



Title 9 Minor Use Permit No.: 101-03-22
Date of Issue: September 8, 2021
Permit Expires: December 31, 2024

Permit Issued By:

Northwest Arctic Borough
Planning Department
C/o John Chase
PO Box 1110
Kotzebue, AK 99752
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Permittee:

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Permittee Contact Information:

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Project Description:

Frost Methane Labs (FROST) plans to deploy a **methane collection system at a lake on the Noatak River that will measure the natural release of methane** from the seeps in a lakebed (‘Other “uses”’ is a Minor Use in the Subsistence Conservation District). FROST’s project will deploy four (4) methane collector funnels (15 feet wide by 15 feet long) that sit below the waterline, connected to the floating platform that measures methane gas. The equipment will remain in the lake and collect measurements for one year. FROST anticipates the project to begin August 2021 and be finished by September 2021.

Specific details of the project are contained in the permit application (22-02-101) submitted by FROST to the Borough Planning Department. This application is incorporated into the Borough’s administrative record. Project Activities are summarized below.

Project Location:

The project site is located at Lake Esieh on the Noatak River within Township 21 North, Range 16 West, Section 5, Kateel River Meridian. The project is located in the Subsistence Conservation District. Kikiktagruk Inupiat Corporation is the landowner.



Figure 1. Methane collection location



Figure 2. Methane collection location on the Noatak River



Other “Uses”:

The project team will consist of four (4) Frost Methane Team members. The project will start in Kotzebue and the team will be transported by a local boat up the Noatak River to the Lake Esieh stream head location. From the stream head, a zodiac will be deployed to ferry the people and equipment to the lakeshore. The team will be on Lake Esieh from August 30th to September 6th. The deployment of the device is expected to last 1 full year.

FROST’s equipment is small, lightweight, and will be easy to remove at the end of the experiment. There will be no pouring of concrete or any heavy machinery installations. The equipment consists of 4 methane collector ‘funnels’ approximately 15 feet in diameter, 1 burning device, and a telemetric measurement device. These funnels are suspended from the surface of the lake, sitting almost entirely below the waterline and do not contact the lake bed. They connect via hoses to a small floating platform (see **Figure 1** below) where the gas is separated from the water, measured and burned. This device will be anchored with standard boat and land anchors only.

The burner is a simple metal cylinder with a sparker inside, similar to a hot water heater in homes, but smaller in size. The burner will use gas taken from the collector funnels and ignite the methane from a sparker. The measuring device will measure flow rate and volume of methane gas. It will send data once per day via satellite messaging.

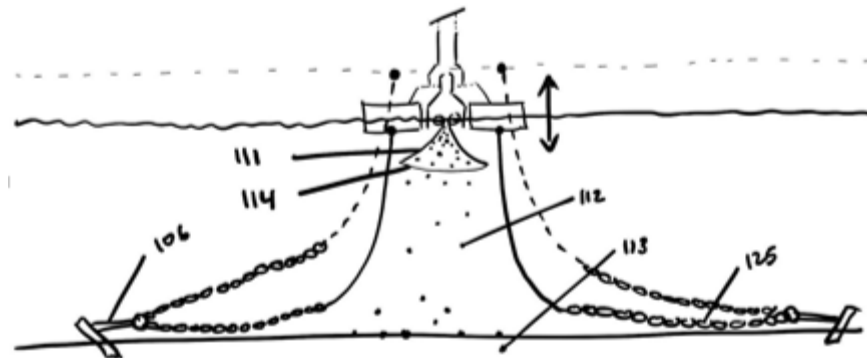


Figure 1. Small floating platform for methane measurements. You can see the anchors.



Figure 2. Methane collector “funnels” measure approx. 15 feet

Permit Authorization and Documentation:

FROST submitted a Title 9 Zoning Permit Application (22-02-101) to deploy a methane collection system in a Subsistence Conservation District on July 12, 2021. On August 25, the Borough Planning Department deemed the application was complete.

On September 8, 2021 the Borough Planning Director approved a Minor Use Permit. The permit fees for this project is \$150. FROST will pay the fee.

The Planning Director has the authority to permit ‘Other “uses”’ in a Subsistence Conservation District by Minor Use Permit, pursuant to NABC 9.12.030

Permit Terms and Conditions:

Administrative approval is hereby **GRANTED** to permit ‘Other “uses”’ as described, subject to the permit terms and conditions stated herein.

1. Frost Methane Labs (FROST) shall comply with the terms of the permission/permits agreements granted by the federal government, State of Alaska, and/or local governments.
2. FROST shall comply with any and all applicable local, borough, state and federal laws. Failure to abide by any part of this permit, or violations of any pertinent borough ordinances or state or federal law or regulation, will be considered grounds for revocation of the permit or denial of future permit requests and may result in issuance of fines or other penalties. This provision applies to all persons working under the authority of this permit.
3. The Permittee is responsible for ensuring that all employees, contractors, sub-contractors, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.



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4. FROST is subject to all penalties and civil actions pursuant to section 9.08.240 for violation of the permit conditions and stipulations prescribed herein.
5. Uses permitted shall cease upon the discovery of archaeological, prehistoric, historic or cultural resources during the project activities, and FROST shall immediately contact both the Planning Director at the NAB Planning Department and Alaska State Historic Preservation Office to determine the conditions to continue.
6. FROST shall notify the Borough within seven (7) calendar days of any damage to the tundra due to project activities that are inconsistent with state and federal permits and in excess of those identified in or different from those noted in the Borough Title 9 permit application and/or accepted as part of the permit update process associated with this permit. This includes, but is not limited to, the scraping of vegetation and spill of oil or other chemicals.
7. During and after project activities, the permittee must conduct activities in a manner to maintain natural drainage patterns, watershed protection, and permafrost stability, to prevent runoff and erosion into water supplies and to minimize alteration of vegetation.
8. The permittee shall ensure fire safety and emergency access necessary for fire and emergency apparatus.
9. All project activities shall utilize measures to minimize noise and nuisance affecting surrounding residential properties including excessive noise, fumes, odors, glare, smoke, vibration, dust, litter, interference in any telephone, radio or television receivers, and/or significant line voltage fluctuation.
10. Any development by the project in floodplains and shoreline areas are to be constructed to minimize loss of life or property due to riverine flooding, icing, and stream bank erosion.
11. 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 and caribou/moose hunting. The permittee will ensure reasonable access to subsistence users to subsistence resources.
12. During the fall season, FROST 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. FROST 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 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.



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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, FROST 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).

13. Project equipment/vehicle servicing and fueling operations are prohibited within 100 feet of any surface water body, including any rivers, drainage channels, sloughs and lakes. Equipment and vehicles are to be maintained to eliminate or minimize any fuel spills and fluid leaks. Equipment and vehicles must be monitored prior to use for hydraulic leaks. If equipment is in continuous use, it shall be inspected daily for hydraulic leaks. Project equipment shall not be abandoned.
14. FROST shall immediately notify the borough (at least within 24 hours) of any change in the project plans and seek modification of the permit. FROST shall suspend uses until approval is given by the Planning Director/Title 9 Administrator. If the proposed action(s) constitutes an emergency, FROST shall comply with 9.16.040 for emergency actions and shall make reasonable efforts to conduct modified uses in a manner that avoids or minimizes significant harm to the environment, consistent with the need to protect property and human life.
15. Access by Borough personnel and their agents. Authorized personnel and/or their agents of the Northwest Arctic Borough when on official business and displaying proper identification shall be allowed access to the sites without interference. Borough personnel and/or agents may conduct scheduled or unscheduled inspections or tests to determine compliance with this permit or respond to emergency situations. The Borough may inspect the properties up to 5-years after the permit expires for compliance checking and inspections.
16. At the completion of the project, the permittee shall file a written report with the Borough 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.
 - c. A report of the findings/measurements from the project.
17. This permit will expire on December 31, 2024, unless revoked by the Title 9 Administrator and/or FROST.



Permit Approval

NORTHWEST ARCTIC BOROUGH

Eva Harvey,
Planning Director/Title 9 Administrator

Date: September 2, 2021

CC: City of Kotzebue, Kotzebue IRA Council, Noatak IRA Council, NANA Regional Corporation, Maniilaq Association, Kikiktagruk Inupiat Corporation
Posted at: NAB Bulletin Board