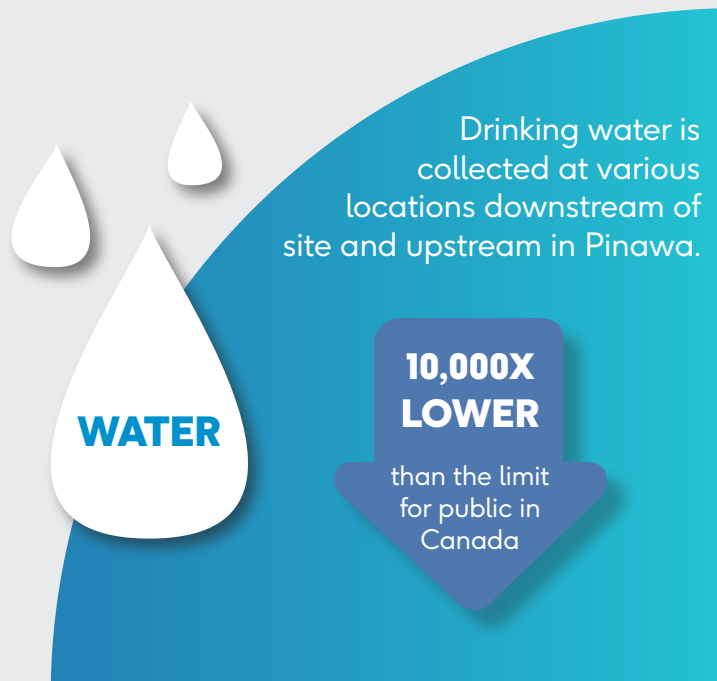


WHITESHELL LABORATORIES ENVIRONMENTAL MONITORING 2023

The Environmental Protection Program at Whiteshell Laboratories studies the environment around the Whiteshell Laboratories facility to ensure there are no effects to human health or the environment.

This brochure was released in 2024, based on data from 2023.

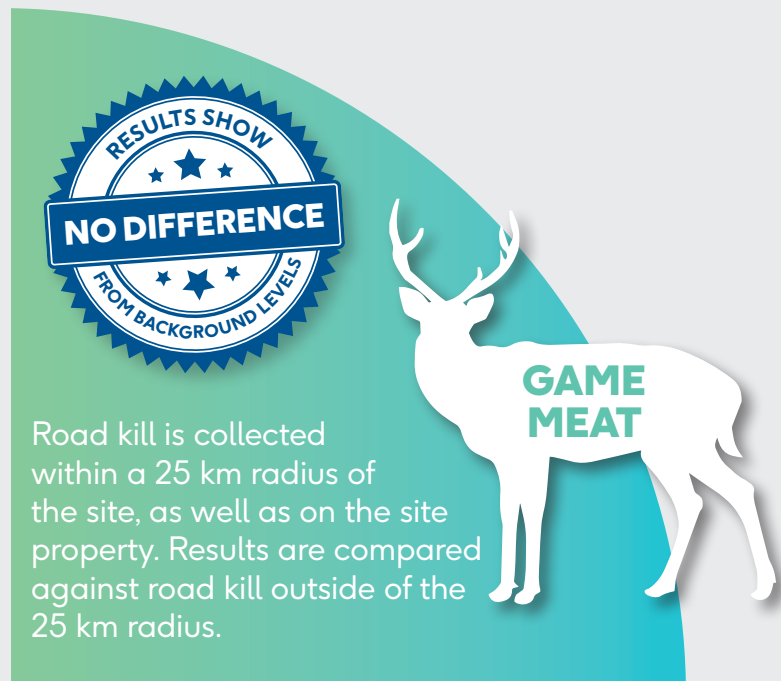


Drinking water is collected at various locations downstream of site and upstream in Pinawa.

10,000X LOWER
than the limit for public in Canada

WATER

The graphic features a large white water drop icon on the left with the word 'WATER' in blue. The background is a teal-to-blue gradient. A dark blue arrow points downwards from the text '10,000X LOWER'.



RESULTS SHOW
NO DIFFERENCE
FROM BACKGROUND LEVELS

Road kill is collected within a 25 km radius of the site, as well as on the site property. Results are compared against road kill outside of the 25 km radius.

GAME MEAT

The graphic features a white silhouette of a deer on the right with the words 'GAME MEAT' in green. The background is a green-to-teal gradient. A circular seal with a starburst border contains the text 'RESULTS SHOW NO DIFFERENCE FROM BACKGROUND LEVELS'.

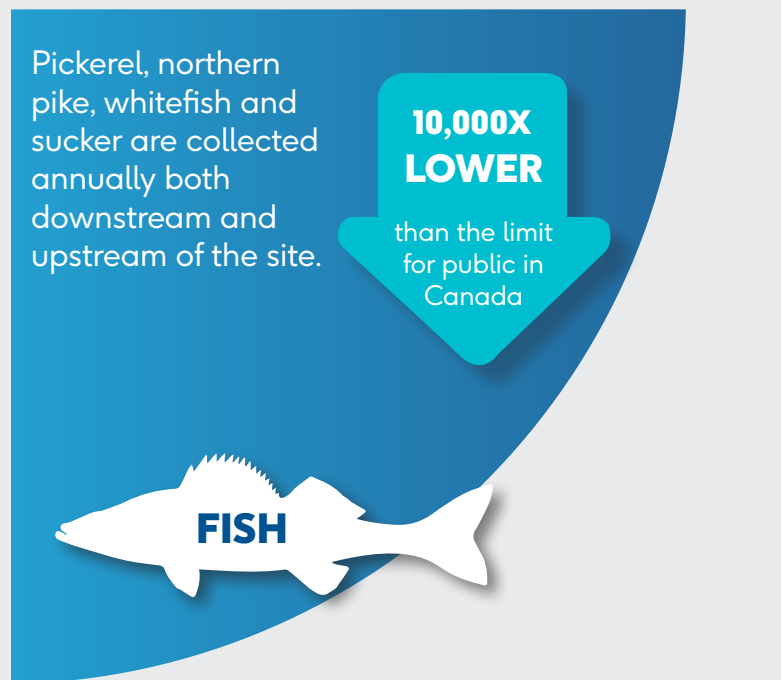


Garden vegetables* are collected at various locations upstream and downstream for testing.

PRODUCE

RESULTS SHOW
NO DIFFERENCE
FROM BACKGROUND LEVELS

The graphic features a white silhouette of a tomato on the left with the word 'PRODUCE' in green. The background is a green-to-teal gradient. A circular seal with a starburst border contains the text 'RESULTS SHOW NO DIFFERENCE FROM BACKGROUND LEVELS'.



Pickerel, northern pike, whitefish and sucker are collected annually both downstream and upstream of the site.

10,000X LOWER
than the limit for public in Canada

FISH

The graphic features a white silhouette of a fish on the bottom with the word 'FISH' in blue. The background is a blue-to-teal gradient. A dark blue arrow points downwards from the text '10,000X LOWER'.

*Environmental Protection is working to improve our program with reporting on **wild rice, berries and mushrooms.**

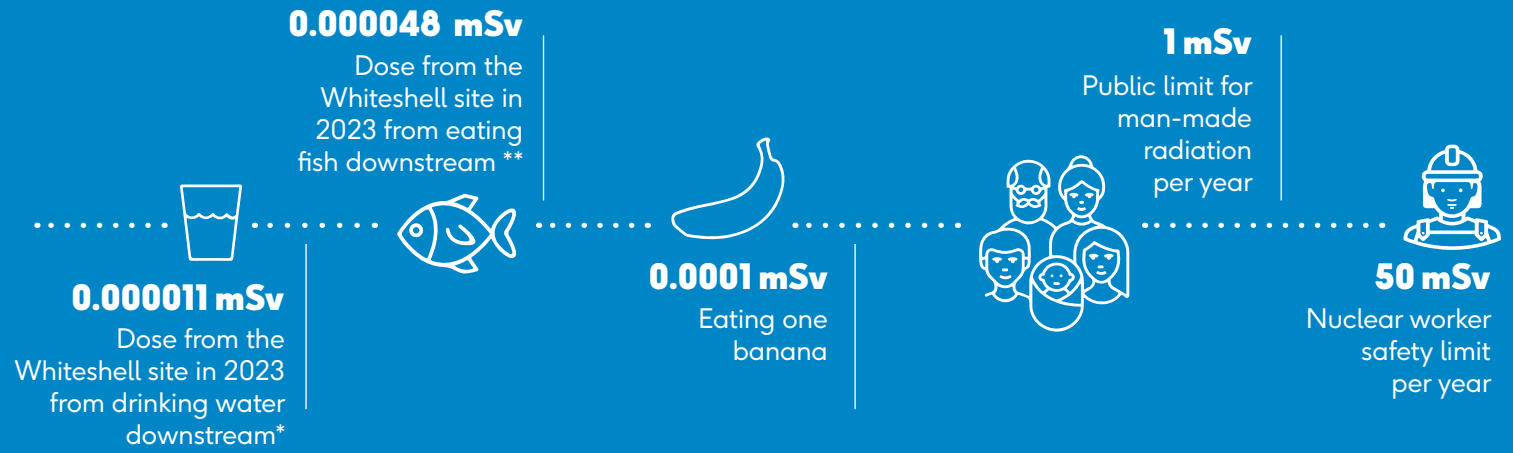


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LEARN MORE

Go to cnl.ca for more information.

HOW DO OUR RESULTS COMPARE?



* Drinking water results based on 840 litres per year consumed, water drawn from the Winnipeg River and does not undergo any filtration or other pre-treatment processes prior to consumption.

** Fish results based on 7.41 kg of fish consumed per year.



23

SPILLS
IN 2023



- HYDRAULIC FLUID
- OIL
- COOLANT
- ANTIFREEZE
- DIESEL
- BATTERY
- THERMOMETER

ON-SITE SPILLS

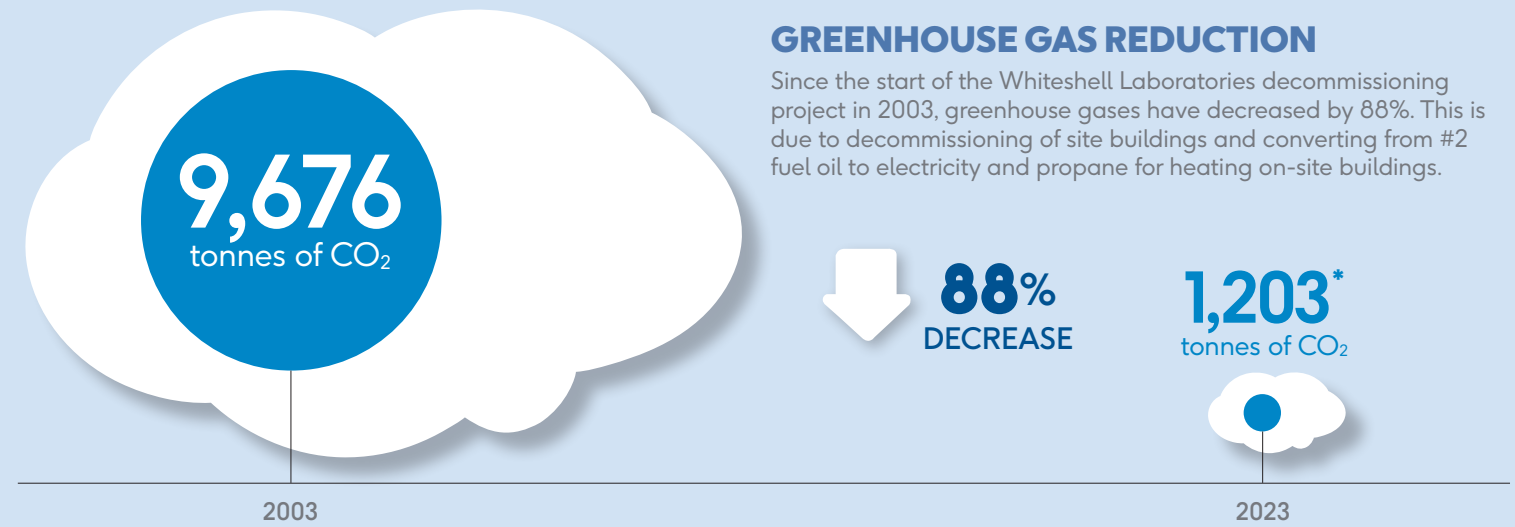
All spills that occur on the Whiteshell Laboratories site are cleaned up immediately, and wastes and contaminated soils/ materials are disposed of properly through a registered hazardous waste receiver. Most spills at Whiteshell occur from mobile equipment. Staff and contractors are required to inspect equipment before use and use secondary spill containment equipment. All spills are immediately reported to Environmental Protection staff.

In 2023 there were 23 minor spills at WL. These spills were primarily from mobile or stationary equipment resulting in spills that ranged from less than 100 millilitres to 4 litres of common industrial substances such as hydraulic fluid, oil, coolant, antifreeze or diesel.

All spills were immediately cleaned up. None of the substances spilled entered a waterway and none of the spills were reportable to a regulatory agency. **None were radiological.**

GREENHOUSE GAS REDUCTION

Since the start of the Whiteshell Laboratories decommissioning project in 2003, greenhouse gases have decreased by 88%. This is due to decommissioning of site buildings and converting from #2 fuel oil to electricity and propane for heating on-site buildings.



*These emissions are called **Scope 1** (Direct) emissions and were calculated according to the federal Greenhouse Gas Reporting Program. **Scope 2** (Indirect Energy GHGs) emissions from purchased electricity and some **Scope 3** (Other Indirect) calculations, such as employee commuting for 2023, are currently in development.

WHAT DOES THAT MEAN?

This reduction in greenhouse gases is equivalent 8,473 tonnes of CO₂! So how much is 8,473 tonnes? It is equivalent to a reduction of...

3,609,550
litres of gasoline consumed



OR

2,596
passenger vehicles
on the road for a year



OR

353,042
propane tanks used
for home barbecues



Source for above data: [Natural Resources Canada Greenhouse Gas Equivalencies Calculator](#)

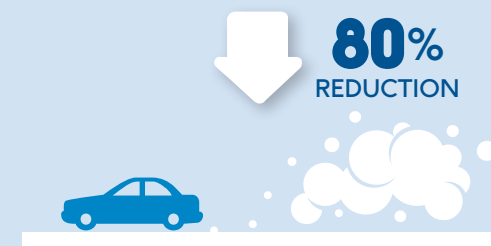
In 2023, our emissions were 1,203 tonnes of greenhouse gases. Greenhouse gas (GHG) emissions from WL include carbon dioxide (CO₂), methane, and nitrous oxide.

Emissions are measured in CO₂ equivalent. Most of our emissions come from the on-site landfill. Sources of estimated emissions are also on-site transportation and stationary fuel combustion of propane.

CRITERIA AIR CONTAMINANTS

Criteria Air Contaminants (CACs) are calculated annually to comply with the Canadian Environmental Protection Act (CEPA). The following CACs at the WL site are all below reporting thresholds: carbon monoxide, oxides of nitrogen and sulphur, and volatile organic compounds.

At Whiteshell Laboratories, we are required to report to the federal government under the National Pollutant Release Inventory (NPRI) as we are over the reporting threshold for two types of particulate matter (PM 10 and PM 2.5). This is from having several kilometres of unpaved roads on the Whiteshell site that vehicles travel on daily, creating dust. As a pollution prevention measure, we reduce the amount of dust on the site from vehicle traffic by applying dust suppressant to 6 kilometres of unpaved roads. This helps to reduce dust in the air by 80%.



Applying **dust suppressant** to unpaved roads helps reduce dust in the air by 80%.



ZERO

In 2023, there were no releases of ozone-depleting substances or halocarbons to air from refrigeration equipment at Whiteshell Laboratories.



3,000

3,000 trees were planted in 2023 through the Tree Canada program with our donation of \$15,000. This helps to offset some of our greenhouse gas emissions for the calendar year.



>3,000

Over 3,000 samples, including air, river water, waste water, vegetation, fish, and more, were collected on-site to support Environmental Protection program results.



ON-SITE FACILITY MONITORING 2023

In addition to monitoring performed in the surrounding environment, Environmental Protection staff at Whiteshell monitor facility performance.



Building 100 houses the shut-down reactor, operational activities and decommissioning activities. Air and water emissions are monitored by the WL Environmental Protection Program.

Check mark indicates water and air emissions from the facility are well below regulatory limits.



Building 300 houses our environmental labs as well as decontamination facilities where we clean personal protective equipment for reuse. It also houses our laundry area.

Check mark indicates water and air emissions from the facility are well below regulatory limits.



The **Outfall** station provides continuous monitoring of water leaving the site.

Check mark indicates water monitored from the facility is well below regulatory limits.



The **lagoon** houses our domestic waste (waste from staff washrooms, flushing toilets and domestic drains). This facility is continuously monitored when we discharge.

In 2023, the lagoon was not discharged. Facility inspections indicate the lagoon is in good condition and in a safe state for the environment.

