

# Municipality of South Bruce CLC Meeting

October 6, 2016 – 7:00pm Council Chambers



# Adaptive Phased Management (APM) Project

# South Bruce Community Liaison Committee (SBCLC) Meeting

October 6, 2016 – 7:00 p.m. Municipal Office, 21 Gordon Street East, Teeswater

#### **AGENDA**

- 1. Call to Order
- 2. Adoption of Agenda
- 3. Disclosure of Pecuniary Interest and Nature Thereof
- 4. Minutes of the Previous Meeting
  - **4.1.** September 8, 2016 SBCLC Regular Meeting
- 5. Delegations: None
- 6. NWMO CLC Task List Review
- 7. Reports: None
- 8. Education
  - 8.1 Dr. Douglas Boreham, Ph.D Professor at the Northern Ontario School of Medicine, Division Head for the Medical Sciences Division and the Bruce Power Research Chair in Radiation and Health Breakthroughs of Low Dose Cancer research and Help Debunk Some of the Myths about the Effects of Radiation.
  - 8.2 Ben Belfadhel, Initial Borehole Drilling to Advance Learning & Preliminary Assessment of Potential Suitability Pamphlet
- 9. Communications: None
- 10. New Business: None
- 11. Next Meeting

South Bruce Community Liaison Committee Meeting – Agenda – September 8, 2016
The next meeting of the SBCLC is scheduled for Thursday, November 3, 2016 at 7:00p.m. (location to be determined).

# 12. Adjournment



# **Nuclear Waste Management**

# Organization (NWMO) Adaptive Phased Management (APM) Project

# **Community Liaison Committee (CLC) Meeting**

# Thursday, September 8, 2016

#### **MINUTES**

The South Bruce Community Liaison Committee met on Thursday, September 8, 2016 at 7:00 p.m. at the South Bruce Municipal Office, 21 Gordon Street East, Teeswater.

**Members Present:** 

Jim Gowland, Chair, Mayor Robert Buckle; Doug Culbert, Vice-

Chair, Les Nichols, Councillor Margie Bates, Councillor Mark

Goetz

Members Absent:

Brian Knox, Corbyn Critchfield, George Miller

NWMO Staff:

Paul Austin, Relationship Manager for Southern Ontario; Cherie Leslie,

Senior Engagement Advisor, Elena Mantagaris, Director, Government

and External Relations

**Municipal Staff:** 

Casey Bates, CLC Project Coordinator, Leanne Martin, Clerk,

Kendra Reinhart, Administrator Treasurer

#### 1. CALL TO ORDER:

Chair Jim Gowland called the meeting to order at 7:00 p.m. and welcomed everyone to the meeting.

#### 2. ADOPTION OF AGENDA:

MOTION CLC-2016- 32 Moved by: Les Nichol Seconded by: Mark Goetz

Agenda That the agenda for the CLC meeting of September 8, 2016 be adopted as

circulated.

**Motion: Carried** 

# 3. <u>DISCLOSURE OF PECUNIARY INTEREST AND NATURE THEREOF:</u>

None

## 4. MINUTES OF THE PREVIOUS MEETING:

## 4.1 June SBCLC Regular Meeting

**MOTION CLC-2016-33** 

Moved by: Doug Seconded by: Margie

Minutes

That the Minutes of the South Bruce Community Liaison Committee Meeting held on June 9, 2016, he adopted as

Committee Meeting held on June 9, 2016, be adopted as

printed and circulated.

**Motion: Carried** 

#### 5. **DELEGATIONS**:

None

#### 6. <u>NWMO TASK LIST REVIEW:</u>

MOTION CLC-2016-34 Moved by: Les Nichol

Seconded by: Doug Culbert

**Task List** 

That the SBCLC Meeting Task List presented to the September

8, 2016 South Bruce Community Liaison Committee Meeting,

be received for information.

**Motion: Carried** 

#### 7. REPORTS:

## 7.1 NWMO Update - Paul Austin, Relationship Manager, Southern Ontario

The NWMO Relationship Manager Paul Austin provided an update related to engagement activities to the committee. Mr. Austin took the opportunity to introduce Cherie Leslie as the new Senior Engagement Advisor for NWMO.

MOTION CLC-2016 - 35 Moved by: Mark Goetz Seconded by: Bob Buckle

Report

That the report of the Administrator – Treasurer to provide

updates related to the Municipality of South Bruce be received

for information.

**Motion: Carried** 

## 7.2 CLC Update – Casey Bates, SBCLC Project Coordinator

The SBCLC Project Coordinator presented a report updating the committee on a proposed community flyer which would be mailed to residents notifying them of upcoming meetings and speakers. Flyers and pamphlets received related to radon were also attached to the report for the committee's reference. A copy of the report had been circulated to the committee prior to the meeting.

**MOTION CLC-2016 - 36** 

Moved by: Bob Buckle Seconded by: Doug Culbert

Report

That the report of the SBCLC Project Coordinator to provide

updates be received for information.

**Motion: Carried** 

#### 8. EDUCATION:

# 8.1 Planning Transportation for APM – Elena Mantagaris, Director, Government and External Relations

Chair Gowland welcomed Elena Mantagaris, Director, Government and External Relations who provided the CLC with a presentation on planning for the Transportation of Used Nuclear Fuel.

MOTION CLC-2016 - 37 Moved by: Doug Culbert Seconded by: Margie Bates

Report

That the report of the Director regarding Planning Transportation for the APM presented to the September 8, 2016 South Bruce Community Liaison Committee meeting, be

received for information.

**Motion: Carried** 

- 9. **COMMUNICATIONS**: None
- 10. **NEW BUSINESS**: None

#### 11. ADJOURNMENT:

MOTION CLC-2016-38 Moved by: Margie Bates Seconded by: Doug Culbert

Adjournment

That we do now adjourn at 8:15 p.m., to meet again on

Thursday, October 6, 2016 at 7:00 p.m., or, at the call of the

Chair.

**Motion: Carried** 

Chair	Vice-Chair	
 CLC Secretary		

#### 2016 South Bruce CLC Meeting Task List

octing Date	1	r Person Responsible	Task	Due	Completed	Comments
	ALL SERVICES	FIRE DIPLOSES, FE	Julie Ireland was requested to circulate an email to members of the CLC to determine		A SECTION	THE REPORT OF THE PARTY AND ADDRESS.
June-04-15	100	to the territory of	whether July 14 or 16 would be preferable for the workshop. A reply to NWMO staff			
June-04-15	THE	Julie Ireland	should be sent by June 15.		Jun 4 2015	
			That language options be developed for the next SBCLC meeting for a resolution for		THE PAR	
luna 04 15	CLC-2015-95	halia fauluma	consideration by the CLC and municipal Council to develop a potential plan for Phase 2		and the second	
June-04-15	OLC-2015-95	Julie Ireland	field studies.		Jul 9 2015	
	The state of	THE RESERVE OF THE PARTY OF THE	Paul Austin will circulate the draft notice regarding the relocation of the Learn More			
huma 04 45			Community Office from Mildmay to Teeswater for Julie Ireland to review, and for the		110000000000000000000000000000000000000	
June-04-15	n/a	Paul Austin	NWMO to publish the notice in the coming months		Aug 7 2015	
			That Julie Ireland, Project Co-ordinator for the SBCLC, be directed to develop a listing of			E TOTAL AND
	I TO LANGE THE	LIDERED WITH	the meeting dates for local service clubs and community groups for the fall of 2015 and		No. of Concession,	
	100 May 201		possibly early 2016 to facilitate the attendance of NWMO staff at those meetings; And			
June-04-15	CLC-2015-98	Julie Ireland	further, that the subject motion be added to the SBCLC Task List.			Draft provided to Paul, and Julie is investigating meeting
30110 04-13	020 2010-00	Toure Ireland				dates and times for service groups
June-04-15	n/a	Leanne Martin	Brian Knox asked the Clerk to provide him with a copy of the municipality's vision, goals, etc.			
Julie-04-10	) (I/a	Leanne Mattin	elc,			
1207 (10	100		lim Coulond requested that a serve of his that			
	The state of the		Jim Gowland requested that a copy of his "letter to the editor", published in the May 21,		E BY EDAI	
June-04-15	in/a	Julie Ireland	2015 edition of the Mildmay Crier, and the initial letter from S.A. MacDonald, which his		11000	
5411C-04-10		ounc fretanu	comments were in reply to, both be included on the agenda for the July SBCLC meeting.		Jul 9 2015	
		TOTAL FORESTER	NWMO staff were requested to coordinate a presentation by Tom Isaacs for the South			
	The State of		Bruce Community Liaison Committee, The speaker will be provided the opportunity to speak for one hour on a future agenda. It was requested that the presentation be		ET EXPE	
	Marie Co.		scheduled for the Contember meeting and to education for the presentation be			Late A Car Appearance in
June-04-15		Paul Austin	scheduled for the September meeting, and to advertise for the meeting, including the name of the presenter.			
00110 01 10		Julie Ireland/Jim			Ole and the second	and the second s
July-09-15		Gowland	Forward the motion regarding the proposed site selection process for Phase 2 studies to Council for approval		THE PARTY OF	Jim Gowland made a presentation to Council and the
0417 00 10		COMMING			Jul 28 2015	resolution was adopted by Council
1 8 2015	CLC-2015-122	Julie Ireland	That nuclear expert Tom Isaacs be invited to provide a presentation to the SBCLC at its			
10,2010	000 2010 122	Julie Ireland	meeting scheduled for Thursday, November 5, 2015;			
	Through the	25 6 1 A 1 T	And further, that Mr. Isaacs be invited to meet informally with members of the South		100000	
3222 43	E 10 10 10 10 10 10 10 10 10 10 10 10 10		Bruce Community, in a forum to be determined by the Relationship Manager for NWMO		1000	
		A.C. Description	and the Project Co-ordinator for the SBCLC		1/1 E 3	
Sept. 131						
			Paul Austin was requested to investigate any programs related to household radon level		70 200	
	0.21 5 45	THE REPORT OF THE PARTY OF THE	detection, and radiation safety and awareness that the NWMO may be familiar with, and			
v 5 2015		Paul Austin	report back to the next meeting with information about any such programs		44.4	
STATE OF THE		THE STATE OF STREET	Julie Ireland was requested to circulate to the Committee a listing received from the			
	PERSONAL PROPERTY.		Huron-Kinloss CLC of independent experts and researchers who could potentially			
v 5 2015	100	Julie Ireland	provide presentations to the SBCLC in the future.		0.0045	
4 2016		Paul Austin	Send link to Julie on reprocessing to circulate to the committee		Dec 2 2015	
4 2016	120	Paul Austin	Update the committee on the status of projects in other communities		Jun-16	
4 2016	The same	Marie Wilson	Ask about availability of tours at the Western Waste Management Facility in 2016			
4 2016	CLC-2016-6	Julie Ireland	Send letter to Mr Firemainr mountain his corrected management Facility in 2016		Apr-16	Group tour scheduled for May 11th
			Send letter to Mr Eickmeier regarding his correspondence on the agenda			
		CLC Coordinator	Coordinate member who will be attending the Canadian Nuclear Conference			
	77. 100, 11.				The same of	George called and talked to Mrs. Wood. She thought her husban
Jun-16	CIC 2016 26	Constanting Constant	That the CLC Committee instruct to have the CLC Coordinator and CLC Member George Miller to			might be interested. George received flyers in the mail. Casey
	CLC-2016-26	George Miller & Casey Bates	All Control of the Co		Aug-24-16	Emailed Mr. Wood, but no reply
Jun-16	CLC-2016-26	Casey Bates	And further to invite Dr. Borehani to a future meeting to provide education on radiation		June 10-16	Coming to the October 6/16 Meeting
	PERSONAL PROPERTY.		THAT the CLC Committee instruct the CLC Coordinator to develop and issue and mail		30.10 10	The october of to insecting
Hall St.	CILIA CONTRACTOR		out to all residents of the South Bruce Community informing the community of the			Working on a flyer prototype. Talked to Paul & NWMO going to I
Jun-16	CLC-2016-30	Casey Bates	upcoming meeting and speakers.		Aug-25-16	with this
			SBCLC Coordinator to contact the current student member of the committee to seek his		Ting 25 15	
1			interest to remain on the committee and further contact the high schools to seek			
Jun-16		Casey Bates	interested students to sit as a member on the committee.			The Current Student Member has not responded to any emails.
	1000			Name and Address of the Owner, where		sarrent student wember has not responded to any emails
V = 1		Casey Bates & Paul Austin	SECLE Coordinator and Paul to incorporate the Radon information into the NWMO		September-30-16	Fill trees the building the second
ep-16	CLC-2016-35		information.		1. optermer 30-10	The Radon information is at the NWMO Office
	18 S V 18					The Radya mormation is at the NWIVIO Office
35 75	No. of the last	Casey Bates	SBCLC Coordinator Mail out to all residents of the South Bruce Community the CLC Meeting		September-28-16	Flyers mailed out to all of South Bruce
ep-16	CLC 2016 35		Fiver		FACTACHINEL-SO-TU	Trivers maked out to all of South Bruce





# Adaptive Phased Management

Phase 2 Preliminary Assessments: Initial Borehole Drilling to Advance Learning

NWMO October 2016



#### **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 Societ, 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 auitability of the site based on detailed site evaluation criteria:

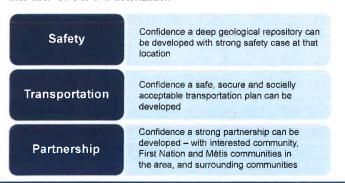
- Technical evaluation (detailed field investigations)
- · Continue social, economic and cultural assessment

#### Status of Studies in South Bruce

- South Bruce entered the learning and site selection process in 2012
- Initial Screening: Completed in August 2012
- Phase 1 Preliminary Assessment: Completed in December 2014
- Currently in Phase 2 of Preliminary Assessment
- Findings to date:
  - South Bruce contains large areas that have the potential to satisfy NWMO's geoscientific site evaluation factors.
- More studies are 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



#### Phase 2 Preliminary Field Investigations

#### **Initial General Field Studies**

Further understand the general geology across the community

#### **Repository-Scale Field Studies**

 Assess in more detail the geology of smaller areas identified with the community as potentially suitable to host repository

Field studies will be planned and implemented in collaboration with people in the area

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# Looking Ahead: Phase 2 Site Selection Planning Assumptions\*

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

## **Approach for Initial Field Studies**

- Purpose is to further advance understanding of the general geology of the community and assess its suitability for the project
- Drill one borehole on Municipal land
- Location of initial borehole is not expected to be a repository site
- NWMO has initiated general dialogue regarding field studies with community members, NWMO has not yet talked to community members about specific borehole locations

**M** nwmo

<sup>\*</sup> Timelines are illustrative, to guide planning. Actual timelines may vary.

# Readiness for Initial Borehole Drilling

- NWMO has reviewed municipally owned land holdings supplied by the Municipality and assessed their suitability for the initial borehole
- Key factors considered in the review include:
  - o Size requirements (minimum one acre)
  - Compliance with regulatory setbacks (i.e. from dwellings, water courses, power lines, roads etc.)
  - Current land use (e.g. parks, playgrounds etc.)
- NWMO has identified 4 possible locations for initial borehole drilling

#### **Next Steps**

- With Council approval, NWMO would like to begin engaging with the community to identify a preferred site for an initial borehole
  - Review the map and borehole pamphlet with Municipal Council and the Community Liaison Committee
  - Discussions with community members, briefings to community groups
  - Provide information directly to households (via newspaper inserts and other communication)
  - Advertised open house in November to seek input from community members
  - Work with the community to inform neighbouring communities about the nature of the activity
  - Engage with First Nation and Metis communities in the area

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# Possible Areas for an Initial Borehole- for Discussion with Community



#### **Timelines**

The manner and pace of engagement will advance with community preferences in mind

- By March 2017, engagement could provide input to support any authorizations which may be needed
- Should engagement, community preferences and approval processes support it, drilling could begin as early as next year
- After engagement of the community, NWMO could update Council in early 2017 and seek agreement to proceed
- If more time is needed to discuss the work with community members before proceeding, we will take the time that is needed and adjust timing for the initial borehole



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PRELIMINARY ASSESSMENT OF POTENTIAL SUITABILITY Initial Borehole Drilling and Testing in Central Huron, Huron-Kinloss and South Bruce DRAFT FOR DISCUSSION WITH COMMUNITIES



In 2012, at the request of the communities of Central Huron, Huron-Kinloss and South Bruce, the Nuclear Waste Management Organization (NWMO) began conducting a series of increasingly detailed technical and social studies to assess suitability for safely hosting a deep geological repository for the long-term management of Canada's used nuclear fuel, Before selecting a potential repository sile, the NVMAO needs to be confident that a deep geological repository can be devisioped with a strong selfey case. A safety case brigs together all the information that contribute fowards undestrateding whether or not a Central Huron, Huron-Kinloss and South Bruce,

together all the information that contribute fowards understanding whether or not a repository at the site could safely contain and isolate used nuclear fuel. This information includes incliganous Knowledge, geoscientific assessments, environmental surveys and morelicining, enrigineering design studies, and safety assessment analyses.

The focus of asking specialities studies is to obtermine if the nock in this area has the potential to satisfy the NWMO's safety requirements for a deep geological repository for

ments for a deep geological repository for the long-term management of Canada's used

Geoscientific studies conducted to date Geoscientific studies conducted to date have involved desktop studies, which make use of publicly available information about the goology of the area. A next step in the process movement of the process moving draining one intails become with each municipality to further understand the general

geology across the communities. These initial geology across the communities. These milital boreholes may be drilled on municipal land. Additional boreholes drilling and testing in other locations may be warranted in this phase of work.

Beyond ensuring safety, the NWMO has continuated to communities that the project will be implemented in a way that losters long-term well-being as defined by the community.

#### **Key Steps**

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

- Desktop studies, using available information, identified broad areas within the communities of Central Huron (2015), Huron-Kinloss and South Bruce (2014) that have potential to host a deep geological repository.
- >> Initial studies are designed to better understand regional geology. They include geological mapping, 2-D selamic reflection studies, and drilling initial boreholes.
- Dorancies.

  > The Central Huron, Huron-Klinioss and South Bruce Councils have each expressed an interest in beginning littial studies and considering an initial borehole in each community.

  Each community has identified municipal lands in:
- the communities as potential locations for these initial boreholes for NWMO review.
- >> Each community has asked the NWMO to engage community members in planning these studies and selecting a site for the initial boreholes.

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 sale, 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

Next steps involve the NWMO and people in the area working together to plan the next set of activities, beginning with Identifying localitons, scope and timing of initial borehole drilling on municipal lands. Together, we

- Review findings from desktop studies and discuss available options for the location of initial boreholes on municipal lands;
- Fian locations and timing of initial borehole drilling. The locations for these boreholes will be selected to The locations for these boreholes will be selected to help advance understanding of the general goolgy in the area, be accessible to community membors to observe the drilling activity, and provide an opportunity for learning about the project. The NWMO will seek permits as required, These boreholes are not expected to be a repository site location;
- 3. Initiate borehole drilling and testing; and
- 4. Review study findings and decide on next steps.

Should the community proceed beyond these initial studies, the next phase of work would involve additional borehole drilling and testing focused at a preferred potential repository site. Before we can do this, we will need to work logether to develop a process for considering and securing land for future borehole drilling and testing, since private land may be involved. Ultimately, the location of the preferred site will need to meet robust safety requirements, will need to be respectful of the sensitivities of community members and the wishes of private land owners, must 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 will only proceed with the involvement of the inforested community. First Nation and Média communities in the area, and surrounding communities.

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#### What is borehole drilling?

A borehole is a narrow, deep, circular hole made in the ground A borehole is a narrow, deep, circular hole made in the ground using motorized equipment (cirring equipment). The process involves draining the borehole and retrieving cylindershaped rock samples, called core. A wide range of festing 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

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 of true coertation, thickness and other considerations of the notice layers, such as whether or not they contain hydrocarbon residunces.

Where will initial boreholes be drilled?

Initial boreholes may be drilled on municipal land - one in

the Municipality of Central Huron, one in the Township of the Municipality of Cantral Huron, one in the Township of Huron-Knoise, and one in the Municipality of South Bruse. Possible locations for initial borehole drilling will need to be decided logalher with people in the area. In addition to meeting technical objectives, borehole drilling locations will be seeded to respect the land use, and cultural and spiritual values of people in the area. These boreholes are not expected to be a repository site location.

To get the discussion started, the municipalities have identified some municipality held land that might be considered for initial boreholes. The NVMO is currently assessing these locations. The NVMO will review potential footients tegether with people in the area to determine where it should focus intuit borehole defining and testing architels.

initial bombole drilling and testing activities.

How many boreholes will the NWMO drill initially?

The NWMO anticipetes driffing three initial boreholes – one in the Municipality of Central Huron, one in the Township of Huron-Kinkoss, and one in the Municipality of South Bruce.

Eventually, more extensive borehole drilling and testing may be undertaken at a location identified together with those in the area as a preferred repository site.

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

As part of its promise to work collaboratively with First Nation and Métis communities, the NMMO is committed to inter-wearing 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

natural environment and fraditional lands, and cultural and spiritual values they may wish to share to guide borholic drilling and testing.

The NWMC will ensure Aboriginal intellectual proporty 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. benefits and effects to be managed.

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What permits are required?

Borehole drilling in southern Ontario is strictly regulated by the

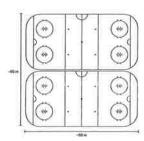
Borehole drilling in southern Ontario is strictly regulated by the Ontario Ministry of Natural Resources and Forestry (MNRF), under the Oif, Gas and Salt Resources Act of Ontario. Each initial brondo will require a well licence before drilling can proceed. The NWMO will prepare these licence applica-tions in collaboration with the municipalities.

When will the initial boreholes be drilled?

Scheduling for the first stage of borehole drilling and testing will depend on the lime needed to identity preferred localions, engage community members in the development of work plans, and obtain the necessary well licences from the MNRF.

How much land is needed to drill a borehole?

The foolprint required for a drill site is about 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side. The area will be fenced.



Footprett required to dell' a borefole



Rotary dritting

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

Trailers will be set up at the site for use as feld offices, for on-site equipment storage, and for a small feld tab 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 at a nearby location within Central Huron, Huron-Kinloss and/or South Bruce. 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.

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A source of water and a drill water management system will be

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

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. This NWMO will work with communities to confirm plans, including how it will minimize the impact of these drilling such as the solid work will be managed in accordance.

How deep will the boreholes be?

Initial boreholes will be drilled through the entire sedimentary sequence in the area. Boreholes will be drilled and cored to a depth of about one kilometre, depending on the location that is selected

What kind of testing is conducted?

Findings from testing will be used to develop a better understanding of the general geology in the area. Testing includes:

- 2. 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;
- 39 Geomechanical measurements, which involve testing rock core samples taken from the borehole to provide informa-tion about rock attength:
- Geophysical measurements made along the length of the borehole to provide information on moreta, 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; and
- information on groundwater flow conditions, and

  O Chemical and isotopic analyses of groundwater samples
  collected from within the bounder, to determine the
  nature of the groundwater (e.g., whether it is first) 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 community members to share information and build awareness and understanding.

How long will it take to complete the borehole drilling

For a borshole approximately one kilometre deep, the entire process can lest 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 safely 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 NIWMO will share findings with the community. The findings, along with those from earlier studies, will guide the NIVMO in welching with community members 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 rubbor plugs. The NWMO will review findings with people in the area and reflect on whether or not to continue with further studies. 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 MMPF requirements.

If the decision is taken to proceed with further studies in the area then the temporary horse could be removed and the

the area, then the temporary plugs could be removed, and the boroholes instrumented. Instrumentation would be installed in the open borehole to measure and record bedrock properties, such as the water pressures over line trames of months to years. These types of measurements proved additional afor-mation about the characteristics of the groundwater systems.

Will the repository be sited where this initial borehole is drilled?

The sites for the initial borsholes are not expected to be repository sites. The initial borshole locations will be selected to help advance understanding of general geology of the area, be accessible to community members to observe the activity, and provide an opportunity for fearning about the project.

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 with the interested community. First Nation and Mells communities in the area, and surrounding communities. The NWMO is conducting studies to explore suitability to host the project in a number of areas in Onlario, including both crystalline rock sites, such as those found in northern Onlario, and sedimentary rock sites, such as those found in northern Onlario.

If the findings from drilling and testing of initial boreholes If the Indings from drilling and testing of initial boreholes provide additional confidence in the geology across Central Huron, Huron-Kinloss and South Bruce, the next phase of work would involve additional borehole drilling and testing focused at a preferred potential repository sile. Before the NWMO could proceed, we would need to work together to develop a process for considering and securing hard for that future borehole drilling and testing since private land may be involved.

involved.

Should the community proceed to the next step in the set selector process, detailed the characterization studies would be conducted over several more years at this preferred site. These more detailed studies would allow the NVMO to collect additional information and complete analyses required to assemble a safety case for a deep geological repository at that breation.

to assemble a safety case for a deep geological repository at that location.

Ultimately, the location of the preferred site will need to meet robust safety requirements, will need to be respectful of the sensitivities of community members and the without of private land owners, must loster the well-being of the area as defined by people who live there, and will need to be supported by strong partnerships. The project will only proceed with the volvement of the interested community. First Nation and Métis communitles in the area, and surrounding communities

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#### Be Involved

Be involved in this initial borehole drilling phase of work as we select 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:

APM Learn More Centre (Central Huron) 38 Albert Street Clinton, ON NOM 1L0

APM Learn More Centre (Huron-Kinloss) Ripley, ON NOG 2R0 huronkinloss.com/nuclear-waste-committee.cfm

APM Learn More Centre (South Bruce) 10 Clinton Street Teeswater, ON NOG 2S0 cicinfo ca/southbruce



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