Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) /

Federal Institute for Geosciences and Natural Resources

Polar Geology

Spill Contingency Plan

Geological Fieldwork

CASE 24 Vendom Fiord

Southern Ellesmere Island

July/August 2025

1. Introduction

The Federal Institute for Geosciences and Natural Resources (BGR), based in Hannover, Germany, in collaboration with the Geological Survey of Canada, is planning a geoscience research project on southern Ellesmere Island for the summer of 2025.

Geological fieldwork CASE 24 Vendom Fiord southern Ellesmere Island

The proposed geoscientific study is a continuation of a longstanding investigation of the geologic development of the Canadian Arctic Islands. Sampling of sedimentary rocks allows researchers to learn more about climate variability in deep time, which is crucial to better understand processes of present-day climate change. Researchers of the team will also collect samples of evidence of ancient life, because these may give direct information on age of the rocks and the ancient environment. Collection of very small fossils in the sedimentary rock would take place by hand. In addition, measuring the orientation of geological structures helps scientists to reconstruct how the collision of ancient continents took place to form the modern Arctic Archipelago. This project would also contribute information to update bedrock maps of southern Ellesmere Island.

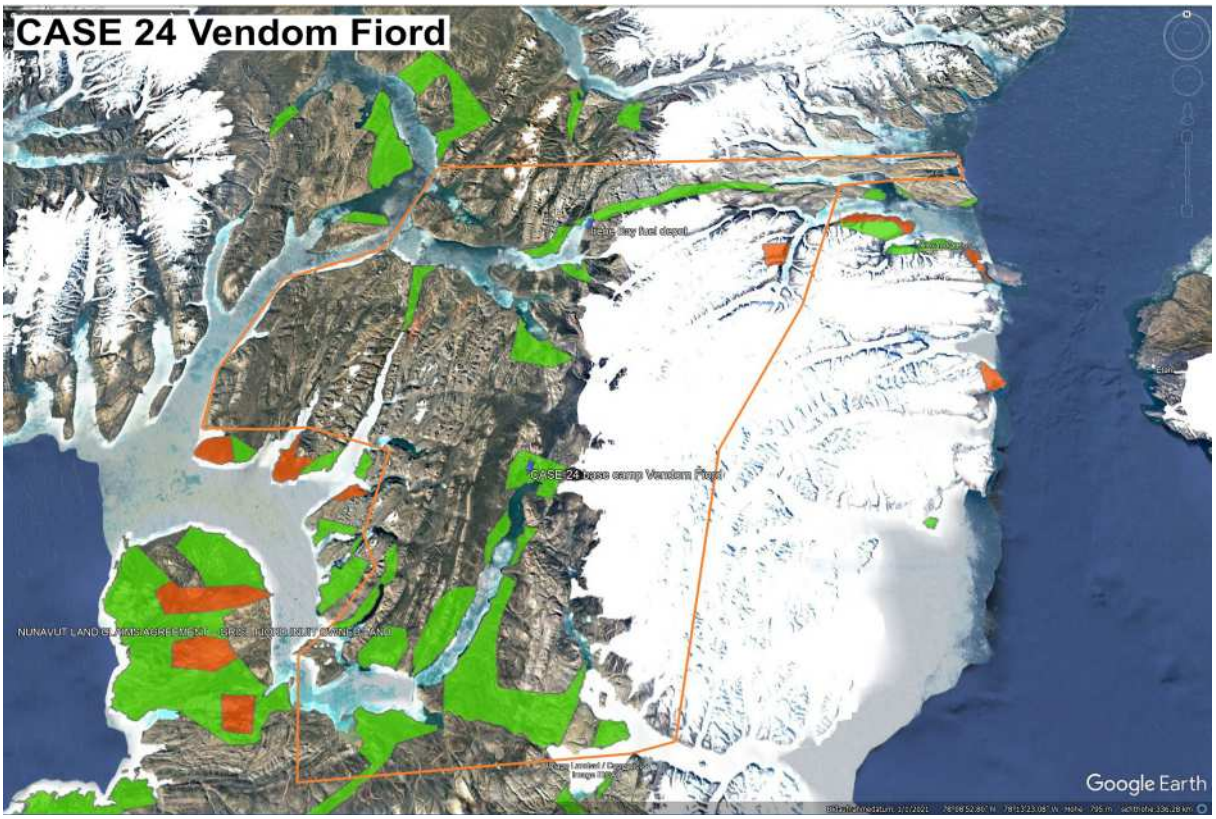
This Spill Contingency Plan has been developed in support of the land use permit application to Crown-Indigenous and Northern Affairs Canada (CIRNAC), and water use authorization from the Nunavut Water Board. The purpose of the Plan is to provide a Spill Contingency Plan in accordance with the Northwest Territories-Nunavut Spill Contingency Planning and Reporting Regulations under the Environmental Protection Act. The Plan has been developed to describe spill prevention measures and spill response procedures for the proposed 2025 camp and research activities in the field.

The 2025 fieldwork will consist of geological mapping and rock sampling supported by a helicopter and fixed-wing transport of equipment to and from the field camp. No drilling or use of any machinery will take place during the 2025 field season. A field camp consisting of canvas tents and simple nylon sleeping tents will be set up within the Nansen and Eureka Sounds Watershed and will include:

- up to 13 sleeping tents
- 1 kitchen tent
- 1 dining tent
- 1 pilot/engineer sleeping tent
- 1 toilet tent

See Figure 1 for the general location of the camp, as well as the full extent of the project area where research activities may take place. The camp is located on an Inuit Owned Land parcel and the respective land use application has been prepared for the Qikiqtani Inuit Association (QIA).

Figure 1: approximate area of research activities with locations of camp and fuel cache.



Location of camp at northern end of Vendom Fiord: N 78° 06' 47.5" W 82° 28' 34.6"

Possible fuel cache at Irene Bay (max. 5 drums): N 79° 00' 44.8" W 81° 31' 56.5"

Figure 2: The camp will look similar to a camp at this position in 2011:

Figure 3: Possible fuel cache at Irene Bay (situation in 2014):

The field team working on site must be familiar with the fuel storage practices, spill prevention measures, and spill response actions detailed in this Spill Contingency Plan. The Plan will be available in print on site and personnel will be instructed accordingly on arrival.

The site supervisor for the CASE 24 Vendom Fiord project and main contact for all spill related matters is:

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2. Potential Spill Materials Inventory

Given the scope of activities planned for the 2025 field season, a limited number of hazardous materials will be present onsite. All petroleum fuel containers will be stored at least 31 meters away from the Ordinary High-Water Mark of any water body. See Table 1 below for a list of hazardous materials stored on site, which could lead to a spill.

Table 1: Project Spill Materials Inventory

Material	Type of Storage Container	Maximum Quantity On Camp Site	Spill Prevention Measures
Aircraft fuel	Jet fuel drums (205 l)	30 (max. 5 in Irene Bay fuel cache)	• Drums stored within berm • Insta-berm and/or absorbent pad used to catch any drips during fuel transfer • Daily inspections of fuel cache to check for leaks or damaged drums, all issues to be addressed immediately • Aircraft fueling only conducted by qualified personnel such as the pilot or engineer • Mark all fuel caches with flags, posts, or similar devices to make them plainly visible, even when buried under snow.
Diesel	Drum (205 l)	1	• Drum stored within berm • Insta-berm and/or absorbent pad used to catch any drips during fuel transfer • Daily inspections of fuel cache to check for leaks or damaged drums, all issues addressed immediately • Mark all fuel caches with flags, posts, or similar devices to make them plainly visible, even when buried under snow.
Propane	Tank (20 lb)	5	• Containers stored in a secure, indoor location out of the elements. • Handled only by cook/camp manager familiar with handling.
Propane	Tank (100 lb)	1	• Container stored in a secure, indoor location out of the elements. • Handled only by cook/camp manager familiar with handling.
Four stroke engine fuel	Jerry cans (5 l)	6	• Jerry cans stored within berm • Insta-berm and/or absorbent pad used to catch any drips during fuel transfer • Daily inspections of fuel cache to check for leaks or damaged drums, all issues addressed immediately • Mark all fuel caches with flags, posts, or similar devices to make them plainly visible, even when buried under snow.

3. Response Plan

In the event of a spill, the following general steps will be followed:

1. Identify the source of the spill and, if possible, stop the flow.

2. Inform the site supervisor immediately.

3. Contain the spill using spill response materials such as absorbent pads or absorbent booms.

4. Initiate clean-up and remedial actions, ensuring that GPS coordinates, photographs, and general notes (substance, estimated spill volume, etc.) are taken for reporting purposes.

5. Segregate contaminated soils, snow/ice or water, and absorbents in separate, clearly labelled 205 litre metal drums for eventual shipment off site.

6. Track spill internally using the Spill Tracker (Appendix A).

7. As per the minimum reportable quantities in the Northwest Territories-Nunavut Spill Contingency Planning and Reporting Regulations, all externally reportable spills, or any spill near or into water, will be reported to the 24-Hour Spill Report Line and the Inspector.

24-Hour Spill Report Line: (867) 920-8130

Inspector: (867) 975-4284 (or as indicated by Crown-Indigenous and Northern Affairs Canada in the Project land use permit)

Though not required by legislation, it is best practice to report all spills to the Spill Line and Inspector.

8. Within 30 days of the spill, the site supervisor or designate will submit a detailed report to the Inspector, as per conditions of the Project land use permit.

4. Resource Inventory

Fully stocked spill kits will be maintained at the campsite and will be placed in an appropriate location near fuel storage and fuel transfer. Miscellaneous equipment present on site will be made available for spill response such as shovels, fuel transfer pumps, hand tools, and hoses/fittings.

The 20 l spill kits include a general maintenance kit, an assortment of products to absorb oils, coolants, solvents and water. Material is stored in a sealed plastic drum.

Some empty, sealed-top 205 l metal drums are present on site to manage all waste liquids, or to transfer liquids into if any drums are compromised.

5. Roles and Responsibilities

BGR superiors - Responsible for ensuring that the site supervisor is aware of spill response and reporting procedures, as well as appropriate mitigations to prevent spills from occurring. The BGR superiors will ensure that the management plan is properly implemented and that the site supervisor is familiar with the conditions of site authorizations such as the land use permit.

Site supervisor – Responsible for ensuring all personnel on site are aware of spill response equipment and procedures, as well as appropriate mitigations to prevent spills from occurring. The site supervisor is responsible for implementing management plans such as the Spill Contingency Plan to minimize environmental impacts from the Project. Should a spill occur, they will ensure proper documentation and that the appropriate authorities are notified in a timely manner.

Staff and Contractors – All personnel working on site must be familiar with the Spill Contingency Plan and understand how to respond to a spill. Staff and contractors must adhere to the Spill Contingency Plan to help minimize wildlife attractants and environmental risks created by the Project.

Appendix A: Spill Tracker

Date	Time	Location Lat/Long	Substance Spilled	Estimated Volume (litres)	Spill # (externally reportable only)	Comments