SAGKEENG ANICINABE INFORMATION BOOKLET ON THE WHITESHELL LABORATORIES RESTORATION PROJECT

July 2025

This booklet was jointly created by Sagkeeng Anicinabe Government (Sagkeeng) and **Canadian Nuclear Laboratories** (CNL) to provide Sagkeeng members accessible and detailed information about CNL's Whiteshell Laboratories Restoration Project. Inside you will find information about the Whiteshell Laboratories Restoration Project (the Whiteshell Laboratories site), how radioactive waste is managed, and CNL's plans for cleaning up and monitoring at the Whiteshell Laboratories site.

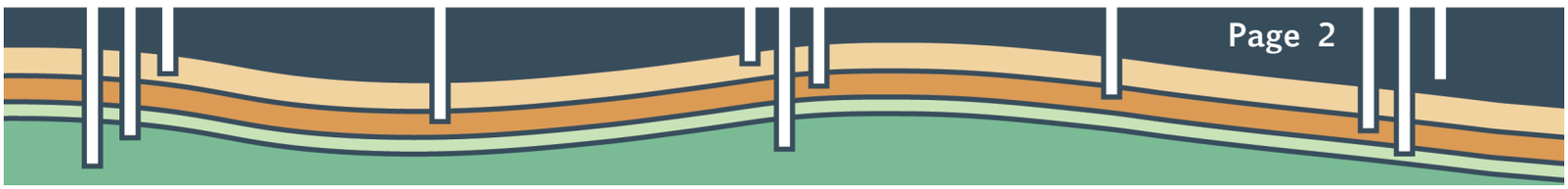
Navigating this Document:

While everyone working on this booklet have aimed at providing the most up to date and accurate picture of the project, site, and relationship, we want to emphasize that discussions, planning, and data collection are ongoing.

The relationship between CNL, **Atomic Energy of Canada Limited** (AECL) and Sagkeeng has not always been extensive or positive. It has improved since the early 2020s. Currently, there are ongoing discussions between CNL, AECL, and Sagkeeng about the future of the Whiteshell Laboratories site, including the Whiteshell Laboratories Site Restoration Plan, as well Sagkeeng's role in future monitoring and management requirements and potential economic benefits, among other considerations. The results of Sagkeeng's Visioning Strategy Project, see page 14 below, will inform those discussions.

It is important to note that there have been substantial discussions amongst Sagkeeng, CNL, and AECL on the preferred method to decommission the Whiteshell Reactor 1 (WR-1), resulting in the Sagkeeng Alternative Means Assessment, which highlighted the community's preference to fully remove WR-1. An overview of the findings of the Sagkeeng Alternative Means Assessment has been included in the Environmental Impact Statement for the WR-1 **decommissioning** project. CNL and AECL continue to propose **in-situ disposal** for the WR-1 reactor. The WR-1 project has been undergoing an environmental assessment since 2016.

As you read through this booklet, technical terms identified in **orange** or **purple** have been defined further on page 17-19 to help provide context and detail for those wanting to learn more. We hope this information booklet helps to answer questions or concerns Sagkeeng members have about what the Whiteshell Laboratories Restoration Project now and into the future.



The Whiteshell Laboratories Site

The Whiteshell Laboratories Restoration Project is located within Sagkeeng Anicinabe Nation's Traditional Territory, approximately 60 kilometers away from the community's reserve lands. The Whiteshell Laboratories — including the former WR-1 nuclear research reactor — are owned by **Atomic Energy of Canada Limited** (AECL). The Laboratories operated as nuclear research laboratories from 1963 up until the late 1990s. When the Government announced the closure of Whiteshell Laboratories in 1998, the focus shifted to **decommissioning** and cleaning up the Whiteshell Laboratories site.

Today, CNL, on behalf of AECL, is leading that work. CNL intends to restore the land in a way that protects the environment, respects the land, and keeps people safe. CNL has managed and monitored the Whiteshell Laboratories site within a Government-Owned Corporate-Operated model since 2015.

The Whiteshell Laboratories site includes seven areas that each had a different purpose in supporting nuclear research activities during its operational lifespan, shown in Map 1 below.

1. The **Campus Area** has several research buildings and the Whiteshell Reactor 1.

2. The **Waste Management Area** stores lower-level radioactive waste, including the 25 low level waste trenches.

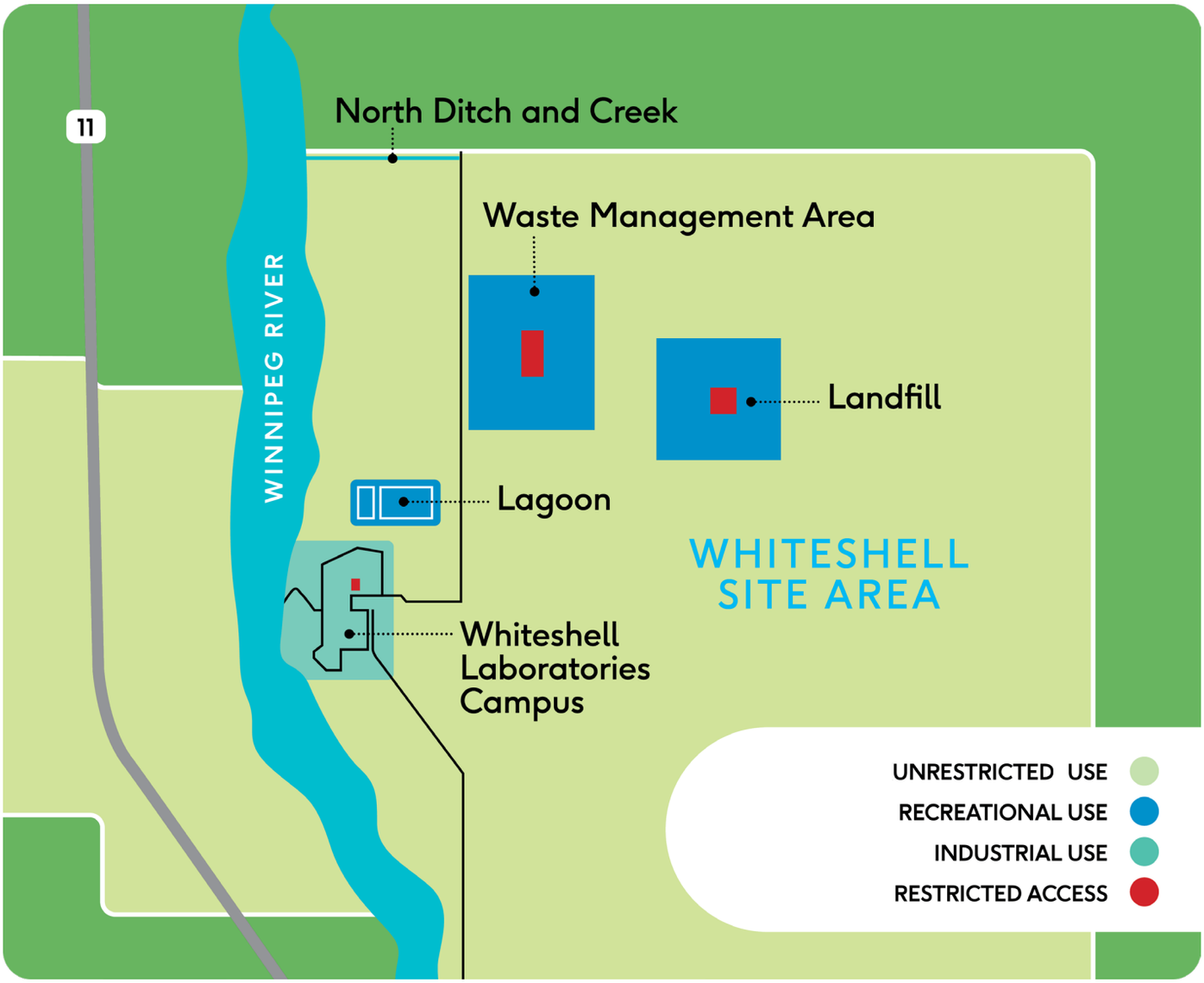
3. The **Sanitary Sewage Lagoon** was used to store **domestic waste** from staff toilets and sinks.

4. The **Non-Radioactive Landfill** stores non-nuclear **solid waste**, buried asbestos, and a firing range.

5. The **North Ditch and Creek** was used as an operational drainage ditch used for non-nuclear purposes.

6. **Outside the Main Campus Area** was used for supporting infrastructure such as power lines and roads.

The remainder of the Whiteshell Laboratories site was not used by CNL for nuclear operations.



Map 1: Whiteshell Laboratories Site Areas and Proposed Future Land Use Categories

Box 1. What is radioactive waste?

We are exposed to radioactive materials daily, even our bodies give off radiation. The natural background levels of radiation we are exposed to on a daily basis are safe.

Radioactive waste contains radioactive materials that can be damaging to human health and the environment. In Canada, the storage, handling, transportation, and disposal of radioactive waste is regulated by the federal government to protect human health and the environment.

Radioactive waste is generated from human activities like medical research and hospitals, nuclear research, nuclear power, **decommissioning** nuclear projects, and mining. The waste material – which can either be a liquid, gas, or solid – contains radioactive material, for which there is no planned use. The waste material is categorized as low, intermediate, or **high level waste**.

Each category of waste is based on time needed to decay, the amount of energy released during the decay, and the necessary shielding to protect people and the environment from the potential impacts of radiation. **Low level waste** includes items such as mop heads, cloths, gloves and other protective clothing that may have been contaminated while being used in the workplace. Over 98% of the nuclear waste in Canada by volume is low level waste. Low level waste can often be placed in garbage bags for safe handling before being placed in storage. **Intermediate level waste** includes items that have had more direct contact with radioactive substances such as reactor components and may require concrete or lead containers for transport and storage.

Radioactive materials produce energy and release particles smaller than the size of an atom. Exposure can occur on the skin through dust, liquid, or through air and can be washed off. Particles can also be ingested or inhaled and enter the bloodstream. If exposure is high enough, this can damage your proteins and DNA that make up your body and trigger radiation sickness or cancer.

For context, a person in Winnipeg is exposed to natural occurring radiation materials at a rate of 2.2 mSv a year on average, resulting from the presence of radon (mSv = **Millisievert**, the unit used to measure exposure to radiation or "dose"). In comparison, the amount of radiation dose that can cause radiation sickness is 1,000 mSv. The graphic below illustrates radiation exposure in everyday life.

Once contained, radioactive waste naturally decays or breaks down so the area becomes safe again. The time it takes for this waste to decay can vary. Some waste can take between a few hours to hundreds of millions of years.

See Box 3 below for a description of how this waste material is regulated and handled to protect human health and the environment.

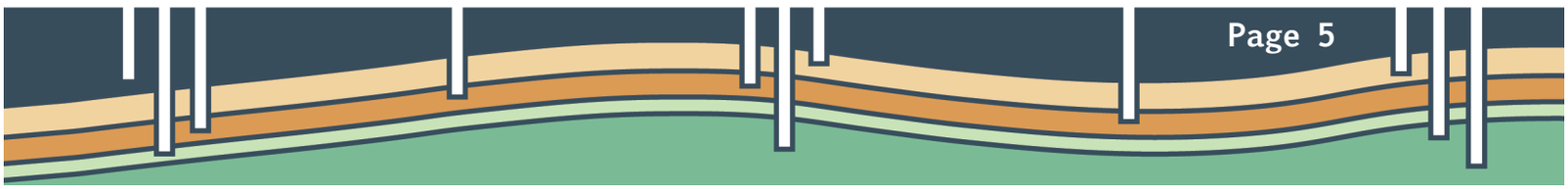


Figure 1: Radiation in Everyday Life

Cleaning Up Whiteshell Laboratories

The **clean up** process for the Whiteshell Laboratories began in 2003. This has included monitoring of the site and surrounding locations for any movement of radioactive and hazardous contaminants. To date, AECL and CNL have completed the following work:

- Removal of over 45 buildings,
- Transported 6,700 cubic meters of **radioactive waste** to AECL's Chalk River Laboratories in Ontario,
- Collected thousands of samples annually through the Whiteshell Laboratories environmental monitoring program (in the last few years, Sagkeeng's Niigan Aki guardian program has also been involved in monitoring work in and around the Laboratories), and
- Diverted **waste** materials from landfill through reuse and recycling.

Today, CNL is **decommissioning** and remediating AECL sites and facilities across the country. CNL plans to have the entire Whiteshell Laboratories site cleaned up by 2035. Following the completion of CNL's decommissioning project, all buildings at the Whiteshell Laboratories site

will be completely removed, all hazardous materials, such as asbestos, PCBs, hydrocarbons, heavy metals, dioxins/furans, will be managed according to federal and provincial legislation and regulations.

CNL is proposing that some waste will be stored underground on site, with the WR-1 reactor decommissioning project and considering this for the Low Level Waste Trenches. Other radioactive waste will be sent to Chalk River Laboratories for storage until dedicated radioactive disposal sites are developed.

Any contaminated land must be cleaned up or made safe for humans and the environment to levels considered safe by federal and provincial standards. Box 2 describes **clean up** options for WR-1 and Low Level Waste Trenches, which are located in the Waste Management Area.

CNL and AECL have assessed different ways of cleaning up WR-1 and the Low Level Waste Trenches in the Waste Management Area. CNL is pursuing in-situ disposal for the WR-1 reactor and continues to engage on options for the Low Level Waste Trenches.

All work will likely be completed by 2035 and environmental monitoring is planned to continue for the next 100 years – or longer – to ensure that radioactive and other hazardous contaminants do not harm humans or the environment. Map 1, above, provides an overview of the end state land uses.

Box 2. Clean Up Plan for the Whiteshell Reactor 1

For WR-1, CNL is undertaking an Environmental Impact Assessment for the **in-situ disposal** of this legacy reactor facility. There have been substantial discussions amongst Sagkeeng, CNL, and AECL on the preferred method to decommission the WR-1 reactor, resulting in the Sagkeeng Alternative Means Assessment, which highlighted the community's preference to fully remove WR-1.

CNL's Planned Disposal: Contain and Isolate Whiteshell Reactor 1 Waste

The Whiteshell Reactor 1 and its below grade components will be encased with grout, then covered with concrete cap and an engineered barrier. The intermediate level radioactive waste is currently underground in an existing concrete-enclosed foundation. This will be encapsulated with specially-formulated grout, with the void spaces in the building and piping systems filled with grout. This is to stabilize the structure and prevent

collapse over time. Once complete, the ground above the reactor disposal area would be revegetated but would not be available for use. Access to this area will be restricted (e.g. fences) to minimize the potential for humans and animals to inadvertently disrupt or damage the disposal facility. This is CNL's and AECL's preferred option for WR-1 and this option is currently under environmental assessment with the **Canadian Nuclear Safety Commission** (CNSC) as the regulatory authority.

CNL's Previously Considered Alternative: Full Removal of Whiteshell Reactor 1

It is important to note that this is not an option that CNL is pursuing, despite Sagkeeng identifying this as their preferred alternative. In the Environmental Impact Statement for the planned **decommissioning** project, a full removal scenario was outlined where all radiological materials removed, packaged, and would be transported to storage facilities, including the calandria (**reactor core**) and thermal shields surrounding it, which were made radioactive during the operation of the reactor. The WR-1 building components would be removed to a depth of three metres below ground. The remaining foundation below three metres would need to be verified to be safe before being left in place. All equipment and structural materials would be sent to the appropriate **waste management** facilities, including municipal waste facilities for those wastes that are not radiologically contaminated. This would involve around 200-300 shipments of radioactive waste to Chalk River Laboratories in Ontario for storage. Once complete, the remaining footprint of land would be considered safe for industrial land use. This full removal plan was noted as the preferred strategy in a 2002 Comprehensive Study Report, based on the assumption that a permanent waste disposal facility for the reactor core components would be available. However, as of 2025, only interim waste storage facilities exist.

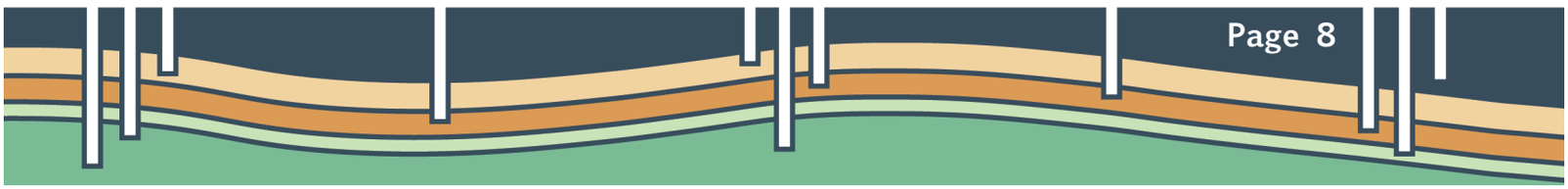


Figure 2: Whiteshell Reactor 1 Today

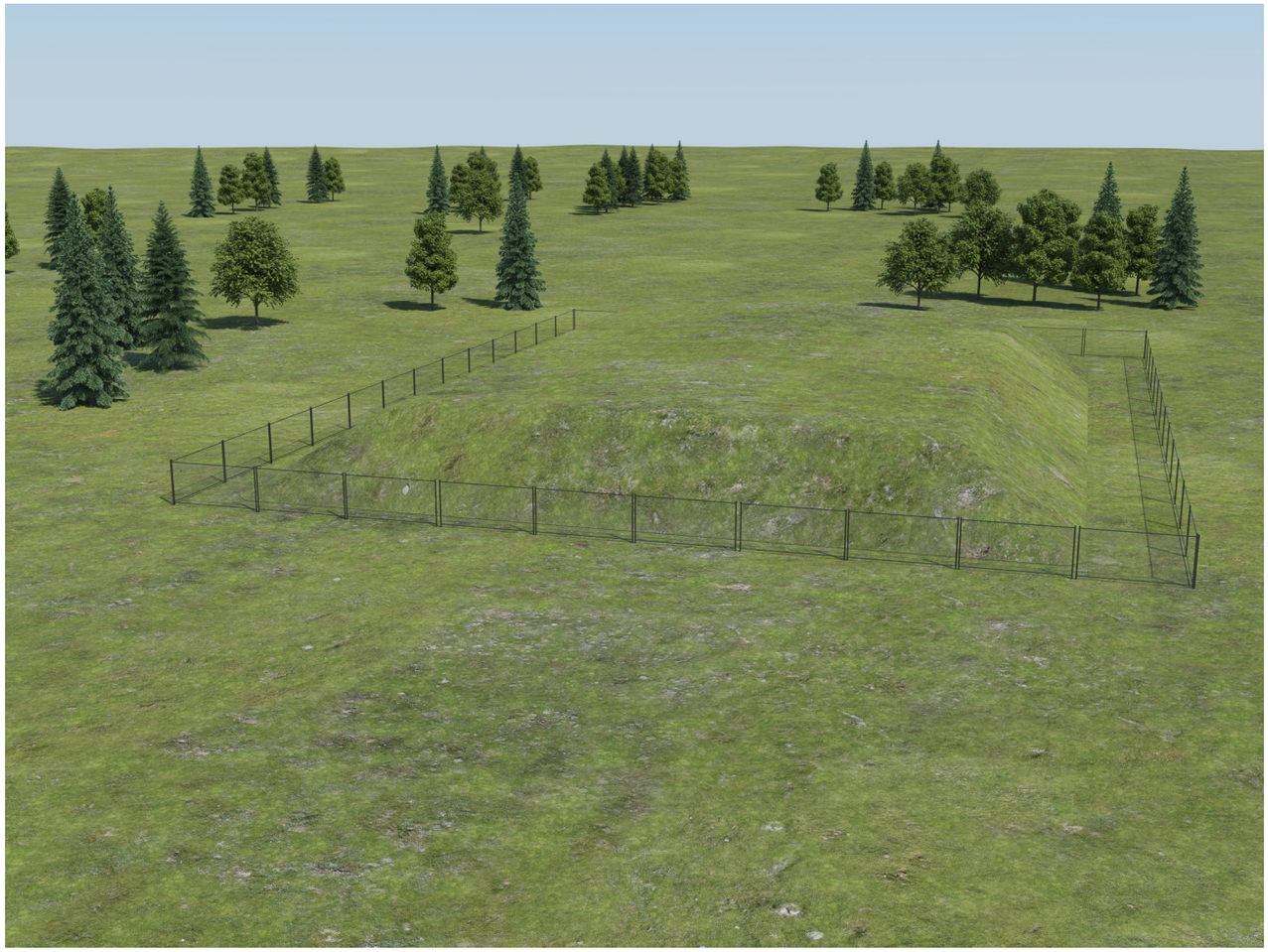


Figure 3: Whiteshell Reactor 1 Proposed After Restoration

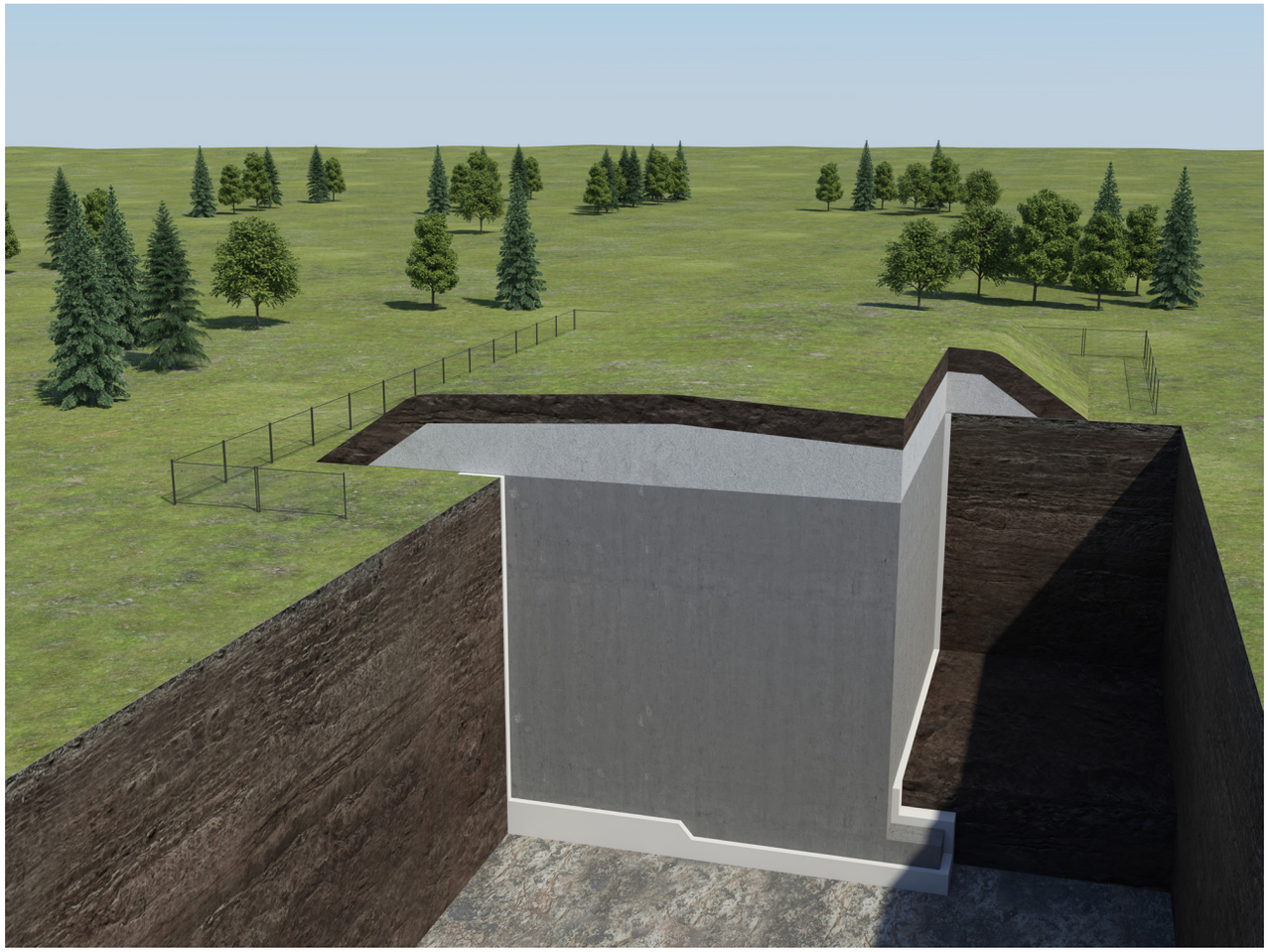


Figure 4: Whiteshell Reactor 1 Proposed After Restoration (Showing Cutaway)

Box 3. Clean Up Options for the Low Level Waste Trenches

For the Low Level Waste Trenches, CNL is engaging Sagkeeng, other Indigenous Nations, and the public to help determine the best **waste management** option. Note that four of the 21 Low Level Waste Trenches have already been identified for complete remediation, due to their legacy waste contents being unsuitable for long-term disposal. None of the following options have been approved and some could impact Indigenous Nations in other traditional territories.

Option 1: In-Situ Disposal of 21 Low Level Waste Trenches

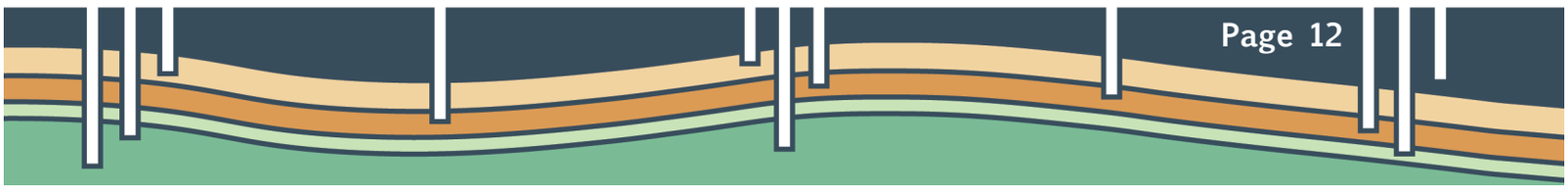
In Option 1, the remaining 21 trenches would be prepared for **in-situ disposal**. This was noted as the preferred strategy in a 2002 Comprehensive Study Report. Multiple engineered barriers would be installed to protect human health and isolate the trenches contents from the surrounding environment while meeting the most current regulations. Environmental monitoring would be conducted for a minimum of 100 years.

Option 2: Full removal of Low Level Waste Trenches

Low level waste from the 21 trenches at Whiteshell Laboratories would be fully removed, including clay liners, caps, and contaminated soil, and sent to the Chalk River Laboratories for storage. This would involve around 3,000 shipments and would require additional storage facilities to be developed at Chalk River Laboratories for this waste.

Option 3: Partial removal of Low Level Waste Trenches (waste is removed and soils and clays remain)

Low level radioactive waste from the trenches would be removed and sent to Chalk River Laboratories in Ontario for safe management. This would involve about 400 shipments. Affected soils, clay liners, and caps would remain in place and covered with the rest of the Waste Management Area (see proposed **clean up** for Waste Management Area below). Environmental monitoring may be required for 100 or more years.



CNL's proposed clean up for the rest of Whiteshell Laboratories Site is as follows:

1. **Main Campus Area:** Buildings and contaminated sediments are proposed to be removed to ensure it is safe for industrial use. Some of this area has already been cleaned up. Public access would not be allowed for a portion of this area and it would be marked with signage and fencing, while other portions of the main campus area would be marked as industrial use (as needed).

2. **Waste Management Area:** Structures, contaminated soil, as well as hazardous radioactive waste are proposed to be removed. Depending on engagement outcomes, some waste associated with the Low Level Waste Trenches may remain. Within the current proposal, public access will not be allowed for a portion of this area and will be marked with signage and fencing, as needed. Parts surrounding the Restricted Area would be marked for recreational use.

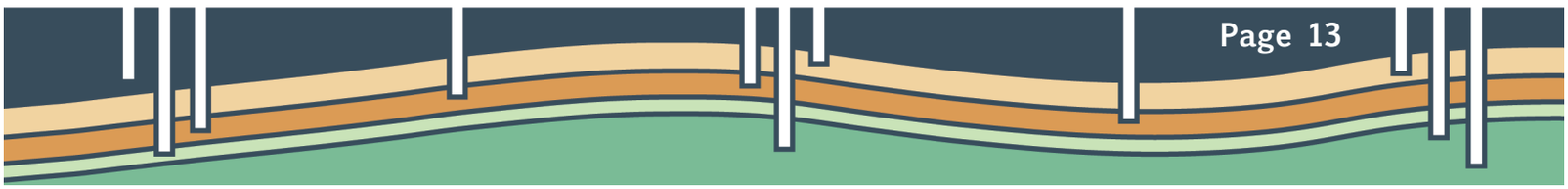
3. **Sanitary Lagoon:** Sediments removed, and the area proposed to be turned into a wetland. Engineered structures manage water levels and discharge to protect the surrounding ground and surface water. The area surrounding the wetland is expected to be safe for recreational use such as trails with viewpoints and benches. Public access would not be allowed for a portion of this area and would be marked with signage and fencing (as needed).

4. **Non-Radioactive Landfill:** Closed in place according to the standards set by Manitoba's provincial regulations for a landfill. This would include an engineered lining and revegetation of the area. The area is expected to be safe for recreational use such as for walking, and activities on top of the surface of the land. Public access would not be allowed for a portion of this area and be marked with signage and fencing (as needed).

5. **North Ditch and Creek:** Contaminated soil might be identified in this area and, if identified, would be removed.

6. **Outside the Main Campus Area:** Much of the infrastructure has already been removed. Any of the remaining infrastructure removed during the clean up. Note that there are high-voltage electrical transmission lines that cross this area of the Whiteshell Laboratories site. CNL does not own these, and they will remain in place. The area is expected to be safe for growing and harvesting food, but with some access restrictions.

7. **Remainder of Whiteshell Laboratories site:** This is non-radiologically affected lands that has not been used for nuclear operations. This area is expected to be safe for traditional harvesting, crops, or livestock, as unrestricted use.



Before Whiteshell Laboratories site can be used for the next potential land uses described in the bullets above:

- CNL needs to show the **Canadian Nuclear Safety Commission** that the land meets specific **clean up** levels or criteria.
- After the clean up, a final site survey needs to be conducted by CNL to confirm clean-up levels, required by Canadian Nuclear Safety Commission.
- This final site survey may identify contamination at Whiteshell Laboratories site that is currently unknown. If there is contamination that was previously unidentified, additional clean up may be required.
- CNL is required to clean up the Laboratories to meet provincial and federal requirements, designed to protect human health and the environment.

Activities intended to restore ecosystems at Whiteshell Laboratories site, such as revegetation with plants and the creation of wetlands, are also proposed to take place during clean up. Sagkeeng may decide to get involved in these activities as well as other work associated with the clean up.

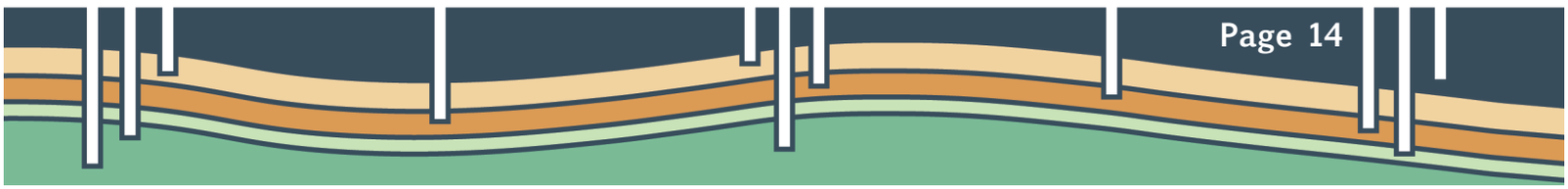
Once clean up is completed, AECL will retain responsibility for the entire Whiteshell Laboratories site. CNL will continue to monitor and carry out activities on behalf of AECL.

Box 4 below provides an overview of how radioactive waste is disposed of in Canada.

Box 4. Disposing of Waste from and at Nuclear Facilities in Canada

Waste from nuclear facilities is disposed of depending on what kind of waste it is:

- **Clean Waste**: can be reused, recycled, or sent to community landfills for disposal. CNL checks to ensure this waste does not include hazardous or radioactive material.
- **Hazardous Waste**: requires additional safety measures for moving and processing and can be disposed of in special, licensed facilities. CNL checks to ensure this hazardous waste is not radioactive.
- **Solid Radioactive Waste**: There are three types of solid radioactive waste: low, intermediate, and high level.



- **Low level waste**: there are no disposal facilities available for low level waste in Canda right now. Low level waste is managed by its producer. Eventually, the national plan is to have several low level waste disposal facilities at different sites in Canada. Right now, CNL sends low level waste from Whiteshell Laboratories to Chalk River Laboratories in Ontario for storage, with the plan to dispose waste in the Near Surface Disposal Facility (NSDF) currently proposed at Chalk River Laboratories.
- **Intermediate level waste**: currently there are no disposal facilities available for intermediate level waste in Canada. Eventually, the national plan is to have one consolidated repository for all intermediate level waste in Canada. This project is being undertaken by the Nuclear Waste Management Organization (NWMO). Right now, CNL sends intermediate level waste from Whiteshell Laboratories for interim storage at Chalk River Laboratories in Ontario. CNL has also proposed that waste from WR-1 would be disposed of in-place with grout encapsulating the underground structure.
- **High level waste** (used nuclear fuel): currently there are no disposal facilities for high level waste in Canada. There is a project to construct one deep geological repository for most of Canada's high level waste. This project is also being undertaken by the Nuclear Waste Management Organization (NWMO). CNL is consolidating its high level waste from Whiteshell Laboratories at Chalk River Laboratories in Ontario for interim storage until the NWMO facility is operational.

- Liquid Radioactive Waste: treated liquid that meets effluent discharge limits can be discharged like wastewater. If it does not meet effluent discharge limits CNL will store this waste.

Intermediate and high level waste, in particular, needs to be isolated and contained so it stays in place and does not move in the environment. As mentioned above, Canada is proposing to build a Deep Geological Repository* to permanently contain high level waste. Canada's Integrated Strategy for Radioactive Waste also calls for most intermediate level waste to be stored via deep geological repository. Disposing of radioactive waste in place (sometimes called "in situ") is another way of managing this kind of waste over the long-term and has been used at a number of sites worldwide**. Restricting certain land uses where waste is buried provides additional protections for human health and safety.

For the Whiteshell Laboratories site, the WR-1 reactor includes material classified as low level and intermediate level waste. All high level waste (in the form of used nuclear fuel) has already been removed from WR-1 and is currently stored on the Whiteshell Laboratories site in above ground dry storage.

For more information, see: CNL's Integrated Waste Strategy, https://www.cnl.ca/wp-content/uploads/CNL-IWS.pdf

**The Deep Geological Repository will be up to 800m below surface. Wabigoon Lake Ojibway Nation has provided consent for this facility to be built and operate in their territory. With the site now chosen, the regulatory process is estimated to be completed by 2032, followed by an estimated 10-year construction period to construct the facilities, then operations are expected to begin in the 2040s.*

***In-situ disposal has taken place internationally since the 1960s. For example, clean up of the power and research reactors at Hallam (Nebraska), Savannah River Site P and R, Experimental Breeder Reactor (EBR) II, Boiling Nuclear Superheater (BONUS) Reactor Facility and Piqua. Two of these examples were decommissioned in the 1960s.*

It is expected that more monitoring will occur at the industrial use areas like the Main Campus Area and the Waste Management Area to ensure contamination does not migrate to other areas and are considered safe for recreational and agricultural uses. CNL has committed to developing detailed plans on how the Whiteshell Laboratories site is proposed to be maintained and monitored prior to the final licensing hearing, which CNL aims to have in 10 years. CNL would likely apply for a licence for institutional control, then detailed plans would be put in place to ensure CNL takes action if there is any contamination migration or an unlikely failure in the disposal facility after **clean up** is complete.

Sagkeeng's Visioning Strategy

Sagkeeng is working on a Visioning Strategy for the Whiteshell Laboratories site. This Visioning Strategy is Sagkeeng-led and is focused on working directly with our members to shape Sagkeeng's vision for the future of the lands currently known as the Whiteshell Laboratories site — one that reflects what is important to Sagkeeng, addresses our shared concerns, and clearly sets out how we expect to be included in future planning and decision-making for these lands. The final deliverable from this project is expected to outline a strategy guided by our values and priorities, that aims to advance Sagkeeng's vision and support future discussions with CNL and AECL, ensuring that decisions about the Whiteshell Laboratories

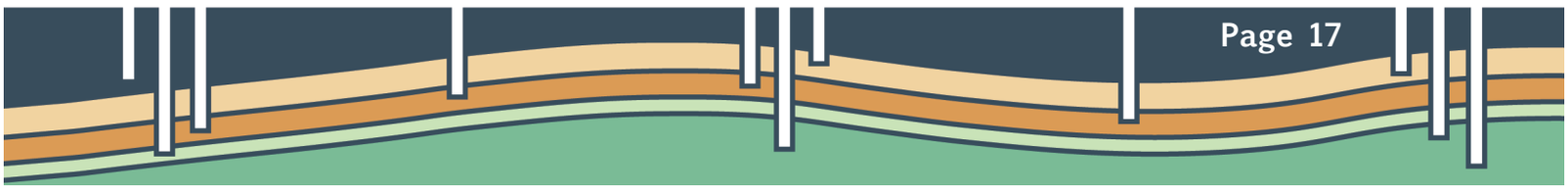
site's future are rooted in what matters most to us.

Sagkeeng hired The Firelight Group to support Sagkeeng developing this Visioning Strategy. Sagkeeng has undertaken two virtual engagement sessions, and completed Community Survey #1—to which 73 completed surveys were submitted. Additional efforts are expected to include:

- Completing Community Survey #2 to begin developing the Sagkeeng vision and a community-driven set of guiding principles, as well as to start thinking about the type of goals that the Visioning Strategy should aim to achieve.
- An on the land mapping activity with Niigan Aki to map priority access and local knowledge such as where important plant and medicine species grow, and to identify sites of significance for Sagkeeng within the Whiteshell Laboratories site.
- Meetings with a trusted language and knowledge holder to develop a new name for the Visioning Strategy based on a list of community-defined criteria.
- In-person engagement events with both on and off-reserve Sagkeeng members to continue building upon visioning efforts already underway and to start setting priorities and objectives for the Visioning Strategy.
- Sagkeeng plans to complete the Visioning Strategy by Fall 2025, followed by a virtual presentation to the community for verification.
- The final Visioning Strategy will be presented to CNL and AECL and can begin informing ongoing discussions and planning efforts between the parties.

The Sagkeeng Visioning Strategy will support Sagkeeng Chief and Council during discussions with CNL and AECL by clearly outlining community preferences, values, and priorities related to the Whiteshell Laboratories site. The Visioning Strategy will represent community interests when considering decisions related to CNL's plans for cleaning up, restoring, and healing the Whiteshell Laboratories site, with direction about how the Sagkeeng community envisions the future use of the land once **decommissioning** is complete. Discussions are ongoing to consider what Sagkeeng involvement, participation and partnership looks like now and in the future.

While the Sagkeeng Visioning Strategy may not be implemented in full, it will give Sagkeeng Chief and Council clear direction for discussions with CNL and AECL when providing guidance on CNL's plans for cleaning up and restoring the Whiteshell Laboratories site and how the site will be used after this work is done.



The Future Land Use Categories of the Whiteshell Laboratories Site

For each area of the Whiteshell Laboratories site, **clean up** is expected to result in one of these four land use categories, which are presented in Map 1 above:

- **Unrestricted Use –** This is the cleanest land category and any type of activity can be done on this land. Land in this category has no restrictions on what can be done on it. Things like growing food or greenhouses, traditional activities like harvesting traditional plants and consumption of foods like berries and mushrooms could be conducted. There would be native plant and wildlife present here as well. Other activities that are under other Land Use Categories can be done as well, such as nature trails, commercial use, or industrial use.

- **Recreational Use –** These areas may have some access restrictions, depending on Environmental Risk Assessment outcomes. This could mean fences or signage. Primary activities in these areas could be casual access for people walking, hiking, skiing, any type of activities where a person would spend no longer than 200 hours per year. There could also be some revegetation of some or all of this land as well. Berries and other edible plants could be eaten as long as they are not being used for sustenance.

- **Industrial Use –** Primary activities in this area could be industrial or commercial use, for instance, setting up a business like a fabrication or manufacturing facility, storage or warehousing or hotels. This area could have access restriction like fencing or signage.

- **Restricted Use –** Land of this type is restricted to access for individuals who may frequent the area. It would be left in a safe state, so that the environment and all people are protected. This includes installing engineered barriers, fencing, future deed restrictions and signage. Land associated to this area would be protected against unintended intrusion to protect the engineered systems used to protect the environment. Enhanced environmental monitoring would also be put in place for 100 years or more.

Definitions

Atomic Energy of Canada Limited: AECL is a federal Crown Corporation. Since 2015, AECL has delivered their mandate through a Government-owned, Contractor-operated model, which means that a private sector organization, CNL, is responsible for managing and operating AECL's sites. The Contractor, as the owner of CNL, is responsible for:

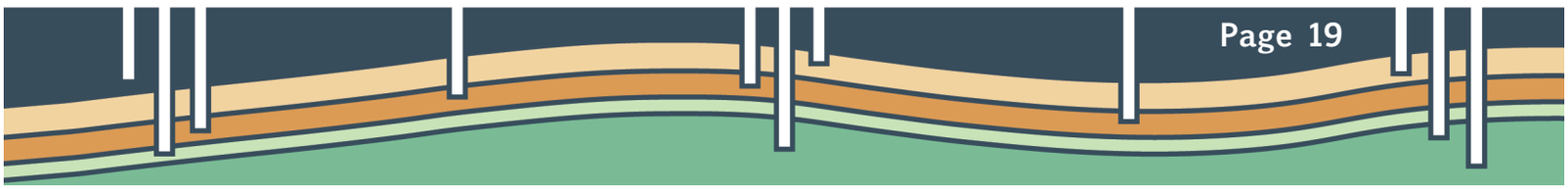
- Appointing CNL's management team.
- Ensuring that CNL carries out its contractual obligations to AECL by employing best industry practices.
- Affecting transformational change to achieve AECL's objectives.

Canadian Nuclear Laboratories: CNL is a private sector nuclear science and technology organization, developing nuclear science for peaceful and innovative applications, like clean energy and health research. Because of CNL's unique expertise in nuclear science and technology, CNL has expertise in restoring and protecting the environment from nuclear contamination. CNL is responsible for the day-to-day operations and maintenance of the Whiteshell Site.

Canadian Nuclear Safety Commission: CNSC regulates the use of nuclear energy and materials to protect health, safety, security and the environment; to implement Canada's international commitments on the peaceful use of nuclear energy; and to disseminate objective scientific, technical and regulatory information to the public. The CNSC oversees management of radioactive waste, including safe handling, transport, storage, and disposal of radioactive waste.

Clean up: The removal of radioactive, chemical or hazardous materials from a site to prevent or minimize negative impacts on human health and safety or the environment. The clean up is carried out to meet specific clean up objectives or criteria that allows for certain types of human use of the land.

Domestic waste: Waste that is discarded from households, including food waste, paper, glass, metals, water from toilets, kitchens, sinks, often dealt with by municipalities or Band Councils.



Decommissioning: After the nuclear site meets the end of its useful life, the site is cleaned up and radioactive and hazardous materials and structures are removed or otherwise disposed of. Through the process various regulatory requirements may be removed based on site testing and allow for the site to be reused for other purposes.

Hazardous waste: Waste that can be damaging to human health and the environment. The storage, handling, transportation, and disposal of hazardous waste is regulated by governments to protect human health and the environment.

High Level Waste (HLW): Radioactive waste that is from used nuclear fuel. HLW is associated with penetrating radiation, which means that shielding is required. In addition, HLW contains significant quantities of long-lived radionuclides which necessitates long-term isolation.

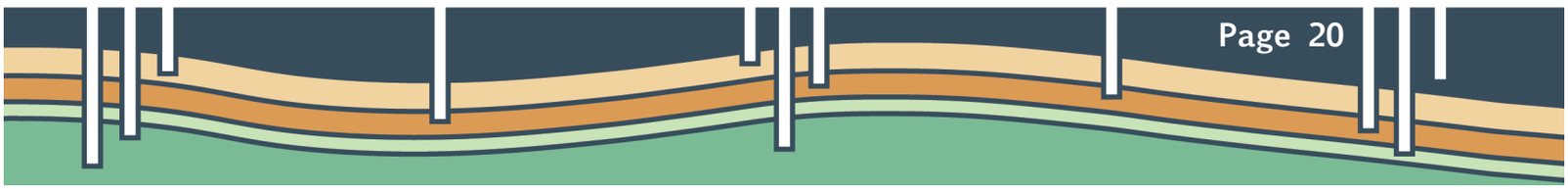
In-Situ Disposal: This typically involves the removal of all or most of the above ground structures, and covering below-ground waste with an engineered barrier to keep water from getting in or out and transporting wastes via groundwater out of the containment area. For example, the underground Whiteshell Reactor 1 structures would be permanently filled with grout and capped with concrete and a cover for this purpose.

Intermediate Level Waste (ILW): Radioactive waste that contains material with long-lived radionuclides that require isolation and containment for more than a several hundred years. Due to its higher activity, ILW may not be considered suitable for near surface disposal.

Low Level Waste (LLW): Radioactive waste that contains material with limited amounts of long-lived activity. Low level waste requires isolation and containment for up to a few hundred years and is considered suitable for disposal in near-surface facilities. This includes contaminated personal protective equipment like boots, gloves, paper suits, mop heads. It could also include affected soil, tools, and equipment that picked up lower levels of contamination.

Millisievert (mSv): A unit of measurement for radiation dose, specifically the amount of ionizing radiation absorbed by the body. Millisieverts are used to quantify the potential biological impact of radiation exposure.

Radionuclides: Unstable isotopes of elements that release radiation as they decay to a more stable form. They can be naturally occurring or created by humans, and their radiation can have both beneficial and harmful effects.



Reactor core: The portion of a nuclear reactor containing the nuclear fuel components where the nuclear reactions take place and the heat is generated.

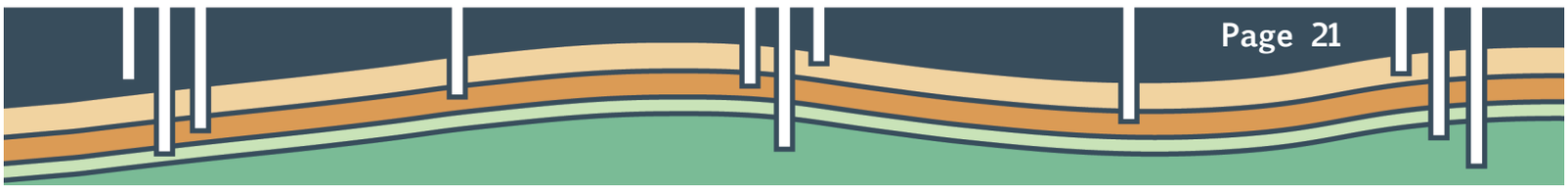
Site clearance survey: A survey that takes place after the proposed restoration plan has been fully implemented, likely to be after 2035.

Solid waste: Waste that is in a solid form, not a gas or liquid form.

Waste disposal site: A site that has been designed and engineered to meet the regulatory rules for the disposal of domestic, hazardous, or radioactive waste material.

Waste handling: The safety precautions that need to be in place when removing domestic, hazardous, or radioactive waste material and transferring it between two sites.

Waste management: The process of managing waste from when it is discarded up to and during final disposal. This may include reducing waste, composing, recycling, reusing, storage or disposal.



Frequently Asked Questions (FAQs) from Sagkeeng Community Members

Sagkeeng has compiled a list of frequently asked questions that have come up from Sagkeeng members throughout Sagkeeng's Visioning Strategy project. CNL and Sagkeeng are currently working on developing clear, accurate responses to each one. The questions are shared below, and we'll provide detailed answers in an upcoming update. If you have a question that isn't included in this list, please don't hesitate to reach out to Ariane Bruyere [abruyere@sagkeeng.ca] or Gabrielle Gracey [gabrielle.gracey@cnl.ca].

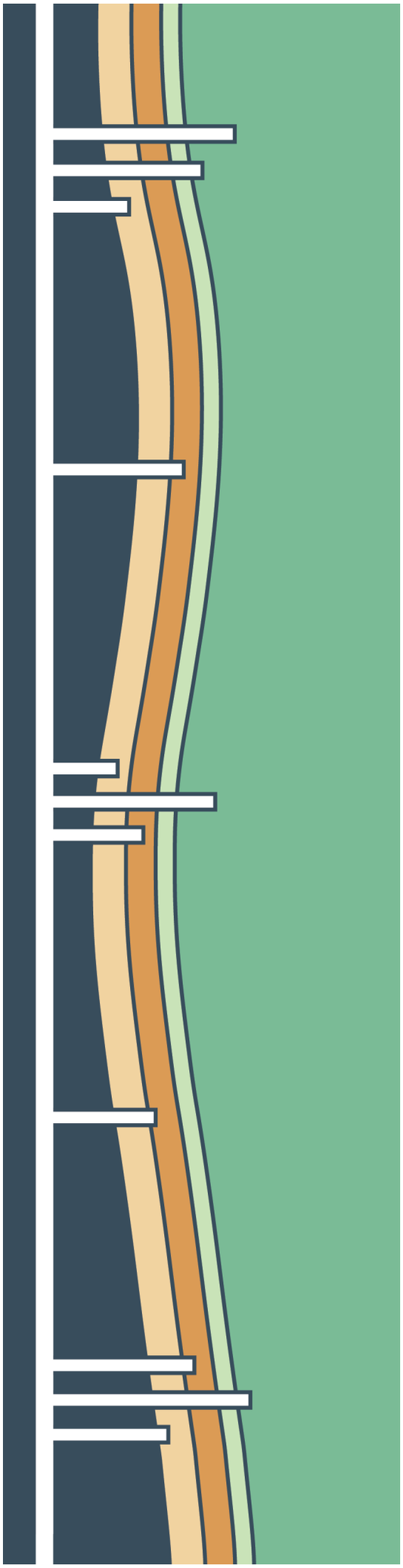
1. Will the land be restored to the way it was *before* Whiteshell Laboratories was built?
2. How do we know that the radioactive waste will be safely stored to protect the land, water, wildlife, and people?
3. How do we know that the monitoring is accurate?
4. What legal requirements are in place to make sure the Whiteshell Laboratories site is properly cleaned up and maintained long into the future?
5. If something goes wrong during or after the clean up, what happens? Who is responsible?
6. How will radioactive contaminated materials be safely moved? Where will they go?
7. Why not transport all radioactive waste material to another location?
8. What is the Low Level Waste Trenches Project?
9. What are Sagkeeng's future plans for this site?
10. Will there be economic opportunities at this site after clean up?
11. Why is Winnipeg River a decision unit? Why is this being considered in the LUES plan?
12. We know this is Sagkeeng's Territory, so why is CNL proposing how it will be managed?
13. Will we be able to use the Whiteshell Laboratories site for ceremony and harvesting medicines safely?
14. How do we know it will be safe to harvest wildlife and fish?

15. What will be done to make sure we don't get sick? How certain is this?

16. How will the sacredness of the site be honored? Can we pass on knowledge of this area to the next generation?

17. What is Sagkeeng Chief and Council doing to make sure CNL will take our Visioning Strategy into account?

18. How can I get involved in the Sagkeeng Visioning Strategy?



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This document was developed collaboratively by Canadian Nuclear Laboratories and Sagkeeng Anicinabe Government.