



NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

MARCH 2015

PRELIMINARY ASSESSMENT OF POTENTIAL SUITABILITY
Airborne Geophysical Surveys



Airborne geophysical surveys are part of a multi-year plan to find a site where a deep geological repository could be constructed to safely contain and isolate Canada's used nuclear fuel over the long term.

In areas where this type of survey is required, the work is conducted in collaboration with communities that were identified through earlier assessments as having strong potential to meet project requirements and voluntarily entered the project's second phase of preliminary assessment. The project can only be implemented with the interested community, First Nation and Métis communities in the area, and surrounding communities working in partnership. Many years of discussion and study will be required before any decision can be made about a location for the repository.

Who is conducting the surveys?

The surveys are being conducted by the Nuclear Waste Management Organization (NWMO). The NWMO is the not-for-profit organization responsible for designing and implementing Canada's plan for the long-term management of used nuclear fuel. The NWMO was established in 2002 under the *Nuclear Fuel Waste Act*.

Why are they being conducted?

Airborne geophysical surveys are an early, exploratory step in a multi-year process to identify a site for a deep geological repository. The repository would be used to safely contain and isolate used nuclear fuel over the long term.

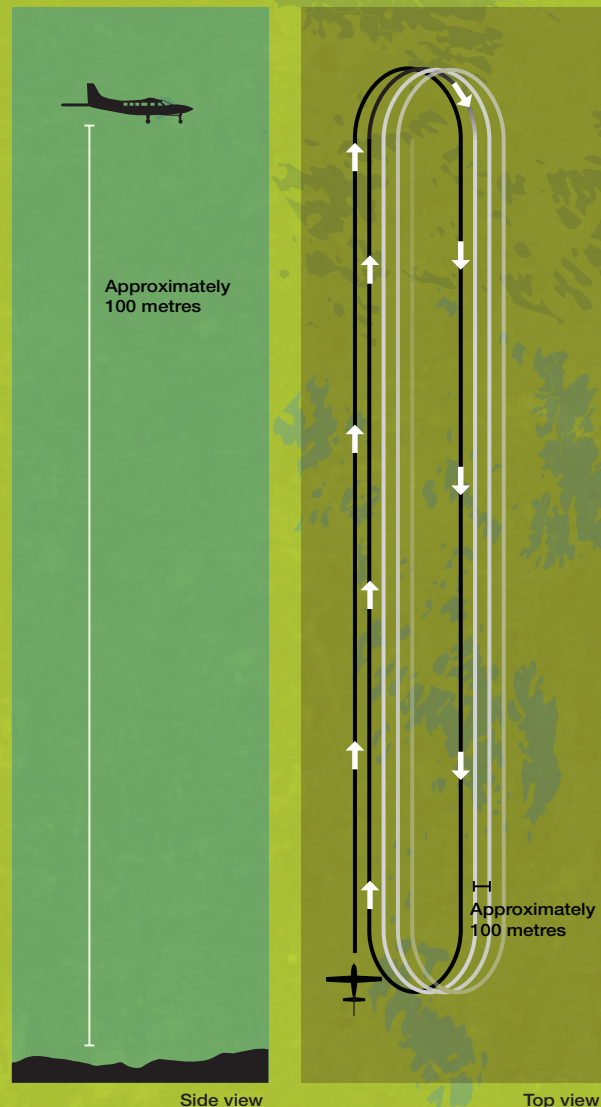
The airborne surveys are meant to gather additional geological information about potential siting areas. They will help the NWMO build a more detailed understanding of bedrock geology both at the surface and deep underground in a variety of areas.

When will surveys be conducted?

Specific dates and the length of time required to complete the surveys vary depending on the areas.

How is the survey conducted?

Aircraft will fly approximately 100 metres above the surface, capturing the areas that desktop studies identified as potentially suitable. To collect data, aircraft will fly along a number of straight lines over the areas, with approximately 100 metres of spacing between each adjacent line. To minimize noise disturbance, adjacent lines will not be flown one after the other.



Side view

Top view

How will the data be used?

The surveys collect data about the geological structure below the surface, as well as the shape and size of different rock types in the area. Once completed, they will provide important information to support discussion with the community, First Nation and Métis communities, and other surrounding communities about where and how the project might be implemented if it were to proceed in the area.

The NWMO will work with people in the area to review the findings and plan for walking portions of the land for geological and environmental mapping. If subsurface studies such as borehole drilling and testing are warranted at a later date, these will also be developed in discussion with people in the area.

Which areas are being surveyed?

Surveys are conducted in locations where earlier assessments suggested there may be large areas of land that may meet the technical safety requirements for a deep geological repository. In order to better understand the surrounding geology, the areas being surveyed are much larger than what would be required for a deep geological repository and associated facilities.

What if the surveys find areas with the potential to be suitable for the project?

If the geology in a surveyed area has the potential to be suitable for the project, people in the vicinity would be engaged in discussions about whether the project is a good fit for the area. The project's host must be informed and willing, and the project can only be implemented with the involvement of the interested community, First Nation and Métis communities, and other communities in the surrounding area working in partnership. The site ultimately selected must meet stringent technical and regulatory requirements.

When will a site be selected for this project?

Several more years of study will be required before a specific site can be identified. The preferred site must meet robust technical requirements focused on safety. The implementation of the project must also foster the well-being of the area as defined by people in the area.

The project will only proceed with the interested community, First Nation and Métis communities, and other surrounding communities in the area working in partnership.



Example of survey plane

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