



Gamètì

Water Licence: W2018L3-0001

Surveillance Network Program (SNP) Training Manual

Issued in December 2018

Expires December 2028



FIELD MANUAL

The purpose of this field manual is to ensure safe and effective sampling in the Tłıchǫ Community of Gamètì, as required by Water Licence W2018L3-0001.

Updated 2020



Surveillance Network Program

SNP Station	Location	Sampling Frequency	Rationale
003-1	The raw water from Rae Lake	Daily	To determine the quantity of raw water
003-2	Sewage effluent at the outflow of the proposed sewage lagoon to the wetland	Monthly from June to October	This sample will indicate effluent quality following wetland treatment
003-3	Rae Lake at outflow of the wetland	Monthly from June to October	To monitor effluent quality from the Sewage Disposal Facilities prior to entering Snare Lake
003-4	Runoff from domestic Solid Waste disposal site	Monthly during periods of open water	To monitor runoff quality from the Solid Waste Facility



Surveillance Network Program

Water Licence Conditions related to the SNP

Part D: Conditions Applying to Waste Disposal

1. The Licensee shall ensure that any unauthorized Wastes associated with the municipal undertaking do not enter any Waters.
2. The Licensee shall immediately notify an Inspector and the Board of any SNP result that is above the criteria value set out in Part D, Conditions 4 and 5.

Sewage

3. The Licensee shall direct Pump-Out sewage to the Sewage Disposal Facilities, or as otherwise approved by the Board.
4. All Sewage effluent discharged from the Sewage Disposal Facilities at Surveillance Network Program Station Number 003-2 shall meet the following effluent quality standards:

PARAMETER	MAXIMUM AVERAGE CONCENTRATION
Suspended Solids	240 mg/L
Oil and Grease	5 mg/L
CBOD	235 mg/L
Faecal Coliforms	1 x 10 ⁶ CFU/100 mL

The Waste discharged shall have a pH between 6 and 9, and no visible sheen of oil and grease.

5. All Sewage effluent discharged from the Sewage Disposal Facilities at Surveillance Network Program Station Number 003-3 shall meet the following effluent quality standards:

PARAMETER	MAXIMUM AVERAGE CONCENTRATION
Suspended Solids	25 mg/L
Oil and Grease	5 mg/L
CBOD	25 mg/L
Faecal Coliforms	1 x 10 ⁶ CFU/100 mL

The Waste discharged shall have a pH between 6 and 9, and no visible sheen of oil and grease.

6. All bagged toilet wastes (honey bags) shall be disposed of in a manner satisfactory to an Inspector at the Bagged Toilet Waste Disposal Facilities.
7. The Licensee shall maintain the Sewage Disposal Facilities to the satisfaction of an Inspector.

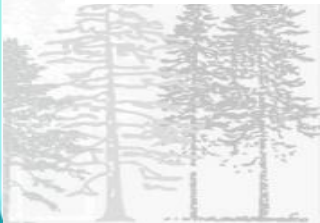
The Importance of Compliance

- The Water Licence is a ***legally binding authorization***

...that means there are legal consequences for not following it!



- **More importantly, the water licence helps make sure the community's water is clean and safe; and**
- **The community's waste disposal facilities are working properly and don't negatively impact the surrounding environment.**



Water Sampling Steps

Step 1. Health & Safety

Step 2. Preparation

Step 3. Sampling Procedures – Part 1 to 3

Step 4. Sampling Locations & Requirements for
SNP Stations 003-1, 003-2, 003-3, & 003-4

Step 5. Sampling and Analysis

Step 6. Storing and Reporting Sampling Data



Step 1. Health & Safety

Before sampling, make sure YOU ARE PREPARED WITH THE FOLLOWING:



Vaccinations

The following vaccinations can help protect you against potential hazards from dealing with sewage:

1. Hepatitis A & B
2. Tetanus



Hand Sanitizer

Use hand sanitizer wipes after each sample



Gloves, Field Gear, etc.

- Make sure you wear proper field gear such as rubber boots and/or coveralls.
- Use disposable gloves during sampling and discard afterwards.
- Make sure you have a communication plan and practice wildlife safety. If possible, sample in pairs.



Step 2. Preparation

Before sampling, prepare the necessary equipment and information:



Pick a date!

Select sampling dates to match licence requirements



Bottles and Cooler

Order bottles and a cooler from Taiga Lab **3-4 days** before sampling date (use laboratory order form)



Ice packs

You should have ice packs ready to keep samples cold (but not frozen)



Garbage Bag

Prepare a garbage to bring with you to dispose of used gloves and preservative vials


















Taiga Lab

Contact Taiga Lab and let them know you are planning to send them samples



Step 2. Preparation

The following table summarizes what the different sampling parameters are and which bottles will be sampled at each SNP station. The check marks note which bottles you will be using to take samples at each SNP site. Using the Lab Colour Codes, that check list is summarized below:

#003-2						
#003-3						
#003-4						

Take the time to note which bottles you will be using at each site. A helpful method is to organize the bottles for each site into a single bag.



Step 2. Preparation

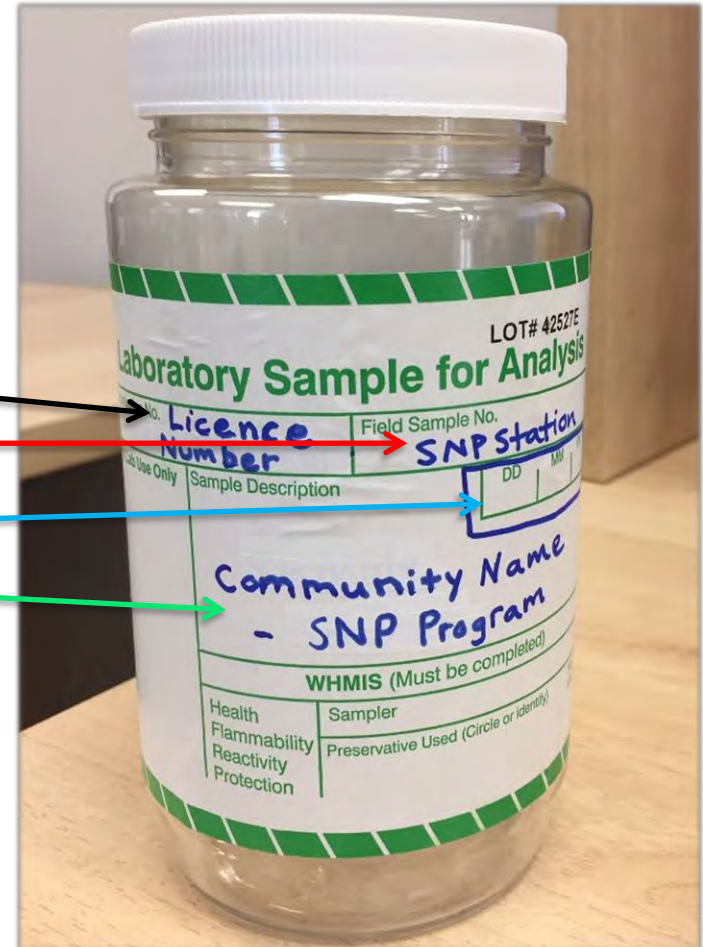
Before sampling, prepare the necessary equipment and information:

Label Bottles

You should have bottles for each sampling event.

Label each bottle with:

1. **W2018L3-0001** (Submission No.)
2. SNP Station # (Field Sample No.)
3. Date and Time (Important for lab – write accurately)
4. **Gamètì – SNP** (Sample Description)



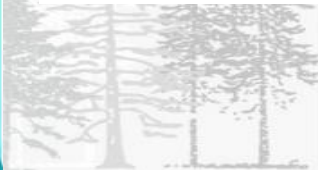
Step 2. Preparation

Prepare to Transport Bottles

1. Complete Laboratory Order Form (see attachments). Put a copy inside a clean plastic Ziploc bag in the cooler with the sample bottles. Be sure to fill out the sample times on the form before shipping.
2. Arrange for delivery of samples to Taiga Laboratory in Yellowknife. Be sure to put a label (see 'Sample Shipment Label for Coolers' slide) on the cooler and tape it up well. A useful method is to print the label and seal it in a Ziploc bag before taping it to the outside of the cooler to prevent any damage.
3. Arrange with Taiga Lab to pick up samples if delivery is not prearranged, especially if it's after work hours.

Decide on Station Sampling Order and Timing

SNP stations should be sampled **as close to flight time as possible** (e.g., late morning if early afternoon flight) and from cleanest station to dirtiest station. For Gamètì, the sites should be sampled in this order: 003-1, 003-4, 003-3, 003-2.



Step 3. Sampling Procedures – Part 1

General Sampling Procedures for each station:

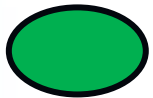
- a. Put on a clean pair of disposable gloves (for each new site)
- b. Ensure bottles are labeled before collecting samples and bring them in a plastic Ziploc bag labelled with the specific SNP station (include required preservatives)
- c. Collect samples, making sure to leave room for preservative, note time sampled on lab Taiga Laboratory Request Form
- d. Add preservative to appropriate sample bottles.
- e. Place sample bottles back into labelled Ziploc bag and put in the cooler with cool packs. Keep unused bottles for other SNP sites in separate bags to avoid cross contamination.
- f. Discard used disposable gloves in your garbage bag
- g. Use hand sanitizer wipes



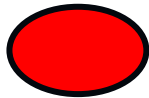
Step 3. Sampling Procedures – Part 2

FOR SAMPLING REQUIREMENTS:

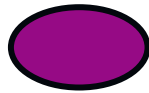
“Fill, shake, and dump” x 3



General
Chemistry



Mercury &
Total Metals



BOD/
CBOD



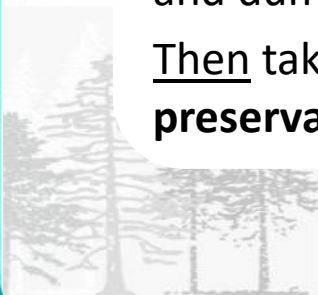
TSS, Ammonia,
Phosphate



First, open your bottle and set the lid aside upright where it won't be contaminated by dirt or other non-sample water.

Then do this 3 times before collecting the sample: Fill bottle, shake with lid on, and dump away from sampling area.

Then take the actual sample, filling the bottle to the top, **allowing room if preservative needs to be added** after the sample is taken.



Step 3. Sampling Procedures – 3

FOR SAMPLING REQUIREMENTS:

“Fill to the top and stop”



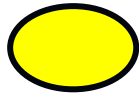
PHENOL



STERILE



BTEX: (2 vials per sample;
NO AIR IN BOTTLES)



Oil & Grease



- **DO NOT** rinse bottle before taking sample.
- Fill bottle right to the top (no air bubbles) and put the lid on.
- For O&G and Phenol bottles, **leave enough space to add preservatives** - or request that the lab preserve the sample on the Taiga Laboratory Request Form.
- Record the time of day the sample was taken.

Step 4. Sampling Locations & Requirements

SNP 003-1

One reading monthly

Raw water intake line at the water treatment plant.

Sampling Requirements:

Volume only; Measure and record water intake in cubic meters (m³)



Step 4. Sampling Locations & Requirements

SNP 003-2

Sewage effluent

At the outflow of the sewage lagoon to the wetland

1 sample monthly during flow (June to October)

Sampling Requirements:



Step 4. Sampling Locations & Requirements

SNP 003-3

*1 sample monthly during
flow (June to October)*

Rae Lake

Outflow of the wetland

Sampling Requirements:



Step 4. Sampling Locations & Requirements

SNP 003-4

1 sample monthly if water present

Runoff from Solid Waste Disposal Facility.

Sampling Requirements:



Step 6. Data Storing & Reporting

When results come back from Taiga Lab:

Using the certificate of analysis received from Taiga, record the results for each SNP site in the annual report template as shown in the following slide.

The annual report template is found on the water boards public registry. A link is included here:




[Gamètì – Reminder of Upcoming Annual Report and SNP Sampling with Template – Mar 3 20](#)

Annual reports are due to the Board on March 31st of each year.

Note that samples taken in June will be a part of the next year's report (i.e., for example, June 2020 samples will be on the March 2021 report)



Step 6. Storing & Reporting

- Check the certificate of analysis is for same station as the table 
- Fill in the table with the appropriate results from the certificate of analysis (make sure units are consistent) 
- Compare the results with the licence requirements and flag exceedances 



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT, X1A 2B3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No:
120932

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 002-2 Taiga Sample ID: 001

Client Project: W2007L3-0002
Sample Type: Sewage
Received Date: 04-Oct-12
Sampling Date: 03-Oct-12
Sampling Time: 16:30

Location: Wharf
Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
Inorganics - Physicals						
pH	7.82		pH units	04-Oct-12	SM4500-HLB	
Solids, Total Suspended	1170	3	mg/L	15-Oct-12	SM2540:D	
Inorganics - Nutrients						
Ammonia as Nitrogen	66.6	0.005	mg/L	15-Oct-12	SM4500-NH3	
Biochemical Oxygen Demand	106	2	mg/L	05-Oct-12	SM5210:B	
Microbiology						
Coliforms, Fecal	320000	10000	CFU/100mL	04-Oct-12	SM9222:D	
Coliforms, Total	>2420000	1000	MPN/100mL	04-Oct-12	SM9223:B	78
Escherichia coli	199000	100	MPN/100mL	04-Oct-12	SM9223:B	
Fecal streptococcus	28500	100	MPN/100mL	04-Oct-12	SM9223:B	
Trace Metals, Total						
Aluminum	780	5	µg/L	12-Oct-12	EPA200.8	
Antimony	0.9	0.1	µg/L	12-Oct-12	EPA200.8	
Arsenic	0.6	0.2	µg/L	12-Oct-12	EPA200.8	

Report Date: Wednesday, October 17, 2012
Print Date: Wednesday, October 17, 2012

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LICENCE REQUIREMENTS:

PARAMETER	MAXIMUM AVERAGE CONCENTRATION
Suspended Solids	240 mg/L
Oil and Grease	5 mg/L
BOD ₅	260 mg/L
Faecal Coliforms	1 x 10 ⁶ CFU/100mL

Surveillance Network Program Lab Results Summary (Stations 002-2 and 002-3)

	Sewage Effluent Discharge – Detention Pond #3				
	SNP 002-2				
	June	July	Aug	Sept	Oct
pH					7.82
Suspended Solids					1170 mg/L
Ammonia-Nitrogen					
BOD ₅					
Faecal Coliforms					
Mercury					

Water Sampling Checklist

- Pre-labelled sample bottles
- Lab order forms (see attachments)
- Ice packs and coolers
- Disposable gloves - at least one clean pair per SNP site (dispose of used gloves into garbage bag away from the sample bottles)
- Ziploc Bags
- Hand sanitizer
- Rubber boots
- Permanent markers
- Safety Communication Device
- Garbage bags



Taiga Environmental Laboratory Order Forms

Government of Northwest Territories / Gouvernement des Territoires du Nord-Ouest

TAIGA ENVIRONMENTAL LABORATORY – FIELD SHEET Laboratory Use Only

400 – St. Anne, Yellowknife, NT X1A 2S4 • Tel: (867) 925-8100 • Fax: (867) 925-8102 • www.enr.gov.nt.ca

Send Results and Invoice to:
 Company/Agency: _____
 Address: _____
 City/Town: _____
 Prov./Terr./Country: _____
 P.O. Box: _____
 E-mail: _____
 Signature: _____

Client Project No.: _____
 Date Collected: _____ Time Collected: _____
 Sampler: _____
 Location: _____
 Run # Required: Yes No

Note: Analysis may be subcontracted without prior notice. See website for how to complete forms and sampling protocols.

Date Received: _____ Received By: _____
 Comments: _____

WATER SAMPLES

Sample Type: Freshwater, surface, potable, groundwater, etc.
 Client Sample ID: (As it appears on field sheet) _____
 Taiga Sample ID: (As it appears on Lab Only) _____

Units Type and Parameters (PLEASE CHECK PARAMETERS REQUESTED BELOW)

Parameter	Unit	Requested	Requested	Requested	Requested
Aluminum	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ammonia	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ammonium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asbestos	fibers/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bacteria	CFU/100mL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biochemical Oxygen Demand (BOD)	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calcium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Copper	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Oxygen	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Solids	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Lead	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Cadmium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Chromium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Cobalt	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Molybdenum	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nitrate	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nitrite	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Phosphate	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sulfate	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Uranium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Nickel	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Potassium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Sodium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Strontium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Vanadium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Selenium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Silver	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Zinc	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Barium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Boron	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Bromine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Fluoride	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Iodine	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Magnesium	mg/L	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Manganese	mg/L	<input type="checkbox"/>	<input type="checkbox"/>		

Taiga Environmental Laboratory Bottle Examples



TSS, Ammonia,
Phosphate



Faecal
Coliforms
"STERILE"



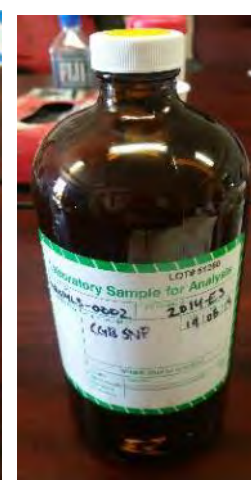
Phenols
"PHENOL"



Mercury
& Total
Metals



BOD/
CBOD



Oil & Grease



pH/
Conductivity

Additional Bottles



BTEX:
(2 vials per sample;
NO AIR IN BOTTLES)



TPH: Requires both
the oil and grease
and BTEX bottles

Taiga Lab Water Sampling Instructions - 1

Water Sampling Instructions

Collecting the Sample



Step One:

Prior to sampling, ensure you have obtained all the sampling equipment you require, such as the proper bottles, filtration devices, *etc.* Refer to the Taiga's Water Sampling Instructions – Ordering Bottles. If there are any questions or concerns, do not hesitate to contact the laboratory. Please have your water license (if applicable) available before contacting the laboratory to ensure proper bottles are ordered. **Note: you may need more than one bottle per sampling site.**



Step Two:

Check your local departure flight schedule to Yellowknife for the day you plan to take your samples. Samples should be shipped to the Laboratory **as soon as possible** after collection. Time your sampling so that the samples can be shipped out by plane as soon as possible.



Step Three:

Follow the sampling instructions on the back of this sheet for each bottle type. Package bottles in a cooler and send to the laboratory. If you require microbiological tests, such as Total Coliforms, E. coli., Fecal Coliforms, BOD, *etc.*, please contact the laboratory with the collection date and time, the Airline name, the waybill number and the expected time of arrival.


















Safety Issues:

Wear appropriate gloves when collecting any sample to avoid contamination and possible exposure to unhealthy substances. The sample preservatives provided by the Laboratory are corrosive and will cause a burning sensation on the skin. If you should spill any on your skin or clothes, rinse the area **immediately** with lots of cool water. Call a doctor should the burning sensation continue.

Find more information here:

<https://www.enr.gov.nt.ca/en/services/taiga-environmental-laboratory/forms#>

Taiga Lab Water Sampling Instructions - 1

Parameter Group		Marking	Preservative	Instructions
	Routine	GREEN	Keep cool at 4°C	<ol style="list-style-type: none"> 1. Rinse bottle three (3) times with sample 2. Fill to top and cap bottle.
	Nutrients	BLACK	Keep cool at 4°C	
	Biochemical Oxygen Demand (BOD)	PURPLE	Keep cool at 4°C	<ol style="list-style-type: none"> 1. Rinse bottle three (3) times with sample 2. Fill to top and cap bottle. 3. Sample must be sent to laboratory within 24 hours
	Microbiological	STERILE	Sodium thiosulphate and Keep cool at 4°C	<ol style="list-style-type: none"> 1. DO NOT RINSE BOTTLE 2. Fill to top and cap bottle. 3. Sample must be sent to laboratory within 24 hours
	Total Metals	RED	5mL of 1:3 nitric acid in RED-dot vials	<ol style="list-style-type: none"> 1. Rinse bottle three (3) times with sample 2. Fill to near the top. 3. Add contents of preservative vial 4. Cap bottle and mix.
	Dissolved Metals	RED	5mL of 1:3 nitric acid in RED-dot vials	<ol style="list-style-type: none"> 1. Filter Sample with 0.45 µm Cellulose Acetate filter 2. Rinse bottle three (3) times with filtrate 3. Fill to near the top. 4. Add contents of preservative vial 5. Cap bottle and mix.
	Hexane Extractable Material (HEM) (also known as Oil and Grease)	YELLOW	4mL 1:1 sulphuric acid in YELLOW-dot vial	<ol style="list-style-type: none"> 1. DO NOT RINSE BOTTLE 2. Fill to shoulder of bottle. 3. Add contents of preservative vial 4. Cap bottle and mix
	BTEX, THM & Purgeable Hydrocarbons	40 mL CLEAR GLASS W/ WHITE LID	Keep cool at 4°C	<ol style="list-style-type: none"> 1. DO NOT RINSE BOTTLE 2. Fill bottle completely leaving NO air bubbles
	Extractable Hydrocarbons	1 L AMBER GLASS W/ WHITE LID	Keep cool at 4°C	<ol style="list-style-type: none"> 1. DO NOT RINSE BOTTLE 2. Fill to top and cap bottle.
	Cyanide	BLUE	1mL of 6N sodium hydroxide	<ol style="list-style-type: none"> 1. Rinse bottle three (3) times with sample 2. Fill to near the top. 3. Add contents of preservative vial 4. Cap bottle and mix.
	Thiocyanate	ORANGE	2ml of 25% sulphuric acid	
	Phenol	YELLOW with P	2mL of 20% sulphuric acid	
	Sulphide	ORANGE with S	2mL of 25% zinc acetate	
	Radionuclide	RED with R	25mL of 17.5% nitric acid	
	Chlorophyll A	1L BROWN PLASTIC BOTTLE	Keep cool at 4°C	<ol style="list-style-type: none"> 1. Rinse bottle three (3) times with sample 2. Fill to top and cap bottle. 3. Sample must be sent to laboratory within 24 hours

Find more information here:

<https://www.enr.gov.nt.ca/en/services/taiga-environmental-laboratory/forms#>

Sample Shipment Label for Coolers

From:

This package contains **TIME SENSITIVE** material and requires
IMMEDIATE PICK-UP/DELIVERY

Please call 867-767-9235 Ext. 53151

To: Taiga Environmental Laboratory

4601 52nd Avenue

Yellowknife, Northwest Territories

X1A 2R3

867-767-9235 Ext. 53151

Please keep refrigerated at 4°C

Date sampled:

Time Sampled:



Contacts



4601 - 52nd Avenue
Yellowknife, NT X1A 3Z4
Phone: (867) 767-9325 ext. 53151
Fax: (867) 920-8740
Email: taiga@gov.nt.ca

*To order Bottles and Cooler: Fax or email the form to Taiga Lab



#1-4905 48th St
Yellowknife, NT X1A 3S3
Telephone: (867) 765-4591
Fax: (867) 765-4593
Email: jpacunayen@wlwb.ca



Airport Location
101 Berry Street
P.O. Box 1693
Yellowknife, NT X1A 3Z4
Phone: (867) 669-8200
Toll-Free: 1-888-545-6794



Northwest
Territories Environment and Natural Resources

Water Resource Officers
Heather Beck and David-Scott McQuinn
Phone: (867) 767-9238 ext. 53243
Email: Heather_Beck@gov.nt.ca and
David-Scott_McQuinn@gov.nt.ca