



**PACIFIC AIR FORCES  
REGIONAL SUPPORT CENTER**

**JOINT BASE ELMENDORF-RICHARDSON, ALASKA**

**2016–2018 PCB-CONTAMINATED SOIL  
REMOVAL ACTION REPORT**

**PORT HEIDEN, ALASKA**

**FINAL  
JANUARY 2019**

(This Page Intentionally Left Blank)

**PACIFIC AIR FORCES  
REGIONAL SUPPORT CENTER**

**JOINT BASE ELMENDORF-RICHARDSON, ALASKA**

**2016–2018 PCB-CONTAMINATED SOIL  
REMOVAL ACTION REPORT**

**PORT HEIDEN, ALASKA**

**FINAL  
JANUARY 2019**

(This Page Intentionally Left Blank)

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
<b>ACRONYMS AND ABBREVIATIONS</b> .....	<b>3</b>
<b>1.0 PROJECT OVERVIEW</b> .....	<b>5</b>
<b>2.0 FIELD ACTIVITIES</b> .....	<b>7</b>
2.1 Excavation Activities .....	7
2.2 Overburden.....	8
2.3 Quantities .....	8
2.4 Analytical PCB Sampling .....	9
2.4.1 Additional Analytical Sampling.....	9
2.4.2 Equipment Decontamination Sampling .....	9
2.5 PCB-Contaminated Soil Transport and Disposal.....	10
<b>3.0 2016 FIELDWORK</b> .....	<b>11</b>
3.1 2016 Soil Analysis .....	11
3.2 2016 Soil Transportation and Disposal .....	12
3.3 Backfilling Activities .....	13
<b>4.0 2017 FIELDWORK</b> .....	<b>15</b>
4.1 2017 Soil Analysis .....	15
4.2 2017 Soil Transportation and Disposal .....	16
4.3 Backfilling Activities .....	17
<b>5.0 CONCLUSIONS</b> .....	<b>19</b>
<b>6.0 REFERENCES</b> .....	<b>21</b>

## TABLES

Table 2-1: PCB-Contaminated Soil Loading, Transport, and Disposal Totals for 2016 Through 2018.....	8
Table 3-1: Soil Samples Collected and Submitted for PCB Analysis in 2016.....	11
Table 3-2: Soil Samples Collected and Submitted for PAH, Pesticide, and VOC Analysis in 2016.....	12
Table 4-1: Soil Samples Collected and Submitted for PCB Analysis in 2017.....	15

## APPENDICES

Appendix A	Figures
Appendix B	Photograph Log
Appendix C	Data Quality Assessment
Appendix D	Waste Documentation
Appendix E	Field Notes
Appendix F	Responses to Comments

(This Page Intentionally Left Blank)

## ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
Ahtna	Ahtna Engineering Services, LLC
bags	flexible intermediate bulk container, Super Sacks, or an equivalent containment device
CFR	Code of Federal Regulations
cy	cubic yards
DQA	data quality assessment
DSA	drum storage area
ELM	Environmental & Logistic Management Solutions Corporation
Jacobs	Jacobs Engineering Group Inc.
KEMRON	KEMRON Environmental Services, Inc.
mg/kg	milligrams per kilogram
PAH	polycyclic aromatic hydrocarbon
PAL	project action limit
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RD	road section
ROD	Record of Decision
RRS	Radio Relay Station
SRA2	Soil Removal Area 2
SS	sampled sidewall section
TSCA	Toxic Substances Control Act
TU	tundra section
USAF	U.S. Air Force
VOC	volatile organic compound
WPA	Work Plan Addendum

(This Page Intentionally Left Blank)



## 1.0 PROJECT OVERVIEW

This 2016–2017 Removal Action Report describes work performed by Ahtna Engineering Services, LLC (Ahtna) and Jacobs Engineering Group Inc. (Jacobs) at Port Heiden, Alaska (Figure A-1). In 2016 and 2017, Jacobs and Ahtna performed a non-time critical removal action of polychlorinated biphenyl (PCB)-contaminated soil at specific sites (Figure A-2) associated with the former Port Heiden Radio Relay Station (RRS). These activities are a continuation of work performed by KEMRON Environmental Services, Inc. (KEMRON) under a separate contract. This report only summarizes work performed by Ahtna. A separate report was completed and submitted for the proceeding KEMRON work (U.S. Air Force [USAF] 2017a).

Work described in this report was conducted for the Air Force Civil Engineer Center under the U.S. Army Corps of Engineers, Alaska District, Environmental Remediation Services Contract No. W911KB-14-D-0005, Task Order No. 0006. The work was performed in accordance with the requirements of the Alaska Department of Environmental Conservation (ADEC); Title 18 of the Alaska Administrative Code (AAC), Chapter 75.360 (18 AAC 75.360) (ADEC 2016b); and Title 40 of the Code of Federal Regulations (CFR) §761.61 (40 CFR 761.61). Other regulatory considerations for the project include the Toxic Substances Control Act (TSCA) and the Resource Conservation and Recovery Act (RCRA).

Work under this contract was conducted in accordance with the following:

- *PCB-Contaminated Soil Removal Action 2016 Work Plan* (USAF 2016a)
- *Port Heiden Former Radio Relay Station 2016 Removal Action Work Plan Addendum* (WPA) (USAF 2016b)
- *Record of Decision for Port Heiden Radio Relay Station* (USAF 2009)
- *Explanation of Significant Differences, Port Heiden Radio Relay Station* (USAF 2010)
- *Explanation of Significant Differences, Port Heiden Radio Relay Station* (USAF 2017b) (Although this document did not receive final signature, the basis and protocol was followed.)

The work was supervised by Ahtna and conducted by Jacobs, with support from Aniakchak Contractors, LLC and Environmental & Logistic Management Solutions Corporation (ELM).

Activities for the Port Heiden field effort included sampling and characterizing PCB-contaminated soil, excavating contaminated soil with PCB concentrations over 1 milligram per kilogram (mg/kg), placing excavated soil directly into flexible intermediate bulk containers (bags), and transporting bags offsite for disposal at the appropriate facility.

This report is organized as follows:

- Section 1.0 provides a project overview for removal of PCB-contaminated soil at the Port Heiden RRS.
- Section 2.0 describes the general fieldwork activities that occurred during the 2016 and 2017 field seasons.
- Section 3.0 summarizes the quantities and details pertaining to the 2016 field season.
- Section 4.0 describes the quantities and details pertaining to the 2017 field season.
- Section 5.0 summarizes the conclusions from the removal action and presents recommendations for future activities.
- Section 6.0 lists the supporting documents referenced in this report.

In addition, the following appendices are provided to supplement the information presented in this report:

- Appendix A presents project figures. The figures show maps of the site layout and the grids that have been delineated, characterized, remediated, and targeted for future sampling.
- Appendix B presents photographs of project activities in 2016 and 2017.
- Appendix C presents the data quality assessment (DQA) and associated ADEC laboratory data review checklists for samples collected in 2017. Information for 2016 data is included in the 2016 *Interim Data Report* (USAF 2017c).
- Appendix D presents waste documentation, including certificates of disposal, bag totals, and certified weight totals for all PCB-contaminated soil disposed of under this contract to date.
- Appendix E presents the field notes for the 2016 and 2017 project activities.

## 2.0 FIELD ACTIVITIES

Field activities performed across the 2016 and 2017 field seasons consisted of soil characterization, excavating and containerizing contaminated soil, overburden stockpiling and characterization, and waste transportation and disposal. Additional field activities performed specifically during the 2016 or 2017 field seasons are discussed in Sections 3.0 and 4.0, respectively.

### 2.1 Excavation Activities

During the 2016 and 2017 field activities, contaminated soil was excavated from the following areas:

- Soil Removal Area 2 (SRA2) (Figures A-3 through A-6)
- North and south Upper Site Road areas (Figures A-7 and A-8)
- Access Road (Figure A-9)
- Sections 89-92 along Upper Site Road and the associated tundra (Figure A-10)
- Drum Storage Area (DSA) (Figure A-11)
- North Landfill and North Landfill Road (Figures A-12 and A-13)
- Septic Lagoon (Figure A-14)
- Sections along Lower Site Road (Figures A-15 and A-16)

Excavation activities in 2016 and 2017 were managed using a geographic information system geodatabase. Grids targeted for excavation were selected based on laboratory sampling results, and excavation instructions were displayed graphically to the field team through use of ArcGIS. Excavation instructions were updated in real time as new analytical results were received. Figures displaying known locations of remaining contaminated soil at the end of the 2017 field season are presented in Appendix A.

Contaminated soil was loaded into 8.5-cubic yard (cy) bags directly from excavations of targeted grids. An additional plastic liner was manually installed into each bag designated as TSCA soil (i.e., soil contaminated with levels of PCBs higher than 50.0 mg/kg) in accordance with federal regulations (40 CFR 761). Filled bags were transported back to a central location, sealed, and moved to a lined staging area. The filled bags were staged and labeled with the general excavation location (e.g., SRA2, DSA), bag identification number, weight of the bag (performed in the field as an estimated weight), date of generation, and site and owner information. Bags were later transported from the staging areas by semi-truck and trailer to the barge landing area, placed on top of a liner, and transferred to ELM for disposal.

## 2.2 Overburden

Based on prior sampling events, some subsurface areas around the RRS were known to be contaminated with PCBs; however, uncontaminated overburden was covering the contaminated soil. Weston Solutions, Inc. performed contract work at the Port Heiden RRS previously and had placed a liner over known contamination in 2009, then backfilled areas where PCBs remained exceeding the project action limit within the SRA2. Based on historical documentation, it was expected that the backfill ranged from depths of several inches up to 24 inches. In these areas, the overburden was removed and stockpiled separately on liners during the 2016 and 2017 field seasons, then sampled as per the ADEC *Field Sampling Guidance* (ADEC 2016a). Stockpiles containing PCB concentrations greater than 1 mg/kg were bagged along with the liners used for stockpile construction for offsite disposal.

## 2.3 Quantities

Between 2016 and 2017, 9,094.49 tons of PCB-contaminated soil were removed from Port Heiden. The total field estimated weight generated and the total certified weight received at disposal for the 2016 and 2017 field seasons are summarized in Table 2-1. The contaminated soil was characterized under TSCA (Title 15 of the U.S. Code §2605) as either TSCA (PCB concentrations greater than or equal to 50 mg/kg) or non-TSCA (PCB concentrations less than 50 mg/kg, but greater than or equal to 1 mg/kg). TSCA bag labels were denoted with a “T” and staged separately from non-TSCA bags.

The weight of each bag was measured in the field onsite using uncertified scales integrated into the loaders. The weight of the bags measured while onsite was considered an estimated value for waste tracking purposes. The disposal facilities’ certified scales provided the final disposal weight. Over the course of the project, a field-estimated weight of 8,827.95 tons of PCB-contaminated soil were excavated. The certified total weight of excavated soil was 9,094.49 tons, a variance of 3 percent.

**Table 2-1: PCB-Contaminated Soil Loading, Transport, and Disposal Totals for 2016 Through 2018**

Year of Generation	PCB Soil (TSCA/Non-TSCA)	Total Estimated Weight Generated (tons)	Total Certified Weight Disposed (tons)
2016	non-TSCA	5,713.3*	4,905.14
	TSCA hazardous	764.1	758.17
2017	non-TSCA	2,205	340.36
	TSCA hazardous	145.55	155.47^
2018	non-TSCA	0	2,935.35
<b>Total</b>		<b>8,827.95</b>	<b>9,094.49</b>

**Notes:**

\*This includes the estimated weight of the 881.6 tons remaining for 2017 disposal

^This includes four drums, staged from 2016. See sections 3.2 and 4.2 for further detail.

For definitions, refer to the Acronyms and Abbreviations section.

## 2.4 Analytical PCB Sampling

Primary PCB samples were collected in accordance with the 2016 work plan (USAF 2016a). Soil samples submitted for PCB analysis were as follows:

- Characterization sampling using a nine-point composite sample for grids adjacent to known contamination that had not been sampled
- Confirmation sampling following excavation of a grid
- Wall sampling from excavated walls with a height greater than or equal to 18 inches
- Discrete sampling for characterization of contamination depth
- Barge landing pre-construction sampling
- Barge landing post-construction sampling
- Equipment wipe sampling post-excavation
- Stockpile sampling

Analytical laboratory support was provided by SGS Environmental Services in Anchorage, Alaska in 2016, 2017, and 2018. Additional laboratory support was provided by EMAX Laboratories in Torrance, California in 2016 and ALS Environmental in Kelso, Washington in 2017. Data quality was compared to the objectives outlined in Worksheet #28 of the 2016 work plan (USAF 2016a). The reported data were considered usable for the soil removal action and found to be acceptable for the purposes of this project. Analytical data including the sample summary, analytical results tables, and ADEC laboratory data review checklists are presented in Appendix C.

### 2.4.1 Additional Analytical Sampling

During the 2006 remedial investigation/feasibility study, additional contaminants were identified in soil at Port Heiden RRS and documented in the Record of Decision (ROD) (USAF 2009). Contaminants included polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and pesticides. Additional sampling for these contaminants occurred in 2016 and 2017 (Sections 3.1 and 4.1) in accordance with the WPA (USAF 2016b).

### 2.4.2 Equipment Decontamination Sampling

Equipment decontamination confirmation samples were collected from the excavator bucket prior to returning the equipment to its owner each season:

- In 2016, two samples were collected at the time of barge loading in August. The PCB results were below the project action limit (PAL) of 10 micrograms per wipe.
- In 2017, two samples were collected; one prior to a temporary demobilization in June and one at the end of the season in August. Results were below the PAL.

## **2.5 PCB-Contaminated Soil Transport and Disposal**

Bags were transported by flatbed truck to the barge landing and placed on a liner pending barge arrival. Upon arrival of the barge in October 2017, bags were loaded and transported from Port Heiden, Alaska to the Port of Seattle in Washington where they were offloaded onto trucks or railcars and transported to the final disposal facility at either Columbia Ridge Landfill in Arlington, Oregon or Chemical Waste Management of the Northwest in Arlington, Oregon. Disposal occurred in December 2017 and January 2018. Due to inclement weather and tidal variance, not all the soil in Super Sacks was able to be transported offsite in 2017. Super Sacks remaining in Port Heiden after 2017 were transported by barge to Seattle in May 2018 and disposed of in July and September 2018. Barge quantities and descriptions for each field season are presented in Sections 3.2 and 4.2.

### 3.0 2016 FIELDWORK

PCB remediation and site characterization work performed in 2016 was completed by KEMRON and Ahtna, with support from Jacobs, under separate contracts. This document summarizes work performed by Ahtna. Work performed during 2016 by KEMRON is discussed in *PCB-Contaminated Soil Removal Action 2016 After Action Report, Port Heiden, Alaska* (USAF 2017a). From 3 June to 8 August 2016 and from 10 to 16 September 2016, 6,544.91 tons of PCB-contaminated soil (combination of certified and field estimated weights) was excavated from the SRA2, Access Road, Site Road, Tundra Sections 89 through 92, North Landfill, North Landfill Road, and the DSA (Figures A-3 through A-16). During excavation of Tundra Section 90, two transformers were identified, transferred to overpacks, and staged at the DSA for removal during the 2017 field season. During excavation of the North Landfill, two drums were identified with unknown contents. The drums were removed, placed into overpacks, and staged for sampling and removal in the 2017 field season.

#### 3.1 2016 Soil Analysis

During the 2016 field season, a total of 1,152 primary analytical samples were submitted for chemical analysis. Of the 1,152 primary samples, 1,103 were soil samples for PCB analysis, two were used to assess the effectiveness of equipment decontamination procedures, and 49 were soil samples for PAH, pesticide, and VOC analysis. All sample results from the 2016 sampling effort are included in the 2016 *Interim Data Report* (USACE 2017c). Table 3-1 summarizes the nature of soil samples collected for PCB analysis during the 2016 field season.

**Table 3-1: Soil Samples Collected and Submitted for PCB Analysis in 2016**

Sample Type	Number of Samples
Initial grid surface characterizations – nine-point composite	424
Grid floor excavation confirmations – nine-point composite	378
Excavation wall confirmations – three-point composite	211
Discrete samples	28
Barge landing pre-construction samples	14
Equipment wipe samples – post-excavation	2
Stockpile samples	48
Duplicates	125
<b>Total PCB soil analysis samples</b>	<b>1,229</b>

**Note:**

For definitions, refer to the Acronyms and Abbreviations section.

Primary PAH, pesticide, and VOC samples were collected in accordance with the 2016 WPA (USAF 2016b) and ADEC's *Field Sampling Guidance* (ADEC 2016a) from the SRA2, DSA, and North Landfill. The types and quantities of PAH, pesticide, and VOC soil samples are

shown in Table 3-2. Soil samples were submitted for limited PAH, pesticide, and VOC analysis and included the following:

- Discrete soil samples collected within a 500-square-foot area surrounding each historically contaminated sample location for PAHs and pesticides
- Discrete samples from locations with previous analytical PCB sampling results greater than or equal to 1,000 mg/kg for VOCs
- Discrete samples from locations with previous analytical PCB sampling results greater than or equal to 500 mg/kg for VOCs (when 1,2,4-trichlorobenzene was above migration to groundwater cleanup level)

**Table 3-2: Soil Samples Collected and Submitted for PAH, Pesticide, and VOC Analysis in 2016**

Sample Type	Number of Samples
Discrete samples – VOCs	6
Discrete samples – PAHs	3
Discrete samples – Pesticides	40
Duplicates <sup>1</sup>	4
<b>Total PAH, pesticide, and VOC soil analysis samples collected in 2016</b>	<b>53</b>

**Notes:**

<sup>1</sup> One duplicate sample was analyzed for VOCs, two were analyzed for PAHs, three were analyzed for pesticides. For definitions, refer to the Acronyms and Abbreviations section.

Of the samples collected for PAHs, only one sample from the North Landfill exceeded the cleanup level listed in the ROD for benzo(a)pyrene of 0.49 mg/kg at 1.4 mg/kg. Five of the pesticide samples had dieldrin concentrations greater than the cleanup level in the ROD of 0.015 mg/kg, ranging from 0.016 to 0.058 mg/kg. As specified in the ROD, dieldrin-contaminated soil was only to be removed if the concentration exceeded the 18 AAC 75.341(c) Method Two human health risk direct contact value of 0.44 mg/kg (USAF 2016b). The dieldrin concentrations did not exceed that value and therefore additional removal activities were not performed. The VOC analytes 1,2,3-trichlorobenzene and 1,2,4-trichlorobenzene were not detected in any of the samples collected following the removal of PCB-contaminated soil with concentrations greater than 1 mg/kg, indicating that these compounds were collocated with the PCB-contaminated soil (USAF 2017c).

### 3.2 2016 Soil Transportation and Disposal

Flatbed trailers were used to transport bags to the barge landing area. Three barges contracted by ELM transported PCB-contaminated waste from Port Heiden, Alaska in 2016. The first barge, *Miller Bay*, was loaded with only Ahtna bags. The second barge, *Klinkwan*, was loaded with both Ahtna and KEMRON bags. The third barge, *Sunny Pointe*, was loaded with only KEMRON bags. Only the Ahtna transportation information is presented in this report (Appendix D).



After loading, the barges *Miller Bay* and *Klinkwan* departed on 26 August 2016 and travelled to the Port of Seattle in Seattle, Washington. All bags containing non-TSCA soil were transferred to rail cars in Seattle and transported to the final disposal facility at Columbia Ridge Landfill in Arlington, Oregon. Bags containing TSCA hazardous soil were loaded into intermodal containers and transported via rail cars to the final disposal facility at Chemical Waste Management of the Northwest in Arlington, Oregon (USAF 2017c). Signed certificates of disposal were issued for the TSCA-generated waste and are included in Appendix D. The following quantities were transported and disposed of offsite during 2016:

- A total of 97 bags of TSCA soil with a certified weight of 758.17 tons were transferred to barges contracted by ELM and transported to Chemical Waste Management of the Northwest in Arlington, Oregon for disposal.
- A total of 667 bags containing non-TSCA soil with a certified weight of 4905.14 tons were transferred to barges contracted by ELM and transported to Columbia Ridge Landfill in Arlington, Oregon for disposal.
- Nine bags of uncontaminated soil and liner material used to construct the barge ramp, weighing 14.2 tons, were transported offsite and disposed of at Columbia Ridge Landfill.
- A total of 113 bags of non-TSCA soil weighing 881.6 tons were staged at the RRS site for offsite transport and disposal in 2017. This quantity was excavated after barge loadout had occurred; therefore, the bags were over-wintered until the following season and inspected several times throughout the winter for integrity.

### 3.3 Backfilling Activities

All 2016 backfilling activities were performed under a separate contract and are discussed in the 2016 after-action report (USAF 2017a).

(This Page Intentionally Left Blank)

## 4.0 2017 FIELDWORK

From 7 June to 30 June and from 1 to 19 August 2017, PCB-contaminated soil was excavated from targeted grid cells and loaded into bags. A total of 319 bags were filled with PCB-contaminated material.

### 4.1 2017 Soil Analysis

During the 2017 field season, 600 primary and 63 duplicate analytical samples were collected and submitted for chemical analysis. Another 27 barge landing post-construction samples and three duplicates were collected in August 2018. Table 4-1 summarizes the nature of soil samples collected for PCB analysis during the 2017 field season.

**Table 4-1: Soil Samples Collected and Submitted for PCB Analysis in 2017**

Sample Type	Number of Samples
Grid surface characterizations – nine-point composite	251
Grid floor excavation confirmations – nine-point composite	151
Excavation wall confirmations – three-point composite	133
Discrete samples	61
Equipment wipe samples – post-excavation	2
Stockpile samples	2
Duplicates (Total)	66
Post construction samples (at barge landing in 2018)	27
<b>Total PCB soil analysis samples collected in 2017</b>	<b>693</b>

**Note:**

For definitions, refer to the Acronyms and Abbreviations section.

Additionally, three primary discrete samples were collected from the RRS and analyzed for the full suite of VOCs, PAHs, and pesticides in accordance with the 2016 WPA (USAF 2016b) and ADEC's *Field Sampling Guidance* (ADEC 2016a). A full suite for these analytes was included during the 2017 discrete sampling due the request of ADEC to ensure updated cleanup levels had been met and to provide additional information regarding cumulative risk for the upcoming five-year review. All results were nondetect for the ROD contaminants analyzed and are presented in Appendix C.

Two drums with unknown contents were removed from the North Landfill during the 2016 field season and placed into overpacks. Two analytical samples, one from each drum, were collected in 2017 in order to properly classify the waste for transport and disposal. Results did not exceed RCRA standards (40 CFR 261/273). The full analytical suite and results are presented in Appendix C.

A total of 27 post-construction samples and three duplicates were collected from the barge landing area in August 2018 after all bags were removed to confirm that contamination had not been transferred during field activities. These samples are included in Table 4-1. All samples were nondetect for PCBs and are included in the DQA (Appendix C).

## 4.2 2017 Soil Transportation and Disposal

Flatbed trailers were used to transport bags to the barge landing area. One barge contracted by ELM transported PCB-contaminated waste from Port Heiden, Alaska. Due to inclement weather and tidal variance, the barge was only able to remove and transport a limited quantity of bags from Port Heiden.

After loading on 29 October 2017, the barge departed and travelled to the Port of Seattle in Seattle, Washington. All bags containing non-TSCA soil were transferred to rail cars in Seattle and transported to the final disposal facility at Columbia Ridge Landfill in Arlington, Oregon. Bags containing TSCA hazardous soil and drums containing TSCA waste were loaded into intermodal containers and transported via rail cars to the final disposal facility at Chemical Waste Management of the Northwest in Arlington, Oregon. Signed certificates of disposal were issued for non-TSCA and TSCA waste and are included in Appendix D.

The quantities of soil and bags generated during the 2017 field season were as follows:

- A total of 16 bags of TSCA soil with a certified weight of 155.47 tons were transported in 2017.
- A total of 299 bags containing non-TSCA soil with a field estimated weight of 2,205 tons were generated during the field effort, 41 of which were transported offsite in 2017.
- Six bags of uncontaminated soil and liner material used to construct the barge ramp, weighing 11 tons, were generated during the 2017 field season.

Additionally, the following quantities generated from the 2016 field season remained on site during the 2017 field season awaiting transport:

- Two overpacks containing drums remained from 2016 and were transported in 2017; (weight included in the TSCA bag field estimated weight).
- Two overpacks containing transformers from 2016 were transported in 2017; (weight included in the TSCA bag field estimated weight)
- A field estimated weight of 881.6 tons of non-TSCA soil.

In May 2018, the bags remaining onsite from the October 2017 loadout were loaded onto a barge and transported to Seattle, followed by overland transport to Columbia Ridge Landfill in Arlington, Oregon. The certified weight of this transport was 2,935.35 tons.

### **4.3 Backfilling Activities**

Backfilling operations began in August 2017 to restore the terrain to a more natural state. Excavated areas with sample results below the PAL were filled and compacted. Approximately 5,672 cy of clean soil was hauled from the Department of Transportation pit and used for backfilling purposes.

The Septic Lagoon, Black Lagoon Outfall Area, and Lower Site Road were completely backfilled. Although the Lower Site Road did not receive results prior to backfilling, grid cells were lined, filled, and compacted as the project budget had been met and open excavations existed within an active roadway.

The DSA and the SRA2 were partially backfilled. At the DSA, a liner was placed on the remaining grids and walls with results above the PAL and the area was backfilled. Grid cells within the SRA2 with results below the PAL were backfilled. Grid cells with results above the PAL were left in place, and a fence was placed around the perimeter of the SRA2 with appropriate signage denoting the presence and risk of PCB contamination.

(This Page Intentionally Left Blank)

## **5.0 CONCLUSIONS**

During the 2016 and 2017 field seasons, Ahtna, with support from Jacobs and Aniakchak Contractors, removed 9,094.49 tons of PCB-contaminated soil, composed of 8,180.85 tons of non-TSCA soil and 913.64 tons of TSCA soil. Excavation and sampling activities for the Port Heiden RRS have met the quantities for this contract.

Bags with a total certified weight of 5,663.31 tons were transported to disposal facilities in Arlington, Oregon in 2016. The certified weight of soil disposed after the 2017 season was 495.83 tons. In 2018, the remainder of the excavated soil, 2,935.35 tons was transported for disposal. The certified weight of all excavated soil exceeded the field-estimated weight by approximately 3 percent, or 266.54 tons.

TSCA and non-TSCA grids targeted for future excavation activities and proposed characterization sample locations are presented in figures in Appendix A. An estimated 5,419 tons of non-TSCA soil and 77 tons of TSCA soil remain onsite to be excavated. Contamination at the North Landfill will be addressed under a separate contract.

(This Page Intentionally Left Blank)



## 6.0 REFERENCES

- ADEC (Alaska Department of Environmental Conservation). 2016a (March). *Field Sampling Guidance*. ADEC Division of Spill Prevention and Response Contaminated Sites Program.
- ADEC. 2016b (November). *Oil and Other Hazardous Pollution Control Regulations – Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances*. Alaska Administrative Code Title 18, Chapter 75.
- USAF (U.S. Air Force). 2009 (February). *Record of Decision for Port Heiden Radio Relay Station*. Final. Prepared by Weston Solutions, Inc.
- USAF. 2010 (May). *Explanation of Significant Differences for Port Heiden Radio Relay Station. Port Heiden, Alaska*.
- USAF 2016a (May). *PCB-Contaminated Soil Removal Action 2016 Work Plan*. Final. Prepared by Ahtna Engineering Services, LLC.
- USAF. 2016b (July). *Port Heiden Former Radio Relay Station 2016 Removal Action Work Plan Addendum*. Final. Prepared by Jacobs Engineering Group Inc.
- USAF. 2017a (March). *PCB-Contaminated Soil Removal Action 2016 After Action Report Port Heiden, Alaska*. Final. Prepared by Jacobs Engineering Group Inc.
- USAF. 2017b (May). *Explanation of Significant Differences, Port Heiden Radio Relay Station. Port Heiden, Alaska*. Final. Prepared by Jacobs Engineering Group Inc.
- USAF. 2017c (July). *PCB-Contaminated Soil Removal Action 2016 Interim Data Report Port Heiden, Alaska*. Final. Prepared by Jacobs Engineering Group Inc.

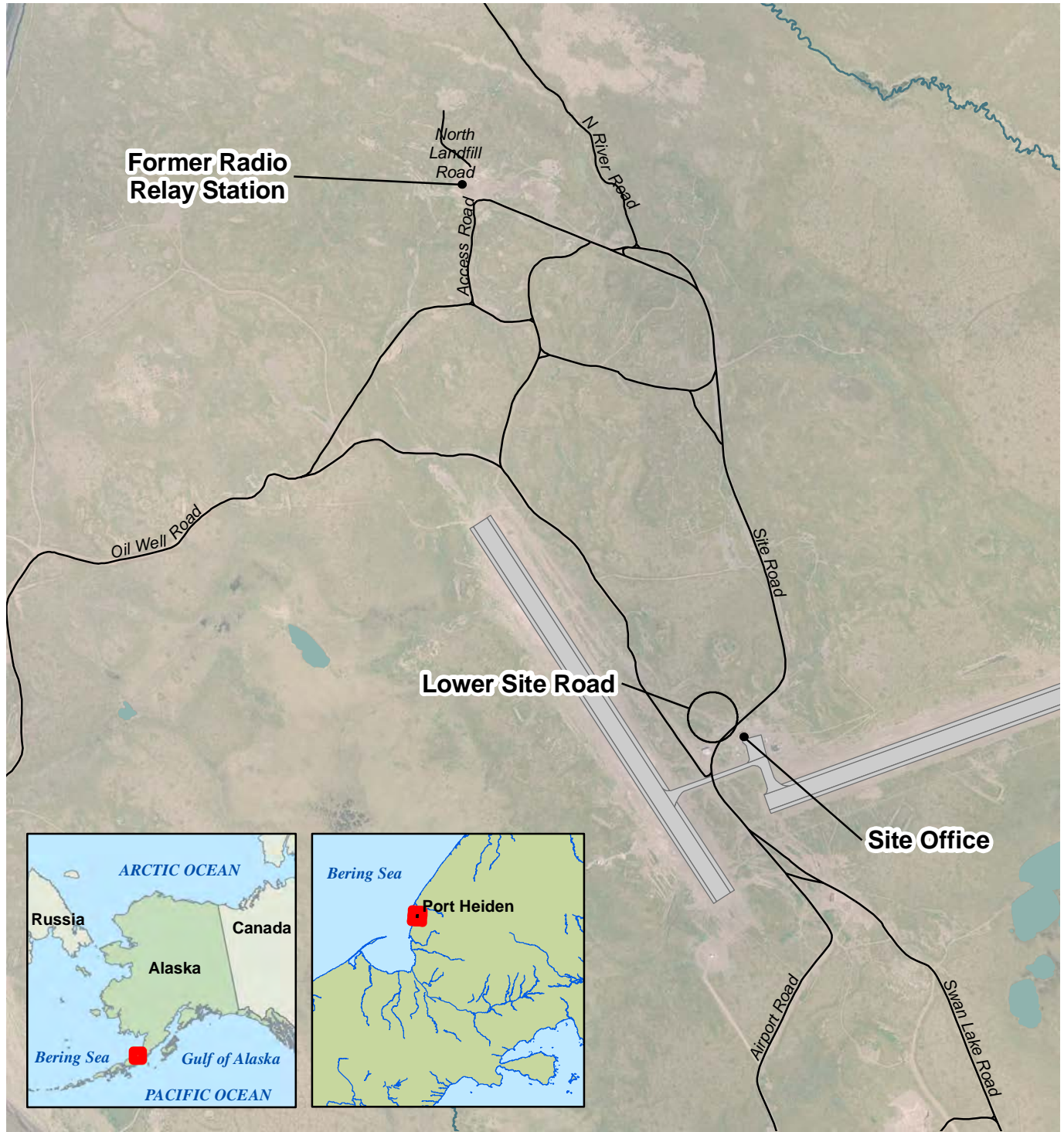
(This Page Intentionally Left Blank)

## **APPENDIX A**

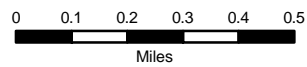
### **Figures**

(This Page Intentionally Left Blank)

P:\PortHeiden\2016\_working\_field\_version\Backup\_120815\GIS\MXD\Ahtna\2016\_IDR\Figure 1\_Loc-Vic.mxd zeiglein





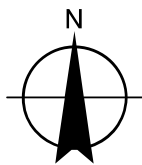
All Locations Are Approximate



WGS 1984 UTM Zone 4N Transverse Mercator

**Legend**

-  Roads
-  Port Heiden Airport



Site Location and Vicinity  
Radio Relay Station PCB Removal Action

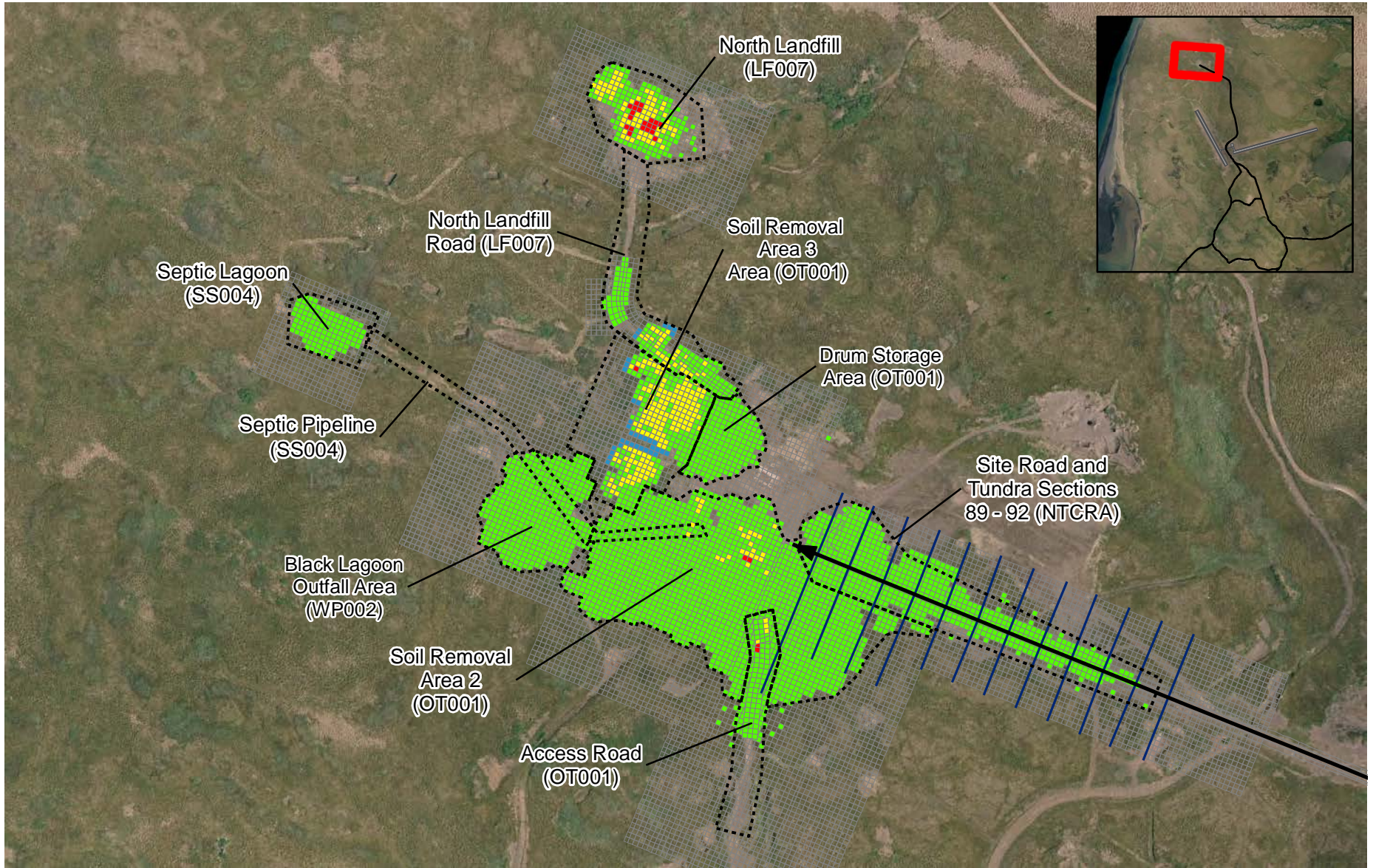
Port Heiden, AK

<b>JACOBS</b>	DATE: 04 Oct 2017	PROJECT MANAGER: G. Rutkowski	FIGURE NO: A-1
---------------	----------------------	----------------------------------	-------------------

(This Page Intentionally Left Blank)



P:\PortHeiden\2017\_working\_field\_version\Backup\_120815\GIS\MXD\Ahtna\2017\_Field\_Planning\2017-06-01\_letter\_Overview\_BDR.mxd zeiglein



- Awaiting sample results
- Below Cleanup, <1 mg/kg
- non-TSCA, 1-50 mg/kg
- TSCA, >50 mg/kg

- Uncharacterized
- Site Road
- RRS Areas
- Road Section Line



All Locations Are Approximate  
 0 120 240 360 480  
 Feet  
 WGS 1984 UTM Zone 4N  
 Imagery: Aerometric 2002

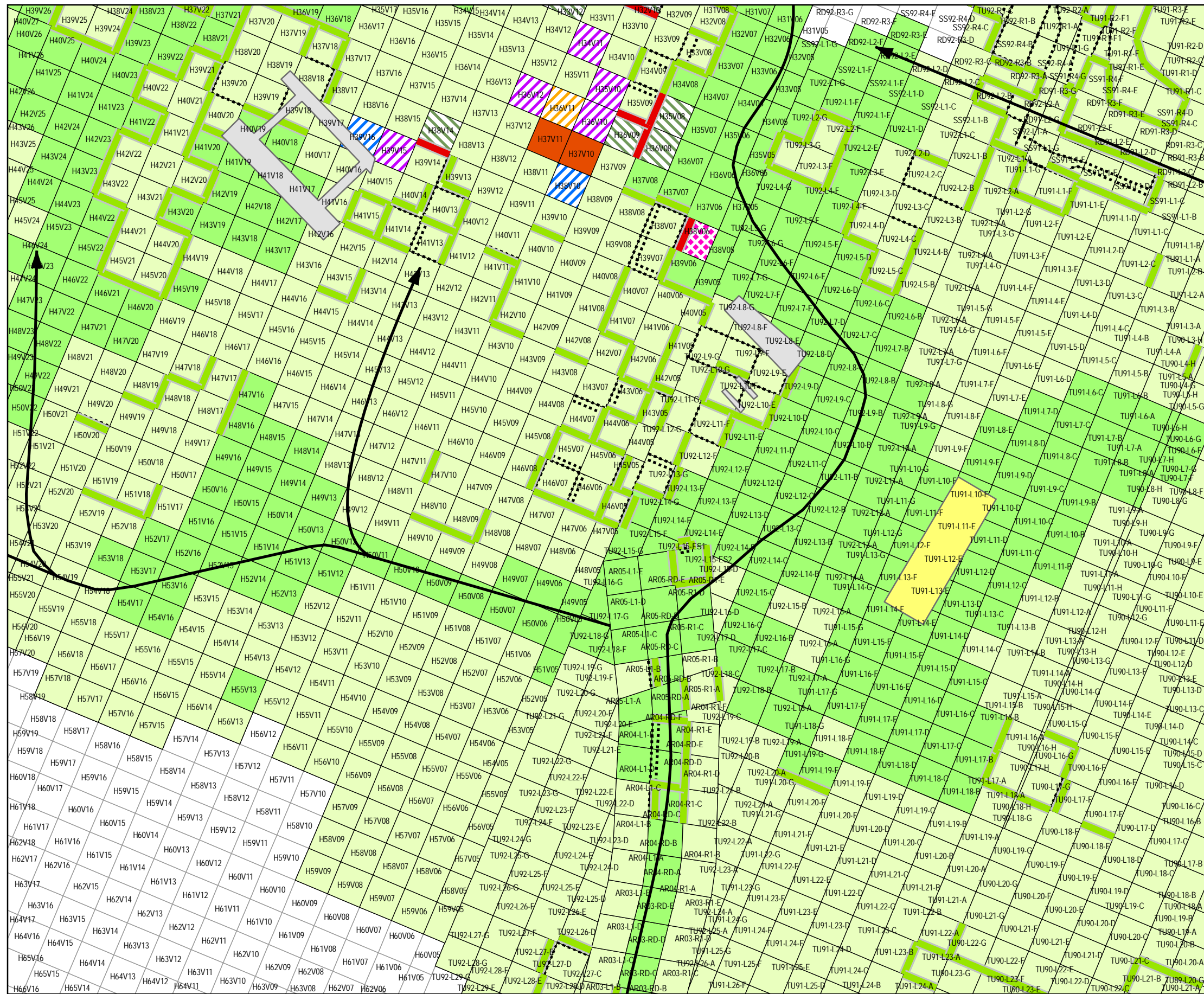
### Radio Relay Station Site Overview

Radio Relay Station Remediation  
 Port Heiden, Alaska

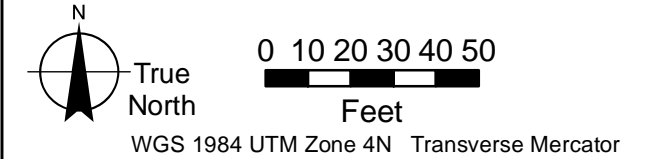
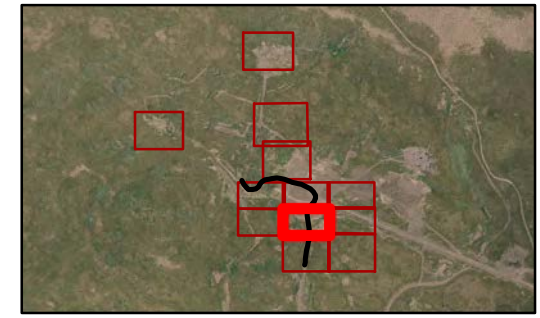
<b>JACOBS</b>	DATE:	PROJECT MANAGER:	FIGURE NO.:
	06 Nov 2017	G. Rutkowski	A-2

(This Page Intentionally Left Blank)





- ➔ Access Roads
  - Sidewalk to be Sampled
  - Sampled Sidewalk
  - Sidewalk Below Cleanup (<1 mg/kg)
  - Sidewalk Non-TSCA (1 to <50 mg/kg)
  - Sidewalk TSCA (>50 mg/kg)
  - ..... Removed Sidewalk
  - Sacking station
  - RRS concrete
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



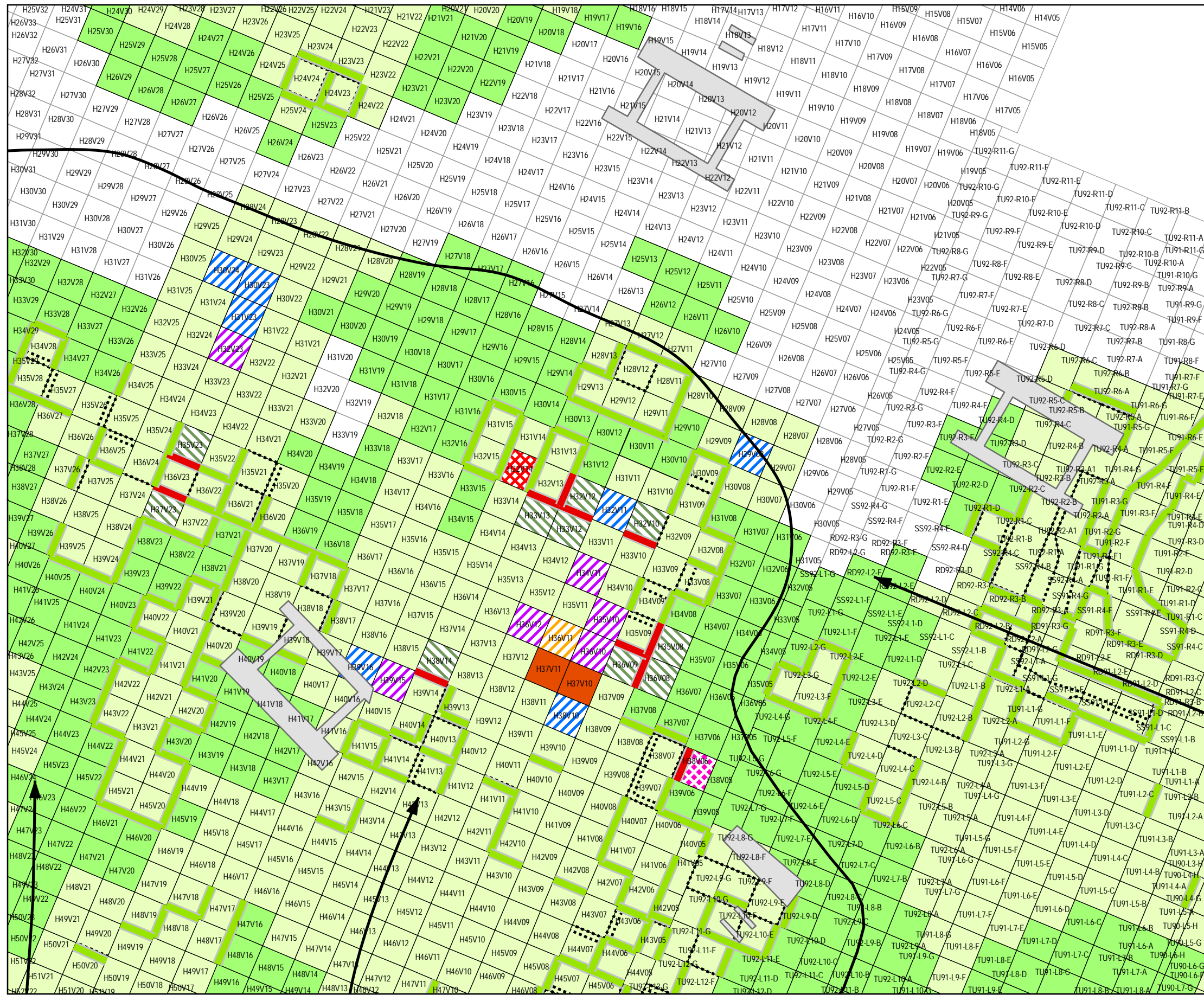
**Soil Removal Area 2 Southeast**  
Radio Relay Station PCB Removal Action  
Port Heiden, Alaska

<b>JACOBS</b>	DATE:	PROJECT MANAGER:	FIGURE NO.:
	06 NOV 2017	G. Rutkowski	A-3

(This Page Intentionally Left Blank)

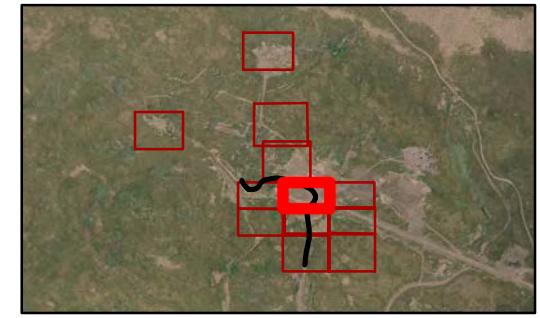


P:\PortHeiden\2017\_working\_field\_version\Backup\_120818\GIS\MXD\Antna\2017\_Field\_Planning\2017-06-01\_talbid\_DDP\_BDR.mxd zeiglein



- Access Roads
- Sidewall to be Sampled
- Sampled Sidewall
- Sidewall Below Cleanup (<1 mg/kg)
- Sidewall Non-TSCA (1 to <50 mg/kg)
- Sidewall TSCA (>50 mg/kg)
- Removed Sidewall
- RRS concrete
- Grid To Be Characterized
- Below Cleanup
- HTRW TO-06 or WERS Legacy Clean

- ### TSCA Excavations
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- ### Non-TSCA Excavations
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



True North  
 0 10 20 30 40 50 Feet  
 WGS 1984 UTM Zone 4N Transverse Mercator

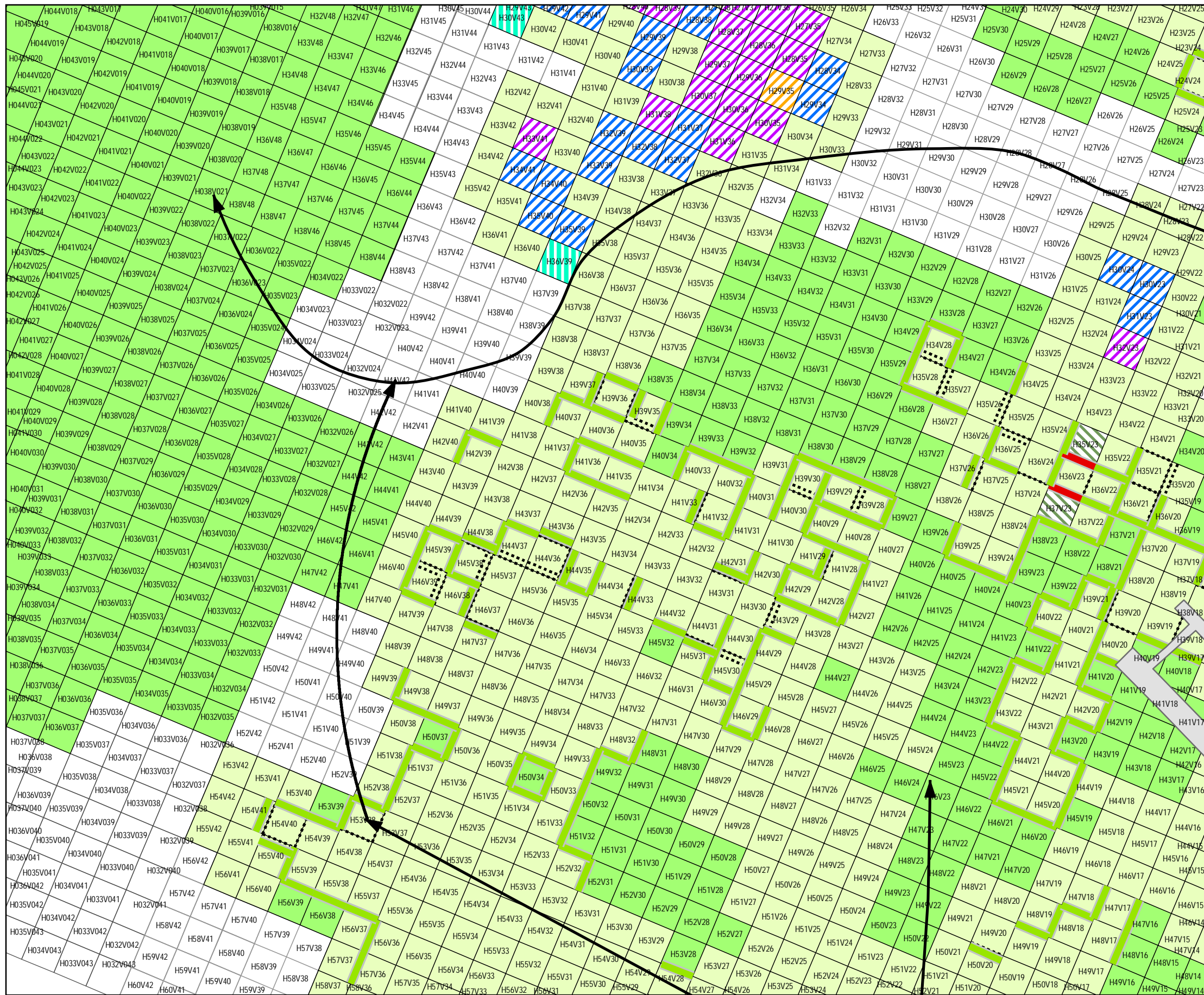
**Soil Removal Area 2 Northeast**  
 Radio Relay Station PCB Removal Action  
 Port Heiden, Alaska

	DATE: 06 NOV 2017	PROJECT MANAGER: G. Rutkowski	FIGURE NO.: A-4
--	----------------------	----------------------------------	--------------------

(This Page Intentionally Left Blank)

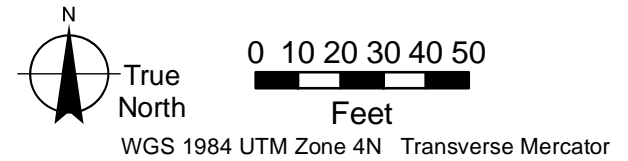
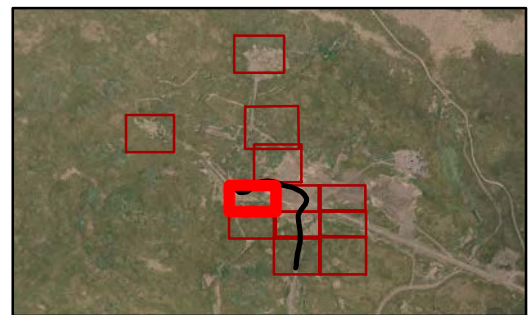


P:\PortHeiden\2017\_working\field\_version\Backup\_120818\GIS\MXD\Arma\2017\_Field\_Planning\2017-06-01\_talbid\_DDP\_BDR.mxd zeiglein



- ➔ Access Roads
- Sidewall to be Sampled
- Sampled Sidewall
- Sidewall Below Cleanup (<1 mg/kg)
- Sidewall Non-TSCA (1 to <50 mg/kg)
- Sidewall TSCA (>50 mg/kg)
- ⋯ Removed Sidewall
- RRS concrete
- ▨ Grid To Be Characterized
- Below Cleanup
- HTRW TO-06 or WERS Legacy Clean

- TSCA Excavations**
- ▨ TSCA to wall depth
  - ▨ Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- ▨ 1-50 mg/kg to wall depth
  - ▨ Remove wall 2.5 feet
  - ▨ Clean at 12, non-TSCA at 24
  - ▨ 1-50 mg/kg at 24 inches
  - ▨ 1-50 mg/kg at 18 inches
  - ▨ 1-50 mg/kg at 12 inches
  - ▨ 1-50 mg/kg at 6 inches

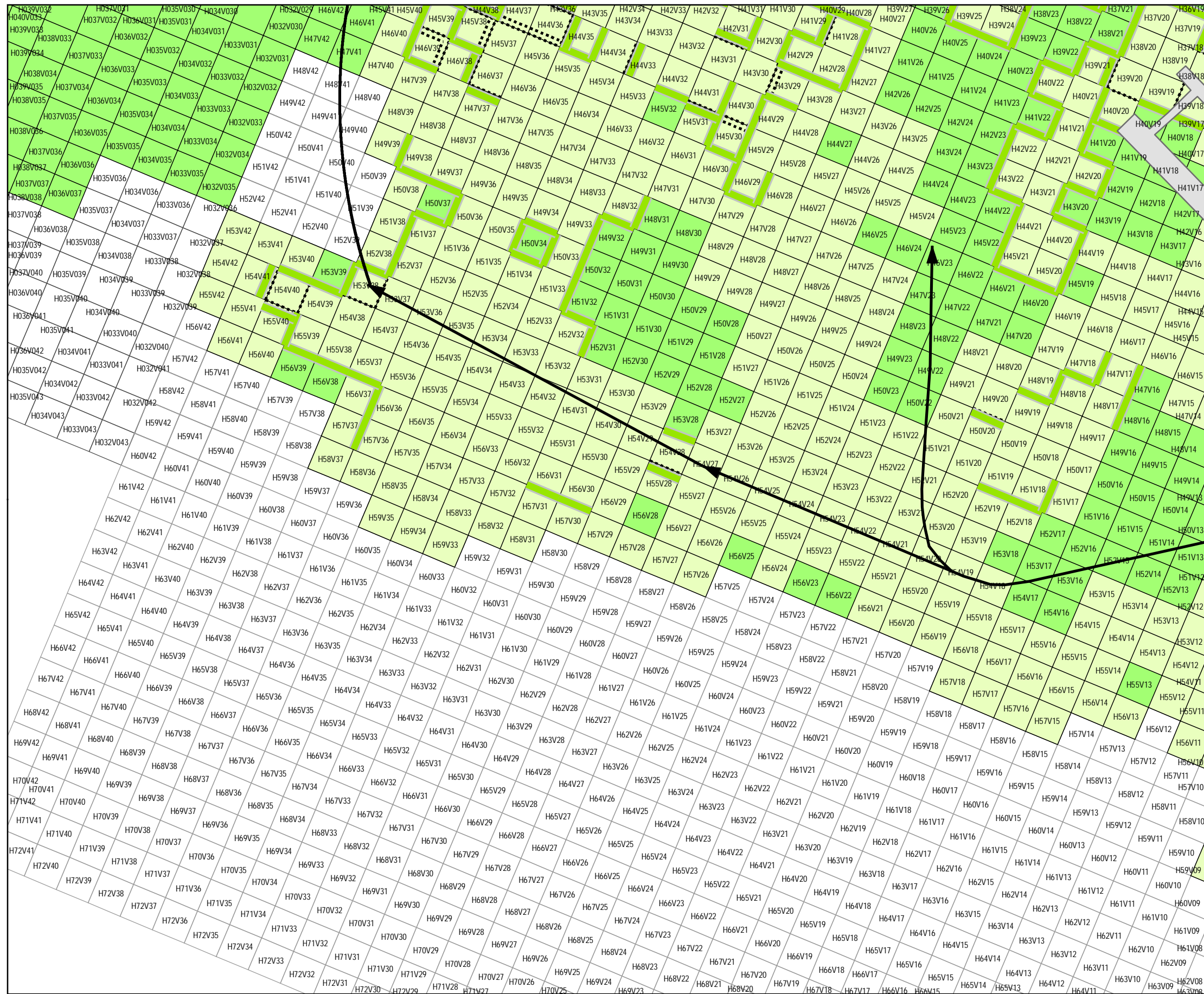


**Soil Removal Area 2 Northwest**  
Radio Relay Station PCB Removal Action  
Port Heiden, Alaska

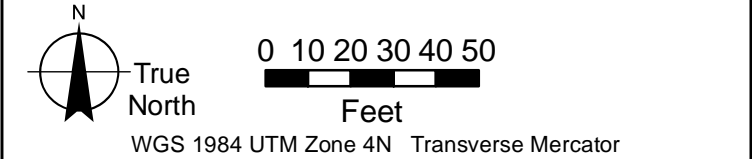
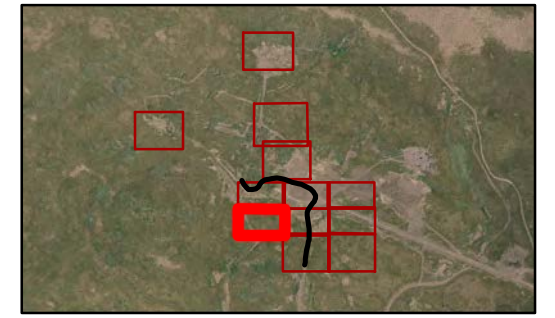
<b>JACOBS</b>	DATE:	PROJECT MANAGER:	FIGURE NO.:
	06 NOV 2017	G. Rutkowski	A-5

(This Page Intentionally Left Blank)





- ➔ Access Roads
  - Sidewall to be Sampled
  - Sampled Sidewall
  - Sidewall Below Cleanup (<1 mg/kg)
  - Sidewall Non-TSCA (1 to <50 mg/kg)
  - Sidewall TSCA (>50 mg/kg)
  - ..... Removed Sidewall
  - RRS concrete
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



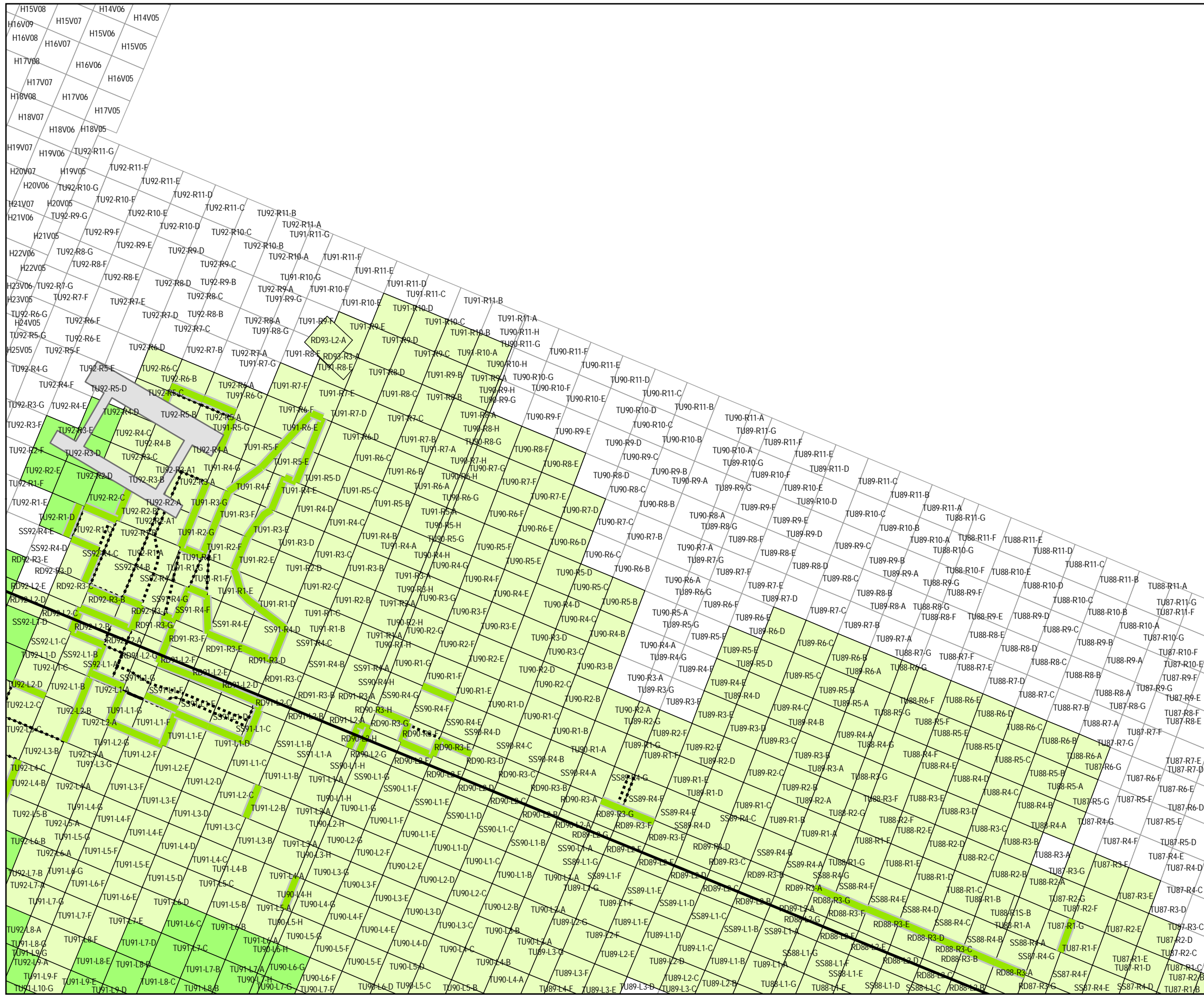
**Soil Removal Area 2 Southwest**  
**Radio Relay Station PCB Removal Action**  
**Port Heiden, Alaska**

<b>JACOBS</b>	DATE:	PROJECT MANAGER:	FIGURE NO.:
	06 NOV 2017	G. Rutkowski	A-6

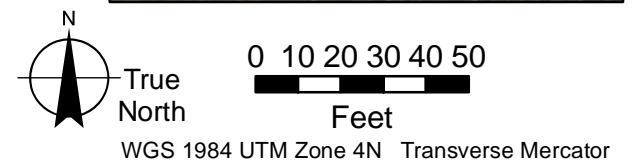
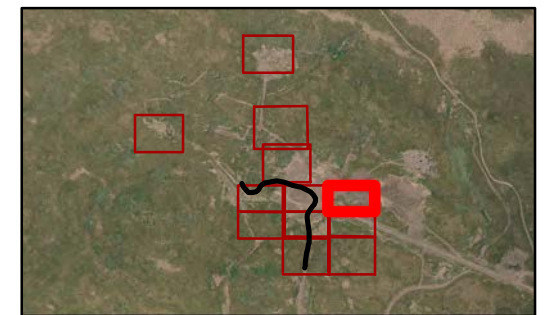
(This Page Intentionally Left Blank)



P:\PortHeiden\2017\_working\_field\_version\Backup\_120818\GIS\MXD\Antina\2017\_Field\_Planning\2017-06-01\_tabled\_DDP\_BDR.mxd zeiglein



- Access Roads
  - Sidewalk to be Sampled
  - Sampled Sidewalk
  - Sidewalk Below Cleanup (<1 mg/kg)
  - Sidewalk Non-TSCA (1 to <50 mg/kg)
  - Sidewalk TSCA (>50 mg/kg)
  - Removed Sidewalk
  - RRS concrete
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



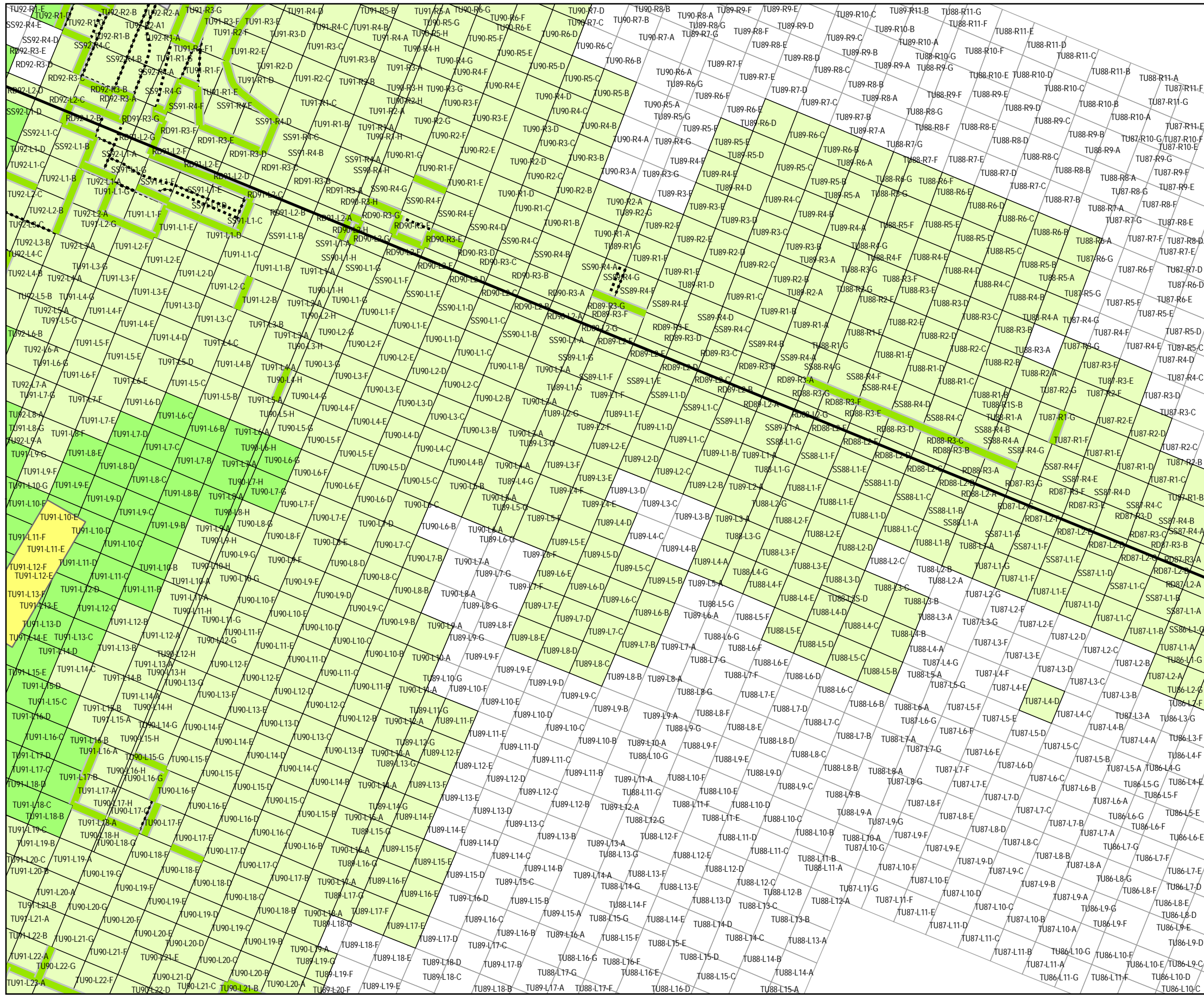
**North Upper Site Road**  
Radio Relay Station PCB Removal Action  
Port Heiden, Alaska

	DATE:	PROJECT MANAGER:	FIGURE NO.:
	06 NOV 2017	G. Rutkowski	A-7

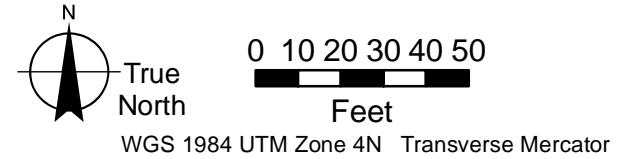
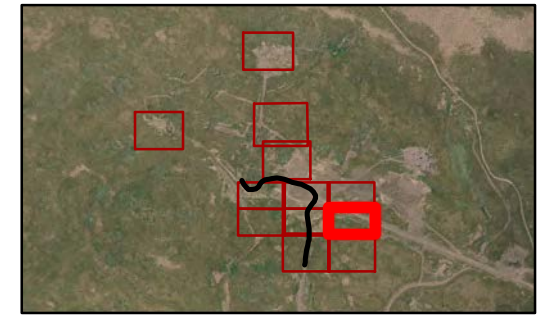
(This Page Intentionally Left Blank)



P:\PortHeiden\2017\_working\_field\_version\Backup\_120818\GIS\MXD\Atnna\2017\_Field\_Planning\2017-06-01\_talbioid\_DDP\_BDR.mxd zeiglein



- Access Roads
  - Sidewalk to be Sampled
  - Sampled Sidewalk
  - Sidewalk Below Cleanup (<1 mg/kg)
  - Sidewalk Non-TSCA (1 to <50 mg/kg)
  - Sidewalk TSCA (>50 mg/kg)
  - Removed Sidewalk
  - Sacking station
  - RRS concrete
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- 
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches

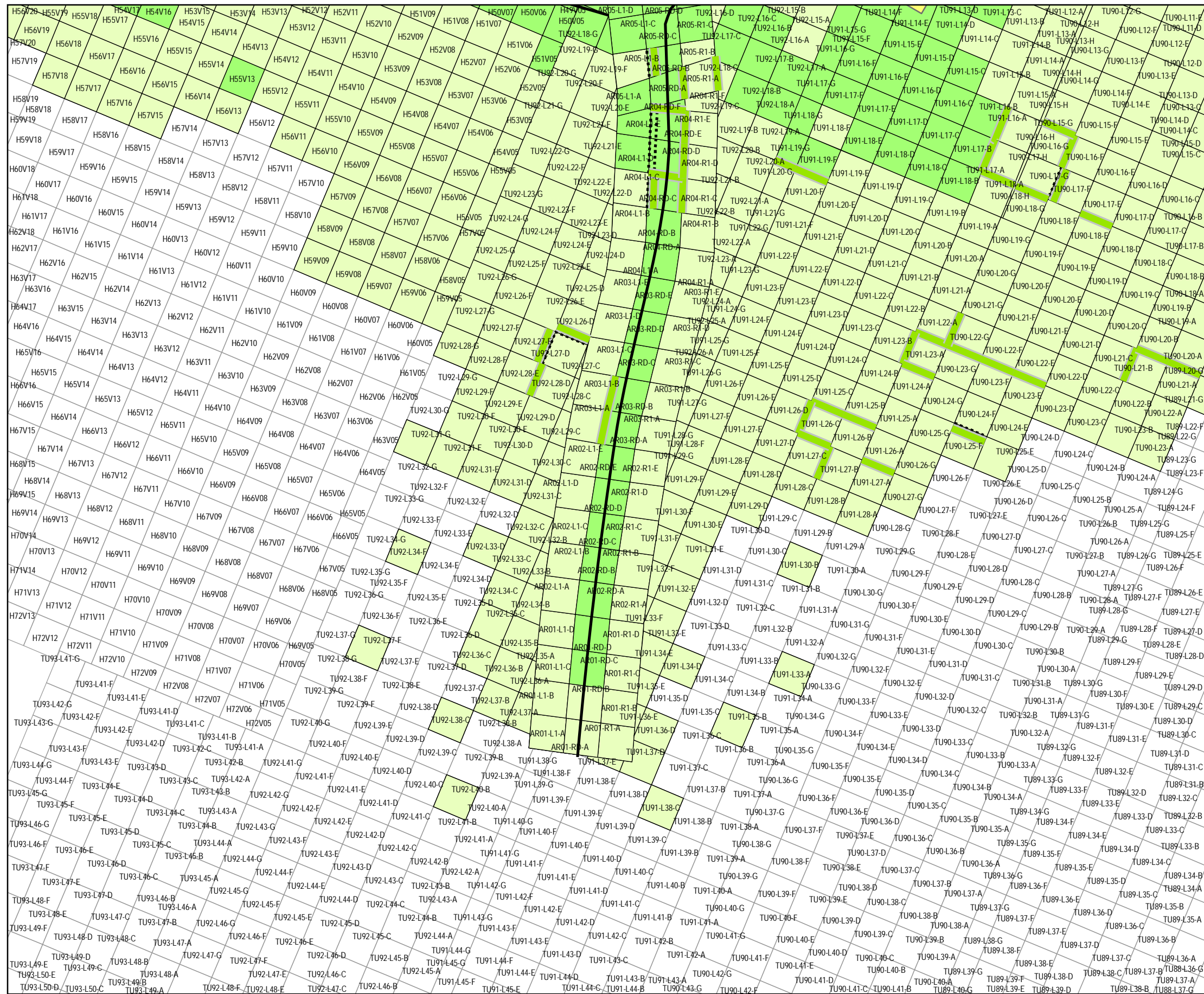


**South Upper Site Road**  
Radio Relay Station PCB Removal Action  
Port Heiden, Alaska

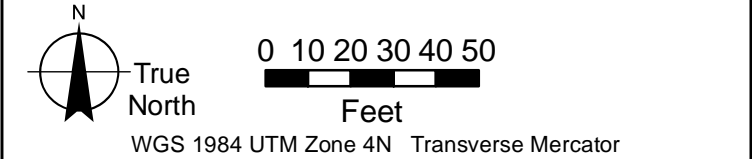
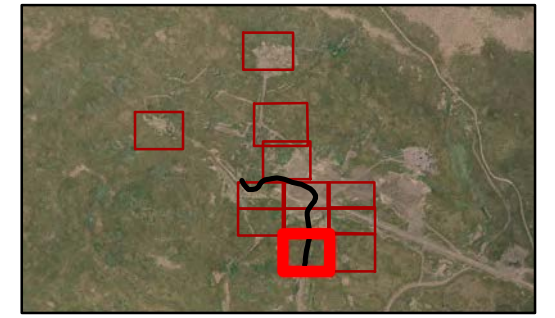
<b>JACOBS</b>	DATE:	PROJECT MANAGER:	FIGURE NO.:
	06 NOV 2017	G. Rutkowski	A-8

(This Page Intentionally Left Blank)





- Access Roads
  - Sidewall to be Sampled
  - Sampled Sidewall
  - Sidewall Below Cleanup (<1 mg/kg)
  - Sidewall Non-TSCA (1 to <50 mg/kg)
  - Sidewall TSCA (>50 mg/kg)
  - Removed Sidewall
  - Sacking station
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



**Access Road**

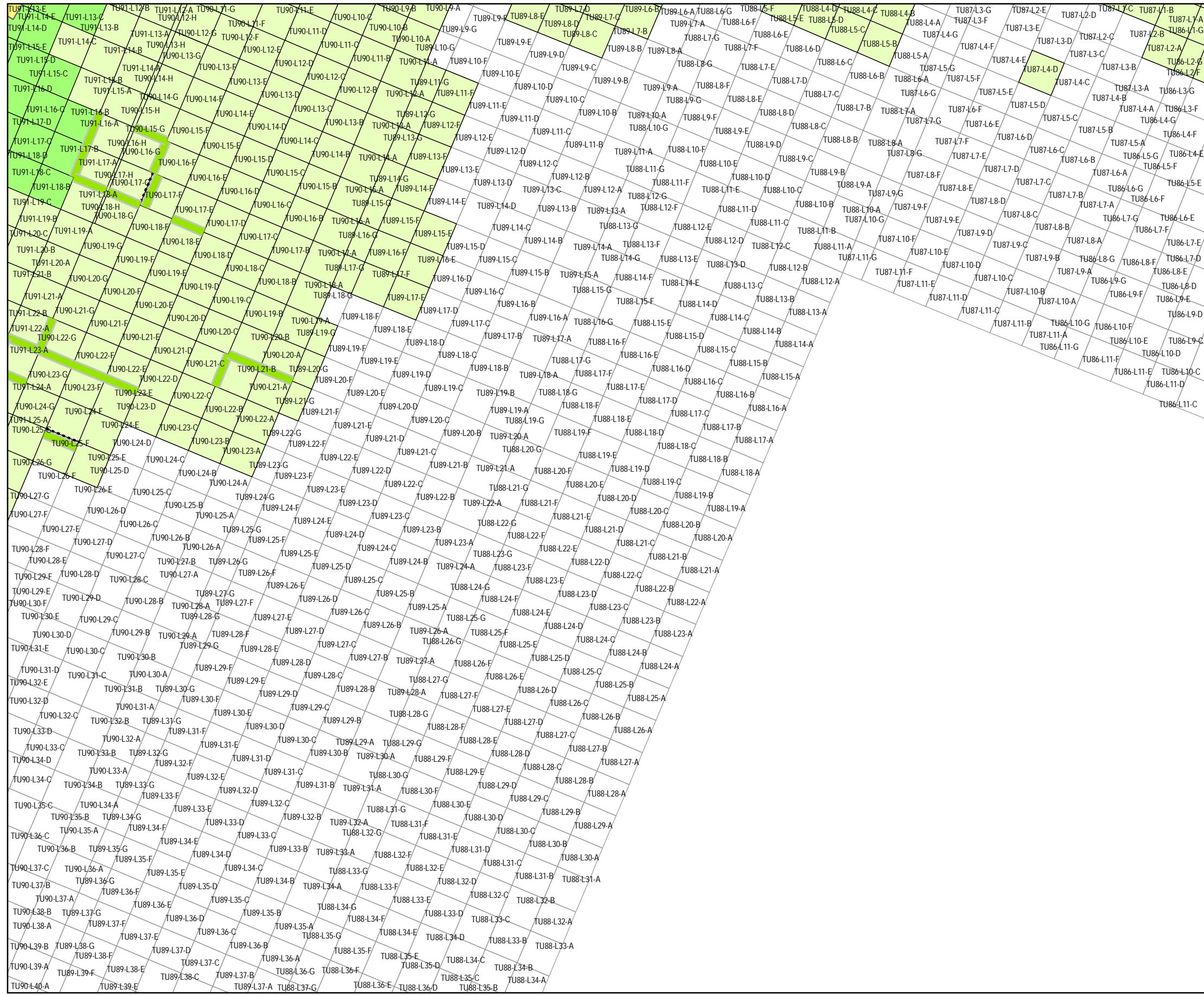
**Radio Relay Station PCB Removal Action**

**Port Heiden, Alaska**

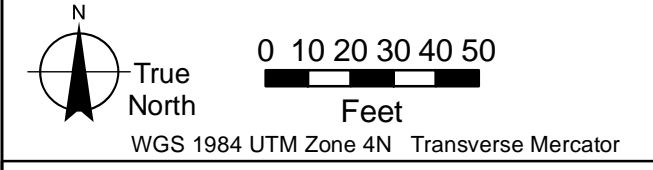
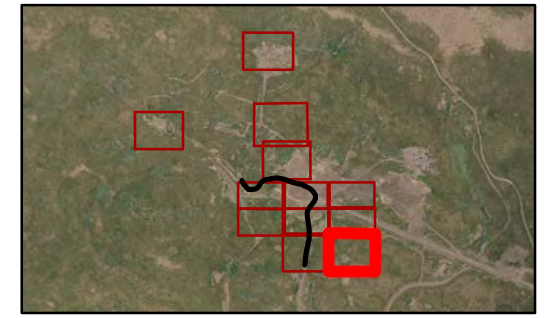
	DATE: 06 NOV 2017	PROJECT MANAGER: G. Rutkowski	FIGURE NO.: A-9
--	----------------------	----------------------------------	--------------------

(This Page Intentionally Left Blank)





- Access Roads
  - Sidewalk to be Sampled
  - Sampled Sidewalk
  - Sidewalk Below Cleanup (<1 mg/kg)
  - Sidewalk Non-TSCA (1 to <50 mg/kg)
  - Sidewalk TSCA (>50 mg/kg)
  - Removed Sidewalk
  - Sacking station
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches

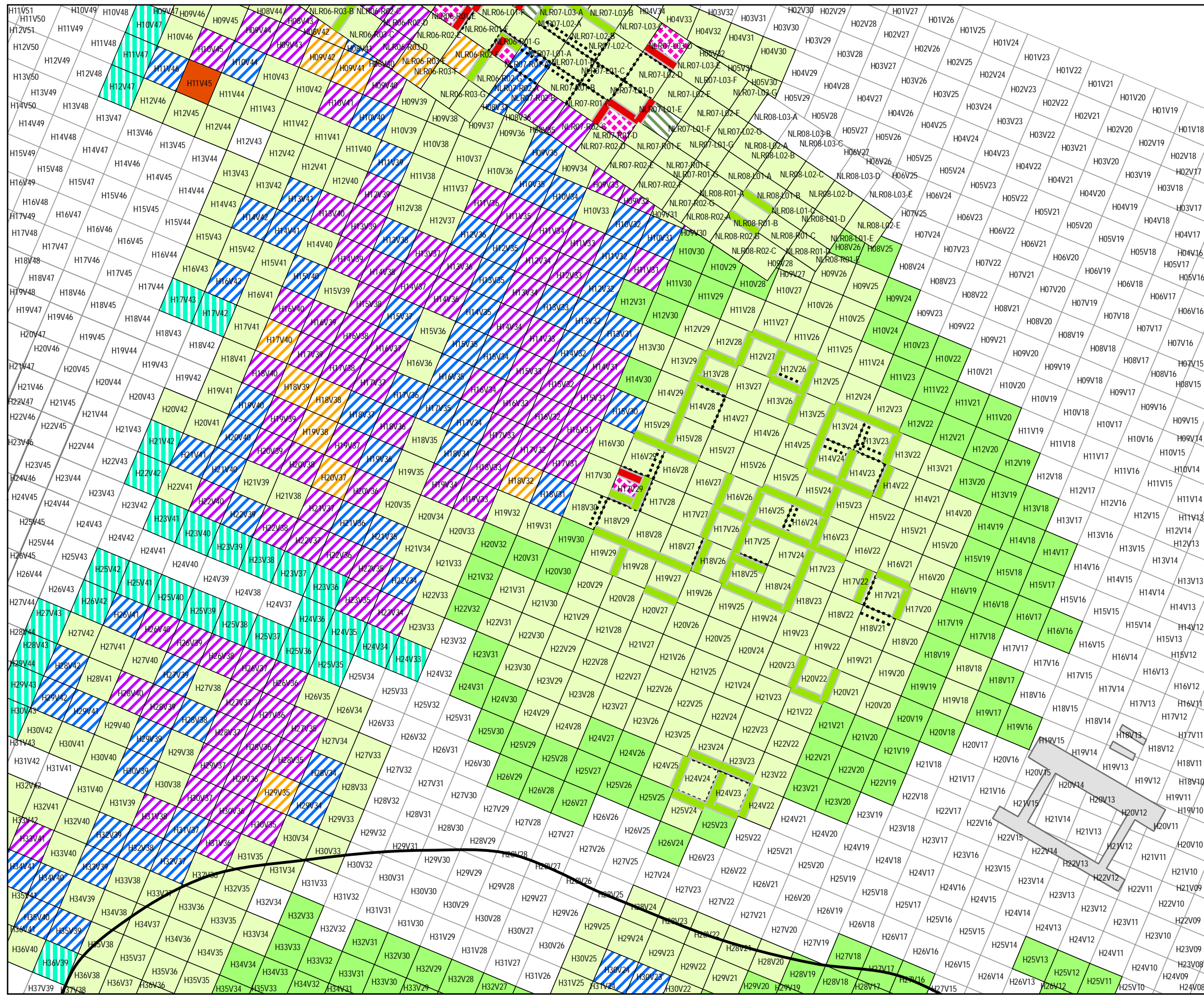


**Tundra Area**  
Radio Relay Station PCB Removal Action  
Port Heiden, Alaska

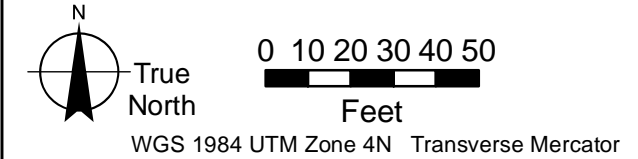
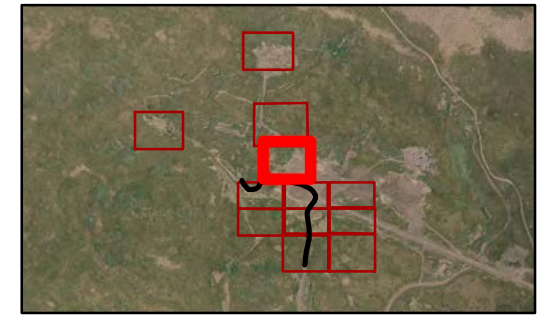
	DATE: 06 NOV 2017	PROJECT MANAGER: G. Rutkowski	FIGURE NO.: A-10
--	----------------------	----------------------------------	---------------------

(This Page Intentionally Left Blank)





- Access Roads
  - Sidewall to be Sampled
  - Sampled Sidewall
  - Sidewall Below Cleanup (<1 mg/kg)
  - Sidewall Non-TSCA (1 to <50 mg/kg)
  - Sidewall TSCA (>50 mg/kg)
  - Removed Sidewall
  - RRS concrete
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches

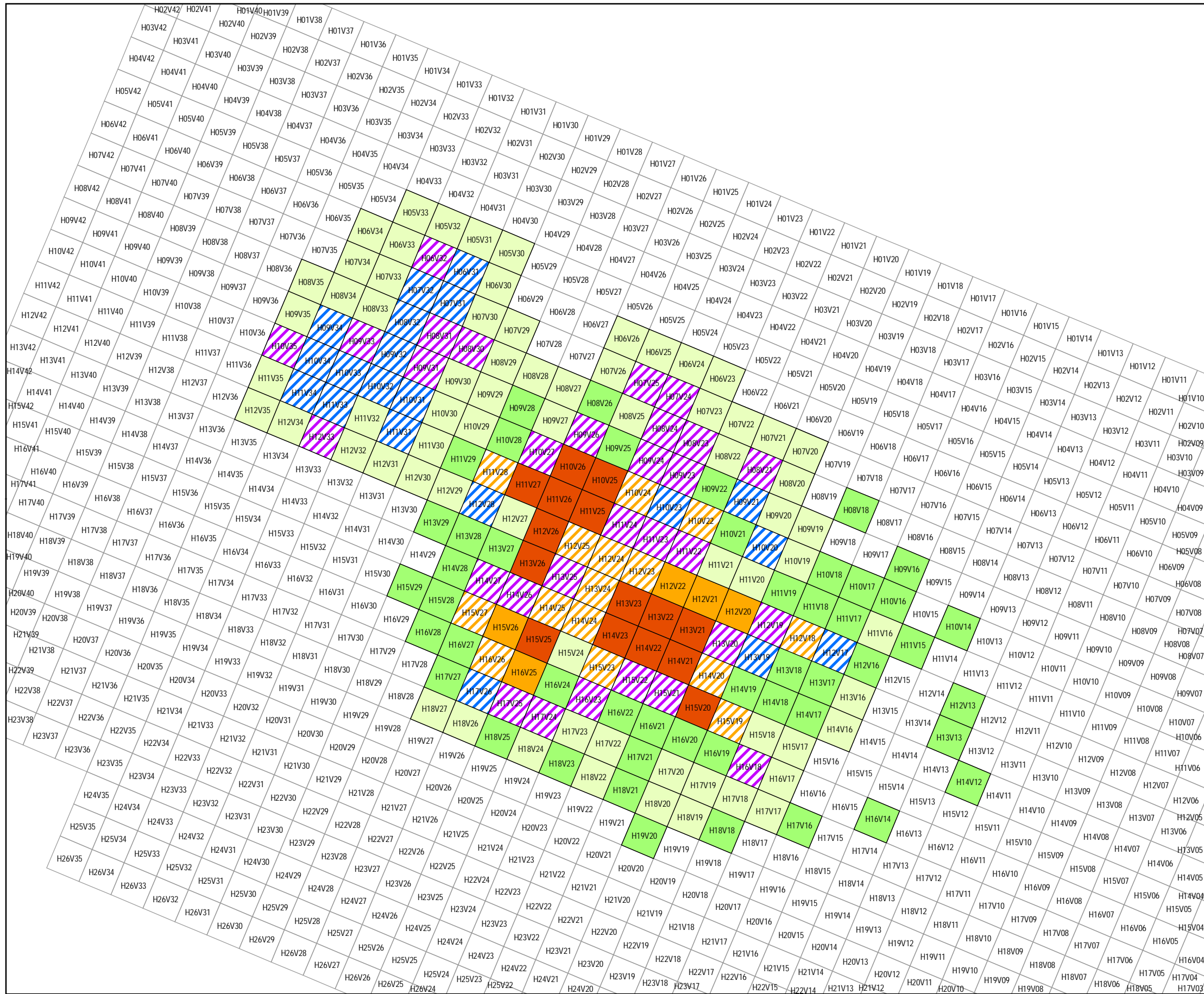


**Drum Storage Area**  
Radio Relay Station PCB Removal Action  
Port Heiden, Alaska

(This Page Intentionally Left Blank)

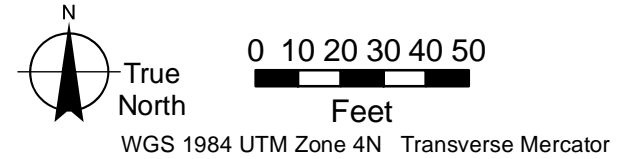
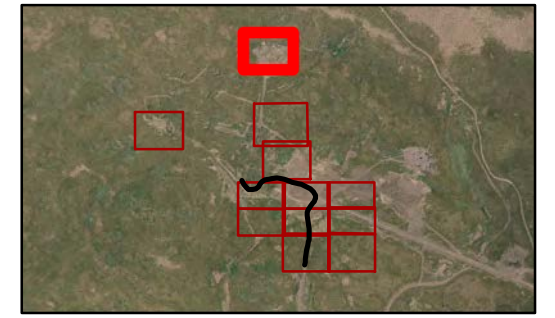


P:\PortHeiden\2017\_working\_field\_version\Backup\_120818\GIS\MXD\Antina\2017\_Field\_Planning\2017-06-01\_talbid\_DDP\_BDR.mxd zeiglein



- ➔ Access Roads
- Sidewall to be Sampled
- Sampled Sidewall
- Sidewall Below Cleanup (<1 mg/kg)
- Sidewall Non-TSCA (1 to <50 mg/kg)
- Sidewall TSCA (>50 mg/kg)
- ..... Removed Sidewall
- ▨ Grid To Be Characterized
- Below Cleanup
- HTRW TO-06 or WERS Legacy Clean

- TSCA Excavations**
- ▨ TSCA to wall depth
  - ▨ Remove TSCA wall 2.5 feet
  - ▨ TSCA to 36 inches
  - ▨ TSCA to 30 inches
  - ▨ TSCA to 24 inches
  - ▨ TSCA to 18 inches
  - ▨ TSCA to 12 inches
  - ▨ TSCA to 6 inches
- Non-TSCA Excavations**
- ▨ 1-50 mg/kg to wall depth
  - ▨ Remove wall 2.5 feet
  - ▨ Clean at 12, non-TSCA at 24
  - ▨ 1-50 mg/kg at 24 inches
  - ▨ 1-50 mg/kg at 18 inches
  - ▨ 1-50 mg/kg at 12 inches
  - ▨ 1-50 mg/kg at 6 inches



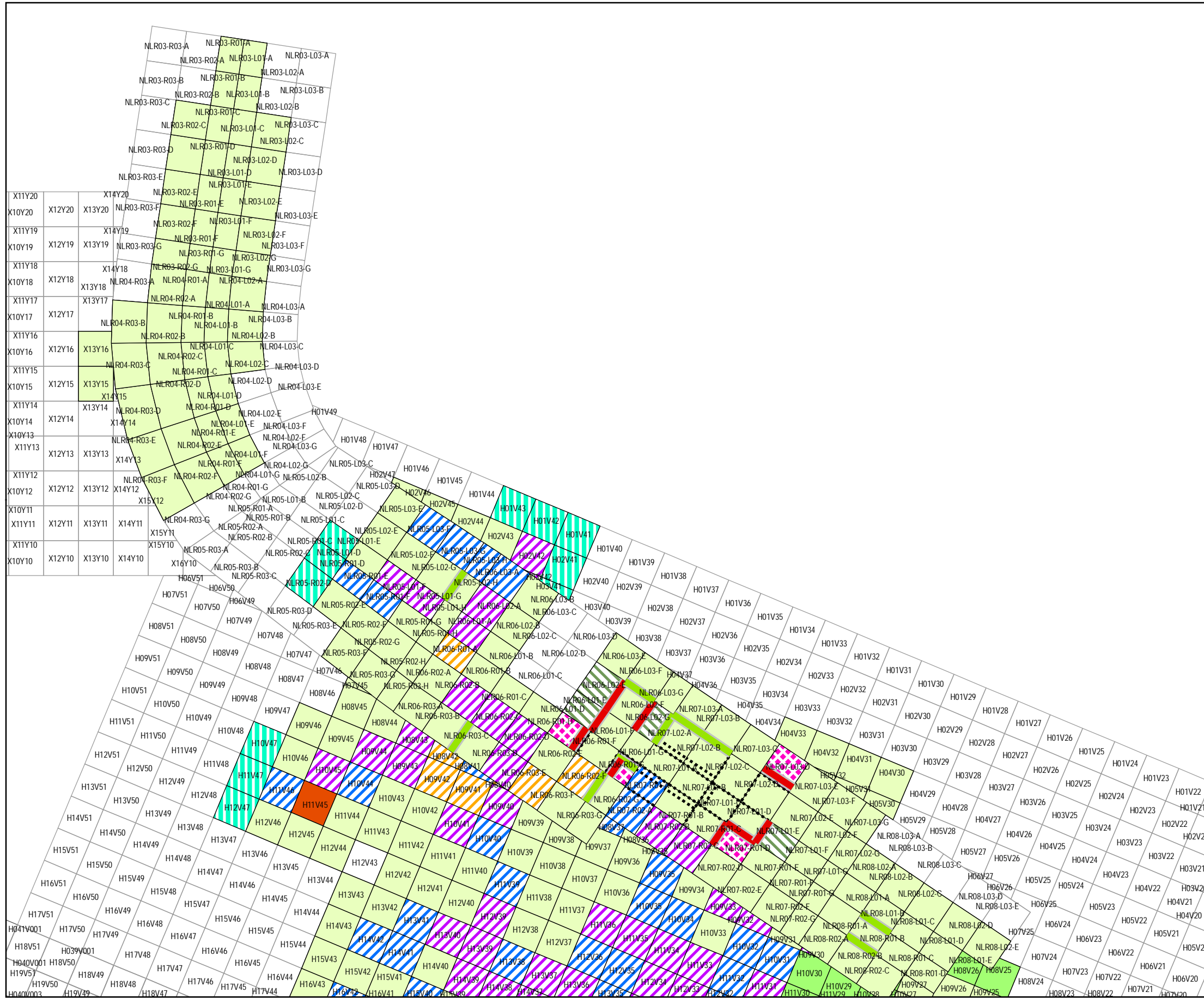
**North Landfill**  
**Radio Relay Station PCB Removal Action**  
**Port Heiden, Alaska**

<b>JACOBS</b>	DATE: 06 NOV 2017	PROJECT MANAGER: G. Rutkowski	FIGURE NO.: A-12
---------------	----------------------	----------------------------------	---------------------

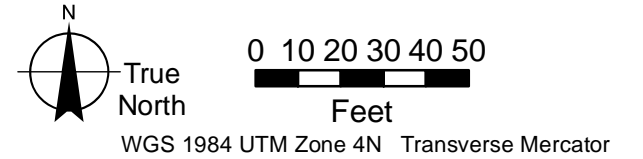
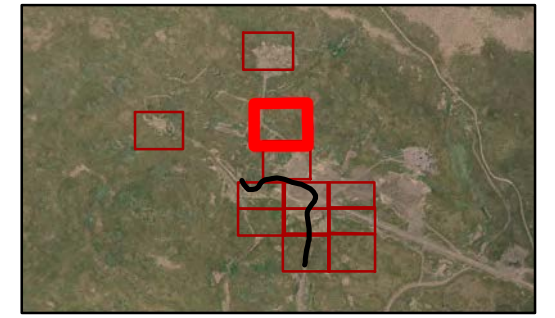
(This Page Intentionally Left Blank)



P:\PortHeiden\2017\_working\field\_version\Backup\_120818\GIS\MXD\Antenna\2017\_Field\_Planning\2017-06-01\_talbid\_DDP\_BDR.mxd zeiglein



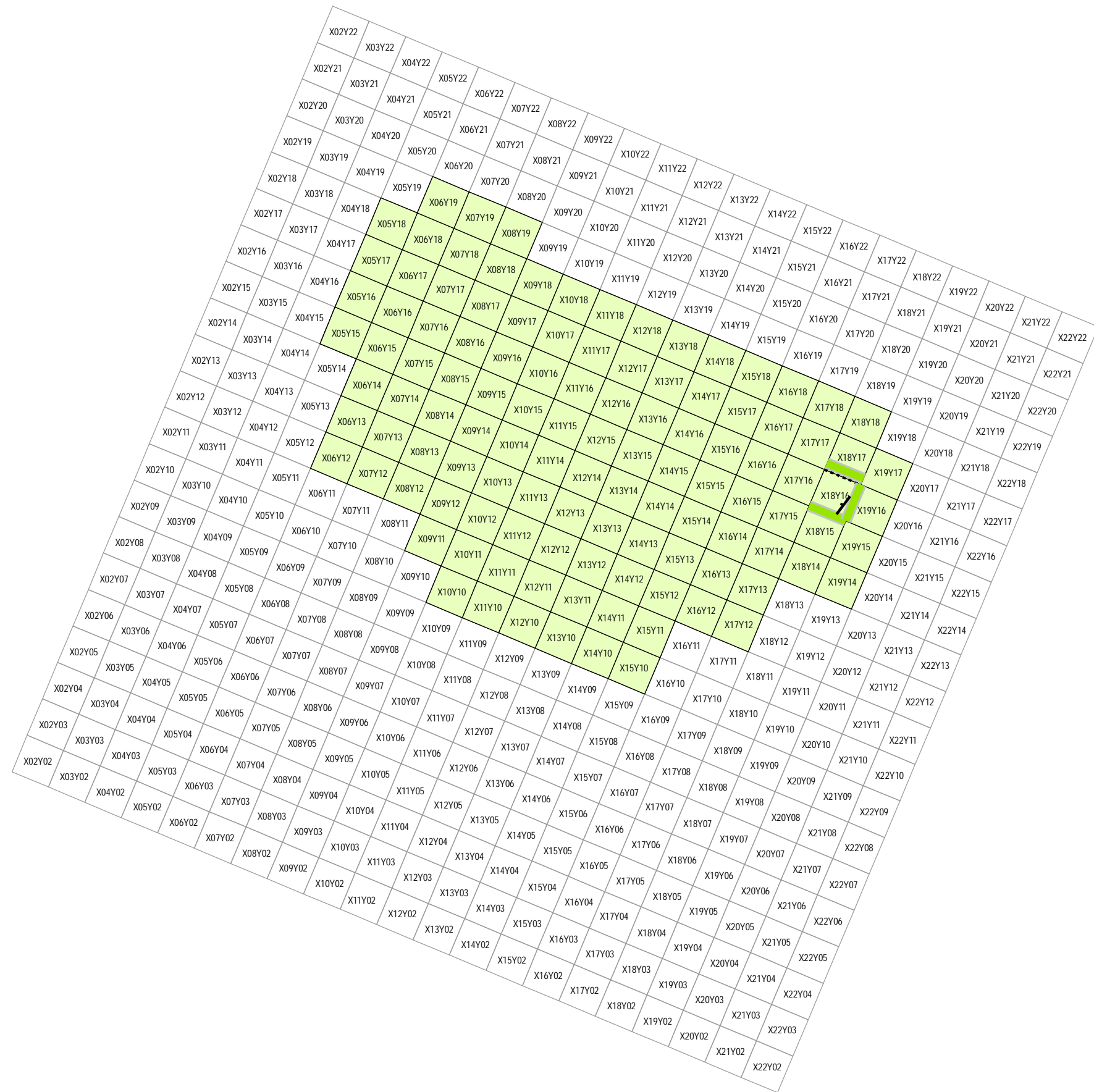
- Access Roads
  - Sidewall to be Sampled
  - Sampled Sidewall
  - Sidewall Below Cleanup (<1 mg/kg)
  - Sidewall Non-TSCA (1 to <50 mg/kg)
  - Sidewall TSCA (>50 mg/kg)
  - Removed Sidewall
  - Grid To Be Characterized
  - Below Cleanup
  - HTRW TO-06 or WERS Legacy Clean
- 
- ### TSCA Excavations
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- ### Non-TSCA Excavations
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



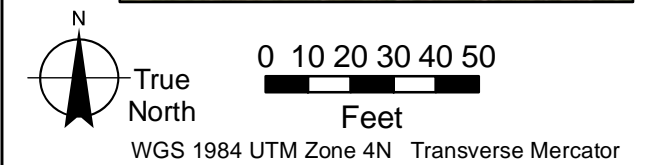
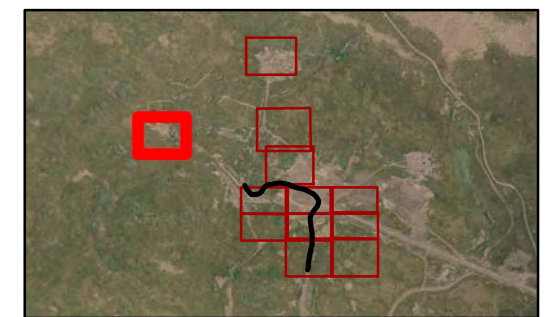
**North Landfill Road**  
**Radio Relay Station PCB Removal Action**  
**Port Heiden, Alaska**

	DATE: 06 NOV 2017	PROJECT MANAGER: G. Rutkowski	FIGURE NO.: A-13
--	----------------------	----------------------------------	---------------------

(This Page Intentionally Left Blank)



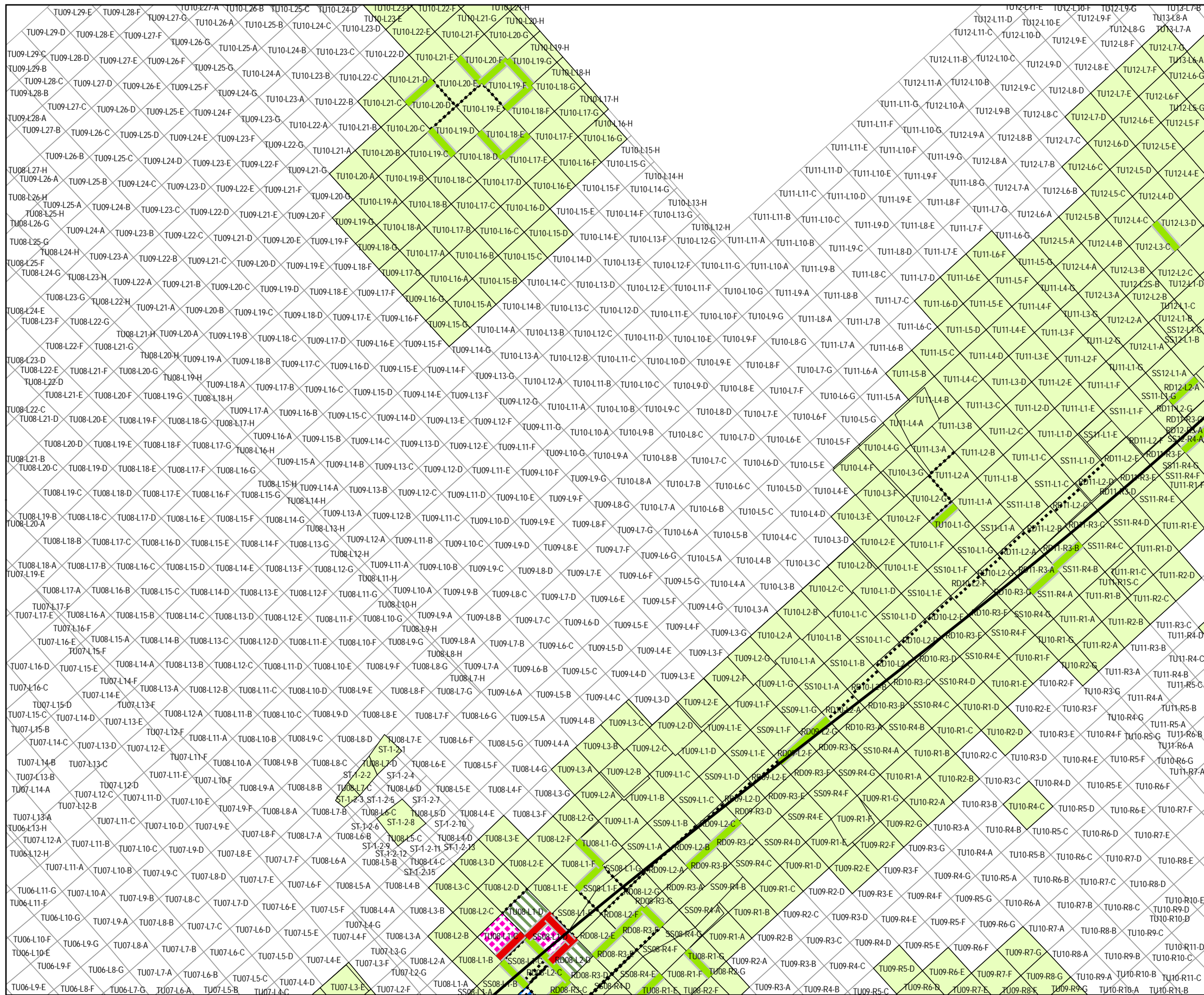
- Access Roads
  - Sidewall to be Sampled
  - Sampled Sidewall
  - Sidewall Below Cleanup (<1 mg/kg)
  - Sidewall Non-TSCA (1 to <50 mg/kg)
  - Sidewall TSCA (>50 mg/kg)
  - Removed Sidewall
  - Grid To Be Characterized
  - Below Cleanup
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



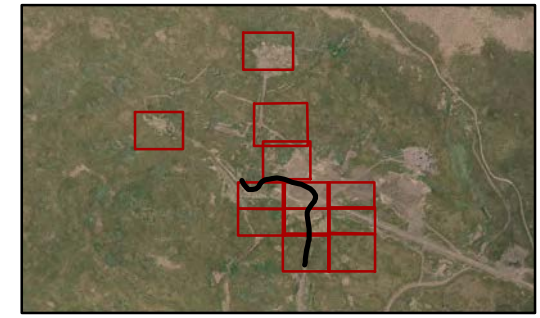
**Septic Lagoon**  
Radio Relay Station PCB Removal Action  
Port Heiden, Alaska

(This Page Intentionally Left Blank)





- Access Roads
  - Sidewall to be Sampled
  - Sampled Sidewall
  - Sidewall Below Cleanup (<1 mg/kg)
  - Sidewall Non-TSCA (1 to <50 mg/kg)
  - Sidewall TSCA (>50 mg/kg)
  - Removed Sidewall
  - Grid To Be Characterized
  - Below Cleanup
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



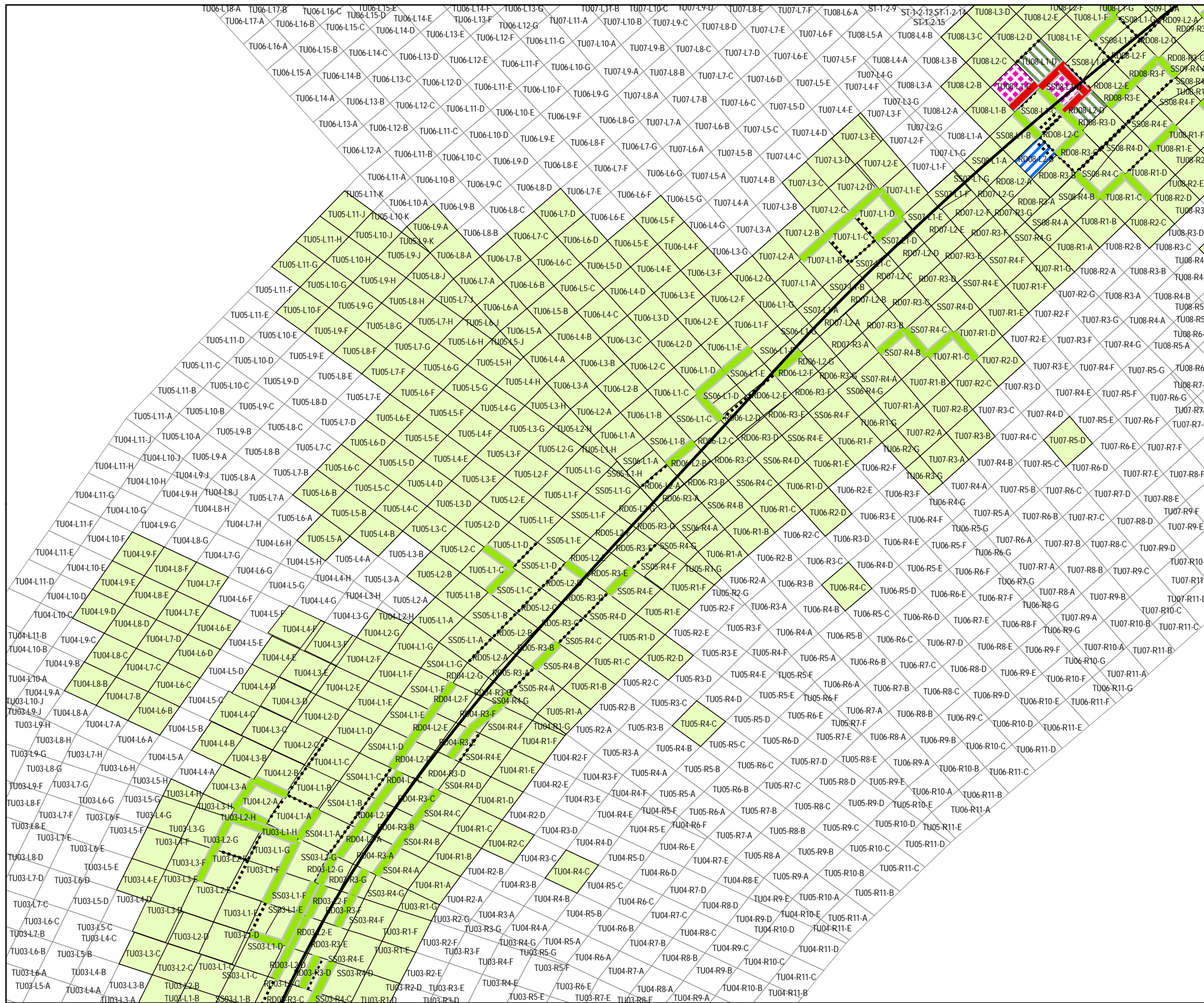
True North  
 0 10 20 30 40 50 Feet  
 WGS 1984 UTM Zone 4N Transverse Mercator

**Lower Site Road 1**  
**Radio Relay Station PCB Removal Action**  
**Port Heiden, Alaska**

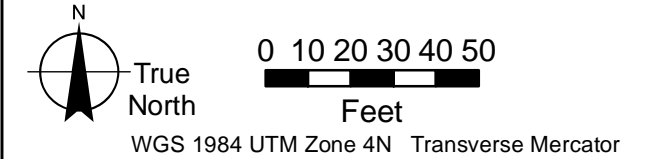
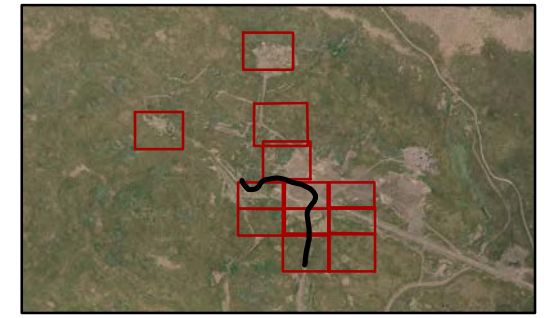
	DATE: 06 NOV 2017	PROJECT MANAGER: G. Rutkowski	FIGURE NO.: A-15
--	----------------------	----------------------------------	---------------------

(This Page Intentionally Left Blank)





- Access Roads
  - Sidewalk to be Sampled
  - Sampled Sidewalk
  - Sidewalk Below Cleanup (<1 mg/kg)
  - Sidewalk Non-TSCA (1 to <50 mg/kg)
  - Sidewalk TSCA (>50 mg/kg)
  - Removed Sidewalk
  - Grid To Be Characterized
  - Below Cleanup
- 
- TSCA Excavations**
- TSCA to wall depth
  - Remove TSCA wall 2.5 feet
  - TSCA to 36 inches
  - TSCA to 30 inches
  - TSCA to 24 inches
  - TSCA to 18 inches
  - TSCA to 12 inches
  - TSCA to 6 inches
- Non-TSCA Excavations**
- 1-50 mg/kg to wall depth
  - Remove wall 2.5 feet
  - Clean at 12, non-TSCA at 24
  - 1-50 mg/kg at 24 inches
  - 1-50 mg/kg at 18 inches
  - 1-50 mg/kg at 12 inches
  - 1-50 mg/kg at 6 inches



**Lower Site Road 2**  
**Radio Relay Station PCB Removal Action**  
**Port Heiden, Alaska**

	DATE:	PROJECT MANAGER:	FIGURE NO.:
	06 NOV 2017	G. Rutkowski	A-16

(This Page Intentionally Left Blank)

**APPENDIX B**  
**Photograph Log**

(This Page Intentionally Left Blank)

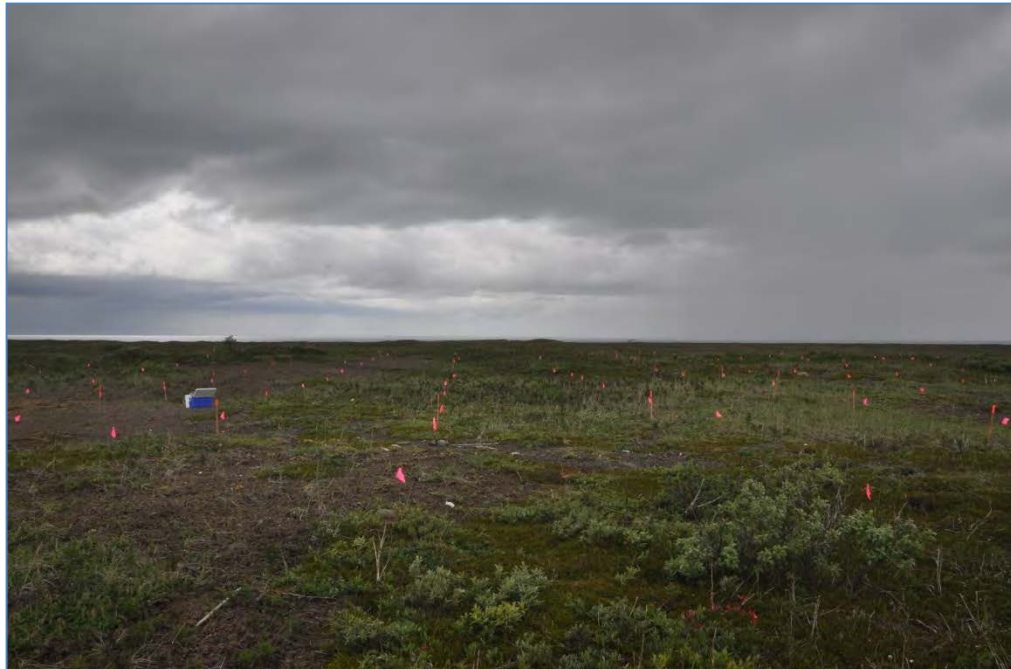


**2016-2018 Removal Action Report – Port Heiden RRS**



**Photo No. 1 – 30 June 2016**

Excavation at Soil Removal Area 2; contaminated soil being transferred into bags.  
View facing east.



**Photo No. 2 – 11 June 2016**

Site with grids established and ready for sample collection. View facing northwest.

**2016-2018 Removal Action Report – Port Heiden RRS**



**Photo No. 3 – 11 June 2016**

North Landfill grids established ready for characterization sample collection. Soil Removal Area 2 excavation in the background. View facing south.



**Photo No. 4 – 22 June 2016**

Collection of characterization samples at North Landfill. View facing west.



**2016-2018 Removal Action Report – Port Heiden RRS**



**Photo No. 5** – 25 June 2016  
Site overview including survey set-up and excavation. View facing north.



**Photo No. 6** – 29 June 2016  
Measuring walls within the tundra area to determine if wall sample collection needs to occur.  
View facing west.

**2016-2018 Removal Action Report – Port Heiden RRS**



**Photo No. 7 – 29 June 2016**

Sample collection of confirmation samples post excavation at the North Landfill adjacent to drums. View facing east.



**Photo No. 8 – 21 June 2017**

Hand excavation for characterization sampling within the Soil Removal Area 2. View facing east.



**2016-2018 Removal Action Report – Port Heiden RRS**



**Photo No. 9** – 19 June 2017

Survey shown for grid characterization and confirmation. View facing west.



**Photo No. 10** – 10 June 2017

Survey base station set-up. View facing west.

**2016-2018 Removal Action Report – Port Heiden RRS**



**Photo No. 11** – 19 August 2016  
Loading bags onto flatbed for waste transport. View facing northwest.



**Photo No. 12** – 23 February 2018  
Repairing top cover over the super sacks after winter storm. View looking northeast.

**APPENDIX C**  
**Data Quality Assessment**



Item No.	Section, page, paragraph, line (classification)	COMMENT	RESPONSE	REVIEWER ACCEPTANCE (A-Agree) (D-Disagree)
		the EPA PCB Coordinator in Region 10	<ul style="list-style-type: none"> <li>• A field estimated weight of 881.6 tons of non-TSCA soil.”</li> </ul>	
2.	Section 1.0, 5 Project Overview	<p>The text states: “The work was performed in accordance with the requirements of the Alaska Department of Environmental Conservation (ADEC); Title 18 of the Alaska Administrative Code (AAC), Chapter 75.360 (18 AAC 75.360) (ADEC 2016b); and Title 40 of the Code of Federal Regulations (CFR) §761.61 (40 CFR 761.61).”</p> <p>NOTE: 18 AAC 75 has been amended as of November 7, 2017</p>	Understood. Although 18 AAC 75 has been amended November 2017, field work was conducted prior to this date and the cited reference was current for these standards. All work performed at Port Heiden RRS was conducted in accordance with regulations in effect at the time. Changes to text for the cited reference will not occur.	
3.	Section 5.0, 19 Conclusions	ADEC concurs with the conclusions and the need for addressing an estimated 5,419 tons of non-TSCA soil and 77 tons of TSCA soil which remains onsite to be excavated.	Agreed.	
4.	Section 6.0, 21 References	<p>NOTE: 18 AAC 75 regulations have been updated since 2016. ADEC. 2017 (November). Oil and Other Hazardous Pollution Control Regulations –Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances.</p> <p>Alaska Administrative Code Title 18, Chapter 75.</p>	Understood. Please refer to the response for Comment #2.	
5.	Section 4.0, C-15 References	<p>18 AAC 75 regulations have been updated since 2016 and the document does not reference UST regulations in the text. Please correct.</p> <p>ADEC. 2017 (November). Oil and Other Hazardous Pollution Control Regulations – Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances.</p> <p>Alaska Administrative Code Title 18, Chapter 75.</p>	Understood. Please refer to the response for Comment #2.	