NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Hornepayne – Borehole Drilling Project Description Submission

Revision Summary		
Revision Number	**Date**	**Description of Changes/Improvements**
R000	2018-04-17	Initial Issue

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List of Acronyms

APM	Adaptive Phase Management
BH	Borehole
eFRI	Enhanced Forest Resource Inventory
ELC	Ecological Land Classification
HQ3	96 mm (3-3/8 in) diameter
MNRF	Ministry of Natural Resources and Forestry
NHIC	National Heritage Information Centre
NWMO	Nuclear Waste Management Organization
PRA	Potential Repository Area
SAR	Species at Risk

1. General Information

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Project Name:
Initial Borehole Drilling in Hornepayne (the "**Borehole Drilling Project**" or the "**Project**")

2. Submission Context

The Nuclear Waste Management Organization ("**NWMO**") is implementing Adaptive Phase Management ("**APM**"), Canada's plan for the long-term management of used nuclear fuel. Used fuel will be safely and securely contained and isolated from people and the environment in a deep geological repository in a suitable host rock using a multiple barrier system. NWMO is currently in the site selection phase of the project.

The Hornepayne area described in this Borehole Drilling Project Description Submission ("**Submission**") is one of five areas in Ontario that is still being considered in the site selection process. Through an increasing level of technical and social assessment, a suitable location will be identified to site the used fuel repository. The initiation of borehole drilling is one of the means to better understand the geological and physical conditions of the rock at repository depth. Once a preferred site is selected, additional detailed site characterization activities would be undertaken.

It is expected that the Borehole Drilling Project in the Hornepayne area will consist of as many as ten (10) boreholes as part of the initial borehole drilling program. The location and depth of the boreholes will be dependent in part on the information collected through the preceding boreholes, taking into account site access and potential environmental constraints, as well as the geological understanding of the area. As described in the sections below, this Submission is for the first three boreholes as part of this initial borehole drilling. Potential drilling areas have been selected based on NWMO's technical requirements, while considering accessibility and minimizing the potential impact on the environment. There will be subsequent submissions for future boreholes addressing the specifics for each of the sites.

As the program progresses, based on the information from the drilling program, additional field work will likely be included into the program. This work will be conducted at existing borehole sites, along access roads or separate locations. The work is likely to include, but is not limited to: seismic surveys (planned to be performed on access routes), shallow geotechnical drilling and/or trenching (in support of engineering design planning), shallow groundwater monitoring wells (environmental monitoring and ground water modelling) and Environmental monitoring stations (collection of baseline data).

This Submission is made pursuant to section 4.1 of the Memorandum of Understanding between Her Majesty the Queen in Right of Ontario as represented by the Minister of Natural Resources and Forestry and NWMO dated March 20, 2017 (the "**MOU**").

3. Summary of Technical and Environmental Work Completed To Date

3.1 Geoscientific Work to Date

Prior to planning for borehole drilling, an assessment of the geoscientific suitability of the Hornepayne area was done following an iterative and systematic approach through a series of progressively more detailed geoscientific assessments. In 2013, a Phase 1 Geoscientific Desktop Preliminary Assessment was completed by Geofirma Engineering to assess whether the Hornepayne area contained general areas that had the potential to satisfy the geoscientific site evaluation factors outlined in NWMO's site selection process (Geofirma, 2013; NWMO, 2010). The desktop preliminary assessment built on an initial screening conducted by Golder Associates in 2011 (Golder, 2011).

The Phase 1 Geoscientific Desktop Preliminary Assessment was conducted using available geoscientific information and key geoscientific characteristics that could be realistically assessed at the desktop stage. These included: bedrock geology; structural geology; interpreted lineaments; distribution and thickness of overburden deposits; surface conditions; and the potential for economically exploitable natural resources. The consideration of these key geoscientific characteristics revealed that the Hornepayne area contained at three general areas that had the potential to satisfy NWMO's geoscientific site evaluation factors. The Phase 1 Geoscientific Desktop Preliminary Assessment also identified geoscientific uncertainties associated with these areas, including the low resolution of available geophysical data over most of the potentially suitable areas and significant overburden cover in most areas (Geofirma, 2013). In order to facilitate Phase 2 field studies, portions of land were temporarily removed from staking for mineral claims in the three identified general potentially suitable areas.

In 2014, as part of Phase 2 of the preliminary geoscientific assessment of the Hornepayne area, NWMO initiated a series of initial geoscientific field studies including initial geological mapping to observe and ground truth general geological features. Initial geological mapping, also referred to as "observing general geological features", was conducted to better understand the lay of the land, and to confirm the presence and nature of key geological features such as fractures, rock types, extent of bedrock exposure and surface constraints. In 2015, the acquisition and interpretation of high-resolution airborne geophysical surveys was completed. The objective of these initial field studies was to advance understanding of the geology of the general potentially suitable areas identified in the Phase 1 Geoscientific Desktop Preliminary Assessment, and assess whether it was possible to identify candidate areas for further field studies, beginning with Geological Mapping. The high-resolution airborne geophysical surveys included both magnetic and gravity surveys that greatly improved understanding of the geological characteristics of the Hornepayne area. The high-resolution surveys provided new information on rock type, homogeneity, and the depth and extent of the potentially suitable host rock. High-resolution geophysical and remote sensing data were then used to conduct a magnetic and surficial lineament interpretation to identify the presence of potential structural features such as fractures and dykes. The results from the initial Phase 2 field studies are documented in two supporting documents: Geophysics Interpretation report (SGL, 2017) and Lineament Interpretation report (SRK, 2017).

In 2016, Detailed Geological Mapping was conducted in the Hornepayne area (Geofirma, 2017a) to advance understanding of the bedrock geology of the general areas, with an emphasis on observation and analysis of the structural geological and lithological framework, in the context of the results from the Phase 2 Lineament Interpretation (SRK, 2017). Information collected during Geological Mapping also helped identify areas of exposed bedrock, assess overburden thickness, and identify surface constraints affecting accessibility within candidate areas. The findings from these Phase 2 field studies are reported in Geofirma (2017b). Based on all geoscientific information gathered to date, including Geological Mapping, potential repository areas (PRAs) were identified.

The integration of geoscientific and other technical and social considerations, led to identification of the potential drilling areas for boreholes one ("**BH01**"), two ("**BH02**") and three ("**BH03**"), located within a potential repository area in the Hornepayne area, as described in this Submission.

3.2 Environmental Work Performed to Date

In 2013, Golder Associates performed an Environmental Desktop Assessment for the Hornepayne area. The assessment provided an overview of the natural environment, terrestrial and aquatic habitats, and potential occurrences of sensitive species in the area. The desktop review completed for Phase 1 studies also included high-level information on background environmental conditions, climate and meteorology, and natural hazards such as forest fires.

AMEC Foster Wheeler was contracted to support the environmental studies in 2016. They completed desktop mapping and field verification for the smaller target locations within two Hornepayne withdrawal areas. This work focused on (1) proposing potential siting areas based on identified environmental constraints; and; (2) identifying potential environmental impacts that may result from the siting activities and proposing methods to avoid, manage, or mitigate those potential impacts. This work is ongoing, and will continue through the Phase 2 site selection activities (i.e., borehole drilling). To date, one field campaign has been completed to gain on-the-ground data useful in verifying interpreted imagery discussed in Section 5.2 and shown on figures in Appendix D. Additional environmental field studies will be conducted for the areas proposed for borehole drilling, including potential access routes. This work will be completed by early September 2018.

4. Detailed Description of Proposed Borehole Drilling Activity

The locations of BH01, BH02 and BH03 are planned within potential drilling areas shown in Figure 1 within the context of the Hornepayne region. The potential drilling areas are located in the Black-Pic batholith just west of Highway 631, approximately 20 km south of the Municipality of Hornepayne.

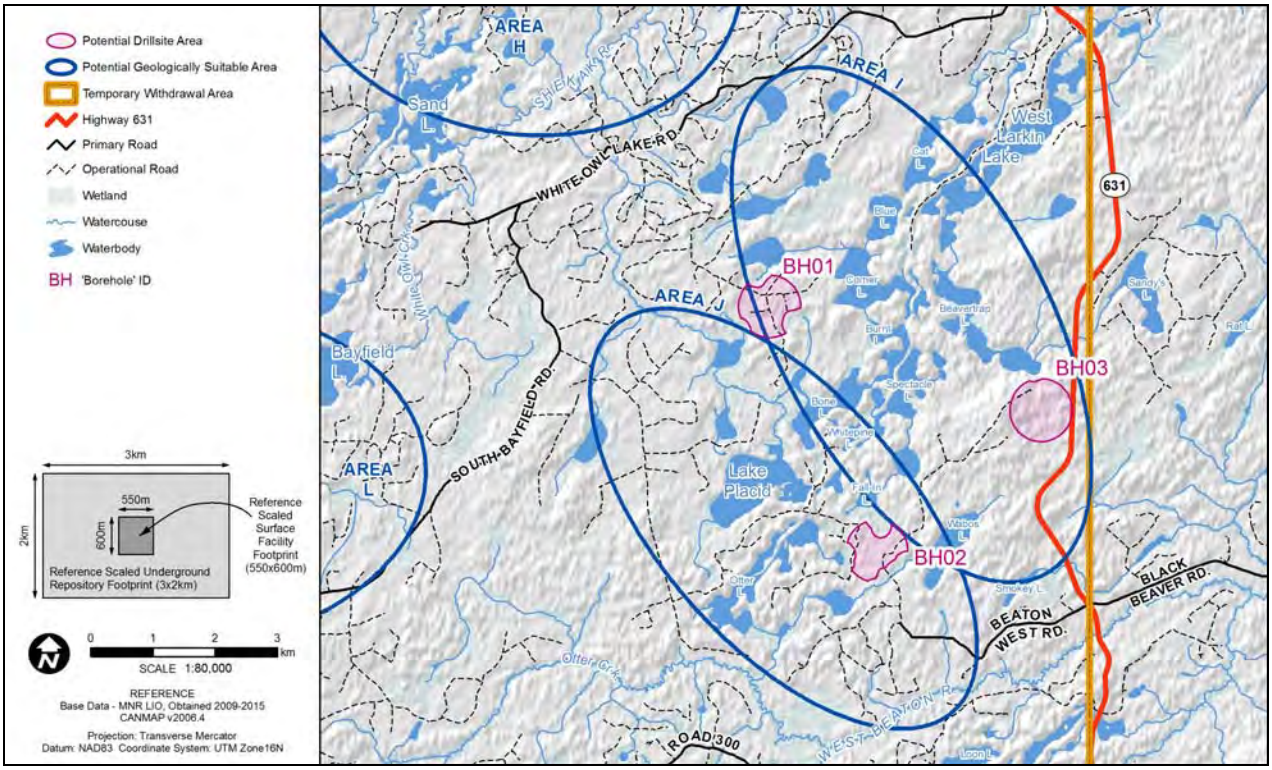

Figure 1: Approximate Locations of Potential Drilling Areas for BH01, BH02 and BH03 in the Hornepayne Area

4.1 Borehole Drilling Activities

The work on BH01 is planned to begin in fall 2018 with BH02 and BH03 beginning in 2019. The monitoring will continue for up to 5 years after installation of the borehole instrumentation. The timing of the initiation of the work could be impacted by social engagement and ecological considerations.

4.1.1 Site Preparation Phase

The site preparation phase is expected to last approximately 4 months for each borehole and includes the activities described below.

1. *Construction of permanent and temporary structures*

   For the planned drilling work, no permanent structures are planned. Temporary structures will be brought to site and setup on the drill sites. These structures will include various sizes of trailers that will serve as offices, storage and work areas.

All drilling, power generation equipment and fuel storage areas will be setup atop of spill containment structures. This is to provide additional spill protection in the event of an accidental spill or equipment failure.

2. Construction of, or improvements to, infrastructure such as accesses roads or trails, water crossings, including design specifications, methods, equipment, and materials to be used

a) Site Access

Access routes may need to be developed, upgraded or maintained to access the BH01, BH02 and BH03 locations within the potential drilling areas.

Planned access routes will be identified based on using existing road access as far as possible and limiting the need to cross water features. The access routes will follow contours to minimize steep grades, be cleared of trees and vegetation and prepared to allow drainage with minimum erosion from rain events and spring thaw.

As required, crushed aggregate will be placed to provide a stable running surface for vehicle access. Harvestable trees will be cut and cleared from the road, all other vegetation will be brushed and piled separately.

Equipment to be used is likely to include skid steer or similar, bull dozer, chainsaws, trucks to remove trees and deliver aggregate, excavators, chipping equipment, feller bunchers, log loaders, brushers, mulchers and small miscellaneous tools.

In general, road construction (Class V or VI), if required, will be performed as per the guidelines for those involved with building access roads on Crown land in Ontario "*Environmental Guidelines For Access Roads and Water Crossings*". The manual will be followed to address impacts from road construction including water crossings, and erosion sedimentation during in-water work as well as from soil erosion on slopes as described in Appendix A.

b) Site Establishment

The pads for the BH01, BH02 and BH03 drill sites (approximately 3500 m^2 per site or 0.9 acre) will each be prepared using aggregate sourced from a local supplier. The aggregate will be spread out using a skid steer or similar equipment and compacted using a small compacting roller.

It is planned to fence the drilling sites with a 2.5 m high fence. This is to prevent wildlife from entering the sites and to limit site spread.

Equipment used during site establishment will likely include trucks for towing in the trailers, drilling support equipment and possibly the drill rig (may also be self-propelled), a small mobile crane to remove equipment from the transport trailers and place into final location (if required), pickup trucks and small equipment such as a skid steer.

It is planned to have longer term land use (for a period of up to 5 years), at up to three of the borehole sites. Equipment will be installed as part of the borehole drilling project to support long-term monitoring, a quarterly sampling program and research activities as described in Section 4.1.3.

Additional equipment may be setup on the site for longer term environmental monitoring (meteorological stations, animal observation cameras, bat and bird sound recording instruments, ambient noise measuring instruments etc.).

c) Site Utilities

The sites will operate diesel powered generators to provide the electrical power needed to support the planned work activities. Power will be for offices, core logging activities, lighting, portable ablution facilities, yard lighting, storage etc.

Cellular and/or satellite communications will be setup at the site to support planned work activities and emergency communications.

Potable and process water will be brought to the sites. Surface water will be used only if the drill site is located in a remote area where transport of potable water to site is not feasible. If surface water is used, appropriate best practices will be used in consultation with the MNRF.

Designated waste disposal bins will be setup on the sites for the collection of all garbage generated during the work program. The garbage bins will be removed from site and taken to a licensed disposal facility located at the nearest town (Hornepayne).

3. Vegetation and ground clearing activities, including equipment and methods to be used and the location and size of area(s) to be cleared

Prior to the start of any work the Lead Contractor and NWMO will work with the MNRF representative to visit the sites and review the planned work so as to minimize the required ground clearing for access and site establishment.

The sites indicated (Figure 1) have been chosen based on the technical needs of the project. They have been located in relatively level areas. The final drill sites will be cleared of trees and brush. The non-harvestable material (soil, saplings, and debris) will be pushed to a suitably agreed area where it will be piled and left at the end of the drilling activity. The absence/presence of merchantable timber will be confirmed during a future site visit. In the event merchantable timber is discovered and cleared, Crown dues will be paid where applicable and the timber will be left at the road side for public fuel wood purposes or stacked for collection for transport to approved lumber or pulp mills.

4.1.2 Operations Phase

The operations phase is expected to last approximately 12 months for each borehole and includes the activities described below.

1. *The planned activities to be performed once the sites are established include:*

a) Drilling and coring

A drill rig will be setup to drill and core HQ3 (96 mm (3-3/8 in)) holes to maximum depths of ~1000 m each. Included in the drilling setup will be the installation of conductor casing which will be bedded to a depth of ~1 m below top of bedrock (casing length will be based on overburden depth). A surface casing will also be installed to a depth of up to 100 m. Drilling fluids and cuttings will be managed at surface and recirculated. Drilling fluids will be traced using a fluorescent tracer.

Field measurements will be made regularly in order to maintain consistent drill fluid properties and to identify any component of drilling fluid in the groundwater and pore water samples.

b) Core logging

All core retrieved will be logged, photographed and sampled on site and stored in core boxes. Some core samples will be taken and shipped off-site for laboratory testing. The core boxes, with the remaining core, will be removed from the site and stored in the interim core storage facility located in Hornepayne. All core will be logged and labelled for traceability.

c) Geophysical borehole logging

The borehole will be logged using industry-standard geophysical equipment that will be lowered down into the drilled hole. At the completion of each activity, the equipment will be retrieved from the hole. All regulatory requirements for transporting, handling and removing the equipment will be followed.

d) Hydraulic testing

A straddle packer system and accompanying equipment will be used to perform the hydraulic testing to determine the hydraulic conductivity of the rock at regular intervals down the borehole. The test locations will be based on the information gained from the geophysical well logging and core logging activities.

e) Groundwater sampling and testing

If permeable zones are detected during the drilling and coring activities, samples of water from those areas will be collected, prepared for testing and shipped out for further laboratory analysis.

f) Borehole sealing

At this time, it is planned that up to three boreholes will be instrumented for additional monitoring. Based on the results from the planned program, there may be a decision to abandon the borehole. If the borehole is abandoned, it will be temporarily sealed at surface and between zones that have differing hydraulic pressures or ground water chemistry (if any are identified). The current plan includes instrumenting the wells to perform longer term data collection (see details in Section 4.1.1 2b - Site Establishment

above). If longer term data collection is not required, the well will be permanently sealed and abandoned according to provincial regulations.

g) Site operation

The sites will operate on a 24/7 basis during drilling and certain testing operations. Workers will access the work site on a daily basis as required for their working shift. The number of workers at each site will vary from 1 to an expected maximum of 15 per shift over the course of the work program. NWMO personnel and authorized visitors will be periodically at the site. Workers will drive to and from the work sites.

2. Clean-up of the Borehole Drilling Sites

At the end of the drilling and testing program all equipment and materials will be removed from the sites (excluding long-term bore hole monitoring instruments). There will be a need to request retaining the access routes and some of the prepared pad. This is required to allow for access to the sites to take water samples, download data from downhole instruments and service equipment as required.

In the event of a contaminant spill, the spill will be cleaned up according to the requirements of the contractor's Environmental Management Plan and the satisfaction of the regulatory authority.

3. Alternate drilling locations

Sites have been reviewed based on project requirements. Due to the nature of the target areas, all potential drilling areas require clearing of trees and vegetation. Target areas have been located on the most level ground, away from water bodies and least likely to cause erosion during heavy rain events and spring melts. Within the potential drilling areas, drill sites and road access options, if needed, will be studied for possible environmental sensitivities.

4.1.3 Longer Term Land Use – Monitoring Phase

The monitoring phase is expected to last 5 years after installation of the borehole instrumentation for boreholes used for monitoring. This phase includes the activities described below.

1. Site requirements for longer term land use:

a) Retain the drill pad from the drilling program – required when equipment and personnel access the site to collect water samples, take pressure measurements and maintenance of the system if required.
b) Add a 3 m x 3 m x 0.1 m thick concrete pad around the well head. The pad provides a stable base for the enclosure and the setup of the test equipment required during the sampling event – See Figure 3.
c) A protective enclosure approximately 1.2 m x 1.2 m x 1.2 m. See Figures 2, 3 and 4. The enclosure protects the external instruments and monitoring connections.
d) Retain the gated fence to restrict access from public and wildlife.
e) Signage and contact numbers.

Figure 2: Example of an Enclosure Placed Atop of an Instrumented Well Head

Figure 3: Example of Concrete Pad with Well Head Enclosure and Temporary Test Equipment

Figure 4: Example of Well Head Enclosure and Temporary Test Equipment

2. Quarterly sampling program

The quarterly sampling program requires access to the site for a pickup truck and trailer. The trailer, containing the test and sampling equipment, is positioned at the borehole. The sampling tripod and winch are setup over the well head and water samples are collected from the isolated sections within the well. The collected water samples are bottled, labeled and prepared for dispatching to an accredited laboratory for analysis. The total volume of water removed from the well is less than 5 liters.

The sampling team, consisting of two people, mobilizes to and from the site each day for a total of 2-3 days. All required materials, tools and equipment are brought to the site for the work are removed at the end of the Project.

During the winter sampling event it is expected that a local contractor will be hired to clear the access route and the site of snow.

The data collected from the instrumentation and the results of the water sample analysis are key inputs to the ground water model and the baseline environmental monitoring program.

3. Research modules

Research modules will be installed at depth in one of the boreholes at the end of the drilling and testing activities. The modules will be filled with bentonite clay and research coupons as shown in Figure 5 (a) full module and (b) as a cut-away view. Each module will be roughly 80 mm in diameter and 50 cm in length. Two packers will be installed, one above and one below a module, to isolate it within the groundwater at the appropriate depth.

(a) 

Full Module

(b) 

Cut-Away View

Figure 5: Example of a Removable Research Module

4. Site inspections

The NWMO will conduct routine site visits to check the drill sites and access routes during and after borehole drilling. These site visits will check to ensure that the site is maintained,

the fence is intact, instrumentations is functioning correctly, access routes are passable and to look for any signs of unauthorized access.

4.1.4 Decommissioning Phase

At the end of Borehole Drilling Project, and the cessation of all other activities by the NWMO in the area, a decommissioning plan will be developed. This plan will cover the rehabilitation of borehole drilling sites, access roads, and water crossings (as required) and will be made with input from local communities.

4.1.5 Hazardous Materials Management

Hazardous materials will be stored according to regulated requirements. As required, and at the end of the planned work, hazardous waste will be removed from site and disposed of at a licensed disposal facility. Hazardous materials are likely to be limited to diesel, gasoline and propane fuel, hydraulic fluid, grease and oil.

Equipment fueling activities, including planned location for re-fueling and any fuel storage on site

Due to the remote nature of the work locations, all fuel for equipment and tools will be brought to sites in a certified fuel transportation container and transferred to certified fuel storage containers. These containers will be double walled and stored in a dedicated fuel storage location with additional containment.

Fueling of large equipment will be done at the equipment e.g. the drill rig and power generator. This equipment will be positioned atop of containment. Where required, temporary spill trays will be placed beneath the refueling point to capture any leaks of fuel during the refueling activities e.g. when refueling small equipment such as a skid steer or pickup truck. Refueling of small tools e.g. a chainsaw, will be performed in a designated refueling area or atop of a spill tray. Fuel storage and refueling areas will be set away from temporary offices and drilling equipment.

Hand held fire extinguishers and spill kits will be located at the fuel storage and refueling locations.

5. Assessment Area

5.1 Environment: Physical and Ecological Features

BH01, BH02 and BH03 have been proposed based on project requirements. Analysis of ecosites, natural features, field verification, and required species-specific and ecological studies will be completed by early September 2018. The NWMO has identified potential drilling areas that could include the need to develop access routes to borehole locations. Access routes will be determined taking the need to reduce disturbance and impacts into consideration, and the ease of construction. If required, access routes will be selected to:

- avoid water crossings;
- avoid unfavorable construction areas (hilly terrain with steep grades, deep swamps,

bedrock, erodible soils, etc.);

- align roads to follow contours where possible;
- select gentle grades; and
- avoid water bodies and buffers.

1. Potential Drilling Areas

Vegetation community polygons are primarily derived using existing Forest Resource Inventory (eFRI) species composition and primary ecosite data (last updated between 2007 and 2010), with interpretation using high resolution four-band digital aerial ortho-photos, where available. Table 1 outlines the vegetation classification in the form of Boreal ELC codes as described by Banton et al (2015), which are also depicted on Figure 6, below. Typical of the Black-Pic withdrawal area, forest communities are the most commonly distributed vegetation communities in each of the potential drilling areas. Coniferous swamp communities also occur regularly.

Table 1: Summary of Boreal Ecosites Based on Desktop Assessment

Potential Drilling Area	ELC Code	Description	Representative Tree Species	Community Type	Estimated Community Series Area per Potential Drilling Area	Estimated Community Series Area per Black-Pic Withdrawal Area[1]
HP_BH01	B049	Dry to Fresh, Coarse: Jack Pine – Black Spruce Dominated	Jack Pine; Black Spruce; Paper Birch	Coniferous Forest	24.3%	42.9%
	B050	Dry to Fresh, Coarse: Pine – Black Spruce Conifer	Black spruce; Jack Pine; Trembling Aspen; Paper Birch; Balsam Fir; White Spruce; Eastern White Cedar			

Potential Drilling Area	ELC Code	Description	Representative Tree Species	Community Type	Estimated Community Series Area per Potential Drilling Area	Estimated Community Series Area per Black-Pic Withdrawal Area[1]
	B055	Dry to Fresh, Coarse: Aspen – Birch Hardwood	Trembling Aspen, Paper Birch; Balsam Fir; Black Spruce; White Spruce; Jack Pine; Northern Mountain-ash	Mixedwood Forest	59.7%	29.7%
	B127	Organic Poor Conifer Swamp	Black Spruce; Jack Pine; American Larch	Coniferous Swamp	16%	22.6%
HP_BH02	B049	Dry to Fresh, Coarse: Jack Pine – Black Spruce Dominated	Jack Pine; Black Spruce; Paper Birch	Coniferous Forest	75.4%	42.9 %
	B065	Moist, Coarse: Black Spruce – Pine Conifer	Black Spruce; Jack Pine; Trembling Aspen; Balsam Fir; Paper Birch; American Larch			
	B055	Dry to Fresh, Coarse: Aspen – Birch Hardwood	Trembling Aspen, Paper Birch; Balsam Fir; Black Spruce; White Spruce; Jack Pine; Northern Mountain-ash	Mixedwood Forest	4.9%	29.7%

Potential Drilling Area	ELC Code	Description	Representative Tree Species	Community Type	Estimated Community Series Area per Potential Drilling Area	Estimated Community Series Area per Black-Pic Withdrawal Area[1]
	B128	Organic Intermediate Conifer Swamp	Black Spruce; American Larch; Balsam Fir	Coniferous Swamp	19.7%	22.6%
HP_BH03	B049	Dry to Fresh, Coarse: Jack Pine – Black Spruce Dominated	Jack Pine; Black Spruce; Paper Birch	Coniferous Forest	10.7%	42.9 %
	B055	Dry to Fresh, Coarse: Aspen – Birch Hardwood	Trembling Aspen, Paper Birch; Balsam Fir; Black Spruce; White Spruce; Jack Pine; Northern Mountain-ash	Mixedwood Forest	52.2%	29.7%
	B128	Organic Intermediate Conifer Swamp	Black Spruce; American Larch; Balsam Fir	Coniferous Swamp	37.1%	22.6%

Note:

[1] – Percent area by community series in the Black-Pic withdrawal area will be less than 100% as ecosites occur within the withdrawal area that are not represented within the potential drilling area

Species at risk (SAR) information was obtained through the MNRF's NHIC database. Since species occurrence data for northern Ontario can be scarce, secondary sources of information in including bird, herpetile, mammal, and aquatic species atlases for Ontario and federal and provincial SAR lists and range maps were also reviewed. Based on this review, only one SAR record exists in proximity to any of the proposed drilling areas. As can be seen in Appendix D - Figure 6, a single incidental observation of woodland caribou (threatened) has been recorded within two kilometres of potential drilling area three. The single observation is located to the northeast of both the potential drilling area and Beavertrap Lake along Highway 631.

Stream order was determined from Land Information Ontario digital elevation models and the application of the Strahler stream order classification (Strahler, 1952; 1954; 1957). Where

fish species information was available but thermal regime data was not, the thermal regime was inferred based on Minns (2010), which described the thermal preference of Ontario stream fish groups. Along with thermal regime, stream morphology, as shown in Appendix D Figures 6a through 6d in, was also assessed. Digital elevation models were used to approximate the average percent slope for each watercourse segment, and the Rosgen Stream Classification (Rosgen, 1996) framework was used to guide probable stream morphology. As expected, watercourses in the vicinity of the potential drilling areas are classified as either cold or cool with a mix of open water, pool, and glide/run morphologies. As noted above, the potential drilling areas included in this Submission have been purposefully located a minimum of 100 m from known watercourses.

In September and October 2016, field verification activities were undertaken for selected areas within the Black-Pic withdrawal area. The specific areas identified for field verification were selected based on criteria relating to site access, spatial representation and frequency of ELC polygons and types, available SAR information, and stream reach and fish habitat information. Field verification study locations are shown on figures included in Appendix D. Of note, all plant species encountered are provincially-ranked as secure or apparently secure; no rare or SAR plant species were recorded. Additionally, no SAR wildlife were recorded, nor were potential bat hibernacula encountered.

In general, there was agreement between the desktop assessment ELC ecosites and the ELC ecosites surveyed. In instances where a revised ecosite code was suggested due to field study, the rationale for the revised code was most often attributed to a change in the proportion of the same canopy tree species. Some suggested revisions were due to differences in soil type. It should be noted that some instances of inaccurate canopy information were noted, and could be attributed to recent logging activities. Overwhelmingly, suggested revisions to the desktop assessment based on the field verification activities were not meaningful in terms of understanding the existing landscape.

Stream reach classification field assessments were guided by the Ontario Stream Assessment Protocol (OSAP; Stanfield 2013), the Ministry of Transportation / Ministry of Natural Resources Fisheries Protocol, and the Ontario Stream Fishes Habitat Assessment Models as published by the Department of Fisheries and Oceans (Minns, 2010). The stream morphology and permanence estimated through desktop assessments did not differ greatly from the actual conditions observed in the field, and verification results showed the estimated stream permanence and flow morphology data were largely correct.

Maps showing the field-verified results of the environmental characterization desktop work completed in the Black-Pic withdrawal area (Appendix D) include:

- land use;
- terrestrial and aquatic habitat suitability and use;
- National Heritage Information Centre (NHIC) element occurrences;
- stream reach classification;
- eFRI ecosite delineation; and
- field verification effort.

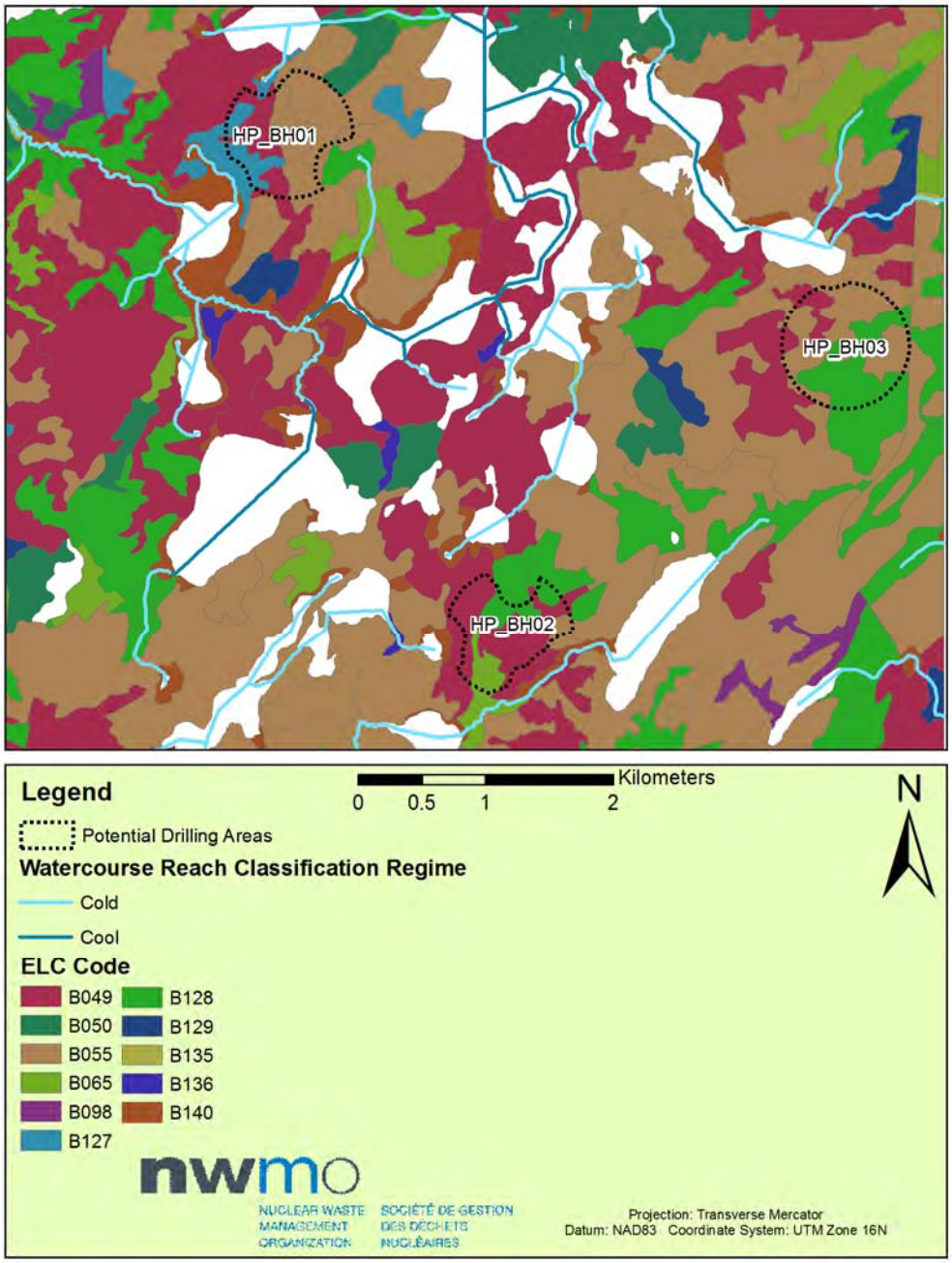

Figure 6: Boreal Ecosites and Watercourse Thermal Regime in Proximity to Potential Drilling Areas

NOTE: The NWMO will continue to perform environmental field investigations to confirm conditions to support the development of the Environmental Management Plan for access road construction, if needed, and drilling and borehole testing work (planned to begin in fall 2018).

5.2 Land Use: Present and Past Uses of the Land

Portions of the potential drilling areas have been logged within the past decade. Additional pre-disturbance site investigations will be conducted to accommodate seasonal survey windows (as required).

No work will take place prior to notification of the Sustainable Forest Licensee. The NWMO will contact the Sustainable Forest Licensee responsible for the forest management area in advance of site disturbance to discuss appropriate monetary compensation that may be required.

Community input known-to-date respecting present and past uses of the land is documented in the community engagement report (Appendix C). Preliminary desktop mapping confirmed the lack of fishing access points near the potential drilling areas (Appendix D – Figure 6).

Table 2 presents a schedule and summary of the pre-disturbance site investigations that will be completed. It is noted that additional field studies may be required prior to disturbance. Timing of clearing work and/or in-water work, if needed, will determine which studies are required. The NWMO will continue to work with Sustainable Forest Licensees, hunters, trappers, and anglers, and local knowledgeable contacts to better inform the description of the existing environmental conditions in and adjacent to the potential drilling locations.

Table 2: Summary of Planned Pre-disturbance Environmental Field Studies at Potential Drilling Areas

Site Visit #1 (February-April)	Site Visit #2 (late April to early May)	Site Visit #3 (early June)	Site Visit #4 (late June to early July)	Site Visit #5 (late July to early August)
• Aerial Stick Nest / Large Mammal Survey (potentially completed by drone survey)	• Nocturnal Owl Playback Surveys (April) • Bat Maternal Roost Habitat Surveys (April/May) • Amphibian (Anuran) Call Surveys (May) • Amphibian Egg Mass/Vernal Pool Surveys (May) • Surface Water Quality Sampling • Sediment Quality Sampling • Soil Quality Sampling	• Morning Songbird Surveys • Crepuscular Bird Surveys • Bat Acoustic Surveys • Amphibian (Anuran) Call Surveys • Amphibian Egg Mass/Vernal Pool Surveys • Incidental Observations	• Morning Songbird Surveys • Crepuscular Bird Surveys • Bat Acoustic Surveys • Amphibian (Anuran) Call Surveys • Amphibian Egg Mass/Vernal Pool Surveys (if necessary) • Ecological Land Classification and Botanical Inventories • Incidental Observations	• Ecological Land Classification and Botanical Inventories • Significant Wildlife Habitat Mapping • Bat Acoustic Detector Retrieval

Site Visit #1 (February-April)	Site Visit #2 (late April to early May)	Site Visit #3 (early June)	Site Visit #4 (late June to early July)	Site Visit #5 (late July to early August)
	• Benthic Invertebrate Community Sampling (if necessary) • Incidental Observations			

5.3 Cultural Heritage

As part of the Phase 1 studies completed for the Hornepayne area (Geofirma, 2013), a cultural heritage screening examined known archaeological and historic sites in the Hornepayne area, using the Ontario Archaeological Sites Database. No known archaeological or historic sites are located in or near the potential drilling areas.

6. Evaluation of Potential Effects

The following is a list of potential environmental effects that the Borehole Drilling Project could have on the potential drilling areas:

- Open drill hole as conduit for groundwater contamination, including rod greases, drilling water and drilling muds/fluids.
- Diversions and grading causing altered surface water flow and increased erosion.
- Compaction and degradation of surface soil and root/seed stock from site clearing.
- Solid waste storage or disposal, including drill core, refuse, and scrap metal.
- Soil, surface water, and ground water contamination from spills.
- Storage or usage of materials such as petroleum hydrocarbons, drilling fluids/muds or other chemicals.
- Increasing stress that affects, for example, breeding, migration, or nesting.
- Vehicle strikes causing injury or death.
- Introducing non-indigenous species that upset and imbalance the ecosystem.
- Disturbance or destruction of habitat and food supply.
- Poor drainage from road construction resulting in excessive erosion, sedimentation and rutting.
- Impact to fish habitat and water quality.

The following sections describe how these potential effects will be avoided or mitigated.

6.1 Avoidance and Mitigation of Potential Effects

1. Avoidance:

The potential drilling areas were selected in part based on the potential to avoid environmental impacts in that location:

- Areas removed from known recreational, residential, and commercial uses to prevent nuisance disturbance to human receptors from potential drilling effects, such as noise, dust, and lighting.
- The potential drilling areas are greater than 100 m from watercourses or waterbodies. The drill pad area is small (approximately 3500 m^2 or 0.9 acre) to avoid any unnecessary impacts.
- The drill area will be fenced to avoid site creep and wildlife interactions.
- To avoid all water taking, water will be trucked in.
- To avoid any discharge of water or effluent, all drilling water will be re-circulated, captured and trucked offsite to a designated licensed facility.
- Potential access routes, if needed, will be planned to avoid unfavorable construction areas (steep grades, deep swamps, erodible soils) and to fit the local terrain and follow the contours of the land.
- Buffer zones of undisturbed vegetation will be maintained between potential access roads and waterbodies.

2. Mitigation

The following is a summary list of planned mitigations based on planned work. A detailed table will be produced. The Environmental Management Plan will detail the required management of all Significant Environmental Aspects identified based on the planned project work:

- Perform surface water and soil sampling prior to the start, during and at the end of the planned work.
- Setup of silt curtains and berms to manage silt from water runoff.
- Dedicated storage areas with spill containment for storage of fuel, oil and drilling fluids.
- Water management system for drilling fluids (Recirculation, filtering, offsite disposal).
- Secured, steel waste disposal bins within fenced work area for garbage (disposed of offsite at registered waste disposal site), and will be locked when work crews leave the site.
- Offsite disposal of sewerage waste from ablution facilities.
- Placing of drilling and support equipment over additional containment (drill rig, generators, testing equipment).
- Casing of drill hole from surface into competent rock.
- Environmental surveys to be conducted prior to start of site preparation to determine the need for species-specific mitigation.

- Environmental management plan to address site survey findings – will be monitored by the NWMO.
- Traffic management plan to reduce possible vehicle accidents and unnecessary ground compaction.
- Fenced work area to limit wildlife entering the work site and prevent site creep.
- Site lighting to be focused on working areas.
- Management of cleared vegetation in accordance with MNRF guidelines.
- Surface soil management and root mat preservation for re-use during site decommissioning to minimize erosion and to preserve native seed stock.
- Site spill management plan and onsite spill kits.
- Contractors will be trained on NWMO's Environmental Guidelines for Contractors (based on Leave No Trace principles) to minimize impact, harvesting, and hunting or harassment of wild animals).
- All clearing of vegetation will occur outside the General Nesting Period for birds, which is considered by Environment and Climate Change Canada to be April 14 to August 28 for wetland and forested areas in Nesting Zones C4 and C5, inclusive (Appendix A). Should vegetation be cleared within the General Nesting Period, searches for active nests should be performed by qualified biologists no more than 48 hours before removal.
- For all non-merchantable trees discovered and cleared, Crown dues will be paid where applicable and the timber will be left at the road side for public fuel wood purposes or as directed by MNRF.
- In-water work, if required, will be subject to timing restrictions as mandated by the MNRF and subject to the temperature regime of the fish community (if any) present within the waterbody.
- An erosion and sediment control plan will be developed for the site that minimizes risk of sedimentation of the waterbody during all phases of the project, including in-water work. Erosion and sediment control measures will be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear.
- Erosion and sedimentation plan for all in-water work.
- Natural vegetation near water crossings will be retained as long as possible to reduce exposure of soil, and replanted with ecologically-appropriate species to re-establish slope stability.
- Road side ditches will not discharge directly into waterways.
- Regular inspection of water crossings to prevent beaver dam construction or other blockage.
- Follow best practice recommendations for roads and water crossings as described in OMNR 2003 and "Environmental Guidelines for Access Roads and Water Crossings (OMNR 1995).

7. Record of Public and Stakeholder Engagement

The NWMO has had extensive engagement with the local communities over recent years. Please see the following attached documents for a summary of activities to date.

1. Record of Aboriginal Engagement in the Hornepayne Area – Appendix B
2. Borehole Drilling: Public and Stakeholder Engagement Report, Hornepayne and area – Appendix C

It should be noted that this engagement is ongoing and will continue for the duration of this, and the planned future borehole drilling work.

As the Project progresses further engagement and communication will occur with other identified stakeholders. These include those that will be identified to the NWMO by the MNRF pursuant to the MOU.

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Appendix A – Example of Potential effects and Mitigation Measures Table (to be developed with contractor)

The "*Environmental Guidelines For Access Roads and Water Crossings*" manual will be followed to address and mitigate the impacts identified for road construction, including water crossings, and erosion sedimentation during in-water work as well as from soil erosion on slopes.

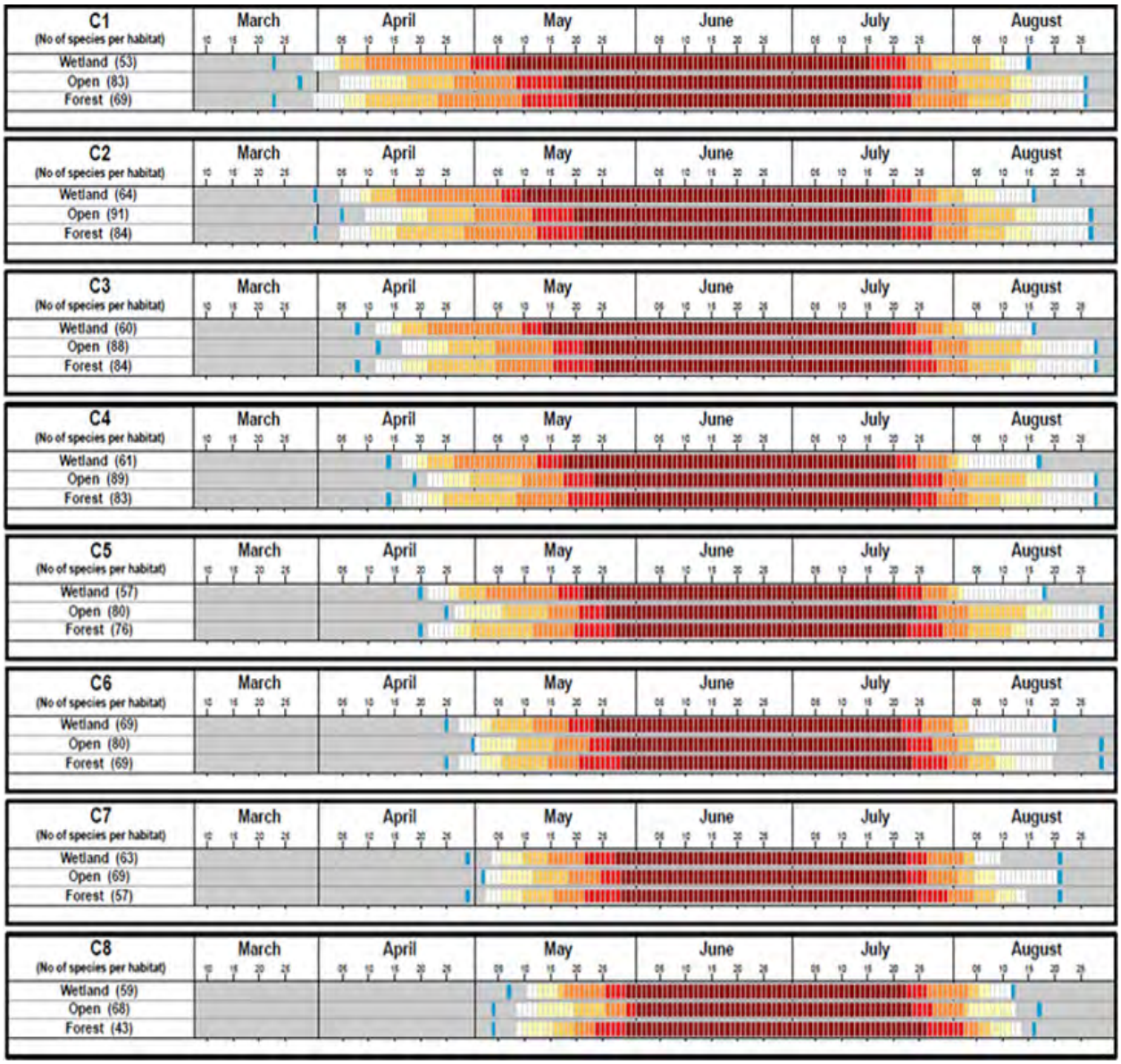
Potential effect	Mitigation
Surface water contamination (fuel, greases, metals)	Conduct baseline surface water sampling program prior to drill pad preparation and site clearing. Multiple levels of containment will be used to minimize contamination.
Potential soil contamination (fuel, greases, metals)	Conduct baseline soil sampling program prior to drill pad preparation and site clearing. Multiple levels of containment will be used to minimize contamination.
Increase erosion/sediment transport during spring melt from snow buildup	Winter work will include snow clearing. Snow will be cleared for safety and work access, and piled in multiple smaller piles or berms to minimize the risk of soil erosion and due to runoff.
Loss and damage of vegetation from land clearing	Clear land of vegetation just in advance of when it is required. Avoid clear cutting and bulldozer blading. Drive over flattened vegetation, to preserve rootstock and prevent soil erosion. Limit the amount of clearing with heavy machinery. Wherever possible, preserve the organic mat. Avoid cutting commercial plant species (presume someone is cultivating them). Cut and remove unstable or snagged trees where they pose a danger to workers or could fall across the roadway. Shall not leave trees leaning into marginal timber. Leave large trees standing, if possible. Weave site vehicle access around trees or relocate facilities to help reduce the visual impact of vegetation clearance.
Disturbance or destruction of habitat	Surveys will be completed in advance of site disturbance for sensitive species that may occur in the area that will be disturbed. The drill pad is small, to avoid unnecessary disturbance.
Introduction of non-indigenous species	Ensure that revegetation programs do not introduce any non-indigenous plant species. Ensure that all equipment arrives on site in clean condition, with no visible earth or vegetation debris.
Contamination of shallow groundwater	Minimal cut and fill will be required. Any required cuts will remain shallow and will not extend to the water table.
Dust and deposition	Reduce vehicle speed on dusty roads and trails. Install temporary windbreaks to control dust dispersion by using polyethylene netting, burlap or lath fencing if required
Migratory bird disturbance	No clearing between restricted time; if clearing must take place during the nesting season to due project constraints, then active nest surveys will be undertaken by a qualified biologist not more than 48 hours prior to disturbance.

Impacts from road construction	The "*Environmental Guidelines For Access Roads and Water Crossings*" manual will be followed to address and mitigate the impacts identified for road construction, including water crossings, and erosion sedimentation during in-water work as well as from soil erosion on slopes.
Contamination of groundwater from use of drilling fluids	Avoided. Drilling fluids will be trucked in, collected, and trucked out to an approved facility.
Oil spill	Secondary Containment and the maintenance of the majority of equipment off site will minimize potential oil spills. Spill kits will be available in the event of an incident.
Soil compaction	Minimization of the drill pad area to minimize area of compaction. All vehicle movement (including trucks, site access vehicles, drill rigs, heavy equipment, snowmobiles, etc.) shall be kept to a minimum and vehicles shall not deviate from the assigned route to the site. Area and routes shall be clearly demarcated.
Disturbance of soil ecosystem. Topsoil contains valuable nutrients, micro-organisms, minerals, seeds, and root stocks, vital to the ecosite. Seeds of native species are contained in topsoil and is important plant species diversity in the disturbed area.	Stockpile topsoil separately from subsoil and protect it for future use in reclamation. Heavy mulch of decaying vegetation should be removed first and stockpiled separately. Topsoil (top 10-20 cm of soil), and subsoil will be stockpiled in separate piles no higher than 1-2 m and used for rehabilitation of the disturbed areas. Soil will be covered with permanent or temporary vegetation to prevent erosion.
Sensitive habitats: crepuscular birds	Qualified specialist to survey site in advance of site preparation following MNRF's survey protocols, as applicable.
Sensitive habitats – myotis bat hibernacula and maternity roots	Survey site in advance of site preparation to determine the presence of sensitive habitats (suitable deadwood etc.).
Sensitive habitat - breeding bird	Clearing work will be completed outside of applicable migratory bird nesting schedule (see figure, below). If clearing work is required during the nesting schedule, breeding bird surveys will be conducted prior to disturbance, and efforts will be made to clear land prior after peak nesting period. Monitoring may continue throughout the drilling program at appropriate intervals.
Collecting or harvesting of plant material	All contractors will be trained on NWMO's Environmental Guidelines for Contractors which adopts the Leave No Trace principles. No harvesting or collecting of plant materials will be permitted
Hunting and harassing of wild animals	All contractors will be trained on NWMO's Environmental Guidelines for Contractors which adopts the Leave No Trace principles. No hunting and harassing of wild animals will be permitted.
Disturbance of wildlife - lighting	No spotlights will be pointed away from the work area. All lights used for drilling activities shall be shielded and pointed downward to avoid light spillage.

Fire	The following shall be observed to prevent bush fires: - Smoking shall be restricted to designated areas and cigarettes shall be extinguished and disposed of in appropriate designated receptacles - onsite fire extinguishers in sufficient numbers for the number of maximum employees -regular fire drills - regular inspection and clearing of site around equipment with ignition or sparking potential for dry debris - records will be kept of all drills and inspection - No fires (cooking, heating, waste management) permitted on site.
Impacts from water taking	Avoided. All water will be trucked in.
Impacts from effluent/discharge water	Avoided. All water will be trucked out.
Solid waste	All solid waste will be collected in appropriate receptacles and removed from site and transferred to an appropriate licensed facility. Upon completion of the borehole, all rock core will be removed from the drill site and stored in an NWMO off-site core storage facility. Good housekeeping practices shall be maintained at all times. All contractors be trained on the NWMO Environmental Guidelines for Contractors, and training records shall be retained and inspected.
Disturbance of site of anthropological or archeological importance	MNRF has shared non-aboriginal historical element occurrences; will be verified with MNRF prior to disturbing the site.
Impacts from Water Crossing	Locate crossings at stable sites to avoid bank slumping, erosion and sedimentation, or site important as wildlife or fish habitat. Culverts will be installed in accordance with the "*Environmental Guidelines For Access Roads and Water Crossings*" manual. Retain vegetation where feasible, and establish protective vegetative cover with appropriate species. Stabilize slopes and shorelines by keeping runoff velocities low. Control sediment by diverting runoff away from exposed soil; trap sediment by using filter cloth, rip rap, or other stabilizing material. Install ditches and drains as necessary to manage water flow from roads. Follow provincial guidelines for fish habitat.

Increase soil erosion and sedimentation: Degradation of surface waters with eroded sediment. Altered patterns of surface water flow and drainage. Increased stream flow velocity or channelling flow (channelization). Loss of valuable and productive topsoil. Generation of non-point source pollution (mainly sediment, but also spilled fuels). Destruction of natural habitat (on land and in aquatic ecosystems). Compaction of soil, which reduces the capacity of water to infiltrate soil resulting in higher runoff volumes.	Minimizing vegetation, soil and bedrock disturbance and exposure to wind and water, collecting and managing (dispersing) runoff and drainage, and collecting and removing sediment. Control structures: Straw bales and sandbags, incorporating geotextile filter cloth, silt fences, brush barriers, diversions and dams, sediment traps or basins.
Management of cut vegetation	Store removed vegetation so that it can be later used as a seed source, moisture retention aid, and shade for new growth during reclamation. Incorporate some of the cut timber and slash into a road/drill pad sub grade and dispose of the remainder of the slash by scattering, piling or burying. Use some of the vegetation that was removed as mulch. Lop or limb cut bulldozed trees and scatter the branches and limbs. Use some of the removed vegetation as mulch. Cut slashed vegetation (slash) into less than 4 m lengths, cover with at least 1 m of soil, reseed, and fertilize. Dispose of slash such that it does not degrade aquatic habitats or pose a fire hazard.
Erosion and Sedimentation during in-water work	Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear. The plan should, where applicable, include: - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body. - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system. - Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required. - Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry. - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction. - Repairs to erosion and sediment control measures and structures if damage occurs.

	- Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
Erosion: soil on slopes	The "*Environmental Guidelines For Access Roads and Water Crossings*" manual will be followed to address and mitigate the impacts of soil erosion on slopes.



General Nesting Periods for Migratory Birds in Zone C (figure from Environment Canada and Climate Change, 2017) https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html#_fig04_1

Appendix B – Record of Aboriginal Engagement in the Hornepayne Area

[as attached]

Report on Aboriginal Engagement in Support of Borehole Drilling in the Hornepayne Area

Revision Summary		
Revision Number	**Date**	**Description of Changes/Improvements**
R000	2018-04-17	Initial issue

Contents

1. INTRODUCTION

This Report on Aboriginal Engagement in Support of Borehole Drilling in the Hornepayne Area (the "**Aboriginal Engagement Report**") is submitted as part of the "Borehole Drilling Project Description Submission" or application for permission to undertake borehole drilling in the area of Hornepayne, Ontario.

The Aboriginal Engagement Report is made in accordance with section 4.3(f) of the Memorandum of Understanding between Her Majesty the Queen in right of Ontario as represented by the Minister of Natural Resources and Forestry (the "**Minister**") and Nuclear Waste Management Organization ("**NWMO**") made as of March 21, 2017 (the "**MOU**"). As such, this record of engagement provides a description of any actions taken by NWMO to engage public, stakeholders, municipalities, local roads or services boards, user groups and other agencies up to the date of submitting the Borehole Drilling Project Description Submission.

2. ENGAGEMENT OF FIRST NATION AND MÉTIS COMMUNITIES AND ORGANIZATIONS IN THE IGNACE AREA

2.1 The NWMO's Approach to Aboriginal Engagement

The NWMO's approach to engagement of Aboriginal peoples is based on a set of key principles founded in the *Nuclear Fuel Waste Act*[1], and supplemented by advice from Elders, key court decisions regarding the importance of Aboriginal and Treaty rights, the notion of community wellbeing, and the Final Report of the Truth and Reconciliation Commission of Canada[2], including:

- Broad-based Aboriginal engagement
- Respect for Aboriginal and Treaty rights
- Recognition of the valuable role Indigenous peoples can play in the development of major projects e.g. interweaving Traditional Knowledge
- Ensuring strengthened community wellbeing
- Contributing to reconciliation between Indigenous and non-Indigenous Canadians

For the purpose of this Aboriginal Engagement Report, NWMO considered Indigenous communities in proximity to the proposed sites for the "Initial Borehole Drilling in Hornepayne", as such project is defined in the Borehole Drilling Project Permission Description Submission (the "**Borehole Drilling Project**" or the "**Project**").

[1] (S.C. 2002, c. 23).

[2] http://www.myrobust.com/websites/trcinstitution/File/Reports/Volume_6_Reconciliation_English_Web.pdf

2.2 First Nation Engagement Activities

NWMO has engaged with First Nations communities in the Hornepayne area since 2013, when it signed a Liaison Agreement with Nishnawbe Aski Nation ("**NAN**") (Treaty #9). The Liaison Agreement provided funding for NAN to learn about the Adaptive Phased Management ("**APM**") project and to allow forum to deliberate on APM, as well as salaries and benefits for support staff.

As set out in greater detail below, NWMO has also engaged with the following First Nation communities that are in proximity to the area of the proposed Borehole Drilling Project:

- Constance Lake First Nation ("**CLFN**")
- Ginoogaming First Nation ("**GFN**")
- Chapleau Cree First Nation ("**CCFN**")
- Missanablie Cree Frist Nation ("**MCFN**")
- Lac Seul First Nation ("**LSFN**")

Based on early engagement activities, CLFN, GFN, CCFN, and MCFN have accepted the offer of a briefing on the Project. The same First Nations were also offered funding under the NWMO's APR Program to support their learning about APM, and NWMO learning about them.

2.2.1 Constance Lake First Nation

CLFN is located approximated 120 kilometers northeast of the proposed drill sites, north of the TransCanada Highway (11). The proposed drilling locations are within the traditional territory of the CLFN.

In addition to project briefings and updates, CLFN has participated in a number of tours of a used nuclear dry storage facility, and in 2015 entered into an agreement with NWMO that provides funding for a Coordinator and community engagement, travel and accommodation, and meeting costs for engagement and learning activities. Learning activities included early geophysical activities, including borehole drilling, as well as CLFN hosted an open house on CLFN Reserve in September 2015. Other activities included hosting Nuclear 101 presentations in the community at the school.

2.2.2 Ginoogaming First Nation

GFN is located approximately 200 kilometers northwest of the proposed drill sites, along the TransCanada Highway (11).

GFN was provided project briefings and updates. In addition, GFN has participated in tours of used nuclear dry storage facilities, and in 2016 entered into an agreement with NWMO that provided funding for a Coordinator and community engagement, travel and accommodation, and meeting costs for engagement and learning activities.

NWMO's agreement with GFN expired in 2017. GFN has expressed interest in a further agreement with NWMO.

2.2.3 Chapleau Cree First Nation

CCFN is located approximately 175 kilometers southeast of the borehole location (330 kilometers by road) and located off Highway 129.

CCFN entered into an agreement with NWMO in December 2016 that provides funding for a Coordinator and community engagement, travel and accommodation, and meeting costs for engagement and learning activities. This agreement has now expired. CCFN has submitted a proposal to NWMO to continue engagement activities with NWMO

2.2.4 Missanabie Cree First Nation

MCFN is located approximately 120 kilometers southeast of the borehole location (300 kilometers by road) and located off Highway 651.

MCFN entered into an agreement with NWMO in December 2017 that provides funding for a Coordinator and community engagement, travel and accommodation, and meeting costs for engagement and learning activities.

2.3 Métis Nation of Ontario Engagement Activities

NWMO's engagement with Métis Nation of Ontario ("**MNO**") on APM began in August 2010, shortly after the NWMO's site selection process began. NWMO arranged with MNO to conduct a half-day workshop prior to the start of MNO's Annual General Assembly (AGA) in Thunder Bay that year. Since that time, NWMO has conducted a half-day briefing and update on the site selection process at every MNO AGA.

In 2011, NWMO entered into an Engagement Liaison agreement with MNO that provided funding for a part-time position within MNO to assist in coordinating NWMO's participation in their AGA, and any other engagement activities related to APM that may arise.

In 2012, NWMO and MNO entered into a comprehensive engagement agreement covering the period 2012-2013 that saw the salary for an Engagement Liaison increased to full-time, funding for the annual AGA NWMO workshop, funding to enable leadership from five MNO regions to travel to the GTA to tour used nuclear fuel "dry storage facilities," a series of community briefings and feasts, and funding for the inclusion of information

about NWMO and APM in the Voyageur newsletter, MNO website, etc. (Communications).

In 2013, NWMO provided funding to MNO to undertake research on MNO citizens' long-term aspirations for the six MNO regions NWMO was engaged with, and their traditional, historical and current use of land. During the months of March and April of 2013, NWMO travelled to Sault Ste. Marie, Timmins, Owen Sound, Terrace Bay and Sudbury to meet with the respective Regional Consultation Committees and to deliver an update on their plans for the long-term management of Canada's used nuclear fuel during a community gathering. All of the above engagement activities have included high-level information related to Step 3 Phase 2 geophysical work, which includes aerial surveys, rock sampling, and borehole drilling.

Throughout 2014-2017 NWMO maintained engagement with MNO through funding agreements (General Relationship Agreements, or "GRAs") of a similar scope and funding level as the 2012-2013 Agreement. In addition, during this time NWMO provided MNO with funding to facilitate Community Wellbeing workshops with citizens at the Regional level, and undertake an Engagement Review, intended to inform future directions/approaches to NWMO-MNO Engagement on APM.

In December 2016, NWMO and MNO entered into a Memorandum of Understanding that provided funding to MNO Region 1 Treaty #3, Lake of the Woods / Lac Seul and Rainy Lake / Rainy River Consultation Committee to undertake a Traditional Knowledge and Land Use Study ("**TKLUS**"), which involved interviewing traditional land users to identify historic and contemporary land use and Métis interests in the Ignace area, and to review and comment on documentation related to NWMO's application for permission to undertake borehole drilling in the Ignace area in 2017.

The TKLUS Interim Report for the Ignace area, received by NWMO on August 17, 2017, has helped to inform NWMO's understanding of traditional use and other interests of Métis people in relation to the borehole drilling projects in the Ignace area.

MNO has submitted a proposal to conduct a TKLUS in Region #3.

2.4 Other Engagement Activities

The Ontario Coalition of Indigenous People ("**OCIP**") advocates on behalf of off-reserve Aboriginal peoples (Métis, Status and non-Status Indians) living in urban, rural and remote areas throughout Ontario. OCIP is an incorporated, not-for-profit, and membership-based coalition of Aboriginal peoples in Ontario. It is not known how many members belong to OCIP, nor where they live. However, NWMO has been engaged in community Learn More sessions with OCIP members since 2015, including in the Hornepayne area. The NWMO has provided funding to the Jackfish Metis (a regional entity of OCIP) since 2015, whereby the Jackfish Metis attend Community Liaison Community meetings in Hornepayne and provide reports to their community.

In both 2015 and 2016, presentations were made to members of OCIP throughout Ontario. As well, OCIP members have toured used nuclear fuel management facilities at Darlington and Pickering nuclear generating stations on a number of occasions.

3. ABORIGINAL TREATIES, COMMUNITIES AND ORGANIZATIONS IN THE AREA OF HORNEPAYNE

3.1 Nishnawbe Aski Nation

As noted above, NWMO signed a Liaison Agreement with NAN (Treaty #9) in 2013, providing funding for NAN to learn about APM and to allow forum to deliberate on APM, as well as salaries and benefits for support staff. The Liaison Agreement with NAN, a political organization representing 49 First Nation communities in northern Ontario, also provided funding to facilitate community information sessions and other activities such as Learn More Briefings and Dry Storage Tours.

The agreement expired in 2017 and the NWMO and NAN are currently in discussion to enter into a new agreement.

3.2 Northeast Superior Regional Chiefs Forum

The Northeast Superior Regional Chiefs Forum represents the Chapleau Cree First Nation, Brunswick House First Nation, Michipicoten First Nation, Missanabie Cree First Nation, Pic Mobert First Nation, and Hornepayne First Nation.

NWMO entered into an agreement with NRDCF in 2014 to provide funds to provide project briefings to the member communities.

4. SPECIFIC ENGAGEMENT OF ABORIGINAL PEOPLES ON BOREHOLE DRILLING IN THE AREA OF HORNEPAYNE, ONTARIO

4.1 Aboriginal communities and organizations contacted for engagement on borehole drilling

Constance Lake First Nation, Chapleau Cree First Nation and Missanabie Cree First Nation were provided notification of NWMO's intention to apply for permission to undertake borehole drilling activities on Crown land in the Hornepayne area.

4.2 Briefing on borehole drilling

The communities and organizations below were briefed on borehole drilling on the dates indicated:

Community/Organization	Date	Location
Constance Lake First Nation	April 16, 2018	Constance Lake FN
Chapleau Cree First Nation	February 22, 2018	Chapleau Cree First Nation
Missanabie Cree First Nation	March 13, 2018	Sault St. Marie, Ontario

The above-noted Indigenous communities were provided a presentation that described where the proposed borehole drilling sites are in the area around Hornepayne.

5. OUTCOME OF ABORIGINAL ENGAGEMENT ACTIVITIES

5.1 Concerns Received from Indigenous Communities during Early Engagement Activities

Certain of the above-noted communities have expressed concern regarding the timing of consultation and of the Project.

In addition, NWMO has recorded concerns received from a grouping of Indigenous people asserting themselves to be the Hornepayne First Nation, which is not a recognized band under the Indian Act. NWMO has received correspondence from this grouping and a notice was placed in the Wicksteed Weekly of April 4, 2018 opposing the Project.

5.2 Summary of potential adverse impacts on potential or established Aboriginal and/or treaty rights and related interests

As of the date of this Aboriginal Engagement Report, there do not appear be any potential adverse impacts on potential or established Aboriginal and/or treaty rights and related interests related to the proposed Borehole Drilling Project.

5.3 Summary of concerns and potential impacts not addressed

Not applicable.

Appendix C – Borehole Drilling: Public and Stakeholder Engagement Report, Hornepayne and Area

[as attached]

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Borehole Drilling: Public and Stakeholder Engagement Report

HORNEPAYNE AND AREA

APRIL 2018

This report is based on a document prepared by DPRA Canada entitled: '*Nuclear Waste Management Organization Borehole Drilling: Public and Stakeholder Engagement Report for Hornepayne'*, dated April 2018.

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1.0 Introduction

The Nuclear Waste Management Organization (NWMO) is proposing to undertake borehole drilling in the vicinity of the Township of Hornepayne in support of its Adaptive Phased Management (APM) siting process for a deep geological repository.

This reports focusses on public and stakeholder comments regarding potential environmental, land use, and social effects of borehole drilling at the proposed borehole locations. NWMO's engagement activities related to borehole drilling were undertaken in three stages corresponding to various decision points that informed the selection of proposed borehole locations; these are described in more detail in Section 3. NWMO carried out engagement with the community of Hornepayne in 2017 and 2018 (in addition to engagement activities intended to support other aspects of the APM siting process for a deep geological repository), in order to provide information to the community and obtain feedback on proposed borehole drilling activities, including potential borehole locations and proposed access roads. Prior to this, initial and preliminary engagement activities on geological and environmental fieldwork and airborne surveys, and planned work to observe general geological features and geophysical and environmental mapping ('walking the land') were undertaken in Hornepayne during 2015 and 2016.

Communications and engagement about potential borehole locations began in April of 2017. The NWMO gathered comments regarding the social considerations of the Potential Geologically Suitable Areas (PGSAs, or 'ovals') through a series of one-on-one and group meetings, meetings with representatives of community groups, Hornepayne Nuclear Waste Community Liaison Committee (NWCLC) meetings, and open houses. Thirteen PGSAs in the area around the community and three specific proposed borehole drilling locations were presented to the community during 2017 and 2018, respectively.

While gathering comments in Hornepayne during 2017, the NWMO also met with others within the region to update them on the siting process, and to inform them of the community engagement process to obtain feedback and comments regarding PGSAs for further study (i.e., potential borehole drilling locations). The neighbouring Township of Manitouwadge is also participating in the NWMO's siting process, including engagement on proposed borehole drilling locations in the Manitouwadge area. The NWMO's broader ongoing engagement activities related to the APM siting process include communities in the surrounding area: White River, Greenstone, Marathon, Terrace Bay, Schreiber, Hearst /Hearst Economic Development Committee /Nord-Aski Regional Economic Development Corporation; and Kapuskasing, Moonbeam, Val Rita-Harty, Fauquier-Strickland, Opasatika.

The NWMO focused 2018 engagement on proposed borehole locations within 2 PGSAs. Discussions have been held with potentially affected land tenure holders (e.g., individuals with trapping, bear management, or baitfish management areas; camp/cabin owners, forestry management companies, recreational users, commercial outfitting operators) in the immediate proximity of the proposed borehole locations near Hornepayne. 'Immediate proximity' has been defined to include tenure that overlaps all or part of one or more of the potential drill site areas, or lies between 2 or more of the

potential drill site areas. Engagement also included cottagers located 3-5 km north of the area, and members of the broader Hornepayne community.

This report presents a summary of the engagement activities completed by the NWMO in the Hornepayne area and the comments received.

Please note that the details of engagement with First Nation and Métis communities are documented separately. Formal consultation with First Nation and Métis communities will also be required.

NWMO further notes that this report is specific to the proposed borehole drilling, and does not include ongoing engagement activities with the community through the broader APM siting process.

2.0 Community Engagement Approach

NWMO's general approach to community engagement related to the proposed borehole locations in the Hornepayne area is summarized below; additional detail on this engagement is described in Section 3.0.

2.1 Engagement Goals and Objectives

The NWMO has conducted a variety of engagement activities related to the APM process for the project in the Township of Hornepayne and vicinity since 2011. In 2017, the NWMO began engagement to support the borehole drilling process and related permitting requirements.

The NWMO's goals and objectives for the 2017 borehole engagement process were to:

- Provide participants with relevant information so they could be knowledgeable and feel comfortable about commenting on the PGSAs;
- Address public questions accurately and consistently;
- Seek and obtain public comments and preferences about the PGSAs for borehole drilling;
- Understand the social, cultural and natural environment considerations relevant to the PGSAs;
- Document public comments, particularly about questions, concerns, and potential impacts specific to the proposed borehole location;
- Ensure participants are informed about the proposed timing of borehole drilling; and
- Solicit other comments and provide information on the go-forward engagement process.

In addition, the overall objectives for the 2018 engagement on proposed borehole drilling locations were to:

- Identify any social, economic, cultural or natural environment matters in relation to the proposed sites for potential boreholes 1, 2, 3 or the temporary access roads which may be needed, and any proposed measures to address these;
- Identify and provide appropriate information to people who may be new to the process; and
- Document comments for inclusion in this engagement report.

2.2 Community Engagement

NWMO has been engaging with the community of Hornepayne since 2011 through the APM process for the siting of a DGR for used nuclear fuel. The focus of this work has been to engage community and area leaders and residents at multiple levels as a means to gather evidence and understanding/knowledge to derive preliminary assessments of the potential for achieving a partnership arrangement in the area with the NWMO to jointly implement APM. Reports are available for review on the NWMO website (www.nwmo.ca).

In addition to ongoing learning, a key focus of engagement activities has been on:

- Preparation for field work (Stage 1: 2015 and 2016);
- Input on the social considerations and community preferences for identifying potential borehole drilling locations at or near a potential repository site (Stage 2: 2017) in two block areas[1]; and
- Considerations in relation to the proposed sites for potential boreholes BH01, BH02, BH03 or the temporary access roads which may be needed (Stage 3: 2018). These stages are described in more detail in Section 3, below.

During each stage of engagement, the NWMO gathered comments through a series of one-on-one and group meetings, meetings with community organizations, Hornepayne Nuclear Waste Community Liaison Committee (NWCLC) meetings, and open houses. Activities also extended to engage in an initial way those having knowledge of/interests in the block areas (e.g., trappers, camp owners/ operators, forestry organizations), and the leadership of municipalities in the surrounding area.

Engagement on the proposed borehole drilling locations will continue over the coming months as the NWMO continues to learn more from the community. NWMO will continue further engagement with potentially affected land tenure holders in the immediate proximity of the proposed borehole locations, including discussion of potential effects from borehole drilling and mitigation measures, as well as other considerations for planning borehole drilling operations.

Details on 2017 and 2018 community engagement on potential borehole locations in the Hornepayne area are captured below in sections 3.2 and 3.3 of this report.

2.2.1 Hornepayne Nuclear Waste Community Liaison Committee

The Hornepayne NWCLC was established by the Township of Hornepayne Municipal Council in October 2011. The Committee is comprised of local volunteers, and members are selected through an open process. The Committee's objectives are to help develop an accurate description of Hornepayne and the surrounding region, to keep fellow residents informed about the results of preliminary assessments, to make sure that residents' concerns are addressed, and to tailor information sessions to meet local needs

[1] The block areas have been temporarily withdrawn from staking for mineral claims to provide an opportunity for initial field studies to proceed.

in order to involve the entire community in learning about the NWMO and Canada's plan for managing used nuclear fuel over the long term.[2]

The NWCLC meets on a monthly basis in Hornepayne. The meetings are open to the public, and the meeting minutes and agendas are posted on the Hornepayne NWCLC website.[3] Meeting agendas and minutes are also available at the Hornepayne Community Office.

Various aspects of the proposed borehole drilling activities and locations were presented and discussed at open and publicly advertised NWCLC meetings. These meetings are discussed in Section 3 of this report.

2.2.2 Hornepayne Community Office

The NWMO Community Office is located at 247 Third Avenue, Suite 3 in Hornepayne. The office supports local residents as they continue to explore Canada's plan for the safe, long-term management of used nuclear fuel.

The Community Office is staffed by a Project Coordinator, a municipal staff person selected by the Township of Hornepayne, working on its behalf. The Office is home to a variety of interactive learning materials and exhibits as well as having NWMO staff available to speak with and answer any questions from visitors. Throughout the borehole engagement process, the Community Office staff is available to answer questions and to share information (e.g. brochures, displays, etc.) with visitors to the office.

2.2.3 Website and Media Communications

NWMO has an extensive website that is routinely updated with information related to the communities, the siting process, ongoing technical research, and other topics. Written responses to topical questions from community members are regularly published, provided to the CLC, and posted on the CLC website.

In addition, NWMO has maintained high visibility in the community via direct mail and advertising in print and radio media (e.g., open houses). This includes newsletters distributed by direct mail and in the Jackfish Journal and Wicksteed Weekly[4] (Hornepayne's community newspapers). The CLC also periodically posts newsletters on their website.

2.2.4 Regional Dialogue with Municipal Organizations and Others

NWMO has periodic briefings/ meetings with elected officials/senior staff from municipalities and regional organizations in the broader area, including:

[2] Hornepayne Nuclear Waste Community Liaison Committee. Online. Accessed March 28, 2018. Available: http://clcinfo.ca/hornepayne/
[3] Hornepayne Nuclear Waste Community Liaison Committee. "Meetings". Online. Accessed March 28, 2018. Available: http://clcinfo.ca/hornepayne/meetings/.
[4] The Jackfish Journal, the local Hornepayne newspaper, ceased publication in late 2017; the Wicksteed Weekly replaced it in December 2017.

- White River (now a Neighbouring Community in the APM siting process[5]);
- Greenstone;
- Marathon;
- Terrace Bay;
- Schreiber;
- Hearst /Hearst Economic Development Committee /Nord-Aski Regional Economic Development Corporation; and
- Kapuskasing, Moonbeam, Val Rita-Harty, Fauquier-Strickland, Opasatika.

Hornepayne is a member of the Northeast Superior Mayors Group (NESMG[6]), which is regularly briefed on the NWMO siting process. The NESMG was briefed on the status of fieldwork in 2015 (April and December) and 2016 (May and November). Informal briefings were provided to municipal leadership in the surrounding area during August 2017. In September 2017, the NESMG was updated on the siting process, including the geoscience assessments and the engagement process regarding proposed borehole drilling and the PGSAs in the Hornepayne area.

NWMO has also attended regional municipal conferences and events attended by local and surrounding area municipalities, including:

- Prosperity Northwest Conference: Northwestern Ontario Municipal Association Conference (The Future of Northwestern Ontario);
- Common Voice Northwest Conference;
- Thunder Bay District Municipal League Conference;
- Association of Municipalities of Ontario (AMO) annual conferences;
- Ontario Good Roads Association (OGRA) annual conferences;
- Rural Ontario Municipal Association (ROMA) conferences; and
- Northwestern Ontario Municipal Association (NOMA) conferences.

3.0 Borehole-Specific Engagement Activities and Outcomes

Key engagement activities that have occurred in relation to the proposed borehole drilling activities are provided below. In addition, the results of the engagement are provided.

NWMO's engagement activities were undertaken in three stages corresponding to various decision points that informed the selection of proposed borehole locations:

[5] In June 2017, the NWMO concluded that White River will not be a focus of further study for the project.
[6] Members of NESMG are the municipalities of Hornepayne, Manitouwadge, White River, Chapleau, Wawa and Dubreuilville.

Stage 1 Initial and preliminary engagement activities on geological and environmental fieldwork and airborne surveys (2015), and planned work to observe general geological features and geophysical and environmental mapping ('walking the land', 2016).

Stage 2 Engagement activities in April - August 2017 to receive comments on community preferences regarding 13 PGSAs in the Hornepayne area, to inform NWMO's assessment of potential socially acceptable borehole locations.

Stage 3 Engagement activities February – April 2018 to identify social, cultural, economic and environmental matters related to the proposed borehole locations. Note: NWMO has identified and engaged with all but one (one of the four trappers) of the tenure holders in the immediate proximity of the proposed borehole locations; this engagement will be ongoing during coming months in 2018.

The approach and outcomes for each stage of engagement are described below.

Table 1 describes the support materials regarding the borehole drilling process that were provided by the NWMO during its engagement activities. The information listed below can be found in the appendices, as indicated in the table.

Table 1 Borehole Engagement Support Materials (2017 and 2018)

Information Source	Description	Appendix
Printed Materials for Distribution	• Brochure entitled *'Preliminary Assessment of Potential Suitability: Initial Borehole Drilling in Hornepayne and Manitouwadge'* (May 2017) • A sample of the open house public comment forms with map from each round of open houses (July 2017 and March 2018)	A
PowerPoint Presentations and Open House Display Panels	• PowerPoint presentations provided at NWCLC meetings • Open house display panels • Description of the borehole drilling process • Summary of natural environment and geologic fieldwork and information collected • Overview of natural environmental features, geologic features in relation to the 13 PGSAs examined • Maps indicating proposed borehole locations, natural features, nearby community, roads, and trails for accessing proposed borehole locations	B

Information Source	Description	Appendix
Advertisements and Invitation Notices	• Published advertisements and newsletters regarding the July 2017 and March 2018 open houses in the Jackfish Journal (2017) and the Wicksteed Weekly (2018)[7] • Advertisements posted locally regarding the July 2017 and March 2018 open houses • Provided invitations at other community events/gatherings • Posting of 2018 open houses on NWMO and NWCLC Facebook pages	C

Appendix D provides a chronological listing of all NWMO engagement activities completed for the borehole drilling process.

3.1 Stage 1: 2015-2016 Initial & Preliminary Engagement Activities Conducted to Solicit Comments on the Potential Borehole Drilling Areas

In 2015, the NWMO began to discuss the plan for geological and environmental fieldwork that helped identify potential social, economic and cultural considerations related to the withdrawal areas. The airborne surveys were discussed at 2015 CLC meetings, March 2015 open houses, and through other engagement activities in Hornepayne.

At the May, 2016 CLC meetings in Hornepayne, White River[8] and Manitouwadge, CLC members discussed the planned work to observe general geological features and geophysical and environmental mapping.

Open houses were held in Hornepayne, White River and Manitouwadge in May 2016 to provide an update on the field studies previously completed in the area, and the field work ('walking the land') proposed for the 2016 season. NWMO also engaged with local individuals having knowledge of/interests in the withdrawal areas to gain their insights about the local conditions and to discuss their questions and concerns regarding the field work to be conducted in 2016. In addition, many one-on-one interviews were conducted with local residents (as well as many informal discussions via other engagement activities).

The NESMG was briefed on the status of fieldwork in 2015 (April and December) and 2016 (May and November); informal briefings were provided to municipal leadership in the surrounding area.

[7] The Jackfish Journal, the local Hornepayne newspaper, ceased publication December 2017; the Wicksteed Weekly replaced it in December 2017.
[8] The last meeting of the CLC in White River was in May 2017; in June 2017, the NWMO concluded that White River will not be a focus of further study for the project.

3.2 Stage 2: 2017 Engagement on PGSAs in Hornepayne Area

3.2.1 Summer 2017 Engagement Activities

In July and early August 2017, the NWMO gathered comments regarding the social considerations related to the withdrawal areas and 13 Potential Geologically Suitable Areas (PGSAs, or 'ovals') through a series of one-on-one and group meetings, meetings with representatives of community groups, Community Liaison Committee (CLC) meetings, and publicly advertised open houses, as described below. Figure 1 shows the '*Potentially Geologically Suitable Areas Based on Early Phase 2 Studies for Discussion with People in the Area*' that were the focus of engagement in 2017. An overview of the engagement outcomes is also provided below.

In September 2017, the NESMG was updated on the siting process, including the geoscience assessments and the engagement process regarding proposed borehole drilling and the PGSAs in the Hornepayne area. Informal briefings were provided to municipal leadership in the surrounding area.

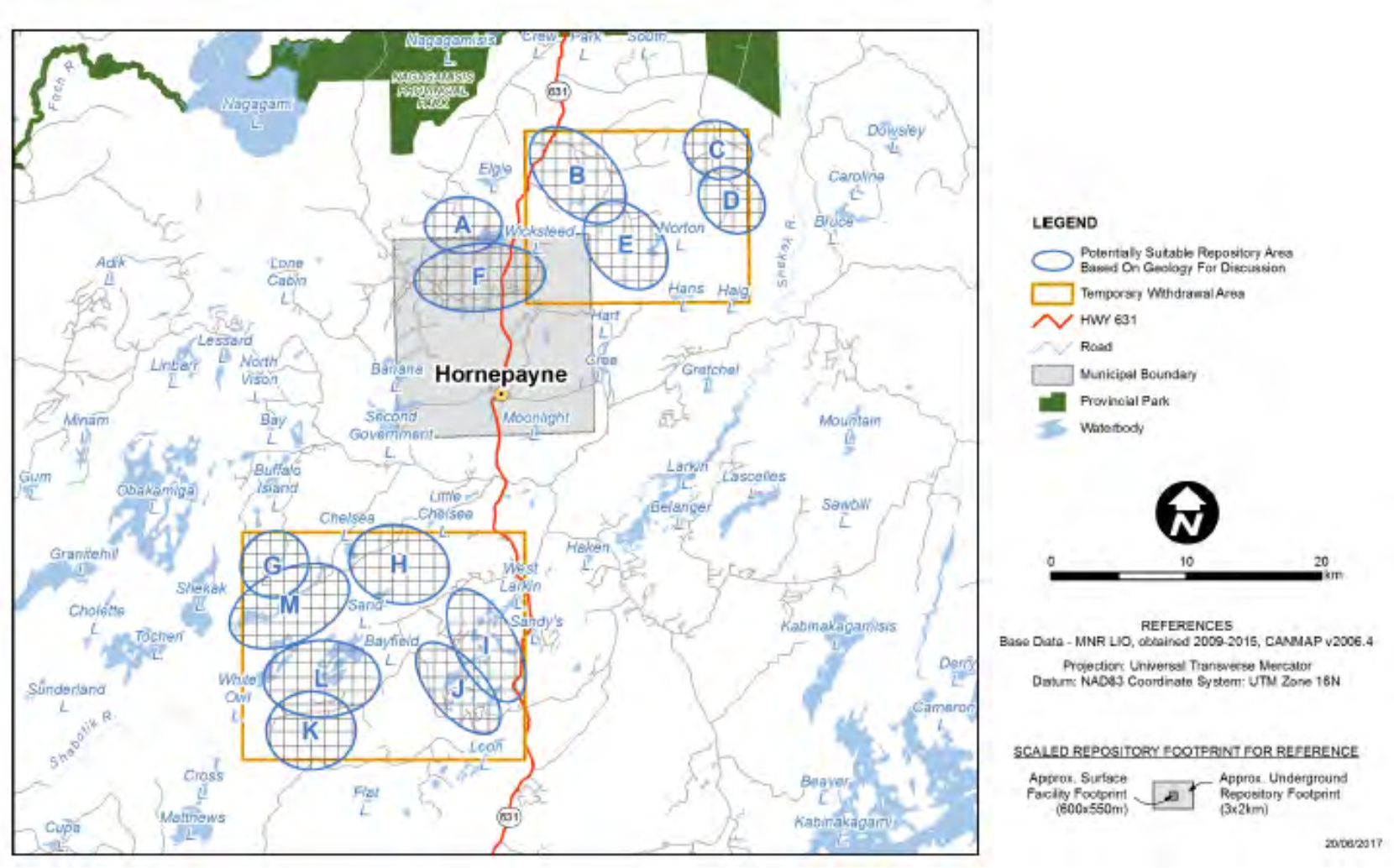
The borehole drilling engagement at the CLC meetings, open houses, one-on-one meetings and group meetings focused on three questions:

1. What is important to know about each of the areas identified on the map?
2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?
3. Are some of these areas preferred over others for initial boreholes? Which ones? Why?

At each of the open houses and one-on-one meetings, note takers were on hand to record all comments provided by participants. Public comment forms were also available for participants to complete and return to the NWMO (refer to **Appendix A** for a sample form). These forms were also available at the Community Office.

Section 3.2.2 provides a summary of what the NWMO heard from participants regarding the PGSA mapping exercise during summer 2017 (July/August open houses and one-on-one meetings).

Figure 1: Potentially Geologically Suitable Areas Based on Early Phase 2 Studies for Discussion with People in the Area (2017)



Hornepayne Nuclear Waste Community Liaison Committee Meetings

An NWCLC meeting in Hornepayne on April 12, 2017 introduced the topic of '*Planning for Initial Borehole Drilling and Testing in the North of Superior*'. A draft borehole drilling brochure was distributed to CLC members. On June 28, the Hornepayne NWCLC were presented '*APM Phase 2 Preliminary Assessments: Initial Borehole Drilling to Advance Learning – Hornepayne'*. The technical studies to date were summarized, and maps of the PGSAs, or 'ovals', within the two blocks were introduced. A May 2017 brochure '*Preliminary Assessment of Potential Suitability: Initial Borehole Drilling in Hornepayne and Manitouwadge Area*' was distributed, and is included in **Appendix A**.

NWMO received preliminary feedback from the CLC and members of the public in attendance at the meetings.

An NWCLC meeting was held on July 11, 2017, following day 1 of the open houses in Hornepayne, and included an overview from NWMO of recent activity and discussion at the open houses on the PGSAs.

The PowerPoint presentations related to borehole engagement provided at each NWCLC meeting are provided in **Appendix B.** See **Appendix E** for NWCLC meeting agendas that included borehole drilling items.

2017 Open Houses

A publicly advertised open house was held at the Hornepayne Community Legion on July 11 (11 pm to 7 pm) and July 12, 2017 (11 am to 7 pm). There were approximately 38 attendees at the open house over the two days (16 attended on July 11 and 22 attended on July 12).

NWMO staff at the open house walked members of the public through a series of display panels explaining the overall siting process, APM and also provided reference materials on the borehole drilling process. Each participant was provided information about the environmental, social, technical and geologic characteristics of the area. The map was introduced by pointing out key features they would likely be familiar with (e.g. roads, lakes). They were also asked if their comments could be recorded in writing. Public comment forms were also available for participants to complete and return to the NWMO (refer to **Appendix A** for a sample form).

A total of 20 mapping exercises were completed with 25 community members at the July open house.

The following items were available to participants (Refer to **Appendices A and B**):

- Brochure: '*Preliminary Assessment of Potential Suitability: Initial Borehole Drilling in Hornepayne and Manitouwadge Area*' (May 2017);
- Display boards;
- Paper copies of maps (see Figure 1, above); and
- Public comment forms that included the map**.**

Members of the public were directed to maps of the *'Potential Geologically Suitable Areas Based on Early Phase 2 Studies – For Discussion with People in the Area'* (see Figure 1, above), showing potentially suitable geology for borehole locations.

NWMO staff members explained that they were confirming existing information and learning from the public about social, geological, cultural and environmental opportunities and constraints related to the ovals, with respect to potential future borehole drilling in the Hornepayne area. Staff asked the members of the public to identify features and locations on the maps that may have meaning to them or the local community, where they live and what they knew about the land. NWMO staff suggested that social features may include camps and recreational areas; hunting, fishing and gathering areas; tourism operations, cultural features; historic sites; areas with views and vistas, etc.

2017 One-on-one and Group Meetings

Beginning the week of July 3rd and continuing through the week of July 17th, one-on-one meetings with individuals in Hornepayne and area were conducted to identify social considerations and preferences with respect to the 13 PGSAs or 'ovals' identified by NWMO. A total of 14 one-on-one interviews/group briefings and mapping exercises were completed with 31 individuals in the weeks before and after the Hornepayne July open houses.

These meetings focused on those involved in the forestry industry, commercial tourism/outfitting, recreational land users (e.g., hunting and fishing), trapping, camp/cottage owners, economic development staff, and local government.

3.2.2 Comments Received on PGSA Community Preferences

The NWMO gained insight into the social considerations for each of the PGSAs, as well as the identification of certain geological and natural environmental features, from the comments received from the participants during the open houses and the one-on-one individual and group meetings/ mapping exercises. Participants provided input on the PGSAs they believed had potential as a socially acceptable borehole location, as well as those that were less preferred, with supporting rationale.

Participants saw the PGSA engagement process taking an additional step closer to identifying a potential location for a deep geological repository in the community. As participants anticipated the potential for siting a deep geological repository at or near the proposed sites for borehole drilling, the social considerations and preferences they shared related to both borehole drilling activities and project siting.

Of the six PGSAs presented in the Northern block (Ovals A, B, C, D, E, F) and the seven in the Southwest block (Ovals G, H, I, J, K, L, M), participants expressed a preference for PGSAs in the Northern block, but indicated general social acceptability for select areas within the Southwest block.

The reasons participants stated for their preference for the Northern block, and Ovals A and F in particular, related largely to social, economic, and infrastructural considerations for the project itself, as participants anticipated potential for siting a deep geological repository at or near the proposed sites for borehole drilling. Specific reasons for the preference for Ovals A & F in particular included potential for revenue and direct benefit to the Township; short travel or commute time to this area; proximity to Highway 631 and

the CN rail line and yard; and the existing industrial activity in this area. Sensitivities included the potential presence of traditional land use and cultural values, historic sites and other interests within and around Nagagamisis Provincial Park.

With respect to the Southwest block, ovals I and J were identified as potentially socially acceptable locations for borehole drilling. It was noted that West Larkin Lake hosts 24 cottages and a commercial outfitting lodge. Some remote tourism operators and cottagers expressed concern about potential stigma/impact of industrial activity in this area. However, many others expressed general support for borehole drilling and a potential deep geological repository in this area, if potential impacts to recreational and commercial activities could be managed or otherwise mitigated.

3.3 Stage 3: 2018 Engagement on Matters Related to Proposed Borehole Locations

3.3.1 2018 Engagement Activities

From February to April 2018, NWMO undertook engagement to identify social, cultural, economic and environmental matters related to three proposed borehole locations in PGSAs/ovals I and J. Figure 2 shows the three proposed borehole locations.

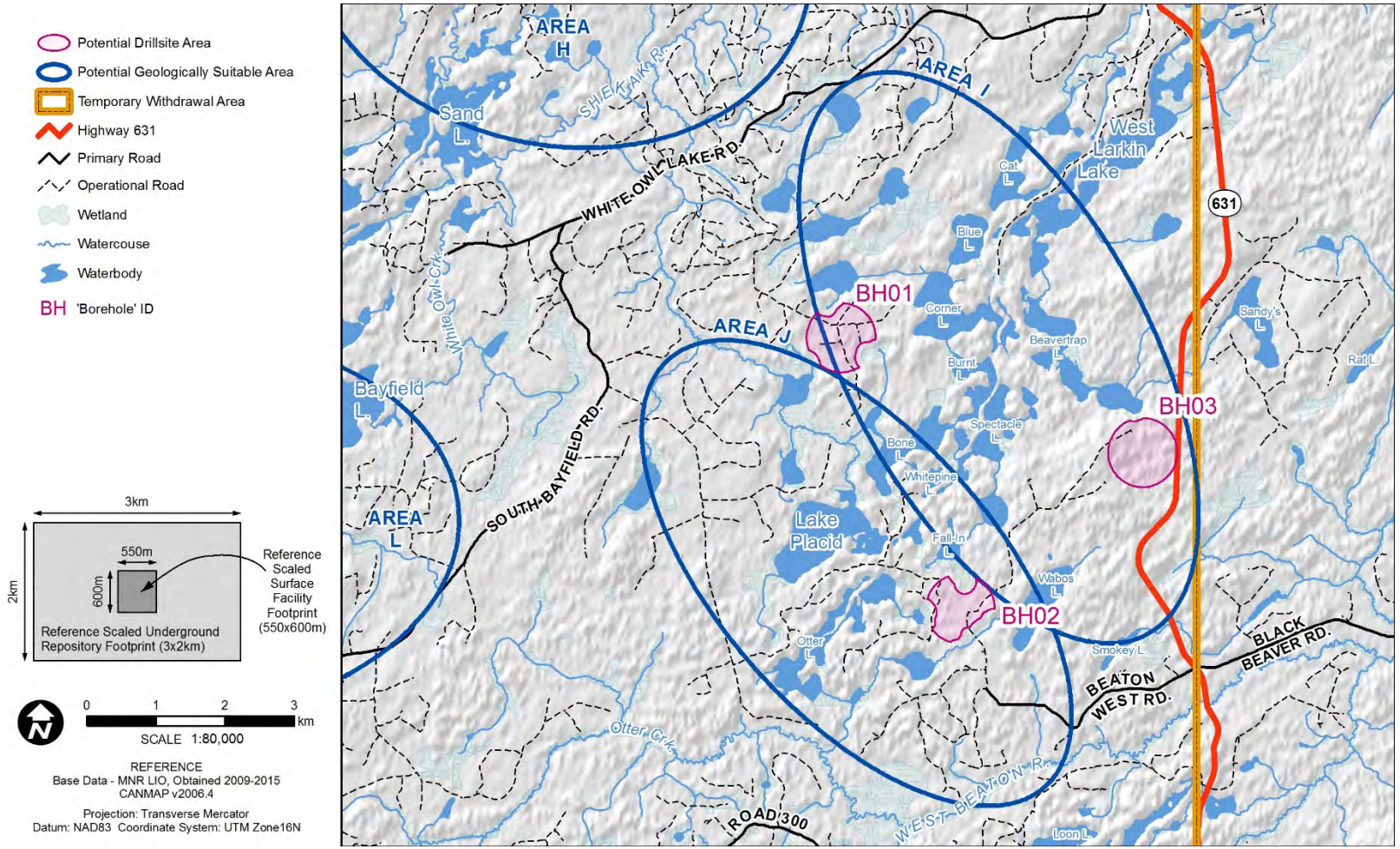
NWMO has identified and engaged with all but one (one of the four trappers) of the tenure holders in the immediate proximity of the proposed borehole locations. 'Immediate proximity' has been defined to include tenure that overlaps all or part of one or more of the potential drill site areas, or lies between 2 or more of the potential drill site areas. Engagement also included cottagers located 3-5 km north of the area, and members of the broader Hornepayne community. Engagement was undertaken through a series of one-on-one and group meetings, meetings with representatives of community groups, NWCLC meetings, and publicly advertised open houses, as described below. Additional engagement will be ongoing during coming months in 2018. An overview of the engagement outcomes is also provided below.

The borehole drilling engagement at the NWCLC meetings, open houses, one-on-one and group meetings focused on three questions:

1. Are you aware of any social, economic, cultural or natural environment matters in relation to the proposed sites for potential boreholes 1, 2, 3 or the temporary access roads which may be needed?
2. If so, what are they and how should they be addressed?

At each of the open houses and one-on-one meetings, note takers were on hand to record comments provided by participants. Public comment forms were also available for participants to complete and return to the NWMO (refer to **Appendix A** for a sample form). These forms were also available at the Community Office.

Figure 2: Potential Location for Initial Boreholes for Discussion with People in the Area – Hornepayne Area (2018)



Section 3.3.2 provides a summary of what the NWMO heard from participants regarding social, economic, cultural or natural environment matters in relation to the proposed borehole locations in 2018.

Hornepayne Nuclear Waste Community Liaison Committee Meetings

The January 9, 2018 Hornepayne NWCLC meeting included an update presentation provided by NWMO, including discussion of proposed borehole drilling activities. At the February 13, 2018, NWCLC meeting, NWMO provided a detailed overview of the proposed borehole locations in the Hornepayne area. The March 13, 2018 NWCLC meeting included further discussion of the technical and infrastructural /logistic factors for the potential borehole locations, social considerations and an overview of engagement with community members at the open houses held on March 5-6. The NWCLC meeting also received comments from attending community members on APM and the siting process, which were responded to by NWMO staff.

During the April 10, 2018 Hornepayne NWCLC meeting, NWMO's presentation provided an update on conversations with people in the area about plans for potential borehole drilling, and next steps in the process.

The PowerPoint presentations related to borehole engagement provided at each NWCLC meeting are provided in **Appendix B.** See **Appendix E** for NWCLC meeting agendas that included borehole drilling items.

2018 Open Houses

Publicly advertised open houses were held March 5 (11 am to 7 pm) and March 6, 2018 (11 am to 7 pm) at the Hornepayne Community Legion. There were a total of 44 participants in attendance at the two events (17 attended March 5, and 27 attended March 6). In addition, three groups of school children and 6 teachers came to open houses on March 5 and 6, and were guided through the open house display by NWMO staff:

- March 5: 3 teachers with 19 students (grades 11 and 12) from the Hornepayne High School;
- March 6: 2 teachers with 14 students (grades 9 and 10) from the Hornepayne High School; and
- March 6: 1 teacher with 22 students (grades 3, 4 and 5) from the Hornepayne Elementary School.

The NWMO staff at the open house walked members of the public through display panels explaining the overall siting process, APM and reference materials on the borehole drilling process. Participants were reminded of the borehole mapping exercise from the last open house in July 2017 and were shown the three proposed potential borehole locations in the Hornepayne area (in PGSAs/ovals I and J). Public comment forms were also available for participants to complete and return to the NWMO (refer to **Appendix A** for a sample form).Refer to **Appendix B** for the Display Panels, and Figure 1 above for g the map of '*Potential Location for Initial Boreholes - For Discussion with People in the Area*'.

The following items were available to participants:

- The open house exhibit;
- Display boards providing specific detail on borehole drilling;
- Paper copies of maps; and
- Take home comment forms that included the map**.**

A total of 21 mapping exercises were completed with 31 participants at the open houses in Hornepayne.

2018 One-on-one and Group Meetings

Beginning the week of February 19, and continuing throughout March and April 2018, NWMO conducted one-on-one meetings with individuals or organizations having tenure (e.g., trapping areas, bear management or baitfish management areas, camps/cabin owners, forestry management companies, recreational users, and commercial outfitters) in the immediate proximity of the proposed borehole locations near Hornepayne. These meetings were intended to identify social, cultural, economic and natural environment matters with respect to the 3 potential borehole locations identified by NWMO. NWMO has identified and engaged with all but one (one of the four trappers) of the tenure holders in the immediate proximity of the proposed borehole locations. Engagement also included cottagers located 3-5 km north of the area, and members of the broader Hornepayne community. Engagement activities will continue in the area to further increase learning and understanding of the planned borehole activities.

Table 2 presents a summary of known land tenure holders who may be potentially affected by borehole drilling in the proposed borehole locations, as well as the extent to which NWMO has successfully engaged with them (in 2017 and 2018). See **Appendix D** for more details on the *Chronological Order of Borehole Engagement Activities in Hornepayne in 2017 & 2018*.

Tenure holders in the immediate proximity of the proposed borehole locations who may be potentially affected by borehole drilling activities have been included in this table. As noted above, 'immediate proximity' has been defined to include tenure that overlaps all or part of one or more of the potential drill site areas, or lies between two or more of the potential drill site areas. A total of 13 one-on-one and group meetings have been conducted with a total of 36 individuals. It is noted that several individuals have attended more than one event or meeting; they have not been 'double-counted'.

NWMO will continue to engage with land tenure holders in relation to proposed borehole drilling, and the siting process more broadly. However, for the purposes of the borehole drilling process, the NWMO has focused engagement efforts on land tenure holders in the immediate proximity of the proposed borehole locations.

To protect the privacy of land tenure holders and to maintain confidentiality of the information shared with NWMO, names of specific individuals or their views on the proposed borehole drilling activities and locations have not been identified in this engagement report.

Table 2: NWMO Engagement Activities with Land Tenure Holders in Immediate Proximity of the Proposed Borehole Locations

Tenure Holder Type	NWMO Engagement Activities
Trappers	The Hornepayne area does not currently have a trappers council/association. There are four trapping areas in the immediate proximity of the proposed borehole locations : • WA 171 (includes small portion of BH01 and extends north and west) • WA 172 (includes majority of BH01 and BH02; both boreholes are along the eastern boundary of this trapping area) – NWMO met on April 5 • WA 175 (includes majority of BH03, small portion of BH02 and is immediately east of BH01) – NWMO met on April 11 • WA 177 (includes a portion of BH03 at the southern end of the trapping area) – NWMO met on March 21 NWMO has identified the licensed operators of each of these areas and has successfully contacted and met with 3 of the 4 to review maps of the proposed borehole locations and obtain feedback on social, cultural, economic and environmental considerations.
Bear Management Area Operators	NWMO has identified a single Bear Management Area Operator in the immediate proximity of the proposed borehole locations (BMA HE-21B-084). On March 13, 2018, NWMO met with this operator.
Baitfish Management Operators	On March 13, 2018), NWMO met with the operator of baitfish area WA 0245, which overlays the 3 proposed borehole locations and covers all of ovals I and J. There are no other baitfish management areas potentially affected by the proposed borehole locations.
Remote Tourism Operators	NWMO has had previous interactions with remote tourism operators in the wider Hornepayne area. There are no remote tourism lodges located in the immediate proximity of the proposed borehole locations that may be directly affected. The two closest remote tourism operations are approximately 10-15 km from the proposed borehole locations, at Bayfield Lake (lodge approximately 10 km west of the proposed borehole locations) and Larkin Lake (approximately 10 km east of the proposed borehole locations). One of these tourism operators attended the March 2018 open house and met with NWMO. NWMO met with the owners of the other operation in July 2017 regarding the PGSAs.

Tenure Holder Type	NWMO Engagement Activities
	In 2018, NWMO has focused its borehole engagement on individuals with land tenure/interests within ovals I and J; however, remote tourism operators have attended open houses and other community meetings (during July/August 2017 and February/March 2018) to learn about the proposed borehole locations / drilling operations. NWMO provided a project briefing to a remote tourism operator via telephone in July 17 2017 and sent a borehole site public comment form via email.
Commercial Outfitters	There are no commercial outfitting operations (i.e., lodges/camps) located in the immediate proximity of the proposed borehole locations. The owner of the nearest commercial outfitting operation (at West Larkin Lake) has been engaged by NWMO in July 2017 and March 2018 regarding borehole locations / borehole drilling activities. NWMO has had interaction with commercial outfitters in the wider Hornepayne area. Individual outfitters also met with NWMO to discuss the proposed borehole locations during July/August 2017 and February/March 2018.
Cottagers/camp owners	NWMO has had multiple points of interaction with cottagers and camp owners in the Hornepayne area. There are two camps located in the immediate proximity of the proposed borehole locations, as well as 24 cottages located approximately 3-5 km to the northeast on West Larkin Lake. The cottages on West Larkin Lake are not in the immediate proximity of the proposed borehole locations. NWMO met with several cottage and camp owners during July/August 2017 to provide project updates, share the map of PGSAs, and obtain feedback on social, cultural, economic and environmental considerations. Recent engagement with cottage/camp owners in the immediate vicinity of the proposed borehole locations and on West Larkin Lake in February – April 2018 is summarized below. NWMO met separately with the owners of the camp on Burnt Lake (between BH01 and BH03), and with the owners of the camp on Corner Lake (about 1 km east of proposed BH01), on March 21, 2018. This family also attended the March 14 meeting with West Larkin Lake Cottagers Association. NWMO has also engaged with many of the owners of cottages on West Larkin Lake about the proposed borehole locations: • NWMO met with the owners of 7 West Larkin Lake cottages at the March 5 and 6, 2018 open houses • On March 14, 2018, NWMO met with the West Larkin Lake Cottagers Association. A total of 23 people attended, 15 of whom were West Larkin Lake cottagers.

Tenure Holder Type	NWMO Engagement Activities
	• Additional one-on-one meetings were held in March and April 2018 to discuss proposed borehole locations with owners of cottages on West Larkin Lake not previously engaged in 2018. In summary, NWMO has engaged with 14 of the 24 cottage owners in 2018 (i.e., at open houses, the March 14 meeting, or one-on-one); engaged with 4 others in 2017 (but not yet in 2018); and has not yet engaged with 10 of the cottagers in 2018. Four of those yet to be engaged this year are residents of Hornepayne that NWMO has not been able to successfully contact. Six of the Larkin Lake cottagers do not reside in Hornepayne. E-mails have been sent to three of these (some of whom have been previously engaged in discussions on proposed borehole drilling activities), with follow-up to come. Calls have been made to one, with follow-up to come. NWMO has been unable to contact the remaining two to date.
Sustainable Forest Licence Holder	Hornepayne is situated within the boundaries of the Nagagami Forest. Nagagami Forest Management Limited (NFML) holds the Sustainable Forest Licence for the Nagagami Forest. NFML is owned by Hornepayne Lumber. NWMO met with the President, Hornepayne Lumber LP and Representative of Nagagami Forest Management (holder of the SFL for Nagagami Forest) during the week of July 3, 2017 and on February 22, 2018. At these meetings, PGSAs and proposed borehole locations were reviewed and discussed in respect of forest harvesting and other socio-economic considerations. Jackfish River Management Ltd. is the management contractor who acts on behalf of Nagagami Forest Management Ltd. regarding the administration of the Nagagami Forest, including forest management planning and operations. The company is based in Hornepayne. NFML is a client of Jackfish River Management Limited. NWMO has been in direct contact with Jackfish River Management Limited staff, including the General Manager. In-person meetings were held to review the maps on the PGSAs and proposed borehole locations on July 11, 2017 and February 22, 2018, respectively. There will be no new harvesting activities on West Beaton Road (the area in immediate proximity of the proposed boreholes) through to March 31, 2021. In March 2018, there was current processing of biofibre in the area that is expected to be complete in 4 to 6 weeks.

Tenure Holder Type	NWMO Engagement Activities
Forest Resource Licence Holders (other wood harvesters)	• Hornepayne Lumber LP • Hearst – Columbia Forest Products (does not have tenure in immediate proximity of the proposed boreholes) As per above, NWMO met with the President, Hornepayne Lumber LP and Representative of Nagagami Forest Management (holder of the SFL for Nagagami Forest) during the week of July 3, 2017 and on February 22, 2018. At these meetings, PGSAs and proposed borehole locations were reviewed and discussed in respect of forest harvesting and other socio-economic considerations.
Land Use Permit Holders	NWMO has not identified any Land Use Permit Holders in the area.
Boat Cache Owners	NWMO has not identified any boat cache owners in the area.
Portages/Recreational Trails	Recreational trails / summer portages; see Nagagami FMP Resource Uses Values map (trails) and Nagagami FMP Resource Based Tourism Values map from: • Bone Lake, to Lake Placid, to Fall-in Lake, to Wabos Lake, to Smokey Lake, linking up with Beaton West Road/Black Beaver Road • Beavertrap Lake to Highway 631/Sandy's Lake • West Larkin Lake to Highway 631/Sandy's Lake Personal boat stashes located near portages were for example identified in the same vicinity by local land tenure holders. Several of those interviewed noted seasonal use of the portages for recreational boating purposes.
Commercial Fisheries Operators	NWMO has not identified any commercial fisheries operators in the immediate proximity of the borehole locations.
Industrial or Commercial Land Owners	NWMO has not identified any industrial or commercial land owners (e.g., mining, hydro-electric generation, manufacturing, retail) in the immediate proximity of the proposed borehole locations. Commercial outfitters and remote tourism business owners are described above.
Snowmobile Clubs	There are no designated snowmobile trails in the immediate proximity of the proposed borehole locations. NWMO has engaged the president and other representatives of the Hornepayne Snowbears Snowmobile Club at the 2017 and 2018 open houses, and a meeting in 2017.
Local Services Board	NWMO has not identified any local services boards in the area.

3.3.2 Comments Received on the Proposed Borehole Locations

At the March 2018 open houses held in Hornepayne, and during one-on-one individual and group meetings, participants were informed about the borehole drilling process and were asked to comment on the three proposed borehole drilling locations and potential access roads. A map providing greater detail of the area (see Figure 2, above) was used to focus the discussions. Refer to Table 2 above, and **Appendix D**, for further details on NWMO engagement with land tenure holders in the vicinity of the proposed borehole locations. NWMO staff provided explanations of the variety of factors that went into identifying the proposed borehole locations the rationale supporting the decision to drill within PGSAs I and J. Many participants expressed interest in the borehole drilling process and a desire to learn more. Also, some participants asked if it would be possible to tour the site during drilling so that they could see the process. Participants had questions about APM and more specifically borehole drilling:

- What is the purpose of borehole drilling, what is involved and how will the environment be protected during these studies? The importance of protecting fish and wildlife habitat, and preventing any environmental contamination was noted.
- What will be the impact of borehole drilling on property value, (with respect to both borehole drilling, and in-the longer term the project if it were located in the area), and how will it impact my current activities?
- More generally, questions were asked by some participants about the nature of used nuclear fuel, the APM project, the site selection process, approvals required and regulatory oversight. How and when will decisions be made?
- Perspectives were provided on potentially hosting the APM project in the area –including general support for the economic development and services which the project will bring if located in the Hornepayne area, but also some opposition.

Engagement activities will continue in the area to further increase learning and understanding of the planned borehole activities.

Regarding the proposed three borehole locations within PGSAs I and J, a large majority of participants said that they had no concerns about the proposed borehole locations or the drilling activity itself. A few individuals expressed concerns around potential impacts of the borehole drilling process in respect of social, cultural, economic, or natural environmental considerations, as summarized below. A few expressed opposition to borehole drilling in the Hornepayne area on the grounds that they are more generally opposed to the APM process and the project. While NWMO focused engagement specifically on the proposed borehole drilling activities, community members' views on the broader project informed the considerations and questions raised during engagement. The comments below relate to proposed borehole drilling.

Some participants noted a preference to utilize existing roads or trails to access borehole locations where possible, and the need to minimize the disturbance that may result from the access to the borehole locations from existing, new or improved access roads.

There are two camps in the immediate proximity of the proposed borehole drilling locations on Corner Lake (approximately 1 km from proposed BH01) and Burnt Lake (between proposed BH01 and BH03). The owners of one of these camps raised questions and concerns about impacts of drilling on use and enjoyment of their camp and the surrounding area, and the need for effective oversight of drilling operations. The owners of the other camp had no concerns about the proposed borehole drilling locations/activities.

NWMO has engaged with many of the owners of 24 cottages on West Larkin Lake, located approximately 3-5 km NE of the proposed borehole locations. During 2018 engagement, many of the cottage owners on West Larkin Lake have stated that they are supportive of borehole drilling at the proposed locations. The owners of four cottages expressed concern about the proposed borehole drilling locations, specifically in terms of potential effects such as noise and traffic, and resulting impacts on their activities or property values; several of these cottagers are strongly opposed to any borehole drilling on the grounds that they do not support the APM process or project. At this time, the owners of 10 of the cottages on West Larkin Lake have not yet been engaged in 2018 discussions on proposed borehole drilling, although some of these participated in 2017. Four of those yet to be engaged this year are residents of Hornepayne that NWMO has not been able to successfully contact in 2018. Six of the Larkin Lake cottagers do not reside in Hornepayne. E-mails have been sent to three of these (some of whom have been previously engaged in discussions on proposed borehole drilling activities), with follow-up to come. Calls have been made to one, with follow-up to come. NWMO has been unable to contact the remaining two to date.

NWMO has met with three of the four trappers whose areas are in immediate proximity to the proposed borehole locations. Two of these trappers stated that they have no concerns with the proposed borehole drilling locations/activities. The third had questions about how the drilling activity may effect furbearer populations and the productivity of trapping. Marten in particular were noted to be sensitive to disturbance. The trappers noted that there has been historic and recent forestry harvesting in the area. All three trappers had suggestions about how potential effects on trapping could be mitigated, including timing drilling activity to avoid prime trapping activity from October to January /February (timing varied by trapper), siting the borehole at the farthest distance from trapping activity, minimizing disturbance /area of footprint/access road construction, returning the site to a natural state, and potential compensation if trapping is adversely affected.

Several participants suggested borehole drilling activities should be timed to minimize any conflict with fall moose hunting, for both safety and to minimize disruption of hunting activities. Few concerns were expressed regarding bear and upland game bird hunting.

Over the course of conversations with individual Indigenous residents of Hornepayne and others, some references have been made to historic use, and the potential for graves or other sites of importance said to be located in the area. A traditional trade route was described. At the meeting with West Larkin Lake

cottagers, a Councillor from Hornepayne First Nation stated that there are gravesites in the area, and asked how far boreholes could be located from them. No site- specific cultural values or gravesites were identified in the immediate proximity of the proposed boreholes during engagement activities.

Summary
Generally, participants did not foresee concerns with borehole drilling in these areas, and were satisfied with the geotechnical and natural environmental studies that supported the proposed borehole locations in the area. A few individuals expressed concern about potential environmental impacts, noise or other disruptions of their activities and suggested possible mitigation measures. A few expressed opposition to any borehole drilling on the grounds that they do not support the APM process or the project.

4.0 Conclusions

Overall, a large majority of the public and stakeholders that have been engaged in 2018 did not foresee concerns with borehole drilling in these areas, and were satisfied with the geotechnical and natural environmental studies that supported the proposed borehole locations in the area. A few individuals expressed concern about potential environmental impacts, noise or other disruptions of their activities and suggested possible mitigation measures. A few expressed opposition to any borehole drilling on the grounds that they do not support the APM process or project.

In this Engagement Report, the NWMO discussed how the borehole engagement process has been an iterative and collaborative process. Public input was sought at every step to ensure that all voices were heard and incorporated fully into the NWMO decision-making process.

Mitigation measures have been included in the project description. However, some mitigation measures were also identified through engagement with land tenure holders, as described in Section 3.3.2 above. Communication / collaboration with land users in the immediate proximity, including forestry companies, trappers, and camp owners in the area, can further minimize potential impacts from borehole drilling.

Engagement activities will continue in the area to further increase learning and understanding of the planned borehole activities.

APPENDICES

APPENDIX A: NWMO Printed Materials

A1. Brochure: Preliminary Assessment of Potential Suitability: Initial Borehole Drilling in Hornepayne and Manitouwadge Area

MAY 2017

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

PRELIMINARY ASSESSMENT OF POTENTIAL SUITABILITY

Initial Borehole Drilling in the Hornepayne and Manitouwadge Area

In 2010, the Nuclear Waste Management Organization (NWMO) began technical and social studies in and around a number of communities, including Hornepayne, Manitouwadge and White River, that expressed interest in assessing their suitability for safely hosting a deep geological repository for the long-term management of Canada's used nuclear fuel. These studies have become increasingly more detailed over time and focused on locations that have potential to safely host a repository.

Before selecting a potential repository site, the NWMO needs to be confident that a deep geological repository can be developed with a strong safety case at that location. A safety case brings together all the information that contributes toward understanding whether or not a repository at the site could safely contain and isolate used nuclear fuel. This information includes Indigenous Knowledge, geoscientific assessments, environmental surveys and monitoring, engineering design studies, and safety assessment analyses.

The focus of early geoscientific studies is to determine if there are rock formations in the area that have potential to satisfy the NWMO's safety requirements for a deep geological repository.

The next site evaluation activity in the area involves drilling an initial borehole in a potential repository location to further understand the geology. Depending on findings, additional borehole drilling and testing in one or more locations may be warranted in the future.

Drilling an initial borehole and associated testing will build upon findings of earlier studies. Selecting a location for an initial borehole provides an opportunity for the NWMO, the interested communities, and First Nation and Métis communities in the area to work together and to reflect upon where the project might best fit.

Beyond ensuring safety, the NWMO has committed to communities and the surrounding area that the project will be implemented in a way that fosters long-term well-being as defined by the community.

Key Steps

To date, the NWMO has completed a number of studies to explore potential suitability of the area to meet the robust technical safety requirements to host the project. The NWMO has shared these findings with communities in the area and published reports on its website.

- Desktop studies, using available information, identified broad areas that have the potential to host a deep geological repository (2013 to 2015). These areas were temporarily withdrawn from staking for mineral claims to provide an opportunity for initial field studies to proceed.

- Initial field studies, including airborne geophysical surveys and observing general geological features, identified candidate areas for further field studies, such as detailed geological mapping (2015).

- Detailed geological mapping completed in summer 2016, provide additional information to understand the suitability of geology in the area. These studies help identify smaller areas that have potential to meet technical safety requirements for a deep geological repository. These smaller areas could be the focus of more detailed study, beginning with drilling an initial borehole.

Selecting a Site for the Long-Term Management of Canada's Used Nuclear Fuel

Canada has a comprehensive plan for the safe, long-term management of the used nuclear fuel produced by its nuclear power plants. The plan includes a process to identify an informed and willing host for a deep geological repository that will contain and isolate the material.

Next steps involve the NWMO and people in the area working together to review findings from technical studies completed to date and plan next steps. Together, we will:

1. Review findings from detailed geological mapping and the smaller areas that have been identified as potentially suitable for hosting a deep geological repository;
2. Decide which of these smaller areas should be the focus of further study, beginning with initial borehole drilling at or near a potential repository site, and develop plans for these studies;
3. Seek permits and work authorizations for borehole drilling, as required;
4. Initiate borehole drilling and testing; and
5. Review study findings and decide on next steps.

Should the area proceed beyond these initial studies, the next phase of work would involve additional borehole drilling and testing focused on a preferred potential repository site in the area. We would decide together on a preferred location. Ultimately, any preferred site will need to have the potential to meet the project's robust safety requirements and be in a place where a strong partnership reflecting area support can be developed.

Example of core

What is borehole drilling?

A borehole is a narrow, deep, circular hole made in the ground using motorized equipment (drilling equipment). The process involves drilling the borehole and retrieving cylinder-shaped rock samples, called core. A wide range of testing is performed on samples of the core and in the borehole to investigate properties of the rock.

What is the purpose of this initial borehole drilling and testing?

Initial borehole drilling will provide more information about whether the geology in the area could be a safe place for a repository. Borehole drilling and testing will help further assess and understand key geological features and uncertainties identified in previous studies. It will provide information about the depth of geological formations, rock types, and the nature of fractures in the rocks.

Building a better understanding of the geology will help the NWMO as it works with people in the area being studied to identify potential repository sites.

Where will the initial borehole be drilled?

We need to decide on a possible location for an initial borehole together with people from the area, including the interested communities, and First Nation and Métis communities in the area. In addition to meeting technical objectives, the borehole drilling location will be selected to respect land use, and cultural and spiritual values of people in the area related to siting of the repository.

To get the discussion started, the NWMO will propose possible locations for initial borehole drilling based on findings from the detailed geological mapping. These locations will be in or near areas that may have potential as a repository site. The NWMO will review these potential drilling locations together with people in the area to determine where it should focus initial borehole drilling and testing activities.

The NWMO anticipates drilling one initial borehole. The location of the borehole will be informed by data from detailed geological mapping and the geoscientific information collected in previous studies.

How will the NWMO interweave Indigenous Knowledge into initial borehole drilling and testing?

The NWMO is committed to interweaving local Indigenous Knowledge in all phases of its work.

The NWMO will work together with Aboriginal peoples in the area to respectfully apply Indigenous Knowledge of the natural environment and traditional lands, and cultural and spiritual values they may wish to share to guide borehole drilling and testing.

The NWMO will ensure Aboriginal intellectual property is protected as agreed to with Aboriginal peoples who choose to share that knowledge.

Aboriginal peoples have a special relationship with the natural environment, and unique stewardship responsibilities that are part of this relationship. The knowledge that comes from this relationship with the land brings special understanding to the broad range of factors that should be considered in field studies, social assessments, and assessing benefits and effects to be managed.

What permits are required?

The NWMO will require permissions from the Ministry of Natural Resources and Forestry (MNRF). We will comply with MNRF conditions in order to use Crown lands for borehole drilling.

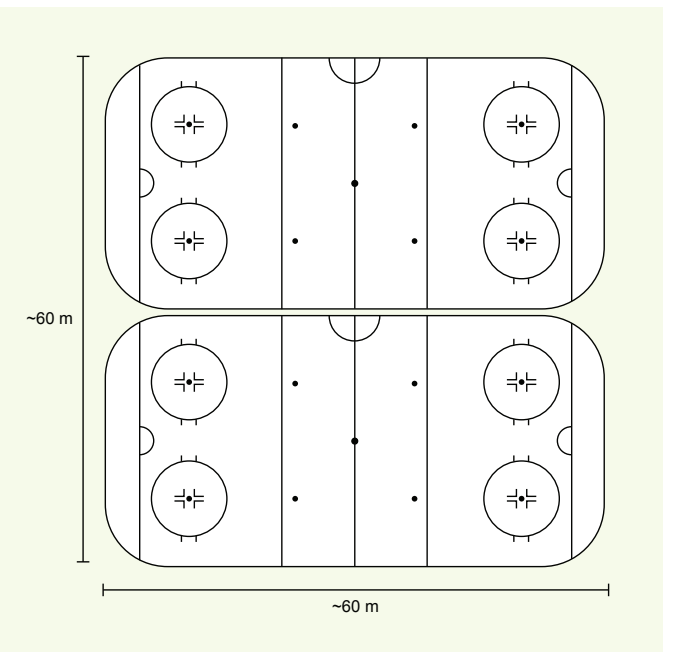
The NWMO will prepare submissions to MNRF with the involvement of people in the area. Once a request for permission is submitted, the process will involve the interested communities in the area, and consultation with affected First Nation and Métis communities.

When will the initial boreholes be drilled?

Scheduling for the first stage of borehole drilling and testing will depend on the time needed to identify preferred locations, collaborate with communities to develop work plans, and obtain work authorizations.

How much land is needed to drill a borehole?

The footprint required for a drill site is around 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side. The area may be fenced depending on its location.



Footprint required to drill a borehole

Rotary drilling

What equipment is used?

Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig. The drill site will likely need to be prepared and graded using granular materials, such as sand and gravel.

Trailers will be set up at the site for use as field offices, for on-site equipment storage, and for a small field lab for on-site testing and preserving rock core and water samples. Electricity for these facilities will be supplied by power generators.

Rock core will be stored in a core storage facility in a nearby community. Depending on the location of the borehole, rock core may be stored on a temporary basis at the drill site, and later, moved to the core storage facility.

Will drilling and testing cause any impact to the environment?

Drilling activities will be managed to minimize impact on the environment. During all stages of fieldwork, the natural environment will be protected.

A source of water and a drill water management system will be required. The NWMO may bring water to the site or source it from a nearby body of water.

Water will be recycled on-site during drilling to minimize

use and release to the environment. Drilling water and cuttings will be managed safely in accordance with provincial regulations. This may involve on-site management or transportation off-site.

During preparation of access routes and use of water, drilling fluids and solids will be managed in accordance with provincial regulations. The NWMO will work with communities in the area to confirm plans, including how it will minimize the impact of these drilling activities on the local environment.

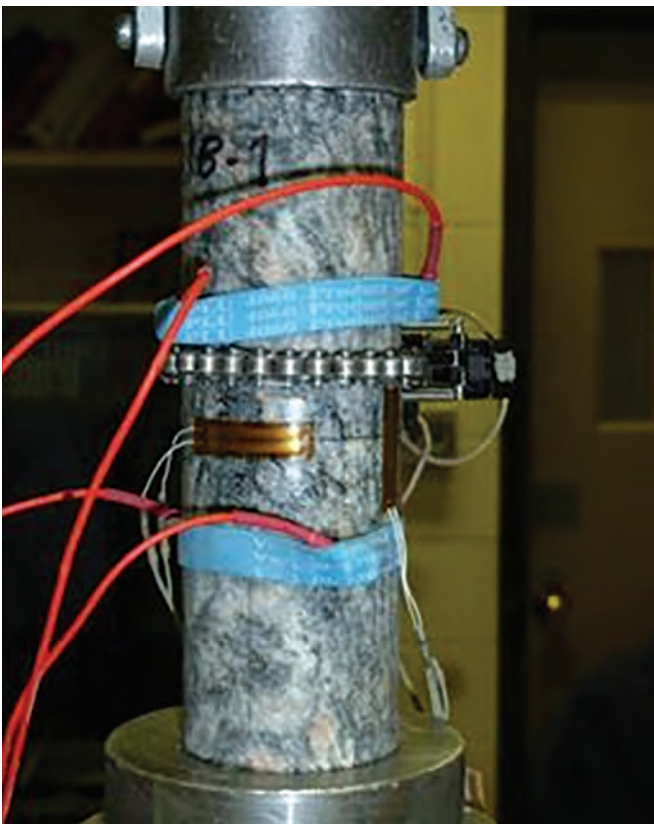
How deep will the boreholes be?

Boreholes will be drilled and cored to a depth of about one kilometre. It is anticipated that the deep geological repository in the type of geology found in the area (crystalline rock) would be developed at a depth of approximately 500 metres below ground surface. Deep boreholes are required to assess suitability of the host rock at depth.

What kind of testing is conducted?

Testing will be used to develop a more detailed understanding of the geological suitability of the rock in the area. Testing includes:

- Logging of the rock core, which involves a geologist inspecting the core to find out the main rock types present, as well as the location and direction of any natural breaks in the core (fractures or faults), and recording this information;
- Geomechanical measurements, which involve testing rock core samples taken from the borehole to provide information about rock strength;
- Geophysical measurements made along the length of the borehole to provide information on minerals, fractures and zones of groundwater flow present within the rock;
- Hydraulic conductivity measurements made at selected locations along the length of the borehole will provide information on groundwater flow conditions at the location being tested; and
- Chemical and isotopic analyses of groundwater samples collected from within the borehole, to determine the nature of the groundwater (e.g., whether it is fresh or saline) and to begin to understand how the groundwater has changed over time.



Example of geomechanical testing

As field studies progress, the NWMO will work with people in the area to share information and build awareness and understanding.

How long will it take to complete the borehole drilling and testing?

For a borehole approximately one kilometre deep, the entire process can last about 90 days, depending on the number of shifts worked each day.

Once initial borehole drilling and testing is complete, geoscience, environmental, engineering, and repository safety specialists will need several months to review the data and share the findings with an expert group for peer review. Once that is complete, the NWMO will share findings with the communities. The findings, along with those from earlier studies, will guide the NWMO in working with communities in planning any future study activities.

What happens to the borehole once drilling and testing is complete?

Upon completion of the planned tests, drilled boreholes will be sealed on a temporary basis using hard rubber plugs.

The NWMO will review findings and reflect on whether or not to continue with further studies with people in the area, including the interested communities, and First Nation and Métis communities.

If the decision is taken not to conduct further studies at a borehole location, the temporary seals will be removed, and the borehole will be permanently sealed along its entire length in accordance with MNRF requirements.

If the decision is taken to proceed with further studies in the area, then the temporary plugs could be removed, and the boreholes instrumented.

Instrumentation would be installed in the open borehole to measure and record bedrock properties, such as the water pressures over time frames of months to years. These types of measurements provide additional information about the characteristics of the groundwater systems.

When will a site be selected for a repository?

Confirming a safe site will take several years of progressively more detailed technical, scientific, social, cultural, and economic studies, as well as engagement of people from the area, including the interested communities, and First Nation and Métis communities. The NWMO is conducting studies to explore suitability to host the project in a number of areas in Ontario, including both crystalline rock sites like those found in the area and sedimentary rock formations such as those found in southern Ontario.

If findings from drilling and testing of the initial borehole provide additional confidence that this location may be potentially suitable to host a repository, the communities and the NWMO may decide together to further advance studies at that location by drilling and testing additional boreholes.

If these additional studies increase confidence that the location may be suitable, and if strong partnerships reflecting area support can be developed, detailed site characterization activities could be conducted and would require several more years. During site characterization, the NWMO would collect additional information and complete analyses required to assemble a safety case for a deep geological repository at that location.

Ultimately, the preferred site will need to 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 who live there, and will need to be supported by strong partnerships. The project can only proceed with the involvement of the interested communities, First Nation and Métis communities in the area, and surrounding communities.

Be Involved

Be involved in this initial borehole drilling phase of work as we select borehole drilling sites, plan, and complete these studies together.

Drop by your local NWMO community office and participate in upcoming community events such as meetings and open houses.

For more information, please contact:

Manitouwadge Community Learn More Office
3-12 Huron Walk
Manitouwadge, ON, P0T 2C0
807.826.3255

Hornepayne Community Learn More Office
PO BOX 177
247 Third Avenue, Suite 3
Hornepayne, ON, P0M 1Z0
807.868.2186

Nuclear Waste Management Organization
22 St. Clair Avenue East, Sixth Floor
Toronto, Ontario M4T 2S3, Canada
Tel.: 416.934.9814 Toll Free: 1.866.249.6966
Email: contactus@nwmo.ca
Website: www.nwmo.ca

A2. Public Comment Form - July 13 and 14, 2017 Open Houses

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Township of Hornepayne
Borehole Community Conversations

We need your input

The map on the other side of this form identifies the areas with potential to meet robust technical safety requirements for a deep geological repository, based on early studies and ongoing analysis. We need your input to help decide where to focus our next phase of studies. This next phase begins with drilling initial boreholes at or near a potential repository site.

1. What is important to know about each of the areas identified on the map?

_____

_____

_____

2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?

_____

_____

_____

3. Are some of these areas preferred over others for boreholes? Which ones? Why?

_____

_____

_____

Contact information:

Please include your contact information so that we can follow-up with you if needed, or if you would like to be added to our distribution list. Your contact information will be treated as confidential.

Name (Required): _____ Affiliation (if any): _____

Address: _____

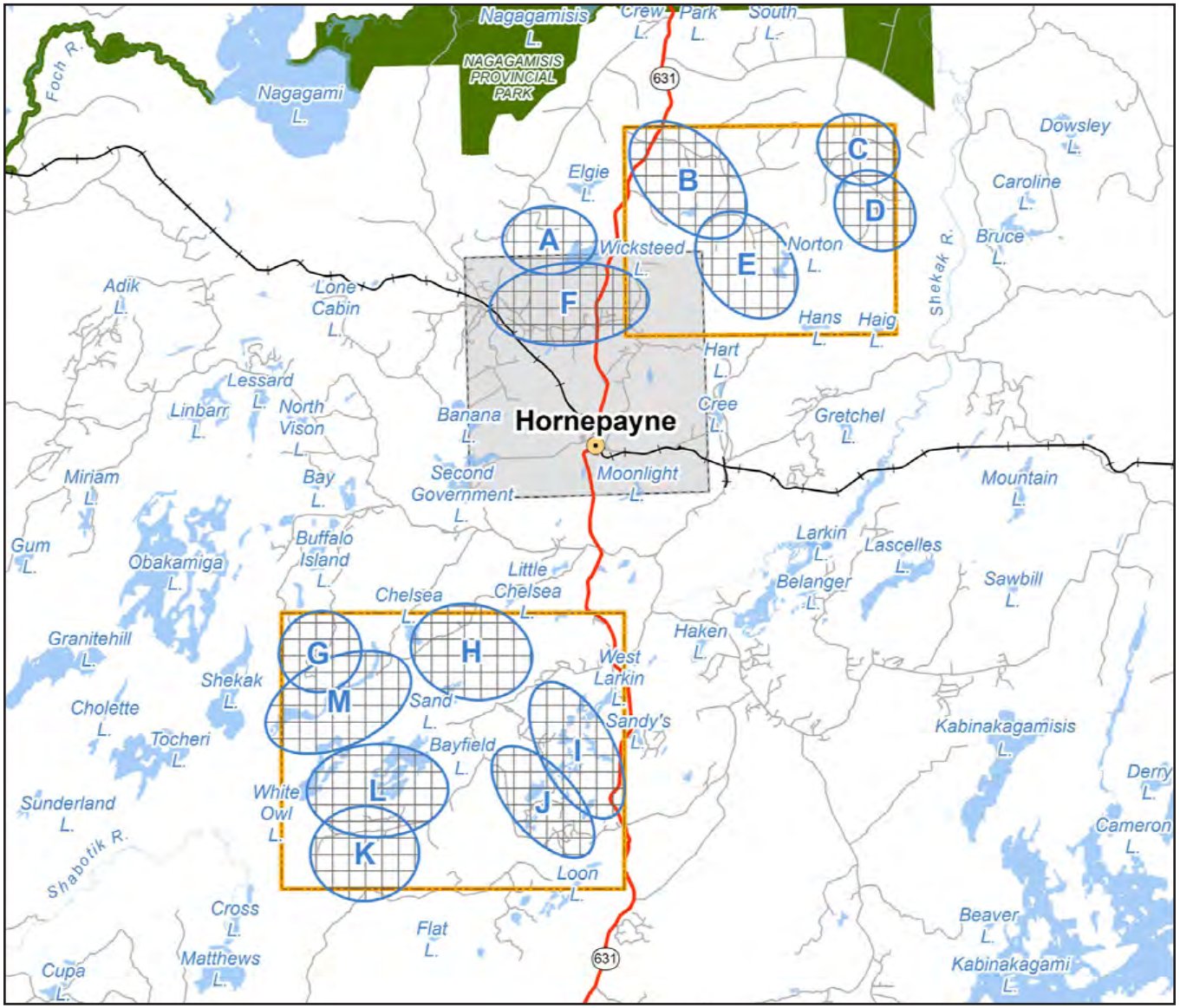
Telephone: (____) _____ Fax: _____ Email: _____

☐ Please add my name to NWMO's distribution list.

Thank you! Please drop off the comment sheet at the NWMO community office or send to:
Township of Hornepayne – Nuclear Waste Management Organization
247 Third Avenue, Suite 3, Hornepayne, ON, P0M 1Z0
Tel: 807.868.2186, Email: learnmore@nwmo.ca

Potential Geologically Suitable Areas Based on Early Phase 2 Studies

For Discussion with People in the Area



LEGEND

- Potentially Suitable Repository Area Based On Geology For Discussion
- Temporary Withdrawal
- HWY 631
- Road
- Railway
- Municipal Boundary
- Provincial Park
- Waterbody

N

0 10 20 km

REFERENCES

Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4

Projection: Universal Transverse Mercator
Datum: NAD83 Coordinate System: UTM Zone 16N

SCALED REPOSITORY FOOTPRINT FOR REFERENCE

Approx. Surface Facility Footprint (600x550m)

Approx. Underground Repository Footprint (3x2km)

04/07/2017

A3. Public Comment Form – March 7 and 8, 2018 Open Houses

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Township of Hornepayne
Initial Borehole Community Conversations

We need your input

The NWMO is conducting geoscientific studies in the area to determine if there are rock formations that have the potential to satisfy the safety requirements for a deep geological repository for the long-term management of Canada's used nuclear fuel. The next site evaluation activity in this region could involve drilling initial boreholes at a potential repository location to further understand the geology.

Conversations about where to focus borehole studies are happening in both the Hornepayne and Manitouwadge areas. The NWMO may focus borehole studies in just one location in the region, depending on the outcome of engagement in the area and the potential to meet project requirements. After reviewing the findings, additional borehole drilling and testing in one or more locations may be warranted in the future.

Considering all findings in the area to date, both from social and technical studies, as well as engagement with municipal, First Nation and Métis communities, we have identified an area and sites for potential borehole drilling.

1. Are you aware of any social, economic, cultural or natural environment matters in relation to the proposed potential borehole sites or the temporary access roads that may be needed?

_____

_____

_____

2. If so, what are they and how should they be addressed?

_____

_____

_____

Contact information:

All comments will be shared with the Township. However, your name and contact information will be treated as confidential unless you indicate otherwise by checking the box below.

Name (Required): _____ Affiliation (if any): _____

Address: _____

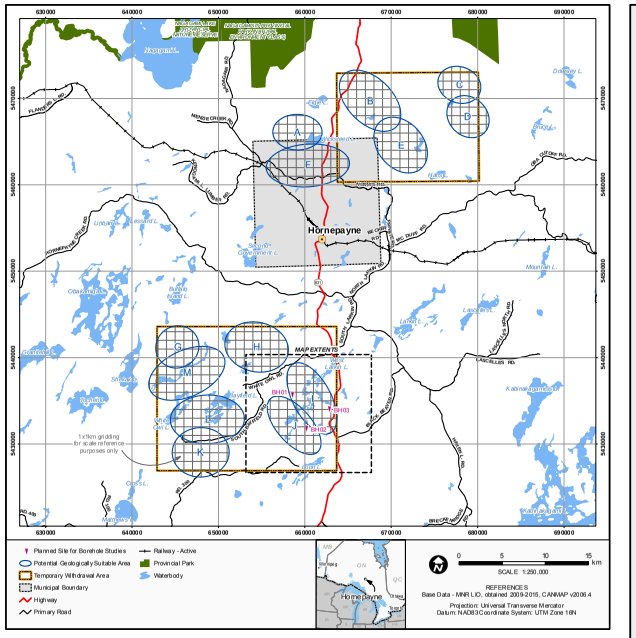
Telephone: (____) _____ Fax: _____ Email: _____

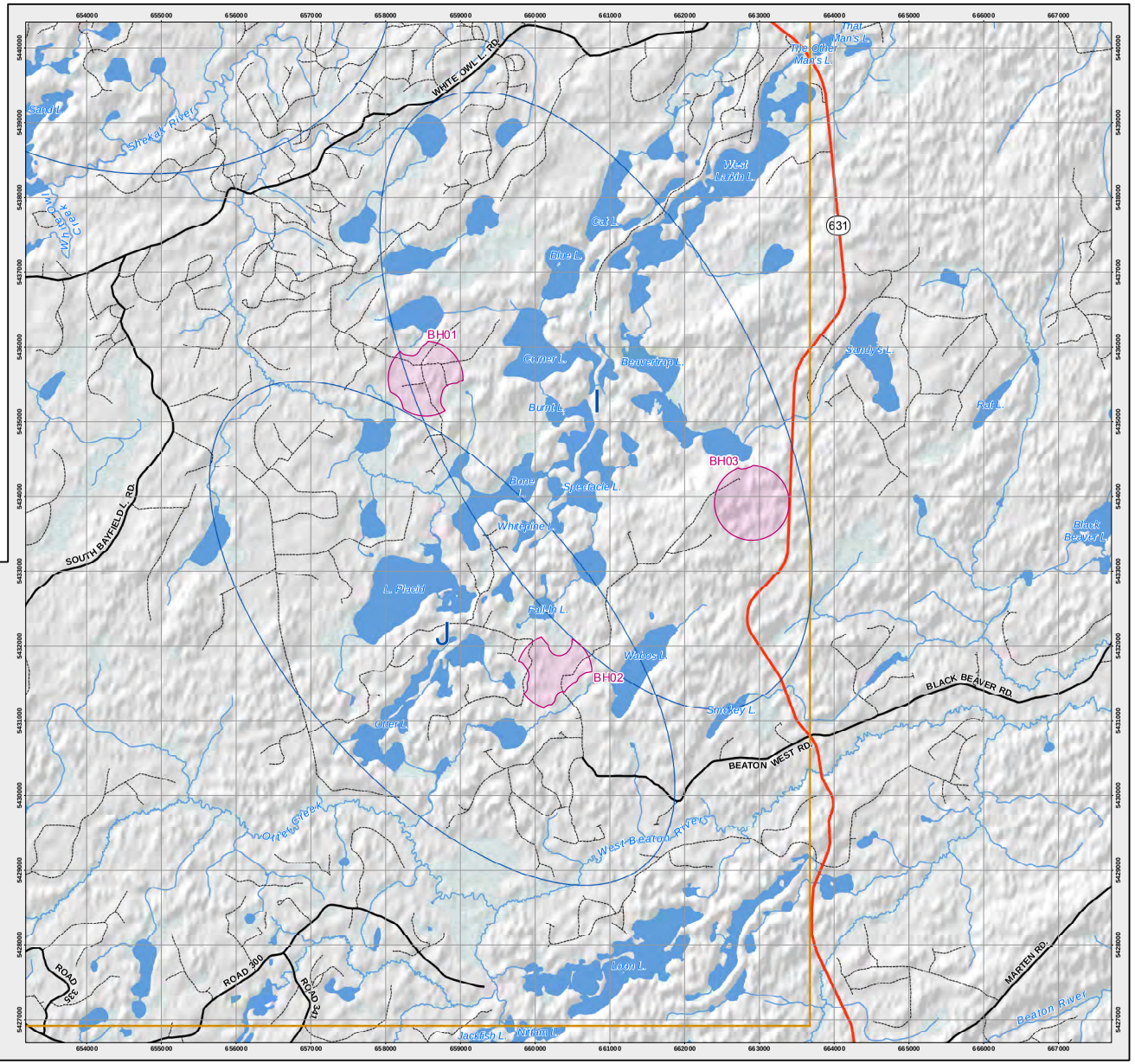
☐ Please share my name and contact information with municipal representatives.

Thank you! Please drop off the comment sheet at the NWMO community office or send to:
Nuclear Waste Management Organization
22 St. Clair Avenue East, Sixth Floor, Toronto, ON M4T 2S3
Fax: 647.259.3692, Email: learnmore@nwmo.ca

Potential Location for Initial Boreholes

For Discussion with People in the Area





LEGEND

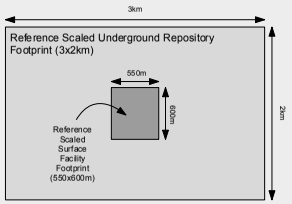
- Potential Drillsite Area
- Potential Geologically Suitable Area
- Temporary Withdrawal Area
- Highway 631
- Primary Road
- Operational Road
- Wetland
- Watercouse
- Waterbody
- BH 'Borehole' ID

0 1 2 km

SCALE 1:25,000

REFERENCE
Base Data - MNR LIO, Obtained 2009-2015, CANMAP v2006.4

Projection: Transverse Mercator
Datum: NAD83 Coordinate System: UTM Zone16N



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NUCLEAR WASTE MANAGEMENT ORGANIZATION

SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

APPENDIX B: NWMO PowerPoint Presentations and Open House Display Panels

B1. Display Panels - July 11 and 12, 2017 Open Houses

We Need Your Input to Help Decide Where to Focus Borehole Drilling

- The Hornepayne area is one of several that are involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Studies are being conducted in several of these areas. No decision will be made on a preferred site before Phase 2 studies are completed, several years from now.

- The next site evaluation activity in this region could involve drilling boreholes at a potential repository location.

- This next phase of studies needs to focus on locations that have potential to meet robust technical safety requirements, and would also be considered a good location for the deep geological repository by people living in the area.

- Studies to date suggest there are many areas that have potential to meet robust technical requirements.

- On which of these locations would you prefer we focus? Which of these locations might make a good repository site, and so should be the focus of borehole studies?

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NUCLEAR WASTE MANAGEMENT ORGANIZATION

SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Site Evaluation Process

The site evaluation process is driven by a community's interest to participate. We are currently planning for borehole studies as part of Phase 2 Preliminary Assessment.

Initial Screening (Few months)

- Desktop studies to evaluate the potential suitability of the community and area against a list of initial screening criteria

Preliminary Assessment (Multiple years, 2 phases)

- Technical and social, economic and cultural assessments to determine whether a site in an area has the potential to meet the detailed requirements for the project:
  - **PHASE 1:** Desktop assessments for all communities
  - **PHASE 2:** Field work for a subset of communities

Detailed Site Characterization (~potentially 3-5 years)

- Detailed field investigations at a single site in Ontario to confirm suitability based on detailed evaluation criteria:
  - Technical evaluation (detailed field investigations)
  - Continue social, economic and cultural assessment

Status of the Site Selection Process

Communities That Expressed Interest in the Site Selection Process

Assessments Underway in the Area

5. Ignace
9. Manitouwadge
10. Hornepayne
13. Blind River
14. Elliot Lake
19. Huron-Kinloss
21. South Bruce

Communities Not Identifies for Further Study

1. English River First Nation
2. Pinehouse
3. Creighton
4. Ear Falls
6. Red Rock
7. Nipigon
8. Schreiber
11. White River
12. Wawa
15. The North Shore
16. Spanish
17. Saugeen Shores
18. Arran-Elderslie
20. Brockton
22. Central Huron

Status of Studies in the Hornepayne Area

- Hornepayne entered the learning and site selection process in 2011
  - Initial Screening: Completed in June 2011
  - Phase 1 Preliminary Assessment: Completed in November 2013
  - **Currently in Phase 2 of Preliminary Assessment**

- Findings to date:
  - The Hornepayne area contains large areas that have the potential to satisfy the NWMO's geoscientific site evaluation factors
  - Borehole drilling is needed to further advance understanding of the geology in the area

- Findings to date have been shared with people in the area and assessment reports are available on the NWMO's website

Evaluation Factors for Assessments of Sites

Safety	Confidence a deep geological repository can be developed with a strong safety case at that location
Transportation	Confidence a safe, secure and socially acceptable transportation plan can be developed
Partnership	Confidence a strong partnership can be developed with the interested community, First Nation and Métis communities in the area, and surrounding communities

Status of Phase 2 Preliminary Field Investigations (Hornepayne)

In Collaboration with Communities

Initial Studies

- High-resolution airborne geophysical surveys **(Completed in 2014)**
- Observing geological features and detailed mapping **(Completed in 2016)**

Intensive Field Work

- Borehole drilling and testing **(In planning stages)**

Purpose of Borehole Drilling and Testing

Building a better understanding of the geology will help identify a potential repository site.

- Provide more information about whether the geology could be a safe place for a repository
- Further assess key geological features and uncertainties identified in previous studies
- Provide information about depth of geological formations, rock types and the nature of fractures in the rocks

Example of core

Interweaving Indigenous Knowledge

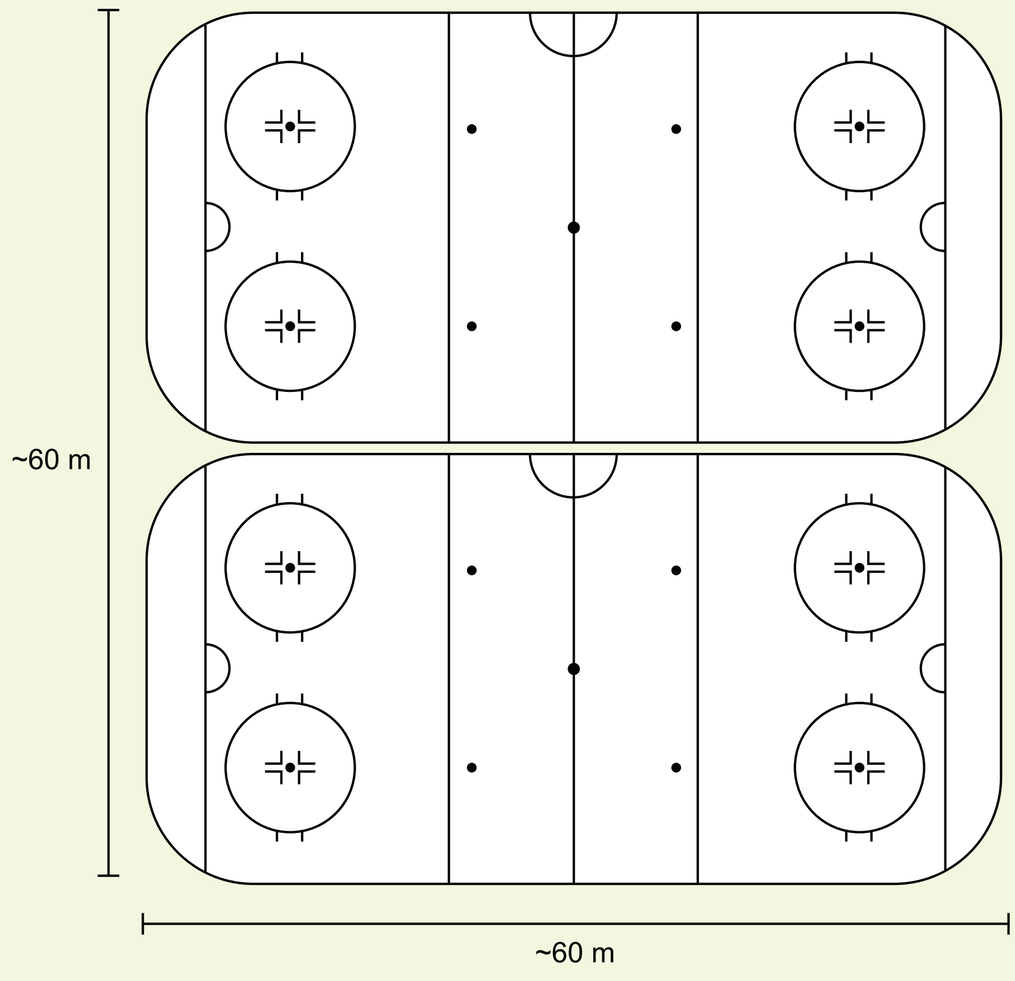
The NWMO respects the value of what Indigenous Knowledge can contribute to the work involved in the site selection process. Through the guidance of the Council of Elders and Youth, the NWMO has recently published an Indigenous Knowledge Policy. The policy will help guide us in the application of Indigenous Knowledge.

A Council of Elders advises the NWMO on the application of Indigenous Knowledge.

The NWMO will ensure Indigenous intellectual property is protected as agreed with the people who choose to share that knowledge and as in the Indigenous Knowledge Policy.

What's Involved in Borehole Drilling and Testing

- The process involves drilling a hole and retrieving cylinder-shaped rock samples, called core.
- Boreholes will be drilled and cored to a depth of about one kilometre.
- The process could last about 90 days, depending on the number of shifts worked each day.
- The drill site will be about 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side.



Footprint required to drill a borehole

Borehole Drilling Equipment

- Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig.

- Trailers at the site will be used as offices, for equipment storage, and for on-site testing and preserving rock core and water samples.

Approach for Initial Borehole Drilling

- We need to decide where to focus our next phase of study, beginning with initial borehole drilling at or near a potential repository site
- Purpose is to further advance understanding of geology and its suitability for a deep geological repository
- Based on early studies, potential geologically suitable areas have been identified for discussion

Rotary drilling

We Need Your Input

The map identifies the areas with potential to meet robust technical safety requirements for a deep geological repository, based on early studies and continuing analysis.

We need your input to help decide where we might focus our next phase of studies.

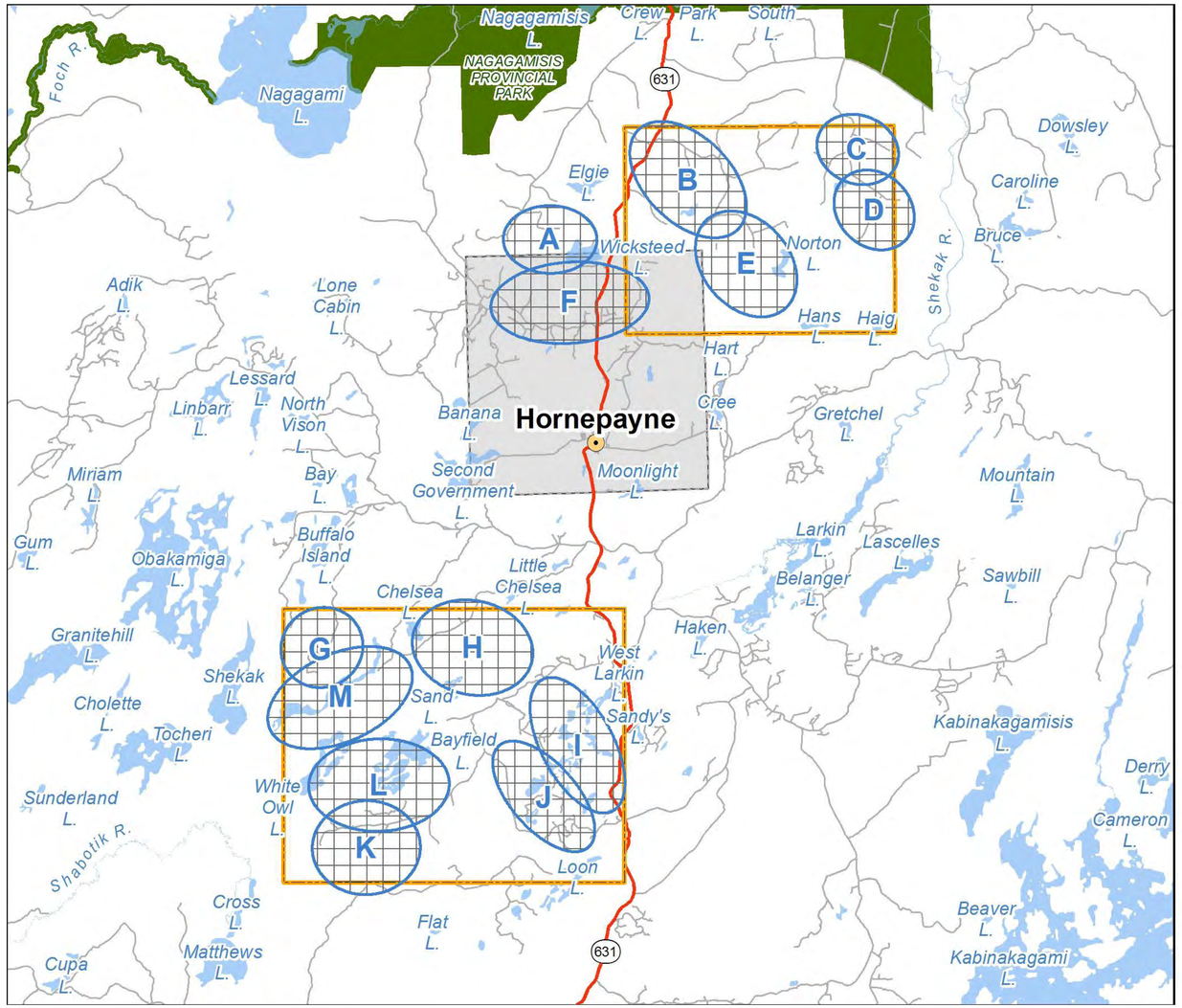
1. What is important to know about each of the areas identified on the map, before decisions are made about where to focus borehole drilling at or near a potential repository site?

2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?

3. Are some of these areas preferred over others for initial boreholes? Which ones? Why?

Potentially Geologically Suitable Areas Based on Early Phase 2 Studies For Discussion with People in the Area

Based on early studies, potential geologically suitable areas have been identified for discussion with people in the area about where we might focus borehole drilling.



LEGEND

- Potentially Suitable Repository Area Based On Geology For Discussion
- Temporary Withdrawal Area
- HWY 631
- Road
- Municipal Boundary
- Provincial Park
- Waterbody

0 10 20 km

REFERENCES
Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4

Projection: Universal Transverse Mercator
Datum: NAD83 Coordinate System: UTM Zone 16N

SCALED REPOSITORY FOOTPRINT FOR REFERENCE

Approx. Surface Facility Footprint (600x550m)

Approx. Underground Repository Footprint (3x2km)

20/06/2017

Next Steps

- Encourage your friends and neighbours to become involved in the conversation – come by the community office to share thoughts or fill out a comment form! And let us know who we should reach out to for their prespective.

- The NWMO is planning to conduct borehole studies in just one location in the region – either in the Hornepayne area or in the Manitouwadge area, depending on potential to meet the robust requirements of the project.

- Conversations about where to focus borehole studies are happening in both these areas. We will share what we are hearing, and next steps on a site in the coming months.

- Both Hornepayne and Manitouwadge, as well as First Nation and Métis communities in the area and surrounding communities would be involved if the project were impliemented in this area.

B2. Display Panels - March 7 and 8, 2018 Open Houses

Review Our Borehole Drilling Plans

- The Hornepayne area is one of several that are involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Studies are being conducted in several of these areas. No decision will be made on a preferred site before Preliminary Assessment studies are completed, several years from now.

- The next site evaluation activity in this region could involve drilling boreholes at a potential repository location.

- This next phase of studies needs to focus on locations that have potential to meet robust technical safety requirements, and would also be considered a good location for the deep geological repository by people living in the area.

- Studies to date suggest there are many areas that have potential to meet robust technical requirements.

- Based on social and technical studies, as well as engagement with municipal, First Nation and Métis communities in the area to date, we have identified an area and sites in which to focus potential borehole drilling.

What We Heard From People in the Area

In deciding on where to drill initial boreholes, first and foremost the site must be safe. In reviewing potentially geologically suitable areas last year, people in the area raised other important economic, socio-cultural and environmental considerations:

- Finding the right balance – close enough to community to enhance economic and social benefit (e.g., population, employment, business opportunities), while avoiding potential adverse change in community character/tourism/recreation due to ‘industrial’ nature of the facility

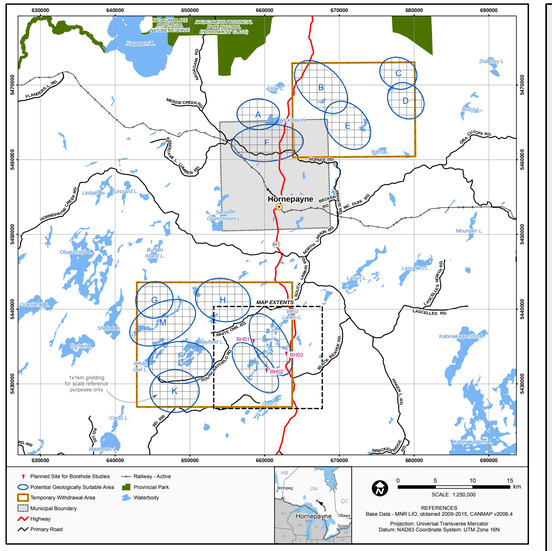
- Proximity to existing infrastructure – roads, power, rail lines, municipal airport, etc.

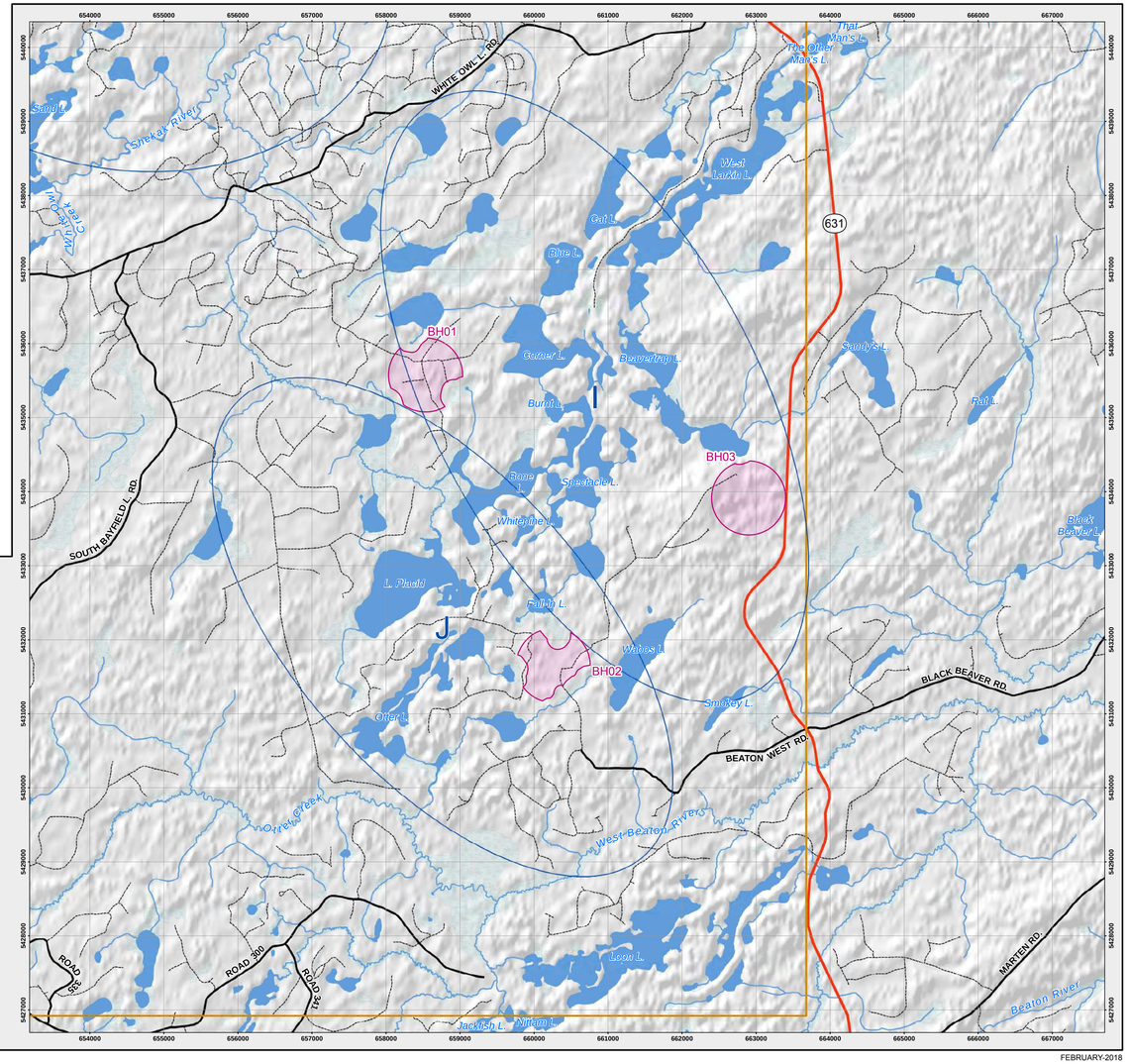
- Compatibility with other land uses, including forestry, remote tourism, outfitting, trapping, recreational activities (camps/cabins, hunting, fishing, boating, snowmobiles/ATVs, etc.)

- Avoid parks/protected areas, large lakes/major rivers, and areas of important habitat

- Avoid areas of known Indigenous interests

Planned Sites for Borehole Drilling





LEGEND

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SCALE 1:25,000

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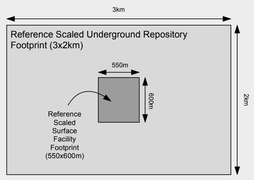

FEBRUARY-2018

Considering all findings in the area to date, both from social and technical studies, as well as engagement with municipal, First Nation and Métis communities, we have identified an area and sites for potential borehole drilling.

Purpose of Borehole Drilling and Testing

Building a better understanding of the geology will help identify a potential repository site.

- Provide more information about whether the geology could be a safe place for a repository
- Further assess key geological features and uncertainties identified in previous studies
- Provide information about depth of geological formations, rock types and the nature of fractures in the rocks

Example of core

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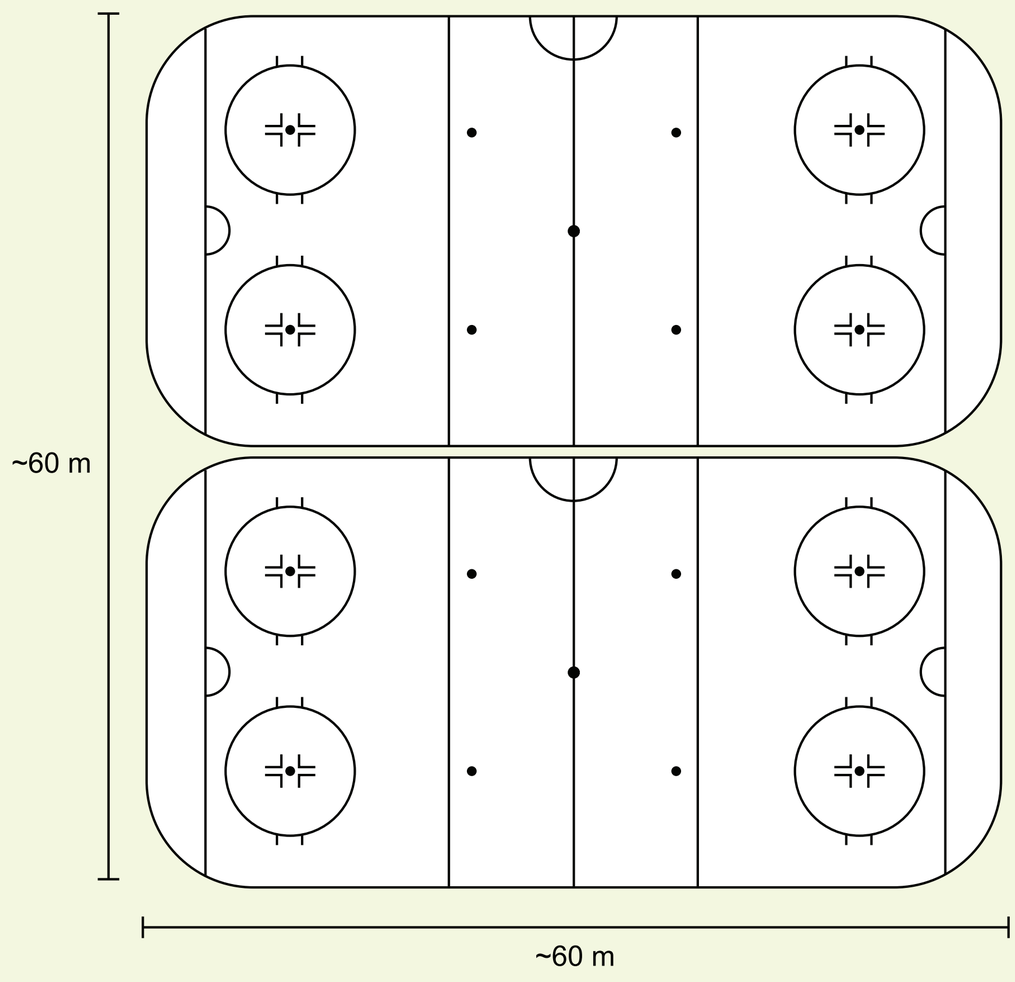

Footprint required to drill a borehole

Borehole Drilling Equipment

- Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig.

- Trailers at the site will be used as offices, for equipment storage, and for on-site testing and preserving rock core and water samples.

What Kind of Testing is Planned?

- Logging of the rock types and structures (e.g., fractures)
- Geophysical logging of the borehole (e.g., fracture location and orientation, mineralogy, presence of groundwater)
- Hydraulic conductivity tests at selected depths in the borehole
- Geomechanical tests of selected rock core samples (e.g., rock strength)
- Chemistry of groundwater samples

Site Establishment

- Clear site of small bush and trees
- Level site with crushed aggregate
- Site leveled to:
  - Support safer work area
  - Layout of equipment and services
- Site fenced to:
  - Contain site creep
  - Restrict animals from entering work area
  - Restrict unplanned access to the site
- Site infrastructure:
  - Drill rig, drilling supplies and water management
  - Offices
  - Core logging
  - Sample preparation
  - Utilities – generator, washrooms, phone and internet, storage

Example of a Drill Site

Borehole Coring and Storage

An example of freshly drilled core and boxed core in indoor storage

Example of Core Logging

Example of Core Sampling, Preserving and Testing

Typical Site Signage (may be in other languages as required)

How We Will Manage Water

- All water brought to site (drilling water and drinking water)
- All contaminated water to be properly disposed of at a registered disposal facility
- Drilling water will be recirculated to minimize requirement for clean water
- Drill chips and sediment will be removed from recirculating water
- Water samples to be taken regularly to check for possible groundwater locations
- Water samples to be collected opportunistically at depth to understand water chemistry and age
- Water samples to be analyzed offsite at accredited laboratories

How We Will Manage Water

Drill chip and sediment removal from drilling fluids for water recirculation

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Protecting the Environment

- Site drainage control to minimize erosion
- Spill prevention and containment
- Spill kits
- Lockable garbage bins
- Refuse and toilet waste disposed offsite at certified waste facility
- Secondary containment for diesel storage and diesel fueled equipment
- Harvestable trees to be cut and placed on side of road for use as firewood (minimum expected at site)
- Environmental survey planned prior to site establishment

Protecting the Environment

Drilling fluids overflow captured in trough for recirculation

Protecting the Environment

Fuel storage and generators placed within spill containment

Protecting the Environment

Silt fences like the one shown are used to prevent erosion from flowing into bodies of water

Next Steps

- The NWMO may focus borehole studies in just one location in the region, depending on the outcome of engagement in the area and the potential to meet the project requirements.

- Conversations about where to focus borehole studies are happening in both the Hornepayne and Manitouwadge areas.

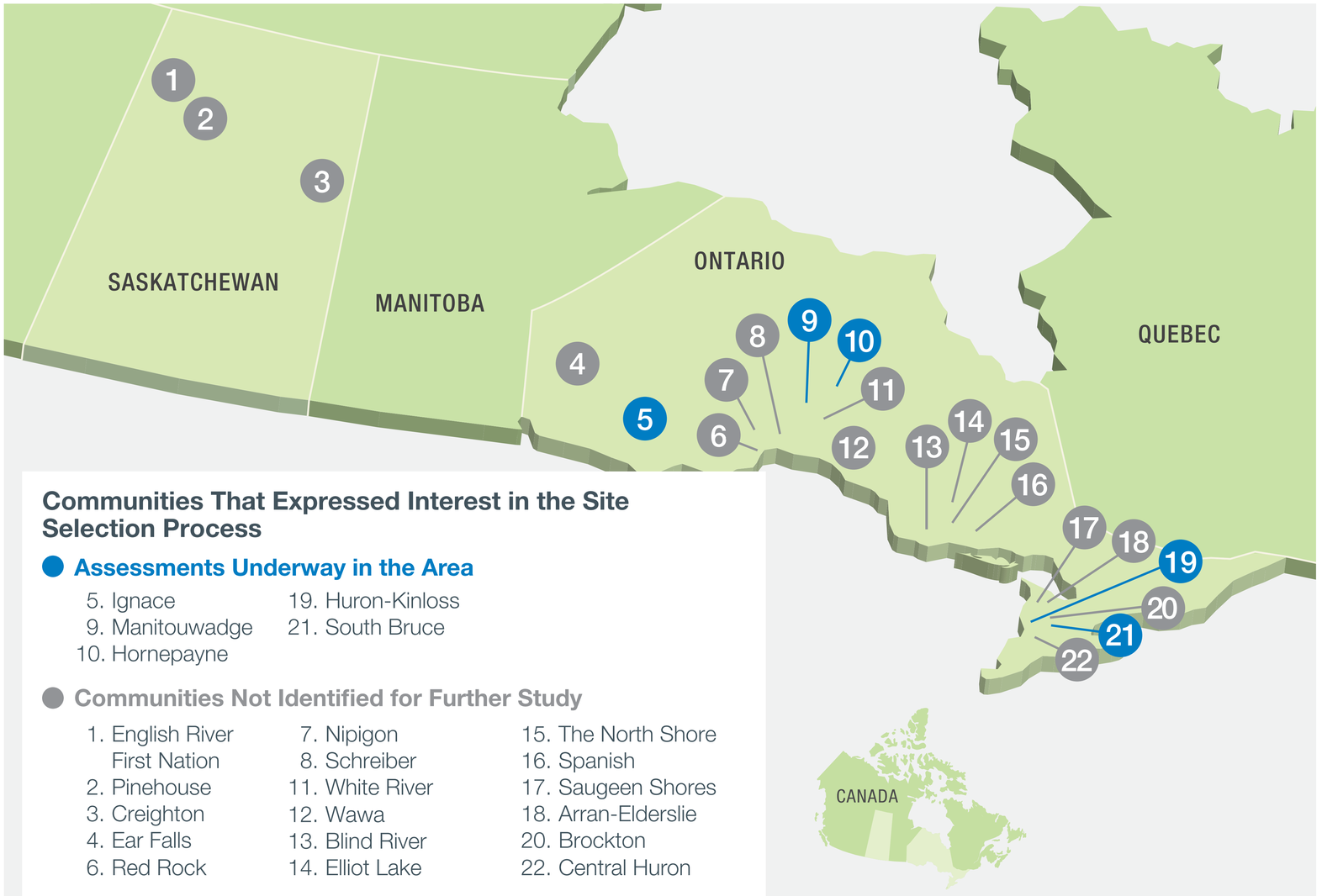
- Both Hornepayne and Manitouwadge, as well as First Nation and Métis communities in the area and surrounding communities, would be involved if the project were implemented in this area.

We need your input:

1. Are you aware of any social, economic, cultural or natural environment matters in relation to the proposed sites for potential boreholes 1, 2 and 3 or the temporary access roads that may be needed?

2. If so, what are they and how should they be addressed?

Status of the Site Selection Process



Communities That Expressed Interest in the Site Selection Process

Assessments Underway in the Area

5. Ignace
9. Manitouwadge
10. Hornepayne
19. Huron-Kinloss
21. South Bruce

Communities Not Identified for Further Study

1. English River First Nation
2. Pinehouse
3. Creighton
4. Ear Falls
6. Red Rock
7. Nipigon
8. Schreiber
11. White River
12. Wawa
13. Blind River
14. Elliot Lake
15. The North Shore
16. Spanish
17. Saugeen Shores
18. Arran-Elderslie
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Nuclear Waste Management Organization (NWMO)

Established 2002

Mission Statement

- The purpose of the NWMO is to develop and implement, collaboratively with Canadians, a management approach for the long-term care of Canada's used nuclear fuel that is socially acceptable, technically sound, environmentally responsible and economically feasible

Our Values

- Safety
- Integrity
- Excellence
- Collaboration
- Accountability
- Transparency

Nuclear Fuel Waste Act (2002) required:

- Formation of the NWMO
- Study of options by the NWMO with Canadians (2002–2005)
- The NWMO to implement approach selected by Government

Waste owners (Ontario Power Generation, Hydro-Québec, New Brunswick Power and Atomic Energy of Canada Limited) have established trust funds to fully fund the long-term management of used nuclear fuel.

The NWMO operates on a not-for-profit basis, federally registered.

Canada's Plan for the Safe, Long-Term Management of Used Nuclear Fuel

Technical Method

- Centralized containment and isolation of used nuclear fuel in a deep geological repository
- Continuous monitoring
- Potential for retrievability
- Optional step of shallow underground storage *

Management System

- Flexibility in pace and manner of implementation
- Phased and adaptive decision-making
- Responsive to advances in technology, research, Indigenous Knowledge, and societal values
- Open, inclusive and fair siting process to seek an informed and willing host
- Sustained engagement of people and communities throughout implementation

* Temporary shallow storage at the deep geological repository is optional and not currently included in the Nuclear Waste Management Organization's implementation plan.

APM selected by Federal government in June 2007

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SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Objectives of Current Phase of Assessments

To develop confidence on selection of a preferred location to take into detailed site characterization.

Safety	Confidence a deep geological repository can be developed with a strong technical safety case at that location
Transportation	Confidence a safe, secure and socially acceptable plan can be developed to transport used nuclear fuel to that location
Partnership	Confidence a strong partnership can be developed – with the interested community, First Nation and Métis communities in the area, and surrounding communities

Interweaving Indigenous Knowledge

The NWMO respects the value of what Indigenous Knowledge can contribute to the work involved in the site selection process. Through the guidance of the Council of Elders and Youth, the NWMO has recently published an Indigenous Knowledge Policy. The policy will help guide us in the application of Indigenous Knowledge.

A Council of Elders advises the NWMO on the application of Indigenous Knowledge.

The NWMO will ensure Indigenous intellectual property is protected as agreed with the people who choose to share that knowledge and as in the Indigenous Knowledge Policy.

B3. Presentation – June 2017 NWCLC Meeting

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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Adaptive Phased Management

Phase 2 Preliminary Assessments: Initial Borehole Drilling to Advance Learning

NWMO
June 2017

Site Evaluation Process

Site evaluation process is driven by community's interest to participate.

Initial Screening
(Few months)

Desktop studies to evaluate the potential suitability of the community against a list of initial screening criteria

Preliminary Assessment
(Multiple years, 2 phases)

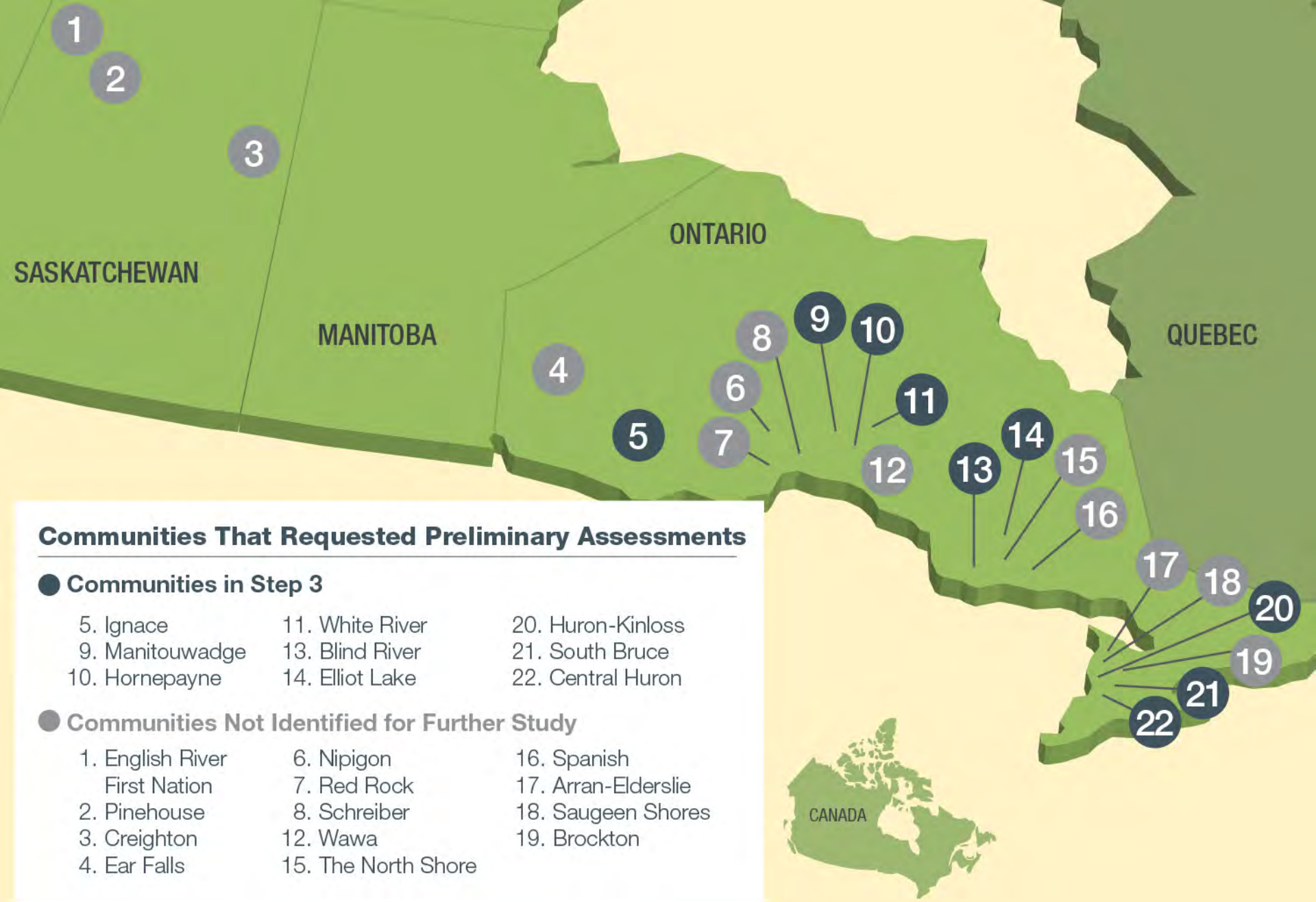
Technical and Social, economic and cultural assessments to determine whether a site in the community has the potential to meet the detailed requirements for the project:

- **PHASE 1:** Desktop for all communities
- **PHASE 2:** Field Work for a subset of communities

Detailed Site Characterization
(~potentially 3-5 years)

Detailed field investigations at one site to confirm suitability of the site based on detailed site evaluation criteria:

- Technical evaluation (detailed field investigations)
- Continue social, economic and cultural assessment



Communities That Requested Preliminary Assessments

Communities in Step 3

5. Ignace
9. Manitouwadge
10. Hornepayne
11. White River
13. Blind River
14. Elliot Lake
20. Huron-Kinloss
21. South Bruce
22. Central Huron

Communities Not Identified for Further Study

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Status of Studies in the Hornepayne Area

- Hornepayne entered the learning and site selection process in 2011
  - Initial Screening: Completed in June 2011
  - Phase 1 Preliminary Assessment: Completed in November 2013
  - **Currently in Phase 2 of Preliminary Assessment**
- Findings to date:
  - The Hornepayne area contains large areas that have the potential to satisfy NWMO's geoscientific site evaluation factors
  - Borehole drilling is needed to further advance understanding of the geology in the area
- Findings to date have been shared with people in the area and assessment reports are available on NWMO's website

Objective of Phase 2 Assessments of Sites

To develop confidence on selection of a preferred location to take into detailed site characterization

Safety	Confidence a deep geological repository can be developed with strong safety case at that location
Transportation	Confidence a safe, secure and socially acceptable transportation plan can be developed
Partnership	Confidence a strong partnership can be developed – with interested community, First Nation and Métis communities in the area, and surrounding communities

Looking Ahead: Phase 2 Site Selection Planning Assumptions*

2014-2022	2023 *	2023 onward
• Complete Phase 2 assessments of multiple sites • Gradually narrow down study areas	• Decision on preferred site	• Initiate activities at site including: – Detailed site characterization; – Building Centre of Expertise; – Regulatory process

* ***Timelines are illustrative, to guide planning. Actual timelines may vary.***

Status of Phase 2 Preliminary Field Investigations (Hornepayne area)

Initial Studies

Intensive Field Work

High resolution airborne geophysical surveys

(Completed in 2015)

Observing geological features and detailed mapping

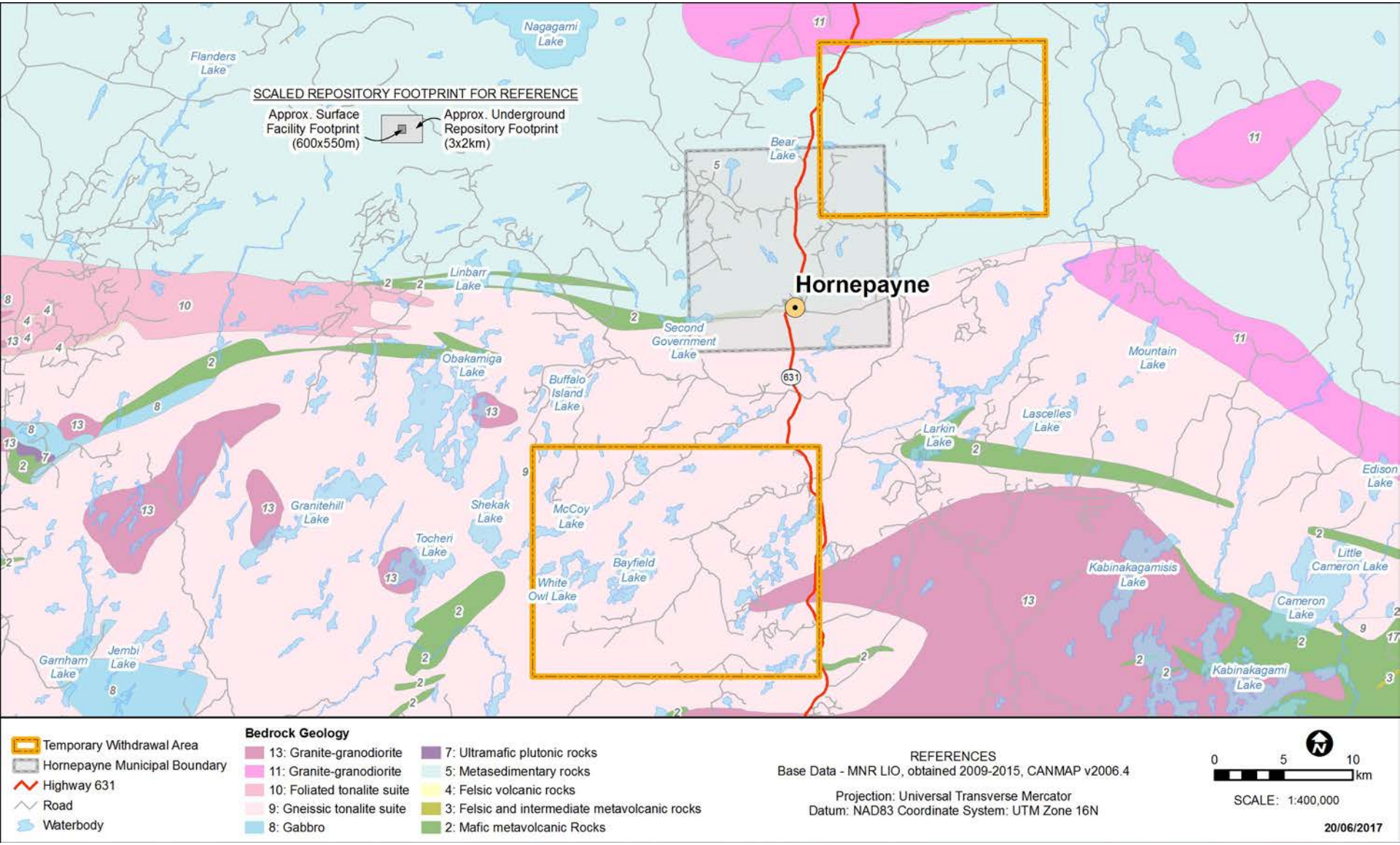
(Completed in 2016)

Borehole Drilling &Testing

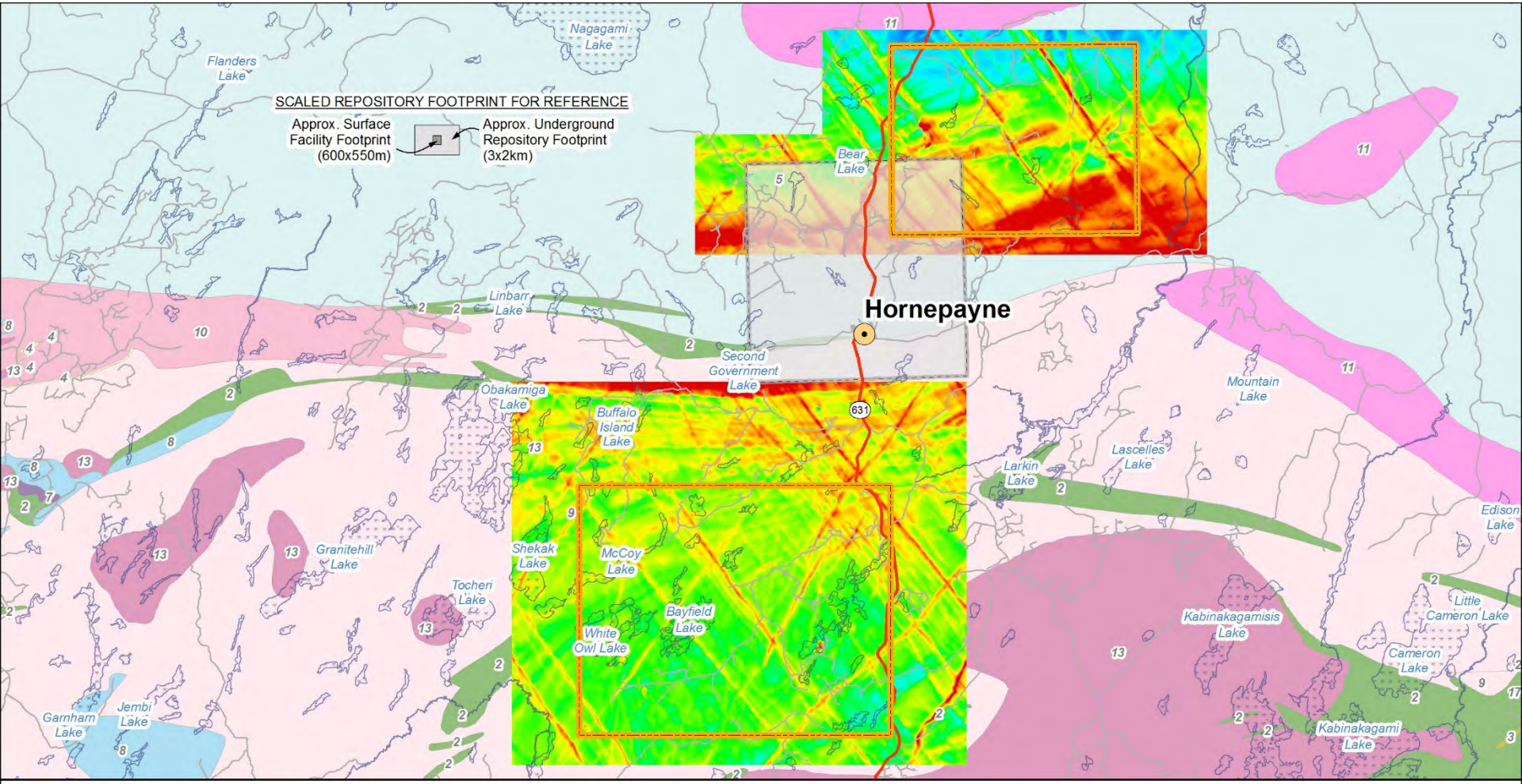
(in planning)

In Collaboration with Communities

Geology of the Hornepayne area



Airborne Surveys in the Hornepayne Area- Magnetic (12,693 Line km's flown)



Temporary Withdrawal Area
Hornepayne Municipal Boundary
Highway 631
Road
Waterbody

-380 MAG - Reduction to Pole [nT] 1290

REFERENCES
Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4

Projection: Universal Transverse Mercator
Datum: NAD83 Coordinate System: UTM Zone 16N

0 5 10 km

SCALE: 1:400,000

20/06/2017

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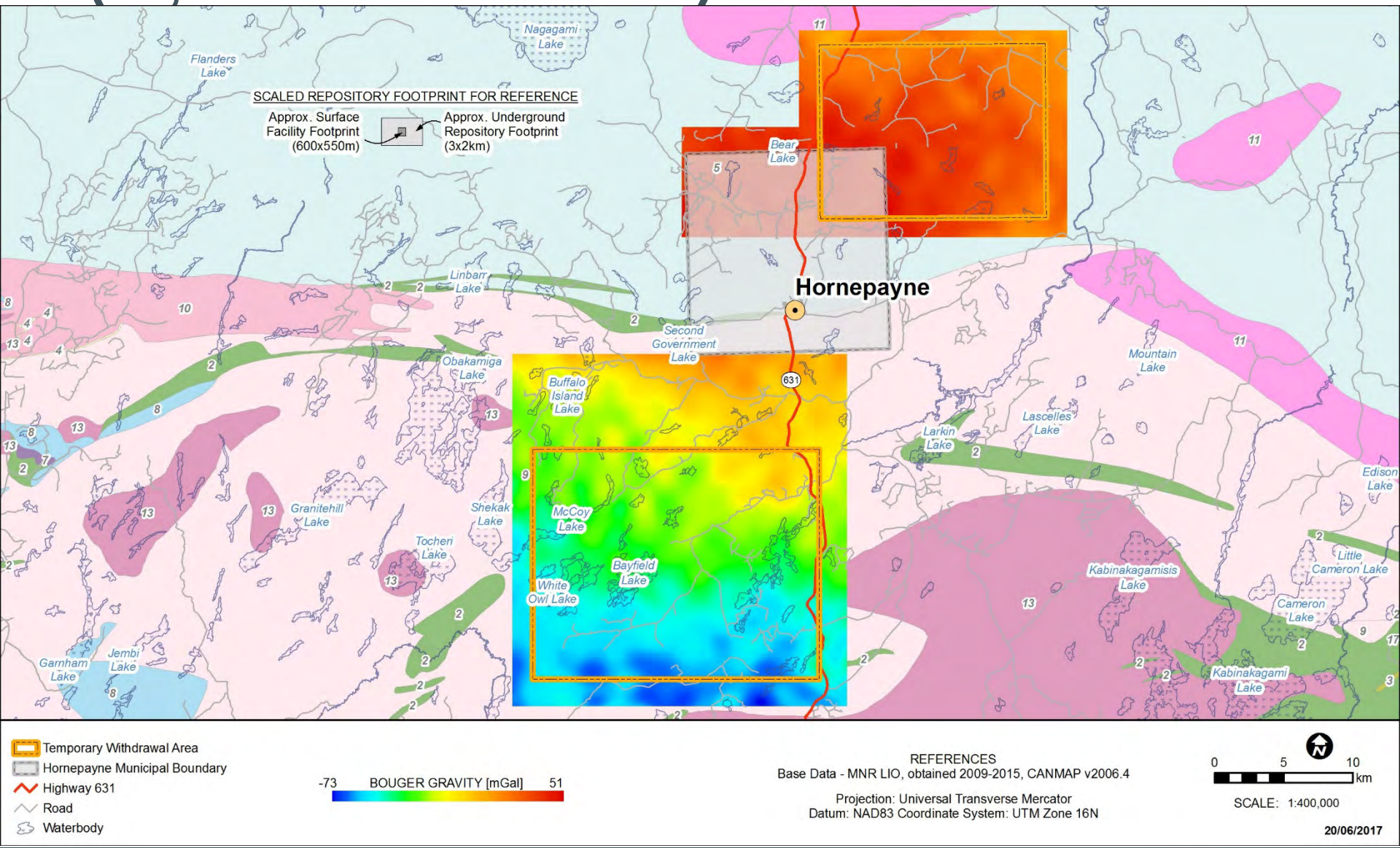
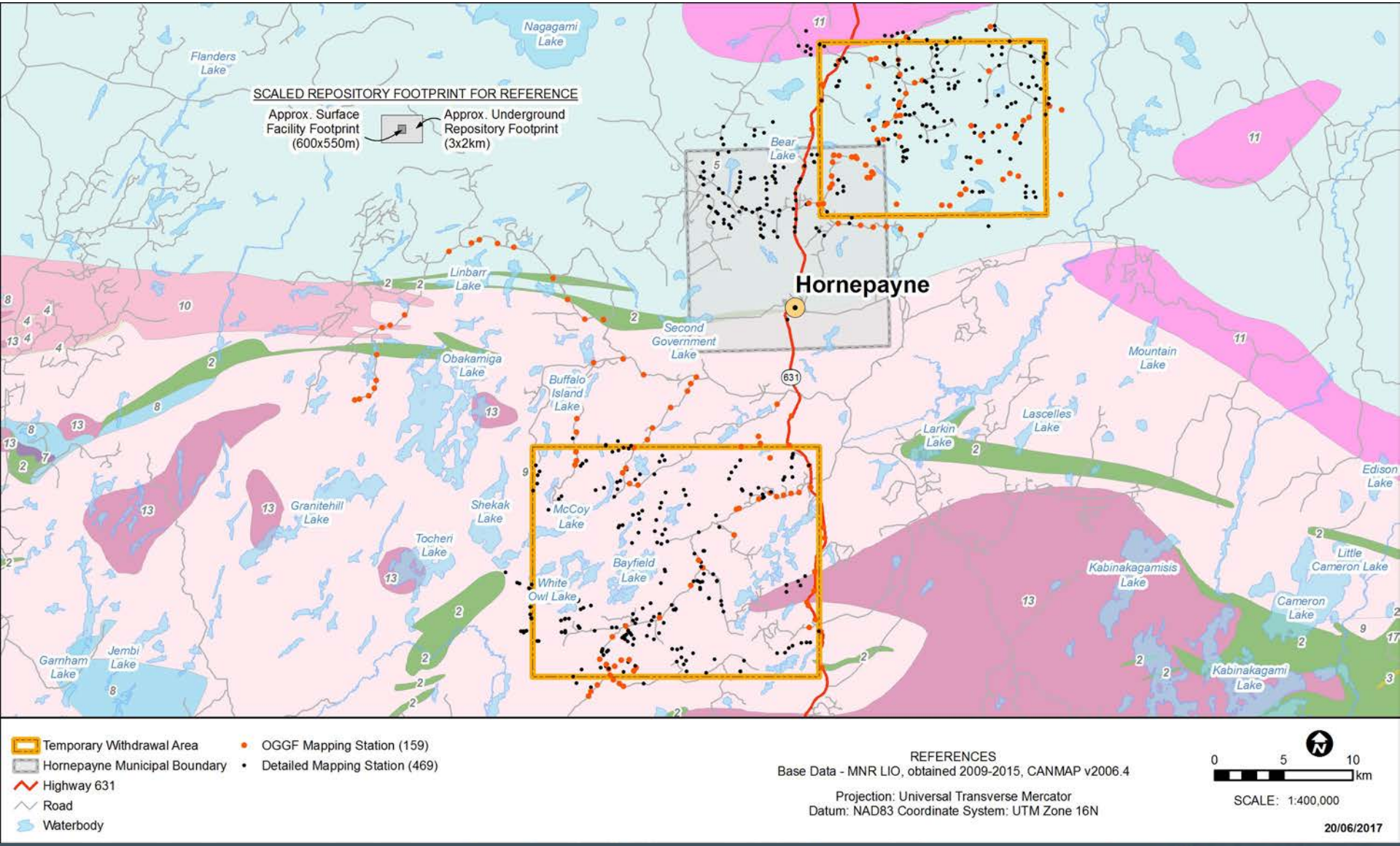
Airborne Surveys in the Hornepayne Area- Gravity (12,693 Line km's flown)



Geological Mapping Locations



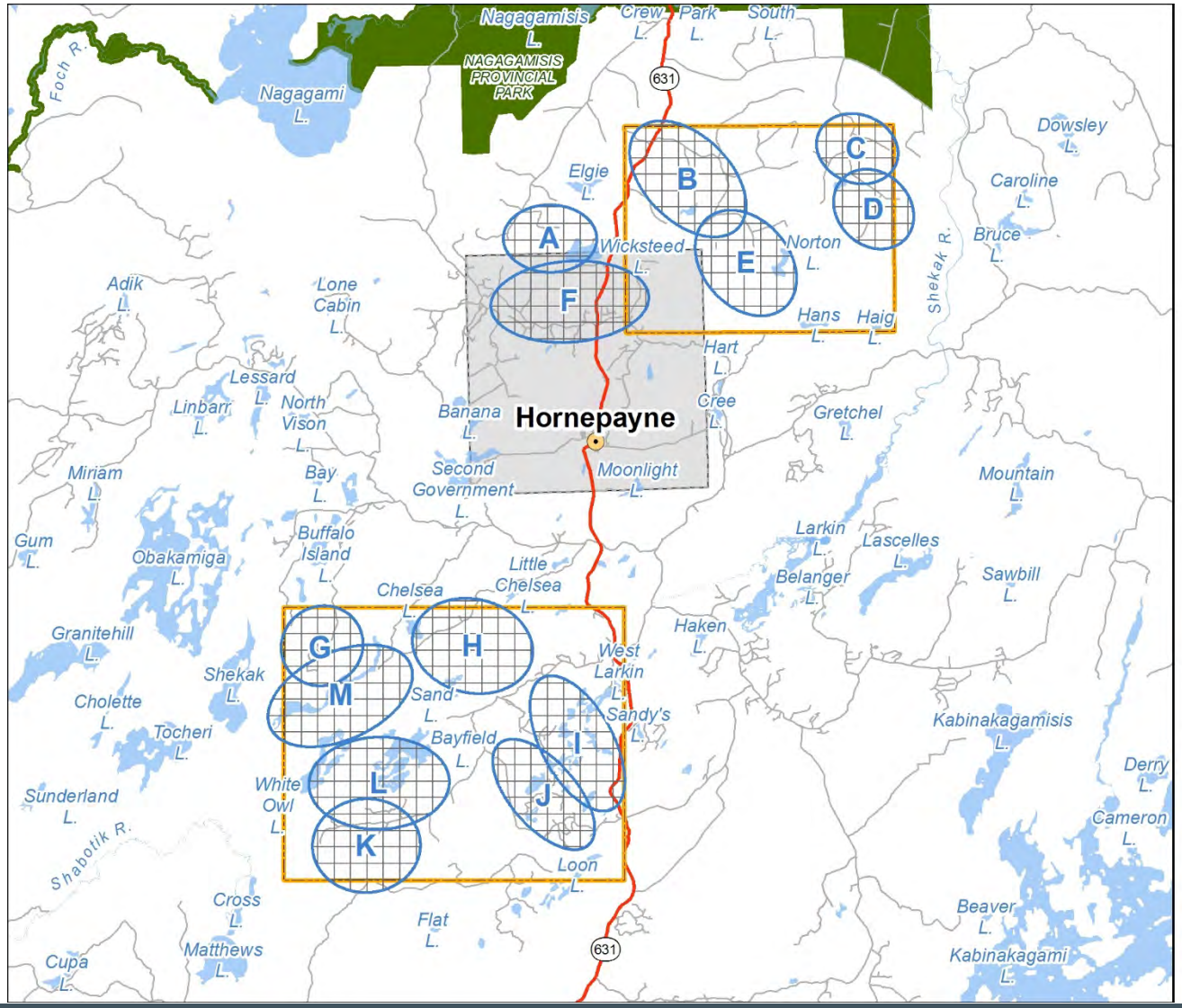
Next Steps

- Complete interpretation of field data geological mapping data- December 2017
- Complete environmental field mapping – December 2017
- Complete early engineering studies- December 2017
- Identify potential borehole drill sites based on technical studies and feedback from people in the area – Beginning Summer 2017
- NWMO may conduct borehole studies in just one location in the region -- either in the Hornepayne area or in the Manitouwadge area, depending on potential to meet the robust requirements of the project.

Approach for Initial Borehole Drilling

- If we were to proceed in this area, where should we focus our next phase of study beginning with initial borehole drilling at or near a potential repository site?
- Purpose is to further advance understanding of geology and its suitability for a deep geological repository
- To begin the discussion with people in the area and learn from them where we might focus initial borehole drilling, potential geologically suitable repository areas based on early Phase 2 studies have been identified

Potential Geologically Suitable Areas Based on Early Phase 2 Studies – For Discussion with People in the Area



Potential Geologically Suitable Areas Based on Early Phase 2 Studies

For Discussion with People in the Area

LEGEND

- Potentially Suitable Repository Area Based On Geology For Discussion
- Temporary Withdrawal Area
- HWY 631
- Road
- Municipal Boundary
- Provincial Park
- Waterbody

N

0 10 20 km

REFERENCES

Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4

Projection: Universal Transverse Mercator
Datum: NAD83 Coordinate System: UTM Zone 16N

SCALED REPOSITORY FOOTPRINT FOR REFERENCE

Approx. Surface Facility Footprint (600x550m)

Approx. Underground Repository Footprint (3x2km)

20/06/2017

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Advancing the Discussion

- Share the map of potential geologically suitable areas based on early Phase 2 studies and invite discussion through a variety of engagement activities on where we might focus borehole drilling
- Provide briefings to groups and individuals who are interested
- Engage with First Nation and Métis communities in the area
- Invite people to share their perspectives through coming to the Learn More community office, and at planned open houses (July) and other activities

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NUCLEAR WASTE MANAGEMENT ORGANIZATION | SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

MAY 2017

PRELIMINARY ASSESSMENT OF POTENTIAL SUITABILITY

Initial Borehole Drilling in the Hornepayne and Manitouwadge Area

In 2010, the Nuclear Waste Management Organization (NWMO) began technical and social studies in and around a number of communities, including Hornepayne, Manitouwadge and White River, that expressed interest in assessing their suitability for safely hosting a deep geological repository for the long-term management of Canada's used nuclear fuel. These studies have become increasingly more detailed over time and focused on locations that have potential to safely host a repository.

Before selecting a potential repository site, the NWMO needs to be confident that a deep geological repository can be developed with a strong safety case at that location. A safety case brings together all the information that contributes toward understanding whether or not a repository at the site could safely contain and isolate used nuclear fuel. This information includes Indigenous Knowledge, geoscientific assessments, environmental surveys and monitoring, engineering design studies, and safety assessment analyses.

The focus of early geoscientific studies is to determine if there are rock formations in the area that have potential to satisfy the NWMO's safety requirements for a deep geological repository.

The next site evaluation activity in the area involves drilling an initial borehole in a potential repository location to further understand the geology. Depending on findings, additional borehole drilling and testing in one or more locations may be warranted in the future.

We need your input

The map identifies the areas with potential to meet robust technical safety requirements for a deep geological repository, based on early studies and analysis which is continuing. We need your input to help decide where we might focus our next phase of studies.

1. What is important to know about each of the areas identified on the map, before decisions are made about where to focus borehole drilling at or near a potential repository site?
2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?
3. Are some of these areas preferred over others for initial boreholes? Which ones? Why?

We look forward to discussions.

Questions?

B4. Presentation – February 2018 NWCLC Meeting

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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Adaptive Phased Management

Phase 2 Preliminary Assessments: Initial Borehole Drilling to Advance Learning

Presented by: Jo-Ann Facella, Director Community Well Being, Assessment & Dialogue

Presented to: Hornepayne Nuclear Waste Community Liaison Committee

February, 2018

Overview

- Provide an update on plans for potential borehole drilling
- Review activities which will occur at the site

Objective of Phase 2 Assessments of Sites

To develop confidence on selection of a preferred location to take into detailed site characterization

Safety	Confidence a deep geological repository can be developed with strong safety case at that location
Transportation	Confidence a safe, secure and socially acceptable transportation plan can be developed
Partnership	Confidence a strong partnership can be developed – with interested community, First Nation and Métis communities in the area, and surrounding communities

Status of Phase 2 Preliminary Field Investigations (Hornepayne area)

Initial Studies

Intensive Field Work

High resolution airborne geophysical surveys

(Completed in 2015)

Observing geological features and detailed mapping

(Completed in 2016)

Borehole Drilling &Testing

(in planning)

In Collaboration with Communities

Status of Studies in the Hornepayne Area

- Hornepayne entered the learning and site selection process in 2011
- Initial Screening completed in June 2011
- Phase 1 Preliminary Assessment completed in November 2014
- Phase 2 studies began in 2014 and we completed: airborne geophysical studies; geological field mapping and interpretation of data; environmental field surveys; and, early engineering studies
- Sought the perspective of people in the area on where borehole drilling should focus in summer 2017
- NWMO completed interpretation of data from technical studies in December 2017
- NWMO may focus borehole studies in just one location in the region, depending on outcome of engagement in the area and potential to meet the requirements of the project.

Initial Borehole Drilling
Discussions – Summer 2017

- We reviewed potential geologically suitable areas identified from early phase 2 studies

  If we were to proceed in this area, where should we focus our next phase of study beginning with initial borehole drilling at or near a potential repository site?

1. What is important to know about each of the areas identified on the map, before decisions are made about where to focus borehole drilling at or near a potential repository site?
2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?
3. Are some of these areas preferred over others for initial boreholes? Which ones? Why?

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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

MAY 2017

PRELIMINARY ASSESSMENT OF POTENTIAL SUITABILITY

Initial Borehole Drilling in the Hornepayne and Manitouwadge Area

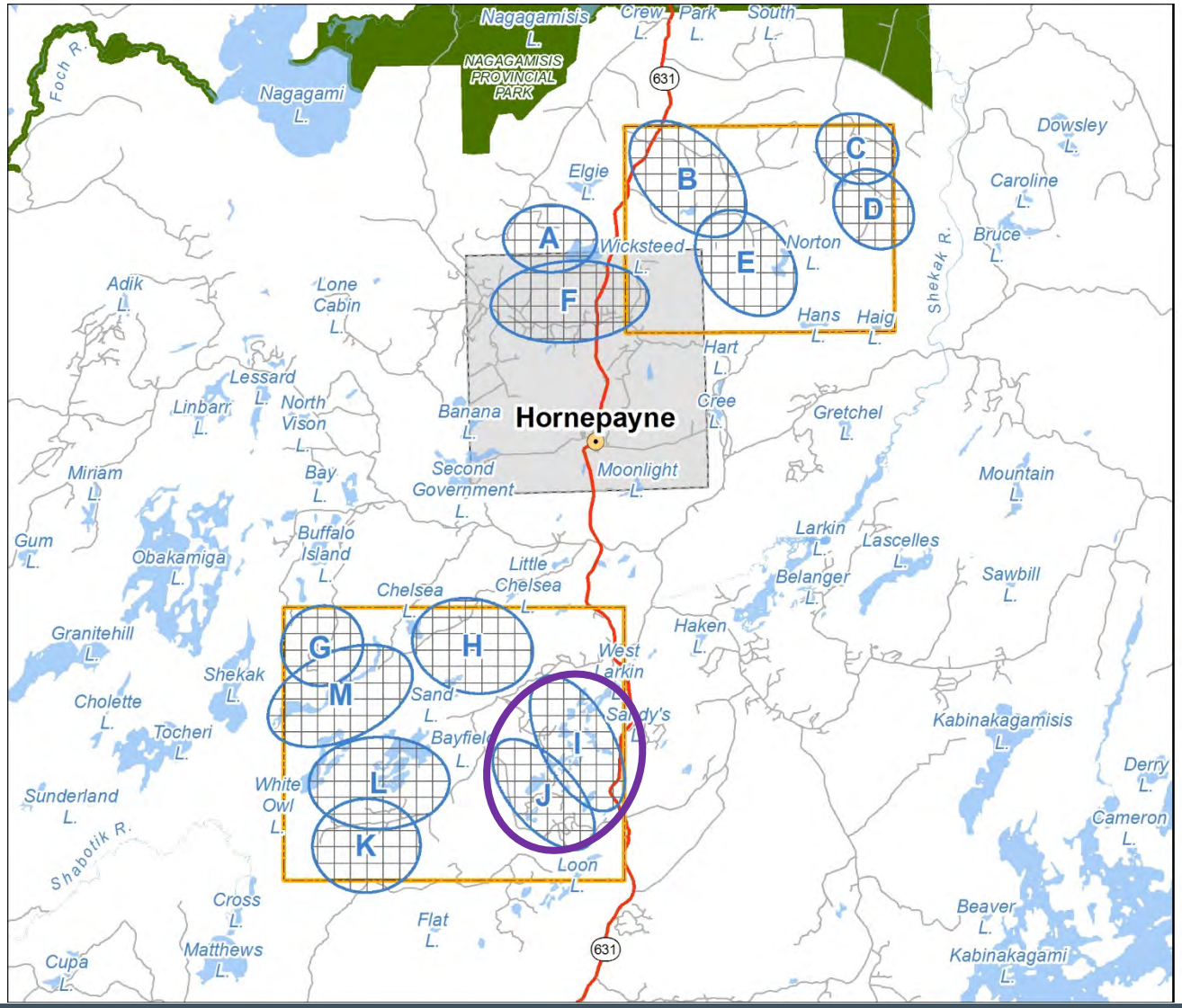
In 2010, the Nuclear Waste Management Organization (NWMO) began technical and social studies in and around a number of communities, including Hornepayne, Manitouwadge and White River, that expressed interest in assessing their suitability for safely hosting a deep geological repository for the long-term management of Canada's used nuclear fuel. These studies have become increasingly more detailed over time and focused on locations that have potential to safely host a repository.

Before selecting a potential repository site, the NWMO needs to be confident that a deep geological repository can be developed with a strong safety case at that location. A safety case brings together all the information that contributes toward understanding whether or not a repository at the site could safely contain and isolate used nuclear fuel. This information includes Indigenous Knowledge, geoscientific assessments, environmental surveys and monitoring, engineering design studies, and safety assessment analyses.

The focus of early geoscientific studies is to determine if there are rock formations in the area that have potential to satisfy the NWMO's safety requirements for a deep geological repository.

The next site evaluation activity in the area involves drilling an initial borehole in a potential repository location to further understand the geology. Depending on findings, additional borehole drilling and testing in one or more locations may be warranted in the future.

Potential Geologically Suitable Areas Based on Early Phase 2 Studies – **Discusssed** with People in the Area



Potential Geologically Suitable Areas Based on Early Phase 2 Studies

For Discussion with People in the Area

LEGEND

- Potentially Suitable Repository Area Based On Geology For Discussion
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- HWY 631
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- Municipal Boundary
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SCALED REPOSITORY FOOTPRINT FOR REFERENCE

Approx. Surface Facility Footprint (600x550m)

Approx. Underground Repository Footprint (3x2km)

20/06/2017

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What We Heard From People in the Area

Once safety is assured, we heard there are other important considerations in selecting a site for borehole drilling:

- Economic
- Socio-cultural
- Natural environment and resources

Considerations

- Balance - Close to community to enhance economic and social benefit (e.g., population, employment, business opportunities), while avoiding potential adverse change in community character /tourism/recreation due to ‘industrial’ nature of APM facility
- Proximity to existing infrastructure – roads, power, rail lines, municipal airport etc.
- Compatibility with other land uses, including forestry, remote tourism, outfitting, trapping, recreational activities (camps/cabins, hunting, fishing, boating, snowmobiles/ATVs etc.)
- Avoid parks/protected areas, large lakes/major rivers, and areas of important habitat
- Avoid areas of known Aboriginal interests

Planned Sites for Borehole Drilling

- Considering all findings, both from social and technical studies and engagement with municipal, First Nation and Métis communities in the area to date, we have identified sites for potential borehole drilling.

- These sites were amongst the group of most preferred areas identified by community members and others in the summer 2017 engagement.

We need your input

Review the proposed borehole sites:

- Are you aware of any social, economic, cultural or natural environment matters in relation to the proposed sites for potential boreholes 1, 2, 3 or the temporary access roads which may be needed?
- If so, what are they and how should they be addressed?

What's Involved in Borehole Drilling and Testing

- Involves drilling a hole and retrieving cylinder-shaped rock samples, called core
- Boreholes will be drilled and cored to a depth of about one kilometre.
- The process could last about 90 days, depending on the number of shifts worked each day.
- The drill site will be about 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side.
- The area will be fenced and gated, as well as graded with granular material

Borehole Drilling Equipment

- Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig.
- Trailers at the site will be used as offices, for equipment storage, and for core logging, on-site testing and preserving rock core and water samples.
- Other equipment and facilities needed include a water storage tank, drill rod and equipment laydown areas, and vehicle traffic lanes.

Borehole drilling: vertical and/or inclined

Planned testing

- Logging of the rock types and structures (e.g., fractures)
- Geophysical logging of the borehole (e.g., fracture location and orientation, mineralogy, presence of groundwater)
- Hydraulic conductivity tests at selected depths in the borehole
- Geomechanical tests of selected rock core samples (e.g., rock strength)
- Chemistry of groundwater samples

Core sampling and laboratory testing

Next steps

- Continue information sharing and engagement with community members and people in the area, including First Nation and Métis communities
- Hold open house event in March and focussed conversations over the next few months on potential drilling sites
- NWMO may seek permissions from government to drill these boreholes which would trigger consultation with Indigenous communities

Discussion

B5. Presentation – April 2018 NWCLC Meeting

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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Adaptive Phased Management

Phase 2 Preliminary Assessments: Initial Borehole Drilling to Advance Learning Update

Presented by: Jo-Ann Facella, Director Community Well Being, Assessment & Dialogue

Presented to: Hornepayne Nuclear Waste Community Liaison Committee

April, 2018

Purpose

- Provide an update on conversations with people in the area about plans for potential borehole drilling.

What is the Plan for Borehole Studies?

- Current plan is to initiate borehole drilling in either Manitouwadge or Hornepayne area.
- Decision about when borehole drilling will proceed at the three potential borehole locations in the Hornepayne area will be made once consultation with First Nation and Metis communities and the people in the area is completed.
- Engagement activities are continuing. Consultation has not yet begun.
- Earliest that drilling for these borehole studies would occur is late 2018, or early 2019.

Where do Borehole Studies fit?

2018 - **Preliminary Assessment of areas and sites**

- Airborne surveys (complete)
- Observing General Geological Features (complete)
- Detailed geophysical mapping (complete)
- Borehole studies

- **Based on learning from Preliminary Assessment, narrowing process continues with removal of siting areas**
  - Five large areas in Ontario are currently the focus of study. The Hornepayne area is one of these five areas

2023 - **Preferred Site is selected**

2024 - **Detailed Characterization begins at site**
- **Centre of Expertise construction**

2028 - **EA/ Licence Application**

2030's - **Construction of the repository begins**

2043 - **Repository operation begins**

What's Involved in Borehole Studies?

- Borehole drilling studies explore the qualities of the rock at depth and whether safety criteria can be met.
- Involves drilling a hole and retrieving cylinder-shaped rock samples, called core.
- Boreholes will be drilled and cored to a depth of about one kilometre.
- The process could last about 90 days, depending on the number of shifts worked each day.
- The drill site will be about 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side.
- The area will be fenced and gated, as well as graded with granular material.
- Borehole drilling activity will be conducted in a manner which protects the environment. Once completed, the site will be returned to original use.

What Equipment is used?

- Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig.
- Trailers at the site will be used as offices, for equipment storage, and for core logging, on-site testing and preserving rock core and water samples.
- Other equipment and facilities needed include a water storage tank, drill rod and equipment laydown areas, and vehicle traffic lanes.

Borehole drilling: vertical and/or inclined

What Testing is planned?

- Logging of the rock types and structures (e.g., fractures).
- Geophysical logging of the borehole (e.g., fracture location and orientation, mineralogy, presence of groundwater).
- Hydraulic conductivity tests at selected depths in the borehole.
- Geomechanical tests of selected rock core samples (e.g., rock strength).
- Chemistry of groundwater samples.

Core sampling and laboratory testing

Ongoing Engagement activities: Who are we speaking with?

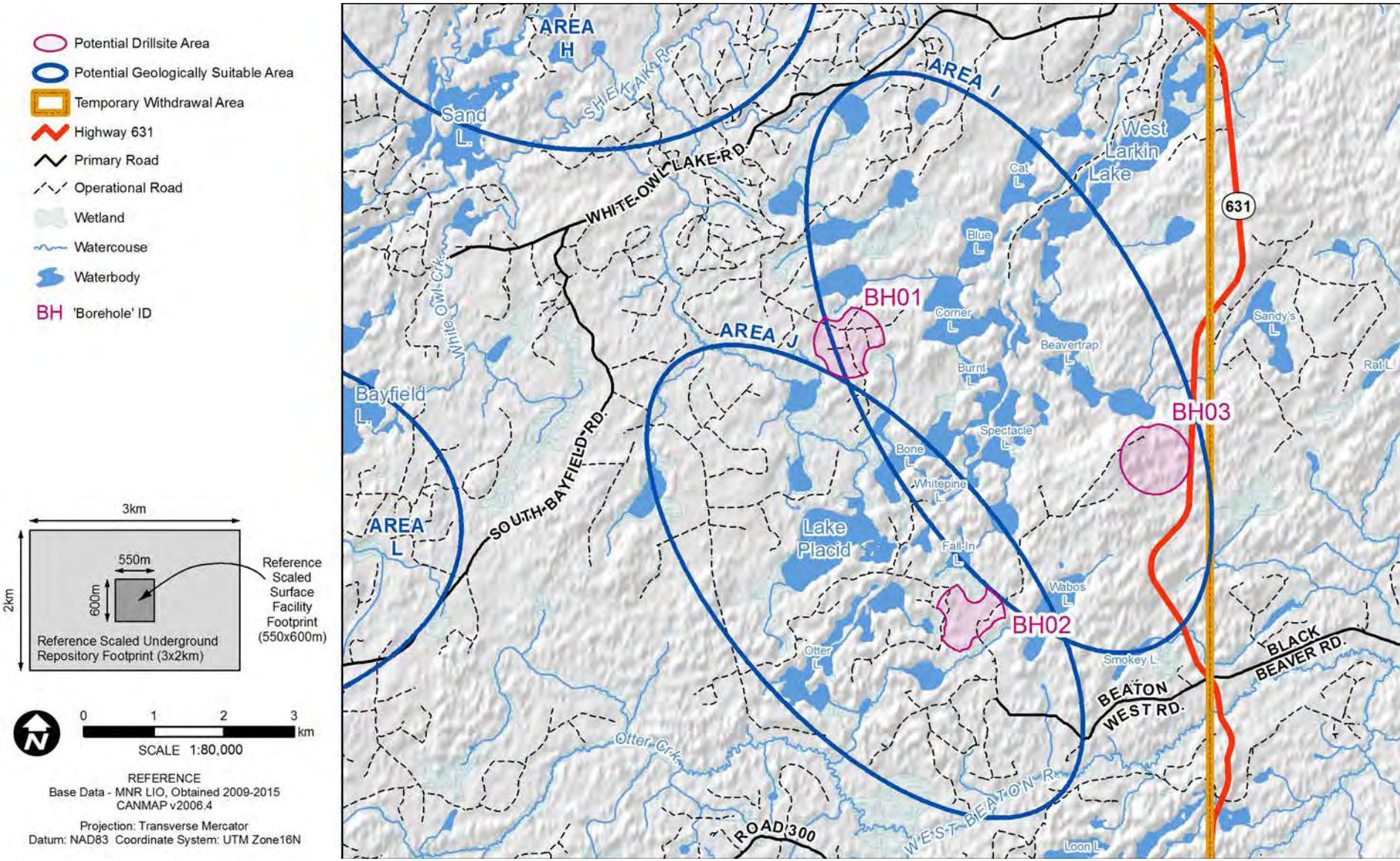
- Hornepayne residents
- First Nation and Métis communities in the area
- Camp owners
- Trappers
- Cottagers
- Bear management/ bait fish areas
- Forestry
- Tourism/ Outfitters

What are we asking?

- Are you aware of any social, economic, cultural or natural environment matters in relation to the proposed sites for potential boreholes 1, 2, 3 or the temporary access roads which may be needed?

- If so, what are they and how should they be addressed?

Potential Location of Borehole Sites – For Discussion with People in the Area



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What are we hearing?

- What is the purpose of borehole drilling, what is involved and how will the environment be protected during these studies?
- What will be the impact of borehole drilling on property value and how will it impact my current activities?
- More generally, questions about what is used nuclear fuel, the project, the site selection process, approvals required and regulatory oversight? How and when will decisions be made?
- Perspectives on hosting the project in the area – including general support for the economic development and services which the project will bring if located in the Hornepayne area, but also some opposition.

Conversations Include

- Discussion of detailed activities which will be undertaken to protect the environment and to minimize any temporary effect on current use of land near the borehole drilling location.
- NWMO's commitment to working with those affected to ensure any effects of the borehole drilling studies are mitigated, and to return the area to original use once initial borehole studies completed.
- Information about Canada's plan, the project, milestones, the site selection process and status, the purpose of borehole drilling and activities involved, regulatory review and oversight.

Next steps

- Continue information sharing and engagement with community members and people in the area, including First Nation and Métis communities.
- In order to be in a position to proceed with initial boreholes in the area, should a decision be made to do so:
  - NWMO begin process of seeking permissions from government to drill initial boreholes. This would initiate formal consultation with Indigenous communities.
  - NWMO begin process to identify potential drillers.
  - NWMO begin environmental mapping in the area to establish baseline conditions.

Discussion

APPENDIX C: NWMO Media

The NWMO have pro-actively worked to promote community engagement activities and produced a variety of publicly available information materials regarding the borehole studies including:

- Promotion of open houses with full page bilingual advertisements in local weekly newspaper, Wicksteed Weekly (and former local paper, The Jackfish Journal) distribution approx. 250
- Promotion of activities through local posters, facebook /, websites and community bulletin boards;
- Reaching out to regional media (e.g., CFNO-FM, CBC radio Thunder Bay) to encourage news coverage of NWMO and updates on the site selection process; and
- Production of a variety of information materials, which are available on the NWMO website and at the Hornepayne Community Office. E.g. maps, brochures, fact sheets, web stories, and Q & A documents.
    - Site Selection = > Study Areas: https://www.nwmo.ca/en/Site-selection/Study-Areas/Hornepayne-and-Area/What-Were-Doing (first accordion menu)
    - Open House web stories: https://www.nwmo.ca/en/More-information/News-and-Activities/2018/03/15/15/21/Initial-Borehole-Planning-Discussed-at-Manitouwadge-Open-House:
    - https://www.nwmo.ca/en/More-information/News-and-Activities/2017/07/13/14/30/Community-Members-Attend-Open-House-in-Hornepayne
    - Site Selection => steps in process: https://www.nwmo.ca/en/Site-selection/Steps-in-the-Process/Step-3-Preliminary-Assessments-of-Suitability/Step-3-Phase-2--Field-Studies-and-Engagement/Borehole-Drilling-and-Testing (second .pdf file has draft discussion document)

Listing of Published Advertisements

Media listing	Date
Advertisement in Hornepayne Jackfish Journal newspaper. Also used local posters, Facebook and CLC website.	Full page bilingual ads (one page English, one page French) in June 28, July 5 editions Open house dates, July 11, 12, 2017
Advertisement in Wicksteed Weekly newspaper. Also used local posters, Facebook and CLC website.	Full page bilingual ads (one page English, one page French) in Feb 21, 28 editions Open house dates, March 5, 6, 2018
Advertisement in Hornepayne Jackfish Journal newspaper. Also used local posters, Facebook and CLC website.	Full page bilingual ads (one page English, one page French) in Sept 13, 20 editions Used Fuel Transportation Package exhibit, Sept 26, 27, 2017
Advertisement in Hornepayne Jackfish Journal newspaper. Hardcopies also distributed at local business and other locations.	Full page bilingual ads (one page English, one page French) in April edition
Advertisement in Hornepayne Jackfish Journal newspaper. Hardcopies also distributed at local business and other locations.	Full page bilingual ads (one page English, one page French) in June edition
Advertisement in Hornepayne Jackfish Journal newspaper. Hardcopies also distributed at local business and other locations.	Full page bilingual ads (one page English, one page French) in November edition
Advertisement in Wicksteed Weekly newspaper. Hardcopies also distributed at local business and other locations.	Full page bilingual ads (one page English, one page French) in March edition
News Release: NWMO to Focus Field Studies on Fewer Communities: NWMO website, CLC website and regional media organizations.	June, 2017
News Release: NWMO Narrowing Down: Facebook, NWMO website, CLC website and regional media organizations.	December 6, 2017
Posting of the 2018 open house on NWMO and NWCLC Facebook pages	March 7, 2018
Article in Wicksteed Weekly, Potential Borehole Drilling	March 14, 2018

Attachments: Advertisements and media coverage

C1. Open House Advertisements

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

OPEN HOUSE

Learn More About Potential Borehole Drilling in the Area

» Where
Royal Canadian Legion
Branch #194
48 Sixth Avenue
Hornepayne, ON

» When
Tuesday, July 11
11 a.m. – 7 p.m.

Wednesday, July 12
11 a.m. – 5 p.m.

Drop by the open house to meet NWMO staff. Learn more about the project and share your thoughts about drilling an initial borehole at or near a potential repository site in order to further understand the geology.

The Hornepayne area is one of several in Ontario currently involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Before a potential site can be identified, several years of progressively more detailed studies are needed, as well as engagement of interested communities, First Nation and Métis communities in the area, and surrounding communities.

PORTES OUVERTES

Venez en apprendre davantage sur les travaux de forage exploratoire potentiels dans la région

» Où
Légion royale canadienne
Filiale #194
48, 6e Avenue,
Hornepayne, ON

» Quand
Mardi 11 juillet
11h à 19h

Mercredi 12 juillet
11h à 17h

Venez participer à une journée portes ouvertes pour rencontrer des membres du personnel de la SGDN. Vous pourrez ainsi vous renseigner sur le projet et faire part de vos idées sur le forage d'un trou de sonde initial sur le site potentiel d'un dépôt, ou à proximité, pour mieux comprendre la géologie locale.

La région de Hornepayne, comme plusieurs autres régions en Ontario, participe actuellement au processus visant à choisir un site pour un dépôt géologique en profondeur où sera stocké le combustible nucléaire irradié canadien. Il faudra plusieurs années d'études de plus en plus détaillées et de travaux d'engagement des collectivités intéressées, des collectivités des Premières nations et métisses des régions participant au processus et des collectivités environnantes avant que ne soit identifié un site potentiel.

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Learn More Event

The Township of Hornepayne has invited the Nuclear Waste Management Organization (NWMO) to host a Learn More Event.

The NWMO will present an exhibit that provides a hands-on opportunity to learn more about plans for the safe and secure transportation of Canada's used nuclear fuel.

Everyone is invited.

When Tuesday, September 26, 2017, 11 a.m. – 7 p.m.
Wednesday, September 27, 2017, 11 a.m. – 5 p.m.

Where Royal Canadian Legion Branch #194
48 Sixth Avenue, Hornepayne, ON

www.nwmo.ca

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Événement *En savoir plus*

Le canton de Hornepayne a invité la Société de gestion des déchets nucléaires (SGDN) à tenir un événement *En savoir plus*.

L'exposition que la SGDN présentera est une bonne façon d'en savoir plus sur les plans pour le transport sûr et sécuritaire du combustible nucléaire irradié canadien.

Tous sont invités.

Quand **Le mardi, 26 septembre 2017, de 11 h à 19 h**
Le mercredi, 27 septembre 2017, de 11 h à 17 h

Où **Légion royale canadienne filiale 194**
48, avenue Sixth, Hornepayne, ON

www.nwmo.ca

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Community Open House

Learn More About Potential Borehole Drilling

Where:
Hornepayne Royal Canadian Legion Branch #194
48, Sixth Avenue

When:
Monday, March 5, 2018
11 a.m. to 7 p.m.

Tuesday, March 6, 2018
11 a.m. to 7 p.m.

www.nwmo.ca

Drop by the open house to meet the NWMO staff. Learn more about the project and share your thoughts about the next planned activity: drilling an initial borehole at or near a potential repository site in order to further understand the geology.

The Hornepayne area is one of several in Ontario currently involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Before a potential site can be identified, several years of progressively more detailed studies are needed, as well as engagement of interested communities, First Nation and Métis communities in the area, and surrounding communities.

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Journées portes ouvertes

Apprenez-en davantage sur les travaux potentiels de forage

Où :
Filiale 194 de la Légion royale canadienne à Hornepayne
48, avenue Sixth

Quand :
Le lundi 5 mars 2018
11 à 19 h

Le mardi 6 mars 2018
11 à 19 h

www.nwmo.ca

Participez à notre événement portes ouvertes pour rencontrer les membres du personnel de la SGDN, apprendre davantage sur le projet et nous faire part de vos idées quant à l'activité future d'évaluation d'un site, notamment le forage d'un trou de sonde initial dans ou à proximité d'un site de dépôt potentiel pour mieux comprendre la géologie.

La région de Hornepayne compte parmi plusieurs d'autres en Ontario qui participent actuellement au processus de sélection d'un site pour un dépôt géologique en profondeur pour le combustible nucléaire canadien. Avant qu'un site potentiel soit identifié, il faudra encore plusieurs années d'études de plus en plus détaillés ainsi que l'engagement des collectivités intéressées, des collectivités des Premières nations et des Métis de la région et des collectivités environnantes.

C2. NWMO Newsletters

The NWMO and Hornepayne
Learning Together

APRIL 2017

Hornepayne Family Fish Derby Draws Record Crowd

Over 200 people came out to Cedar Point for this year's Hornepayne Family Fish Derby day. Put on by the Hornepayne Recreation Committee and KidsSport Hornepayne, the event brought out record crowds. The NWMO's Pat Dolcetti was there for the third straight year helping out the organizers.

"Paul and Lisa Stewart did an amazing job bringing everything together once again," said Dolcetti. "There were free hot dogs, hot chocolate, and even fishing poles, not to mention more prizes than you could count."

The NWMO was happy to be one of the many sponsors that contributed to the successful local event.

Top: The Hornepayne Family Fish Derby enjoyed strong support and participation from the community, and many area sponsors.

Bottom left: James Maki proudly displays his catch of the day. *Bottom middle:* The NWMO's Pat Dolcetti was happy to assist the successful organizers, Lisa and Paul Stewart. *Bottom right:* It's "Game On" for the NWMO's Pat Dolcetti as he enjoys a little bit of shinny hockey.

Distinguishing between the NWMO's Deep Geological Repository and OPG's DGR for Low- and Intermediate-Level Waste

The Nuclear Waste Management Organization (NWMO) is implementing Adaptive Phased Management (APM) – Canada's plan for the safe, long-term management of used nuclear fuel. The endpoint of APM is the safe isolation and containment of used nuclear fuel in a deep geological repository constructed in sedimentary or crystalline rock in an area with an informed and willing host. The multi-year process for selecting a site for a used nuclear fuel repository and associated Centre of Expertise is actively continuing in nine communities in Ontario, including the Township of Hornepayne.

Under a completely separate process, Ontario Power Generation (OPG) – an Ontario based electricity company – is proposing to construct a deep geologic repository (DGR) for low- and intermediate-level waste at the Bruce nuclear site in the Municipality of Kincardine. This project is currently going through a regulatory review process (began in late 2005) to receive a license to prepare a site and construct a deep geologic repository.

The OPG DGR for low- and intermediate-level waste is completely separate and distinct from the NWMO's deep geological repository for Canada's used nuclear fuel. The two projects were initiated under separate processes consistent with the federal Radioactive Waste Policy Framework that outlines the responsibilities and accountabilities for the safe management of the different nuclear waste streams. Under the policy, waste owners such as OPG are accountable for the long-term management of the low- and intermediate-level waste they create. The federal government is responsible for overseeing the long-term management of used nuclear fuel through the NWMO.

The NWMO has provided technical expertise since 2009 in support of OPG's efforts to obtain regulatory approvals for a proposed DGR for low- and intermediate-level waste; however, the NWMO's role on behalf of OPG is completely separate and distinct from the NWMO's mandate to implement APM for Canada's used nuclear fuel.

Of Note...

- The NWMO's Dr. Erik Kremer, Senior Engineer for Repository Safety, gave a presentation entitled "Overview of Repository Radiological Safety" at the February meeting of the Hornepayne Nuclear Waste Community Liaison Committee (NWCLC). Look for more presentations in the coming months. These meetings are open to the public and all are welcome to attend. For more information about Canada's plan for the safe, long-term management of used nuclear fuel, visit the Hornepayne Learn More Office at 247 Third Avenue, Suite 3, or visit www.nwmo.ca.

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La SGDN et Hornepayne
Apprendre ensemble

AVRIL 2017

Le tournoi de pêche en famille de Hornepayne attire une foule record

Plus de 200 personnes se sont rendues à Cedar Point pour le tournoi de pêche en famille de Hornepayne de cette année. Organisée par le Comité récréatif de Hornepayne et SportJeunesse Hornepayne, l'événement a attiré une foule record. Pour la troisième année consécutive, Pat Dolcetti de la SGDN a participé à l'événement, venant en aide aux organisateurs.

« Paul et Lisa Stewart ont réuni tout le monde de manière remarquable encore une fois, raconte Pat Dolcetti. Les hot dogs, le chocolat chaud, les cannes à pêche même, étaient offerts et n'oublions pas que l'on pouvait remporter plus de prix que l'on ne pouvait imaginer. »

La SGDN était heureuse de compter parmi les nombreux commanditaires qui ont contribué au succès de cet événement local.

En haut: Le tournoi de pêche en famille de Hornepayne a bénéficié du soutien et de la participation solides de la collectivité et des nombreux commanditaires locaux.

En bas à gauche: James Maki pose fièrement avec sa prise du jour. *En bas au milieu:* Pat Dolcetti de la SGDN était heureux d'apporter son aide aux talentueux organisateurs, Lisa et Paul Stewart. *En bas à droite:* Pat Dolcetti de la SGDN relève le défi et joue une petite partie de shinny.

Distinguer le dépôt géologique en profondeur de la SGDN du DGP pour déchets de faible et moyenne activité d'OPG

La Société de gestion des déchets nucléaires (SGDN) travaille à la mise en oeuvre de la Gestion adaptative progressive (GAP) – le plan canadien de gestion à long terme sûre du combustible nucléaire irradié. L'objectif final de la GAP est le confinement et l'isolement sûrs du combustible nucléaire irradié au sein d'un dépôt géologique en profondeur construit dans une formation rocheuse sédimentaire ou cristalline située dans une région avec un hôte informé et consentant. Le processus pluriannuel visant à choisir un site pour l'établissement d'un dépôt de combustible nucléaire irradié et du Centre d'expertise associé se poursuit activement dans neuf collectivités en Ontario, dont la ville de Hornepayne.

Dans le cadre d'un processus entièrement distinct, Ontario Power Generation (OPG) – une entreprise d'électricité ontarienne – propose de construire un dépôt géologique en profondeur (DGP) de déchets de faible et moyenne activité sur le site nucléaire de Bruce, près de la municipalité de Kincardine. Ce projet fait actuellement l'objet d'un processus d'examen réglementaire (amorcé à la fin de 2005) en vue de l'obtention d'un permis de préparation d'un site et de construction d'un dépôt géologique en profondeur.

Le projet de DGP de déchets de faible et moyenne activité d'OPG est entièrement distinct du projet de dépôt géologique en profondeur de la SGDN qui doit accueillir le combustible nucléaire irradié canadien. Les deux projets sont rattachés à des processus distincts amorcés conformément à la Politique-cadre fédérale en matière de déchets radioactifs, qui établit les responsabilités et les obligations de reddition de comptes liées à la gestion sûre des différents flux de déchets nucléaires. En vertu de cette politique, les propriétaires de déchets comme OPG sont responsables de la gestion à long terme des déchets de faible et moyenne activité qu'ils produisent. Le gouvernement fédéral supervise la gestion à long terme du combustible nucléaire irradié par l'intermédiaire de la SGDN.

Depuis 2009, la SGDN fournit une expertise technique en soutien aux efforts d'OPG visant l'obtention des approbations réglementaires nécessaires à la mise en oeuvre d'un DGP de déchets de faible et moyenne activité; toutefois, le rôle de la SGDN par rapport au projet d'OPG est entièrement distinct de son mandat de maître d'oeuvre de la GAP, le plan de gestion du combustible nucléaire irradié canadien.

Of Note...

Au cours de la réunion du Comité de liaison communautaire de Hornepayne sur les déchets nucléaires (CLCDN), Erik Kremer, ingénieur principal pour la sûreté du dépôt à la SGDN, a donné une présentation intitulée *La sûreté radiologique du dépôt en bref*. Restez à l'affût, d'autres présentations devraient être données au cours des prochains mois. Ces réunions sont ouvertes au public et tous sont les bienvenus. Pour de plus amples informations sur le plan canadien de gestion à long terme sûre du combustible nucléaire irradié, veuillez visiter le bureau *En savoir plus* de Hornepayne au 247, avenue Third, Suite 3, ou le site Web www.nwmo.ca.

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Pour plus d'informations sur la SGDN et sur le plan du Canada pour la gestion à long terme du combustible nucléaire irradié, veuillez visiter : **www.nwmo.ca**

The NWMO and Hornepayne
Learning Together

JUNE 2017

NMWO Seeks Local Knowledge about Proposed Borehole Locations at Open House

The Nuclear Waste Management Organization (NWMO) is hosting an **open house in Hornepayne July 11 – 12** *(See Of Note Section below) to share information and listen to comments from area residents about the next site evaluation activity that could involve borehole drilling in the area to explore sub-surface geology.*

This next site evaluation activity could involve borehole drilling in a technically suitable and socially acceptable location that has the potential to be a repository site. Desktop and surface-based field studies conducted to date show there are a number of areas that are potentially suitable for a deep geological repository from a technical safety perspective. Borehole drilling is done to obtain core samples in order to better understand the geology at or near these sites.

Participants at the open house will have an opportunity to learn more about what's involved with borehole drilling, view proposed areas for initial drilling and share local knowledge about these proposed locations. The NWMO is working collaboratively with people in the area to understand where it might focus this work. All comments that we hear at the open house will help to identify and assess a preferred location.

"We want to make sure people have a clear understanding of what's involved with drilling activities, and learn their perspective on where best to focus these studies," said Dr. Mahrez Ben Belfadhel, Vice President Site Selection for the NWMO. "We look forward to talking with area residents at the upcoming open house or the Learn More Centre over the coming months to review these areas and hear your perspectives."

We encourage community members to drop by, meet NWMO staff, share your thoughts and learn more about the process and possible next steps.

Similar studies are being planned for several siting areas in the province.

Confirming a safe site will take several years of progressively more detailed technical, scientific, social, cultural and economic studies as well as continued engagement with the community, First Nations and Métis communities in the area and surrounding communities.

What is Borehole Drilling?

The process of borehole drilling involves drilling a narrow, deep, circular hole in the ground and retrieving cylinder-shaped rock samples called core. Core samples will provide information about true orientation, thickness and other characteristics of the rock layers, such as whether or not they contain hydrocarbons.

Examples of rock core

White River and Central Huron No Longer A Focus of Geological Studies, Both to Continue to Play a Role

The Nuclear Waste Management Organization (NWMO) announced on June 23 that it is narrowing its focus as it prepares to further advance the next set of activities in the selection process for a deep geological repository for Canada's used nuclear fuel.

The Township of White River, and the Municipality of Central Huron in Southwestern Ontario will no longer be considered a potential host for the project. Both will continue to play an important role as neighbours to communities that remain in the process. For White River, this means the areas in the vicinity of Manitouwadge and Hornepayne.

"As we work toward identifying a single preferred site, we need to increasingly focus on specific locations that have strong potential to meet safety requirements and a foundation for sustained interest in exploring the project," said Dr. Mahrez Ben Belfadhel, Vice-President of Site Selection. "Central Huron and White River have each made a significant contribution on behalf of Canadians to this project, and their continued leadership will be invaluable as we work together to plan next steps in their regions."

The next activities in these areas will involve planning for sub-surface geological studies and preliminary discussions about visioning, planning and partnership. Regional engagement will continue, as the project will only proceed with interested communities, potentially affected First Nation and Métis communities, and surrounding communities working in partnership to implement it.

Ongoing work and engagement with municipal, First Nation and Métis communities in the areas around Ignace, Hornepayne, Manitouwadge, Blind River, Elliot Lake, Huron-Kinloss and South Bruce are not affected by the June 23 decision.

Identifying one preferred safe and socially acceptable site as the sole focus of study is expected to take until 2023.

Of Note...

- An Open House will be held in Hornepayne on July 11 - 12 at the Royal Canadian Legion, Branch #194 at 48 6th Avenue. Hours for July 11 are 11 a.m. to 7 p.m. and for July 12 from 11 a.m. to 5 p.m. All are welcome
- For more information about borehole drilling or Canada's plan for the safe, long-term management of used nuclear fuel, visit the Hornepayne Learn More Centre at 247 Third Avenue, Suite 3.

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La SGDN et Hornepayne
Apprendre ensemble

JUIN 2017

La SGDN mobilise le savoir local sur les sites proposés de forage exploratoire lors de journées portes ouvertes

La Société de gestion des déchets nucléaires (SGDN) tient **des journées portes ouvertes les 11 et 12 juillet à Hornepayne** *(voir la section À noter, plus bas) pour fournir des renseignements aux résidents du secteur et recueillir leurs commentaires sur la prochaine activité d'évaluation de sites, qui pourrait comprendre des travaux de forage dans le secteur pour explorer la géologie en subsurface.*

La prochaine activité d'évaluation des sites pourrait comprendre le forage de trous de sonde sur un site techniquement apte et socialement acceptable qui pourrait convenir à l'établissement d'un dépôt. Les études de bureau et les études réalisées jusqu'à maintenant sur le terrain, en surface, montrent qu'un certain nombre de secteurs seraient potentiellement propices, sur le plan technique, à l'établissement d'un dépôt géologique en profondeur. Les travaux de forages serviront à recueillir des carottes rocheuses pour mieux connaître la géologie de ces sites et des environs.

Les participants aux journées portes ouvertes auront l'occasion d'en apprendre davantage sur ce qu'impliquent ces forages exploratoires, de prendre connaissance des régions proposées pour leur réalisation et de faire part de leurs connaissances sur ces sites proposés. La SGDN travaille en collaboration avec les résidents de la région pour déterminer où elle doit mener ses travaux. Tous les commentaires reçus lors de ces journées portes ouvertes contribueront à choisir et à évaluer un site potentiel.

« Nous tenons à ce que les gens comprennent bien en quoi consistent les activités de forage et à ce qu'ils nous donnent leur avis sur les endroits où nous pourrions mener ces études », indique M. Mahrez Ben Belfadhel, Vice-président responsable de la sélection d'un site à la SGDN. « Nous avons hâte de discuter avec les résidents de la région lors de ces journées portes ouvertes ou bien, au cours des prochains mois, au Centre En savoir plus pour examiner ensemble les sites proposés et savoir ce qu'ils en pensent. »

Nous encourageons les résidents de la collectivité à venir rencontrer des membres du personnel de la SGDN, donner leur avis et en apprendre davantage sur le processus et sur les éventuelles prochaines étapes.

Nous procédons actuellement à la planification d'études similaires dans plusieurs régions de la province. Nous ne pourrons confirmer la sûreté d'un site qu'au terme de plusieurs années d'études techniques, scientifiques, sociales, culturelles et économiques de plus en plus détaillées et d'engagement de la collectivité intéressée, des collectivités des Premières nations et métisses de la région et des collectivités environnantes.

En quoi consistent les travaux de forage?

Le processus consiste à percer un trou étroit, profond et circulaire dans le sol et à extraire des échantillons rocheux cylindriques que l'on appelle des carottes. Ces carottes fourniront des renseignements sur l'orientation véritable, l'épaisseur et d'autres caractéristiques des strates rocheuses pour savoir, par exemple, si elles contiennent des hydrocarbures.

Exemples de carottes rocheuses

White River et Central Huron ne font plus l'objet d'études géologiques, mais elles continuent toutes deux de jouer un rôle

La Société de gestion des déchets nucléaires (SGDN) a annoncé le 23 juin qu'elle continuait de concentrer ses efforts alors qu'elle se prépare à entreprendre la prochaine série d'activités du processus de sélection d'un site pour un dépôt géologique en profondeur pour le combustible irradié canadien.

La Municipalité de Central Huron et le Canton de White River ne seront plus considérés comme des hôtes potentiels pour le projet. Les deux collectivités continueront de jouer un rôle important tandis que les activités se poursuivent dans les collectivités voisines participant encore au processus, c'est-à-dire, dans le cas de White River, les secteurs en périphérie de Hornepayne et de Manitouwadge.

Le canton de White River et la municipalité de Central Huron, dans le sud-ouest de l'Ontario, ne feront plus désormais l'objet d'études détaillées, mais ils continueront de jouer un rôle important en tant que collectivités voisines de collectivités participant au processus, c'est-à-dire, dans le cas de White River, les régions à proximité de Hornepayne et de Manitouwadge.

« Alors que nous progressons dans la sélection d'un site unique, nous devons concentrer de plus en plus nos efforts sur des collectivités spécifiques fortement susceptibles de satisfaire aux exigences de sûreté et faisant preuve d'un intérêt soutenu à explorer le projet, explique M. Mahrez Ben Belfadhel, Vice-président de la Sélection d'un site. Central Huron et White River ont chacune énormément contribué à ce projet au nom des Canadiens et leur leadership continu sera inestimable lorsque nous travaillerons ensemble à la planification des prochaines étapes dans la région. »

Les prochaines activités dans ces régions comprendront la planification d'études géologiques en subsurface et des discussions préliminaires en matière de vision, de planification et de partenariat. L'engagement régional se poursuivra car le projet ira de l'avant uniquement si les collectivités intéressées, les collectivités des Premières nations et métisses potentiellement touchées et les collectivités environnantes travaillent ensemble à sa mise en oeuvre.

Les travaux et le dialogue en course dans les collectivités municipales, autochtones et métisses des secteurs autour d'Ignace, Hornepayne, Manitouwadge, Blind River, Elliot Lake, Huron-Kinloss et South Bruce ne sont pas touchés par la décision du 23 juin.

Le choix d'un site sûr et socialement acceptable faisant seul l'objet des études de caractérisation détaillée devrait être fait vers 2023.

À noter...

- Des journées portes ouvertes auront lieu à Hornepayne les 11 et 12 juillet à la Légion royale canadienne, Filiale 194, au 48, 6e Avenue. L'activité du 11 juillet se tiendra de 11 h à 19 h et celle du 12 juillet de 11 h à 17 h. Tous sont les bienvenus.
- Pour en savoir plus sur les travaux de forage ou sur le plan de gestion à long terme sûre du combustible nucléaire irradié canadien, visitez le Centre En savoir plus de Hornepayne, au 247 3e Avenue, bureau 3.

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The NWMO and Hornepayne
Learning Together

NOVEMBER 2017

Students Learn about the Safe Transportation of Used Nuclear Fuel

Classes from local secondary and elementary schools recently toured the Nuclear Waste Management Organization (NWMO) transportation exhibit while it was in Hornepayne.

Several classes had an opportunity to engage with NWMO staff while viewing, firsthand, a transportation package for used nuclear fuel.

"The transport package is incredibly robust" explained Yang Sui, NWMO Mechanical Engineer. It is designed to remain tightly sealed even in severe transportation accidents. Canadian Nuclear Safety Commission regulations require transportation packages be tested through drop testing, puncture testing, fire testing, and water immersion testing. Only those packages that pass regulatory testing can be certified to transport used nuclear fuel. The container on display is one such certified package."

Students and local residents were able to see and touch a transportation package to see for themselves, the robust design which ensures the safe isolation and containment of the used nuclear fuel.

"I'm a visual and tactile learner myself, so I know seeing and touching the actual container really helps students understand the technology involved," Sui said.

Packages are made of a solid stainless steel box with walls nearly 30 centimetres thick, a lid attached with 32 15-pound bolts, and an impact limiter. They provide containment, shielding and impact resistance for the 192 used CANDU fuel bundles inside. When fully loaded, the containers weigh approximately 35 tonnes.

The transportation of used nuclear fuel in Canada is a stringently regulated activity involving both Transport Canada and the Canadian Nuclear Safety Commission (CNSC).

For more on the safe and secure transportation of used nuclear fuel www.nwmo.ca/en/transportationplanning.

Top: The NWMO's Yang Sui engages with local students who toured the NWMO's transportation exhibit. A highlight of the exhibit is an actual certified transportation package, which students and others were able to explore firsthand. *Bottom:* Secondary students, on a school field trip, tour through the NWMO's transportation exhibit to learn about the safety aspects of transporting Canada's used nuclear fuel.

Hornepayne Mayor Morley Forster takes advantage of a summer open house to provide comments to the NWMO about the next potential site evaluation activity that could involve borehole drilling. Residents were asked to share local knowledge about proposed areas for drilling. All comments from the open houses will help identify a potentially technically suitable and socially acceptable location that has the potential to be a repository site.

Of Note...

The NWMO's draft annual update to its five-year strategic plan is now available for public comment on our website. The plan lays out our work for the next five years as we narrow our focus to identifying a single, preferred location for a deep geological repository, while ensuring safety of people and the environment over the long-term. The public comment period extends to November 30, 2017. Once the review period is completed, the final document will be revised to reflect public comments. The document can be accessed at: www.nwmo.ca/implementation. Hard copies of the plan are also available at the Learn More Centre at 247 Third Avenue, Suite 3.

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La SGDN et Hornepayne
Apprendre ensemble
NOVEMBRE 2017

Des élèves se renseignent sur le transport sûr du combustible nucléaire irradié

Des classes du secondaire et du primaire de la localité ont récemment visité l'exposition sur le transport de la Société de gestion des déchets nucléaires (SGDN), qui était de passage à Hornepayne.

Plusieurs classes ont eu l'occasion de discuter avec des membres du personnel de la SGDN et de voir de près un colis de transport de combustible nucléaire irradié.

« Le colis de transport est incroyablement robuste », a expliqué Yang Sui, ingénieur en mécanique à la SGDN. « Il est conçu pour rester fermé hermétiquement même en cas d'accident grave de transport. La réglementation de la Commission canadienne de sûreté nucléaire exige que les colis de transport fassent l'objet d'épreuves de chute libre, de perforation, de résistance au feu et d'immersion dans l'eau. Seuls les colis qui répondent aux exigences réglementaires sont homologués pour le transport du combustible nucléaire irradié. Le conteneur en démonstration est un de ces colis homologués. »

Les élèves et résidents du secteur ont pu voir et toucher un colis de transport, dont la robuste conception garantit l'isolement et le confinement sûrs du combustible nucléaire irradié pendant son transport.

« J'apprends moi-même de manière très visuelle et tactile, et je sais qu'il est très utile pour les élèves de voir et de toucher un véritable colis pour comprendre la technologie sous-jacente », a ajouté M. Sui.

Les colis sont composés d'une coque aux parois en acier inoxydable massif d'une épaisseur de 30 centimètres, d'un couvercle rivé à l'aide de 32 boulons de sept kilogrammes (15 lb) et d'un limiteur d'impact. Ils ont comme fonction de confiner, de blinder et de protéger contre les chocs les 192 grappes de combustible CANDU contenus dans le dispositif. À pleine capacité, un conteneur pèse approximativement 35 tonnes.

Le transport du combustible nucléaire irradié au Canada est une activité rigoureusement réglementée, à la fois par Transports Canada et par la Commission canadienne de sûreté nucléaire (CCSN).

Pour en savoir plus sur le transport sûr et sécuritaire du combustible nucléaire irradié, visitez la page www.nwmo.ca/transportationplanning.

En haut : Yang Sui, un ingénieur en mécanique de l'équipe de la SGDN responsable du système de transport, discute avec des élèves du secteur qui ont visité l'exposition de la SGDN sur le transport. Un des éléments les plus importants de l'exposition est un colis de transport homologué, que les élèves et d'autres résidents ont pu voir de près. *En bas :* Des élèves du secondaire visitent l'exposition de la SGDN sur le transport lors d'une sortie scolaire pour en apprendre davantage sur certains aspects du transport du combustible nucléaire irradié liés à la sûreté.

Le maire de Hornepayne, M. Morley Forster, a profité d'une journée portes ouvertes cet été pour fournir des commentaires à la SGDN sur la prochaine activité d'évaluation de sites envisagée, qui pourrait comprendre des travaux de forage exploratoire. Les résidents ont été invités à faire part de leurs connaissances locales concernant les secteurs proposés pour des travaux de forage. Tous les commentaires reçus lors des journées portes ouvertes aideront à choisir un emplacement potentiel techniquement sûr et socialement acceptable pour l'établissement possible d'un dépôt.

À noter...

L'ébauche de la mise à jour annuelle du plan stratégique quinquennal de la SGDN est actuellement disponible à des fins de commentaires publics sur son site Web. Ce plan décrit les travaux que la Société prévoit réaliser au cours des cinq prochaines années, destinés notamment à réduire le nombre de collectivités en lice pour l'établissement d'un dépôt géologique en profondeur à un seul site, tout en veillant à la sécurité à long terme de la population et de l'environnement. La période de commentaires publics se terminera le 30 novembre 2017. Une fois cette période d'examen terminée, le document sera révisé pour tenir compte des commentaires fournis par le public. Le document est disponible à l'adresse www.nwmo.ca/fr/implementation et au Centre *En savoir plus* à 247, avenue Third, bureau no 3.

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The NWMO and Hornepayne
Learning Together

MARCH 2018

Norman Sandberg is the new Relationship Manager for Hornepayne and Manitouwadge area

As the communities of Hornepayne and Manitouwadge and surrounding region move forward in the Adaptive Phased Management process, they will be working with a new relationship manager. Norman Sandberg, a veteran in the municipal sector and most recently, Relationship Manager for the Nuclear Waste Management Organization (NWMO) in Blind River and Elliot Lake, has taken over the role of Relationship Manager for the Hornepayne and Manitouwadge area.

Norman takes over from John Fraser who has retired. This will be an easy transition, as he has worked in this role with the NWMO for the past six years.

Norman is looking forward to continuing his work in the Hornepayne and Manitouwadge area.

"I'm very grateful for the warm welcome from both communities," said Norman. "Our team is looking forward to building on all the great collaborative work already accomplished, and moving forward together in this learning process."

Norman brings with him a wealth of municipal experience having served on the Association of Municipalities in Ontario (AMO) and Ontario Small Urban Municipalities (OSUM) board for six years including a stint as AMO President in 2010. He was also a councillor in the Town of Collingwood for 13 years and participated in NWMO's Municipal Forum.

Norman Sandberg

Studies continue in Hornepayne and four other areas in Ontario

Elliot Lake and Blind River are no longer areas of focus

The NWMO will focus efforts on fewer areas in the site selection process for a deep geological repository for used nuclear fuel. The area around Blind River and Elliot Lake, Ontario, will no longer be considered to host the project. Studies are continuing in the vicinity of Ignace, Manitouwadge, Hornepayne, South Bruce and Huron-Kinloss, Ontario, from the original 22 that expressed interest in participating.

"We are grateful to have worked with communities in this area and for the outstanding leadership they have shown on behalf of all Canadians through their involvement in this process," said Dr. Mahrez Ben Belfadhel, Vice President of Site Selection. "The decision to narrow our focus is part of an ongoing, rigorous process to identify a single, safe site in an area with an informed and willing host and strong potential for the partnerships that will be required to implement the project."

For additional information, please visit www.nwmo.ca under News and Activities.

Next steps for Hornepayne area

The next planned geological study in the learning process for the Hornepayne area is initial borehole drilling at or near a potential repository site. These studies will advance understanding of the local geology and help assess the area's potential suitability to safely host a deep geological repository for used nuclear fuel.

Earlier studies and engagement activities helped to identify areas that have the potential to be geologically and socially suitable. Based on further technical studies and local input, potential borehole drilling locations have been identified for review by people in the area.

The Hornepayne area is one of five in Ontario currently involved in the site selection process. Ultimately the project will require the involvement of surrounding communities, including First Nation and Métis communities working in partnership to advance the project.

Opportunity for employment with the NWMO

The NWMO is seeking to hire a locally-based individual to help facilitate important engagement work in Hornepayne and Manitouwadge, Ontario region involved in the site selection process.

The successful candidate must reside in the area and will work out of the community office in either Hornepayne or Manitouwadge, Ontario. Extensive travel within both communities and surrounding area is required. This is a contract position.

For more information: www.nwmo.ca/careers.

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The *NWMO and and Hornepayne Learning Together* mini-newsletter is a community-oriented feature designed to encourage learning and discussion about Canada's plan for the long-term management of used nuclear fuel and the site selection process. We welcome your questions. Please forward your questions to askthenwmo@nwmo.ca or call us at 1.866.249.6966. Find us on Facebook, Instagram and Twitter.

For more information about the NWMO and Canada's plan for the long-term management of used nuclear fuel, please visit: **www.nwmo.ca**

La SGDN et Hornepayne
Apprendre ensemble

MARS 2018

Norman Sandberg est le nouveau responsable des relations pour le secteur de Hornepayne et de Manitouwadge

Alors qu'elles continueront d'avancer dans le processus de la Gestion adaptative progressive, les collectivités de Hornepayne et de Manitouwadge et celles de la région environnante travailleront dorénavant avec un nouveau responsable des relations. M. Norman Sandberg, un vétéran du secteur municipal qui était encore récemment affecté à Blind River et à Elliot Lake comme responsable des relations pour la Société de gestion des déchets nucléaires (SGDN), vient d'assumer la fonction de responsable des relations pour le secteur de Hornepayne et de Manitouwadge.

M. Sandberg remplacera M. John Fraser, qui a pris sa retraite. La transition sera facile, puisque M. Sandberg occupe ce type de poste à la SGDN depuis maintenant six ans.

Il sera très heureux de poursuivre son travail dans le secteur de Hornepayne et de Manitouwadge.

« Je suis reconnaissant de l'accueil chaleureux que m'ont réservé les deux collectivités », a indiqué M. Sandberg. « Notre équipe est impatiente de poursuivre le formidable travail de collaboration déjà entrepris et de cheminer avec la région dans ce processus d'apprentissage. »

M. Sandberg possède une vaste expérience de la sphère municipale, ayant été pendant six ans membre des conseils d'administration de l'Association of Municipalities of Ontario (AMO) et des Ontario Small Urban Municipalities (OSUM), notamment en qualité de président de l'AMO en 2010. Il a de plus été conseiller municipal de la ville de Collingwood pendant 13 ans et a participé au Forum municipal de la SGDN.

Norman Sandberg

Les études se poursuivent à Hornepayne et dans quatre autres secteurs en Ontario

Le secteur d'Elliot Lake et de Blind River ne fait plus l'objet d'études

La SGDN concentrera ses efforts sur un nombre plus restreint de secteurs pour la sélection d'un site en vue de l'établissement d'un dépôt géologique en profondeur de combustible nucléaire irradié. Le secteur autour de Blind River et d'Elliot Lake, en Ontario, ne sera plus considéré comme un hôte potentiel pour le projet. Les études se poursuivent dans les secteurs entourant Ignace, Manitouwadge, Hornepayne, South Bruce et Huron-Kinloss, en Ontario, cinq des vingt-deux collectivités qui avaient initialement exprimé leur intention de participer au processus.

« Nous sommes reconnaissants d'avoir pu travailler avec les collectivités de ce secteur et d'avoir bénéficié du remarquable leadership qu'elles ont manifesté au nom de tous les Canadiens lors de leur participation à ce processus », a indiqué M. Mahrez Ben Belfadhel, vice-président responsable de la sélection d'un site. « La décision de concentrer nos activités sur un nombre réduit de collectivités fait partie d'un processus continu et rigoureux qui mènera au choix d'un site unique sûr, au sein d'un secteur associé à un hôte informé et consentant, où la probabilité est forte que les partenariats nécessaires à la mise en œuvre du projet puisse se nouer. »

Pour en savoir plus, veuillez suivre le lien « Nouvelles et activités » à l'adresse www.nwmo.ca/fr.

Prochaines étapes pour le secteur de Hornepayne

La prochaine étude géologique prévue dans le processus d'apprentissage pour le secteur de Hornepayne sera le forage d'un trou de sonde initial sur ou à proximité d'un site potentiel de dépôt. Ces études visent à mieux connaître la géologie locale et à évaluer plus avant la capacité potentielle d'un secteur à accueillir en toute sûreté un dépôt géologique en profondeur de combustible nucléaire irradié.

Les études et activités de mobilisation antérieures avaient aidé à déterminer les secteurs qui sont susceptibles de convenir au projet sur les plans géologique et social. D'après des études techniques réalisées par la suite et des avis recueillis localement, des sites potentiels de forage exploratoire ont été ciblés en vue d'être examinés par les résidents du secteur.

Le secteur de Hornepayne est l'un des cinq secteurs en Ontario qui participent actuellement au processus de sélection d'un site. À terme, la réalisation du projet nécessitera la participation, dans le cadre d'un partenariat, des collectivités environnantes, y compris des collectivités des Premières nations et des Métis.

Possibilité d'emploi à la SGDN

La SGDN souhaite engager localement une personne qui aura comme mandat d'aider à organiser des activités importantes de dialogue dans le secteur de Hornepayne et de Manitouwadge, en Ontario, qui participe actuellement au processus de sélection d'un site.

La personne retenue doit résider dans le secteur. Elle devra travailler depuis le bureau local de Hornepayne ou de Manitouwadge, en Ontario. Des déplacements fréquents au sein des deux collectivités et du secteur environnant seront exigés. Il s'agit d'un poste contractuel.

Pour de plus amples informations : www.nwmo.ca/fr/careers.

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Le mini-bulletin *La SGDN et Hornepayne apprendre ensemble* est un outil de communication de portée locale qui vise à stimuler l'apprentissage et la discussion sur le plan canadien de gestion à long terme du combustible nucléaire irradié et le processus de sélection d'un site. Vos questions sont les bienvenues. Vous pouvez transmettre vos questions par courriel à askthenwmo@nwmo.ca, ou par téléphone, au 1 866 249-6966. Vous pouvez aussi nous joindre sur Facebook.

Pour plus d'informations sur la SGDN et sur le plan du Canada pour la gestion à long terme du combustible nucléaire irradié, veuillez visiter : **www.nwmo.ca**

C3. NWMO News Release

News Release: NWMO to Focus Field Studies on Fewer Communities

June, 2017 | Toronto

No more geological studies planned in Central Huron and White River, both to continue to play a role

TORONTO, June 23, 2017 –The Nuclear Waste Management Organization (NWMO) is narrowing its focus to fewer communities as it prepares to further advance the next set of activities in the selection process for a deep geological repository for Canada's used nuclear fuel.

The Municipality of Central Huron and the Township of White River will no longer be considered a potential host for the project. Both will continue to play a role as activities continue in nearby communities of Huron-Kinloss and South Bruce in the southwest, and to the northwest in the vicinity of Hornepayne and Manitouwadge.

"As we work toward identifying a single preferred site, we need to increasingly focus on specific locations that have strong potential to meet safety requirements and a foundation for sustained interest in exploring the project," said Dr. Mahrez Ben Belfadhel, Vice-President of Site Selection. "Central Huron and White River have each made a significant contribution on behalf of Canadians to this project, and their continued leadership will be invaluable as we work together to plan next steps in their regions."

The next activities in the areas of Huron-Kinloss and South Bruce; and Hornepayne and Manitouwadge will involve planning for more geological studies and initial discussions about visioning and partnership. Regional engagement will continue, as the project will only proceed with interested communities, potentially affected First Nation and Métis communities, and surrounding communities working in partnership to implement it.

Studies continue in areas around Ignace, Blind River and Elliot Lake, Ontario, which are also engaged in the process for siting the national infrastructure project. Ongoing field activities and engagement with municipal, First Nation and Métis communities in those regions are not affected by today's decision.

The NWMO will continue the process of narrowing down potential sites to host the project until it arrives at one preferred safe and socially acceptable site as the focus of more detailed site characterization. The preferred site must have a suitable rock formation in an area with an informed and willing host.

About the NWMO

The Nuclear Waste Management Organization (NWMO) is implementing Canada's plan for the long-term management of used nuclear fuel. The organization was created in 2002 by Canada's nuclear electricity producers. Ontario Power Generation Inc., NB Power Nuclear and Hydro-Québec are the founding members, and along with Atomic Energy of Canada Limited, fund the NWMO's operations. The NWMO operates on a not-for-profit basis and derives its mandate from the Federal Nuclear Fuel Waste Act.

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La SGDN concentre ses études sur le terrain sur un nombre réduit de collectivités

juin, 2017 | Toronto

Aucune nouvelle étude géologique prévue à Central Huron et White River; les deux collectivités continuent de jouer un rôle.

TORONTO, 23 juin 2017 – La Société de gestion des déchets nucléaires (SGDN) continue de concentrer ses efforts sur un nombre réduit de collectivités alors qu'elle se prépare à aller de l'avant avec la prochaine série d'activités du processus de sélection d'un site pour un dépôt géologique en profondeur pour le combustible irradié canadien.

La Municipalité de Central Huron et le Canton de White River ne seront plus considérés comme des hôtes potentiels pour le projet. Les deux collectivités continueront de jouer un rôle important tandis que les activités se poursuivent dans les collectivités voisines de Huron-Kinloss et South Bruce, au sud-ouest, et à proximité de Hornepayne et Manitouwadge, au nord-ouest.

« Alors que nous progressons dans la sélection d'un site unique, nous devons concentrer de plus en plus nos efforts sur des collectivités spécifiques fortement susceptibles de satisfaire aux exigences de sûreté et faisant preuve d'un intérêt soutenu à explorer le projet, explique M. Mahrez Ben Belfadhel, Vice-président de la Sélection d'un site. Central Huron et White River ont chacune énormément contribué à ce projet au nom des Canadiens et leur leadership continu sera inestimable lorsque nous travaillerons ensemble à la planification des prochaines étapes dans leurs régions. »

Les prochaines activités dans la région de Huron-Kinloss et South Bruce ainsi que dans celle de Horneypayne et Manitouwadge incluront la planification d'études géologiques additionnelles et des discussions initiales sur la vision de l'avenir et le partenariat. L'engagement régional se poursuivra car le projet ira de l'avant uniquement si les collectivités intéressées, les collectivités des Premières nations et métisses potentiellement touchées et les collectivités environnantes travaillent ensemble à sa mise en oeuvre.

Les études continuent dans les régions autour d'Ignace, Blind River et Elliot Lake, en Ontario, qui sont également impliquées dans le processus de sélection d'un site pour ce projet d'infrastructure national. Les activités sur le terrain et l'engagement en cours avec les collectivités municipales, des Premières nations et métisses au sein de ces régions ne seront pas affectés par la décision annoncée aujourd'hui.

La SGDN poursuivra le processus de réduction du nombre de sites hôtes potentiels pour le projet jusqu'à l'identification d'un site unique sûr et socialement acceptable pour la réalisation d'études de caractérisation plus détaillées. Le site choisi devra disposer d'une formation rocheuse appropriée dans une région avec un hôte informé et consentant.

À propos de la SGDN

La Société de gestion des déchets nucléaires (SGDN) met en oeuvre le plan canadien de gestion à long terme du combustible nucléaire irradié. La Société a été créée en 2002 par les producteurs canadiens d'électricité d'origine nucléaire. Ontario Power Generation Inc., Énergie nucléaire NB et Hydro-Québec, les membres fondateurs de la SGDN, ainsi qu'Énergie atomique du Canada limitée, financent les activités de la Société. La SGDN est un organisme à but non lucratif et son mandat tire son origine de la Loi sur les déchets de combustible nucléaire.

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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

FOR IMMEDIATE RELEASE

Blind River, Elliot Lake and area no longer part of site selection for used nuclear fuel project

NWMO provides funding to recognize leadership in advancing Canada's Plan

TORONTO, December 6, 2017 – The Nuclear Waste Management Organization (NWMO) will focus efforts on fewer areas in the site selection process for a deep geological repository for used nuclear fuel. The area around Blind River and Elliot Lake, Ontario will no longer be considered to host the project. Studies are continuing in the vicinity of five other communities, including Ignace, Manitouwadge, Hornepayne, South Bruce and Huron-Kinloss, Ontario, from the original 22 that expressed interest in participating.

Technical studies and engagement with people in the area identified a number of factors that would pose challenges in siting a repository. These include complexities associated with the geology, limited access and rugged terrain, and low potential to develop the breadth of partnerships needed to implement the project.

"We are grateful to have worked with communities in this area and for the outstanding leadership they have shown on behalf of all Canadians through their involvement in this process," said Dr. Mahrez Ben Belfadhel, Vice President of Site Selection. "The decision to narrow our focus is part of an ongoing, rigorous process to identify a single, safe site in an area with an informed and willing host and strong potential for the partnerships that will be required to implement the project."

In recognition of their leadership, the municipal and First Nation communities that led siting activities in the area will be eligible for funding to support investments in community sustainability and well-being. Blind River, Elliot Lake and Sagamok Anishnawbek First Nation will receive $600,000. The neighbouring communities of Spanish and The North Shore will receive $300,000. The contributions will be made to their community well-being reserve funds.

Since 2010, the NWMO has been engaged in a multi-year, community-driven process to identify a preferred site for a deep geological repository for Canada's used nuclear fuel. The NWMO expects to be in a position to select a preferred site by about 2023.

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

About the NWMO

The purpose of the Nuclear Waste Management Organization (NWMO) is to develop and implement, collaboratively with Canadians, a management approach for the long-term care of Canada's used nuclear fuel that is socially acceptable, technically sound, environmentally responsible and economically feasible. The NWMO was created in 2002 by Canada's nuclear electricity producers, with 2017 marking 15 years of operations. Ontario Power Generation Inc., NB Power Nuclear and Hydro-Québec are the founding members, and along with Atomic Energy of Canada Limited, fund the NWMO's operations. The NWMO operates on a not-for-profit basis and derives its mandate from the federal *Nuclear Fuel Waste Act*, which came into force in November 2002.

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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

DIFFUSION IMMÉDIATE

Blind River, Elliot Lake et le secteur environnant ne font plus partie du processus de sélection pour le projet de dépôt de combustible irradié

La SGDN accorde un financement en reconnaissance du leadership manifesté dans le cadre de la mise en œuvre du plan canadien

TORONTO, le 6 décembre 2017 – La Société de gestion des déchets nucléaires (SGDN) concentrera ses efforts sur un nombre plus restreint de secteurs pour la sélection d'un site pour un dépôt géologique en profondeur de combustible nucléaire irradié. Le secteur autour de Blind River et d'Elliot Lake, en Ontario, ne sera plus considéré comme un hôte potentiel pour le projet. Les études se poursuivent dans les secteurs entourant cinq autres collectivités ontariennes, Ignace, Manitouwadge, Hornepayne, South Bruce et Huron-Kinloss, des 22 collectivités qui avaient initialement exprimé leur intention de participer au processus.

Les études techniques et les activités de mobilisation menées en collaboration avec des gens du secteur ont permis de relever un certain nombre de facteurs qui poseraient des difficultés au regard de l'établissement d'un dépôt. Ces difficultés comprennent des complexités d'ordre géologique, un accès limité, une topographie accidentée et une faible probabilité de pouvoir conclure l'éventail des partenariats requis pour mettre en œuvre le projet.

« Nous sommes reconnaissants d'avoir pu travailler avec les collectivités de ce secteur et d'avoir bénéficié du remarquable leadership qu'elles ont manifesté au nom de tous les Canadiens dans le cadre de leur participation à ce processus », a indiqué M. Mahrez Ben Belfadhel, vice-président responsable de la sélection d'un site. « La décision de concentrer nos activités fait partie d'un processus continu et rigoureux qui mènera au choix d'un site unique sûr, au sein d'un secteur associé à un hôte informé et consentant, où il sera fort probable que les partenariats nécessaires à la mise en œuvre du projet pourront se nouer. »

En reconnaissance de leur leadership, les collectivités municipales et des Premières nations qui ont fait réaliser des activités liées au processus de sélection d'un site dans leur secteur seront admissibles à un financement visant à les aider à investir dans leur viabilité et leur bien-être. Blind River, Elliot Lake et la Première nation de Sagamok Anishnawbek recevront un financement de 600 000 dollars. Les collectivités voisines de Spanish et de The North Shore recevront une somme de 300 000 dollars. Ces contributions seront versées à leurs Fonds de réserve pour le bien-être de la collectivité.

Depuis 2010, la SGDN travaille à la mise en œuvre d'un processus pluriannuel, axé sur les collectivités, qui vise à choisir un site de prédilection pour un dépôt géologique en profondeur

où sera stocké le combustible nucléaire irradié canadien. La SGDN prévoit être en mesure de choisir un tel site d'ici approximativement 2023.

À propos de la SGDN

L'objectif de la Société de gestion des déchets nucléaires (SGDN) est d'élaborer et de mettre en œuvre, en collaboration avec les Canadiens, une méthode de gestion à long terme du combustible nucléaire irradié canadien qui soit socialement acceptable, techniquement sûre, écologiquement responsable et économiquement viable. La SGDN a été créée en 2002 par les producteurs canadiens d'électricité d'origine nucléaire. Ontario Power Generation Inc., Énergie nucléaire NB et Hydro-Québec, les membres fondateurs de la SGDN, ainsi qu'Énergie atomique du Canada limitée, financent les activités de la Société. La SGDN est un organisme à but non lucratif et tire son mandat de la *Loi sur les déchets de combustible nucléaire*, une loi fédérale qui est entrée en vigueur en novembre 2002.

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C4. Social Media Coverage

Posting of the 2018 open house on NWMO and NWCLC Facebook pages

Nuclear Waste Management Organization

Published by Asif Hossain [?] · 7 March ·

Drop by the Manitouwadge Community Centre on Wednesday and Thursday from 11 a.m. to 7 p.m. We're hosting an open house, and would love to hear your thoughts.

246 people reached

Boost Post

Like Comment Share

Karen Girard-Robinson and Mark Osiecki

6 shares

C5. Hornepayne Area Media Coverage

Potential Borehole Drilling

By Cheryl Fort

On Monday March 5 and Tuesday March 6 from 11am to 7pm, both days the Nuclear Waste Management Organization (NWMO) held a community open house to learn more about potential borehole drilling in our area.

The open house was an opportunity for citizens to learn more about the project and to share their thoughts about the next planned activity: drilling an initial borehole at or near a potential repository site in order to further understand the geology.

"What is borehole drilling?

A borehole is a narrow, deep, circular hole made in the ground using motorized equipment (drilling equipment). The process involves drilling the borehole and retrieving cylinder-shaped rock samples, called core. A wide range of testing is preformed on the samples of the core and in the borehole to investigate properties of the rock." *Taken from NWMO pamphlet*

At the open-house there was a sample core available for people to touch and see.

"**How deep will the boreholes be?**

Boreholes will be drilled and cored to a depth of about one kilometre. It is anticipated that the deep geological repository in the type of geology found in the area (crystalline roc) would be developed at a depth of approximately 500 metres below ground surface. Deep boreholes are required to assess suitability of the host rock at depth." *Taken from NWMO pamphlet*

The NWMO is seeking your input and have a two questions on a form that you can submit. You can pick up a form at our NWMO community office and you can either submit it at the office or mail it directly to NWMO in Toronto.

The two questions are:

1. Are you aware of any social, economic, cultural or natural environment matters in relation to the proposed potential borehole sites or the temporary access roads that may be needed?
2. If so, what are they and how should they be addressed?

There are three potential site locations, all located to the south of Hornepayne about 20kms. There is still time to get your voice heard.

Another avenue to get some answers: Wicksteed Weekly has been invited along with other news reporters to visit at the Western Waste Management Facility this coming March 22. Please email me at chittecreek@gmail.com with questions or information that you would like to know. There is much to learn about nuclear waste and alone I can not think of every question to propose and will definitely be a voice.

10 Things I Wish I Knew Before University: Part I

By Melissa Dane

That summer before I went to university, I thought I had it all figured out. I had been researching schools across the world since grade nine, applied to scholarships my guidance counsellor had never even heard of and had even written extracurricular essays in practice for my first year away. (In retrospect, I don't recommend the last one). Regardless, you would say I was the most prepared and knowledgeable high school graduate about post-secondary and what to expect. It was kind of scary, just ask my mother. But despite all this preparation there were still countless things I learned in my first year that I think would have made a difference if I knew beforehand. So, I've compiled a list of ten of them, which will be told over this week's article and next week's. Also, some of these may university centric, but most apply to college as well.

1. Schedule Time to Waste Time

This was absolutely the hardest lesson I learned in my first year, and one that I still grapple with today. When you go away to school life gets busy and your time starts disappearing at a speed you've never experienced before. Being the perfectionist over-achiever that I am, I tried (and sometimes still try) to schedule every part of my week down to the minute. While time management is a necessary skill of life, relaxing and just doing nothing are sometimes just as critical. Make sure to schedule time to see your friends, watch cat videos on YouTube, and the occasional sleep in. These are the kinds of things that will keep you sane throughout the year. I've also realized that when I over-schedule myself my assignments are not as great and I'm almost 100% guaranteed to get sick. Now, I try to operate at an average of 85%, so for every day I spend crammed in the library for 16 hours, I give myself one day to do what I want to do. Which sometimes is nothing at all.

2. You're Going to Feel Overwhelmed – and It's Okay

When I first started reading about university, everyone talked about feeling overwhelmed. Naively, I thought that with the right schedule, fitness routine, consistent sleep, and daily fruit count that I would avoid this. That is not what university is about. You are meant to get pushed and stretched. That's why you're here. And if your program isn't as challenging as you expected, I assure you that navigating life on your own will be stressful enough. But that's okay and everyone is feeling it too. So, talk to them. Or call your mom. Or call your best friend from high school even if you haven't talked since August, because they're feeling it too one way or another. And there's no avoiding it because those stressful feelings, they're called growing up.

3. For Your Sanity, Buy a Referencing Guide

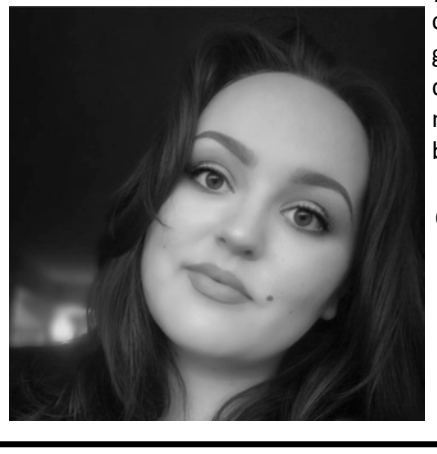
You will have to write a lot of essays and papers when you go to university, if you're in a social sciences program. All these essays must follow the same referencing style – APA, MLA, Chicago style. Once you get to school and get a sense of which referencing style you be using, buy the book. You'll have to be very specific with your citations and will be using so many different resources than you ever did in high school. These guidebooks explain everything you'll need to know and will make sure your papers are perfect every time you hand them in.

4. Participate in Class

Ask questions and discuss points in your classes, especially if you're lucky enough to have smaller sized ones. Not only will it help you learn the material better and make your assignments easier, but your professors will notice too. Pushing that participation outside of the classroom and into your professor's office hours also helps. Professors are much more likely to help you out if you've taken the time to show interest in their course.

5. Attend Everything You Can

University courses usually give participation grades for students who come to class. Make sure you go and claim those grades, you'll thank yourself at the end of the years. Attend everything outside of your classes too. Universities have so much going on, try their movie nights, clubs and different events. Bring your friends or make friends there. Those events could become your favourites of the year.



Check back next week when I finish off the next 5 items on this list!

Appendix D: Chronological Order of Borehole Engagement Activities in Hornepayne – 2017 & 2018

Activity	Date
Stage 2: 2017 Engagement on PGSAs in Hornepayne Area	
Meeting with MPP, Algoma-Manitoulin to provide siting update and review of assessment approach	March 27, 2017
Meeting with MP, Algoma-Manitoulin to provide siting update and review of assessment approach	April 6, 2017
Hornepayne NWCLC meeting (introduce PGSAs/ borehole ovals)	June 28, 2017
Interviews with Township CAO/ Clerk and Councillor	Week of July 3, 2017
Interview with Member of Hornepayne Snowbears Snowmobile Club & Land user in north-east withdrawal area	Week of July 3, 2017
Interview with President of Hornepayne Lumber and President of Nagagami Forest Management (holder of the Sustainable Forest Licence for the Nagagami Forest)	Week of July 3, 2017
Hornepayne Open House, Day 1 (discuss PGSAs/ 'ovals')	July 11, 2017
Interview with operator of a remote tourism camp on Larkin Lake during the open house	July 11, 2017
Interview with Manager of Jackfish River Management	July 11, 2017
Hornepayne NWCLC meeting (further discussion of PGSAS)	July 11, 2017
Hornepayne Open House, Day 2 (discuss PGSAs)	July 12, 2017
Interviews with Hornepayne Mayor and Township Staff during the open house	July 11 & 12, 2017
Interviews with owners of cottages on West Larkin Lake during the open house	July 11 & 12, 2017
NWMO provided a project briefing to a remote tourism operator via telephone and sent a borehole site public comment form via email.	July 17, 2017
NWMO provided a Project briefing to the owner of a remote tourism operation via telephone and provided a public comment form regarding preferences of the PGSAs for potential borehole drilling via email	July 17, 2017
Interview with owner of an outfitting operation on West Larkin Lake and business partner	July 19, 2017
Meeting with West Larkin Cottagers Association (18 cottagers attended)	July 19, 2017
Interview with local trapper (WA 168)	July 20, 2017
Interview with Hornepayne Economic Development Committee Staff	July 20, 2017
Interview with Township Councillor	July 20, 2017
Meeting with Marathon Mayor on July Open Houses regarding the PGSAs (ovals) engagement process, and update on siting process	Aug 1, 2017
Meeting with Greenstone (Caramat) Councillor regarding the PGSAs (ovals) engagement process, and update on siting process	Aug 2, 2017

Activity	Date
Phone briefing with Hearst Mayor on July Open Houses regarding the PGSAs (ovals)	Aug 3, 2017
Presentation to Northeast Superior Mayors Group (NESMG) meeting in Wawa regarding the PGSAs (ovals) engagement process, and update on siting process	September 11, 2017
Meeting with MP, Algoma-Manitoulin to provide siting update and information on planned work and timelines for remaining communities	December 6, 2017
Meeting with MPP, Algoma-Manitoulin to inform re: Siting update / planned work and timelines for remaining communities; noted discussions with communities of Hornepayne and Manitouwadge to identify a technically suitable and socially acceptable potential repository site and prepare for borehole drilling in one of the two communities	December 11, 2017
Stage 3: 2018 Engagement on Matters Related to Proposed Borehole Locations	
Hornepayne NWCLC meeting, with update presentation provided by NWMO, including future proposed borehole drilling engagement	January 9, 2018
Hornepayne NWCLC meeting, with presentation provided by NWMO on proposed borehole drilling activities and locations (BH01, BH02, BH03) in ovals I and J	February 13, 2018
Interview with Manager of Jackfish River Management	February 22, 2018
Interview with Manager of Hornepayne Lumber /President of Nagagami Forest Management (holder of the Sustainable Forestry Licence for the Nagagami Forest)	February 22, 2018
Interview with local trapper (WA 168)	February 23, 2018
Hornepayne Open House, Day 1	March 5, 2018
Hornepayne Open House, Day 2	March 6, 2018
Meeting at open house with operator of remote tourism camp at Larkin Lake to the east of Hwy 631 and operator of BMA HE-22-010	March 6, 2018
Meeting at open house with owner of rental properties in town and remote tourism camp 20 to 25 km southeast of proposed borehole locations	March 6, 2018
Interviews at open house with President of the Hornepayne Snowbears Snowmobile Club and two other members of the snowmobile club	March 6, 2018
Meetings with the owners of 7 West Larkin Lake cottages at the March 5 and 6, 2018 open houses	March 5/6, 2018 Open House
Meetings with Hornepayne Mayor and Council members at the March 5 and 6, 2018 open houses	March 5/6, 2018 Open House
Meeting with MPP, Algoma-Manitoulin to inform that NWMO is advancing discussions with Hornepayne and Manitouwadge to identify a technically suitable and socially acceptable potential repository site and prepare for borehole drilling in one of the two communities. Utilized maps to show parcels of land under consideration. Agreed to keep MPP updated on the progress made in identifying the preferred area.	March 7, 2018

Activity	Date
Meeting with operator of bear management area BMA HE-21B-084 (directly overlays BH locations/ovals), operator of baitfish management area WA0245 (overlays the 3 proposed borehole areas) and owner of outfitting lodge on West Larkin Lake (approximately 5+ km north of borehole areas)	March 13, 2018
Hornepayne NWCLC meeting with follow-up on engagement for proposed borehole drilling activities and locations	March 13, 2018
Meeting with White River CAO to provide project update, including proposed borehole drilling activities and locations (provided digital copy of maps April 4 and hard copies April 9, 2018).	March 14, 2018
Meeting with three Indigenous Hornepayne residents to discuss traditional knowledge and historic use of the area	March 14, 2018
Meeting with West Larkin Lake Cottagers Association Total of 23 individuals attended (15 cottagers attended, in addition to 8 other individuals with land tenure/ interests near or in the immediate proximity of the proposed borehole locations (e.g., trapping, camps/cottages, including trapper at WA 177; Hornepayne First Nation Councillor, family owning cabin on Corner Lake)	March 14, 2018
Meeting with trappers of WA 177 (in immediate proximity of proposed borehole locations)	March 21, 2018
Meeting with owners of camp on deeded land on SW shore of Corner Lake (approximately 1 km from proposed BH01)	March 21, 2018
Meeting with owners of camp on leased land on SW shore of Burnt Lake (between BH01 and BH03)	March 21, 2018
Meeting with owner of a West Larkin Lake cottage (not previously engaged in 2018 borehole discussions)	April 4, 2018
Meeting with owner of a West Larkin Lake cottage (not previously engaged in 2018 borehole discussions)	April 5, 2018
Meeting with trapper of WA 172 (in immediate proximity of proposed borehole locations)	April 5, 2018
Hornepayne NWCLC meeting including update presentation on engagement on the proposed borehole locations	April 10, 2018
Meeting with trapper of WA 175 (in immediate proximity of the proposed borehole locations)	April 11, 2018
6 Larkin Lake cottagers do not reside in Hornepayne. E-mails sent to 3 (some of whom have been previously engaged in discussions on proposed borehole drilling activities), with follow-up to come. Call made to 1 with follow-up to come. NWMO unable to contact remaining two to date.	April 2018

APPENDIX E: Hornepayne CLC Meeting Agendas

Hornepayne
Nuclear Waste Community Liaison Committee

Learning More About Canada's Plan for the Long-Term Management of Used Nuclear Fuel

Learn More Community Office
247 Third Avenue, P.O Box 177
Hornepayne, Ontario, P0M 1Z0
Phone # 807-868-9997
Fax # 807-868-9907
hornepaynenwclc@gmail.com

Regular Monthly Meeting:
Wednesday April 12th 2017
Time: 6:00pm
Royal Canadian Legion Branch #194
48 Sixth Avenue,
Hornepayne, Ontario

Agenda

1. Meeting called to order
    a. Approval to open Tonight's April 12th meeting
2. Review Agenda
    a. Approval of Tonight's April 12th Agenda
3. Review March 7th meeting minutes
    a. Approval of March 7th Meeting Minutes
4. Project Coordinator Report
    a. Approval of Project Coordinator Report
5. NWMO report to committee on recent activity
    a. ICGR Conference Update
    b. Update on Community Planning Initiative
    c. Municipal Engagement (Regional Engagement) Outlook
        i. NOMA - April 26-29
        ii. FONOM - May 11-13
        iii. North East Superior Mayors Group – June
        iv. Briefings for Marathon, Greenstone, Hearst, Kapuskasing - June
    d. Planning for Interim Storage Facility Tours in 2017
    e. Transportation Questions from the Committee
6. Discussion of Recent Events in and around the Community
7. Presentation by NWMO Director Social Research and Dialogue, Jo-Ann Facella and Relations Manager John Fraser "Briefing on Planning for Initial Borehole Drilling and Testing in the North of Superior"
8. Responses to any Questions Raised
9. Other Business
    a. "Special" meeting for Training Presentation by Gail Jaremy
    b. Confirm Next Meeting date-May 23rd change to May 10th
10. Meeting Closure
    a. Approval for April 12th Meeting Closure

Hornepayne
Nuclear Waste Community Liaison Committee

NWCLC

Learning More About Canada's Plan for the Long-Term Management of Used Nuclear Fuel

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Hornepayne, Ontario, P0M 1Z0
Phone # 807-868-9997
Fax # 807-868-9907
hornepaynenwclc@gmail.com

Regular Monthly Meeting:
Wednesday June 28th 2017
Time: 6:00pm
Royal Canadian Legion Branch #194
48 Sixth Avenue,
Hornepayne, Ontario

Agenda

1. Meeting called to order
    a. *Resolution No. 17-25* Approval to open Tonight's June 28th meeting
2. Review Agenda
    a. *Resolution No. 17-26* Approval of Tonight's June 28th Agenda
3. Review May 8th meeting minutes
    a. *Resolution No. 17-27* Approval of May 8th Meeting Minutes
4. Project Coordinator Report
    a. *Resolution No. 17-28* Approval of Project Coordinator Report
5. NWMO report to committee on recent activity
    a. Review of recent stocktaking activities: John Fraser
    b. Outline of Next Steps in Engagement: Activities and Logistics: John Fraser
    c. Presentation
        i. Overview of Geoscience Assessments and Next Steps in Engagement: NWMO Special Presenter
    d. Update on Community Planning Initiative
    e. Municipal Engagement (Regional Engagement) Outlook
        i. North East Superior Mayors Group-September
        ii. Briefings for Marathon, Greenstone, Hearst, Kapuskasing-July
        iii. Associations of Municipalities Ontario (AMO) Conference-August
    f. Update on CSR Submissions
6. Discussion of Recent Events in and around the Community

a. Dry Storage Tour May 15th~Trenton Moore
b. Community Spirit Day~June 17th rescheduled at a date yet to be determined.
c. Canada 150 Celebration July 1st

7. Responses to any Questions Raised
8. Other Business
   a. *Resolution No. 17-29* Approval of Regional Nuclear Waste Community Liaison Committee (RNWCLC) February 15th Minutes
   b. *Resolution No. 17-30* Approval to have a named committee member as a designate for the CLC Chair to attend Regional Nuclear Waste Community Liaison Committee.
   c. *Resolution No. 17-31* Approval to host a special meeting in August the week of 15th~18th for speaker Dr. Jason Donev from the University of Calgary to give a presentation on "Nuclear 101".
   d. *Resolution No. 17-32* Approval of Hornepayne Nuclear Waste Community Liaison Committee Facebook page.
   e. Confirm Next Meeting date~July 11th
9. Meeting Closure
   a. *Resolution No. 17-33* Approval for June 28th Meeting Closure

Hornepayne
Nuclear Waste Community Liaison Committee

NWCLC

Learning More About Canada's Plan for the Long-Term Management of Used Nuclear Fuel

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Hornepayne, Ontario, P0M 1Z0
Phone # 807-868-9997
Fax # 807-868-9907
hornepaynenwclc@gmail.com

Regular Monthly Meeting:
Wednesday July 11th 2017
Time: 7:00pm
Royal Canadian Legion Branch #194
48 Sixth Avenue,
Hornepayne, Ontario

Agenda

1. Meeting called to order
    a. *Resolution No. 17-34* Approval to open Tonight's July 11th meeting
2. Review Agenda
    a. *Resolution No. 17-35* Approval of Tonight's July 11th Agenda
3. Review June 28th meeting minutes
    a. *Resolution No. 17-36* Approval of June 28th Meeting Minutes
4. Project Coordinator Report
    a. *Resolution No. 17-37* Approval of Project Coordinator Report
5. NWMO report to committee on recent activity
    a. Discussion following the Open House on Geologically Suitable Areas for Potential Initial Borehole Drilling Based on Early Phase 2 Studies.
6. Discussion of Recent Events in and around the Community
    a. Canada 150 Celebration July 1st
7. Responses to any Questions Raised
8. Other Business
    a. Correspondence from Ken Fraser re: Dr. Gordon Edwards
    b. Confirm Next Meeting date-September 26th
9. Meeting Closure
    a. *Resolution No. 17-38* Approval for July 11th Meeting Closure

Hornepayne
Nuclear Waste Community Liaison Committee

NWCLC

Learning More About Canada's Plan for the Long-Term Management of Used Nuclear Fuel

Agenda

Regular Monthly Meeting

Tuesday, February 13th 2018 at 6:00pm

Royal Cdn Legion Branch No. 194
48 Sixth Ave, Hornepayne, Ontario

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1. Meeting called to order
    a. *Resolution No. 18-06* Approval to open tonight's February 13th meeting
2. Review and Note any Changes to Agenda
3. Approval of Agenda
    a. *Resolution No. 18-07* Approval of tonight's February 13th Agenda
4. Approval of prior meeting minutes
    a. *Resolution No. 18-08* Approval of amended September 26th Meeting Minutes
    b. *Resolution No. 18-09* Approval of amended November 14th Meeting Minutes
    c. *Resolution No. 18-10* Approval of January 9th Meeting Minutes
5. Project Coordinator Report
    a. *Resolution No. 18-11* Approval of Project Coordinator Report
6. NWMO Report to Committee on Recent Activity
    a. Introduction of NWMO Relation Manager
    b. Aboriginal Engagement Update
    c. Communications Update
    d. Discussion of possible borehole locations
    e. Discussion regarding March Open Houses related to potential borehole drilling and exploring partnerships
7. Presentation
8. Responses to any Questions Raised
9. Discussion of Recent Events in and around the Community
10. Other Business
    a. Resolution No. 18-12 Approval Dr. Jason Donev School Visits Expenditures
    b. Confirm Next Meeting date-March 13th
11. Meeting Closure
    a. *Resolution No. 18-13* Approval for February 13th Meeting Closure

Learn More Community Office
247 Third Ave, PO Box 177, Hornepayne, Ontario
Ph. (807) 868-9997
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HORNEPAYNENWCLC@GMAIL.COM |

Agenda

Regular Monthly Meeting

Tuesday, March 13th 2018 at 6:00pm

Royal Cdn Legion Branch No. 194
48 Sixth Ave, Hornepayne, Ontario

---

1. Meeting called to order
    a. *Resolution No. 18-14* Approval to open tonight's March 13th meeting
2. Review and Note any Changes to Agenda
3. Approval of Agenda
    a. *Resolution No. 18-15* Approval of tonight's March 13th Agenda
4. Approval of prior meeting minutes
    a. *Resolution No. 18-16* Approval of February 13th Meeting Minutes
5. Project Coordinator Report
    a. *Resolution No. 18-17* Approval of Project Coordinator Report
6. NWMO Report to Committee on Recent Activity
7. Presentation
8. Responses to any Questions Raised
9. Discussion of Recent Events in and around the Community
    a. Hornepayne Winterfest
    b. Nwmo Open House
10. Other Business
    a. Discuss Communication Plan
    b. Review Terms of Reference
    c. Create a 2018 Learning Plan
    d. Develop a Budget
    e. Confirm Next Meeting date-April 10th
11. Meeting Closure
    a. *Resolution No. 18-18* Approval for March 13th Meeting Closure

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Hornepayne
Nuclear Waste Community Liaison Committee

Learning More About Canada's Plan for the Long-Term Management of Used Nuclear Fuel

Agenda

Regular Monthly Meeting

Tuesday, April 10th 2018 at 6:00pm

Royal Cdn Legion Branch No. 194
48 Sixth Ave, Hornepayne, Ontario

---

1. Meeting called to order
2. Review and Note any Changes to Agenda
   2.1. Approval of Agenda
3. Approval of prior meeting minutes
   3.1. Approval of March 13th Meeting Minutes
   3.2. Approval of March 27th Meeting Minutes
4. Project Coordinator Report
   4.1. Approval of Project Coordinator Report
5. NWMO Report to Committee on Recent Activity
   5.1. Municipal Engagement Update
   5.2. Communications Update
   5.3. Aboriginal Engagement Update
6. Presentation(s)
   6.1. "International Cooperation and Experience"-Jennifer McKelvie, Ph.D P.Geo NWMO Senior Scientist
   6.2. "Initial Borehole Drilling to Advance Learning Update"-Jo-Ann Facella NWMO Director of Community Well Being, Assessment and Dialogue
   6.3. "Indigenous Relations"-Bob Watts, NWMO Vice President of Indigenous Relations
7. Responses to any Questions Raised
8. Discussion of Recent Events in and around the Community
   8.1. C&D Paul Curling Club-Year end Bon Spiel

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9. Other Business/Topics for Discussion
   - 9.1. "21 Things you may not know about the Indian Act"-Bob Joseph, Indigenous Corporate Training Inc.
   - 9.2. Financial Support for Accepted Hornepayne SHAD Applicant
   - 9.3. Regional Youth Engagement with Manitouwadge School "Tech Day" Robotics
   - 9.4. St. Lukes Anglican Church appeal for Financial Assistance
   - 9.5. Canadian Nuclear Safety Commission (CNSC) Presentation in 2018
   - 9.6. Invitation to speakers Brennain Lloyd, Theresa McClenaghan, and Dr. Edwards
   - 9.7. Permissions for Recording of Presentations made to the CLC
   - 9.8. Dr. Jason Donev Hornepayne School Visits and Presentation to Community
   - 9.9. Review Revised Terms of Reference (draft)
   - 9.10. Review 2018 NWCLC Learning Plan (draft)
   - 9.11. Review 2018 NWCLC Budget (draft)
   - 9.12. Confirm Next Meeting date-May 8th
10. Meeting Closure
   - 10.1. Approval for Meeting Closure

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Appendix D – Environmental Characterization Desktop Work Completed to Date in the Black-Pic Withdrawal Area

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5440000 5435000 5430000

HA-RS1 (Terrestrial Work Only)

HA-RS2

HA-RS3 (Aquatic Work Only)

HA-RS4

HA-RS5

Upper Shekak Lake
Unknown Raptor
Chelsea Lake
Chelsea Creek
Shekak River
Jay Lake
Biscotasing Caribou Range
Sand Lake
McCoy Lake
West Larkin Lake
Cat Lake
Blue Lake
Agreen Lake
White Otter Creek
Corner Lake
Beavertrap Lake
16FV6335
Osprey
Bayfield Lake
Burnt Lake
Bone Lake
Spectacle Lake
Unknown Raptor
Whitepine Lake
HIGHWAY 631
White Owl Lake
South Bayfield Lake
Lake Placid
Fall-In Lake
Wabos Lake
Broadwing Hawk
Otter Lake
Smokey Lake
16FV5730
16FV5729
16FV5829
Otter Creek
Loon Lake

LEGEND

- Sites Recommended for Verification Field Work (labelled with ID)
- Preferred Recommended Areas for Verification Field Work (labelled with ID, fall 2016 field work conducted)
- Planned Terrestrial Survey Transect
- Actual Terrestrial Survey Transect
- Planned Aquatic Survey Location
- NHIC Species at Risk 1 km Square (refer to table for species information)
- Fishing Access Point
- Avian Nesting Site
- Flow Direction
- Active Aggregate Site
- Waste Management Site
- Moose Aquatic Feeding Area
- Caribou Range Boundary
- Research Plot
- Highway
- Local Road
- Resource / Recreation Road
- Forestry Road (MNRF)
- Major Contour (50 metre interval)
- Minor Contour (10 metre interval)
- Esker
- Beaver Dam
- Watercourse
- Waterbody
- Wetland
- Wooded Area
- Watershed Boundary

NHIC Species at Risk

NHIC Square ID	Species
16FV5729	Common Nighhawk, Eastern Whip-poor-will
16FV5829	Common Nighhawk, Eastern Whip-poor-will
16FV5730	Common Nighhawk, Eastern Whip-poor-will
16FV6335	Woodland Caribou

0 2.5 5 10 15 20 Kilometres

NOTES:
- Base data on this map was extracted form Land Information Ontario (MNRF), Queen's Printer for Ontario, 2015 - 2016.
- Quaternary geology features from Ontario Geological Survey, MNDM.
- No aquatic data was collected for Hornepayne Black-Pic due to the presence of hunters in the area during the time of the survey.

NHIC Species at Risk sensitive data:
Source: Data provided by Ontario MNRF
Copyright: Queen's Printer for Ontario [May-June 2014 and 1990]
This derivative product of the sensitive data does not constitute endorsement by MNRF

Datum: NAD83
Projection: UTM Zone 16N

N W E S

nwmo NUCLEAR WASTE MANAGEMENT ORGANIZATION / SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

amec foster wheeler

ADAPTIVE PHASED MANAGEMENT PHASE 2 - NORTH OF SUPERIOR

Hornepayne Black-Pic Natural Feature Maps with Field Work Recommendation Areas and Field Work Conducted (Fall 2016)

PROJECT N°: TB161019 | **FIGURE: 6**

SCALE: 1:80,000 | DATE: March 2017

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638000 640000 642000 644000 646000 648000 650000 652000

5442000 5440000 5438000 5436000

Shekak River
Chelsea Lake
Chelsea Creek
HA-RS1-T2
HA-RS1-T1/
HA-RS1-T1-A
McCoy Lake
Shekak River
Sand Lake
White Owl Creek
White Owl Lake
Agreen Lake
Bayfield Lake

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LEGEND

- ELC and Potential Significant Wildlife Habitat Classification
- Planned Terrestrial Survey Transect
- Actual Terrestrial Survey Transect
- Planned Aquatic Survey Location
- Infrequent Significant Wildlife Habitat
- Forestry Road (MNRF)
- Northern Pike Spawning Area
- Walleye Spawning Area

ELC and Potential Significant Wildlife Habitat Classification Labelling

B065 1kipt — ELC Classification (refer to Table 1); Potential Significant Wildlife Habitat Classification (refer toTable 3)

Watercourse Reach Classification Morphology and Regime

- Cascade / Waterfall, Cold
- Glide / Run, Cold
- Glide / Run, Cool
- Pool, Cold
- Pool, Cool
- Pool, Warm
- Riffle, Cold
- Riffle, Cool

Watercourse Class

- Intermittent Watercourse
- Permanent Watercourse
- Open Water

0 0.5 1 2 3 4 5 Kilometres

a b c d

NOTES:
- Base data on this map was extracted form Land Information Ontario (MNRF), Queen's Printer for Ontario, 2015 - 2016.
- Background imagery from MNRF Forest Resource Inventory, provided by NWMO, 2007 - 2010.
- No aquatic data was collected for Hornepayne Black-Pic due to the presence of hunters in the area during the time of the survey.

Datum: NAD83
Projection: UTM Zone 16N

N W E S

nwmo NUCLEAR WASTE MANAGEMENT ORGANIZATION / SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

amec foster wheeler

ADAPTIVE PHASED MANAGEMENT PHASE 2 - NORTH OF SUPERIOR

Hornepayne Black-Pic Preliminary Ecological Land Classification, Potential Significant Wildlife Habitat and Stream Reach Categorization

PROJECT N°: TB161019	**FIGURE: 6a**
SCALE: 1:40,000	DATE: March 2017

654000 656000 658000 660000 662000 664000 666000 668000

5442000 5440000 5438000 5436000

Jay Lake
Chelsea Creek
Shekak River
White Owl Creek
HIGHWAY 631
West Larkin Lake
Cat Lake
Blue Lake
Corner Lake
Beavertrap Lake

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LEGEND

- ELC and Potential Significant Wildlife Habitat Classification
- Planned Terrestrial Survey Transect
- Actual Terrestrial Survey Transect
- Planned Aquatic Survey Location
- Infrequent Significant Wildlife Habitat
- Arterial Road
- Local / Street
- Forestry Road (MNRF)
- Walleye Spawning Area

ELC and Potential Significant Wildlife Habitat Classification Labelling

B065 1kIpt
- ELC Classification (refer to Table 1)
- Potential Significant Wildlife Habitat Classification (refer toTable 3)

Watercourse Reach Classification

Morphology and Regime
- Cascade / Waterfall, Cold
- Glide / Run, Cold
- Glide / Run, Cool
- Pool, Cold
- Pool, Cool
- Pool, Warm
- Riffle, Cold
- Riffle, Cool

Watercourse Class
- Intermittent Watercourse
- Permanent Watercourse
- Open Water

0 0.5 1 2 3 4 5 Kilometres

a b c d

NOTES:
- Base data on this map was extracted form Land Information Ontario (MNRF), Queen's Printer for Ontario, 2015 - 2016.
- Background imagery from MNRF Forest Resource Inventory, provided by NWMO, 2007 - 2010.
- No aquatic data was collected for Hornepayne Black-Pic due to the presence of hunters in the area during the time of the survey.

Datum: NAD83
Projection: UTM Zone 16N

N W E S

nwmo NUCLEAR WASTE MANAGEMENT ORGANIZATION / SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

amec foster wheeler

ADAPTIVE PHASED MANAGEMENT
PHASE 2 - NORTH OF SUPERIOR

Hornepayne Black-Pic
Preliminary Ecological Land Classification, Potential Significant Wildlife Habitat and Stream Reach Categorization

PROJECT N^{O}: TB161019	**FIGURE: 6b**
SCALE: 1:40,000	DATE: March 2017

638000 640000 642000 644000 646000 648000 650000 652000

5434000 5432000 5430000 5428000

White Owl Lake

White Owl Lake

Bayfield Lake

South Bayfield Lake

Otter Creek

G:\Proposal_NWMO_NorthSuperior_Ontario_April2016\Initial_GIS_Work\Tech_Memo_1\MXD_Maps\Hornepayne_BP_Series_PSS_3.mxd

LEGEND

- ELC and Potential Significant Wildlife Habitat Classification
- Planned Terrestrial Survey Transect
- Actual Terrestrial Survey Transect
- Planned Aquatic Survey Location
- Infrequent Significant Wildlife Habitat
- Forestry Road (MNRF)
- Northern Pike Spawning Area
- Walleye Spawning Area

ELC and Potential Significant Wildlife Habitat Classification Labelling

B065 1kJpt — ELC Classification (refer to Table 1); Potential Significant Wildlife Habitat Classification (refer toTable 3)

Watercourse Reach Classification Morphology and Regime

- Cascade / Waterfall, Cold
- Glide / Run, Cold
- Glide / Run, Cool
- Pool, Cold
- Pool, Cool
- Pool, Warm
- Riffle, Cold
- Riffle, Cool

Watercourse Class

- Intermittent Watercourse
- Permanent Watercourse
- Open Water

a b c d

0 0.5 1 2 3 4 5 Kilometres

NOTES:
- Base data on this map was extracted form Land Information Ontario (MNRF), Queen's Printer for Ontario, 2015 - 2016.
- Background imagery from MNRF Forest Resource Inventory, provided by NWMO, 2007 - 2010.
- No aquatic data was collected for Hornepayne Black-Pic due to the presence of hunters in the area during the time of the survey.

Datum: NAD83
Projection: UTM Zone 16N

N W E S

nwmo NUCLEAR WASTE MANAGEMENT ORGANIZATION / SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

amec foster wheeler

ADAPTIVE PHASED MANAGEMENT PHASE 2 - NORTH OF SUPERIOR

Hornepayne Black-Pic Preliminary Ecological Land Classification, Potential Significant Wildlife Habitat and Stream Reach Categorization

PROJECT N°: TB161019	**FIGURE: 6c**
SCALE: 1:40,000	DATE: March 2017

654000 656000 658000 660000 662000 664000 666000 668000

5434000 5432000 5430000 5428000

Lake Placid
Bone Lake
Burnt Lake
Beavertrap Lake
Spectacle Lake
Whitepine Lake
Fall-In Lake
Wabos Lake
Smokey Lake
Otter Lake
Otter Creek
West Beaton River
Loon Lake
HIGHWAY 631

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LEGEND

- ELC and Potential Significant Wildlife Habitat Classification
- Planned Terrestrial Survey Transect
- Actual Terrestrial Survey Transect
- Planned Aquatic Survey Location
- Infrequent Significant Wildlife Habitat

- Arterial Road
- Local / Street
- Forestry Road (MNRF)
- Walleye Spawning Area

Watercourse Reach Classification Morphology and Regime

- Cascade / Waterfall, Cold
- Glide / Run, Cold
- Glide / Run, Cool
- Pool, Cold
- Pool, Cool
- Pool, Warm
- Riffle, Cold
- Riffle, Cool

Watercourse Class

- Intermittent Watercourse
- Permanent Watercourse
- Open Water

ELC and Potential Significant Wildlife Habitat Classification Labelling

B065 1jklpt
- ELC Classification (refer to Table 1)
- Potential Significant Wildlife Habitat Classification (refer toTable 3)

0 0.5 1 2 3 4 5 Kilometres

a b c d

NOTES:
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Datum: NAD83
Projection: UTM Zone 16N

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nwmo NUCLEAR WASTE MANAGEMENT ORGANIZATION / SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

amec foster wheeler

ADAPTIVE PHASED MANAGEMENT PHASE 2 - NORTH OF SUPERIOR

Hornepayne Black-Pic Preliminary Ecological Land Classification, Potential Significant Wildlife Habitat and Stream Reach Categorization

PROJECT N^{O}: TB161019	**FIGURE: 6d**
SCALE: 1:40,000	DATE: March 2017