeer muscle and fat on St. Lawrence Island (DHHS 2001). The risk assessment conducted for Northeast Cape evaluated reindeer as an ecological endpoint and determined the cross fox represented a more highly exposed terrestrial mammal because it has a smaller home range than reindeer and, as a carnivore, is at a higher trophic level. The results of the evaluation indicated the ecological hazard estimate for the cross fox was below the departure criterion of 1.0 for all sites (USACE 2004b).

A community member indicated there was a pipeline break between the Native Village of Northeast Cape and the Site 7 Landfill. He would like this area located and tested (RAB 2012a)

The area (identified as an additional pipeline break site during the 2012 December RAB meeting) was included as an area of investigation during the 2013 field season. Analytes were not identified at concentrations greater than site-specific cleanup levels (USACE 2014a).

ACAT would like cleanup levels to be reevaluated given the multiple health burdens that affect the community (EPA 2012c).

Cleanup levels used for the Northeast Cape were developed based on the Human Health and Ecological Risk Assessment, Washington Administrative Code, and AAC. They are considered protective of future residential use (USACE 2009a, 2009b, 2004b).

Sampling was not conducted within the landfill at Site 7 following remedial activities in 2009. It is not clear whether contaminants remain above cleanup levels below the landfill cap at Site 7 (USACE 2010a; EPA 2012a).

Visual monitoring of Site 7 is recommended to ensure the remedy remains protective of human health and the environment. As previously established, shallow groundwater near the landfill cap is slow to recharge and does not produce water in sufficient quantities to provide drinking water. As a result, groundwater monitoring is considered unnecessary; however, monitoring of nearby surface water is recommended (EPA 2012a).

Responses to questionnaires identified a few areas where additional contamination related to FUDS activities may be present. Community members identified potentially hazardous debris beneath the landfill cap at Site 7 (Section 6.9 and Appendix E).

As part of the selected remedy, an intrusive investigation was conducted in 2009 to identify and remove any large caches of drums with potentially hazardous contents from the Site 7 landfill. This investigation is detailed in Section 3.2.1.

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9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Recommendations and follow-up actions have been identified to address the issues presented in Section 8.0. Table 9-1 presents these recommendations and identifies Issue 1 as affecting protectiveness and Issues 2 and 3 as not affecting protectiveness.

Table 9-1
Recommendations and Follow-up Actions

Issue No.	Recommendations/ Follow-up Actions	Party Responsible	Regulatory Party	Milestone Date	Affects Protectiveness? (Yes/No)	
					Current	Future
1	Implement LUCs following completion of the remedial action fieldwork, as described in the DD.	USACE	ADEC	2018	No	Yes
2	Remove debris protruding from the landfill cap.	USACE	ADEC	2018	No	No
3	Remove debris identified in and around ponds adjacent to the landfill cap.	USACE	ADEC	2018	No	No
1,2,3	Conduct an additional Periodic Review of Site 7	USACE	ADEC	2019	No	No

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10.0 PROTECTIVENESS STATEMENT(S)

The remedy at Site 7 is expected to be protective of human health and the environment upon its completion. In the interim, no exposure pathways that could result in unacceptable risks have been noted.

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11.0 NEXT REVIEW

Future periodic reviews for Site 7 are necessary to evaluate remedy completion. The next Periodic Review is due on or before 19 June 2019.

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12.0 REFERENCES

ACAT (Alaska Community Action on Toxics). 2009. (11 November). Thank you letter from Pamela Miller (ACAT) and Vi Waghiyi (ACAT) to Mathy Stanilaus (EPA). Includes *Tribal Representatives from St. Lawrence Island, Alaska, and the Alaska Community Action on Toxics (ACAT) Concerns About Ongoing U.S. Army Corps of Engineers Cleanup Work at the Northeast Cape and Gambell*. Letter from Dennis McLerran, Regional Administrator (EPA) to Colonel Richard Koenig, District Commander (USACE). FRMDs F10AK069603_08.01_0082_a and F10AK096903_08.01_0519_a.

ADEC (Alaska Department of Environmental Conservation). 2012 (8 April). *Oil and Other Hazardous Substances Pollution Control* (18 AAC 75).

ADEC. 2011 (1 October). *Oil and Other Hazardous Substances Pollution Control*. "Groundwater use." (18 AAC 75.350).

ADEC. 2008 (9 June). *Cleanup Levels Guidance*. Division of Spill Prevention and Response. Contaminated Sites Program.

ADEC. 2007a (17 October). *ADEC Comments on the Northeast Cape Proposed Plan*. Letter from Jeff Brownlee (ADEC) to Carey Cossaboom (USACE). FRMD No. F10AK096903_05.08_0502_a.

ADEC. 2007b (24 May). *ADEC Comments on the Northeast Cape 350 Determination*. Letter from Jeff Brownlee (ADEC) to Carey Cossaboom of USACE. May 24, 2007. FRMD No. F10AK096903_05.07_0501_a.

Bristol Environmental Remediation Services, LLC. 2009 (20 November). *Request for Site 7 Landfill Closure at Northeast Cape, St. Lawrence Island, Alaska.* Technical Memorandum. St. Lawrence Island, Alaska. FRMD No. F10AK096905_07.08_0501_a.

Craner, Jeremy. 2011 (17 September). *Visual Inspection Checklist (Post-Closure) Site 7 Landfill and Site 9 Landfill*. FRMD Nos. F10AK096903_07.11_0500_p and F10AK096905_07.11_0500_p.

DHHS (U.S. Department of Health and Human Services). 2001 (21 September). *Health Consultation: Exposure Investigation, Investigation of Persistent Organic Pollutants in Reindeer on St. Lawrence Island*. N.E. Cape White Alice Site (a/k/a N.E. Cape Site). St. Lawrence Island, Alaska, FRMD No. F10AK096903_03.11_0007_a.

EPA (U.S. Environmental Protection Agency). 2013. *Integrated Risk Information System (IRIS)*. Retrieved from http://www.epa.gov/IRIS/.

EPA. 2012a (November). *Environmental Protection Agency (EPA) Region 10's Evaluation of Army Corps of Engineers Cleanup of FUDS at N.E. Cape and Gambell, St. Lawrence Island, Alaska.* FRMD Nos. F10AK0969603_01.07_0011_a and F10AK069603_01.07_0500_a.

EPA. 2012b (13 September). *Memorandum Clarifying the Use of Protectiveness Determination for Comprehensive Environmental Response, Compensation, and Liability Act Five-Year Reviews*. OSWER No. 9200.2-111.

EPA. 2012c (15 February). *December 2011 Public Meetings on Saint Lawrence Island Regarding Environmental Health and Cleanup Issues, Proposed Action Items Resulting from the Meeting*. Letter from Sylvia Kawabata, Assessment and Brownfields Unit Manager (EPA) to December Dialogue Meeting Participants. FRMD No. F10AK096904_08.10_0013_a.

EPA. 2010a (23 March). Letter from Dennis McLerran, Regional Administrator (EPA) to Pamela Miller, Executive Director and Vi Waghiyi, Program Director of the Alaska Community Action on Toxics (ACAT). FRMDs F10AK096903_01.01_0503_a and F10AK069603_01.01_0009_a.

EPA. 2010b (23 March). *Tribal Representatives from St. Lawrence Island, Alaska, and the Alaska Community Action on Toxics (ACAT) Concerns About Ongoing U.S. Army Corps of Engineers Cleanup Work at the Northeast Cape and Gambell*. Letter from Dennis McLerran, Regional Administrator (EPA) to Colonel Richard Koenig, District Commander (USACE). Includes Thank you letter from Pamela Miller (ACAT) and Vi Waghiyi (ACAT) to Mathy Stanilaus (EPA). FRMDs F10AK069603_08.01_0082_a and F10AK096903_08.01_0519_a.

EPA. 2001 (June). *Comprehensive Five-Year Review Guidance*. EPA. 540-R-01-0007. OSWER No. 9355.7-03B-P. Office of Emergency and Remedial Response. Washington, D.C.

Geist, Lisa. 2013 (7 August). *Visual Inspection Checklist (Post-Closure) Site 7 Landfill* and *Visual Inspection Checklist (Post-Closure) Site 9 Landfill*. FRMD Nos. F10AK096903_07.11_0503_p and F10AK096905_07.11_0502_p.

Kukulget, Inc. 2012 (23 April). *Right of Entry*. Letter from Morris Toolie, Jr., President (Kukulget, Inc.) to Thomas Kretzschmar, Real Estate Division Chief (USACE).

Patton, W. and B. Csejtey. 1980. Geologic map of St. Lawrence Island, Alaska: U.S. Geological Survey Miscellaneous Investigation Series. Map I-1203. 1 sheet, scale 1:250,000.

RAB (Restoration Advisory Board). 2012a (27 June). *St. Lawrence Island Restoration Advisory Board and Public Meeting, Meeting Minutes.* Teleconference. FRMD No. F10AK096904_08.10_0010_a.

RAB. 2012b (5 December). *St. Lawrence Island Restoration Advisory Board and Public Meeting, Meeting Minutes*. City Hall, Savoonga, Alaska. FRMD No. F10AK096904_08.10_0019_p.

Shewman, Aaron. 2012 (26 July). Visual Inspection Checklist (Post-Closure) Site 7 Landfill and Site 9 Landfill. FRMD Nos. F10AK096903_07.11_0501_p and F10AK096905_07.11_0501_p.

U.S. Army. 2013 (24 April) *Department of the Army Right-of-Entry for Environmental Assessment and Response*. Saint Lawrence Island, Alaska. No. DACA85-8-12-00046. Agreement between the U.S. Government, Kukulget, Inc. and Sivuqaq, Inc. beginning on 1 June 2013.

USACE (U.S. Army Corps of Engineers). 2014a. *2014 Five-Year Review*. Pre-Draft. (Unpublished).

USACE. 2014b (February). *2013 Sampling Conducted in Conjunction with the 2013 Five-Year Review at Northeast Cape*. Final. St. Lawrence Island, Alaska. Prepared by Jacobs Engineering Group Inc. FRMD No. F10AK096903_07.11_0504_p and F10AK096905_07.11_0503_p.

USACE. 2012 (June). *Northeast Cape HTRW Remedial Actions, Final Removal Action Report*, St. Lawrence Island Alaska. Prepared by Bristol Environmental Remediation Services, LLC. FRMD No. F10AK096903_07.08_0503_a.

USACE. 2010a (May). *In-Situ Chemical Oxidation (Phase I) and Intrusive Drum Removal/Landfill Cap, Site 7 Landfill Cap Construction Completion Report, Northeast Cape, St. Lawrence Island, Alaska*. Prepared by Bristol Environmental Remediation Services, LLC. FRMD No.F10AK096905_07.08_0500_p.

USACE. 2010b (9 April). *Response to Three Specific Points Regarding the USACE FUDS on St. Lawrence Island, Alaska.* Letter from Colonel Richard Koenig, District Commander (USACE) to Dan Opalski, Director of Environmental Cleanup (EPA). FRMD Nos. F10AK096903_01.01_0503_a and F10AK069603_01.01_0009_a.

USACE. 2009a (June). *Decision Document: Site 7 Cargo Beach Road Landfill, Containerized Hazardous, Toxic, and Radioactive Waste (CON-HTRW) Project #F10AK096905*. Northeast Cape Formerly Used Defense Site (FUDS) St. Lawrence Island, Alaska. Signed 19 June 2009. FRMD F10AK096905_05.09_0500_a.

USACE. 2009b (January). *Decision Document: Hazardous, Toxic, and Radioactive Waste (HTRW) Project #F10AK096903*. Northeast Cape Formerly Used Defense Site (FUDS) St. Lawrence Island, Alaska. Signed 3 September 2009. FRMD F10AK09603_05.09_0500_a.

USACE. 2008 (May). *Proposed Plan for Site 7 Cargo Beach Road Landfill* FRMD No. F10AK096905_04.10_0500_a.

USACE. 2007a (November). *Geophysical Survey, Northeast Cape, St. Lawrence Island.* Prepared by R&M Consultants, Inc. FRMD No. F10AK096905_03.10_0500_a.

USACE. 2007b (4 April). Submission for Groundwater Use Determination (18 AAC 350) at Northeast Cape on St. Lawrence Island. Letter from Carey Cossaboom (USACE) to Jeff Brownlee (ADEC). FRMD No. F10AK096903_05.01_001_a.

USACE. 2007c (March). *Feasibility Study*, Northeast Cape FUDS, St. Lawrence Island, Alaska. FRMD No. F10AK096904_04.09_0500_a and F10AK096905_0500_a.

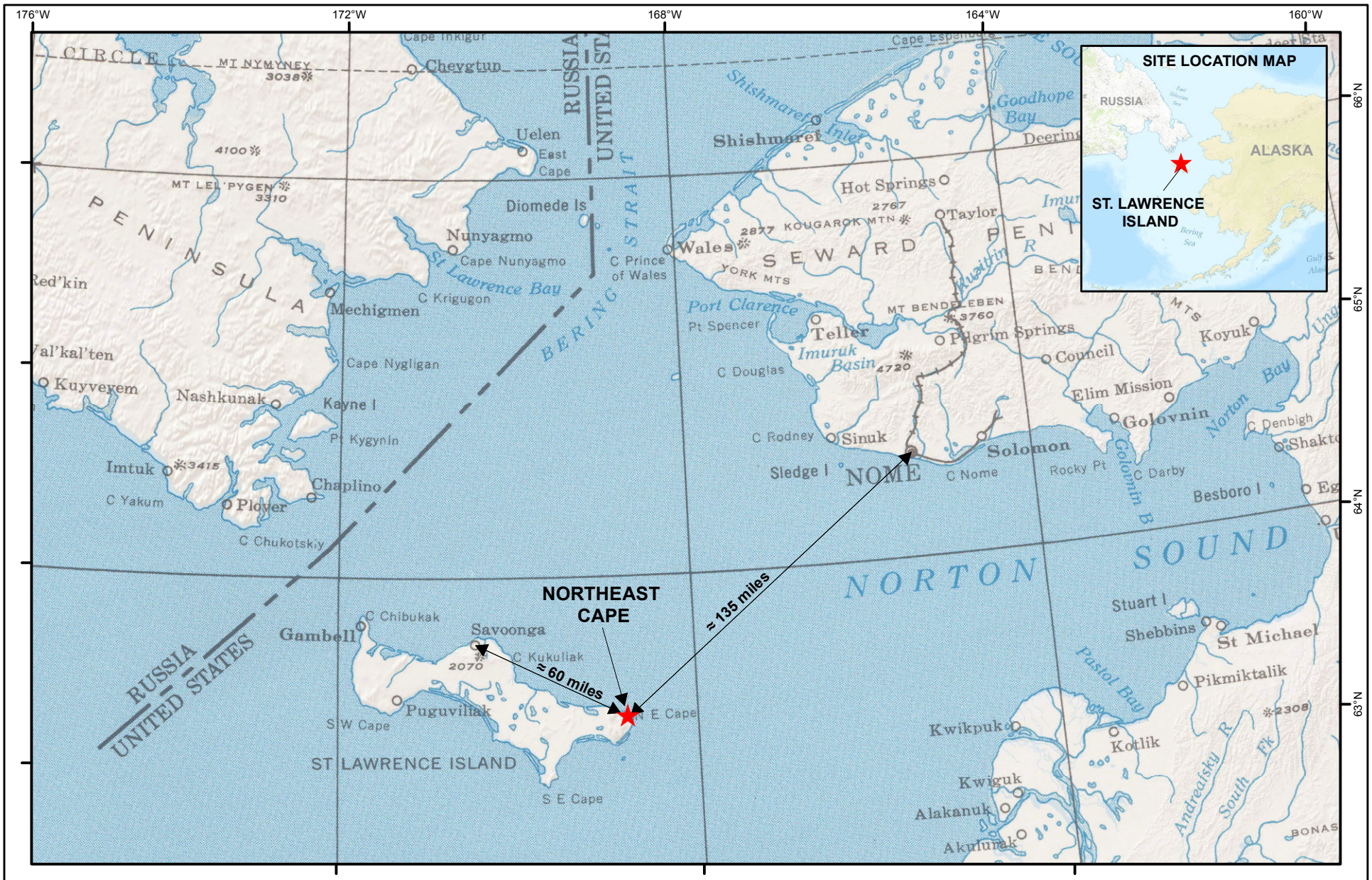
USACE. 2004a (10 May). *Environmental Quality Formerly Used Defense Sites (FUDS) Program Policy*. ER 200-3-1. http://munitionsresponsepartners.com/uploads/ER_200-3-1_Environmental_Quality_-_FUDS.pdf. Accessed 6 February 2015.

USACE. 2004b (March). *Human Health and Ecological Risk Assessment*. Northeast Cape Installation. St. Lawrence Island, Alaska. Final. Prepared by MWH. FRMD No. F10AK096903_03.11_0005_a.

USACE. 2001 (August). *GIS-based Historical Photographic Analysis*, St. Lawrence Island, Northeast Cape Sites, Alaska, Engineer Research & Development Center, Topographic Engineering Center.

APPENDIX A

Figures



★ Northeast Cape (Site Location)

N

All Locations Are Approximate

0 20 40 60 80

Miles

WGS 1984 UTM Zone 2N

NORTHEAST CAPE VICINITY MAP

ST. LAWRENCE ISLAND, ALASKA

JACOBS	DATE:	PROJECT MANAGER:	FIGURE NO:
	17 JUN 2014	K. MAHER	A-1

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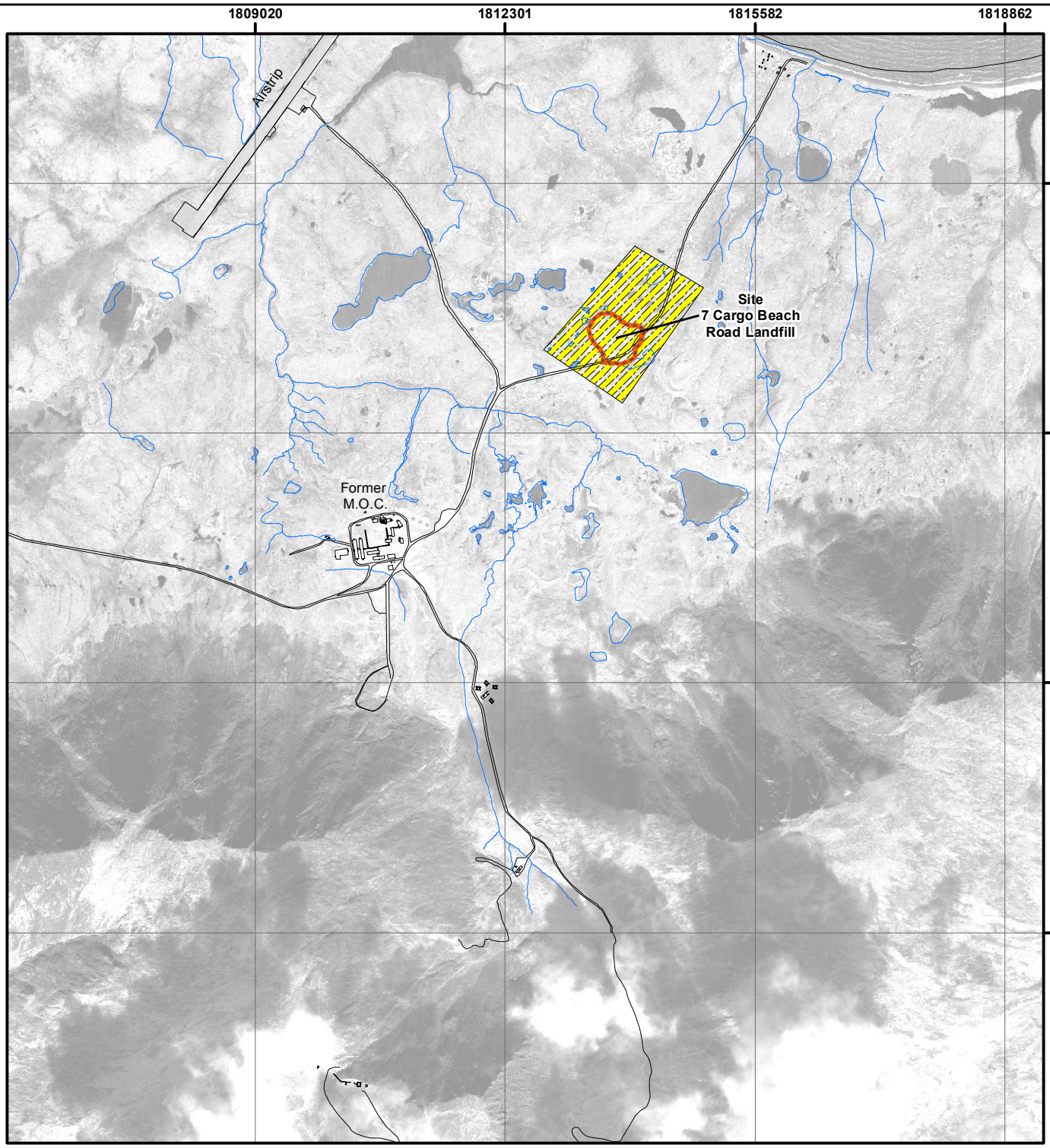

Site Location

Surface Water Feature

Roads and Buildings

Non-Drinking Water Area

All Locations Are Approximate

0 0.25 0.5

Miles

NAD 1983 StatePlane Alaska 9 FIPS 5009 Feet

N

NORTHEAST CAPE
SITE 7 - CARGO BEACH ROAD LANDFILL LOCATION

NORTH EAST CAPE, SAINT LAWRENCE ISLAND, ALASKA

JACOBS	DATE: 09 FEB 2015	PROJECT MANAGER: K. MAHER	FIGURE NO: A-2

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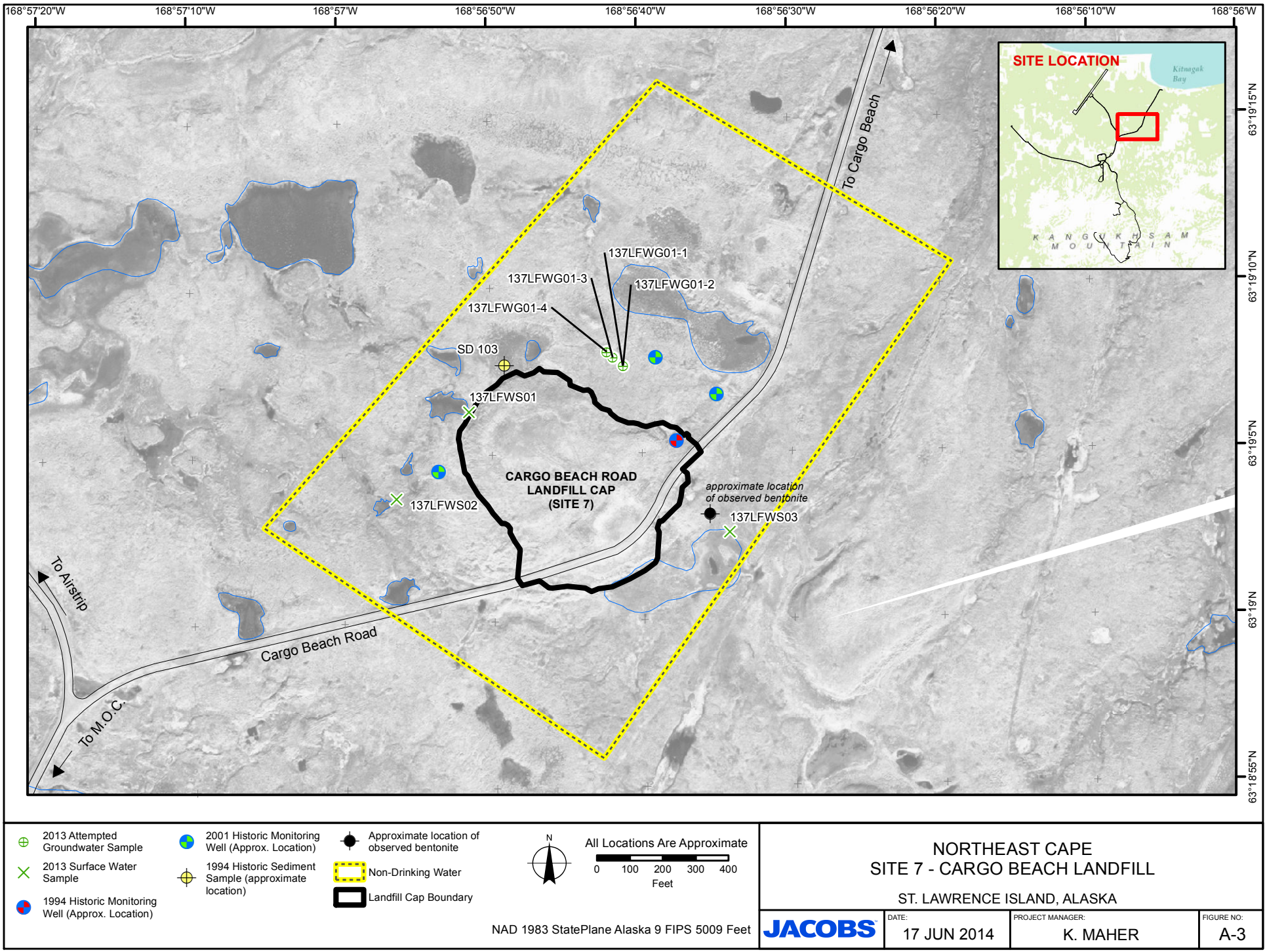

NORTHEAST CAPE
SITE 7 - CARGO BEACH LANDFILL

ST. LAWRENCE ISLAND, ALASKA

JACOBS	DATE: 17 JUN 2014	PROJECT MANAGER: K. MAHER	FIGURE NO: A-3

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APPENDIX B

Cleanup Levels, Toxicity, and Risk Evaluation

U.S. Army Corps of Engineers
Alaska District

SITE 7 CARGO BEACH ROAD LANDFILL
FIRST PERIODIC REVIEW REPORT

NORTHEAST CAPE FUDS
ST. LAWRENCE ISLAND, ALASKA

APPENDIX B
CLEANUP LEVELS, TOXICITY, AND RISK EVALUATION

Formerly Used Defense Site F10AK0969-05

FINAL
FEBRUARY 2015

TABLE OF CONTENTS

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
COC	contaminant of concern
COPC	contaminant of potential concern
DD	Decision Document
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NA	not applicable
PCB	polychlorinated biphenyl
TAH	total aromatic hydrocarbon
TAqH	total aqueous hydrocarbon

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INTRODUCTION

Updates to regulations and chemical-specific toxicity data may occur over time. The effects of those changes are evaluated as part of the technical assessment conducted for the Site 7 Cargo Beach Road Landfill Periodic Review to ensure the selected remedy remains protective of human health. The evaluation of regulatory updates involves a two-step process followed by the evaluation of chemical-specific toxicity data updates (risk evaluation), if necessary. The evaluation process summarized below is explained in greater detail in the Periodic Review Report.

- The evaluation begins by determining whether any contaminants of potential concern (COPC) or contaminants of concern (COC) have new or changed standards since the time of the Decision Document (DD) (USACE 2009). All compounds identified in the DD are presented in Table B-1, below. Additionally, any compounds detected during remedy implementation that exceed the cleanup levels listed in the applicable or relevant and appropriate regulations have been included; therefore, Table B-1 includes more compounds than the DD list of COPCs and COCs.
- If a new or more stringent standard was identified, the COPC or COC was evaluated further. No new or more stringent standards were identified for Site 7 Cargo Beach Road; therefore, no COPCs or COCs were carried forward for the risk evaluation.

ADEC CLEANUP LEVELS USED FOR SOIL

For soil cleanup levels, the ADEC Method Two under 40-inch zone, migration to groundwater cleanup level (Title 18 of the Alaska Administrative Code [AAC], Chapter 75, Table B1), was applied for all compounds not listed in the DD as COCs. For those compounds listed as COCs, the cleanup level has either not changed or the site-specific values were calculated using a Method Four risk assessment.

CLEANUP LEVELS USED FOR SURFACE WATER

For surface water cleanup levels, the strictest cleanup levels or standards listed in 18 AAC 70 were used.

Table B-1
Evaluation of Changes in Chemical-Specific Standards

COPCs/ COCs	DD-Established RAO for COCs	Source [a]	Current Alaska Cleanup Level	Is There A Newly Promulgated Cleanup Level Since Previous Review?	Is the New Level More Stringent than the Previous Standard?
Surface Water (mg/L)					
Diesel-range organics C_{10} to C_{25}	No Sheen	18 AAC 70	--	No	NA
Residual-range organics C_{25} to C_{36}	No Sheen	18 AAC 70	--	No	NA
Total aromatic hydrocarbons	0.01	18 AAC 70	0.01	No	NA
Total aqueous hydrocarbons	0.015	18 AAC 70	0.015	No	NA
Soil (mg/kg)					
Diesel-range organics C_{10} to C_{25}	9,200	18 AAC 75 Method 4 /site-specific	250	No	NA
Residual-range organics C_{25} to C_{36}	9,200	18 AAC 75 Method 4 /site-specific	10,000	No	NA
Arsenic	11[b]	Site-specific Background	3.9	No	NA
PCBs (sum)	1	18 AAC 75	1	No	NA

Notes:
[a] Sources listed in the DD include the following:
18 AAC 75 Table C;
18 AAC 75 Table B1;
18 AAC 75 Method 4 risk-based residential cleanup level from the *Feasibility Study* (U.S. Army Corps of Engineers 2007)

[b] DD-specified limit based on elevated background concentrations.

REFERENCES

ADEC (Alaska Department of Environmental Conservation). 2008 (June). *Cleanup Levels Guidance*. Division of Spill Prevention and Response. Contaminated Sites Program.

U.S. Army Corps of Engineers. 2009 (June). Decision Document: *Site 7 Cargo Beach Road Landfill, Containerized Hazardous, Toxic, and Radioactive Waste (CON-HTRW) Project #F10AK096905, Northeast Cape Formerly Used Defense Site (FUDS).* St. Lawrence Island, Alaska. Prepared by USACE-Alaska District, June 2009.

U.S. Army Corps of Engineers. 2007 (March). *Feasibility Study*, Northeast Cape FUDS, St. Lawrence Island, Alaska. FRMD No. F10AK096904_04.09_0500_a and F10AK096905_0500_a.

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APPENDIX C

Site Inspection Checklists and Logbook

JACOBS

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION

Site name: Site 7 - Cargo Beach Road Landfill	**Date of Inspection:** ~~10/~~ 9/13/13
Location and Region: NE Cape	**EPA ID:** AK9799F2999
Agency, office, or company leading the five-year review: USACE	**Weather/temperature:** Overcast ~40°F

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☐ Groundwater pump and treatment
- ☒ Other: Capping with land use controls
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls
- ☐ Surface water collection and treatment

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (CHECK ALL THAT APPLY)

1. O&M site manager NONE (Name) NONE (Title) _____ (Date)

Interviewed ☐ at site ☐ at office ☐ by phone (Phone no. _____)

Problems, suggestions (☐ Report attached) _____

2. O&M staff NONE (Name) NONE (Title) _____ (Date)

Interviewed ☐ at site ☐ at office ☐ by phone (Phone no. _____)

Problems, suggestions (☐ Report attached) _____

3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency ADEC

Contact Curtis Dunkin (Name) Project Manager (Title) 01/2014 (Date)

Interviewed ☐ at site ☐ at office ☐ by phone (Phone no. _____)

Problems, suggestions (☒ Report attached) _____

Agency _____

Contact _____ (Name) _____ (Title) _____ (Date)

Interviewed ☐ at site ☐ at office ☐ by phone (Phone no. _____)

Problems, suggestions (☐ Report attached) _____

4. Other interviews (optional) (☒ Report attached) _____

JACOBS **Five-Year Review Site Inspection Checklist (2/12)**

Site Name: Site 7

III. ONSITE DOCUMENTS & RECORDS VERIFIED

1. O&M Documents
   - O&M manual ☐Readily available ☐Up to date ☒N/A
   - As-built drawings ☐Readily available ☐Up to date ☒N/A
   - Maintenance logs Doc ☐Readily available ☐Up to date ☒N/A
   - Remarks: ~~Record of Decision~~ used for site information and site maps.

2. Site-Specific Health and Safety Plan ☐Readily available ☐Up to date ☒N/A
   Contingency plan/emergency response plan ☐Readily available ☐Up to date ☒N/A
   Remarks: _____

3. O&M and OSHA Training Records ☐Readily available ☐Up to date ☒N/A
   Remarks: _____

4. Permits and Service Agreements
   - Air discharge permit ☐Readily available ☐Up to date ☒N/A
   - Effluent discharge ☐Readily available ☐Up to date ☒N/A
   - Waste disposal, POTW ☐Readily available ☐Up to date ☒N/A
   - Other permits:_____ ☐Readily available ☐Up to date ☒N/A
   - Remarks: _____

5. Gas Generation Records ☐Readily available ☐Up to date ☒N/A
   Remarks: _____

7. Groundwater Monitoring Records ☐Readily available ☐Up to date ☒N/A
   Remarks: _____

8. Leachate Extraction Records ☐Readily available ☐Up to date ☒N/A
   Remarks: _____

9. Discharge Compliance Records
   - Air ☐Readily available ☐Up to date ☒N/A
   - Water (effluent) ☐Readily available ☐Up to date ☒N/A
   - Remarks: _____

10. Daily Access/Security Logs ☐Readily available ☐Up to date ☒N/A
    Remarks: _____

Site Name: Site 7

JACOBS Five-Year Review Site Inspection Checklist (3/12)

IV. O&M COSTS

1. O&M Organization

- ☐ State in-house
- ☐ PRP in-house
- ☐ Federal Facility in-house
- ☒ Other USACE
- ☐ Contractor for State
- ☐ Contractor for PRP
- ☐ Contractor for Federal Facility

2. O&M Cost Records ~~NOT AVAILABLE~~ RP 6-5yr reviews

- ☐ Readily available
- ☐ Up to date
- ☐ Funding mechanism/agreement in place → for all NE Cape Sites
- Original O&M cost estimate $5851,587 Breakdown attached

Total annual cost by year for review period if available

From ____ Date	To ____ Date	____ Total cost	Breakdown attached
From ____ Date	To ____ Date	____ Total cost	Breakdown attached
From ____ Date	To ____ Date	____ Total cost	Breakdown attached
From ____ Date	To ____ Date	____ Total cost	Breakdown attached
From ____ Date	To ____ Date	____ Total cost	Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period

Describe costs and reasons: ~~NOT AVAILABLE~~ RP NONE

V. ACCESS AND INSTITUTIONAL CONTROLS

☒ Applicable ☐ N/A

A. Fencing

1. Fencing damaged

- ☐ Location shown on site map
- ☐ Gates secured
- ☒ N/A

Remarks ____

B. Other Access Restrictions

1. Signs and other security measures

- ☐ Location shown on site map
- ☒ N/A

ICs in progress

Remarks Site 7 cargo beach landfill ~~has existing~~ remedy includes land use controls to ensure no buildings are constructed on landfill cap and to prevent use of groundwater. Site 7 is located on Village property on a remote island. There is currently no road access to site from either on-island Village.

Site Name: Site 7

JACOBS Five-Year Review Site Inspection Checklist (4/12)

VI. GENERAL SITE CONDITIONS

A. Landfill Surface ☒ Applicable ☐ N/A

1. **Roads damaged** ☒ Location shown on site map ☒ Roads adequate ☐ N/A
   Remarks Cargo beach Road crosses over landfill cap.

B. Other Site Conditions

Remarks

VII. LANDFILL COVERS

☒ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident
   Areal extent _____ Depth _____
   Remarks
2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident
   Lengths _____ Widths _____ Depths _____
   Remarks
3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
   Areal extent _____ Depth _____
   Remarks
4. **Holes** ☐ Location shown on site map ☒ Holes not evident
   Areal extent _____ Depth _____
   Remarks
5. **Vegetative Cover** ☒ Grass Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks Soil is very coarse making vegetative growth difficult
6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks South border of cap consist of armored rock on slope.
7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
   Areal extent _____ Height _____
   Remarks
8. **Wet Areas/Water Damage** ☒ Wet areas/water damage not evident
   ☐ Wet areas location shown on site map Areal extent _____
   ☐ Ponding location shown on site map Areal extent _____
   ☐ Seeps location shown on site map Areal extent _____
   ☐ Soft subgrade location shown on site map Areal extent _____
   Remarks
9. **Slope Instability**
   ☐ Slides
   ☐ Location shown on site map
   ☒ No evidence of slope instability
   Areal extent _____
   Remarks

B. Benches ☐ Applicable ☒ N/A

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay
   Remarks _____
2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
   Remarks _____
3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
   Remarks _____

C. Letdown Channels ☐ Applicable ☒ N/A

(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
   Areal extent _____ Depth _____
   Remarks _____
2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
   Material type _____ Areal extent _____
   Remarks _____
3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
   Areal extent _____ Depth _____
   Remarks _____
4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
   Areal extent _____ Depth _____
   Remarks _____
5. **Obstructions** Type _____ ☐ No obstructions
   ☐ Location shown on site map Areal extent _____
   Size _____
   Remarks _____
6. **Excessive Vegetative Growth** Type _____
   ☐ No evidence of excessive growth
   ☐ Vegetation in channels does not obstruct flow
   ☐ Location shown on site map Areal extent _____
   Remarks _____

D. Cover Penetrations ☐ Applicable ☒ N/A

1. **Gas Vents** ☐ Active ☐ Passive ☐ Properly secured/locked
   ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ Needs maintenance ☐ Evidence of leakage at penetration
   ☐ N/A

   Remarks _____

2. **Gas Monitoring Probes**
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
   ☐ Good condition ☐ Evidence of leakage at penetration
   ☐ Needs maintenance ☒ N/A

   Remarks _____

3. **Monitoring Wells** (within surface area of landfill)
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
   ☐ Good condition ☐ Evidence of leakage at penetration
   ☐ Needs Maintenance ☒ N/A

   Remarks _____

4. **Leachate Extraction Wells**
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
   ☐ Good condition ☐ Evidence of leakage at penetration
   ☐ Needs Maintenance ☒ N/A

   Remarks _____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A

   Remarks _____

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance ☐ N/A

   Remarks _____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance ☒ N/A

   Remarks _____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☒ N/A

   Remarks _____

Site Name: Site 7

JACOBS **Five-Year Review Site Inspection Checklist (7/12)**

F. Cover Drainage Layer ☐ Applicable ☒ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☒ N/A
   Remarks _____

2. **Outlet Rock Inspected** ☐ Applicable ☒ N/A
   Remarks _____

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1. **Siltation** Areal extent _____ Depth _____ N/A
   ☐ Siltation not evident
   Remarks _____

2. **Erosion** Areal extent _____ Depth _____
   ☐ Erosion not evident
   Remarks _____

3. **Outlet Works** ☐ Applicable ☒ N/A
   Remarks _____

4. **Dam** ☐ Applicable ☒ N/A
   Remarks _____

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement _____ Vertical displacement _____
   Rotational displacement _____
   Remarks _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks _____

JACOBS **Five-Year Review Site Inspection Checklist (8/12)**

Site Name: Site 7

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☒ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
   Areal extent _____ Depth _____
   Remarks _____

2. **Vegetative Growth** ☐ Location shown on site map ☒ N/A
   ☐ Vegetation does not impede flow
   Areal extent _____ Type _____
   Remarks _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent _____ Depth _____
   Remarks _____

4. **Discharge Structure** ☐ Functioning ☒ N/A
   Remarks _____

VIII. VERTICAL BARRIER WALLS

☐ Applicable ☒ N/A

1. **Settlement** Location shown on site map Settlement not evident
   Areal extent _____ Depth _____
   Remarks: _____

2. **Performance Monitoring**
   Type of monitoring _____
   ☐ Performance not monitored Frequency _____
   ☐ Evidence of breaching
   Head differential _____
   Remarks: _____

Site Name: Site 7

IX. GROUNDWATER/SURFACE WATER REMEDIES

☒ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☐ Good condition ☐ All required wells properly operating
   ☐ Needs Maintenance ☒ N/A
   Remarks ~~An abandoned well location was observed on southern side of Site.~~ 9/13/13

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   Remarks NOT APPLICABLE

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition
   ☐ Requires upgrade ☐ Needs to be provided
   Remarks NOT APPLICABLE

B. Surface Water Collection Structures, Pumps, and Pipelines Applicable ~~N/A~~

1. **Collection Structures, Pumps, and Electrical**
   ☐ Good condition ☐ Needs Maintenance
   Remarks

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   Remarks

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition
   ☐ Requires upgrade ☐ Needs to be provided
   Remarks

Site Name: Site 7

C. Treatment System Applicable N/A

1. **Treatment Train** (Check components that apply)
   - ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   - ☐ Air stripping ☐ Carbon adsorbers
   - ☐ Filters _____
   - ☐ Additive (e.g., chelation agent, flocculent) _____
   - ☐ Others _____
   - ☐ Good condition ☐ Needs Maintenance
   - ☐ Sampling ports properly marked and functional
   - ☐ Sampling/maintenance log displayed and up to date
   - ☐ Equipment properly identified
   - ☐ Quantity of groundwater treated annually _____
   - ☐ Quantity of surface water treated annually _____
   - Remarks _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   - ☒ N/A ☐ Good condition ☐ Needs Maintenance
   - Remarks _____

3. **Tanks, Vaults, Storage Vessels**
   - ☒ N/A ☐ Good condition
   - ☐ Proper secondary containment ☐ Needs Maintenance
   - Remarks _____

4. **Discharge Structure and Appurtenances**
   - ☒ N/A ☐ Good condition ☐ Needs Maintenance
   - Remarks _____

5. **Treatment Building(s)**
   - ☒ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
   - ☐ Chemicals and equipment properly stored
   - Remarks _____

6. **Monitoring Wells** (pump and treatment remedy)
   - ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
   - ☐ Good condition ☐ All required wells located ☐ Needs Maintenance
   - ☒ N/A
   - Remarks ~~One abandoned well location was observed onsite. Bentonite used.~~ WAS NOT PART OF A TREATMENT SYSTEM CP 9/16/13 ~~CP 9/16/13~~

D. Monitoring Data NOT APPLICABLE

1. **Monitoring Data**
   - ☐ Is routinely submitted on time ☐ Is of acceptable quality
2. **Monitoring data suggests:**
   - ☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

E. Monitoring Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ All required wells located ☐ Needs Maintenance
☒ N/A

Remarks One abandoned well location ~~left~~ observed onsite 9/13/13

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The Remedy at Site 7 Cargo beach Road landfill was intended to place a 2' cap over the landfill and implement land use controls. The selected Remedy is effective in general. The cap Remains in good condition however debris was noted along the perimeter. There was a small amount of debris protruding from the cap on the southern side near the armored rock. Debris was also observed in the nearby ponds.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Site 7 has been graded to promote positive drainage and mitigate erosion.

Site Name: Site 7

JACOBS Five-Year Review Site Inspection Checklist (12/12)

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

NONE OBSERVED.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Add additional fill to the southern side of the cap to ensure a 2' cover. Remove additional debris remaining outside of cap including a few rusted ~~ste~~ 55gal drums.

Implement LUCs, obtain 18AAC 75.350 formal documentation/approval

~~7-5~~ ~~7-5~~ ~~To Kr.~~ 9/13/13

p23 - 55g drums
p16 - 5 ft. revised
p24 - Bentonite well
p26 - mention drainage ditch condition

9/13/13

INCH

1

2

3

4

5

6

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NE CAPE 5-YR REVIEW
LOGBOOK #1 SITE NOTES

9/11/13 TO 9/16/13

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ALL-WEATHER
UNIVERSAL
№ 373

C. FELL
J. ORCZEWSKA
K. MAHER

HTRW-307-05F45902-H04-0001
05F45902

Did you remember ... ???

Daily Logbook Checklist

- ☐ Project name / Site ID / Client
- ☐ Date
- ☐ Weather, site conditions, and other salient observations
- ☐ Level of PPE used
- ☐ Full names of onsite personnel and affiliations (including all visitors)
- ☐ Daily objectives
- ☐ Field measurements and calibrations
- ☐ Time and location of activity
- ☐ Field observations and comments
- ☐ Deviations from the Work Plan
- ☐ Site photographs
- ☐ Site sketches (with reference i.e. "N" arrow)
- ☐ Survey and location i.e. samples or debris (GPS coordinates when possible)
- ☐ For each sample record:
  - Date, time, sampler(s)
  - Sample ID
  - Media, container(s), preservatives
  - QC (dup/MS/MSD)
  - Analysis
  - MeOH lot #
  - Tare weight

- ☐ Sample shipments (when, what, destination)
- ☐ Waste tracking (when, how much, destination)
- ☐ Daily summary of activities (i.e. # of samples collected)

LOGBOOK #1 SITE NOTES

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Name JACOBS ENGINEERING

Address 4300 B STREET SUITE 600
ANCHORAGE AK 99503

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Project NE CAPE 5-YR REVIEW
05F45902

C. FELL (CF)
J. ORCZEWSKA
K. MAHER

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CONTENTS

NE CAPE, 5-YR REVIEW, USACE 9/11/13

~1240 LEFT NOME FOR NE CAPE ON BERING AIR

~1400 ARRIVED AT BRISTOL ENG. CAMP ON NE CAPE

SITE ORIENTATION W/ CHUCK CROLEY

PERSONNEL (LEVEL D PPE)

JACOBS	K. MAHER	P.M.
JACOBS	J. ORCZEWSKA	BIOLOGIST
JACOBS	C. FELL	GEOLOGIST
BRISTOL	C. CROLEY	SITE SUPER
USACE	J. CRANER	QAR

1430 GOT SITUATED IN LODGING AND PREPPED SOME OF THE FIELD GEAR
- ↳ GEL ICE IN FREEZER
- ↳ ONLY 12 COOLERS → SPACE ISSUE?

NOTE: PLAN TO SPEND REMAINDER OF DAY SCOUTING SITES AND FLAGGING SAMPLING LOCATIONS

WX: MOSTLY CLOUDY TO OVERCAST
SOUTH WIND 5 TO 10 MPH TEMP MID 40S

Scale: 1 square = _____ Rite in the Rain

NE CAPE

9/11/13 5-YR REVIEW USACE

1521 SITE DRIVE W/ THE CRAR (USACE)

↳SITE 8 IS THE LOW LYING AREA ALONG THE RIGHT SIDE OF THE ROAD (CAMP)

LEFT FROM CAMP ROAD

↳SITE 7 IS THE THICKLY VEGETATED HILL LEFT FROM SITE 8

↳SITE 6 IS WHERE INTERMODAL CONTAINERS ARE STAGED

↳SITE 3 IS ON THE RIGHT JUST BEFORE BEACH

↳SITE 4 IS ON THE LEFT JUST BEFORE BEACH

↳SITE 5 IS ON THE BEACH

NOTE MARK BOUNDARIES OF SITES WHERE OBSERVED OR MAKE SKETCHES

1612 ↳SITE 9 IS THE BARE AREA ON LEFT SIDE OF ROAD JUST BEFORE INTERMODAL CONTAINER STAGING AREA ON THE RIGHT

↳SITE 10 IS THE NEWLY GRADED AREA JUST PAST CONTAINER STAGING AREA.

↳SITE 11 IS THE NEWLY DISTURBED AREA JUST DOWNHILL OF THE ~~CF~~ 9/11/13 SITE 10

↳SITE 28 IS THE LOW AREA BELOW SITE 10

↳SITE 31 & 32 ARE UP THE ROAD TOWARD QUARRIES

→32 IS FOUNDATION AT BASE OF HILL

1711 ↳SITE 16 IS ESSENTIALLY AT THE GAC STATION JUST BEFORE THE GAC STATION

* DIRECTIONS ARE BASED ON COMING FROM CAMP

1742 END OF SITE WALK

1745 to 1815 DINNER

1820 GEAR ORGANIZATION & COOLER PREP

Bottle Count

		FROM WP	WS 19
Coolers = 12			
250 HNO_3 Polys = 33	3	35	Filtered + unfiltered
1L HCl = 35	5	30	×10
1L No pres = ~~1240~~	50	45	
40mL HCl VOA = ~~69~~		60	"

Per cooler Sample Location

Ground water + SW

- 6 x 40mL VOA
- 2 x 1L HCl AMBER
- 3 x 1L No pres AMBER
- 2 x 250mL HNO_3 [Filtered / UNFILTERED]

2005 END OF DAY

NE CAPE
5-YEAR REVIEW

USACE
9/12/13

0655 HEALTH AND SAFETY MEETING (BRISTOL)

0715 DAILY TAILGATE (JACOBS)

↳ PERSONNEL (LEVEL D PPE)

JACOBS	K. MAHER	SITE LEAD
JACOBS	C. FELL	SSHO/TECH
JACOBS	J. ORCZEWSKA	TECH

WX: PARTLY TO MOSTLY CLOUDY
35°F TO 40sF
CALM TO LIGHT BREEZE

0752 DAILY OBJECTIVES:
- COMPLETE GW/SURFACEWATER SAMPLING
- SITE WALKS FOR SITE 7 & 9 (LANDFILL)

Christopher D. Fell 9/12/13

NE CAPE
5 YEAR REVIEW

USACE
9/12/13

0754 TURBIDIMETER (S/N 6192)
↳ CALIBRATED ON 9/6/13 BY TTT ENVIRO

0905 YSI (S/N 1002449) CALIBRATION VERIFICATION
↳ CALIBRATED ON 9/6/13 BY TTT ENVIRO
↳ BAROMETER CAL: 29.72 in Hg
↳ CAL VERIFICATION
→ ORP: 240mV exp. 12/17 = 256.8mV OK
→ COND: 1413 $\overset{25°C}{\mu m/cm}$ / 1020 $\overset{11°C}{\mu m/cm}$ = 9290K
→ pH 7.0: 6.95 OK
→ pH 10.01: 10.01 OK
→ pH 4.01: 3.95 OK

0940 LOADED SUPPLIES IN PICKED AND TRAVELLED TO SITE 9

0945 ARRIVED AT SITE 9 LANDFILL
↳ BEGAN SAMPLING PROCEDURE AT LOCATIONS 9LF-WS01 & 9LF-WS02

0950 ADVANCED DRIVE POINT

NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1000 *SAMPLE: 13-9LF-WS01-0
PRIMARY & MS/MSD
↳COLLECTED WITH DEDICATED DIPPER
↳4 40ml VOAs (HCl) AK101/BTEX SW8260
unfiltered ↳1 250poly (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
filtered ↳1 250poly (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
CF/KM/JO ↳2 1L AMBER (HCl) AK102/AK103
↳3 1L AMBER (none) SW8270SIM/SW8082
→SURFACE WATER
X3 FOR MS/MSD
—FILTERED METALS COLLECTED W/PERISTALTIC

1000 *SAMPLE: 13-9LF-WS02-0
↳COLLECTED WITH DEDICATED DIPPER
DUPLICATE
↳4 40ml VOAs (HCl) AK101/BTEX SW8260
unfiltered ↳1 250poly (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
filtered ↳1 250poly (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
CF/KM/JO ↳2 1L AMBER (HCl) AK102/AK103
↳3 1L AMBER (none) SW8270SIM/SW8082
→SURFACE WATER
—FILTERED METALS COLLECTED W/PERISTALTIC

1135 FINISHED SAMPLING 9LF-WS01
9LF-WS02

*SAMPLES MAINTAINED AT 4±2°C AFTER COLLECTION

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1149 BEGAN SAMPLING PROCEDURE AT LOCATION 9LF-SW03

1155
CF/KM/JO *SAMPLE: 13-9LF-WS03-0
PRIMARY ↳COLLECTED WITH DEDICATED DIPPER
↳4 40ml VOAs (HCl) AK101/SW8260
unfiltered ↳1 250poly (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
filtered ↳1 250poly (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
↳2 1L AMBER (HCl) AK102/AK103
↳3 1L AMBER (none) SW8270SIM/SW8082
→SURFACE WATER
→FILTERED METALS COLLECTED W/PERISTALTIC

1211 FINISHED SAMPLING AT LOCATION 9LF-WS03

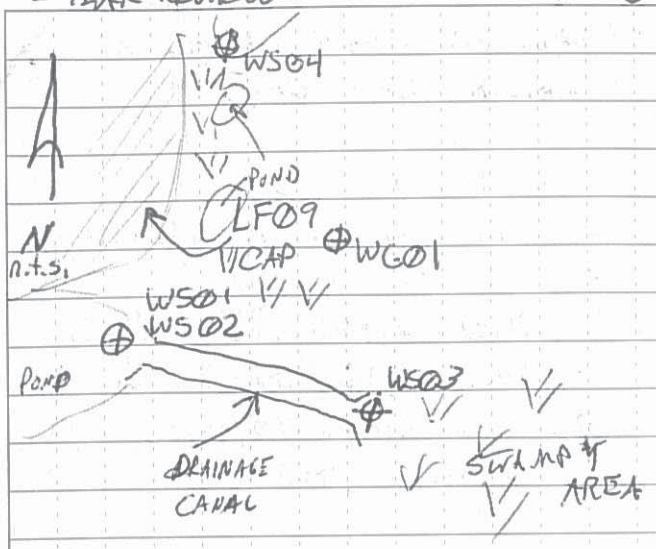
1212 SAMPLING LOCATIONS ARE RECORDED ON APPENDIX A FIGURES IN THE WORKPLAN (FIELD COPY) AND ON PAGE 8

1215 LEFT FOR LUNCH

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/12/13



1305 HEADED BACK TO SITE

1310 ADVANCED DRIVE POINT AT SITE 7 LAND FILL
- ↳ REFUSAL AT APROX 4-6 INCHES BGS
- ↳ STEPPED OUT APPROX. 1FT → REFUSAL AT 6in
- ↳ STEPPED OUT APPROX 10FT NORTH → REFUSAL AT 6in
- ↳ STEPPED OUT APPROX 20FT NORTH → REFUSAL AT 30in

1340 BEGAN SAMPLING AT SLF-WG01

1346 BEGAN SAMPLING PROCEDURE AT LOCATION SLF-WS04

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1350 *SAMPLE: 13-SLF-WS04-0
- PRIMARY ↳ COLLECTED W/ DEDICATED DIPPER, FILTERED METALS COLLECTED W/ PERISTALTIC
- ↳ 4 40ml VOAs (HCl) AK101/SW8260 (BTEX)
- ↳ 2 1L AMBER (HCl) AK102/AK103
- FILTERED ↳ 1 250ml POLY (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
- UNFILTERED ↳ 1 250ml POLY (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
- ↳ 3 1L AMBER (none) SW8270 SIM/SW8082
- → SURFACE WATER

1351 *SAMPLE: ~~13-SLF-WS05~~ CE 9/12
PRIMARY 13-SLF-WG01-2
- ↳ COLLECTED W/ PERISTALTIC PUMP
- 1416 ↳ 4 40ml VOAs (HCl) AK101/SW8260 (BTEX)
- 1550 FILTERED ↳ 1 250ml POLY (HNO_3) SW6020 RCRA METALS SW7471 MERCURY
- ~~↳ 250ml POLY (HNO_3)~~ CE 9/12

Christopher D Fell 9/12/13

Scale: 1 square = _____

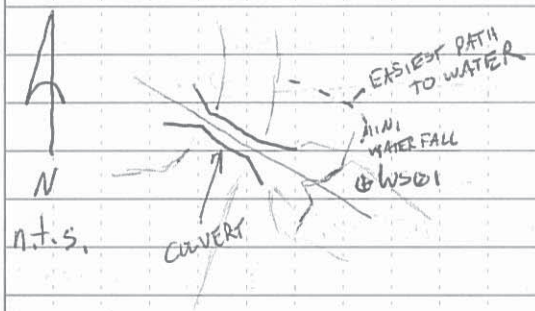
NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1437 GROUNDWATER GRAB SAMPLING AT LOCATION 9LF-WG01
- WATER EXTREMELY TURBID W/ SILT/FINE SAND & ORGANICS.
- SCREEN CONTINUALLY PLUGS WITH FINE ORGANICS & SEDIMENT
- PRODUCTION RATE MUCH LOWER THAN 250ml/min
- 4 40ml VOAs IN ONE HOUR

1450 FINISHED SAMPLING 9LF-WS04

1504 ARRIVED AT KANGUKSHAM MOUNTAIN SPRING SAMPLING LOCATION (KMS



NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1516 STARTED SAMPLING PROCEDURE AT THE KANGUKSHAM MOUNTAIN SPRING

1521 *SAMPLE: 13-KMS-WS01-0
↳ COLLECTED WITH DEDICATED DIPPER, FILTERED ~~w/~~ (CF) 9/12 METALS COLLECTED WITH PERISTALTIC PUMP
PRIMARY
CF/JO
↳ 4 40ml VOAs (HCl) AK101/SW8260C(BTEX)
↳ 1 250ml Poly (HNO3) SW6020 RCRA METALS SW 7471 MERCURY
↳ 1 250ml POLY (HNO3) SW6020 RCRA METALS SW 7471 MERCURY
↳ 2 1L AMBER (HCl) AK102/AK103
↳ 3 1L AMBER (none) SW8270SIM/SW8082
→ SURFACE WATER

1539 FINISHED SAMPLING AT KANGUKSHAM MOUNTAIN SPRING

1550 FINISHED SAMPLING AT ~~9LF-WS03~~ (CF) 9/12
9LF-WG01-2 DUE TO EXTREMELY LOW WATER PRODUCTION FROM THE WELL POINT

NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1600 ARRIVED AT SITE 7 LANDFILL
↳ LAID OUT LOCATIONS

1625 STARTED SAMPLING PROCEDURE AT
7LF-WS01

1630 *SAMPLE: 13-7LF-WS01-0
PRIMARY ↳ COLLECTED W/ DEDICATED DIPPER,
CF/JO/KM FILTERED METALS COLLECTED W/
PERISTALTIC PUMP
↳ 4 40ml VOAs (HCl) AK101/SW8260 (BTEX)
FILTERED ↳ 1 250ml POLY (HNO3) SW6020 RCRA METALS SW7471 MERCURY
UNFILTERED ↳ 1 250ml POLY (HNO3) SW6020 RCRA METALS SW7471 MERCURY
↳ 2 1L AMBER (HCl) AK102/AK103
↳ 3 1L AMBER (none) SW8270SIM/SW8082
– SURFACE WATER

1650 FINISHED SAMPLING AT 7LF-WS01

1640 STARTED SAMPLING PROCEDURE AT
7LF-WS02

NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1644 *SAMPLE: 13-7LF-WS02-0
PRIMARY ↳ COLLECTED W/ DEDICATED DIPPER,
JO/CF/KM FILTERED METALS COLLECTED WITH
PERISTALTIC PUMP
↳ 4 40ml VOAs (HCl) AK101/SW8260 (BTEX)
FILTERED ↳ 1 250ml POLY (HNO3) SW6020 RCRA METALS SW7471 MERCURY
UNFILTERED ↳ 1 250ml POLY (HNO3) SW6020 RCRA METALS SW7471 MERCURY
↳ 2 1L AMBER (HCl) AK102/AK103
↳ 3 1L AMBER (none) SW8270SIM/SW8082
→ SURFACE WATER

1653 STARTED SAMPLING PROCEDURE AT
7LF-WS03-0

PRIM
CF 9/12

1654 *SAMPLE: 13-7LF-WS03-0
PRIMARY ↳ COLLECTED W/ DEDICATED DIPPER, FILTERED METALS
JO/CF/KM WITH PERISTALTIC PUMP
↳ 4 40ml VOAs (HCl) AK101/SW8260 (BTEX)
FILTERED ↳ 1 250ml POLY (HNO3) SW6020 RCRA METALS SW7471 MERCURY
UNFILTERED ↳ 1 250ml POLY (HNO3) SW6020 RCRA METALS SW7471 MERCURY
↳ 2 1L AMBER (HCl) AK102/AK103
↳ 3 1L AMBER (none) SW8270SIM/SW8082
→ SURFACE WATER

NE CAPE
5 YEAR REVIEW

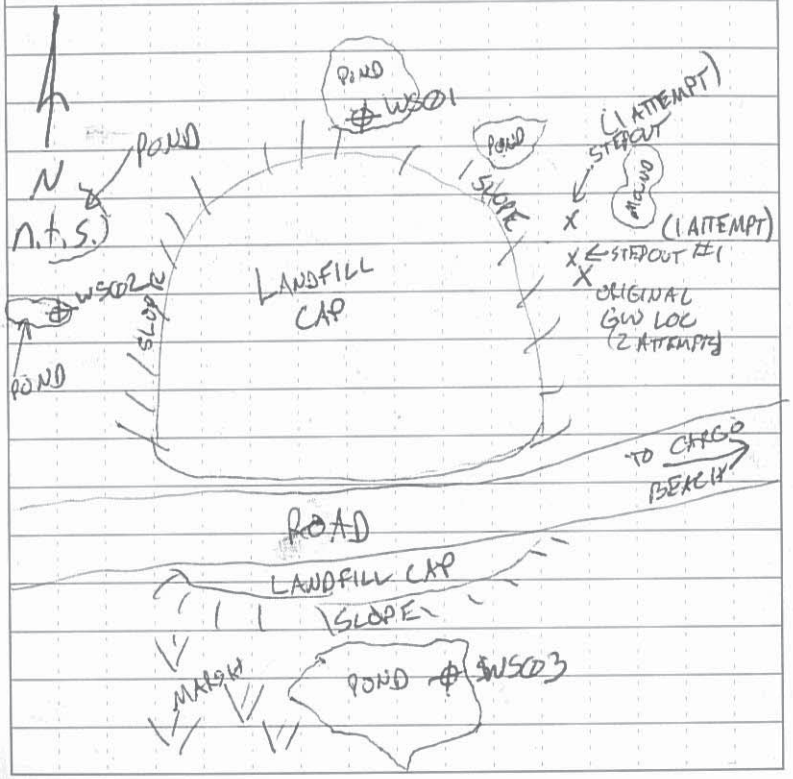
USACE
9/12/13

1720 FINISHED SAMPLING AT 7LF-WS02

1738 FINISHED SAMPLING AT 7LF-WS03

~~LEFT SITE FOR THE DAY~~ 9/12

1736 7LF GW SAMPLING LOCATION

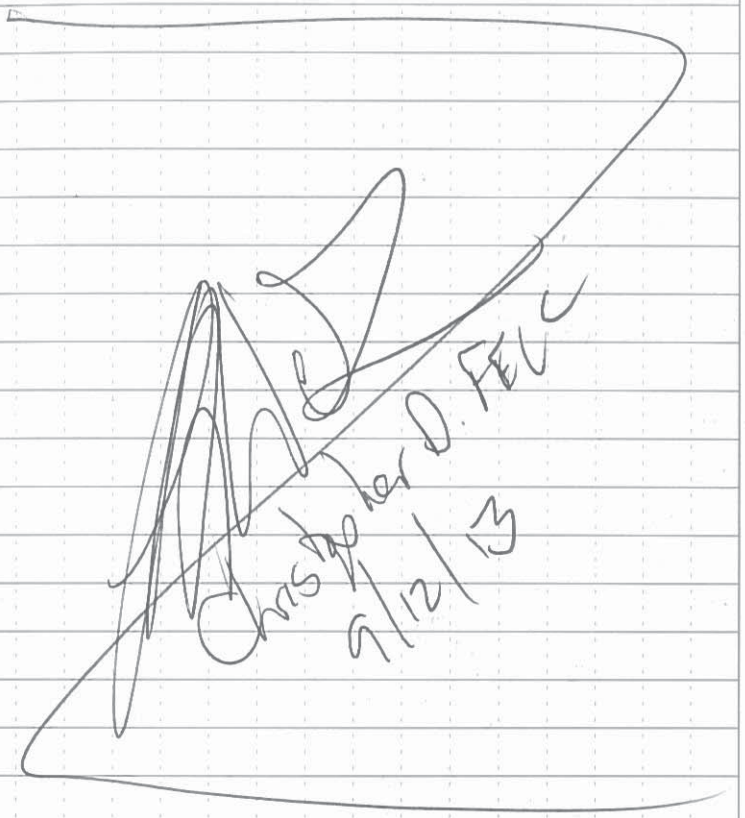


Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/12/13

1749 LEFT SITE FOR THE DAY
↳ TRANSFERRED SAMPLES BACK TO CAMP
↳ SAMPLING WASTE/IDW TRANSFERRED BACK TO CAMP IN 5 GALLON BUCKETS (PAGE 62)



Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

0700 JACOBS TAILGATE

PERSONNEL

JACOBS	K. MAHER	SME LEAD
JACOBS	C. FELL	SSHO/TECH
JACOBS	J. ORCZEWSKA	TECH

→ K. MAHER DEPARTED AT APPROX 1440

WX: WINDY 10-20mph GUSTS
30sF TO 40sF
OVERCAST

0720 DAILY OBJECTIVES
- COOLER PACKING
- RENTAL DEMOBIE
- 5YR REVIEW TRAINING
- BEGIN 5YR REVIEWS

0800 BRISTOL TAILGATTE

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

0830 TO 1140 PREPARED CHAINS OF CUSTODY FOR 8 COOLERS WITH SAMPLES COLLECTED ON 9/12/13

COOLERS
- KILO
- JULIETT
- CHARLIE
- MIKE
- ALFA
- HOTEL
- ECHO
- ROMEO

1140 5 YEAR REVIEW CHECKLIST TRAINING

1200 LUNCH

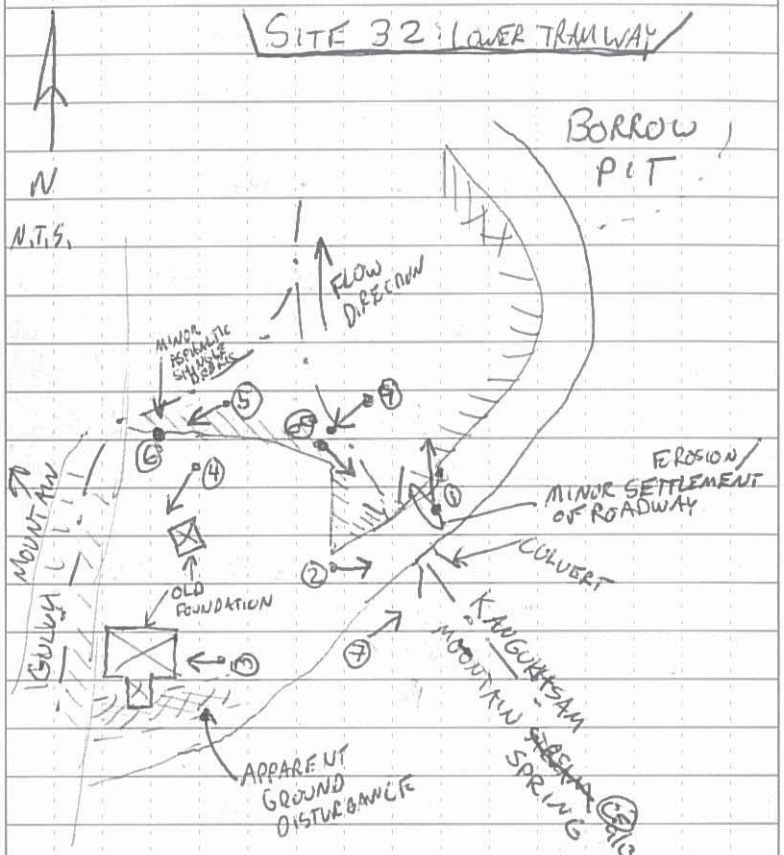
1230 BACK FROM LUNCH - GOING TO START SITE WALKS
→ K. MAHER WAITING IN CAMP FOR AIRPLANE TO NOME

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

1240 SITE WALK OF SITE 32 - LOWER TRAMWAY
↳ SEE CHECKLIST FOR FURTHER INFORMATION

SITE 32: LOWER TRAMWAY



Scale: 1 square = _____

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NE CAPE
5 YEAR REVIEW

USACE
9/13/13

1313 OBSERVED MINOR WOOD AND METAL DEBRIS ON SITE

1321 OBSERVED MINOR ASPHALTIC SHINGLE DEBRIS 1x2 FT TO 2x2 FT (APPROX) DIMENSIONS ON THE GROUND WEST OF THE OLD FOUNDATION

1325 OBSERVED APPARENT GROUN DISTURBANCE (RECENT) TO THE EAST OF THE OLD FOUNDATION, THIN VEGETATION IS GROWING ON THE EXTREMELY ROCKY SOIL

1327 NO GROUNDWATER MONITORING WELLS WERE OBSERVED

1330 CULVERT UNDER ROAD AT THE SITE IS APPROX 5 TO 6 FT IN DIAMETER

1332 ONGOING REMEDIAL ACTIVITY IS MINING BORROW FOR BACK FILL ADJACENT TO THE SITE ON THE OPPOSITE SIDE OF KANGUKSAM MOUNTAIN SPRING

1343 LEFT SITE 32: LOWER TRAMWAY

Scale: 1 square = _____

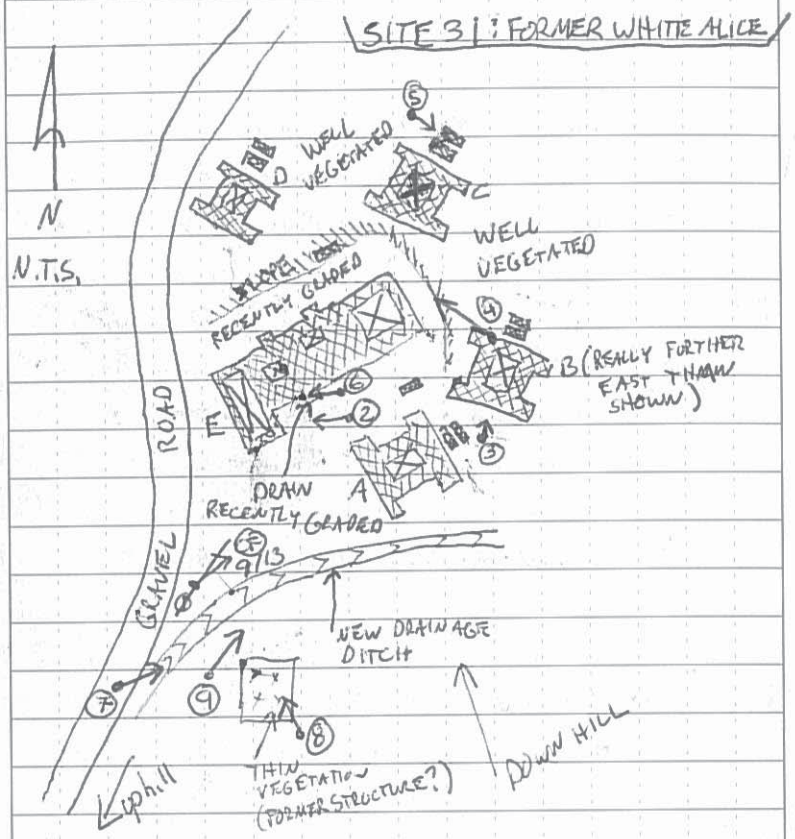
PAGE 19

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

1347 ARRIVED AT SITE 31: FORMER WHITE ALICE

SITE 31: FORMER WHITE ALICE



FOUNDATION (CONCRETE)

① → PHOTO + DIRECTION

HOLES IN FOUNDATIONS (FILLED W/ SOIL)

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

1404 OBSERVED MINOR WOOD/METAL/WIRING DEBRIS NEAR ANTENNA FOUNDATION "C"

1405 OBSERVED A DRAIN COVER (RUSTED) ON THE SOUTH SIDE OF FOUNDATION "E" WITH AN UNFILLED VOID UNDERNEATH (APROX 6 FT DEEP, 5 WIDE, 9FT LENGTH) DRAIN IS APPROX 4FT LONG & 6 INCHES WIDE. SAFETY ISSUE

1415 AREA AROUND FOUNDATION "E" AND ANTENNA FOUNDATION "A" HAVE BEEN RECENTLY GRADED, COMPACTED, AND SEEDED. NEW VEGETATION IS JUST SPROUTING. AREA APPEARS TO BE GRADED TO PROMOTE POSITIVE DRAINAGE AND MITIGATE EROSION

1416 HOLES IN FOUNDATIONS HAVE BEEN FILLED WITH SOIL
↳ NO STAINING OF CONCRETE OBSERVED

1420 AREA OF STUNTED VEGETATION ~~UP~~ CF 9/13 UPHILL FROM THE WACS SITE (APPROX 20FT BY 30FT RECTANGLE)

1424 NO GROUNDWATER MONITORING WELLS OBSERVED

1440 LEFT SITE 31: WHITE ALICE
↳ CHECKLIST ON SEPERATE FORM

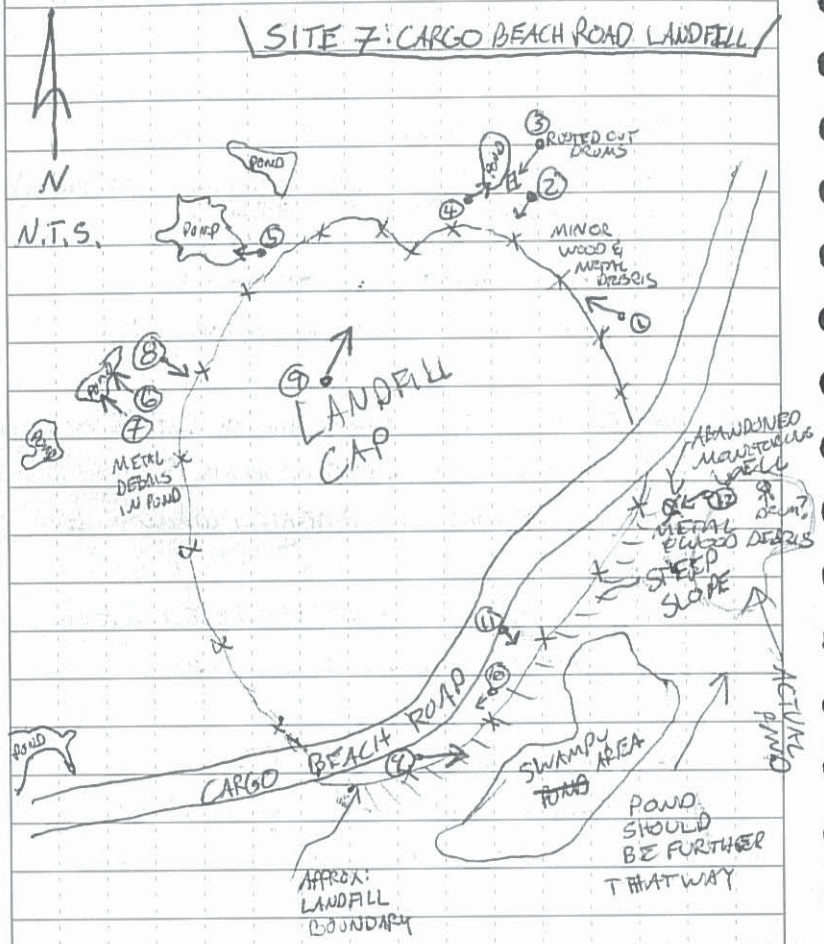
Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

1509 ARRIVED AT SITE 7: CARGO BEACH ROAD LANDFILL

SITE 7: CARGO BEACH ROAD LANDFILL



Scale: 1 square = _____

NE CAPE
5 YR REVIEW

USACE
9/13/13

1517 THE LANDFILL COVER APPEARS TO CONSIST OF FINE AND COARSE GRAVEL AT THE SURFACE WITH PATCHY GRASS COVER

1523 CARGO BEACH ROAD CROSSES THE LANDFILL CAP. NO SETTLEMENT OBSERVED GRADING/DRAINAGE APPEARS ADEQUATE

1528 WOOD DEBRIS AT PICTURE ① LOCATION (MINOR) WITH OTHER WOOD AND METAL DEBRIS NEARBY

1546 OBSERVED 2 RUSTED OUT DRUMS NEAR THE EDGE OF THE POND NEAR THE NE CORNER OF THE LANDFILL (55 gal?)

1547 OBSERVED METAL/WOOD/PLASTIC DEBRIS IN THE NORTHEAST POND

1552 OBSERVED METAL DEBRIS IN THE POND AT THE NW CORNER OF THE LANDFILL WHERE PICTURE ⑤ WAS TAKEN

1553 LANDFILL CAP DOES NOT HAVE OBSERVED SIGNS OF SETTLEMENT/EROSION OR LANDFILL DEBRIS STICKING THROUGH THE CAP

1559 OBSERVED METAL DEBRIS IN THE POND TO THE WEST OF THE LANDFILL (METAL ROOFING?) → PICTURES 6 & 7

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

1607 RUBBER HOSE STICKING THROUGH LANDFILL CAP ALONG WITH SOME METAL DEBRIS NEAR PICTURES 10 & 11

1615 OBSERVED AN ABANDONED MONITORING WELL NEAR THE SE CORNER OF THE LANDFILL - ABANDONED WITH HYDRATED BENTONITE

1616 OBSERVED ~~MINOR~~ METAL DEBRIS AND OTHER DEBRIS IN THE POND NEAR THE SE CORNER OF THE LANDFILL
↳ OBSERVED A SUBMERGED OBJECT W/ A ROUND OPENING (DRUM?)

1633 ITEMS OF INTEREST
- DEBRIS PROTRUDING THROUGH CAP ON S SIDE (MINOR)
- SIGNIFICANT METAL & WOOD DEBRIS IN THE SURROUNDING PONDS (INCLUDING A FEW RUSTED OUT DRUMS

1637 LEFT SITE 7 LANDFILL
↳ 5 YR REVIEW CHECKLIST ON SEPERATE FORM

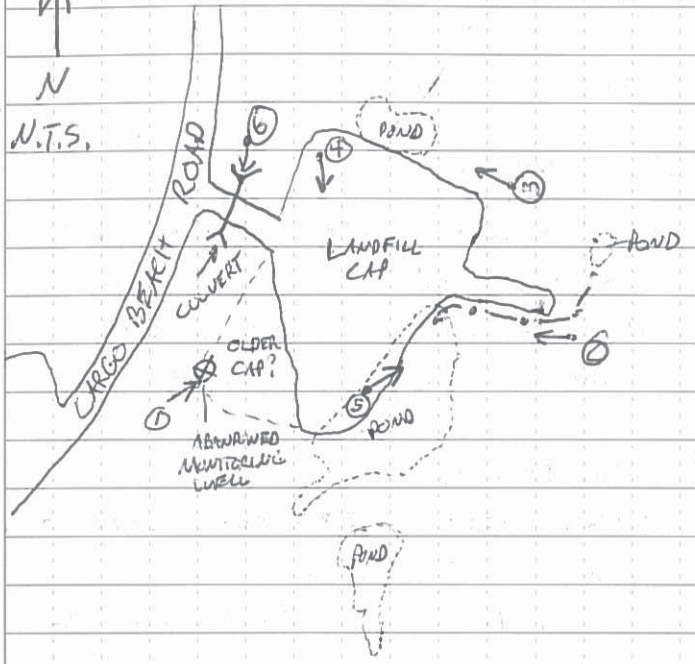
1640 ARRIVED AT SITE 9: HOUSING & OPERATIONS LANDFILL
↳ 5 YR REVIEW CHECKLIST INCLUDED ON A SEPERATE FORM

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

SITE 9: HOUSING & OPERATIONS LANDFILL



① → PICTURE LOCATION & DIRECTION
POND BOUNDARY
DIVERSION DITCH
CULVERT

1642 DRAINAGE IN EXCELLENT CONDITION ~ NO VEGETATION IN DITCH

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/13/13

1649 LANDFILL CAP APPEARS TO BE IN GOOD CONDITION WITH THIN GRASSY VEGETATION. CAP IS COMPOSED OF COARSE MATERIAL (GRAVEL) THAT MAKES VEGETATIVE GROWTH DIFFICULT.

1651 EROSION & SETTLEMENT WERE NOT OBSERVED. GRADING APPEARS TO ALLOW DRAINAGE

1657 OBSERVED AN ABANDONED MONITORING WELL AT THE SW CORNER OF THE OLD LANDFILL CAP.

↳ COULD NOT FIND THE OTHER 2 MONITORING WELLS SHOWN IN THE DECISION DOCUMENT

1734 LEFT SITE 9: HOUSING & OPERATIONS LANDFILL

END OF DAY

Christopher D. Fell 9/13/13

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

0800 BRISTOL TAILGATE

0830 JACOBS TAILGATE

PERSONNEL

JACOBS	C. FELL	SITE LEAD
JACOBS	J. ORCZEWSKA	SSHO/TECH

WX: CALM
30s TO 40s F
OVERCAST

850 DAILY OBJECTIVES
- 5 YEAR REVIEW SITE WALKS
- PAPERWORK QC
- CONTINUE PREP FOR DEMOBE

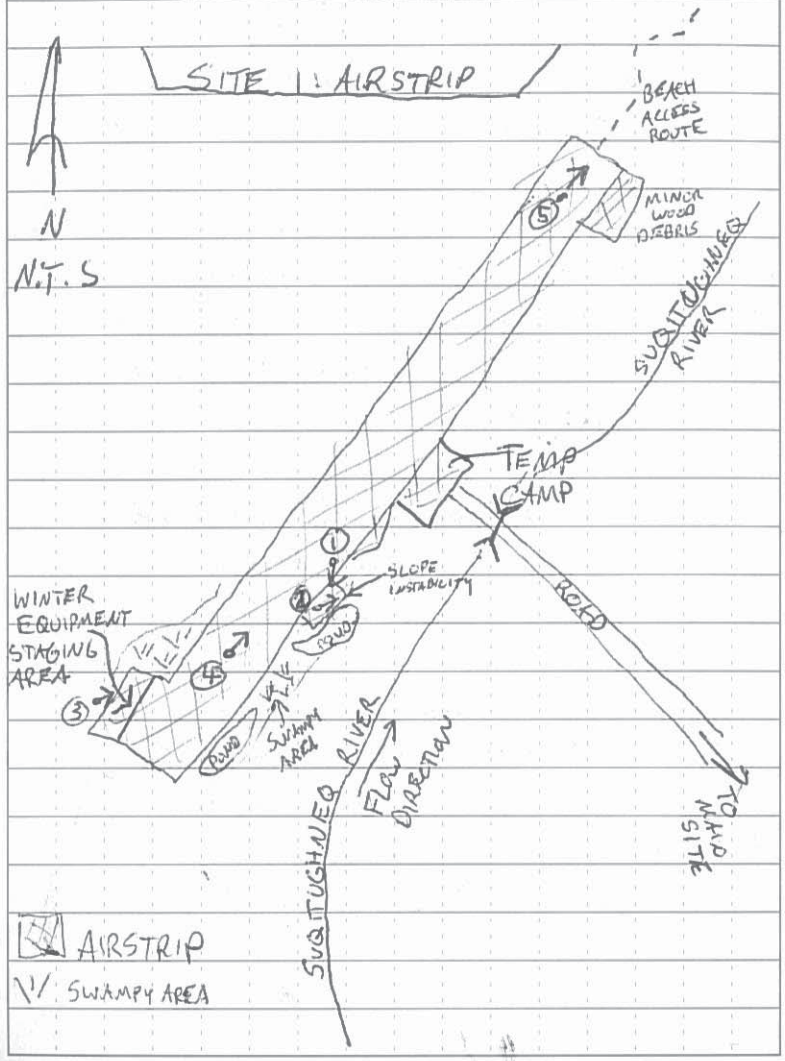
850 TO SITE HISTORY REVIEW

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

0944 AEFT CAMP TO CONDUCT SITE WALK FOR SITE 1 : AIRSTRIP



Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

0955 OBSERVED 1 TO 6 INCH TENSION CRACKS IN THE SLOPE OF A SIDING OFF THE SIDE OF THE RUNWAY. THE NORTHEAST CORNER OF THE PAD HAS APPROXIMATELY 1FT OF SETTLEMENT AT THE TOP OF THE SLOPE.

↳ SLOPE INSTABILITY IS APPROX 30-40FT FROM THE EDGE OF THE RUNWAY AND WILL NOT AFFECT OPERATIONS ON THE RUNWAY

1000 RUNWAY SURFACE WAS OBSERVED TO BE IN GOOD CONDITION AND WAS FREE OF RUTTING, SETTLEMENT, OR EROSION DAMAGE

↳ SLOPES IMMEDIATELY ADJOINING THE RUNWAY SURFACE WERE GENERALLY FREE OF SIGNS OF SLOPE INSTABILITY, HOWEVER ARE SLOPED BETWEEN 1 1/2 TO 1 AND 3/4 TO 1 WHICH MAY LEAD TO EROSIVE DAMAGE OVER TIME

↳ SMALL TENSION CRACKS ON 3/4 TO 1 SECTIONS

Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

1014 A FEW SHIPPING RACKS ARE STAGED ON THE END OF THE RUNWAY AT THE WINTER STORAGE AREA
↳ NO SOIL STAINING OBSERVED AT STORAGE AREA

1033 MINOR WOOD DEBRIS NOTED ALONG THE EAST SIDE OF THE RUNWAY NEAR THE NORTH END

1038 A TRAIL HAS BEEN FORMED OFF THE NORTH END OF THE RUNWAY LEADING TO THE BEACH.

1044 LEFT SITE 1 AIRSTRIP
↳ 5 YEAR REVIEW CHECKLIST ON A SEPERATE FORM

ITEMS OF INTEREST

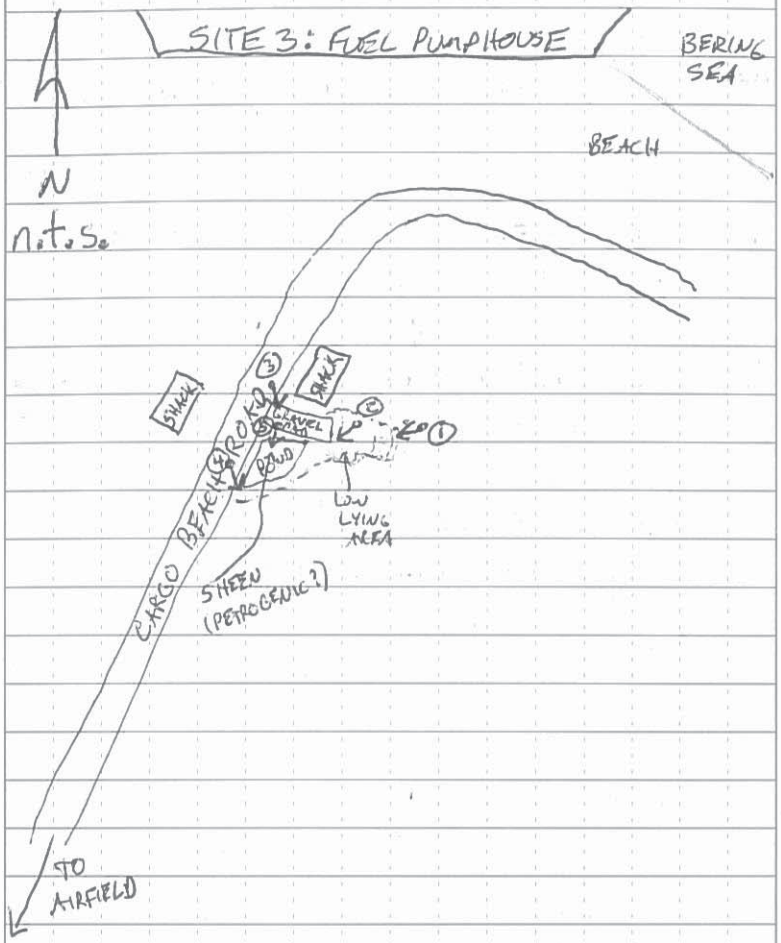
- MINOR SLOPE STABILITIES ISSUES ON THE RUNWAY EDGES.

Christopher D. Reed 9/14/13

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

1055 ARRIVED AT SITE 3: FUEL PUMPHOUSE



NE CAPE USACE
5 YEAR REVIEW 9/14/13

1112 OBSERVED A SALVAGED PIECE OF RUSTED OUT EQUIPMENT STAGED FOR REMOVAL

1113 EXCAVATION AREA NOTED IN THE ROD APPEARS TO NOW BE A POND

1114 BIOGENIC SHEEN (BRITTLE) NOTED ON SOME WATER IN FROM THE ROAD

1116 FORMER PIPELINE WAS NOT OBSERVED (REMOVED?) FORMER PUMPHOUSE STRUCTURE HAS BEEN REMOVED.

1119 SHEEN NOTED ON PONDED WATER NEAR THE GRAVEL PAD. SHEEN WAS NOT BRITTLE AND FLOWED BACK TOGETHER AFTER BEING DISTURBED (LIGHT SHEEN)

1126 VEGETATION IS GROWING WELL ONSITE EXCEPT ON A NEW GRAVEL PAD

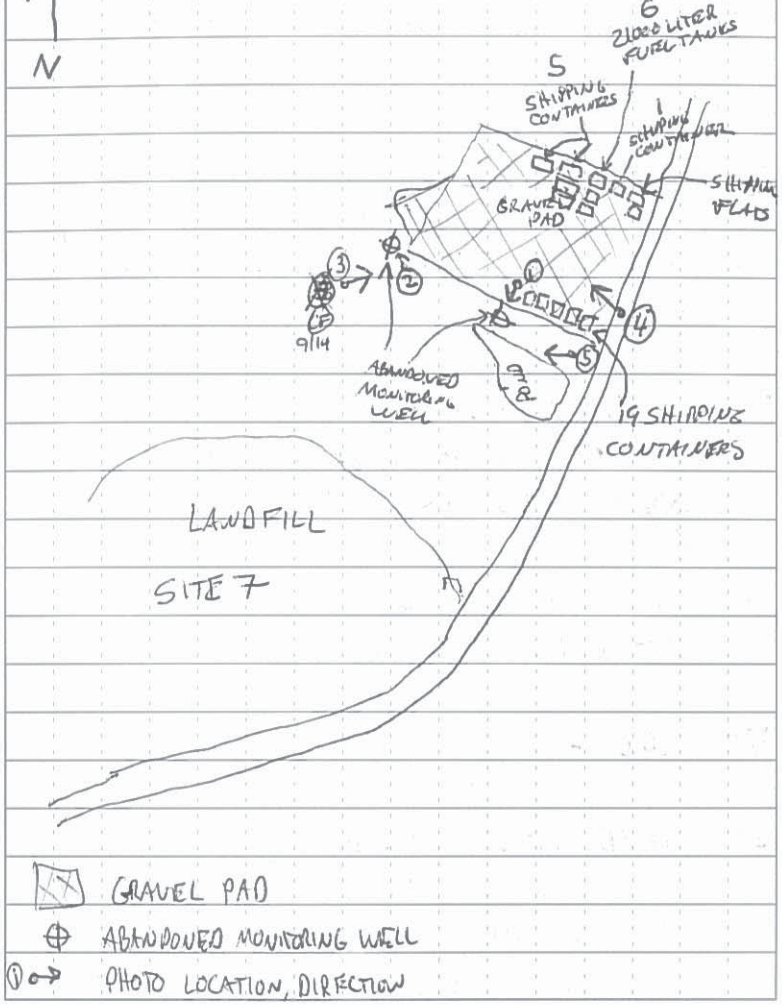
1132 LEFT SITE 3: FUEL PUMPHOUSE

1133 ARRIVED AT SITE 6: GRAVEL PAD
↳ 5 YEAR REVIEW CHECKLIST ON A SEPERATE FORM

Scale: 1 square = _____ PAGE 32

NE CAPE USACE
5 YEAR REVIEW 9/14/13

SITE 6: GRAVEL PAD



Scale: 1 square = _____ PAGE 33

Rite in the Rain

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

1140 OBSERVED AN ABANDONED MONITORING WELL ON THE SW SIDE OF THE SITE. (HYDRATED BENTONITE)

1143 A SECOND ABANDONED MONITORING WELL OBSERVED ON THE WEST CORNER OF THE PAD (HYDRATED BENTONITE)

1148 DID NOT OBSERVE STAINING ON THE NEWLY GRADED GRAVEL PAD THAT IS CURRENTLY BEING USED TO STORE SHIPPING CONTAINERS.

↳ PAD APPEARS TO HAVE BEEN RECENTLY SAMPLED
↳ GRID SAMPLING
↳ PAD GRADED TO PROMOTE DRAINAGE AND MITIGATE EROSION

1153 DID NOT OBSERVE DEBRIS OR A SHEEN IN THE POND TO THE SOUTH OF THE SITE

1155 LEFT SITE 6: GRAVEL PAD

1206 LUNCH

1230 DONE WITH LUNCH

1230 to 1340 VIEWED HISTORICAL PHOTOS WITH JEREMY CRANER (USACE)

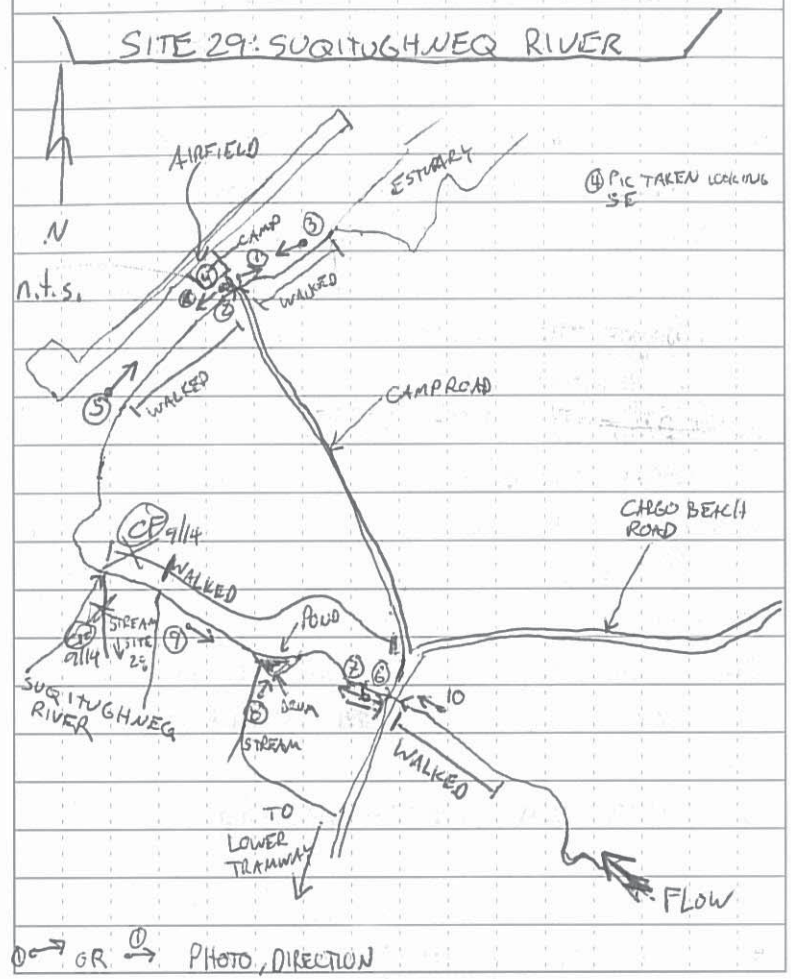
Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

1341 SITEWALK FOR SITE 29: SUQITUGHNEQ RIVER
↳ 5 YEAR REVIEW CHECKLIST ON A SEPERATE FORM.

SITE 29: SUQITUGHNEQ RIVER



Scale: 1 square = _____

NE CAPE USACE

5 YEAR REVIEW 9/14/13

1352 WALKED THE SUQITUGHNEQ RIVER FROM CAMP ROAD TO THE ESTUARY

1357 DID NOT OBSERVE ANY DEBRIS OR (PETROGENIC) SHEEN. LOOKS LIKE A RIVER

1402 CONSTRUCTION CAMP IS PUMPING WATER FROM THE SUQITUGHNEQ RIVER FOR GENERAL USE (SOUTH OF ROAD)

1411 WALKED THE SUQITUGHNEQ RIVER FROM CAMP ROAD TO THE END OF THE RUNWAY

1412 ~~DID NOT~~ CR 9/14 DID NOT ~~OVERLOOK~~ OBSERVE ANY DEBRIS OR SHEEN (PETROGENIC).

TRAVELLED UP RIVER

1426 WALKED THE SUQITUGHNEQ RIVER FROM CARGO BEACH ROAD TOWARDS THE AIRFIELD

1433 OBSERVED A DRUM IN A POND → VERY RUSTED, NO SHEEN OBSERVED

1445 DID NOT SEE DEBRIS/SHEEN (PETROGENIC) TO SOUTH OF SITE 28 DRAINAGE

1450 WALKED THE SUQITUGHNEQ RIVER FROM CARGO BEACH ROAD UPSTREAM

↳ WATER HOSE (4 inch) IN THE WATER AT THE CULVERT FOR CARGO BEACH ROAD. MAY BE IN USE AS A WATER SOURCE FOR CONSTRUCTION/REMEDIATION ACTIVITIES.

1500 DID NOT SEE DEBRIS/SHEEN (PETROGENIC) ALONG THE SUQITUGHNEQ RIVER

1512 LEFT SITE 29: SUQITUGHNEQ RIVER

1515 SITE WALK FOR SITE 8: POL SPILL

↳ 5 YEAR CHECKLIST ON A SEPERATE FORM

1522 VEGETATION IS THICK AND HEALTHY

NO ODOR OBSERVED

NO SHEEN (PETROGENIC) OBSERVED

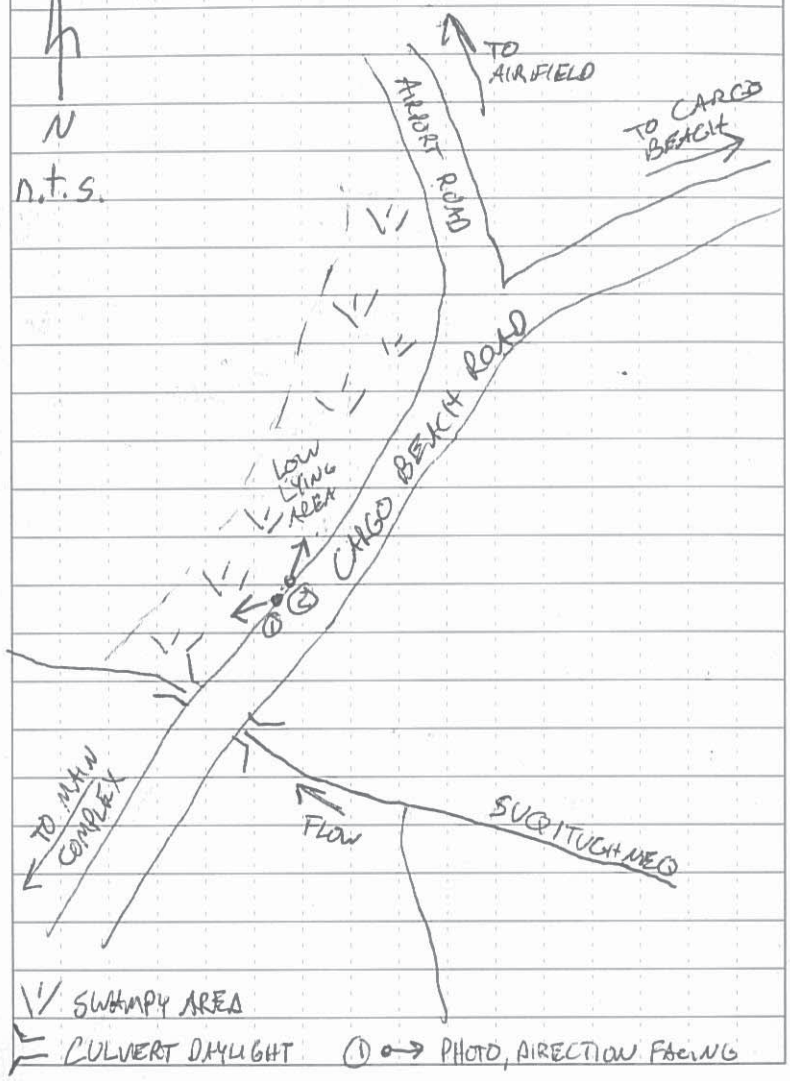
NO DEBRIS OBSERVED

1533 LEFT SITE 8: POL SPILL

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

SITE 8: POL SPILL



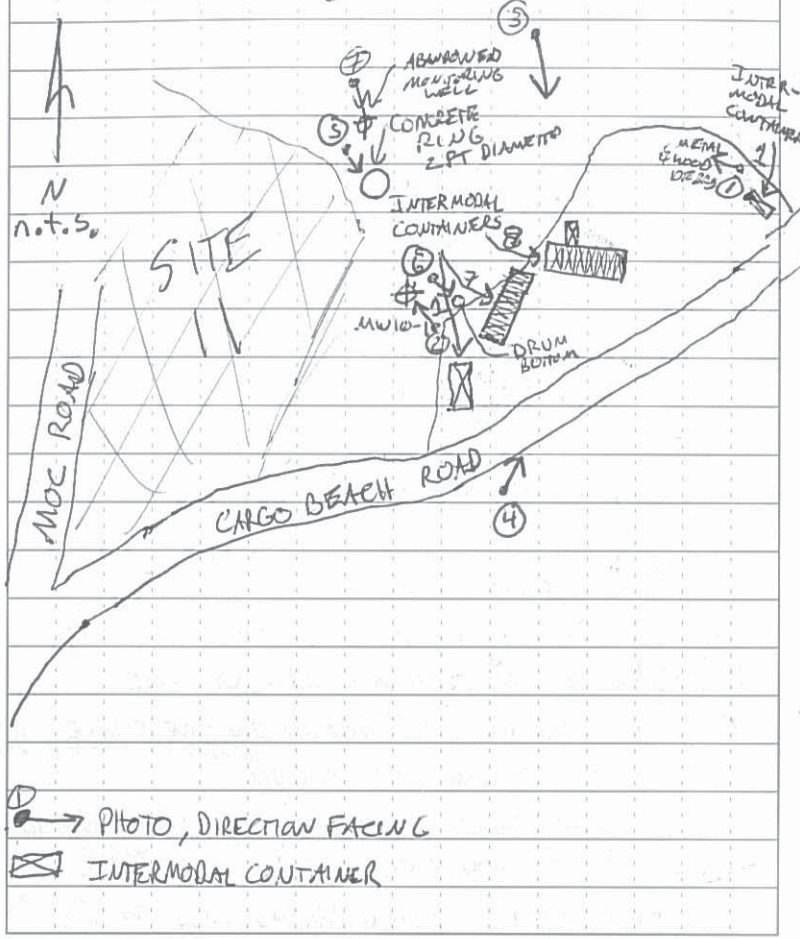
Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

1534 ARRIVED AT SITE 10: BURIED DRUMS
↳ 5 YEAR REVIEW CHECKLIST ON A SEPERATIVE FORM

SITE 10: BURIED DRUMS



Scale: 1 square = _____

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

1547 OBSERVED WOOD AND METAL DEBRIS (MINOR) AT THE NE CORNER OF THE SITE

1550 OBSERVED MONITORING WELL 10-1, WELL CASING HAS JACKED 1 FOOT ABOVE THE PROTECTIVE STEEL CASING. NO LOCKING CAP OR PROTECTIVE BOLLARDS.

1554 ~~EVADEN~~ EP 9/14 OBSERVED EVIDENCE OF RECENT SOIL BORINGS & SAMPLING ACTIVITY

1558 SITE IS CURRENTLY BEING USED AS A LAYDOWN AREA BY THE REMEDIAL CONTRACTOR (BRISTOL). SITE IS GRADED AND COMPACTED TO PROMOTE POSITIVE DRAINAGE AND MITIGATE EROSION

↳ NO VEGETATION PRESENT ON THE GRAVEL PAD. VEGETATION AROUND THE PAD APPEARS HEALTHY

1604 OBSERVED A DRUM BOTTOM AT BASE OF SLOPE

1608 2ND MONITORING WELL SHOWN ON THE FIGURE IN THE ROD WAS NOT FOUND.

↳ JEREMY CRAMER INDICATES IT WAS DECOMMISSIONED (USACE) ↳ OBSERVED THE ABANDONED WELL

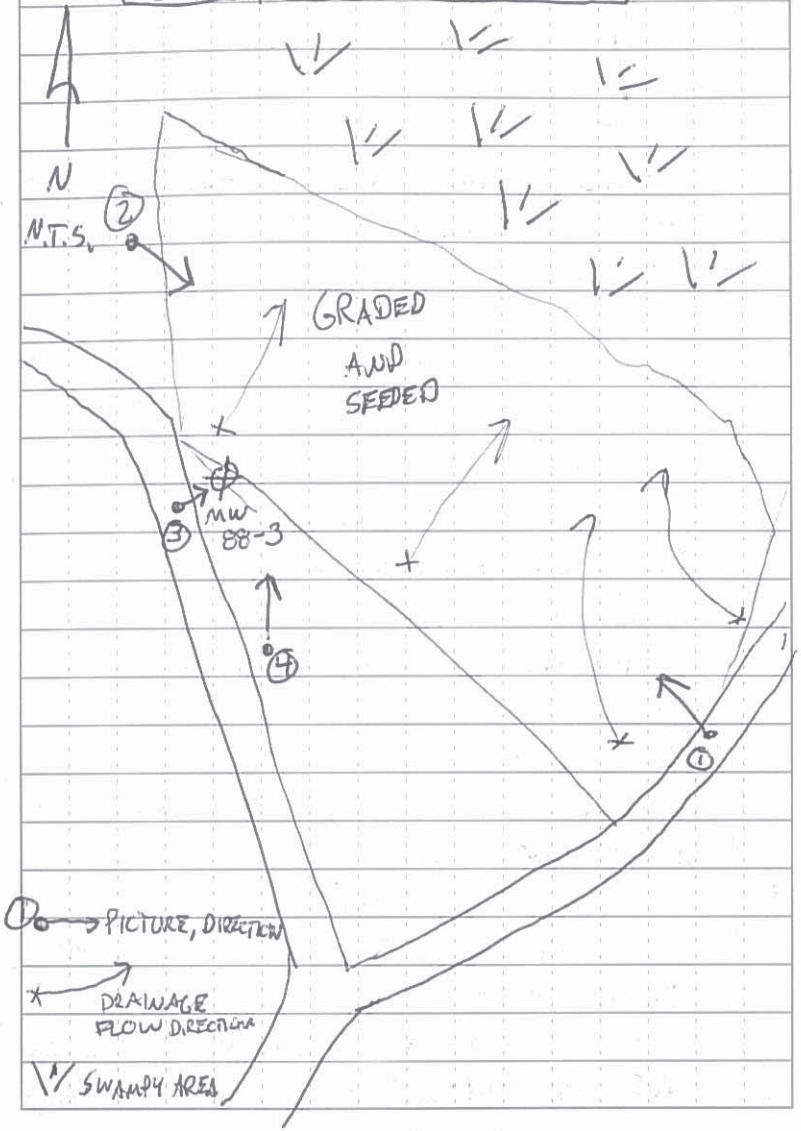
1624 LEFT SITE 10: BURIED DRUMS

Scale: 1 square = _____ PAGE 40

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

SITE 11: FUEL TANKS



Scale: 1 square = _____ PAGE 41

Rite in the Rain

NE CAPE
5 YEAR REVIEW

USACE
9/14/13

1625 ARRIVED AT SITE ~~1615~~ 9/14 11: FUEL TANKS FOR A SITE WALK
↳ 5 YEAR REVIEW CHECKLIST ON A SEPERATE FORM

1635 OBSERVED MONITORING WELL MW88-3.
↳ CASING HAS A LOCKING CAP - WITH NO LOCK
↳ FLUSH MOUNT MONUMENT DOES NOT CLOSE AS THE WELL APPEARS TO HAVE FROST JACKED

1643 SITE HAS BEEN GRADED/COMPACTED/AND SEEDED TO PROMOTE POSITIVE DRAINAGE AND MITIGATE EROSION.
↳ OBSERVED THE REMEDIAL CONTRACTOR (BRISTOL) SPREADING SEED ON THE AREA

1645 LOCATIONS OF THE FORMER ASTs ARE NOT APPARANT

1650 DEBRIS NOT OBSERVED ONSITE OR AROUND THE PERIMETER

1715 LEFT THE SITE Christopher D. Fell 9/14/13

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

0730 PAPERWORK & SITREP
0745 BREAKFAST
0800 BRISTOL TAILGATE

0830 JACOBS TAILGATE

PERSONNEL
JACOBS J. ORCZEWSKA SSHO/TECH
JACOBS C. FELL SITE LEAD

WX:
OVERCAST
LIGHT BREEZE
LOW 40sF

PPE: LEVEL D MODIFIED

DAILY OBJECTIVES
- SITEWALK REMAINING 7 SITES
- PREP FOR DEMOBE

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

0931 ARRIVED AT SITE 28: DRAINAGE BASIN
↳ 5 YEAR REVIEW CHECKLIST ON A SEPERATE FORM

0950 OBSERVED 5 30 FT BY 60 FT SETTLING PONDS FOR COLLECTING WATER & SEDIMENT FROM DREDGE OPERATIONS
↳ 11 SEDIMENT COLLECTION BAGS (25FT × 6FT × 1½FT) PRESENT IN THE PONDS
↳ GAC SYSTEM BY PRO ACT BEING USED TO TREAT WATER PRIOR TO ONSITE DISPOSAL (ONTO RUN DRA)

0956 INTERMEDIATE PONDS ARE BEING USED TO LIFT WATER & SEDIMENT UPHILL WITH PUMP STATIONS

1004 A SEDIMENT TRAP (STEEL WALL, 6FT WITH 3FT LIP)

1014 A SMALL DREDGE WAS BEING USED TO REMOVE SEDIMENT (ON PONTOONS)

1017 A JUTE MAT SEDIMENT TRAP WAS AT THE MOUTH OF THE DRAINAGE, DID NOT OBSERVE SEDIMENT ESCAPING INTO THE SUQITUGHNEQ RIVER

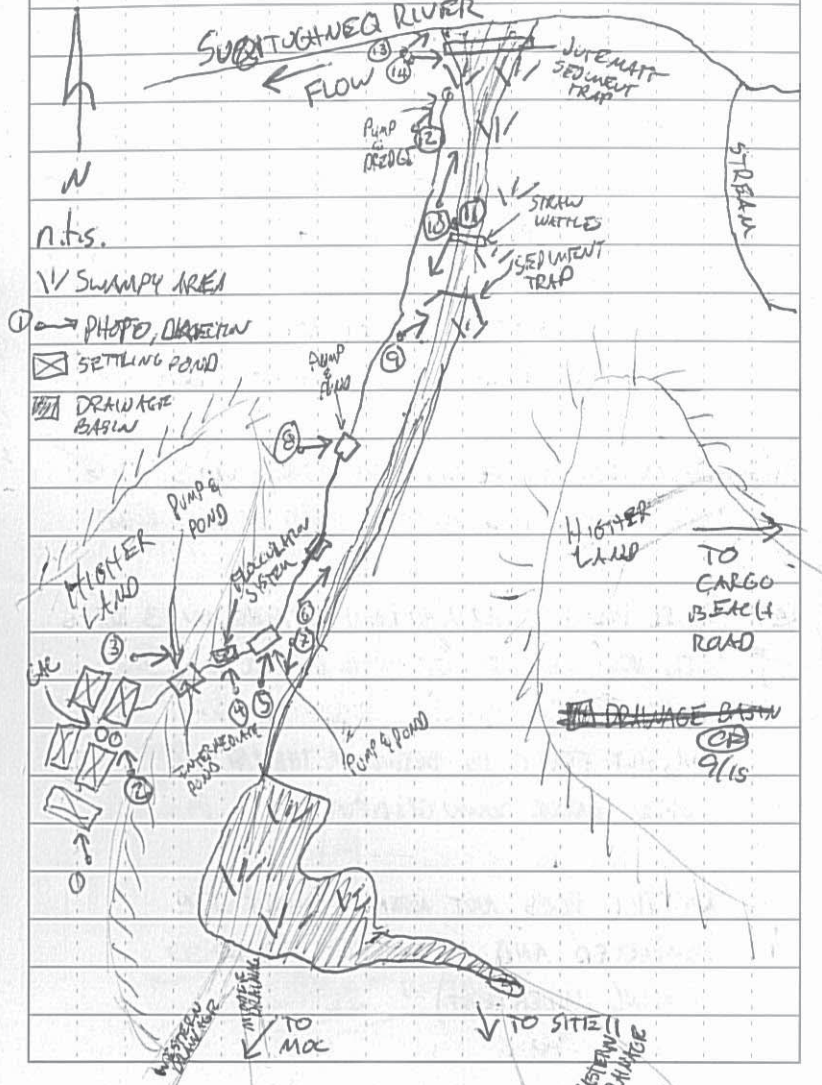
1018 DID NOT OBSERVE DEBRIS IN THE DRAINAGE

Scale: 1 square = _____ PAGE 44

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

SITE 28: DRAINAGE BASIN



Scale: 1 square = _____ PAGE 45

Rite in the Rain

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

1027 LEFT SITE 28: DRAINAGE BASIN

1030 MET W/ ECO LAND SURVEYING ABOUT SURVEY OF SAMPLING LOCATIONS FROM 9/12/13
↳ NEED TO REMARK SITE 32
↳ WILL VISIT SITE 7 & SITE 9 WITH THE SURVEYOR BEFORE LUNCH

1050 ARRIVED AT SITE 21: WASTEWATER TANK
↳ 5 YEAR REVIEW FORM ON A SEPERATE FORM

1105 OBSERVED BRISTOL (REMEDIAL CONTRACTOR) SEEDING THE GRAVEL PAD AT THE END OF THE ROAD

1109 GRAVEL PAD HAD BEEN AN OPEN EXCAVATION 3 DAYS AGO. NOW IS BACKFILLED WITH GRAVEL ~~WITH~~ (CR)/IS LITTLE SILT.
↳ A SILT FENCE IS BETWEEN THE PAD AND OPEN WATER DOWN GRADIENT

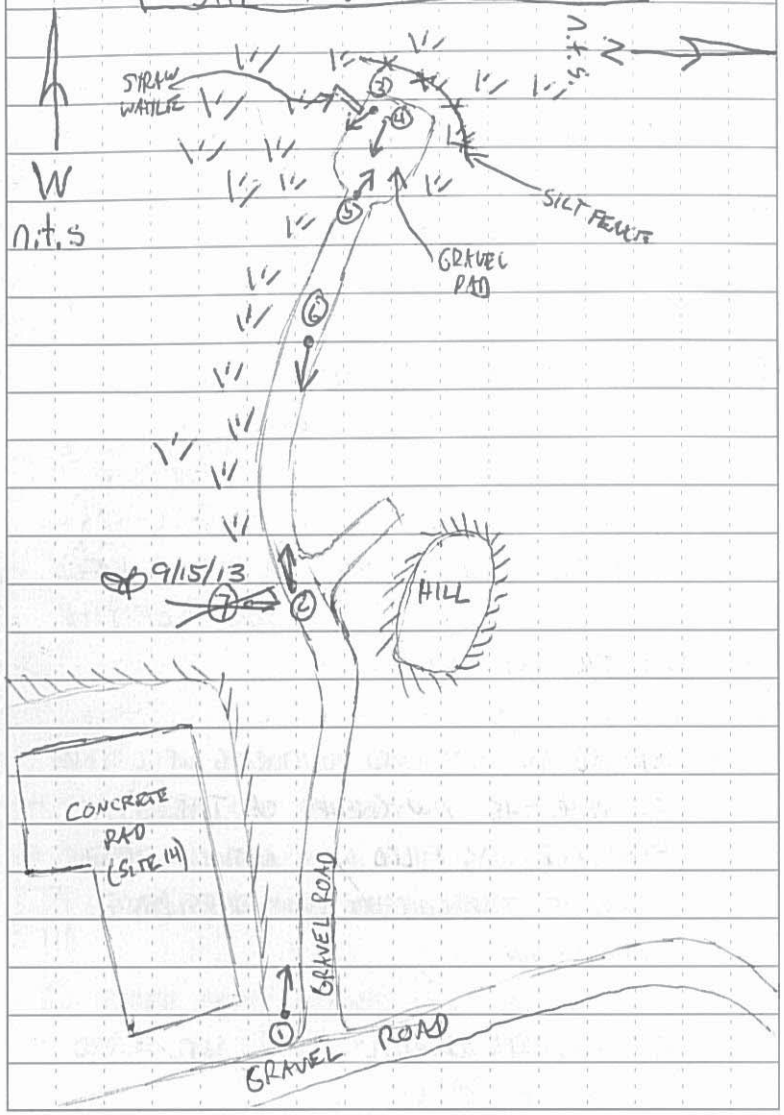
BACKFILL DOES NOT APPEAR TO HAVE BEEN COMPACTED AND IS TOO WET TO DO SO (PUMPING UNDER FOOT)

Scale: 1 square = _____ PAGE 46

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

SITE 21 : WASTEWATER TANK



Scale: 1 square = _____ PAGE 47

Rite in the Rain

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

1121 LEFT SITE 21: WASTEWATER TANK

1123 ARRIVED AT SITE 16: ~~HEAT & POWER PLANT~~ PAINT & DOPE STORAGE CD 9/15
↳ 5 YEAR REVIEW FORM ON A SEPERATE FORM

1125 TO 1155 MET WITH SURVEYORS TO SHOW WHERE SAMPLING LOCATIONS ARE

1155 LEFT SITE FOR LUNCH

1230 LEFT CAMP FOR SITE

1241 ARRIVED ON SITE 16: ~~HEAT & POWER PLANT~~ PAINT & DOPE STORAGE CD 9/15

1251 OBSERVED AN ABANDONED MONITORING WELL THAT WAS NEAR THE SW CORNER OF THE FORMER BUILDING

1257 OBSERVED AN ABANDONED MONITORING WELL THAT WAS NEAR THE NW CORNER OF THE SITE.
↳ SURFACE WAS FILLED WITH NATIVE MATERIAL SOME OF THE CONCRETE FROM THE SURFACE COMPLETION

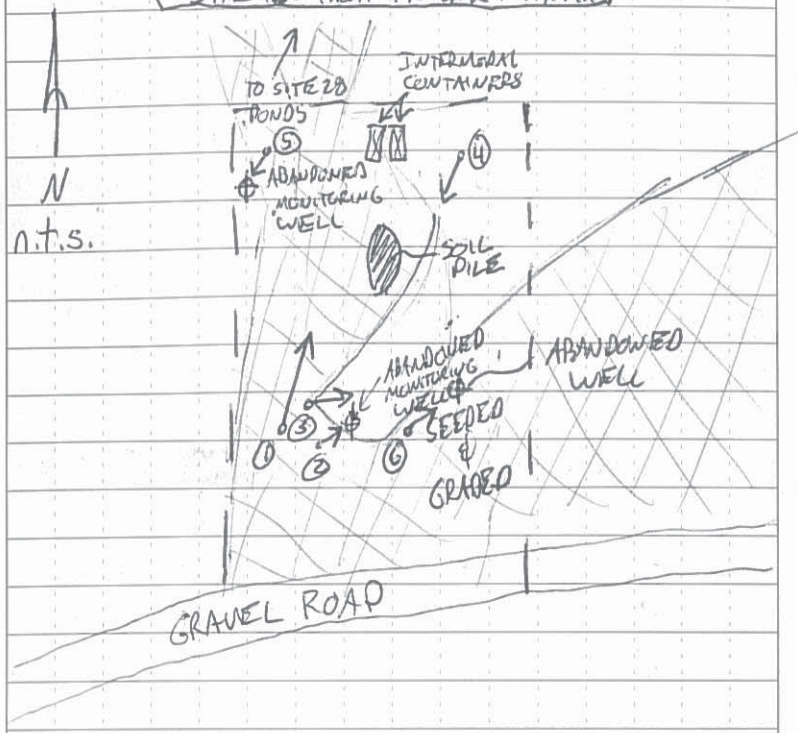
1300 SITE HAS BEEN RECENTLY GRADED AND SEEDED ON THE SE PORTION

Scale: 1 square = _____ PAGE 48

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

SITE 16: ~~HEAT & POWER PLANT~~ PAINT & DOPE STORAGE CD



- - - APPROX SITE BOUNDARY

⊕ ABANDONED MONITORING WELL

DISTURBED GROUND / GRADED AREA

⑥ TAKEN AFTER PICTURE 11 AT NOC SITE (PG 51)

Scale: 1 square = _____ PAGE 49

Rite in the Rain

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

1301 MUCH OF THE WESTERN PORTION OF THE SITE IS BEING USED TO ACCESS SITE 28 OR AS AN EQUIPMENT STORAGE AREA - AN APPROX 3 YD PILE OF SOIL IS ON SITE

1302 GRADING OF THE SITE APPEARS TO PROMOTE POSITIVE DRAINAGE AND MITIGATE EROSION

1307 LEFT SITE 16: PAINT & DOPE STORAGE

1313 ONSITE (13, 15, 19, 27) FOR SITE WALKS
↳ 5 YEAR REVIEW CHECKLIST ON SEPERATE FORMS

1325 MONITORING WELL "X" (CP 9/15) MW88-10 → OK CONDITION ↙ NEEDS REPAIR
- WELL MONUMENT (FLUSH) CLOSES BUT NOT BOLTED
- WELL CASING IS OK AND FITTED WITH LOCKING CAP THAT IS NOT LOCKED

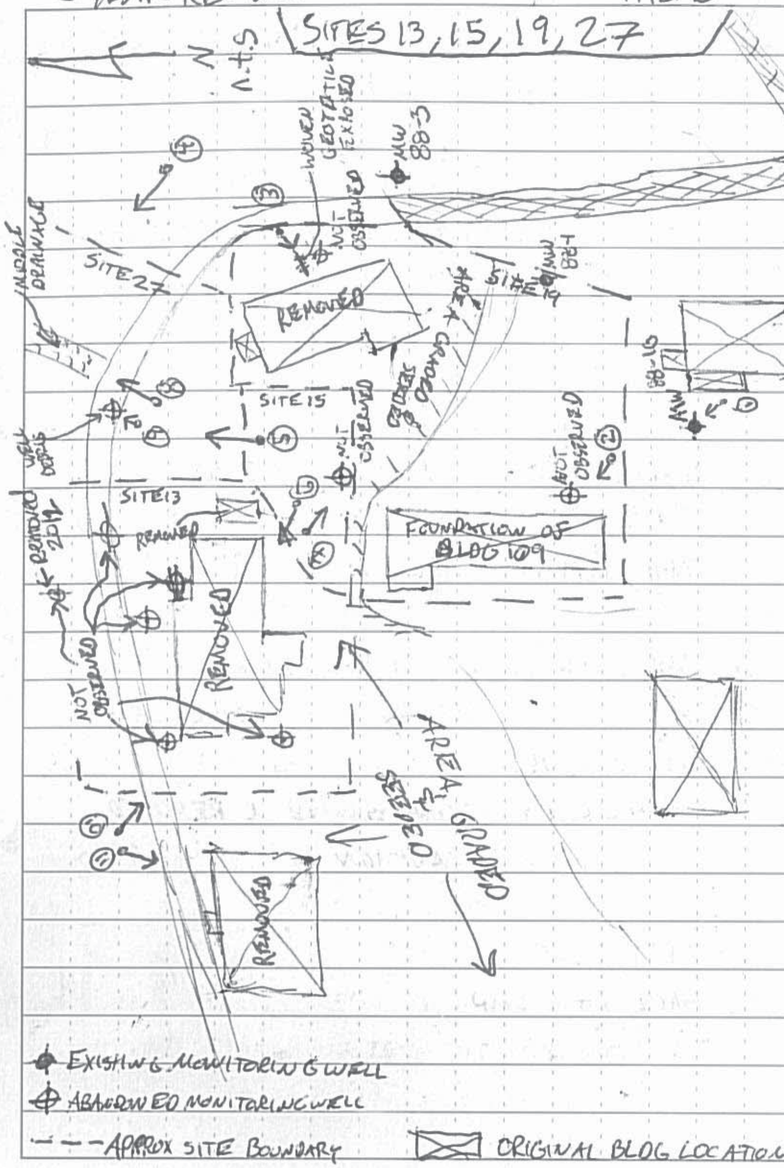
1332 MONITORING WELL MW 88-1 → POOR CONDITION
- WELL MONUMENT (FLUSH) DOES NOT CLOSE
- WELLCASING HAS FROST JACKED AND THE CAP IS NOT LOCKED

1335 MONITORING WELL MW88-3 → POOR CONDITION
- WELL MONUMENT (FLUSH) DOES NOT CLOSE
- WELL CASING HAS FROST JACKED AND THE CAP IS NOT LOCKED

Scale: 1 square =

NE CAPE
5 YEAR REVIEW

USACE
9/15/13



Scale: 1 square =

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

1350 BUILDING AT SITE 13 HAS BEEN REMOVED ALONG WITH THE FOUNDATION

1353 BUILDING & FOUNDATION ON THE NW PORTION OF SITE 19 HAS BEEN REMOVED. THE FOUNDATION FOR THE BUILDING ON THE SW PORTION OF SITE 19 REMAINS.

1355 SITES 13, 15, & 27 HAVE BEEN RECENTLY GRADED, AND SEEDED TO PROMOTE POSITIVE DRAINAGE AND MITIGATE EROSION ALONG WITH THE NORTHERN HALF OF SITE 19

1356 MONITORING WELLS IN THE CENTRAL PORTION OF THE MAIN OPERATIONS COMPLEX (MOC) WERE NOT OBSERVED
↳ LIKELY DECOMMISSIONED OR REMOVED DURING EXCAVATION

1400 LEFT SITE
1415 BACK AT CAMP

Scale: 1 square = _____ PAGE 52

NE CAPE
5 YEAR REVIEW

USACE
9/15/13

1415 5 YEAR REVIEW PAPERWORK
to and QC
1800

End of Day

9/15/13

Scale: 1 square = _____ PAGE 53

NE CAPE USACE

5 YEAR REVIEW 9/16/13

Personnel: C. FELL
J. ORCZEWSKA

Weather: Rain, 30-40°F
light wind

PPE: Mod. Level D

Objectives: - Prep site for Demobe
- QC paperwork
- Interview QAR for any remaining questions

~~08~~ 9/16/13
~~08~~ 0755: Bristol Tailgate

0800: Jacobs Tailgate

0830: Continue site paperwork and QC.

~~1300~~ CF 9/16/13

Scale: 1 square = _____ PAGE 54

NE CAPE USACE

5 YEAR REVIEW 9/16/2013

1030 - Prep gear for Demob

~~1415 - FLIGHT TO DOME~~ CF 9/16/13

1300 - INTERVIEW W/ J. CRANER (USACE)

↳ SITE 28 SEDIMENTATION POND(S)
- PLAN TO NOT CONSTRUCT AS SEDIMENT LOAD IN THE DRAINAGE IS LOW AND CONSTRUCTION WOULD LIKELY INCREASE RISK OF SPREADING CONTAMINATED SEDIMENT

↳ SITES W/ MNA REMEDIES
- PLAN TO REPAIR WELLS NEXT SEASON
- PLAN TO AUGMENT NETWORK TO PROVIDE SUFFICIENT MONITORING NEXT YEAR

1415 - DEMOBE TO DOME
2000 - DEMOBE TO ANC
2130 - END OF DAY

Christopher D. Fell 9/16/13

Scale: 1 square = _____ PAGE 55 Rite in the Rain

NE CAPE 5YEAR REVIEW — USACE PHOTO LOG

CONTINUED FROM PG 61

Date	Photo#	Dir.	Description
9/14/13	070	N/A	Site29 Drum in Pond
	071	SE	Site29 Sugi River
	072	NW	Site29 Sugi River
	073	SW	Site8 South overview
	074	NE	Site8 North Overview
	075	W	Site10 Debris
	076	N/A	Site10 Monitoring well
	077	S	Site10 Bristol Staging
	078	N	Site10 Bristol Staging
	079	N/A	Site10 Concrete Ring
	080	N/A	Site10 drum lid
	081	N/A	Site10 abandoned well
	082	NW	Site11 overview
	083	SW	Site11 overview
	084	N/A	Site11 monitoring well
9/14/13	085	N	Site11 seeding
9/15/13	086	N	Site28 Sedim Pond
	087	W	Site28 Water filters
	088	NW	Site28 Sediment Tubes
	089	E	Site28 Intermed Pond
	090	N	Site28 Floculate add
	091	N	Site28 Intermed Pond
9/15/13	092	NE	Site28 Overview.

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NE CAPE 5YEAR REVIEW — USACE PHOTO LOG

Date	Photo#	Dir	Description
9/15/13	093	SW	Site 28 Overview
	094	E	Site28 Water Pump
	095	E	Site28 Sediment Trap
	096	N	Site28 Bristol Demob
	097	S	Site28 Overview
	098	S	Site28 Dredge
	099	E	Site28 Drainage to Sugi
	100	E	Site28 Wattles before Sugi
	101	W	Site21 Road
	102	W	Site21 Road
	103	SE	Site21 Backfill
	104	E	Site21 Backfill
	105	W	Site21 Silt Fence
	106	S	Site21 Seeding
	107	E	Site21 Road
	108	N	Site16 Overview S28 Access
	109	N/A	Site16 Abandoned well
	110	E	Site16 Overview
	111	S	Site16 Overview
	112	N/A	Site16 abandoned well
	113	N	Site16 Abandoned well
	114	N	MOC Overview
9/15/13	115	N	MOC Overview

Scale: 1 square = _____ PAGE 57

Rite in the Rain

5 year Review
NE CAPE

USACE
PHOTO LOG

Date	Photo #	Dir.	Description
9/15/13	116	N	Site 19 Monitoring well
	117	W	Site 19 GeoTek
	118	W	MOC Overview
	119	~~W~~ N ~~MOC~~ Site 15	Overview
	120	N	Site 13 overview
	121	SE	Site 15 Overview
	122	N	Site 27 drainage
	123	N	Site 27 Well debris
	124	E	MOC Overview
9/15/13	125	S	MOC Overview

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NE CAPE
S-YR REVIEW

USACE
PHOTO LOG

DATE	PHOTO #	DIRECTION FACING	DESCRIPTION
9/12/13	001	S	CALIBRATION YSI
9/12/13	002	S	SITE KMS SAMPLING
9/12/13	003	N	SITE OVERVIEW
9/12/13	004	N	7LF GW SAMPLING LOCATION
9/12/13	005	NE	9LF GW SAMPLING
9/12/13	006	n/a	9LF GW TURBIDITY
9/13/13	007	N	GW attempts 7LF & 9/13/13
9/13	008	N	Site 32 Road ~~bed~~ depression
9/13	009	9/13 NE	Site 32 lower ~~tramway~~ Roadway
9/13	010	9/13 SW	Site 32 Old ~~foundation~~ upper tramway
9/13	011	9/13 W S	Site 32 ~~Debris~~ Old foundation
9/13	012	W	Site 32 Debris
9/13	013	N/A	Site 32 Asphaltic debris
9/13	014	N	Site 32 culvert
9/13	015	E	Site 32 culveet
9/13	016	S	Site 32 metal debris
9/13	017	W	Site 31 Recent grading
9/13	018	N	Site 31 Antenna foundation
9/13	019	W	Site 31 Antenna foundation
9/13	020	E	Site 31 Metal debris
9/13	021	N/A	Site 31 Drain
9/13	022	N	Site 31 Drainage
9/13/13	023	N	Site 31 Depression

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Rite in the Rain

NE CAPE 5-YR REVIEW — USACE PHOTO LOG

DATE	PHOTO #	DIRECTION FACING	DESCRIPTION
9/13/13	Ø24	N	Site31 Foundations N/E
	Ø25	N	Site7 Debris
	Ø26	N/A	Site7 Metal Debris
	Ø27	N/A	Site7 Metal Debris
	Ø28	N	Site7 Rusted Drums
	Ø29	N	Site7 debris in Pnds
	Ø30	N	Site7 landfill cap
	Ø31	N	Site7 Debris in Pond
	Ø32	NW	Site7 Debris in Pond
	Ø33	W	Site7 Debris in Pond
	Ø34	E	Site7 landfill cap
	Ø35	E	Site7 top of cap
	Ø36	E	Site7 Armored rock
	Ø37	N/A	Site7 Debris
	Ø38	S	Site7 Debris
	Ø39	N/A	Site7 Abandoned well loc.
	Ø40	S	Site7 Debris in Pond
	Ø41	N/A	Site7 Possible Drum
	Ø42	N/A	Site9 Abandoned well loc
	Ø43	W	Site9 Diversion trench
	Ø44	W	Site9 landfill cap
	Ø45	E	Site9 Vegetation
9/13/13	Ø46	N	Site9 Pond near cap

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NE CAPE 5-YR REVIEW — USACE PHOTO LOG

DATE	PHOTO #	DIRECTION FACING	DESCRIPTION
9/13/13	Ø47	S	Site9 Culvert
9/14/13	Ø48	S	Site1 Pond
	Ø49	E	Site1 cracking on edge
	Ø50	E	Site1 loading equip
	Ø51	NE	Site1 Runway
	Ø52	NE	Site1 4-wheel tail off runway
	Ø53	W	Site3 Overview
	Ø54	SW	Site3 Pond onsite
	Ø55	S	Site3 Pond onsite
	Ø56	SE	Site3 Recent excavation
	Ø57	N/A	Site3 Sheen in Pond
	Ø58	N/A	Site6 Abandoned well
	Ø59	N/A	Site6 Abandoned well
	Ø60	E	Site6 Bristol Staging
	Ø61	NW	Site6 Bristol Staging
	Ø62	E	Site6 Nearby Pond
	Ø63	E	Site29 Overview from off Road
	Ø64	W	Site29 Overview from Road
	Ø65	E	Site29 Sugi River
	Ø66	SE	Site29 Bristol Water Intake
	Ø67	E	Site29 Sugi River
	Ø68	E	Site29 Culvert
9/14/13	Ø69	W	Site29 Sugi River

* CONTINUED ON PAGE 56 *

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NE CAPE

5 YR REVIEW

USACE

WASTE TRACKING

CONTAINER ID	GEN DATE	CONTENTS	CONTAINER TYPE / DESCRIPTION
13NECAPE-B1	9/12/13	DECON/PURGE H2O/CHL WASTE	5-gallon bucket NON-HAZ
			↳ SHIPPED TO NOME 9/13/13
13NECAPE-B2	9/12/13	IDW/PPE WASTE	5-gallon bucket NON-HAZ
			↳ ADDED TO BRISTOL'S

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APPENDIX D

Photograph Log

Site 7 Cargo Beach Road Landfill
Northeast Cape – St. Lawrence Island, Alaska

PHOTOGRAPH LOG
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PHOTOGRAPH LOG
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Photo Number **Page**

Site 7 Cargo Beach Road Landfill
Northeast Cape – St. Lawrence Island, Alaska

Photo No. 1 – 7 August 2013
Cargo Beach Road and Site 7 Landfill. View facing southwest.

Photo No. 2 – 7 August 2013
Site 7 Landfill East. View facing northwest.

Photo No. 3 – 7 August 2013
Site 7 Landfill North Corner. View facing southeast.

Photo No. 4 – 7 August 2013
Site 7 Landfill Southeast corner. View facing southwest.

Photo No. 5 – 12 September 2013
Overview of Northeast Cape Site. View facing north.

Photo No. 6 – 14 September 2013
View of a pond adjacent to Site 1. View facing south.

Photo No. 7 – 13 September 2013
Wood debris at Site 7. View facing north.

Photo No. 8 – 13 September 2013
Metal debris at Site 7.

Photo No. 9 – 13 September 2013
Metal debris at Site 7.

Photo No. 10 – 13 September 2013
Drum debris located near a pond at Site 7. View facing north.

Photo No. 11 – 13 September 2013
Debris in pond located adjacent to landfill cap at Site 7. View facing north.

Photo No. 12 – 13 September 2013
Condition of northern edge of landfill cap at Site 7. View facing west.

Photo No. 13 – 13 September 2013
Miscellaneous debris in pond adjacent to landfill cap at Site 7. View facing north.

Photo No. 14 – 13 September 2013
Miscellaneous debris in pond near landfill cap at Site 7. View facing northwest.

Photo No. 15 – 13 September 2013
Metal debris in pond adjacent to landfill cap at Site 7. View facing north.

Photo No. 16 – 13 September 2013
Condition of northern edge of landfill cap at Site 7. View facing west.

Photo No. 17 – 13 September 2013
View standing on top of landfill cap at Site 7. View facing northwest.

Photo No. 18 – 13 September 2013
Condition of armored rock on the southern border of landfill cap at Site 7. View facing east.

Photo No. 19 – 13 September 2013
Debris protruding through the southern side of landfill cap at Site 7.

Photo No. 20 – 13 September 2013
Debris located with the armored rock at Site 7. View facing south.

Photo No. 21 – 13 September 2013
Abandoned monitoring well filled with bentonite at Site 7.

Photo No. 22 – 13 September 2013
Debris in pond south of landfill cap at Site 7. View facing south.

Photo No. 23 – 13 September 2013
Apparent drum located in pond south of landfill cap at Site 7.

APPENDIX E

Completed Interview Questionnaire Forms

Interview Record

Name: Robert Annogiyuk	Date: 1-15-2014
Organization: NALEMP Project Manager	Phone Number:
Title:	Email:
Interview Type: Mail/Email	Phone/In Person ✓
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

NALemp - Program moves quickly. sometimes to quickly

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

Not well informed Because of some of the Technical Terms.

Contaminants + what they mean.

- more Introductory information would be helpful so people can Get A better perspective.

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Interview Record

Name: Orville Toolie	Date: 1-15-14
Organization:	Phone Number:
Title: Community Member	Email:
Interview Type: Mail/Email	Phone/In Person
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

   doing pretty good - a lot cleaner than Savoonga

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

No.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

People of Savoonga know whats going on.
→ letters from the corps to update the community

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

use the area for local housing

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

- Would like to have more Evaluation of materials taken off the site + used as Building materials

ref

Interview Record

Name: Members of Kukulget Inc Board of Directors.	Date: ~~01/2014~~ 01/15/2014
Organization: -	Phone Number: -
Title: -	Email: -
Interview Type: Mail/Email	Phone/In Person
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

* Cleanup is a good thing
* How much of that backfilled gravel is contaminated or over contaminated soil?

→ 1952 agreement to Native Village of Savoonga to return site to original condition.

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

* Concerns about what contaminants were left there near the camp.
* Military use - leftovers were dumped and community Dining members picked through the dump to get to the can!

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

* Reports that Bristol + employees were taking four wheelers and beachcombing which violated the agreement with the landowners. (Every summer since work has been performed)

* Medivac injured personell while cleanup going on (2012 and 2013)

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

Yes.

- Don't get too technical – put it in laymens terms.
- more information about ~~[illegible]~~ what areas are clean and which aren't.

* → Decision Document wasn't explained or presented to the community. } major concern

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

* Site walk to previous areas. to get updates. Tribal Council or Corporation would at least have a copy of the signed document.

* Add signage to the landfills (around the perimeter) to notify site visitors.

* Add monitoring wells to landfills and MOC. Include signs OR flags to avoid hitting them in the winter.

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

- Cap was seeded with "local grass"
- "Grass can't grow on rocks" & Open up cap take out debris and change cap material add soil.

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

* Don't drink water from NE Cape anymore
* No longer use Kangukhsam 4th Spring.

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

* Left 2 landfills; if you are already taking out all of that soil; why not remove the debris.
* Site 7; engine, airplane, transformers, batteries, road grader, barrel all seen beneath the surface, Cleanup was only at the surface.
* MOC. all utilidors left in place 1999-2004; more utilidors left in place MOC. one at Pad 98, loading frame was located.
* Septic tank between Site 21 and Site 28.
  → Followup; with information to community OR Remedial Efforts.

* Another dump ↗ South of Radome Site (Site 33?)
  Site located
  "Clean it up"
  → Community members observed helicopter activity around to the south side of the mountain. Believed to haul unknown
* Commercial fishing hot spot outside of Suqi River Drainage. Close to land.
* West side of mtn Kangukksam Mtn. 10+ drums seen while hunting
* Sludge at Site 24 below ponds
  Barrels still remain.
* Long-term monitoring of the Suqi River
  The lagoon at the ~~mouth~~ end of Suqi freezes up. When it opens water movement increases
* Corps should maintain the airstrip
* POL sites limited to 2ft below ground water. Not getting to clean. Contamination remains
* Fragments of asbestos + concrete slabs left at Site 31 + MDC. would like them removed. → What is underneath them — what if we disturb them to use the land?

Interview Record

Name: Dean Kolawiyo	Date: 1-15-2014
Organization: Community Member	Phone Number:
Title:	Email:
Interview Type: Mail/Email	Phone/In Person ✓
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

Clean-up part is going ok. Happy work is moving Forward

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

When can you get information. Why are taking so long?

Feels like some community concerns are not being addressed. (Health)

Family members were put at risk by participating in clean-up prior to Hazwoper.

Interview Record

Name: Name withheld		Date: 1-15-2014
Organization: Community Member		Phone Number:
Title:		Email:
Interview Type:	Mail/Email	Phone/In Person
Site (s) Name:	Northeast Cape, St. Lawrence Island	

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

Email maps of what areas are above the clean-up level.

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

- Beachcombers are concern, because in my opinion I consider it trespassing.

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

Likes the format of the RAB meetings. good information.

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Would like to move out there in the future

Interview Record

Name: Name Withheld	Date: 01/15/2014
Organization: Community Member	Phone Number:
Title:	Email:
Interview Type: Mail/Email	Phone/In Person
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

- want the whole area cleaned up - not just the individual site. lack of information / understanding
- concern about ammo, weapon storage at NE Cape - where location is, if contamination remains.

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

Gallons of heating fuel -

Health problems in Savoonga - problems that didn't exist before

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

NO

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

No - would like more information about what they have found

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

NO

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

* No good understanding of the DD and how it was signed etc.

* SW cape, Sipen pak camps,
  - material used contain lead-based paint that originated at NE Cape. Paint and tar used.

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

NO

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Do not have confidence that the land is clean. "I don't want to use that land! It might still be dirty."

Interview Record

Name: Pamela Miller and Vi Waghiyi	Date: 1-24-14
Organization: Alaska Community Action on Toxics and Native Village of Savoonga Tribal Member (Vi)	Phone Number: (907) 222-7714
Title: Executive Director (Pamela Miller) and Environmental Health and Justice Program Director and NVS Tribal Member (Vi Waghiyi)	Email: pamela@akaction.org and vi@akaction.org
Interview Type: **Mail/Email**	
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

The clean-up of the Northeast Cape site is far from complete and not protective of the health of the people living on the Island. We believe that the site was not properly characterized and thus the remediation has not been fully informed enough to identify and remove important source areas of contamination. Source areas of contamination are still contaminating the Suqi River and ground water. We are concerned about continuing contamination of the Suqi River and estuary from fuel-related compounds from prior large spills, PCBs, and pesticides. The Suqi River, once a prime fishing location for the people of St. Lawrence Island, has not recovered because of the damage caused by the military occupation, activities, and on-going contamination from sources areas.

2. **From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?**

The original community at NE Cape, the Native Village of Northeast Cape, was and continues to be displaced by the military operations at NE Cape. The people of St. Lawrence Island intend to re-establish the community at NE Cape, however cannot do so until they are assured that the cleanup is protective of health and well-being for a residential community and future generations. People cannot safely use the NE Cape area for traditional hunting and fishing or for the harvesting of food (greens and berries) and medicinal plants. The ground- and surface sources of drinking water sources are not safe.

Monitored Natural Attenuation is not an acceptable remedy as it will take decades for levels of contamination to reach "safe" levels. The contamination has already harmed the health of generations of families associated with NE Cape. Overall, we do not think the remedies are protective of health and the environment. We think and the tribe supports that other active remediation methods must be used, including additional and effective removal as well as active chemical oxidation as proposed by the RAB Technical Advisor.

Cleanup standards are far from adequate. For example, DRO cleanup standards for soil are 9,200 mg/kg. At those levels, contaminated soils will continue to serve as a source of contamination to ground- and surface waters. We believe that the contamination remaining in landfill sites at NE Cape is of great concern for health since they were simply capped and will remain in place and unabated. Leachate from these landfills will continue to harm and present hazards to the Suqi River watershed, fish and wildlife, and people's health.

Detection limits used for analysis and Aroclor analysis rather PCB congener analysis are not adequate methods to properly characterize the nature and extent of contamination. The analytical methods are not sensitive enough to assess the range of contaminants known to exist in the sediments, soils, water at NE Cape. Analyses should include: congener-specific PCBs, mirex, HCB, dioxins/furans, DDE, BTEX, PAHs, and others. Also, we think that TCE and other solvents, as well as vinyl chloride should be included among the analytes. People are also concerned that there might be undisclosed information about what harmful substances were used and/or left at NEC, including the possible use of radionuclides/radiation hazards.

The Army Corps of Engineers has not conducted proper government-government consultation according to their legal obligations. The past Corps of Engineer's Project Managers have not been culturally sensitive.

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

The military was not been responsible for posting proper signage in the Yupik language to warn people about the hazards of the site following their abandonment of the site. Therefore, people salvaged hazardous materials and used them for homes and cabins. Also, to this day, there are no warnings concerning the danger of consuming water from the Suqi River.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

We had to submit a petition to the Army Corps of Engineers to establish a Restoration Advisory Board (RAB). Although the RAB meetings provide information sharing, concerns and information requests expressed by community members and our technical advisor have not been respected or acted upon.

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

The site cleanup should not be closed at this stage because of the remaining contamination. Long-term monitoring should include re-installment at sites where monitoring wells have been removed and installment of new monitoring wells in key locations such as down gradient from

the Main Complex and the landfill sites (including sites 7, 9, 10, for example). Integrative sampling methods should be employed within the Suqi River (such as SPMDs), as well as sediments cores within the Suqi River and its estuary, biological sampling of fish and wildlife that use the NEC area. As mentioned above, proper analytical techniques and improved characterization must be done. As stated by the RAB technical advisor, the estuary needs improved characterization and should be subjected to innovative remedial measures to reduce the concentration and distribution of chlorinated (PCBs, mirex, DDE and others), non-chlorinated organics, and metals (e.g. Hg). The Corps of Engineers has disregarded the on-going contamination by PCBs in the Suqi River and effects to water quality of the soluble PCB congeners and input to the estuary.

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

Yes. The tribe should be an official signatory to the Decision Document. The site should continue to receive active remediation and not be closed – additional monitoring and remediation is needed as discussed above.

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

As described above, the remedial actions have not been sufficient to protect the health of people of St. Lawrence Island. Physical processes used to remove contaminated sediments are likely or will likely uncover additional contaminated sediments. This is not acceptable since previous sampling may not have included elevated concentrations. Disturbed samples are a new environment and may result in further exposures.

The cleanup is NOT complete and unless it is completed, it will continue to cause harmful exposures and prevent adequate health protections.

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

The RAB community members, tribal leaders, and RAB technical advisor's knowledge, concerns, and recommendations have not been followed or addressed by the Corps of Engineers or their contractors. Jacobs Engineering, as the third party independent reviewer, should review past RAB meeting minutes, RAB member statements/comments, and Technical Advisor statements and include these in the Review since most of these expressed concerns have not been addressed. These concerns and recommendations must be addressed for the protection of the health and well-being of the St. Lawrence Island Yupik people and future generations.

INTERVIEW RECORD

Site Name: Northeast Cape	**FUDS ID No.: F10AK096903**
Site Location: Northeast Cape, Saint Lawrence Island, Alaska	
Subject: First 5-Year Review	**Date: January 27, 2014**
Interview Type: ☐ Telephone ☐ Visit ☐ Email ☒ Questionnaire	

Interviewee:

Name: Curtis Dunkin	**Title: Environmental Program Specialist**	**Organization: Alaska Department of Environmental Conservation**
Telephone No: 907.269.3053 **Fax No: 907.269.7649** **E-Mail Address: Curtis.dunkin@alaska.gov**	**Street Address: 555 Cordova St.** **City, State, Zip: Anchorage, AK 99501**	

The following general questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

INTERVIEW QUESTIONS

1. What is your overall impression of the project?

Remedial activities at Northeast Cape (NEC) have been ongoing for over 15 years; of which mobilizations to conduct remedial actions and remedy implementations have been occurring at the site the past 5 consecutive field seasons. In the past six years the Army Corps of Engineers (Corps) has prioritized the resources necessary to implement the cleanup at NEC and it is ADEC's understanding that the Corps plans to continue doing so until all remedies are implemented and protectiveness is achieved at all NEC sites. Remedial actions at NEC have been a very large and complicated undertaking due to the remoteness of the site, the short field season, and the complexity of the contamination issues. Overall, ADEC perceives the remedial activities to have occurred in an adequate and timely manner that is in accordance and consistency with CERCLA law and ADEC regulations. To date, a large majority of the planned removal actions have been completed and it is ADEC's understanding that the Corps plans to continue mobilizing and conducting remedial actions in the 2014 field season as well as in future years to continue cleaning up and/or monitoring the contamination at the NEC sites.

ADEC will be submitting comments pertaining to each specific site being evaluated as part of this First Five-year Review for NEC to be considered and included in the draft 2014 Five-year Review Report after ADEC has received and reviewed the draft 2013 NEC Remedial Action Report.

2. From your perspective, what effects have site operation had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

Saint Lawrence Island residents and community members have expressed both gratitude that the NEC FUDS is being cleaned up as well as concerns regarding the overall protectiveness of the remedies in the 2009 Decision Documents. From ADEC's perspective, the immediate effects of site operations on the surrounding community (Savoonga and the Native Village of NEC) have been positive mainly due to the decrease in human and environmental exposure risks via the removal and offsite disposal of extensive volumes of contaminated soil. ADEC will be submitting comments pertaining to each specific site being evaluated as part of this First Five-year Review for NEC to be considered and included in the draft 2014 Five-year Review Report after ADEC has received and reviewed the draft 2013 NEC Remedial Action Report.

3. Are you aware of events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

ADEC is not aware of any events of vandalism, trespassing, or emergency responses from local authorities that have occurred in association with the NEC FUDS and/or its associated contamination issues.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

ADEC perceives that it is well informed about the remedial activities and progress associated with NEC. ADEC staff travel to Savoonga twice a year to attend the semi-annual Restoration Advisory Board meetings. ADEC staff travel to NEC at least once annually to conduct multi-day facility-wide site inspections of the remedial activities being conducted during the field season; and has in recent years conducted two separate site inspections. ADEC staff regularly participate in in-person meetings and teleconferences with project team members as needed. ADEC staff, per ADEC's CERCLA regulatory authority, review, submit comments, and grant approvals of work conducted in association with the contaminated sites issues at NEC. During field seasons when remedial activities are being conducted at NEC, the Corps has kept ADEC apprised with daily quality control and progress reports. The Corps has also notified ADEC in a timely manner whenever there has been a change in site conditions and/or when it has required ADEC's review, input, and approval to implement remedial activities.

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

Yes. ADEC will be submitting comments pertaining to each specific site being evaluated as part of this First Five-year Review for NEC to be considered and included in the draft 2014 Five-year Review Report after ADEC has received and reviewed the draft 2013 NEC Remedial Action Report.

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

ADEC is not aware of any problems which have required or will require changes to any of the selected remedies or the two 2009 Decision Documents. ADEC will be submitting comments pertaining to each specific site being evaluated as part of this First Five-year Review for NEC to be considered and included in the draft 2014 Five-year Review Report after ADEC has received and reviewed the draft 2013 NEC Remedial Action Report.

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

ADEC is not aware of any changes in land use, access, or site conditions associated with NEC which have occurred in the past five years that have had or may have an impact on protectiveness. ADEC will be submitting comments pertaining to each specific site being evaluated as part of this First Five-year Review for NEC to be considered and included in the draft 2014 Five-year Review Report after ADEC has received and reviewed the draft 2013 NEC Remedial Action Report.

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

ADEC will be submitting comments pertaining to each specific site being evaluated as part of this First Five-year Review for NEC to be considered and included in the draft 2014 Five-year Review Report after ADEC has received and reviewed the draft 2013 NEC Remedial Action Report.

9. Miscellaneous Comments:

ADEC will be submitting comments pertaining to each specific site being evaluated as part of this First Five-year Review for NEC to be considered and included in the draft 2014 Five-year Review Report after ADEC has received and reviewed the draft 2013 NEC Remedial Action Report.

Interview Record

Name: Mitchell Kiyuklook	Date: 4Feb2014
Organization: Pres. of Native Village of Savoonga	Phone Number: N/A
Title:	Email:
Interview Type: Mail/Email	Phone (circled) / In Person
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

- looks like to be more cleaned up
Buried drums - at the landfills - would like them cleaned up.
Recycling Metals place - found trace of radiation -
→ NALEMP coorinator, ADOT, EPA, Ron Scudato — conf. call. 29 Jan 14?
→ Elders speak about dead Walruses — Winefred James (Gambell) Black, burned skin.

(margin note: NE Cape was active last from when the military was still there.)

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

— Increase incidence of cancer - concerned with the high rate of cancer on the island.
— High rate of PCB in the blood.

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

Collection of construction materials for use around the island.
↳ historic

a lot of exposure occurred during this time.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

Not really -

→ Help to understand what cleanup levels mean.
→ Better explanation of what the regulations mean and how the cleanup levels were established.

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

- Cleanup should be longer.
- DRO spill at Site 11 → could smell the DRO approx 6-7 miles. — DRO level is too high.

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

— Possible radiation that was identified on recycled metals. (Trace identified - unclear on location or source)
— Want it removed from the land.

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

Sugi river ~~bec~~ does not have as much fish as before
Seal numbers have gone done - slowly returning
Subsistence is affected - The area is not used as much as it used to. Slowly returning.

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

* Do more research and testing of the soil + water.
— Provide information before the reports come out. Native Village of Savoonga
— sampling of the reindeer again initiated.
- now that cleanup efforts have been initiated.
- dust stirup, leaching, etc...
↳ affecting lichen + grass.

Interview Record

Name: Paul Rookok	Date: 04 Feb 2014
Organization: Tribal Gov. in Savoonga	Phone Number: N/A
Title:	Email:
Interview Type: Mail/Email	Phone/In Person (Phone circled)
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?

* Cleanup missed in areas that weren't included as a sites.

— As a laborer we were told to only cleanup the areas that were within the site.

— Wires and cables remain and were mostly covered by vegetation + water.

– "overall it's a fair job - not a good one."

*more sampling should have been done during the RIs to get a better sense of whats there.

– Took a lot of talking to get and old truck remove from landfill east of Y area

→ hardly any shareholders working on the cleanup - shareholders - would like to see more shareholders earning money on cleanup and - would also help w/ communication

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

only a handful of people know about the cleanup.

– most shareholders don't have any ideas.

To get information out - more details are needed to be explained - use layman's terms.

→ To the corporation

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

Shareholders in Gambell complaining about recreational activities in their leisure time - employees that were not shareholders were riding ATV offsite and rumors indicate they were taking artifacts, old ivory, etc. Things that belong to the Native Corp. These are cultural and traditional items.

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

— We need something that explains what's been cleaned up that everyone can understand.

— only a handful of people know - just people that worked there.

— Pictures are nice however it doesn't tell a complete story. What they are doing and why?

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

Work with Native Corp at Savoonga + Gambell and the IRA.

Protect the artifacts + respect environment

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

Need a better understanding of DD.

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

Site belongs to Gambell & Savoonga.

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Should be up to the Corporations & not any body.

Interview Record

Name: Delbert Pungowiyi	Date: 04Feb2014
Organization: Community Member	Phone Number: N/A
Title: Former Pres of Nat. Village of Savoonga	Email: —
Interview Type: Mail/Email	Phone/In Person
Site (s) Name:	Northeast Cape, St. Lawrence Island

The following interview questions are based on EPA guidance (EPA 540-R-01-007). Questions may be left unanswered if they do not apply to you.

Interview Questions

1. What is your overall impression of the project (general sentiment)?
   - Happy that Congress is moving forward and getting cleanup going
   - Very disappointing.
   - It has been a huge ordeal to get the Corps to clean up the site to Residential cleanup levels
   - From the Beginning there is always been a concern with cost not safety. It's disappointing.

2. From your perspective, what effects have site operations had on the surrounding community? Are you aware of any community concerns/complaints regarding site operations, administration, implementation, or overall protectiveness of the remedies in the Decision Documents?

   concerns ↓

   * The Native Village of Savoonga should be included as a signatory on the Decision Document ESD, given the agreement that took place on 1952. (Ratified by Sec. of State)

   → Health of the people on island particularly Cancer. PCB levels are very high[1] - Causes Fear in the community. Common phrase is "Who's next?"

   Health has been affected dramatically.

3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

NO.

No - ACAT and Ron Scudato have been instrumental in getting information to the community.

communication is lacking. where are we at with the cleanup?

4. Do you feel well informed about the site's activities and progress? Have there been communications or activities regarding the site?

NO. lack of communication + honesty.
- Difficult to deal w/ Corps Don't want to deal w/ Corps of AK - should be dealing with Washington. Government - to - Government relationships are non-existance.
- Repatriation Act of Aleuts.

Eye to Eye. There No need to deal with Alaska. This is is a federal issue.

5. Do you have any suggestions regarding future operation, maintenance, and monitoring (OMM) at the site?

- This should be negotiated with tribal governments - they need to be involved.

- get the debris out of landfills - not satisfied - theres still possibilety for things to migrate out. Its just gravel for a cap.

6. Have any problems been encountered which required, or will require, changes to the remedy or Decision Document?

* Metals taken off island to be recycled have shown levels of radiation
* Seals [redacted] numbers have decreased in the area.
* Determining POL was biogenic ~~no~~ was inaccurate ~~by~~ without a reasonable doubt.

7. Are you aware of any changes in land use, access, or other site conditions that have occurred in the past five years that you feel may impact the protectiveness of the site?

People are scared of the area. Prior to the cleanup there was high levels of PCB -
- Wash all of the berries
- Dust stirred up is a concern - did this result in spread of PCBs?

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Most Imp. - It is illegal that they signed the DD and excluded the Native Village of Savoonga - We have strong opposition to the ~~remedies and the~~ document itself. I would like closure brought to this cleanup by including Native Village of Savoonga and have a Congressional hearing in Washington. The island needs recognition for the role they played for this country and the mistreatment of the peoples Human Rights.

PCB as high as 7.5 ppm on the Island.

→ Record of Decision should be Native Village of Savoonga and the Commander and Chief not corps and State of AK.

APPENDIX F

Public Notice Documentation

US Army Corps of Engineers Announces Start of Five-Year Review

The Unites States Army Corps of Engineers at Joint Base Elmendorf-Richardson (JBER) announces the beginning of the Five-Year Review of cleanup remedies being implemented at the Northeast Cape Formerly Used Defense Site located on St. Lawrence Island, Alaska.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 121, and the National Contingency Plan requires that remedial actions which result in any hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure be subject to a five-year review.

The purpose of the Five-Year Review is to evaluate whether the remedies selected to clean up contaminated sites are operating as designed and remain protective of human health and the environment.

Detailed information concerning the Northeast Cape cleanup effort is available at the following information repositories :

Alaska Resources Library & Information Services, University of Alaska, Anchorage
3211 Providence Drive
(907) 786-1871

Savoonga City Hall
(907) 984-6614

Gambell Sivuqaq Lodge
(907) 985-5335

The findings of the Five-Year Review will be available for review after September 2014.

Interested persons can participate in the Five-Year Review process through December 2013 by responding to a questionnaire available from:

Kevin Maher, Jacobs Engineering
4300 B Street, Suite 600
Anchorage, AK 99508
kevin.maher@jacobs.com (907) 563-3322

Information on the cleanup process is shared with interested persons through periodic Northeast Cape public meetings. If you would like to be added to the contact list, contact Valerie Palmer at (907) 753-2578 or POA-FUDS@usace.army.mil

Publisher's Affidavit

UNITED STATES OF AMERICA,

State Of Alaska } **SS:**

Second Division

I N. A, being first duly sworn on oath deposes and says:

That I am and was at all times herein this affidavit mentioned, administrator-ads of THE NOME NUGGET, a newspaper of general circulation and published weekly at Nome, Second Division, State of Alaska, and online that the ~~Stebbins 5-Yr Reviews~~ St Lawrence Island a printed copy of which is hereto annexed, was published in said paper once and every week for one successive and consecutive weeks in the issues of the following dates:

August 22, 2013

X N. A

SUBSCRIBED and SWORN to before me this 2nd day of October, 2013

NOTARY PUBLIC in and for the State of Alaska.

My commission expires 12/07/16

NANCY L. MCGUIRE NOTARY PUBLIC STATE

FIVE-YEAR REVIEW
NORTHEAST CAPE FORMERLY USED DEFENSE SITE
ST. LAWRENCE ISLAND, ALASKA

September 2013

FIVE-YEAR REVIEW

The United States Army Corps of Engineers (USACE) at Joint Base Elmendorf-Richardson is undergoing a five-year review of remedial actions implemented at the Northeast Cape Formerly Used Defense Site located on St. Lawrence Island, Alaska.

The five-year review is a detailed evaluation of the implementation and performance of the remedy selected to achieve environmental cleanup. The objective of the evaluation is to document if cleanup activities (or "remedies") are protecting people and the environment. If the remedies are not effective, the five-year review makes recommendations to improve protectiveness. This evaluation is required by federal regulations, and the Alaska Department of Environmental Conservation (ADEC) will review the process to ensure completeness and accuracy. This will be the first five-year review for Northeast Cape.

SITES INCLUDED IN THE FIVE YEAR REVIEW

Based on the signed decision documents, remedial actions were selected for various sites to address surface soil, subsurface soil, groundwater, and sediment contaminated with polychlorinated biphenyls (PCB), diesel-range organics (DRO), residual-range organics (RRO), arsenic, benzene, and naphthalene. The following table lists the sites and the remedial actions performed at each site.

Site Number and Name		Action
Site 1	Air Strip	EX/D
Site 3	Fuel Pumphouse	EX/D
Site 6	Gravel Pad	EX/D
Site 7	Cargo Beach Road Landfill	C/LUC
Site 8	Petroleum, Oil, and Lubricant Spill	MNA/LUC
Site 9	Housing and Operations Landfill	C/LUC
Site 10	Buried Drums	EX/D and MNA/LUC[1]
Site 11	Fuel Tanks	EX/D and MNA/LUC[1]
Site 13	Heat and Power Plant	EX/D and MNA/LUC[1]

Site Number and Name		Action
Site 15	Fuel Pipeline	EX/D and MNA/LUC[1]
Site 16	Paint and Dope Storage	EX/D
Site 19	Auto Maintenance	EX/D and MNA/LUC[1]
Site 21	Wastewater Tank	EX/D
Site 27	Diesel Fuel Pump	EX/D and MNA/LUC[1]
Site 28	Drainage Basin	EX/D
Site 29	Suqitughneq River	Incidental Debris Removal
Site 31	White Alice Communications	EX/D
Site 32	Lower Tramway	EX/D

Notes:
EX/D = Excavation with disposal or treatment
MNA/LUC = Monitored natural attenuation with land use controls
C/LUC = Capping with land use controls
[1]Although chemical oxidation was identified as the primary remedy in the decision documents, it was not implemented. The contingency remedy described in the decision documents, excavation of soil and monitored natural attenuation of groundwater, will be implemented.

COMMUNITY INVOLVEMENT

The community is encouraged to participate in the review process. Public comments may be provided by responding to a written questionnaire through December 2013, or in person following the December 2013 Restoration Advisory Board public meeting in Savoonga. The questionnaire can be requested from and comments submitted to:

Kevin Maher, Jacobs Engineering Group Inc.
4300 B Street, Suite 600
Anchorage, AK 99508
kevin.maher@jacobs.com (907) 563-3322

ADDITIONAL INFORMATION

Documents pertaining to background information and the decision documents for Northeast Cape are on file at the following information repository locations:

Alaska Resources Library and Information Services, University of Alaska, Anchorage
3211 Providence Drive
(907) 786-1871

Savoonga City Hall
(907) 984-6614

Gambell Sivuqaq Lodge
(907) 985-5335

Information on the cleanup process is shared with interested persons through periodic public meetings. If you would like to be added to the contact list, contact Valerie Palmer at (907) 753-2578 or POA-FUDS@usace.army.mil

US ARMY CORPS OF ENGINEERS
Alaska District
P.O. Box 6898 (CEPOA-PM-ESP)
JBER, AK 99506-0898

OFFICIAL BUSINESS

DELIVER TO: