

**Surveillance Advances**  
**Progrès dans le domaine de la surveillance**

# **Wastewater Monitoring in Northern and Remote Areas: The Eeyou Istchee Experience**

## **Surveillance des eaux usées dans les régions nordiques et éloignées : l'expérience Eeyou Istchee**

November 26, 2024

12:00 – 1:00pm CT / 1:00 – 2:00pm ET

### **Speakers**

**Dr. Catherine Dickson** Public Health Physician, Cree Board of Health and Social Services of James Bay

**Reggie Tomatuk** Public Health Environmental Health Planning & Programming Research Officer, Fish & Wildlife Tech – Sir Sandford Fleming, Cree Board of Health and Social Services of James Bay

**Laurence Truong** Water Quality Coordinator, Cree Nation Government



National Collaborating Centre  
for Infectious Diseases  

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Centre de collaboration nationale  
des maladies infectieuses



Public Health  
Agency of Canada

Agence de la santé  
publique du Canada



# Land Acknowledgment: NCCID



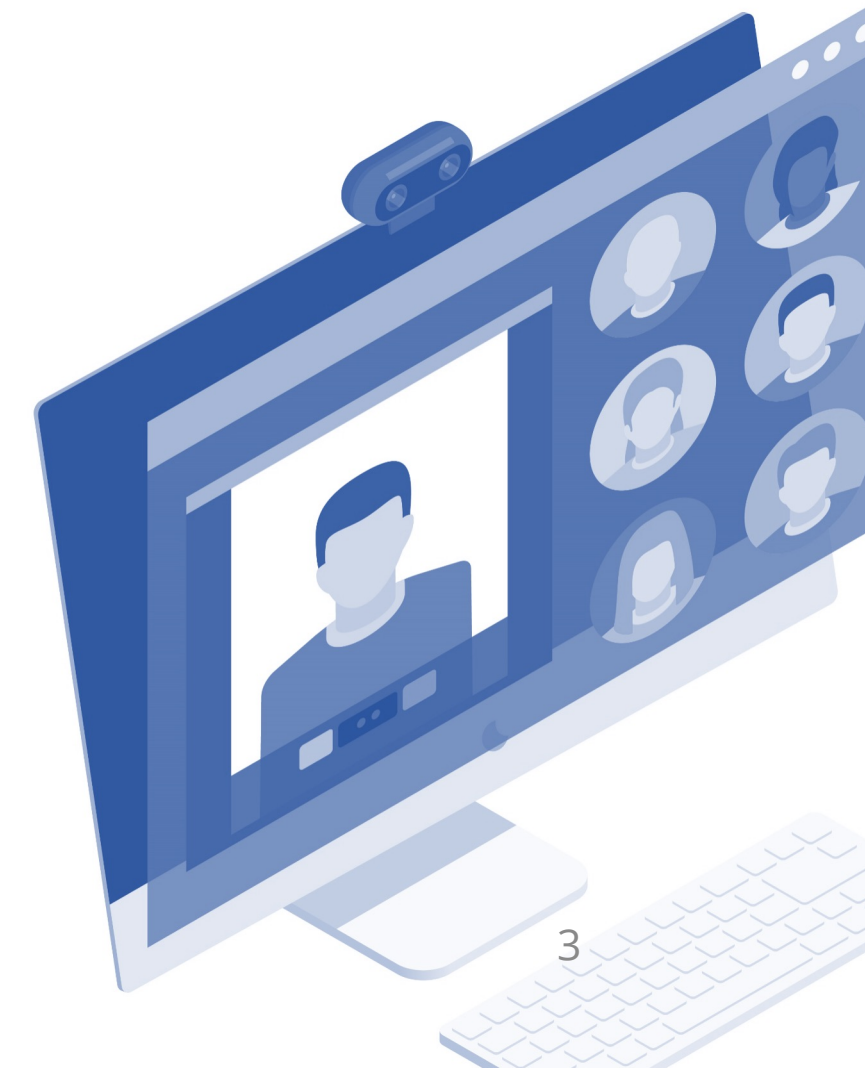
The National Collaborating Centre for Infectious Diseases is hosted by the University of Manitoba. The University is situated on Treaty 1 Territory, the original lands of the Anishinaabe, Cree, Oji-Cree, Dakota, and Dene peoples, and homeland of the Métis Nation. As an organization, NCCID recognizes the systemic inequities and treaties that have been implemented as part of the process of colonization intended to benefit some while harming others. We are committed to working with our partners towards reconciliation and we strive to honour the lands and their original caretakers in our work.

I am joining you today from the City of Hamilton. Situated upon the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee and Mississauga Peoples, this land is covered by the Dish With One Spoon Wampum Belt Covenant, an agreement between the Haudenosaunee and Anishinaabek to share and care for the resources around the Great Lakes.

# Housekeeping



- Seminar recording and presentation slides will be available shortly after the seminar at the NCCID website: <https://nccid.ca/>
- If you have technical problems with Zoom, please email us at [nccid@umanitoba.ca](mailto:nccid@umanitoba.ca)
- The chat box for participants has been disabled for this session. We will use the chat box to share additional information.
- Please use the Q&A tab to submit your questions for our speakers. You can “like” other people’s questions to push them up in priority



# Accreditation



Surveillance Advances is a self-approved group learning activity (Section 1) as defined by the Maintenance of Certification Program of the **Royal College of Physicians and Surgeons of Canada**.

The seminar series is also approved by the Council of Professional Experience for professional development hours for members of the **Canadian Institute of Public Health Inspectors**.

If you would like a letter of participation, please complete the survey which will be shared after the seminar.





# Land Acknowledgment: PHAC



I would like to take this time to acknowledge the land where I live and work. Situated upon the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee and Mississauga Peoples, this land is covered under the Between the Lakes Treaty No. 3, and protected by the Dish With One Spoon Wampum agreement.

Today, Dundas and the City of Hamilton are home to many Indigenous peoples from across the Turtle Island. We honour the Indigenous peoples who have lived on and cared for these lands for generations, and I am grateful for the opportunity to share and call this place home.

# Today's speakers



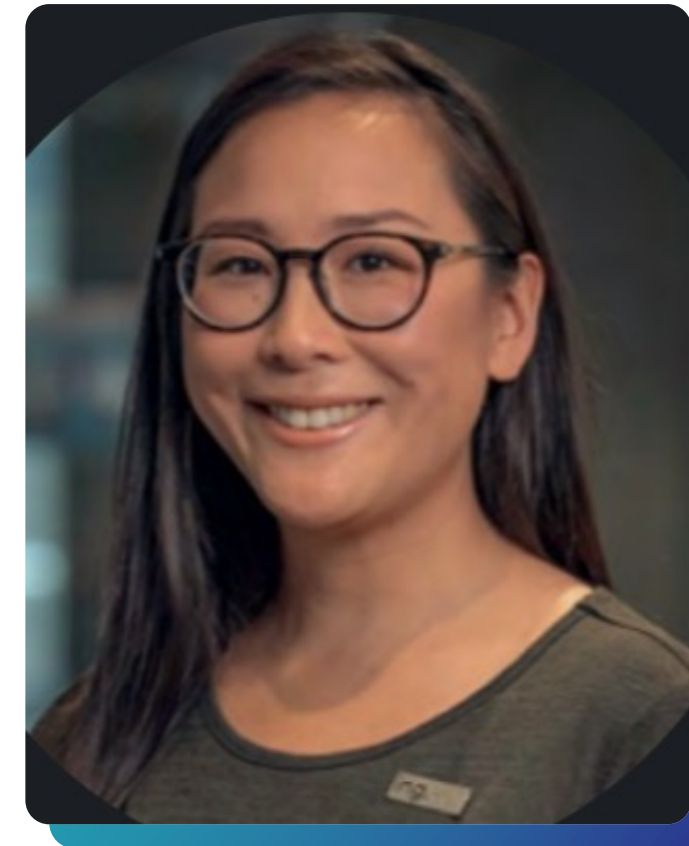
**Dr. Catherine Dickson**

Public Health Physician, Cree  
Board of Health and Social  
Services of James Bay



**Reggie Tomatuk**

Public Health Environmental  
Health Planning &  
Programming Research Officer,  
Fish & Wildlife Tech – Sir  
Sandford Fleming, Cree Board  
of Health and Social Services of  
James Bay



**Laurence Truong**

Water Quality Coordinator,  
Cree Nation Government

# Water Monitoring in Eeyou Eenou Istchee

Mayo boo

## Catherine Dickson

Public Health and Preventive Medicine Specialist, Cree Board of Health and Social Services of James Bay

## Reggie Tomatuk

Planning, Programming and Research Officer, Environmental Health, Cree Board of Health and Social Services of James Bay

## Laurence Truong

Water Quality Coordinator, Cree Nation Government



# Conflicts of interest

We have no conflicts of interest to declare.

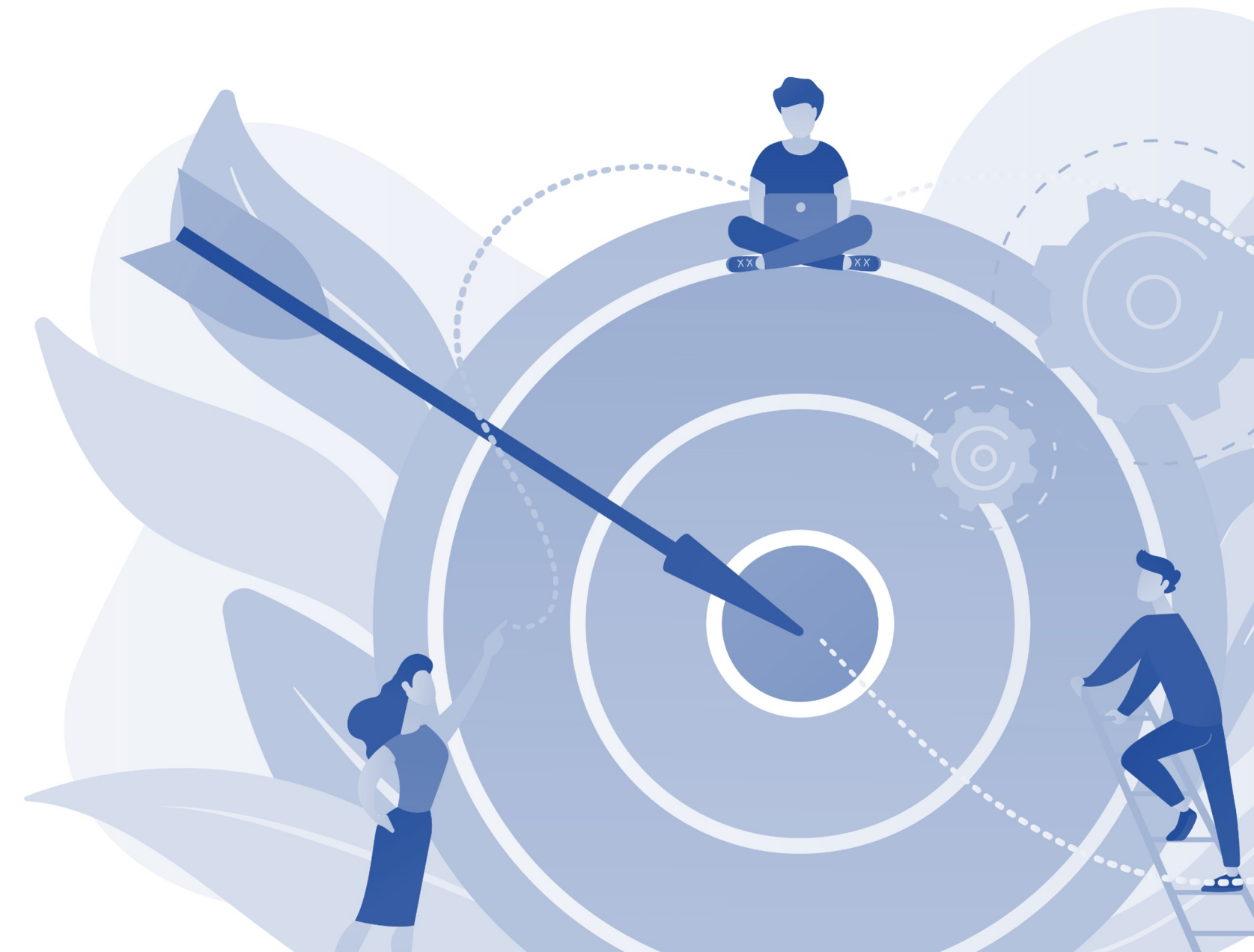




# Learning Objectives



1. The importance of building and maintaining community partnerships in wastewater surveillance work.
2. The importance of communicating information in a way that your intended audience understands.







# Outline

- How our system is set-up
- Community-driven surveillance
- Outreach and partnerships
- Challenges and limitations
- Future applications of wastewater surveillance in Eeyou Istchee





**Community-driven  
project.  
Requested by  
community leaders.**

**Supported by  
National  
Microbiology  
Laboratory.**



# The case for wastewater surveillance in remote communities during pandemic times

- The need for information to guide local decisions.
- Limited testing capacity.
- Testing fatigue.
- Rapid tests now mean less information is reported.





# Wastewater Surveillance in Remote Locations

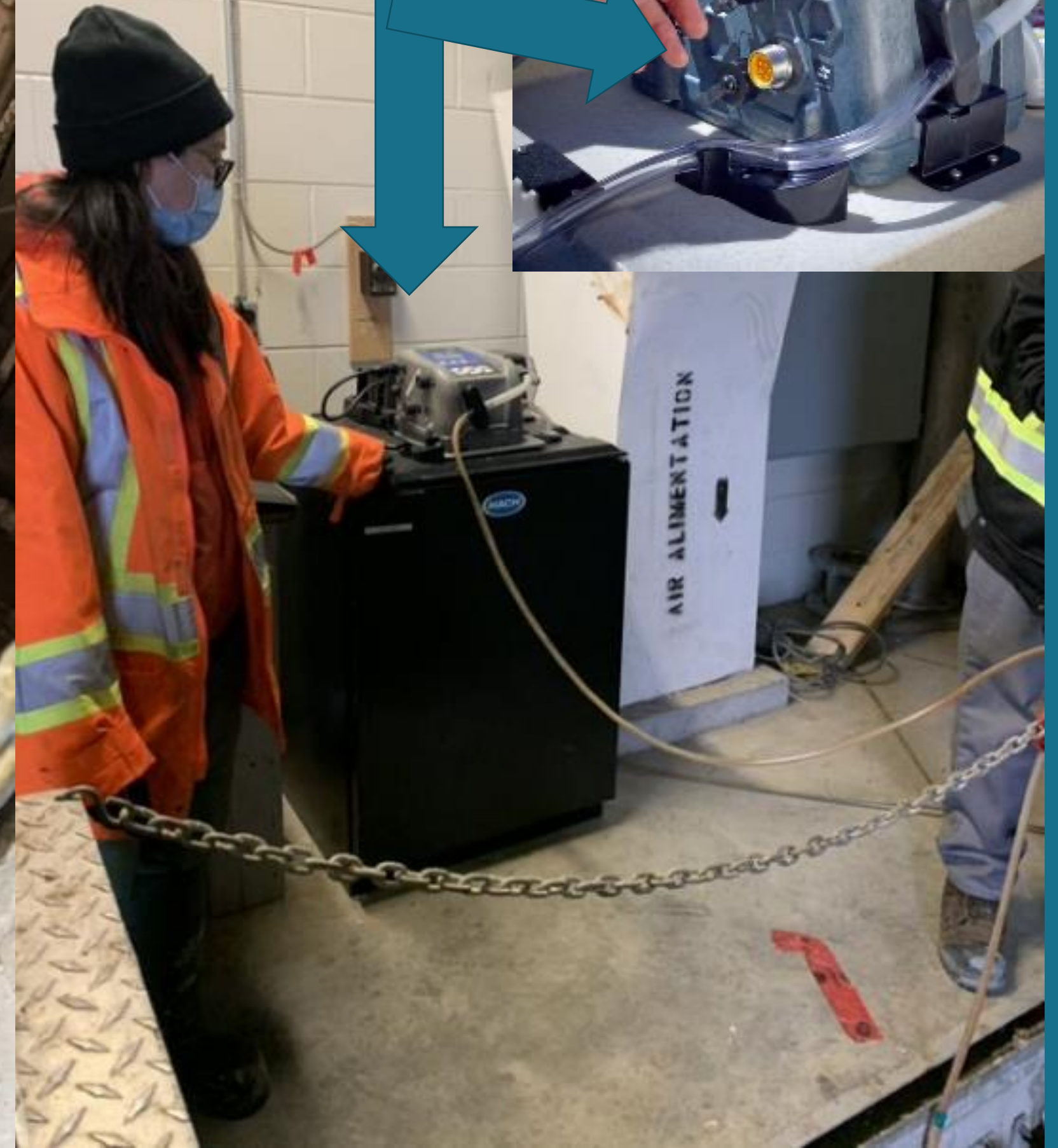
- Wastewater testing typically uses a large lab with multiple instruments and specially trained individuals.
- Shipping delays can make it hard to get timely results. This is a challenge if you are in a remote location and want to use wastewater as an early warning system.
- The GeneXpert system was proposed as an alternative to conventional labs for wastewater testing in remote locations.





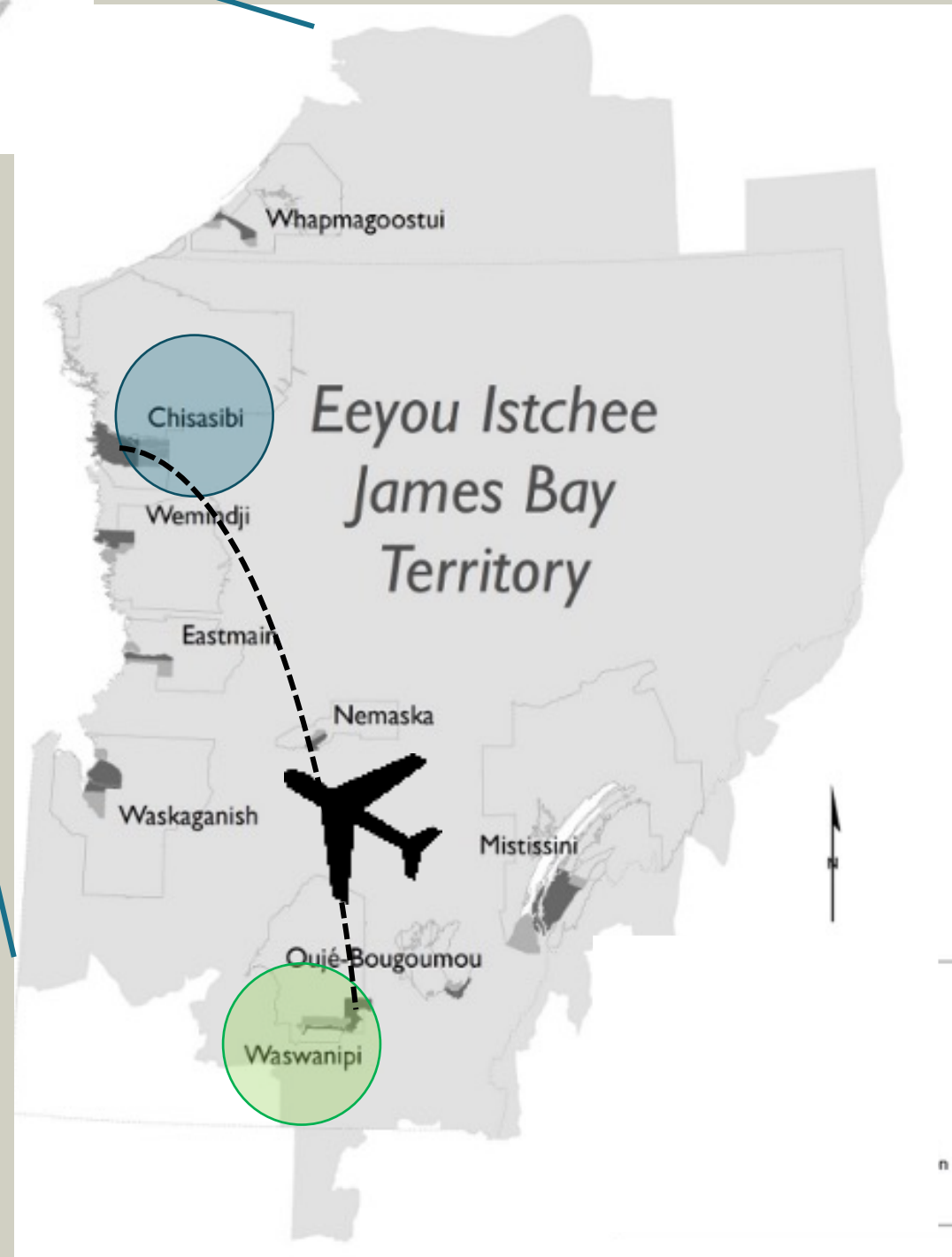
Sewage  
Mayo boo

Autosampler  
machine





**The samples are dropped off at the clinic and shipped by Cree Health Board charter flights to Chisasibi for laboratory testing.**





**Our team of 3 Cree local lab techs run the samples through the GeneXpert PCR.**

**Testing is done for 4 viruses: COVID-19, Flu A, Flu B, RSV**

**Results are available within 2 hours.**

Sewage sample

PCR = Polymerase Chain Reaction





# Reporting

## Included in internal COVID updates

- Currently released monthly.
- Weekly update when reports were more frequent.
- Allows comparison of reported regional cases to wastewater numbers.

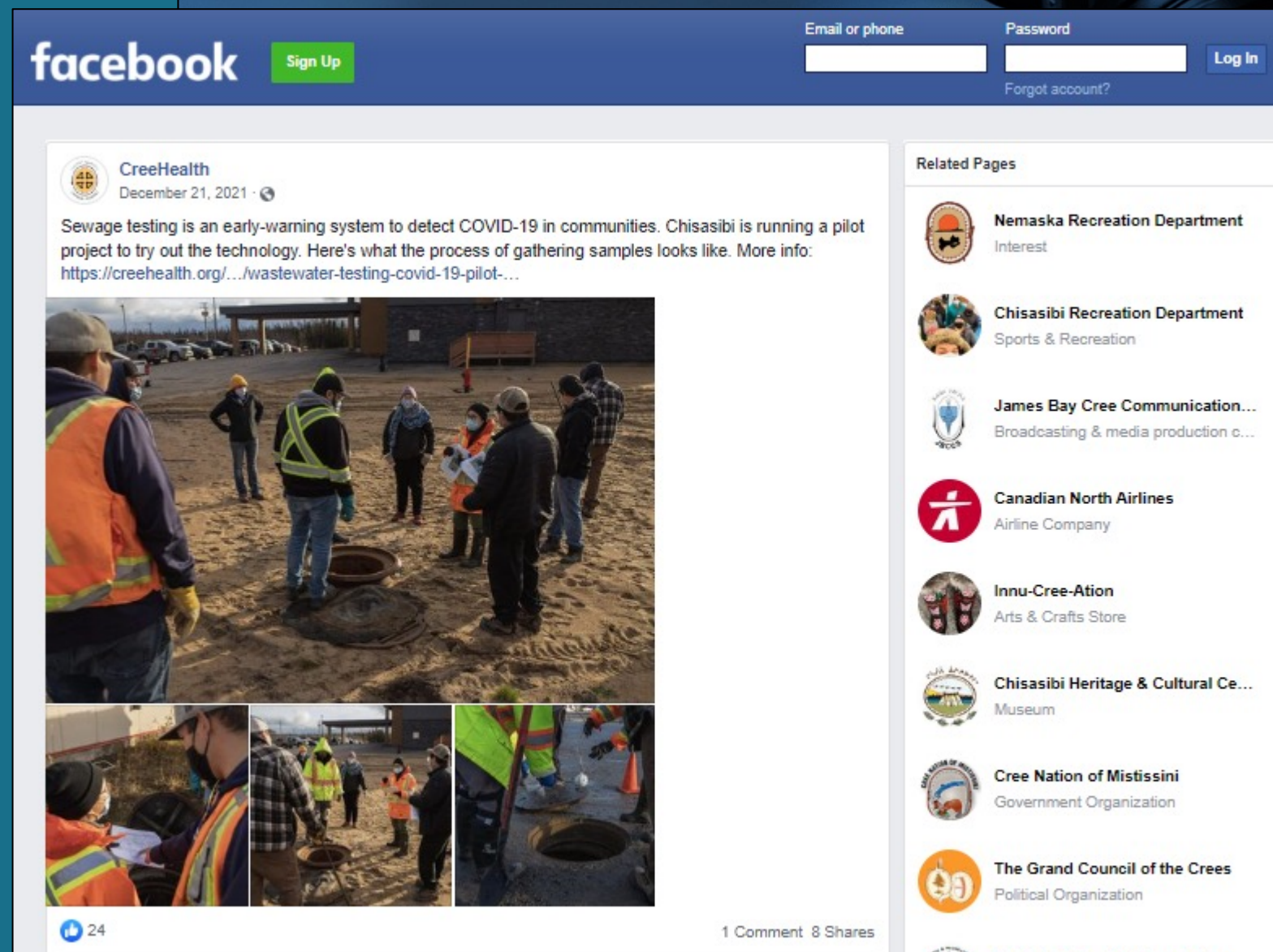
## Community updates

- Biweekly email.
- Send to staff at the municipal level identified by each community as their point person.
- Also shared with designated people from the clinic.

### Report contents:

- Trend graph,
- Presence/absence of COVID/Flu A/Flu B/RSV,
- Interpretation,
- Reminders/recommendations.

# Communications around wastewater testing.







# Wastewater workers training





A photograph of a snowy landscape with several bear tracks visible in the snow. The tracks are dark and show the characteristic claw marks of a bear. The snow is white and slightly textured. In the background, there are some dark, thin branches or trees.

**You can not get COVID-19  
from sewage.**

**When we find dead bits of  
virus DNA in the sewage,  
it's like finding a bear's  
tracks, not a live bear.**

# High school science class visit





The Sunday Magazine

## Wastewater surveillance provides crucial COVID data, but also carries privacy concerns: scientists



Researchers say data from your poop is anonymous. Steve Hruddy says we need more assurances



Jonathan Ore · CBC Radio · Posted: May 29, 2022 4:00 AM ET | Last Updated: June 5



Image by [insert author name] on [website name]

## Challenges and limitations





A

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🔍

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# America Is Doubling Down on Sewer Surveillance

Like viruses, illicit and prescription drugs leave behind traces in the country’s wastewater systems.

By Helen Ouyang

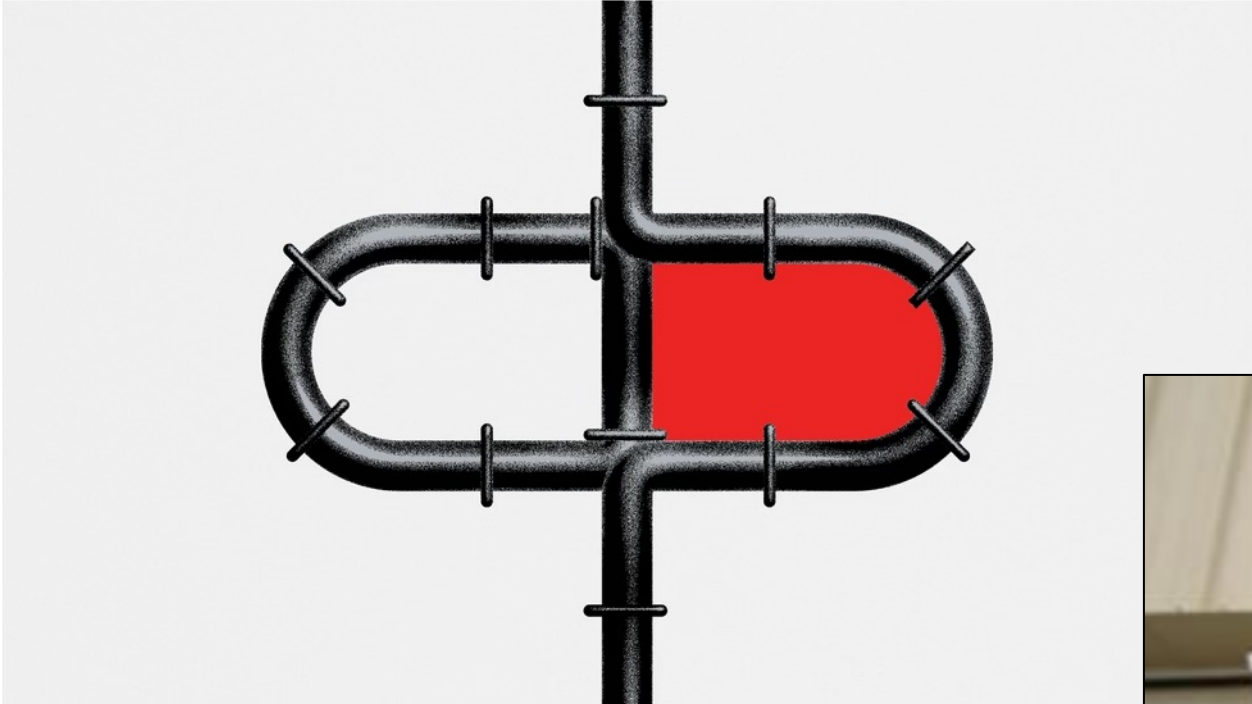


Illustration by Ben Kothe / The Atlantic

# Future applications of wastewater surveillance



Image by [Insert author name] on [Website name]





## Partners:

- Cree Board of Health and Social Services of James Bay regional public health
- Cree Nation Government
- Cree Nation of Chisasibi
- Cree Nation of Waskaganish
- Cree Nation of Mistissini
- Cree Nation of Waswanipi
- Chisasibi Eeyou Resource and Research Institute (CERRI)
- National Microbiology Laboratory

# Meegwetch! Merci! Thank you!

## Questions?

**CERRI** 



or name] on [W





# Discussion Period

## Any questions?

Please use the **Q&A tab** to submit your questions for our speaker. You can “**like**” other people’s questions to push them up in priority.





# Closing Remarks





# Thank You!



The seminar recording and presentation slides will be posted on <https://nccid.ca/> within a few weeks.

Please complete our **post-seminar evaluation survey** by scanning its QR code. Today's post-seminar survey will also be distributed to you shortly after the seminar.

Join us on **Tuesday, January 28, 2025 (1:00-2:00pm ET)** for the next seminar!

Visit <https://nccid.ca/surveillance-advances-seminar-series/> for more information.

