

STATE OF ALASKA

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM**

SEAN PARNELL, GOVERNOR
610 University Avenue
Fairbanks, AK 99709-3643
PHONE: (907) 451-2702
FAX: (907) 451-5105
www.dec.state.ak.us

File: 1542.38.001

February 9, 2012

Scott Berglund
Federal Aviation Administration
Environmental Section
AAL-471, FAA
222 W. 7th Ave, Box 14
Anchorage, AK 99513-7587

Re: **Federal Aviation Administration (FAA) Biorka Island Station Living Quarters
Summary of Evaluations and Determinations**

Dear Mr. Berglund:

The Alaska Department of Environmental Conservation Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Federal Aviation Administration FAA Biorka Island Station located in the Necker Islands in southeast Alaska in Sections 7 and 8, Township 58 South, Range 62 East of the Copper River Meridian. Based on the information provided to date, ADEC has determined the site status of each of the areas of concern. The current status of the sites is listed below, and the body of the decision document summarizes the history of the site and explains the site status determination for each area of concern. Please note that a separate Record of Decision documents the FAA Biorka Island Station VORTAC and associated sites.

Comprehensive Site Status Summary for All Biorka Island Areas of Concern

The following identifies ADEC site status determinations for all Areas of Concern (AOCs) on Biorka Island. For clarity, this list includes AOCs which are not addressed in this letter. Specific details for each AOC and file references are available within the text, or in another document.

AOCs Addressed in this letter:

Further action required

- Building 601 ASTs
- Pipeline 47-P-10
- Wood Crib/Culvert near Building 300

- Contaminated Soil at Beach Tank Farm Fill Valve

Cleanup Complete:

- 2.5 Inch Cross Island Aboveground Pipeline
- Former Pipeline 47-P-09
- Gasoline Spill at Building 300
- Petroleum Contamination at Buildings 100-102
- Lead Contamination at Buildings 100-102
- Living Quarters Former Tank Farm
- Dry Well at Building 302
- Cell Phone Tower Facility
- Former Diesel AST 47-D-2

Cleanup Complete – LUST:

- Former UST 47-D-1 and Potentially Contaminated Soil Disposal Area

Not an AOC:

- Former Soil Stockpile near Road
- Former Transformer Pad near Dock
- US Coast Guard Transformer near Building 300

AOC Addressed in the January 7, 2010 ADEC Decision Document FAA Biorka Island RCAG, Record of Decision:

Cleanup Complete

- FAA Biorka Island RCAG

AOCs Addressed in the February 9, 2012 ADEC Decision Document FAA Biorka Island Station VORTAC Summary of Evaluations and Determinations:

Further Action Required

- Storage Shed and Drum Storage Area
- Unpermitted Landfill under Helipad
- Diesel AST near Building 402

Cleanup Complete

- 3.5 Inch Fuel Pipeline
- ¾ inch Supply and Return Pipeline

Cleanup Complete – LUST

- Diesel Tank Farm USTs 47-A-2, 47-A-3, 47-A-4
- Gasoline UST 47-A-1
- Diesel UST 47-C-01

Not an AOC

- Former Transformer Pad
- Transformer #141870
- Small Vehicle Leak (Stain #2)

AOC with Undetermined Site Cleanup Responsibility

- LORAN Facility

Introduction

These site status decisions are based on the administrative record for the FAA Biorka Island Living Quarters site, which is located in the offices of ADEC in

Fairbanks, Alaska. This decision document summarizes the decision process used to determine the environmental status of the areas of concern at the site and provides a summary of the regulatory issues considered in the determination.

Regulatory authority under which the site is being cleaned up:
18 AAC 75 and 18 AAC 78

Background

The FAA, formerly known as the Civil Aeronautics Administration (CAA), and the US Coast Guard began activities on the Biorka Island property in 1951. In 1956, the CAA obtained a 155-acre parcel of land around the docks. A 24-acre native allotment parcel near the docks was also transferred. The Living Quarters and Dock facilities are located within the former 24-acre native allotment, at the head of Symonds Bay. The facility operations have been ongoing with buildings alternately constructed, remodeled, or demolished over the years. Most of this facility is covered by pad fill and grass. With the exception of the Living Quarters Tank Farm area, the topography of the facility is flat with an average slope of less than 1 percent.

Currently, there are no year-round residents on Biorka Island. Several facility buildings and the facility grounds are used by Southeast Alaska Regional Health Consortium (SEARHC) Community Health Service of Sitka, as the Raven's Way mental health treatment center. Frequent visitors to the island include treatment groups (generally consisting of 10 teenagers and 7 adult staff), FAA personnel performing maintenance on generators, and air navigational aids.

Characterization and Cleanup Activities

The following reports document characterization and cleanup actions at the Biorka Island Station:

- Ecology and Environment Inc. *Environmental Compliance Investigation Report for Biorka Island Navigation Aid Station, Biorka Island*. April 1992.
- Ecology and Environment Inc. *Site Cleanup and Investigation Report, Biorka Island FAA Station, Biorka, Alaska*. December 1994.
- CH2MHill Inc. *Site Closure Report, Quarters Area Biorka Island, Alaska*. June 2003.
- CH2MHill Inc. *Quarters Area Tank Farm, Biorka Island, Alaska*. July 2003.
- CH2MHill Inc. *Site Closure Report, Building 300 and 601 Area, Biorka Island, Alaska*. March 2006.
- Bristol Construction Services, LCC. *Groundwater Sampling and Environmental Investigation, Biorka Island, Alaska, Closeout Report Final*. August 2008.
- Federal Aviation Administration. *Memorandum for the Record: Lead Contaminated Soils Around the Perimeter of Bldgs 100, 101, 102 at Biorka Island, Alaska*. April 2011.

Additional site specific activities are noted in the section ADEC Decision. The attached Compilation of Sample Results for Living Quarters Determinations

identifies analytical and observational data of special significance for each site. General figures from site investigation reports are also attached to identify the general physical locations of each site.

Contaminants of Concern

The contaminants of concern at the Living Quarters facilities are:

- Diesel Range Organics (DRO)
- Gasoline Range Organics (GRO)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Polychlorinated Biphenyls (PCBs)
- Lead

Cleanup Levels

The Department approved alternate cleanup levels for DRO, GRO and Benzene, as well as Method 2 Migration to Groundwater Cleanup levels for BTEX, and PCBs. Use of Alternate Cleanup Levels at this site would require long term monitoring and maintenance.

Contaminant	Method 2 Above 40 Inch Zone Cleanup Levels (mg/kg)					
	Alternate Cleanup Levels	Migration to Groundwater	Ingestion	Inhalation	Direct Contact	Outdoor Inhalation
Diesel Range Organics (DRO)	1860	260	8250	12500		
Gasoline Range Organics (GRO)	1400	230	1400	1400		
Benzene	0.0401	0.025			120	8.5
Toluene		6.5			6600	220
Ethylbenzene		6.9			8300	81
Xylenes		63			16600	63
Polychlorinated Biphenyls (PCBs)					1	
Lead					400	

Pathway Evaluation

The exposure pathways for human health that were evaluated include the following: migration to groundwater, incidental ingestion of soil, inhalation of vapors in indoor and outdoor air, and dermal contact with soil. Drinking water is obtained from a rainwater cistern, or alternately, from a freshwater lake. Groundwater, where present, is brackish and is not used as a drinking water source. Contaminant concentrations exceeding cleanup levels remain at the site.

Exposure to these areas will be controlled with institutional controls, until further assessment or remediation actions are taken.

The exposure pathway analysis above was supported by the most recent ADEC Exposure Tracking Model (ETM) ranking. The ETM results showed all pathways for closed sites to be De Minimis Exposure or Pathway Incomplete.

ADEC Further Action Required Determination

ADEC has determined that further action is required to address soil contamination issues at the following sites. These sites are currently designated as separate Source Areas within site 1542.38.001. These Source Areas will remain open and active within the ADEC Database until remediation work is complete.

Building 601 ASTs - This site is listed in the ADEC Database as Source Area 78358. Building 601 was the site of several ASTs and documented soil contamination in association with these tanks. A removal action occurred in 2005. Samples at the limits of the excavation were below alternate cleanup levels in 30 of 34 samples taken, with 8 samples exceeding ADEC Method 2 Migration to Groundwater cleanup levels. With the exception of sidewall sample 601Q32 and its duplicate, samples in excess of ADEC Method 2 Migration to Groundwater cleanup levels were collected from irregular depressions in the bedrock, where further excavation was not possible. Concentrations up to 5800 mg/kg DRO were identified in these irregular bedrock depressions. Sample 601Q32 indicates that additional contamination may exist beneath Building 601. FAA must complete the following to reach a Cleanup Complete determination: identify and remove contaminated soils from beneath Building 601, and confirm that remaining contamination is not likely to migrate to groundwater and is present below ADEC Method 2 Outdoor Inhalation and ADEC Method 2 Ingestion cleanup levels.

Former Pipeline 47-P-10 - This site is listed in the ADEC Database as Source Area 78364. Former Pipeline 47-P-10 was a 2 inch pipeline extending from North-Northwest of Building 200 to East of Building 201. In June of 2004, approximately 10 cubic yards of soil were removed from the southern end of the pipeline, with field screening to confirm successful removal of impacted soils. Six laboratory samples were also collected and submitted for laboratory analysis. Parts of the northern section of the pipeline were determined to be too close to active utilities adjacent to the road. 4 test pits were hand excavated at these locations and a sample was collected from each pit. The test pits documented concentrations of DRO up to 5,600 mg/kg in sample 90Q02. The extent of soil contamination associated with Former Pipeline 47-P-10 in the vicinity of Building 201 is not clear. FAA must complete the following to reach a Cleanup Complete determination: confirm that the extent of petroleum contamination along the section of former Pipeline 47-P-10 near Building 201 is limited in area, and confirm

that remaining contamination in this area is not impacting groundwater and is not likely to migrate to groundwater from this location.

Wood Crib/Culvert near Building 300 - This site is listed in the ADEC Database as Source Area 79109. The Wood Crib/Culvert is located beneath the roadway approximately 30 feet north of Building 300. The Wood Crib/Culvert was discovered during the installation of Monitoring Well BKA04-89 in 2004. Analytical samples taken during installation of this well measured DRO levels in soil of 12,000 mg/kg at 3 to 4 feet bgs, and 6,000 mg/kg at 5 to 6 feet bgs, with a groundwater sample detecting DRO at 3.1 mg/L. An analytical sample was taken in June 2008 with DRO concentrations of 3,220 mg/kg at 8.5 feet bgs. Arsenic was measured in the 2006 sampling event at concentrations of 5.25 mg/kg, above ADEC Method 2 cleanup levels but consistent with elevated background levels measured in 1994. Contaminants remain at this site in excess of ADEC Method 2 Migration to Groundwater cleanup levels to depths of 8.5 feet. Groundwater sampled at this site exceeds ADEC Table C Groundwater Cleanup Levels for DRO and RRO. FAA must complete the following to reach a Cleanup Complete determination: remediate contaminated soil at the location of the Wood Crib/Culvert to levels below ADEC Method 2 Migration to Groundwater cleanup levels and verify that groundwater is no longer being impacted at this site.

Contaminated Soil at Beach Tank Farm Fill Valve - This site is listed in the ADEC Database as Source Area 79111. The Former Beach Tank Farm area is located north of the Living Quarters area. Work conducted in 2006 at a fill valve near the Beach tanks encountered contaminated soil during an excavation. Historic photography indicated that the location was the site of several ASTs which are the suspected source of contamination. The area has not been characterized and it is uncertain what amount of contamination may exist at this location. FAA must complete the following to reach a Cleanup Complete determination: investigate and characterize contamination at the Fill Valve Area, and remediate contaminated soil at the site to ADEC Method 2 Migration to Groundwater cleanup levels.

ADEC Cleanup Complete Determination

ADEC has determined that a Cleanup Complete determination is appropriate for the following sites. These sites are currently designated as separate Source Areas in site file 1542.38.001. These Source Areas will be reranked within the ADEC Database to document their Cleanup Complete determination.

2.5 Inch Cross Island Aboveground Pipeline - This site is listed in the ADEC Database as Source Area 79017. The 2.5 inch Cross Island Aboveground Pipeline spans from the Beach Tank Farm area to the LORAN tank farm (former Living Quarters Tank Farm). This distance of approximately 2 miles generally paralleled the main road. As part of the 1994 interim cleanup, 36 cuts were made to the pipeline and approximately

350 gallons of diesel fuel were drained from the line. The line was left in place. Twenty locations were field screened for potential leaks, including all low points along the line; three locations were analyzed in the field lab due to high readings. The three locations were examined in 2005, with no indications of stains or stressed vegetation found. ADEC has determined that contamination at this location presents *De Minimis* risk to humans or the environment at this site due to the relatively low potential concentrations, isolated and difficult to reach locations of contamination, and highly organic soil conditions which limit potential migration of contaminants. A Cleanup Complete determination is made for the 2.5 inch Cross Island Aboveground Pipeline.

Former Pipeline 47-P-09 - This site is listed in the ADEC Database as Source Area 78365. Former Pipeline 47-P-09 was a $\frac{3}{4}$ inch, threaded black iron fuel pipeline traveling between Building 300 and Building 201. Upon excavation and removal of the pipeline, field screening was conducted to characterize possible fuel contamination. Soil adjacent to Building 300 was discovered in excess of Method 2 cleanup levels, with the remainder of the field screening indicating a low risk of significant petroleum contamination associated with the pipeline. In 2005, contaminated soil associated with Building 300 was excavated and removed. The FAA has characterized contamination at this site, and remaining contamination is below ADEC Method 2 cleanup levels. A Cleanup Complete determination is made for Former Pipeline 47-P-09.

Building 300 Gasoline Spill - This site is listed in the ADEC Database as Source Area 78359. In June 2001, an accidental gasoline spill occurred along the roadside near Building 300. FAA personnel were on scene at the time and immediately responded to the spill. Samples were taken in 2002 by excavating 8 test pits, with concentrations below ADEC Method 2 Migration to Groundwater cleanup levels in 4 test pits. In two test pits adjacent to the entrance of Building 300, GRO, benzene, toluene, ethylbenzene, and total xylenes were above ADEC Method 2 Migration to Groundwater Cleanup Levels. Two other test pits near Building 300 slightly exceeded ADEC Method 2 Migration to Groundwater cleanup levels for benzene. In 2008, two test pits were excavated immediately north and south of the entrance to Building 200 and field screened, with one analytical sample taken from the area of the highest field screen results. BTEX was not detected, and concentrations of GRO were measured well below ADEC Method 2 Migration to Groundwater cleanup levels. The FAA has appropriately characterized the contamination related to the 2001 accidental gasoline spill. Contamination which has previously exceeded cleanup levels is limited to a small volume of less than 1 cubic yard, and has been attenuating. ADEC has determined that remaining contamination at this site is *De Minimis*. A Cleanup Complete determination is made for the Gasoline Spill near Building 300.

Lead Contamination at Buildings 100, 101, and 102 - This site is listed in the ADEC Database as Source Area 79025. Former Buildings 100, 101, and 102 were used as residences until their demolition in 2001. Lead based paint was used on the exterior of Buildings 100, 101, and 102. Analytical sampling indicated that lead contamination was limited to within 4 feet of the buildings. In 2001, these buildings were demolished. Demolition activities included the removal of soils around the perimeter of each building, to a depth of 4 inches and 4 feet out from the building wall. Confirmation sampling for lead indicated that concentrations were below ADEC cleanup levels; any residual lead contamination is considered to be *De Minimis* in concentration and volume. A Cleanup Complete determination is made for the lead contamination at former Buildings 100, 101, and 102.

Petroleum Contamination at Buildings 100, 101, and 102 - This site is listed in the ADEC Database as Source Areas 79356. A fuel line supplied heating fuel to these buildings until the mid 1970s, when an AST was installed at each building. These three ASTS were removed in 2002 along with approximately 900 cubic yards of soil. Confirmation sampling indicated that one sample at the Building 102 excavation exceeded ADEC Method 2 Migration to Groundwater cleanup levels for DRO, but did not exceed Ingestion and Inhalation cleanup levels. Based on results from excavations at former Buildings 100 and 101, ADEC has determined that soil characteristics at this location will retard migration of DRO to groundwater at former Building 102. ADEC has determined that remaining petroleum contamination at the former Buildings 100, 101, and 102 is *De Minimis* in concentration and volume. A Cleanup Complete determination is made for the petroleum contamination at former Buildings 100, 101, and 102.

Living Quarters Former Tank Farm - This site is listed in the ADEC Database as Source Area 78360. The former Living Quarters Tank Farm included a 5,000 gallon AST, two 2,000 gallon ASTs, and a 600 gallon gasoline AST. These tanks were removed in 1994, at which time approximately 500 sq ft of stained soil were observed. A release investigation indicated the site had become contaminated, presumably from surface releases diesel and gasoline. In 2002, approximately 800 cubic yards of soil were excavated and temporarily stored in a stockpile prior to off-site remediation. Samples collected at the limits of excavation indicated that contaminated soil has been excavated to the extent practicable. An area of approximately 400 sq ft could not be completely excavated due to irregular depressions and fracturing of bedrock. Three groundwater monitoring sets were below ADEC Method 2 Groundwater cleanup levels. Although contaminated soil remains in place above ADEC Method 2 Migration to Groundwater cleanup levels, groundwater data indicates that contamination is not significantly dissolving into the aquifer. Remaining contaminated soil is *De Minimis* in volume, is not expected to migrate or leach off site, and is below ADEC Method 2 Inhalation and Ingestion cleanup levels. A Cleanup Complete determination is made for the former Living Quarters Tank Farm.

Dry Well near Building 302 - This site is listed in the ADEC Database as Source Area 78366. A Dry Well was located a short distance from Building 302 and appears to have provided a drain point for floor drains in Building 302. Building 302 has historically been used as a storage, shop, and temporary housing facility. The three floor drains leading to the dry well were tested for PCBs in 1994 prior to sealing; concentrations were detected but below cleanup levels. The dry well was located in 2002 and a soil sample taken from the bottom of the well indicated detectable levels of petroleum contamination at concentrations below ADEC Method 2 Migration to Groundwater Cleanup Levels. PCBs were not detected at the bottom of the dry well. A Cleanup Complete determination is made for the former Dry Well near Building 302.

Cell Phone Tower Facility - This site is listed in the ADEC Database as Source Area 79112. During the 2008 investigation, soil contamination was discovered at the former Cell Phone Tower Facility. Two soil samples identified DRO contamination at concentrations of 1,630 mg/kg and 1,190 mg/kg. ADEC has determined that the highly organic composition of the soil, distance to groundwater, and limited area of contamination indicates that contamination is not likely to migrate into groundwater at this location. Contamination at this site is well below ADEC Method 2 Ingestion and Inhalation cleanup levels. A Cleanup Complete determination is made for the former Cell Phone Tower Facility.

Former Diesel AST 47-D-02 - This site is listed in the ADEC Database as Source Area 79113. The AST was located adjacent to the former Non Directional Beacon building, which has since been demolished and replaced with a NEXRAD facility. In 1994, the 500 gallon diesel AST was removed along with approximately 30 cubic yards of soil. Confirmation sampling after the removal action did not detect DRO or benzene. Contamination associated with this site has been fully addressed. A Cleanup Complete determination is approved for Diesel AST 47-D-02.

ADEC Cleanup Complete - LUST Determination

ADEC has determined that a Cleanup Complete Determination is appropriate for the following LUST site. This site is referred to as a separate area of concern (AOC) in site file 1542.38.001. This site will be designated in the ADEC Database as Cleanup Complete.

UST 47-D-01 and Soil Disposal on Cross Island Road - This site is listed in the ADEC Database as Source Area 79023. This UST was associated with the former Non Directional Beacon building, which has been demolished and replaced with a NEXRAD facility. In 1994, the 1,000 gallon diesel UST was removed along with approximately 10 cubic yards of contaminated soil. Two confirmation samples were taken from the limits of excavation. DRO was detected at concentrations of 9000 mg/kg and 230 mg/kg. An unknown

volume and concentration of remaining contaminated soil was inadvertently removed in 1994 during the excavation and removal of 2800 cubic yards of soil. This comingled 2800 cubic yards of soil was placed at a hairpin turn uphill from the Quarters area. Site inspections at the hairpin turn in 1993 and 1994 did not note any contamination or environmental concerns at this location. The action of excavation, transportation, and dispersal of potentially contaminated soil likely diluted the contaminated soil with clean soil, aerated the mix, and made it impossible to differentiate the contaminated soil stockpile. Significant migration of contamination is unlikely based on information from other diesel contaminated locations on Biorca Island. A Cleanup Complete determination is approved for the Diesel UST 47-D-01 and Potentially Contaminated Soil Disposal Area.

ADEC Not an Area of Concern Determination

ADEC has determined that the following sites are not areas of concern.

Former Soil Stockpile Near Road - During cleanup activities in 2000, 2001, and 2004, a temporary stockpile was established along the cross island road near a hairpin turn. Stockpiled soils were temporarily stored before transport to Seattle for treatment and disposal in July 2004. All soils were appropriately manifested and disposed. Samples taken after the removal of the stockpile did not indicate migration of contaminants. This location is not an area of concern under 18 AAC 75 or 18 AAC 78.

Former Transformer Pad Near Dock - A pad for a former transformer exists near the dock in the Living Quarters area. There is no documented release from this transformer. In 1992, a soil sample and a wipe sample were taken to confirm that contamination was not present in the area. PCBs were not detected in either sample. The former Transformer Pad near Dock location is not an area of concern under 18 AAC 75 or 18 AAC 78.

US Coast Guard Transformer - A transformer was previously located adjacent to Building 300. There is no documented release from this transformer. In 1992, a soil sample and a wipe sample were taken to confirm that contamination was not present in the area. PCBs were not detected in either sample. The US Coast Guard Transformer near Building 300 location is not an area of concern under 18 AAC 75 or 18 AAC 78.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 -18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days after the

date of issuance of this decision document, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this decision document, please contact the ADEC project manager, Fred Vreeman at (907) 451-2181 or by email at fred.vreeman@alaska.gov.

Approved By



Fred Vreeman
Environmental Program Manager

Recommended By



James Ward
College Intern III

Enclosure: Compilation of Sample Results for LQ Determinations
Excerpted figures 3-16 and 3-12 (Bristol Construction Services 2008)
Excerpted figures 3-1 and 3-3 (Ecology and Environment 1994)

cc: Mark Ridgway, US Coast Guard
Michael Wilcox, US Forest Service
Tim Chittenden, US Forest Service

SITE SUMMARY TABLE

for:

FAA Biorka Island - Living Quarters

File: 1542.38.001

Hazard ID: 901

ATTACHMENT 1

Site	Sample #	Contaminates of Concern							Report
		DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	ethyl benzene (mg/kg)	xylenes (mg/kg)	PCB (mg/kg)	
Method 2 Migration to GW Cleanup		230	260	0.025	6.5	6.9	63	1	
Method 2 Over 40" Zone		1860	1400	0.0401					
Alternative Cleanup Levels									
Building 601 ASTs 4 ASTs, EE315, 316, 317, 318 (QS AOC5) Source Area 78358	BKA04SS601Q27 (Floor, bedrock)	5800							
	BKA04SS601Q32D (Wall, bedrock)	2400							
	BKA04MW89Q01 (Sentry GW)	3.1							CH2MHill, Site Closure Report, Building 300 and 601 Area, Biorka Island, Alaska. March 2006
Decision	The Building 601 area will remain open with the expectation of additional work to be conducted in 2012								
Comments	A cleanup excavation in 2004 removed soil to bedrock; 32 of 34 confirmation soil samples were below ACLs but the foundation of Building 601 prevented complete excavation. FAA has indicated that Building 601 will be demolished in 2012. Contamination near and beneath building 601 should be characterized and remedied to ADEC method 2 cleanup levels.								
Pipeline 47-P-10 between Buildings 200 and 201 (QS AOC10) Source Area 78364	BKA06SD201Q01 (sediment)	13.7	ND	ND	ND	ND	ND	--	
	BKA06SD201Q02 (sediment)	8.06	1.23	ND	ND	ND	ND	--	Bristol Construction Services, LCC, Groundwater Sampling and Environmental Investigation, Biorka Island, Alaska, Closeout Report Final. August 2008
Decision	Pipeline 47-P-10 will remain in open status with the expectation of additional work to be conducted in 2012.								
Comments	Minimal concentrations of contamination have been detected where pipeline 47-P-10 has been excavated, but uncertainty remains due to prior inability to excavate contaminated soil adjacent to utilities near Building 201 and near Building 601. FAA has indicated that Building 601 will be demolished in 2012. Contamination near and beneath Building 601 should be characterized and remedied to ADEC method 2 cleanup levels.								

SITE SUMMARY TABLE

for:

FAA Biorka Island - Living Quarters

File: 1542.38.001

Hazard ID: 901

Site	Sample #	Contaminates of Concern						Report
		DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	ethyl benzene (mg/kg)	xylene (mg/kg)	
Wood Crib/Culvert near Building 300 (QS AOC9) Source Area 79109	BKA-04MW89Q01 (groundwater)	--	3.1 mg/L	--	--	--	--	CH2MHill, Building 300 and 601 Area, Biorka Island, Alaska. March 2006
	BKA04-MW89S504 (3-4' bgs)	12000	120	--	--	--	0.065	Bristol Construction Services, LLC, Groundwater Sampling and Environmental Investigation, Biorka Island, Alaska, Closeout Report Final. August 2008
	BKA04-MW89S504 (5-6' bgs)	6000	51	--	--	--		
	BKA06SS300Q03 (8.5' bgs)	3220	4.46	--	--	--		
This site will remain open with the expectation of additional work to be conducted in 2012.								
Contamination at this location exceeds cleanup levels for DRO to a depth in excess of 8.5' bgs.								
Contaminated Soil at Beach Tank Farm Fill Valve Source Area 79111	--	--	--	--	--	--	--	CH2MHill, Building 300 and 601 Area, Biorka Island, Alaska. March 2006
	This site will remain open with the expectation of additional work to be conducted in 2012.							
Contaminated soil was discovered at a fill valve near the Beach tanks in 2006 but was not adequately characterized. Historic photography indicated that the location was the site of several ASTs. The extent of contamination at this site must be characterized and remedied to ADEC method 2 cleanup levels.								
2.5 inch Cross Island aboveground Pipeline (QS AOC3) Source Area 79017	P001SL	TPH 17315	--	--	--	--	--	Ecology and Environment, Site Cleanup and Investigation Report, Biorka Island FAA Station, Biorka, Alaska. December 1994
	A Cleanup Complete designation is approved for the 2.5 inch Cross Island Aboveground Pipeline.							
As part of the 1994 interim cleanup, 36 cuts were made to the pipeline and approximately 350 gallons of diesel fuel were drained from the line. The line was left in place. Twenty locations were screened for potential leaks, including all low points along the line; 3 locations were analyzed with the field lab due to high readings. The three locations were examined in 2005, with no indications of stains or stressed vegetation found. The locations of three high readings are isolated and difficult to reach, with excavation likely to cause greater harm to the environment.								

SITE SUMMARY TABLE

for:

FAA Biorka Island - Living Quarters

File: 1542.38.001

Hazard ID: 901

Site	Sample #	Contaminates of Concern						Report
		DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	ethyl benzene (mg/kg)	xylenes (mg/kg)	
Pipeline 47-P-09 between Buildings 300 and 201 (QS AOC13) Source Area 78365	BKA04SS57	TPH 278	--	--	--	--	--	CH2MHill, Site Closure Report, Building 300 and 601 Area, Biorka Island, Alaska. March 2006
Decision	A Cleanup Complete designation is approved for Pipeline 47-P-09.							
Comments	During the excavation of Pipeline 47-P-09, soil adjacent to Building 300 was discovered that exceeded Method 2 cleanup levels. These impacted soils were excavated in 2005; the remainder of the removed pipeline was field screened and did not indicate contamination at levels near Method 2 Cleanup levels.							
Gasoline Spill near Building 300	"Drain Pit Sidewall" BKA06SS300Q01	--	17600	662	3320	573	2885	CH2MHill, Site Closure Report, Building 300 and 601 Area, Biorka Island, Alaska. March 2006
Decision	A Cleanup Complete designation is approved for the Gasoline Spill near Building 300							
Comments	Following a gasoline spill in 2001, 4 out of 14 samples exceeded Method 2 Migration to Groundwater cleanup levels. Two of these samples near Building 300 slightly exceeded benzene cleanup levels, and two of these samples were located near a drain pit outside the entrance to Building 300. A sample taken in 2008 at the location of the previous sampling was well below cleanup level, indicating that attenuation had reduced the concentration of contaminants at this site.							

SITE SUMMARY TABLE

for:

FAA Biorka Island - Living Quarters

File: 1542.38.001

Hazard ID: 901

Site	Sample #	Contaminates of Concern							Report
		DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	ethyl benzene (mg/kg)	xylenes (mg/kg)	PCB (mg/kg)	
Petroleum and Lead Contamination at Buildings 100, 101, 102 (QSC AOC7) & (QS AOC16) Source Area 79025 & 78356	Bldg 100	ND	ND	ND	ND	ND	ND	ND	CH2mHill, Site Closure Report, Quarters Area Biorka Island, Alaska. June 2003
	Bldg 101	ND	ND	ND	ND	ND	ND	ND	
	Bldg 102	ND	ND	ND	ND	ND	ND	ND	
	BKA02SS178Q01	553	ND	ND	ND	ND	ND	ND	
Decision	A Cleanup Complete designation is approved for the petroleum contamination at Buildings 100, 101, and 102.								
Comments	A Letter sent in February 2004 serves to document that contaminated soil in the specific area of Bldgs 100-102 area has been removed to the greatest extent practical, groundwater is not impacted, and the ADEC does not require additional treatment in this area. Contamination at former Building 102 is above migration to groundwater cleanup levels but below direct contact and inhalation cleanup levels. Since groundwater at this location is not contaminated and the volume of contaminated soil appears minimal, this exceedence is determined to be <i>De Minimis</i> . Lead paint associated with these buildings chipped onto adjacent soil, resulting in lead contamination above ADEC Method 2 cleanup levels. Soil removals during demolition of Buildings 100, 101, and 102 resulted in the removal and off-site disposal of lead contaminated soil associated with these sites. Any residual lead contamination is determined to be <i>De Minimis</i> .								
Living Quarters Tank Farm EE311, 312, 313, 314 (QS AOC8) Source Area 78360	BKA02SS099T12	--	7.42	0.066					CH2MHill, Quarters Area Tank Farm, Biorka Island, Alaska. July 2003
	BKA02SS099T13	3920	3.20	0.155					
	BKA02SS099T14	2610	18.6	0.0288					
	BKA02SS099T34	--	6.49	0.0952					
	BKA02SS099T35	2620	14.7	0.408					
	BKA02SS099T37	2010	1.59	ND					
	BKA02SS099T38	--	5.52	0.0803					
Decision	A Cleanup Complete designation is approved for this site.								
Comments	Contaminated soil has been excavated to the extent practicable, however an area of approximately 400 sq ft could not be excavated due to irregular depressions of bedrock below groundwater. 3 previous GW monitoring sets were below ADEC Method 2 groundwater cleanup levels (Bristol 2008). Although remaining contamination remains in place above migration to groundwater cleanup levels, groundwater data indicates that contamination is not leaching. Remaining contaminated soil is <i>De Minimis</i> in volume, is not expected to migrate or leach, and is below ADEC Method 2 Inhalation and Ingestion cleanup levels.								

SITE SUMMARY TABLE

for:

FAA Biorka Island - Living Quarters

File: 1542.38.001

Hazard ID: 901

Site	Sample #	Contaminates of Concern						Report	
		DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	ethyl benzene (mg/kg)	xylenes (mg/kg)		PCB (mg/kg)
Dry Well near Building 302 (QS AOC15) Source Area 78366	BKA06SS302Q01	ND	ND	--	--	--	--	ND	Bristol Construction Services, LCC, Groundwater Sampling and Environmental Investigation, Biorka Island, Alaska, Closeout Report Final. August 2008
	BKA06SS302Q02	ND	ND	--	--	--	--	ND	
Decision	A Cleanup Complete designation is approved for the Dry Well near Building 302.								
Comments	Although sediment samples in Building 302 contained contaminants of concern, samples at and near the dry well did not detect petroleum hydrocarbons, VOCs, or PCBs.								
Former Cell Phone Tower Facility	BKA06SSCRSM02	1630	--	--	--	--	--	--	Bristol Construction Services, LCC, Groundwater Sampling and Environmental Investigation, Biorka Island, Alaska, Closeout Report Final. August 2008
	BKA06SSCRSM04	1190	1.09	--	--	--	--	--	
Decision	A Cleanup Complete designation is approved for the Former Cell Phone Tower Facility								
Comments	Contamination at this site is above ADEC Method 2 Migration to Groundwater Cleanup Levels, however, the highly organic composition of the soil, minimal volume of groundwater, and limited amount of contamination indicates that diffusion of contamination into groundwater is unlikely. Contamination at this site is well below ADEC Method 2 Ingestion and Inhalation cleanup levels.								
UST 47-D-01 and Soil Disposal on Cross Island Road Source Area 79023	BKA94IC-509065L	9000	ND	ND	22	ND	ND	--	Ecology and Environment, Site Cleanup and Investigation Report, Biorka Island FAA Station, Biorka, Alaska. December 1994
Decision	A Cleanup Complete designation is approved for UST 47-D-01								
Comments	UST 47-D-01 was a 1,000 gallon diesel UST excavated in 1994, along with 10 cubic yards of contaminated soil. DRO was detected at the limits of excavation at concentrations of 9,000 mg/kg. A substantial but unknown volume of additional soil was inadvertently excavated and placed at a hairpin turn uphill from the Quarters area. Significant migration of contaminants is unlikely after the action of excavation, transportation, and dispersal of contaminated soil.								

SITE SUMMARY TABLE

for:

FAA Biorka Island - Living Quarters

File: 1542.38.001

Hazard ID: 901

Site	Sample #	Contaminates of Concern							Report
		DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	ethyl benzene (mg/kg)	xylenes (mg/kg)	PCB (mg/kg)	
Former Soil Stockpile Near Road (QS AOC19)	BKA04SL001M08	150	<5	ND	ND	ND	ND	--	Smith Bayliss LeResche Inc. Corrective Action Final Soil Disposal Report . October 2004
Decision	This site was adequately addressed and is not considered an area of concern.								
Comments	Stockpiled soils were temporarily stockpiled before transport to Seattle for treatment and disposal. All soils were appropriately manifested and disposed. Samples taken after removal of the stockpile did not indicate migration of contaminants.								
Former Transformer Pad near Dock (QS AOC1)	S-BKAQUA-7	--	--	--	--	--	--	ND	Ecology and Environment Inc, Environmental Compliance Investigation Report for Biorka Island Navigation Aid Station, Biorka Island. April 1992
Decision	This site was adequately addressed and is not considered to be an area of concern.								
Comments	No documented release. FAA took a soil sample & wipe sample to verify conditions.								
US Coast Guard Transformer Building 300 (QS AOC6)	S-BKAQUA-6	--	--	--	--	--	--	ND	Ecology and Environment Inc, Environmental Compliance Investigation Report for Biorka Island Navigation Aid Station, Biorka Island. April 1992
Decision	This site was adequately addressed and is not considered to be an area of concern.								
Comments	There was no documented release of contaminants and no sign of stressed vegetation or indications of a release.								

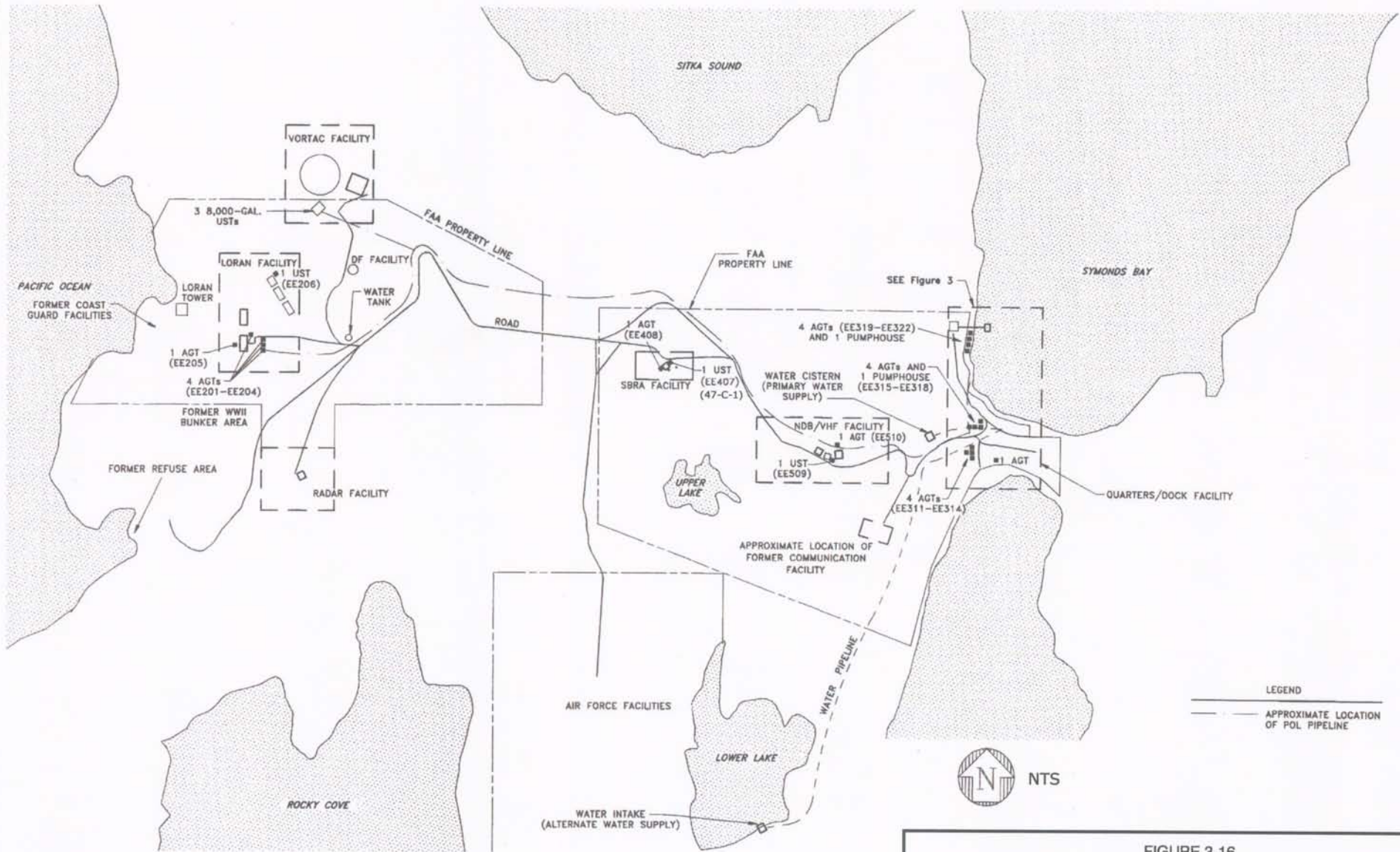


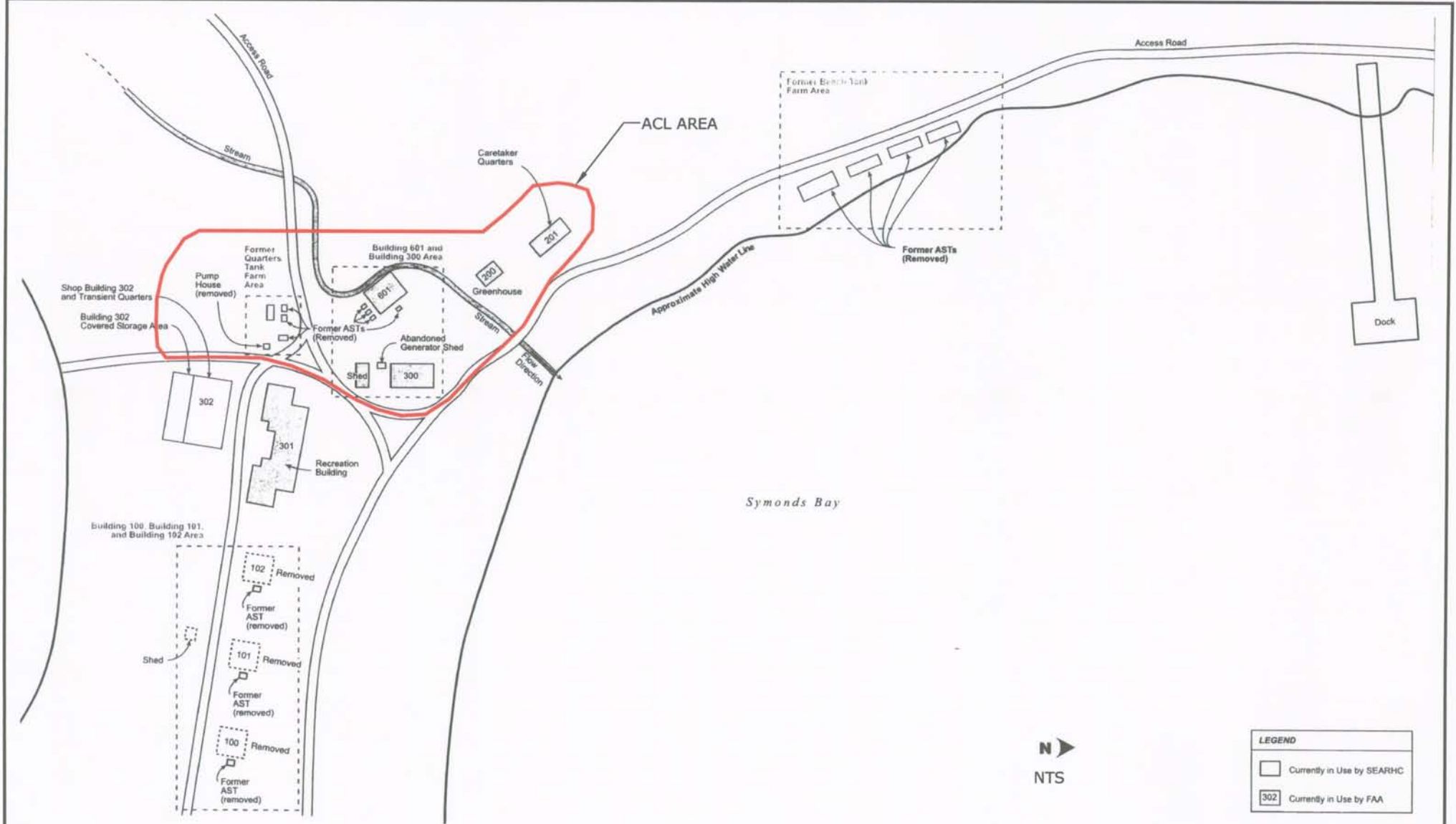
FIGURE 3-16
 BIORKA ISLAND FAA STATION
 BIORKA ISLAND, ALASKA
 SBRA FACILITY LOCATION MAP

SOURCE: ECOLOGY AND ENVIRONMENT, INC.
 FIGURE 2, TANK LOCATION AND IDENTIFICATION MAP
 JUNE, 1994




Phone (907) 563-0013 Fax (907) 563-6713
 Project No. 57002

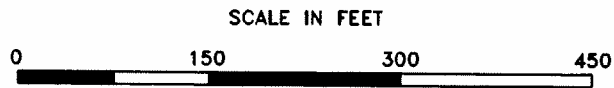
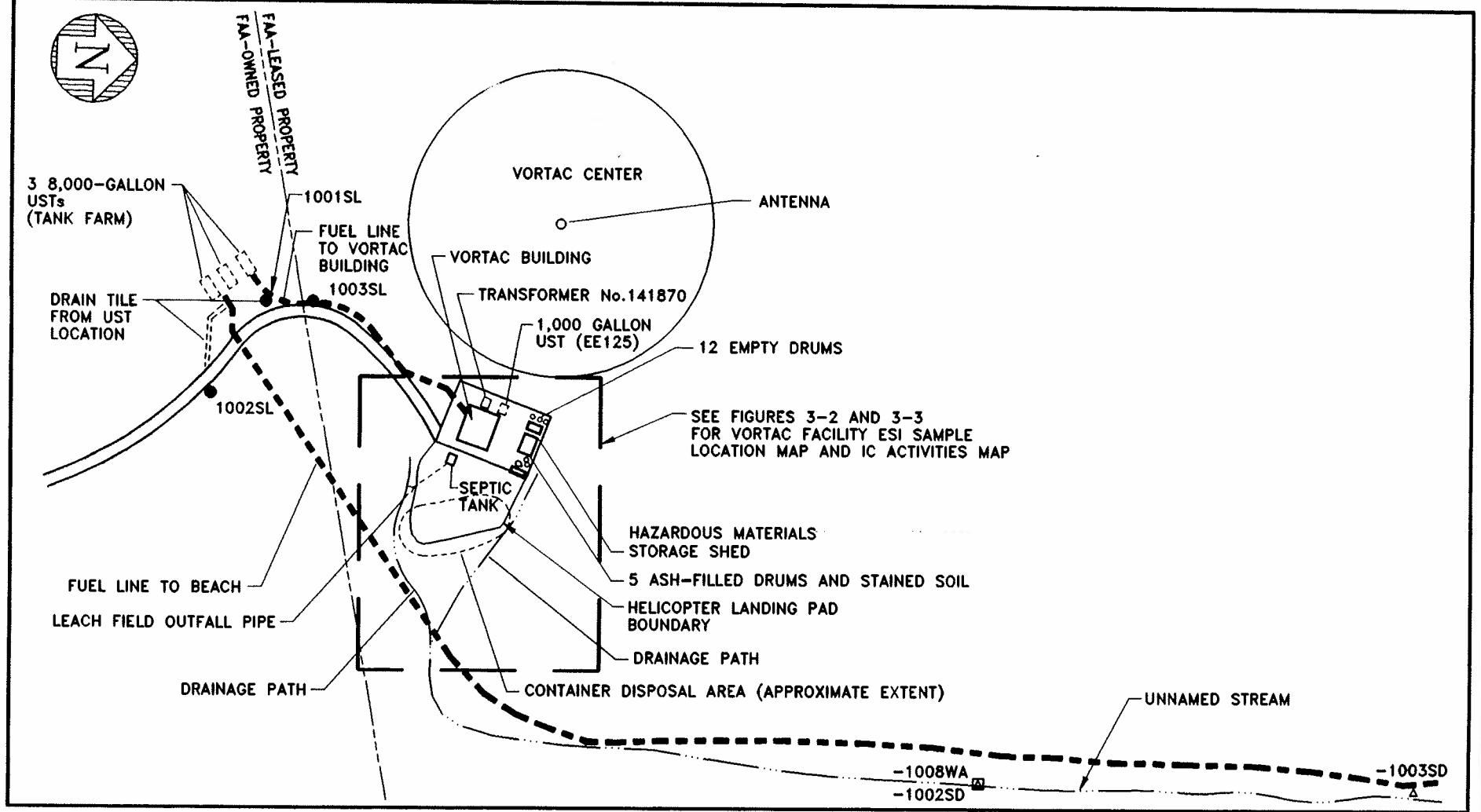
DATUM:	DATE	04/21/06	SHEET
NA	DWN.	MTG	16
PROJECTION:	SCALE	SHOWN	of
NA	APPRVD.	SJ	17



SOURCE: CH2MHILL CONSTRUCTORS, INC.
 FIGURE 2-2, QUARTERS/DOCK FACILITY MAP
 DECEMBER, 2004

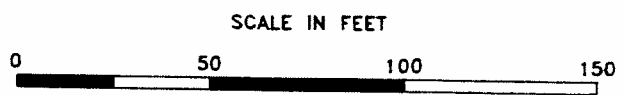
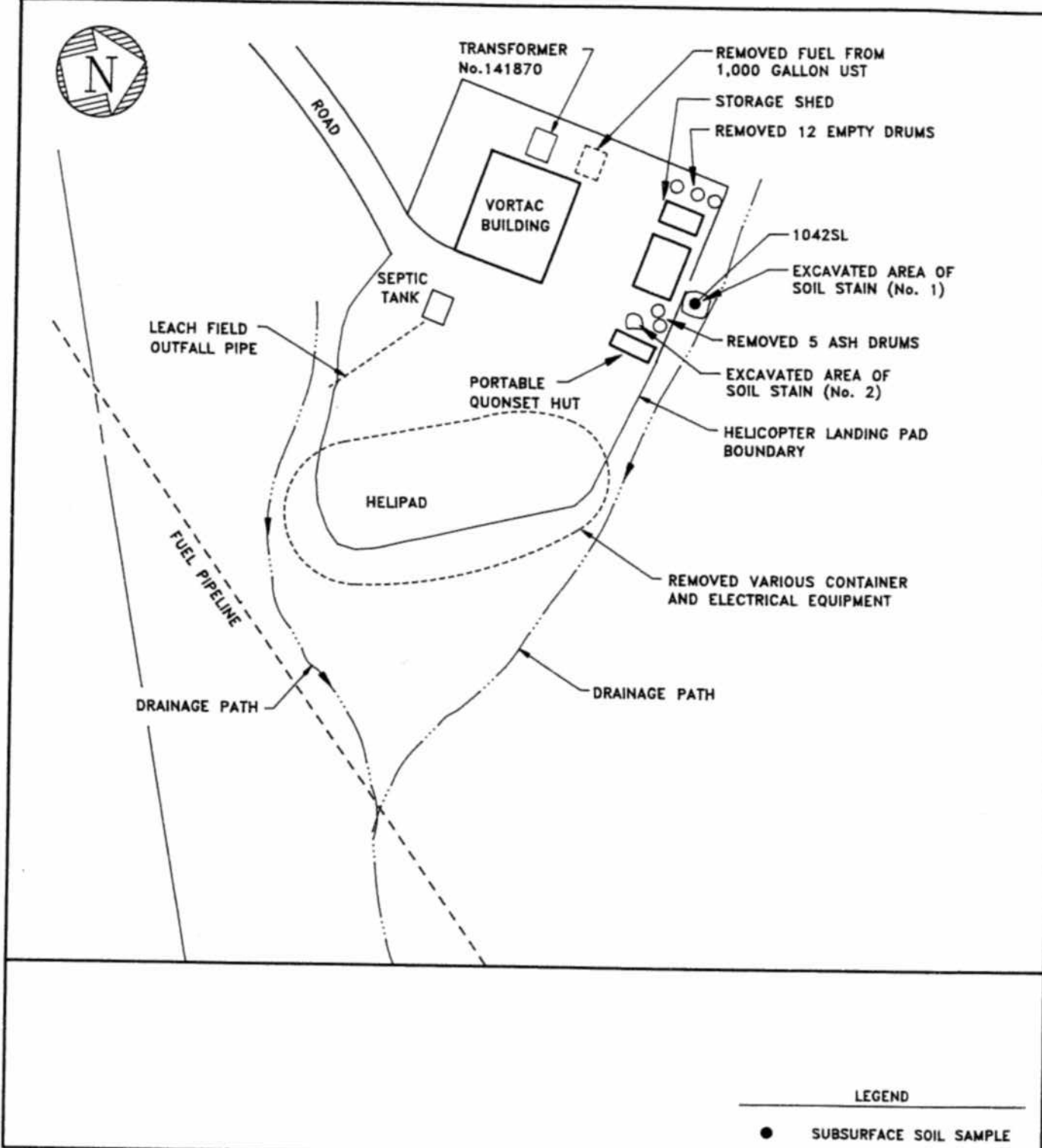
FIGURE 3-12
BIORKA ISLAND FAA STATION
BIORKA ISLAND, ALASKA
ACL SIGN AREA AT FORMER QUARTERS TANK FARM
AND BUILDING 300/601 AREAS

 Bristol CONSTRUCTION SERVICES, LLC Phone (907) 563-0013 Fax (907) 563-6713 Project No. 57002	DATUM:	DATE <u>04/21/06</u>	SHEET
	NA	DWN. <u>MTG</u>	12
	PROJECTION:	SCALE <u>SHOWN</u>	of
	NA	APPRVD. <u>SJ</u>	17



LEGEND	
●	SUBSURFACE SOIL SAMPLE
○	SURFACE SOIL
▣	COLLOCATED SURFACE WATER AND SEDIMENT SAMPLE
△	SURFACE SEDIMENT SAMPLE

Ecology and Environment, Inc.	
Figure: 3-1	Proj. No: VR7000
Date: 8/10/94	Drawn by: MEH
Title: BIORKA ISLAND FAA STATION VORTAC FACILITY SAMPLE LOCATION MAP	



Ecology and Environment, Inc.	
Figure: 3-3	Proj. No: VR7000
Date: 8/10/94	Drawn by: MEH
Title:	VORTAC FACILITY IC ACTIVITIES