



Northwest Arctic Borough, Planning Department  
Title 9 Major Use Permit No: 116-03-22  
Alaska Industrial Development Export Authority

**Title 9 Major Use Permit No.: 116-03-22**  
**Alaska Industrial Development Export Authority Ambler Mining District**  
**Industrial Access Road Project**  
**Date of Public Notice: July 1, 2022**  
**Date of Issue: August 2, 2022**  
**Permit Expires: December 31, 2023**

✓ APPROVED

**Permit Issued By:**

Northwest Arctic Borough  
Planning Department  
c/o Clay Nordlum, Planning Director  
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**Project Description:**

The Alaska Industrial Development and Export Authority (AIDEA) submitted a Title 9 application to perform low-impact environmental studies, which are part of the front-end engineering and design scope of work for the Ambler Access Project. The proposed 2022-2023 field activities do not include any construction activities and are all being conducted solely for the purposes of collecting data to guide environmental, engineering, and design of the Project. AIDEA will perform cultural resource surveys, hydrology investigations, and land surveys on approximately 96 (ninety-six) miles within the Northwest Arctic Borough (NAB), on the Ambler

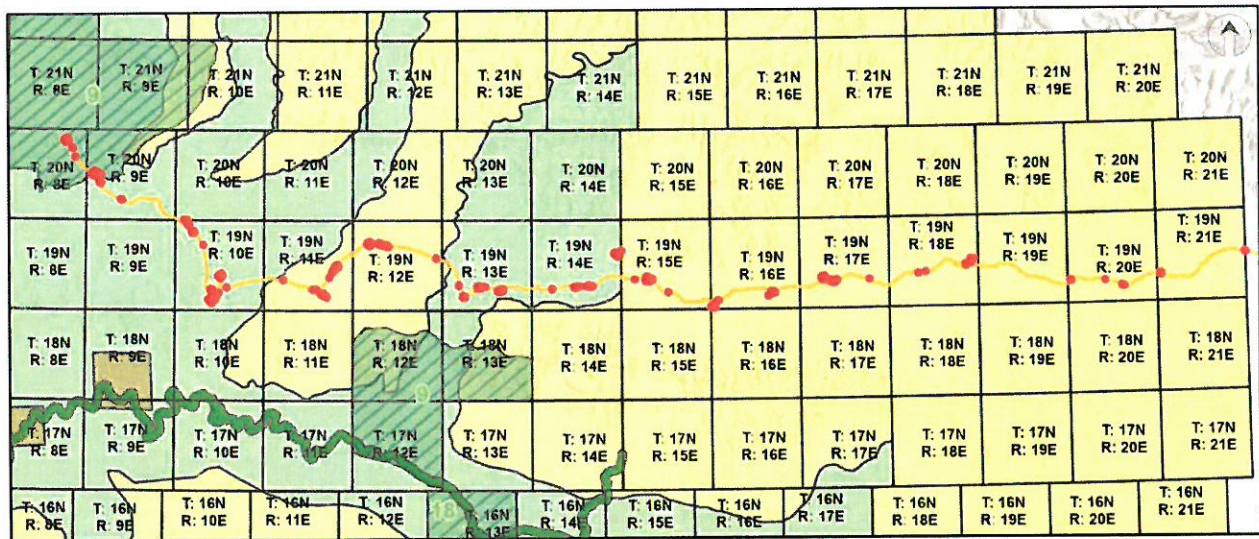


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Road corridor, which occurs between milepost 115 to milepost 211 (see Figure 1 below). The proposed fieldwork activities for 2022-2023 are similar in scope and location to the 2021 fieldwork activities previously authorized under NAB Conditional Use Permit No. 103-22-22, which were not completed due to weather and logistical constraints. The fieldwork proposed for 2022-2024 is not linear but primarily consists of specific locations such as potential bridges and material sites.

AIDEA proposes 2022-2023 fieldwork at 39 locations in the NAB that includes:

- Archaeological (cultural resource) surveys
- Geotechnical drilling
- Temporary field camps
- Temporary airstrip use, and
- Overland travel



**Figure 1. Ambler Access Project – Proposed 2022-2024 cultural resource survey fieldwork at 39 locations.** Survey target areas are shown in red. NAB zoning districts are shown by color: yellow is General Conservation; light green is Subsistence Conservation; olive green is Village District; and green with diagonal blue lines denotes Subsistence Subdistricts.

All fieldwork access will be via helicopter. No aerial surveys at low altitude or low speed will occur this season. Crew sizes vary. Cultural Resources crews include 6 personnel, geotechnical drilling crews include up to 9 personnel and remote camps would be staffed by up to 12 personnel. Crews will start the survey work from EAST to WEST along the survey corridor, starting in Bettles.





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The following Uses make up this project in the **Subsistence and General Conservation Districts**:

- ‘Exploration, assessment or examination of a parcel by a professional archaeologist or other qualified person’

The Use for this project meet the Major Use threshold for permitting.

Specific details of the project are contained in the Title 9 application and documents submitted by AIDEA to the Borough Planning Department. These documents are incorporated into the Borough’s administrative record. Project Activities are summarized below.

**Project Location:**

**Table 1. Fieldwork activities included in NAB Code and number of locations**

Fieldwork Activity	Number of Locations	NAB Title 9 Code Reference & Number of Sites	
		SC Lands	GC Lands
Cultural Resource Surveys	39	9.12.030(D)(5)	9.12.050(B)(8)
Potential bridge sites	15	4 sites	11 sites
Potential material sites	24	11 sites	16 sites
Geotechnical Drilling	54	9.12.030(D)(6)	9.12.050(C)(3)
Potential bridge sites	30	11 sites	19 sites
Potential material sites	24	11 sites	14 sites
Overland Travel	81 miles within NAB	9.12.030(D)(9)	9.12.050(C)(5)
Temporary Field Camps		9.12.030(D)(2)	9.12.050(B)(5)
Temporary Use of Airstrip	1 (Sun Camp Airstrip)		9.12.050(B)(9)
<b>Total</b>	<b>94</b>		

**Cultural Resource Surveys:**

Cultural resource surveys are designed and executed for the purpose of identifying and characterizing archaeological and/or historic objects or sites which may be located within the Project’s future construction footprint.

In the 2022 field season, AIDEA is proposing to conduct cultural resource inventory and evaluation surveys on 39 project components located within the NAB at 15 potential bridge locations (Table 2), 5 potential primary material sites (Table 3), and 19 potential secondary material sites (Table 3) as shown on Figure 1 and on additional maps in Appendix A. Twenty locations are identified with an asterisk (\*) in Tables 2 and 3, indicating the sites authorized for 2021 fieldwork activities (NAB Title 9 Conditional Use Permit No. 103-03-22); the activities at these sites were unable to be completed in 2021. The remaining 19 material sites are newly



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proposed for 2022 fieldwork activities. In total, the cultural resources study areas for the 2022 field season consist of approximately 1,395 acres.

**Table 2. Ambler Access Project 2022 cultural resources fieldwork – bridge locations**

Waterbody Name	Component/ Structure Type	Coordinates			NAB Zone	Appendix & Map Page No.	Map ID	Miles to Kobuk
		Township	Range	Section				
1. Reed River*	Large Bridge	19N	18E	24	GC	Appendix A, Page 5	LB1	56.2
2. Unnamed*	Small Bridge	19N	18E	21	GC	Appendix A, Page 5	SB4	53.5
3. Unnamed*	Small Bridge	19N	18E	20, 21	GC	Appendix A, Page 5	SB5	53.0
4. Unnamed*	Small Bridge	19N	17E	26	GC	Appendix A, Page 6	SB3	49.8
5. Beaver Creek*	Large Bridge	19N	17E	28	GC	Appendix A, Page 6	LB2	47.5
6. Krumpet Creek*	Medium Bridge	19N	16E	31	GC	Appendix A, Page 8	MB15	39.5
7. Unnamed*	Small Bridge	19N	15E	27	GC	Appendix A, Page 9	SB19	36.4
8. Unnamed*	Small Bridge	19N	15E	19	GC	Appendix A, Page 9	SB22	34.4
9. Square Creek*	Small Bridge	19N	11E	27	GC	Appendix A, Page 13	SB13	14.4
10. Unnamed*	Small Bridge	19N	11E	27	GC	Appendix A, Page 13	SB14	14.1
11. Unnamed*	Small Bridge	19N	11E	20, 29	GC	Appendix A, Page 13	SB6	12.9
12. Unnamed*	Small Bridge	19N	10E	27	SC	Appendix A, Page 14	SB20	9.9
13. Kogoluktuk River*	Large Bridge	19N	10E	28	SC	Appendix A, Page 14	LB7	9.1
14. Unnamed*	Small Bridge	19N	10E	8	SC	Appendix A, Page 15	SB18	11.5
15. Ruby Creek*	Medium Bridge	20N	09E	28	SC	Appendix A, Page 16	MB3	13.5





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**Table 3. Ambler Access Project 2022 Cultural Resources Fieldwork – Material Sites**

Component Name	Component/ Structure Type	Coordinates			NAB Zone	Appendix & Map Page No.	Map ID	Miles to Kobuk
		Township	Range	Section				
1. Reed River Bluffs – Drift*	Primary Mat Site	19N	18E	13, 24	GC	App A, Pg 5	PMS11	55.6
2. Beaver Creek Outwash*	Secondary Mat Site	19N	17E	28	GC	App A, Pg 6	SMS16	47.2
3. Beaver Creek Drift	Secondary Mat Site	19N	17E	20, 29	GC	App A, Pg 7	SMS6	46.6
4. W Beaver Creek Piedmont 1	Secondary Mat Site	19N	16E	26	GC	App A, Pg 7	SMS17	43.2
5. W Beaver Creek Piedmont 2	Secondary Mat Site	19N	16E	26, 34, 35	GC	App A, Pg 7	SMS18	43.1
6. NE Narvak Lake Piedmont G*	Primary Mat Site	19N	15E	36	GC	App A, Pg 8	PMS10	39.0
		19N	16E	31	GC			
7. E Avaraart Lake Drift 1	Secondary Mat Site	19N	15E	20, 29	GC	App A, Pg 9	SMS7	35.1
8. E Avaraart Lake Drift 2	Secondary Mat Site	19N	15E	20, 21, 28, 29	GC	App A, Pg 9	SMS8	35.4
9. Avaraart Lake Andesite <sup>1</sup>	Secondary Mat Site	19N	14E	12, 23	SC, GC	App A, Pg 9	SMS20	34.0
		19N	15E	7, 18	GC			
10. S Avaraart Lake Drift 1	Secondary Mat Site	19N	14E	26, 27	SC	App A, Pgs 9-10	SMS9	31.4
11. S Avaraart Lake Drift 2	Secondary Mat Site	19N	14E	27, 28	SC	App A, Pg 10	SMS10	30.5
12. Mauneluk River Basalt	Secondary Mat Site	19N	13E	26, 27	SC	App A, Pg 11	SMS21	25.5
13. Mauneluk River Alluvial Terrace	Primary Mat Site	19N	13E	28	SC	App A, Pg 11	PMS9	24.1
14. E Ambler Lowlands PG A	Secondary Mat Site	19N	12E	8, 9	GC	App A, Pg 12	SMS11	19.6
15. E Ambler Lowlands PG B	Secondary Mat Site	19N	12E	9	GC	App A, Pg 12	SMS12	19.8
16. E Ambler Lowlands PG C	Secondary Mat Site	19N	12E	7, 8	GC	App A, Pg 12	SMS13	18.8
17. E Ambler Lowlands G Drift	Secondary Mat Site	19N	11E	13, 14, 23, 24	GC	App A, Pg 13	SMS23	16.3
18. E Ambler Lowlands Alluvial Fan	Secondary Mat Site	19N	11E	26, 27, 34, 35	GC	App A, Pg 13	SMS24	14.5
19. Kogoluktuk River Alluvium	Secondary Mat Site	19N	10E	21, 22	SC	App A, Pg 14	SMS25	10.1
20. Kogoluktuk River Drift/Alluvium*	Primary Mat Site	19N	10E	27, 28, 33	SC	App A, Pg 14	PMS8	8.9
21. Ambler Lowlands Marble	Secondary Mat Site	19N	10E	5	SC	App A, Pg 15	SMS26	11.9
22. Central Ambler Lowlands Glacial Drift	Secondary Mat Site	19N	10E	5, 6	SC	App A, Pg 15	SMS14	12.5
23. Shungnak River Drift and Terrace Gravels*	Primary Mat Site	20N	09E	17, 18, 19, 20	SC	App A, Pg 17	PMS12	15.28
24. Ambler River Alluvium	Secondary Mat Site	20N	08E	2	SC	App A, Pg 17	SMS15	17.9

*GC: General Conservation Zoning District; SC: Subsistence Conservation Zoning District*

*1 Site is located within two zoning districts. Values may not sum up to totals since this site occurs within two zones.*

**16 Targets in the GC; 11 Targets in the SC**

For the 2022 season, AIDEA anticipates basing the eastern project cultural resources field crews in Coldfoot (for sites between approximately MP 115 and MP 130) and the western crews in Dahl Creek, (for sites between approximately MP 137 and MP 211). Fieldwork will proceed in a roughly east-to-west trajectory. The cultural resources field survey will include between three and four crews that will consist of the following individuals:





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- A crew lead
- An assistant crew lead
- Two archaeological technicians
- An archaeological intern
- A Tribal Liaison
- A bear guard

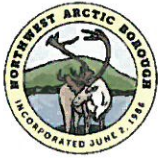
Crews will be supported by one helicopter based in Coldfoot and two helicopters based in Dahl Creek. Crews will move daily between Coldfoot or Dahl Creek and the fieldwork sites shown in Figure 1. AIDEA anticipates that cultural resources field surveys will commence approximately mid-August, 2022, and will continue until the end of the season, approximately September 30, 2022. Surveys may commence earlier if all appropriate approvals are received.

Typical cultural resources fieldwork will consist of teams hiking and walking the extent of the potential bridge crossing or material site in a patterned manner to identify surface features or artifacts, historic structures, trails, or other indications that historic or archaeological resources may be present in the area. In areas of known or suspected historic use, this will include the use of a metal detector in an attempt to locate concentrations of historic material. The crews will also inspect the terrain and conditions to determine if there are likely to be buried archaeological deposits within the area. If the area has the potential to have archaeological material, crews will perform shovel tests, which consist of 50cm x 50cm (20in x 20in) pits dug with hand tools (e.g., small shovels and trowels). The dirt excavated is screened through a 0.25-inch hardware mesh onto a tarp to ensure that no artifacts are missed. The shovel tests are excavated until the archaeologist reaches bedrock, gravels, glacial till, or the limits of the hand tools (usually about 1 meter [3 feet]). Upon completion of the test, the crews document the soil stratigraphy and make notes and collect photos of the test and backfill all dirt from the tarp into the test hole and return the surface to its original grade.

If the crews identify a historic or archaeological site, they will document the site using field notes, forms, photographs, and GPS receivers. The type and size of an encountered site will determine the time and level of effort required to document it (e.g., a single surface artifact will take less time than a large historic mining camp). For subsurface archaeological sites, additional subsurface tests will be excavated in a systematic pattern to attempt to define preliminary boundaries of the site. Collection and curation of artifacts and samples will be in accordance with the permits and agreement documents for the Project. The cultural resource team will obtain all necessary permits from landowners and regulators required for field investigations, which include the agreements for long-term artifact curation at federal agency facilities and museums (e.g., National Park Service and University of Alaska Museum of the North).

The State of Alaska SHPO's office is part of AIDEA's coordination effort. The Ambler Access Project's Section 106 Programmatic Agreement (PA) has established the requirements for the





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management of historic and archaeological findings. As a PA signatory, the SHPO's office approved the collection and curation protocols in the PA, which the Project is required to follow.

Specifically, the cultural resource survey crews will follow the protocol outlined below:

- **Subsurface Artifacts:** Collect all cultural materials recovered from a shovel test, as well as charcoal associated with cultural contexts. Collect all hearth matrix (the entirety of ash/charcoal lenses or other subsurface features).
- **Surface Artifacts at Prehistoric Sites:** Only collect utilized or diagnostic tools, items of significant research value, artifacts that are necessary to assist with evaluating the NRHP eligibility of the site, or that are vulnerable to disturbance, loss or unauthorized collection. Collect obsidian artifacts for geochemical sourcing.
- **Surface Artifacts at Historic Sites (1880 to 50 years before present):** Collect items of significant research value, such as items associated with individuals (jewelry, carvings, etc.) or are vulnerable to disturbance, loss or unauthorized collection.

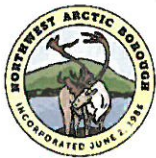
Equipment which cultural resource survey crew will use include:

- Hand Tools (e.g., shovels, entrenchment tools, trowels, root nippers, brushes)
- Screens for sifting excavated sediment
- Tarps
- Electronic equipment (GPS units, cameras, metal detectors, radios, sat phones)
- Bear Spray and Firearm (bear guard)

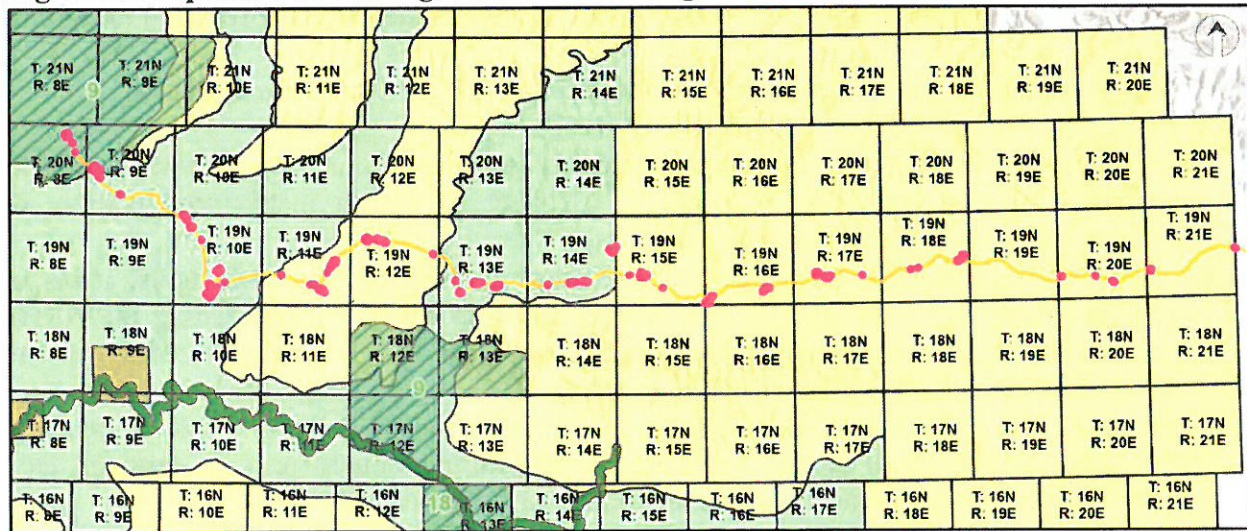
Cultural Resources survey summary: 39 locations, approximately 1-3 days at each location, three to four 6-person crews, in the field approximately July 1-September 30, 2022.

**Geotechnical Drilling /NABC 9.12.030(D)(6) and 9.12.050(C)(3)/**

Geotechnical drilling is classified as Minor Resource Extraction per NABC. The drilling will support collection of physical data to inform appropriate Project design. Investigations in 2022-2023 are proposed at 24 potential material sites and 30 potential bridge locations as shown on Figure 2 below, detailed in Tables 5 and 6, and illustrated on additional maps in Appendix A. Summer activities are planned to occur between August and October 2022 and winter drilling in February and April 2023. The geotechnical drilling program will include installation of thermistor wells in select boreholes, which will be left in place.



**Figure 2. Proposed 2022-2023 geotechnical drilling activities at 54 locations.**



*Geotechnical drilling locations are shown by pink dots. Zoning districts are described in Figure 1.*

Drilling will be conducted under the supervision of AIDEA's consultant, PND Engineers, Inc. Depending on the drill site, one or two drill shifts per day are proposed. Anticipated personnel associated with each drill spread per shift include:

- One driller
- One driller helper
- One engineer/logger
- A mechanic/driller helper will move between drill spreads as needed
- One observer
- One bear guard
- TBD: Cultural resources monitor and tribal liaison, based on cultural resources survey finding

Drilling equipment used for borings may include:

- Sonic, air rotary, or auger drill
- Core penetrating test (CPT) drill

The type of drill used at each location will depend on the conditions encountered; sonic drills will be used for coring rock and both frozen and unfrozen soil; air rotary drills will be used if the sonic drill is unable to penetrate a soil layer. All drills produce a hole less than 8 inches in diameter (Figure 3), and there is no functional difference in drilling methods between the sonic, auger, air rotary, and CPT drills in terms of environmental impacts.

Drilling crews and drills will be transported by helicopter to the work locations, and helicopters will be used to move drills between sites and from one side of a waterbody to the other at bridge sites during open water conditions.





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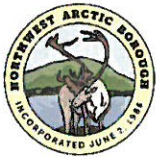
Borings at the potential small bridge and potential material sites will be advanced to a depth of 50 and 150 feet below ground surface, respectively. In frozen ground, 10-ft cores will be collected; in unfrozen ground sonic cores will be advanced at 5-ft intervals with standard penetrometer test blow counts. Frozen cores may be transported and frozen off-site for logging or classification, while unfrozen samples will be field classified, with only representative samples collected and taken off-site. Drill cuttings will be replaced back into the borehole, with any remaining cuttings spread at the surface surrounding the hole.

Water will be used in support of geotechnical drilling activities. The maximum amount of water for geotechnical drilling activities is provided in Table 4. AIDEA will coordinate water withdrawal and receive approval from the appropriate landowners and ADNRC prior to geotechnical drilling activities commencing.

**Table 4. Ambler Access Project 2022-2023 potential water use for geotechnical drilling activities**

Component/ Structure Type	Map ID	Component/Waterbody Name	Maximum Total Water Usage (gallons)
1. Large Bridge	LB1	Reed River	1,200
2. Large Bridge	LB10	Shungnak River	1,200
3. Large Bridge	LB2	Beaver Creek	1,200
4. Large Bridge	LB6	Mauneluk River	1,200
5. Large Bridge	LB7	Kogoluktuk River	1,200
6. Large Bridge	LB9	Kobuk River	1,200
7. Medium Bridge	MB10	Halfman Creek	1,040
8. Medium Bridge	MB13	Huffman Creek	1,040
9. Medium Bridge	MB14	Unnamed	1,040
10. Medium Bridge	MB15	Krumpet Creek	1,040
11. Medium Bridge	MB2	Unnamed	1,040
12. Medium Bridge	MB3	Ruby Creek	1,040
13. Medium Bridge	MB5	Unnamed	1,040
14. Medium Bridge	MB6	Coal Creek	1,040
15. Medium Bridge	MB7	Unnamed	1,040
16. Medium Bridge	MB9	Mauneluk Side Channel	1,040
17. Small Bridge	SB1	Unnamed	480
18. Small Bridge	SB11	Unnamed	480
19. Small Bridge	SB13	Square Creek	480
20. Small Bridge	SB14	Unnamed	480





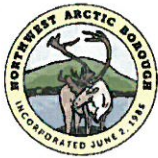
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21.	Small Bridge	SB18	Unnamed	480
22.	Small Bridge	SB19	Unnamed	480
23.	Small Bridge	SB20	Unnamed	480
24.	Small Bridge	SB22	Unnamed	480
25.	Small Bridge	SB3	Unnamed	480
26.	Small Bridge	SB4	Unnamed	480
27.	Small Bridge	SB5	Unnamed	480
28.	Small Bridge	SB6	Unnamed	480
29.	Small Bridge	SB7	Unnamed	480
30.	Small Bridge	SB8	Unnamed	480
31.	Primary Material Site	PMS9	Mauneluk River Alluvial Terrace	1,800*
32.	Primary Material Site	PMS10	NE Narvak Lake Piedmont G	1,800*
33.	Primary Material Site	PMS11	Reed River Bluffs - Drift	1,800*
34.	Primary Material Site	PMS12	Shungnak River Drift and Terrace Gravels	1,800*
35.	Primary Material Site	PMS8	Kogoluktuk River Drift/Alluvium	1,800*
36.	Secondary Material Site	SMS6	Beaver Creek Drift	1,800*
37.	Secondary Material Site	SMS7	E Avaraart Lake Drift 1	1,800*
38.	Secondary Material Site	SMS8	E Avaraart Lake Drift 2	1,800*
39.	Secondary Material Site	SMS9	S Avaraart Lake Drift 1	1,800*
40.	Secondary Material Site	SMS10	S Avaraart Lake Drift 2	1,800*
41.	Secondary Material Site	SMS11	E Ambler Lowlands PG A	1,800*
42.	Secondary Material Site	SMS12	E Ambler Lowlands PG B	1,800*
43.	Secondary Material Site	SMS13	E Ambler Lowlands PG C	1,800*
44.	Secondary Material Site	SMS14	Central Ambler Lowlands Glacial Drift	1,800*
45.	Secondary Material Site	SMS15	Ambler River Alluvium	1,800*
46.	Secondary Material Site	SMS16	Beaver Creek Outwash	1,800*
47.	Secondary Material Site	SMS17	W Beaver Creek Piedmont 1	1,800*
48.	Secondary Material Site	SMS18	W Beaver Creek Piedmont 2	1,800*
49.	Secondary Material Site	SMS20	Avaraart Lake Andesite	1,800*
50.	Secondary Material Site	SMS21	Mauneluk River Basalt	1,800*
51.	Secondary Material Site	SMS23	E Ambler Lowlands G Drift	1,800*
52.	Secondary Material Site	SMS24	E Ambler Lowlands Alluvial Fan	1,800*
53.	Secondary Material Site	SMS25	Kogoluktuk River Alluvium	1,800*
54.	Secondary Material Site	SMS26	Ambler Lowlands Marble	1,800*

*\*May not need water for material sites depending on drilling method used. Water may need to be flown in, rather than withdrawn from nearby waterbody.*

Thermistor wells may be installed at potential bridge and proposed roadway alignment boring locations within the NAB to collect thermal data at depth over time. Wells will be constructed of 1-inch-diameter Schedule 80 polyvinyl chloride (PVC) pipe. The space between PVC pipe and borehole wall will be backfilled with imported, clean dry sand. Some thermistor wells will be equipped with a full-length digital thermal cable (DTC) installed with sensors at 2-foot intervals. DTCs will be connected to on-site data loggers, with data transmitted by telemetry to Anchorage





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or collected and stored locally using a “torpedo” data logger for manual download. Dataloggers will be mounted to Unistrut posts and denoted with reflective delineators. GPS coordinates will be recorded at each thermistor well (Figure 5 and Figure 6).



Figure 5. Example of installed thermistor well, DTC, and datalogger.

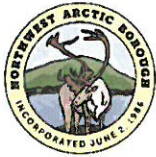


Figure 6. Example of installed thermistor well, DTC, and datalogger.

Thermistor wells will remain in place for a minimum of 1 year but may stay in place through the design phase of the Project. When removed, the PVC pipe will be cut at or below the ground surface as deep as practicable; dataloggers, support structures, and DTCs will be removed. Expected permafrost conditions at drill sites may freeze below-ground PVC in place, prohibiting complete removal of the thermistor wells. The remaining PVC will be covered with surrounding soils and tamped into place.

Table 5. Ambler Access Project, 2022-2023 geotechnical drilling – material sites

Component Name	Component/ Structure Type	Coordinates			NAB Zon	Appendix & Map Page No.	Map ID	Miles to Kobuk
		Township	Range	Section				
1. Reed River Bluffs - Drift	Primary Material Site	19N	18E	13, 24	GC	Appendix A, Page 5	PMS11	55.6
2. Beaver Creek Outwash	Secondary Material Site	19N	17E	28	GC	Appendix A, Page 6	SMS16	47.2
3. Beaver Creek Drift	Secondary Material Site	19N	17E	20, 29	GC	Appendix A, Page 7	SMS6	46.6
4. W Beaver Creek Piedmont 1	Secondary Material Site	19N	16E	26	GC	Appendix A, Page 7	SMS17	43.1
5. W Beaver Creek Piedmont 2	Secondary Material Site	19N	16E	26, 34, 35	GC	Appendix A, Page 7	SMS18	43.2



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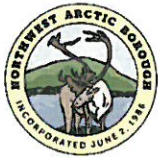
6.	NE Narvak Lake Piedmont G	Primary Material Site	19N	15E	36	GC	Appendix A, Page 8	PMS10	39.0
			19N	16E	31	GC			
7.	E Avaraart Lake Drift 2	Secondary Material Site	19N	15E	20, 21, 28, 29	GC	Appendix A, Page 9	SMS8	35.4
8.	E Avaraart Lake Drift 1	Secondary Material Site	19N	15E	20, 29	GC	Appendix A, Page 9	SMS7	35.1
9.	Avaraart Lake Andesite*	Secondary Material Site	19N	14E	12, 13	SC, GC	Appendix A, Page 9	SMS20	34.0
			19N	15E	7, 18	GC			
10.	S Avaraart Lake Drift 1	Secondary Material Site	19N	14E	26, 27	SC	Appendix A, Pages 9 & 10	SMS9	31.4
11.	S Avaraart Lake Drift 2	Secondary Material Site	19N	14E	27, 28	SC	Appendix A, Page 10	SMS10	30.4
12.	Mauneluk River Basalt	Secondary Material Site	19N	13E	26, 27	SC	Appendix A, Page 11	SMS21	25.5
13.	Mauneluk River Alluvial Terrace	Primary Material Site	19N	13E	28	SC	Appendix A, Page 11	PMS9	24.1
14.	E Ambler Lowlands PG B	Secondary Material Site	19N	12E	9	GC	Appendix A, Page 12	SMS12	19.8
15.	E Ambler Lowlands PG A	Secondary Material Site	19N	12E	8, 9	GC	Appendix A, Page 9	SMS11	19.6
16.	E Ambler Lowlands PG C	Secondary Material Site	19N	12E	7, 8	GC	Appendix A, Page 12	SMS13	18.8
17.	E Ambler Lowlands G Drift	Secondary Material Site	19N	11E	13, 14, 23, 24	GC	Appendix A, Page 13	SMS23	16.3
18.	E Ambler Lowlands Alluvial Fan	Secondary Material Site	19N	11E	26, 27, 34, 35	GC	Appendix A, Page 13	SMS24	14.5
19.	Kogoluktuk River Alluvium	Secondary Material Site	19N	10E	21, 22	SC	Appendix A, Page 14	SMS25	10.1
20.	Kogoluktuk River Drift/Alluvium	Primary Material Site	19N	10E	27, 28, 33	SC	Appendix A, Page 14	PMS8	8.9
21.	Ambler Lowlands Marble	Secondary Material Site	19N	10E	5	SC	Appendix A, Page 15	SMS26	11.9
22.	Central Ambler Lowlands Glacial Drift	Secondary Material Site	19N	10E	5, 6	SC	Appendix A, Page 15	SMS14	12.5
			20N	10E	20				
23.	Shungnak River Drift and Terrace Gravels	Primary Material Site	20N	09E	17, 18, 19, 20	SC	Appendix A, Pages 16 & 17	PMS12	15.28
24.	Ambler River Alluvium	Secondary Material Site	20N	08E	2	SC	Appendix A, Page 17	SMS15	17.9

GC: General Conservation Zoning District; SC: Subsistence Conservation Zoning District

\*Site is located within two zoning districts. Values may not sum up to totals since this site occurs within two zones.

**14 Targets in the GC; 11 Targets in the SC**



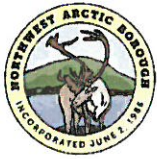


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**Table 6. Ambler Access Project 2022-2023 geotechnical drilling – bridge locations**

Waterbody Name	Component/ Structure Type	Coordinates			NAB Zone	Appendix & Map Page No.	Map ID	Miles to Kobuk
		Township	Range	Section				
1. Unnamed	Medium Bridge	19N	21E	13	GC	Appendix A, Page 1	MB7	74.8
		19N	22E	18	GC			
2. Kobuk River	Large Bridge	19N	21E	30	GC	Appendix A, Page 2	LB9	69.0
3. Unnamed	Medium Bridge	19N	20E	27	GC	Appendix A, Page 3	MB5	66.4
4. Unnamed	Small Bridge	19N	20E	27	GC	Appendix A, Page 3	SB8	66.4
5. Unnamed	Small Bridge	19N	20E	28	GC	Appendix A, Page 3	SB7	65.3
6. Unnamed	Medium Bridge	19N	20E	30	GC	Appendix A, Page 3	MB14	63.0
7. Reed River	Large Bridge	19N	18E	24	GC	Appendix A, Page 5	LB1	56.2
8. Unnamed	Small Bridge	19N	18E	21	GC	Appendix A, Page 5	SB4	53.5
9. Unnamed	Small Bridge	19N	18E	20, 21	GC	Appendix A, Page 5	SB5	53.0
10. Unnamed	Small Bridge	19N	17E	26	GC	Appendix A, Page 6	SB3	49.8
11. Beaver Creek	Large Bridge	19N	17E	28	GC	Appendix A, Page 6	LB2	47.5
12. Krumpet Creek	Medium Bridge	19N	16E	31	GC	Appendix A, Page 8	MB15	39.5
13. Unnamed	Small Bridge	19N	15E	27	GC	Appendix A, Page 9	SB19	36.4
14. Unnamed	Small Bridge	19N	15E	19	GC	Appendix A, Page 9	SB22	34.4
15. Coal Creek	Medium Bridge	19N	14E	29	SC	Appendix A, Page 10	MB6	28.9
16. Mauneluk Side Channel	Medium Bridge	19N	13E	32	SC	Appendix A, Page 11	MB9	23.2
17. Mauneluk River	Large Bridge	19N	13E	29, 32	SC	Appendix A, Page 11	LB6	23.1
18. Huffman Creek	Medium Bridge	19N	13E	29	SC	Appendix A, Page 11	MB13	23.1
89. Halfman Creek	Medium Bridge	19N	12E	13	GC	Appendix A, Page 11	MB10	22.4
20. Unnamed	Small Bridge	19N	11E	23	GC	Appendix A, Page 13	SB11	15.5
21. Square Creek	Small Bridge	19N	11E	27	GC	Appendix A, Page 13	SB13	14.4
22. Unnamed	Small Bridge	19N	11E	27	GC	Appendix A, Page 13	SB14	14.1
23. Unnamed	Small Bridge	19N	11E	20, 29	GC	Appendix A, Page 13	SB6	12.9
24. Unnamed	Small Bridge	19N	10E	27	SC	Appendix A, Page 14	SB20	9.9





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25. Kogoluktuk River	Large Bridge	19N	10E	28	SC	Appendix A, Page 14	LB7	9.1
26. Unnamed	Small Bridge	19N	10E	8	SC	Appendix A, Page 15	SB18	11.5
27. Ruby Creek	Medium Bridge	20N	09E	28	SC	Appendix A, Page 16	MB3	13.5
28. Shungnak River	Large Bridge	20N	09E	19, 20	SC	Appendix A, Pages 16 & 17	LB10	14.8
29. Unnamed	Small Bridge	20N	08E	12	SC	Appendix A, Page 17	SB1	16.8
30. Unnamed	Medium Bridge	20N	08E	11, 12	SC	Appendix A, Page 17	MB2	17.4

*GC: General Conservation Zoning District; SC: Subsistence Conservation Zoning District*  
**19 Targets in the GC; 11 Targets in the SC**

**Geotechnical Drilling Summary:** 24 potential material sites and 30 potential bridge locations (see Table 5 and Table 6, respectively), approximately 1-3 days at each location, one 3- to 9-person crew, in the field between August 2022 and February 2023.

**Overland Travel /NABC 9.12.030(D)(9) and 9.12.050(C)(5)/**

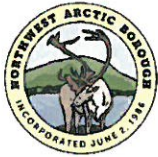
Summer Access. Summer fieldwork access will be performed via helicopter. Helicopter sizes vary depending on crew size and availability. Helicopters will be used to move drills between sites, and from one side of a waterbody to the other at bridge sites during open water conditions. The sonic drills to be used are track-mounted and will typically move between boreholes at each site without requiring helicopter transport. The largest helicopter will likely be a Bell 212 (Figure 7) or 214 (Figure 8). Crew sizes vary depending on the type of fieldwork and season.

Winter Access. Winter access for the proposed 2022-2023 geotechnical drilling program will be by tracked over-snow vehicles, with snowmachine and helicopter support as needed and as described below. The total proposed distance of overland winter travel is 81 miles (Figure 9).

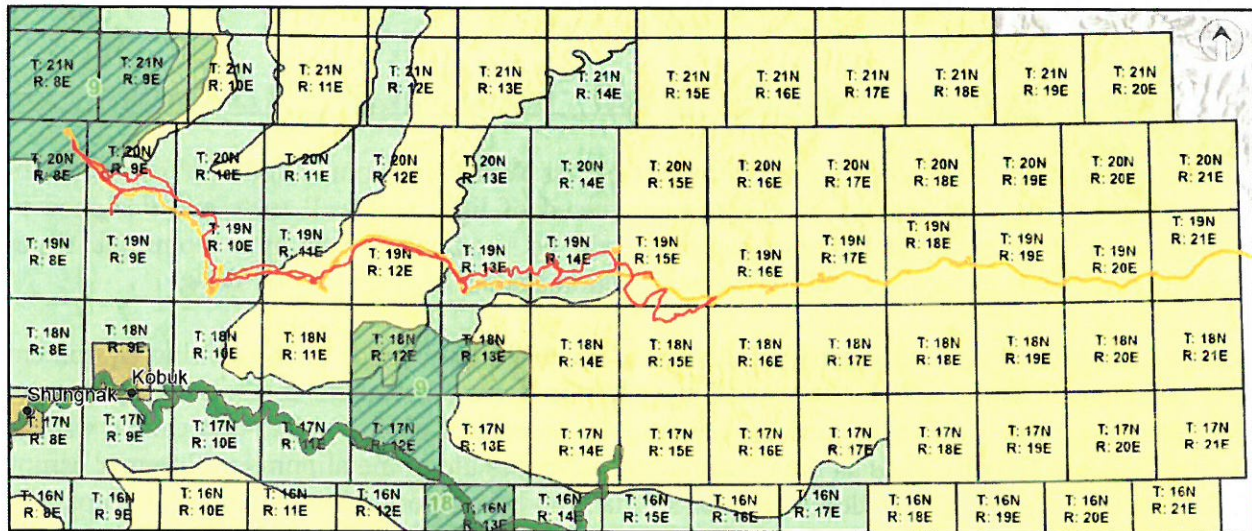
The anticipated approach for the winter geotechnical drilling program will be to dedicate one drill spread for the potential large and medium bridge crossings and one drill spread for the potential small bridge crossings and proposed alignment sites, with the possibility for each drill location to be supported by a remote camp (Temporary Camps described in Section 3.4). Drilling will begin on the west end of the alignment and move east.

During winter, the investigation crew, drills, and camp will be transported overland along rivers and tundra where vegetation, terrain, and snow cover allow. Winter overland travel will be utilized as much as possible for safety and cost reasons associated with reducing the reliance on helicopters. The actual overland routes will run adjacent to or along the proposed road alignment to the extent practicable, or along rivers running parallel to the alignment to reduce tundra travel. The proposed winter overland travel route is shown in Figure 9. Actual overland routes will depend on snowpack, ice thickness, terrain, and vegetation type. No vegetation clearing is anticipated necessary to facilitate winter overland travel.





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**Figure 9. Proposed winter overland travel.** Winter overland travel route is shown as a red line; and the direct Area of Potential Effect (APE) is shown as an orange line. Zoning districts are described in the Figure 1 caption.

Mobilization of the winter program will occur from the Dahl Creek airstrip. Drills, winter camps, and fuel will be transported to the Project area via tracked vehicles. Drilling units will be assembled on ski sleds or tracked trailers. Winter camps will be assembled on tracked trailers. Approximately four tracked vehicles are anticipated to be used to transport drill rigs. Tracked vehicles and trailers exert less than four pounds per square inch of ground pressure and have been extensively used in tundra environments during winter travel to minimize disturbance or damage to the vegetation under the snowpack. Due to expected deeper snow conditions and terrain requirements in the Project area, tracked vehicles will likely be used, and track-mounted trailers will be pulled instead of the sleighs shown below.



During drilling activities, snowmachines will be used to transport personnel between boreholes and to and from the adjacent remote camp. River ice at crossing locations will be evaluated for





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thickness using GPR, drills, and ice augers to verify that it can safely support the weight of the drill and sleds for travel to the opposite side of the river.

**Geotechnical Drilling Temporary Remote Camps [NABC 9.12.030(D)(2) and 9.12.050(B)(5)]**

Temporary remote field camps typically consist of less than 12 personnel and in place for fewer than 7 days. Temporary camps would be constructed of light soft-wall tents and designed to minimize local area impacts. These camps would be used when helicopter commute times become excessive, and work would be concentrated in a small area for several days.

Remote camps will be mobilized from Bettles or Coldfoot in advance of the drilling equipment and personnel. Camps will be supported by additional crew members transported by ground (snowmobiles based in Bettles) and air (helicopters based in Coldfoot). The two camps will be rotated between the drill sites as the investigation advances along the alignment. Summer camps will consist of camping style dome tents or similar and be supported via helicopter. Camps will typically be sited on upland terrain adjacent to work areas and would be installed for the minimum duration of time needed.

Camp infrastructure will be sufficient to complete the work in the immediate area before demobilizing or moving to the next location. Power will be provided by small gasoline generator. Heat, if required, will be provided by small propane heaters installed in the tents. Camp staff will include a wilderness guide and cook. No bulk storage of fuel or supplies will be directly associated with the proposed camp. Water and food will be flown in via helicopter, and all trash will be removed from site and disposed of in designated landfills or other permitted waste disposal sites. Human waste will be disposed of in pit privies and buried prior to camp demobilization.

The winter field camps will be 16-person temporary remote camps staged on a fabricated trailer with snow skis or tracks. Four skids or trailers would be equipped with sleeper tents; the caravan would also include a modern spike kitchen tent, washroom, and generator trailer with toilets, sinks, and shower stalls, 1,000-gallon potable water tank, a skid for supplies, and a waste disposal unit. Footprints of the camp trailers will be approximately 10 ft. by 25 ft.; overall camp footprints would be approximately 100 ft. by 150 ft.

All tents will have an auxiliary heat source, either propane or oil stoves. Potable water for drinking will be delivered during regular helicopter-based resupply. Latrine facilities will be portable outhouses/shelters with human waste collected for off-site disposal. Electricity will be provided via portable gasoline generators and a temporary distribution network to the tents. Non-burnable garbage and any hazardous waste will be transported off-site for proper disposal. Camp staff will include a camp manager, medic, and cook. Winter camps will be supported by a combination of snowmobiles and helicopters, as appropriate.

After completion of camp use, all tents and related infrastructure will be immediately removed.





### **Temporary Use of Sun Camp Airstrip [NABC 9.12.050(B)(9)]**

The Sun Airstrip is planned to be used to support the helicopter travel across the proposed road corridor. Primarily, a fuel cache site is planned again at the airstrip (MTRS: K19N17E028, USGS Survey Pass A-5; map on page 6 in Appendix A). Sun Camp Airstrip is located on State of Alaska land. Fuel storage for the 2022-2023 field seasons will include storage for not more than five 119-gallon tanks, amounting to no more than 595 gallons of fuel storage. All tanks will be removed at the end of the field season. Alaska Department of Natural Resources (ADNR) permit approval was received on August 15, 2021. The associated ADNR Land Use Permit # LAS 33785 is valid through August 14, 2026. The airstrip is not planned to be used for any camp or material/equipment laydown support activities.

### **Fuel Storage, Helicopter Use, and Refueling:**

Fuel will be transported by helicopter to Sun Camp Airstrip and proposed geotechnical locations (locations depicted in Figure 2) in portable 119-gallon double-walled “fly tanks” for temporary storage of diesel and/or Jet A fuel. Up to five 119-gallon fuel tanks would be stored in double-walled containers with at least 110 percent containment at Sun Camp Airstrip and at each proposed geotechnical drill site within the NAB (Table 5 and 6). This amounts to 595 gallons of fuel at any given location. This is less than the minimum 660-gallon standard to classify as bulk fuel storage per NABC 9.04.070 (Definitions). Not more than five tanks (550 gallons) will be maintained on site at a time. All tanks will be removed at the end of the field season. (“Bulk Fuel Storage” is 660 gallons or more in the GC and SC Districts)

Winter geotechnical drilling will require a remote camp, which may be established on lands within the NAB, up to five 119-gallon fuel tanks would be stored in double-walled containers with at least 110 percent containment, to provide five days’ worth of fuel for the camp facilities.

Portable fuel cans (5- or 15-gallon capacity) will be used for generators, camp snowmachines, and will accompany the crews as needed.

Fuel transfers will be conducted in accordance with all applicable regulatory requirements. Fueling procedures include spill management practices such as drip-plan placement under parked vehicles and placement of vinyl liners with foam dikes under all valves or connections to fuel tanks. A spill kit packed with absorbents specifically for jet fuel will remain on site through the field season. The helicopter also carries a spill kit. Spills of any size are cleaned and evaluated to improve spill prevention procedures. If a spill occurs, the crew will immediately stop work and evaluate the situation. The release will be reported, and the contaminated snow will be removed for disposal. No fuel transfer will occur on river ice.



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**Current State and Federal Permit Approvals:**

\*Ongoing litigation over AIDEA's relevant federal permits limits AIDEA's immediate activities to those approved by U.S. Federal District Court Judge Gleason (3:20-cv-00187-SLG and 3:20-cv-00253-SLG).

- Archaeological Resources Protection Act (ARPA) Permit
- NPS Special Use Permit
- NPS Scientific Research & Collections Permit
- BLM 2920-1 Land Use Permit
- Alaska Department of Natural Resources (ADNR) Land Use Permit
- ADNR Temporary Water Use Authorization (associated with geotechnical investigations)
- ADNR State Cultural Resource Investigation Permit (SCRIP)
- NANA Land Access Agreement

**Permit Authorization and Documentation:**

AIDEA submitted a Title 9 Land Use Permit application for the following the uses described in this permit for Subsistence and General Conservation Districts.

The Title 9 initial application was received in April 2022. In June, the Borough Planning Department received additional information, including updates from Judge Gleason regarding related federal permits, and deemed the application complete. The 20-day public comment period for this permit started July 1.

**Permit Terms and Conditions:**

1. The Alaska Industrial Development Export Authority (AIDEA) shall comply with the terms of the permission, permits and/or agreements granted by the federal government, State of Alaska, NANA Regional Corporation, Northwest Arctic Borough and other applicable agencies.
2. AIDEA shall comply with any and all applicable local, Borough, state and federal laws. The Borough reserves the right to conduct periodic inspections of the permitted operations as well as work with the permittee to observe operations and/or trips for permit compliance.
3. AIDEA's 2022 Summer Fieldwork activities are required to be sited, designed, constructed and operated in a manner that does not substantially interfere with the use of a site that is important for significant cultural uses or essential for transportation to subsistence use areas.





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4. All project activities shall utilize measures to avoid or minimize disrupting wildlife and bird migration, or subsistence activities including fishing, trapping, waterfowl hunting, egg gathering, berry picking and caribou hunting. The applicant will ensure reasonable access to subsistence users to subsistence resources.
5. All vehicles shall be operated in a manner such that the vegetative mat of the tundra is not disturbed. Vehicles shall not be abandoned. Vehicles must avoid areas where species that are sensitive to noise or movement are concentrated.
6. All trash and human waste generated at the sites must be properly disposed in accordance with Northwest Arctic Borough Code Section 9.25.020 M., establishing standards of disposal of refuse, human body waste, and chemicals. All remedial activities shall comply with any and all other applicable state and federal laws, including all applicable hazardous waste and disposal requirements, all waste disposal and landfill requirements, and all open burning and air quality standards.
7. The applicant must conduct activities in a manner to maintain natural drainage pattern, watershed protection, and permafrost stability; to prevent runoff and erosion into water supplies; to minimize alteration of vegetation; and to conserve natural features and the general environment of the area.
8. AIDEA shall post public notices (at the Borough offices and US Post Office, and at the City and Tribal governments of Ambler, Shungnak, and Kobuk) and provide public service announcements on KOTZ radio informing the community regarding the date and times of cultural resource surveys on the Ambler Road corridor to promote communication and safety.
9. Uses permitted shall cease upon the discovery of archaeological, prehistoric, historic or cultural resources during the project activities, and AIDEA shall immediately contact the Planning Director at the NAB to determine the conditions to continue.
10. Except as authorized by the State Historic Preservation Officer under an approved mitigation plan, persons shall not disturb cultural, archaeological or historic sites listed or eligible to be included on the National Register of Historic Places or sites identified by the administrator or the commission as important to the study, understanding or illustration of national, state or local history, prehistory or culture.
11. During the fall season, AIDEA or any project contractors shall not, during the migration of caribou, locate any operation and/or equipment so as to block or cause diversion of the migration of caribou. AIDEA and/or any project contractors shall cease any activity that may interfere with the seasonal fall caribou migrations and/or caribou winter/spring movements, such as marine, ground and airborne transports, ground and airborne surveys or movement of equipment, until such time as the migration or spring movements have



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cleared  $\frac{3}{4}$  of a mile from the location of the project activity. Concern for human safety will be given special consideration when applying this policy.

As a general guideline, caribou migration means an area where 500 or more caribou are travelling or congregating. However, during the fall period of August through December, AIDEA shall take extra precautions to avoid deflecting even small numbers (e.g. group sizes of 5-10) of the first caribou moving through the area as these groups/bands set trails as "lead caribou" that subsequent caribou later follow during the migration. The intent of these guidelines are to ensure free passage of caribou through the area and to avoid impacting caribou and the communities that historically and currently depend upon it as well as preserving existing and important adjacent land uses. These guidelines may be revised based upon updated information and research (including local traditional knowledge).

12. All fuel/oil/hazardous substance storage, including waste oil, must meet all applicable state and federal containment laws. Any project fuel storage shall meet all applicable state and federal containment laws to prevent fuel spills and protect against fire danger. If a spill occurs, it must be reported immediately to the Alaska Department of Environmental Conservation and the NAB Planning Department (at least within 24 hours). Appropriate spill kits and absorbent pads must be stored at the storage location. Fuel/oil drums or other storage containers shall not be abandoned.
13. Project equipment servicing and fueling operations are prohibited within 100 feet of any surface water body, including any rivers, drainage channels, sloughs and lakes. Equipment must be monitored daily for hydraulic leaks. Project equipment shall not be abandoned.
14. AIDEA shall immediately notify the Borough (at least within 24 hours) of any change in the plans and seek modification of the permit.
15. AIDEA is subject to all penalties and civil actions pursuant to section 9.08.240 for violation of the permit conditions and stipulations prescribed herein.
16. Annually by December 31<sup>st</sup>, the permittee shall file a written report with the NAB Planning Department describing the following:
  - a. A complete report of any fuel or other hazardous substances discharges and clean-up activities completed,
  - b. Other matters as reasonably required by the Administrator/NAB Planning Director.
17. At the conclusion of each season the Borough Planning Department shall evaluate the effectiveness of the permit conditions. The Title 9 Administrator shall be authorized to adopt corrective measures for ineffective or inadequate permit conditions.





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18. AIDEA and/or landowners shall allow the NAB and/or their representative's access to the permitted sites and properties, during the term of this permit or within 5 years after permit expiration, to conduct scheduled or unscheduled inspections to determine compliance with this permit or respond to emergency situations.
19. This permit was issued on August 2, 2022. Application was received in April 2022 and deemed complete in June 2022. This permit will expire December 31, 2023, unless revoked by the Title 9 Administrator and/or AIDEA.

**Permit Approval**

**NORTHWEST ARCTIC BOROUGH**

Major Use Permit Approved by the Northwest Arctic Borough Planning Department  
Authorized signatory: Clay Nordlum, Planning Director

Date: August 2, 2022

CC: City Offices of: Ambler, Buckland, Deering, Kiana, Kobuk, Kotzebue, Noatak, Noorvik, Selawik, and Shungnak,  
IRA Offices of: Ambler, Buckland, Deering, Kiana, Kobuk, Kotzebue, Noatak, Noorvik, Selawik, and Shungnak, NANA Regional Corporation, Maniilaq Association, KEA, KOTZ, Northwest Arctic Borough School District, NIHA, National Park Service—Kotzebue office, US Fish & Wildlife Service—Kotzebue office

Posted at: [www.nwabor.org](http://www.nwabor.org)

