

4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - FINAL REPORT -

Prepared For: Town of Norman Wells

Address: Box 5

Norman Wells,NT

X0E 0V0

Attn: Hugo Pabke Facsimile: (867) 587-3724

### Final report has been reviewed and approved by:

Glen Hudy

**Quality Assurance Officer** 

#### **NOTES:**

- Fest methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- > Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - o Environment Canada
  - o USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Results are based on the specific tests at the time of analysis, does not represent the conditions during sampling and relates only to the items tested.

ReportDate: June 15, 2023

**Print Date:** *June 15, 2023* 



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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(2) Taiga Sample ID: 001

Client Project: \$18L3-003
Sample Type: Freshwater
Received Date: 26-May-23
Sampling Date: 25-May-23
Sampling Time: 10:30

**Location:** Norman Wells

Report Status: Final

<b>Test Parameter</b>	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	41.7	0.1	mg/L	31-May-23	TEL035	
Magnesium	12.1	0.1	mg/L	31-May-23	TEL035	
Potassium	1.0	0.1	mg/L	31-May-23	TEL035	
Sodium	6.6	0.1	mg/L	31-May-23	TEL035	
<b>Inorganics - Nutrients</b>						
Ammonia as Nitrogen	< 0.005	0.005	mg/L	29-May-23	TEL068	
CBOD	6	2	mg/L	26-May-23	TEL019	
Nitrogen, Total	0.83	0.06	mg/L	27-May-23	TEL066	
Organic Carbon, Total	25.2	0.5	mg/L	01-Jun-23	TEL033	
Phosphorous, Total	0.030	0.002	mg/L	01-Jun-23	TEL069	
<u>Inorganics - Physicals</u>						
Conductivity, Specific (@25C)	305	0.4	μS/cm	26-May-23	TEL059	
pH	7.53		pH units	26-May-23	TEL058	
Solids, Total Suspended	< 3	3	mg/L	26-May-23	TEL008	

### Microbiology

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## - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-0	Taiga Sample ID: 001				
Coliforms, Fecal	1	1	CFU/100mL	26-May-23	TEL017
<u>Organics</u>					
Hexane Extractable Material	< 2.0	2	mg/L	01-Jun-23	TEL072
Oil and Grease, visible	Non-visible			26-May-23	Visual Exam
<b>Subcontracted Inorganics</b>					
Nitrate as Nitrogen	< 0.0030	0.003	mg/L	31-May-23	EPA300.1
Nitrite as N	< 0.0010	0.001	mg/L	31-May-23	EPA300.1
NO2+NO3 - N	< 0.0050	0.005	mg/L	31-May-23	EPA300.1
Sulphate	48.3	0.05	mg/L	31-May-23	EPA300.1
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	30-May-23	AB ENV.06537
Trace Metals, Total					
Arsenic	0.4	0.2	μg/L	31-May-23	TEL035
Cadmium	< 0.04	0.04	μg/L	31-May-23	TEL035
Chromium	< 0.1	0.1	μg/L	31-May-23	TEL035
Copper	0.4	0.2	μg/L	31-May-23	TEL035
Iron	118	5	μg/L	31-May-23	TEL035
Lead	0.2	0.1	μg/L	31-May-23	TEL035
Mercury	< 0.01	0.01	μg/L	31-May-23	TEL035
Nickel	1.1	0.1	μg/L	31-May-23	TEL035
Silver	< 0.1	0.1	μg/L	31-May-23	TEL035
Titanium	0.2	0.1	μg/L	31-May-23	TEL035
Zinc	1.5	0.4	μg/L	31-May-23	TEL035

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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(3) Taiga Sample ID: 002

Client Project: S18L-003
Sample Type: Freshwater
Received Date: 26-May-23
Sampling Date: 25-May-23
Sampling Time: 10:30

**Location:** Norman Wells

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	45.2	0.1	mg/L	31-May-23	TEL035	
Magnesium	13.9	0.1	mg/L	31-May-23	TEL035	
Potassium	1.0	0.1	mg/L	31-May-23	TEL035	
Sodium	12.1	0.1	mg/L	31-May-23	TEL035	
Inorganics - Nutrients						
Ammonia as Nitrogen	< 0.005	0.005	mg/L	29-May-23	TEL068	
CBOD	5	2	mg/L	26-May-23	TEL019	
Nitrogen, Total	0.85	0.06	mg/L	27-May-23	TEL066	
Organic Carbon, Total	24.9	0.5	mg/L	01-Jun-23	TEL033	
Phosphorous, Total	0.018	0.002	mg/L	01-Jun-23	TEL069	
<u>Inorganics - Physicals</u>						
Conductivity, Specific (@25C)	372	0.4	μS/cm	26-May-23	TEL059	
pН	7.98		pH units	26-May-23	TEL058	
Solids, Total Suspended	< 3	3	mg/L	26-May-23	TEL008	
Microbiology						
Coliforms, Fecal	1	1	CFU/100mL	26-May-23	TEL017	20

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## - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003		Taiga Sample ID: 002			
<u>Organics</u>					
Hexane Extractable Material	< 2.0	2	mg/L	01-Jun-23	TEL072
Oil and Grease, visible	Non-visible			26-May-23	Visual Exam
<b>Subcontracted Inorganics</b>					
Nitrate as Nitrogen	< 0.0030	0.003	mg/L	31-May-23	EPA300.1
Nitrite as N	< 0.0010	0.001	mg/L	31-May-23	EPA300.1
NO2+NO3 - N	< 0.0050	0.005	mg/L	31-May-23	EPA300.1
Sulphate	61.0	0.05	mg/L	31-May-23	EPA300.1
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	30-May-23	AB ENV.06537
Trace Metals, Total					
Arsenic	0.5	0.2	μg/L	31-May-23	TEL035
Cadmium	< 0.04	0.04	μg/L	31-May-23	TEL035
Chromium	0.1	0.1	μg/L	31-May-23	TEL035
Copper	0.6	0.2	μg/L	31-May-23	TEL035
Iron	200	5	μg/L	31-May-23	TEL035
Lead	< 0.1	0.1	μg/L	31-May-23	TEL035
Mercury	< 0.01	0.01	μg/L	31-May-23	TEL035
Nickel	1.3	0.1	μg/L	31-May-23	TEL035
Silver	< 0.1	0.1	μg/L	31-May-23	TEL035
Titanium	1.4	0.1	μg/L	31-May-23	TEL035
Zinc	1.0	0.4	μg/L	31-May-23	TEL035

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Taiga Batch No.: 230707

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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(3) Taiga Sample ID: 002

## - DATA QUALIFERS -

Data Qualifier Descriptions:

20 Possible matrix interference, reported result uncertain.

\* Taiga analytical methods are based on the following standard analytical methods

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

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Norman Wells,NT

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Attn: Hugo Pabke Facsimile: (867) 587-3724

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Glen Hudy

**Quality Assurance Officer** 

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ReportDate: July 5, 2023

Print Date: July 5, 2023



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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(2) Taiga Sample ID: 001

Client Project: S18L3-003
Sample Type: Freshwater
Received Date: 09-Jun-23
Sampling Date: 08-Jun-23
Sampling Time: 10:00

**Location:** Norman Wells

Report Status: Final

<b>Test Parameter</b>	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	59.1	0.1	mg/L	14-Jun-23	TEL035	
Magnesium	16.9	0.1	mg/L	14-Jun-23	TEL035	
Potassium	0.8	0.1	mg/L	14-Jun-23	TEL035	
Sodium	10.6	0.1	mg/L	14-Jun-23	TEL035	
<b>Inorganics - Nutrients</b>						
Ammonia as Nitrogen	< 0.005	0.005	mg/L	13-Jun-23	TEL068	
CBOD	3	2	mg/L	07-Jun-23	TEL019	
Nitrogen, Total	0.83	0.06	mg/L	10-Jun-23	TEL066	
Organic Carbon, Total	23.7	0.5	mg/L	13-Jun-23	TEL033	
Phosphorous, Total	0.030	0.002	mg/L	15-Jun-23	TEL069	
<u>Inorganics - Physicals</u>						
Conductivity, Specific (@25C)	451	0.4	μS/cm	12-Jun-23	TEL059	
pН	7.63		pH units	12-Jun-23	TEL058	
Solids, Total Suspended	8	3	mg/L	12-Jun-23	TEL008	
3.61 11 1						

### Microbiology

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## - CERTIFICATE OF ANALYSIS -

Coliforms, Fecal 2 1 CFU/100mL 09-Jun-23 TEL017	
2 1 CrO/100HL 07-Juli-23 1EL01/	
<u>Organics</u>	
Hexane Extractable Material < 2.0 2 mg/L 12-Jun-23 TEL072	
Oil and Grease, visible Non-visible 19-Jun-23 Visual Exam	
Subcontracted Inorganics	
Nitrate as Nitrogen < 0.0030 0.003 mg/L 14-Jun-23 EPA300.1	
Nitrite as N < 0.0010 0.001 mg/L 14-Jun-23 EPA300.1	
NO2+NO3 - N < 0.0050 0.005 mg/L 14-Jun-23 EPA300.1	
Sulphate 96.0 0.05 mg/L 14-Jun-23 EPA300.1	
Subcontracted Organics	
Phenols, Total < 0.0010 0.001 mg/L 16-Jun-23 AB ENV.06537	
Trace Metals, Total	
Arsenic 0.4 0.2 $\mu g/L$ 23-Jun-23 TEL035	
Cadmium $< 0.04$ 0.04 $\mu g/L$ 23-Jun-23 TEL035	
Chromium $< 0.1$ 0.1 $\mu g/L$ 23-Jun-23 TEL035	
Copper 0.3 0.2 $\mu$ g/L 23-Jun-23 TEL035	
Iron 76 5 μg/L 23-Jun-23 TEL035	
Lead $< 0.1$ 0.1 $\mu g/L$ 23-Jun-23 TEL035	
Mercury $< 0.01$ 0.01 $\mu g/L$ 23-Jun-23 TEL035	
Nickel 1.0 0.1 $\mu g/L$ 23-Jun-23 TEL035	
Silver $< 0.1$ 0.1 $\mu g/L$ 23-Jun-23 TEL035	
Thallium $< 0.1$ 0.1 $\mu g/L$ 23-Jun-23 TEL035	
Zinc 1.7 0.4 μg/L 23-Jun-23 TEL035	

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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(3) Taiga Sample ID: 002

Client Project: S18L3-003
Sample Type: Freshwater
Received Date: 09-Jun-23
Sampling Date: 08-Jun-23
Sampling Time: 10:00

**Location:** Norman Wells

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	58.5	0.1	mg/L	14-Jun-23	TEL035	
Magnesium	17.3	0.1	mg/L	14-Jun-23	TEL035	
Potassium	0.7	0.1	mg/L	14-Jun-23	TEL035	
Sodium	16.8	0.1	mg/L	14-Jun-23	TEL035	
<b>Inorganics - Nutrients</b>						
Ammonia as Nitrogen	0.007	0.005	mg/L	13-Jun-23	TEL068	
CBOD	3	2	mg/L	07-Jun-23	TEL019	
Nitrogen, Total	0.88	0.06	mg/L	10-Jun-23	TEL066	
Organic Carbon, Total	24.6	0.5	mg/L	13-Jun-23	TEL033	
Phosphorous, Total	0.013	0.002	mg/L	15-Jun-23	TEL069	
Inorganics - Physicals						
Conductivity, Specific (@25C)	478	0.4	μS/cm	12-Jun-23	TEL059	
рН	8.09		pH units	12-Jun-23	TEL058	
Solids, Total Suspended	8	3	mg/L	12-Jun-23	TEL008	
<u>Microbiology</u>						
Coliforms, Fecal	2	1	CFU/100mL	09-Jun-23	TEL017	

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## - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-000	3-(3)		Taiga	<b>9:</b> 002	
<u>Organics</u>					
Hexane Extractable Material	< 2.0	2	mg/L	12-Jun-23	TEL072
Oil and Grease, visible	Non-visible			19-Jun-23	Visual Exam
<b>Subcontracted Inorganics</b>					
Nitrate as Nitrogen	0.0053	0.003	mg/L	15-Jun-23	EPA300.1
Nitrite as N	< 0.0010	0.001	mg/L	15-Jun-23	EPA300.1
NO2+NO3 - N	0.0053	0.005	mg/L	15-Jun-23	EPA300.1
Sulphate	95.1	0.05	mg/L	15-Jun-23	EPA300.1
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	16-Jun-23	AB ENV.06537
Trace Metals, Total					
Arsenic	0.5	0.2	μg/L	23-Jun-23	TEL035
Cadmium	< 0.04	0.04	μg/L	23-Jun-23	TEL035
Chromium	0.1	0.1	μg/L	23-Jun-23	TEL035
Copper	0.6	0.2	μg/L	23-Jun-23	TEL035
Iron	188	5	μg/L	23-Jun-23	TEL035
Lead	< 0.1	0.1	μg/L	23-Jun-23	TEL035
Mercury	< 0.01	0.01	μg/L	23-Jun-23	TEL035
Nickel	1.3	0.1	μg/L	23-Jun-23	TEL035
Silver	< 0.1	0.1	μg/L	23-Jun-23	TEL035
Thallium	< 0.1	0.1	μg/L	23-Jun-23	TEL035
Zinc	1.1	0.4	μg/L	23-Jun-23	TEL035

ReportDate: July 5, 2023 Print Date: July 5, 2023



Taiga Batch No.: 230798

4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(3) Taiga Sample ID: 002

\* Taiga analytical methods are based on the following standard analytical methods

 ${\rm SM}$  - Standard Methods for the Examination of Water and Wastewater  ${\rm EPA}$  - United States Environmental Protection Agency

ReportDate: July 5, 2023

Print Date: *July 5, 2023* 



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### - FINAL REPORT -

**Prepared For:** Town of Norman Wells

Address: Box 5

Norman Wells,NT

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Attn: Hugo Pabke Facsimile: (867) 587-3724

### Final report has been reviewed and approved by:

Glen Hudy

**Quality Assurance Officer** 

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  - o Environment Canada
  - o USEPA
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- Results are based on the specific tests at the time of analysis, does not represent the conditions during sampling and relates only to the items tested.

ReportDate: July 28, 2023

**Print Date:** *July 28, 2023* 





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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003(2) Taiga Sample ID: 001

Client Project: S18L3-003
Sample Type: Freshwater
Received Date: 14-Jul-23
Sampling Date: 13-Jul-23
Sampling Time: 10:00

**Location:** Norman Wells

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	67.3	0.1	mg/L	24-Jul-23	TEL035	
Magnesium	19.9	0.1	mg/L	24-Jul-23	TEL035	
Potassium	1.0	0.1	mg/L	24-Jul-23	TEL035	
Sodium	18.2	0.1	mg/L	24-Jul-23	TEL035	
<b>Inorganics - Nutrients</b>						
Ammonia as Nitrogen	0.032	0.005	mg/L	20-Jul-23	TEL068	
CBOD	4	2	mg/L	14-Jul-23	TEL019	
Nitrogen, Total	1.50	0.06	mg/L	18-Jul-23	TEL066	
Organic Carbon, Total	32.0	0.5	mg/L	25-Jul-23	TEL033	
Phosphorous, Total	0.438	0.002	mg/L	19-Jul-23	TEL069	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	227	0.4	mg/L	14-Jul-23	TEL060	
рН	7.38		pH units	14-Jul-23	TEL058	
Solids, Total Suspended	6	3	mg/L	20-Jul-23	TEL008	
Microbiology						

#### **Microbiology**

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## - CERTIFICATE OF ANALYSIS -

Client Sample ID: \$18		Taiga Sample ID: 001			
Coliforms, Fecal	72	1	CFU/100mL	14-Jul-23	TEL017
<u>Organics</u>					
Hexane Extractable Mater	ial < 2.0	2	mg/L	24-Jul-23	TEL072
Oil and Grease, visible	Non-visible			14-Jul-23	Visual Exam
Subcontracted Inorganics					
Nitrate as Nitrogen	< 0.0030	0.003	mg/L	20-Jul-23	EPA300.1
Nitrite as N	< 0.0010	0.001	mg/L	20-Jul-23	EPA300.1
NO2+NO3 - N	< 0.0050	0.005	mg/L	20-Jul-23	EPA300.1
Sulphate	21.9	0.05	mg/L	20-Jul-23	EPA300.1
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	20-Jul-23	AB ENV.06537
Trace Metals, Total					
Arsenic	1.3	0.2	μg/L	25-Jul-23	TEL035
Cadmium	< 0.04	0.04	μg/L	25-Jul-23	TEL035
Chromium	0.2	0.1	μg/L	25-Jul-23	TEL035
Copper	0.3	0.2	μg/L	25-Jul-23	TEL035
Iron	1620	5	μg/L	25-Jul-23	TEL035
Lead	< 0.1	0.1	μg/L	25-Jul-23	TEL035
Mercury	0.01	0.01	μg/L	25-Jul-23	TEL035
Nickel	1.5	0.1	μg/L	25-Jul-23	TEL035
Silver	< 0.1	0.1	μg/L	25-Jul-23	TEL035
Thallium	< 0.1	0.1	μg/L	25-Jul-23	TEL035
Zinc	1.3	0.4	μg/L	25-Jul-23	TEL035

**ReportDate:** July 28, 2023 **Print Date:** *July 28, 2023* 



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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003(3) Taiga Sample ID: 002

Client Project: S18L3-003 Sample Type: Freshwater Received Date: 14-Jul-23 Sampling Date: 13-Jul-23 Sampling Time: 10:00

**Location:** Norman Wells

**Final** Report Status:

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	59.9	0.1	mg/L	24-Jul-23	TEL035	
Magnesium	23.8	0.1	mg/L	24-Jul-23	TEL035	
Potassium	1.0	0.1	mg/L	24-Jul-23	TEL035	
Sodium	22.2	0.1	mg/L	24-Jul-23	TEL035	
<b>Inorganics - Nutrients</b>						
Ammonia as Nitrogen	0.014	0.005	mg/L	20-Jul-23	TEL068	
CBOD	3	2	mg/L	14-Jul-23	TEL019	
Nitrogen, Total	1.52	0.06	mg/L	18-Jul-23	TEL066	
Organic Carbon, Total	29.0	0.5	mg/L	25-Jul-23	TEL033	
Phosphorous, Total	0.029	0.002	mg/L	19-Jul-23	TEL069	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	166	0.4	mg/L	14-Jul-23	TEL060	
рН	8.13		pH units	14-Jul-23	TEL058	
Solids, Total Suspended	8	3	mg/L	20-Jul-23	TEL008	
<u>Microbiology</u>						
Coliforms, Fecal	142	1	CFU/100mL	14-Jul-23	TEL017	

ReportDate: July 28, 2023

**Print Date:** July 28, 2023



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## - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003		Taiga Sample ID: 002				
<u>Organics</u>						
Hexane Extractable Material	< 2.0	2	mg/L	24-Jul-23	TEL072	
Oil and Grease, visible	Non-visible			14-Jul-23	Visual Exam	
<b>Subcontracted Inorganics</b>						
Nitrate as Nitrogen	0.105	0.003	mg/L	20-Jul-23	EPA300.1	
Nitrite as N	0.0014	0.001	mg/L	20-Jul-23	EPA300.1	
NO2+NO3 - N	0.106	0.005	mg/L	20-Jul-23	EPA300.1	
Sulphate	86.9	0.05	mg/L	20-Jul-23	EPA300.1	
Subcontracted Organics						
Phenols, Total	< 0.0010	0.001	mg/L	20-Jul-23	AB ENV.06537	
Trace Metals, Total						
Arsenic	1.3	0.2	μg/L	25-Jul-23	TEL035	
Cadmium	< 0.04	0.04	μg/L	25-Jul-23	TEL035	
Chromium	0.3	0.1	μg/L	25-Jul-23	TEL035	
Copper	1.0	0.2	μg/L	25-Jul-23	TEL035	
Iron	373	5	μg/L	25-Jul-23	TEL035	
Lead	0.2	0.1	μg/L	25-Jul-23	TEL035	
Mercury	0.01	0.01	μg/L	25-Jul-23	TEL035	
Nickel	2.0	0.1	μg/L	25-Jul-23	TEL035	
Silver	< 0.1	0.1	μg/L	25-Jul-23	TEL035	
Thallium	< 0.1	0.1	μg/L	25-Jul-23	TEL035	
Zinc	1.5	0.4	μg/L	25-Jul-23	TEL035	

**ReportDate:** July 28, 2023 **Print Date:** *July 28, 2023* 



Taiga Batch No.: 231083

4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003(3) Taiga Sample ID: 002

\* Taiga analytical methods are based on the following standard analytical methods

SM - Standard Methods for the Examination of Water and Wastewater EPA - United States Environmental Protection Agency

ReportDate: July 28, 2023

Print Date: *July 28, 2023* 



4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - FINAL REPORT -

Prepared For: Town of Norman Wells

Address: Box 5

Norman Wells,NT

X0E 0V0

Attn: Hugo Pabke Facsimile: (867) 587-3724

### Final report has been reviewed and approved by:

Glen Hudy

**Quality Assurance Officer** 

#### **NOTES:**

- Fest methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- > Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - o Environment Canada
  - o USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Results are based on the specific tests at the time of analysis, does not represent the conditions during sampling and relates only to the items tested.

ReportDate: September 20, 2023 Page 1 of 4

Print Date: September 20, 2023



4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(02) Taiga Sample ID: 001

Client Project: S18L3-003
Sample Type: Freshwater
Received Date: 04-Aug-23
Sampling Date: 03-Aug-23
Sampling Time: 10:30

**Location:** Norman Wells

Report Status: Final

<b>Test Parameter</b>	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	64.1	0.1	mg/L	08-Aug-23	TEL035	
Magnesium	21.0	0.1	mg/L	08-Aug-23	TEL035	
Potassium	1.3	0.1	mg/L	08-Aug-23	TEL035	
Sodium	21.8	0.1	mg/L	08-Aug-23	TEL035	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	0.019	0.005	mg/L	11-Aug-23	TEL068	
CBOD	3	2	mg/L	04-Aug-23	TEL019	
Nitrogen, Total	1.50	0.06	mg/L	10-Aug-23	TEL066	
Organic Carbon, Total	35.9	0.5	mg/L	10-Aug-23	TEL033	
Phosphorous, Total	0.237	0.002	mg/L	10-Aug-23	TEL069	
<u>Inorganics - Physicals</u>						
Conductivity, Specific (@25C)	235	0.4	μS/cm	11-Aug-23	TEL059	
pН	7.45		pH units	11-Aug-23	TEL058	11
Solids, Total Suspended	< 3	3	mg/L	13-Sep-23	TEL008	
361 7						

#### **Major Ions**

**ReportDate:** September 20, 2023

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4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

## - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003	Taiga Sample ID: 001				
Nitrate as Nitrogen	< 0.01	0.01	mg/L	05-Aug-23	TEL055
Nitrate+Nitrite as Nitrogen	< 0.01	0.01	mg/L	05-Aug-23	TEL055
Nitrite as Nitrogen	< 0.01	0.01	mg/L	05-Aug-23	TEL055
Sulphate	8	1	mg/L	05-Aug-23	TEL055
Microbiology					
Coliforms, Fecal	14	1	CFU/100mL	04-Aug-23	TEL017
<u>Organics</u>					
Hexane Extractable Material	< 2.0	2	mg/L	14-Aug-23	TEL072
Oil and Grease, visible	non-visible			20-Sep-23	Visual Exam
<b>Subcontracted Organics</b>					
Phenols, Total	< 0.0010	0.001	mg/L	09-Aug-23	AB ENV.06537
Trace Metals, Total					
Arsenic	0.8	0.2	μg/L	15-Sep-23	TEL035
Cadmium	< 0.04	0.04	μg/L	15-Sep-23	TEL035
Chromium	< 0.1	0.1	μg/L	15-Sep-23	TEL035
Copper	< 0.2	0.2	μg/L	15-Sep-23	TEL035
Iron	558	5	μg/L	15-Sep-23	TEL035
Lead	< 0.1	0.1	μg/L	15-Sep-23	TEL035
Mercury	0.02	0.01	μg/L	15-Sep-23	TEL035
Nickel	1.0	0.1	μg/L	15-Sep-23	TEL035
Silver	< 0.1	0.1	μg/L	15-Sep-23	TEL035
Thallium	< 0.1	0.1	μg/L	15-Sep-23	TEL035
Zinc	< 0.4	0.4	μg/L	15-Sep-23	TEL035

ReportDate: September 20, 2023
Print Date: September 20, 2023



Taiga Batch No.: 231242

4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(02) Taiga Sample ID: 001

## - DATA QUALIFERS -

Data Qualifier Descriptions:

11 Holding time exceeded before sample analysis.

\* Taiga analytical methods are based on the following standard analytical methods

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: September 20, 2023

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4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - FINAL REPORT -

Prepared For: Town of Norman Wells

Address: Box 5

Norman Wells,NT

X0E 0V0

Attn: Hugo Pabke Facsimile: (867) 587-3724

### Final report has been reviewed and approved by:

Glen Hudy

**Quality Assurance Officer** 

#### **NOTES:**

- Fest methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- > Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - o Environment Canada
  - o USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Results are based on the specific tests at the time of analysis, does not represent the conditions during sampling and relates only to the items tested.

ReportDate: October 6, 2023



4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(02) Taiga Sample ID: 001

Client Project: S18L3-003
Sample Type: Freshwater
Received Date: 22-Sep-23
Sampling Date: 21-Sep-23
Sampling Time: 10:00

**Location:** Norman Wells

Report Status: Final

<b>Test Parameter</b>	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	62.1	0.1	mg/L	28-Sep-23	TEL035	
Magnesium	20.8	0.1	mg/L	28-Sep-23	TEL035	
Potassium	2.4	0.1	mg/L	28-Sep-23	TEL035	
Sodium	29.7	0.1	mg/L	28-Sep-23	TEL035	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	0.014	0.005	mg/L	27-Sep-23	TEL068	
CBOD	< 2	2	mg/L	22-Sep-23	TEL019	
Nitrogen, Total	1.26	0.06	mg/L	27-Sep-23	TEL066	
Organic Carbon, Total	29.6	0.5	mg/L	27-Sep-23	TEL033	
Phosphorous, Total	0.047	0.002	mg/L	28-Sep-23	TEL069	
<u>Inorganics - Physicals</u>						
Conductivity, Specific (@25C)	527	0.4	μS/cm	22-Sep-23	TEL059	
рН	7.41		pH units	22-Sep-23	TEL058	
Solids, Total Suspended	< 3	3	mg/L	26-Sep-23	TEL008	

#### **Major Ions**

ReportDate: October 6, 2023



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## - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003	3-(02)	Taiga Sample ID: 001			
Nitrate as Nitrogen	0.02	0.01	mg/L	22-Sep-23	TEL055
Nitrate+Nitrite as Nitrogen	0.02	0.01	mg/L	22-Sep-23	TEL055
Nitrite as Nitrogen	< 0.01	0.01	mg/L	22-Sep-23	TEL055
Sulphate	15	1	mg/L	22-Sep-23	TEL055
Microbiology					
Coliforms, Fecal	2	1	CFU/100mL	22-Sep-23	TEL017
<u>Organics</u>					
Hexane Extractable Material	< 2.0	2	mg/L	25-Sep-23	TEL072
Oil and Grease, visible	d Grease, visible Non-visible			22-Sep-23	Visual Exam
<b>Subcontracted Organics</b>					
Phenols, Total	< 0.0010	0.001	mg/L	29-Sep-23	AB ENV.06537
Trace Metals, Total					
Arsenic	0.6	0.2	μg/L	04-Oct-23	TEL035
Cadmium	< 0.04	0.04	μg/L	04-Oct-23	TEL035
Chromium	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Copper	< 0.2	0.2	μg/L	04-Oct-23	TEL035
Iron	226	5	μg/L	04-Oct-23	TEL035
Lead	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Mercury	< 0.01	0.01	μg/L	04-Oct-23	TEL035
Nickel	0.7	0.1	μg/L	04-Oct-23	TEL035
Silver	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Thallium	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Zinc	0.9	0.4	μg/L	04-Oct-23	TEL035

ReportDate: October 6, 2023
Print Date: October 10, 2023



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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(03) Taiga Sample ID: 002

Client Project: S18L3-003
Sample Type: Freshwater
Received Date: 22-Sep-23
Sampling Date: 21-Sep-23
Sampling Time: 10:00

**Location:** Norman Wells

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Cations by ICP-MS						
Calcium	72.2	0.1	mg/L	28-Sep-23	TEL035	
Magnesium	30.9	0.1	mg/L	28-Sep-23	TEL035	
Potassium	1.8	0.1	mg/L	28-Sep-23	TEL035	
Sodium	28.2	0.1	mg/L	28-Sep-23	TEL035	
Inorganics - Nutrients						
Ammonia as Nitrogen	0.019	0.005	mg/L	27-Sep-23	TEL068	
CBOD	< 2	2	mg/L	22-Sep-23	TEL019	
Nitrogen, Total	1.36	0.06	mg/L	27-Sep-23	TEL066	
Organic Carbon, Total	33.3	0.5	mg/L	27-Sep-23	TEL033	
Phosphorous, Total	0.010	0.002	mg/L	28-Sep-23	TEL069	
Inorganics - Physicals						
Conductivity, Specific (@25C)	646	0.4	μS/cm	22-Sep-23	TEL059	
рН	7.90		pH units	22-Sep-23	TEL058	
Solids, Total Suspended	< 3	3	mg/L	26-Sep-23	TEL008	
Major Ions						
Nitrate as Nitrogen	0.03	0.01	mg/L	22-Sep-23	TEL055	

ReportDate: October 6, 2023



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## - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003	3-(03)		Taiga	<b>):</b> 002	
Nitrate+Nitrite as Nitrogen	0.03	0.01	mg/L	22-Sep-23	TEL055
Nitrite as Nitrogen	< 0.01	0.01	mg/L	22-Sep-23	TEL055
Sulphate	79	1	mg/L	22-Sep-23	TEL055
<u>Microbiology</u>					
Coliforms, Fecal	5	1	CFU/100mL	22-Sep-23	TEL017
<u>Organics</u>					
Hexane Extractable Material	< 2.0	2	mg/L	05-Oct-23	TEL072
Oil and Grease, visible	Non-visible			22-Sep-23	Visual Exam
<b>Subcontracted Organics</b>					
Phenols, Total	< 0.0010	0.001	mg/L	29-Sep-23	AB ENV.06537
Trace Metals, Total					
Arsenic	0.7	0.2	μg/L	04-Oct-23	TEL035
Cadmium	< 0.04	0.04	μg/L	04-Oct-23	TEL035
Chromium	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Copper	0.9	0.2	μg/L	04-Oct-23	TEL035
Iron	58	5	μg/L	04-Oct-23	TEL035
Lead	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Mercury	< 0.01	0.01	μg/L	04-Oct-23	TEL035
Nickel	1.7	0.1	μg/L	04-Oct-23	TEL035
Silver	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Thallium	< 0.1	0.1	μg/L	04-Oct-23	TEL035
Zinc	0.9	0.4	μg/L	04-Oct-23	TEL035

ReportDate: October 6, 2023
Print Date: October 10, 2023



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### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(1) Taiga Sample ID: 003

Client Project: S18L3-003
Sample Type: Freshwater
Received Date: 22-Sep-23
Sampling Date: 21-Sep-23
Sampling Time: 10:00

**Location:** Norman Wells

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
CBOD	3	2	mg/L	22-Sep-23	TEL019	
Nitrogen, Total	1.95	0.06	mg/L	27-Sep-23	TEL066	
Organic Carbon, Total	29.2	0.5	mg/L	27-Sep-23	TEL033	
Phosphorous, Total	0.088	0.002	mg/L	28-Sep-23	TEL069	
<b>Inorganics - Physicals</b>						
Conductivity, Specific (@25C)	440	0.4	μS/cm	22-Sep-23	TEL059	
pН	7.82		pH units	22-Sep-23	TEL058	
Solids, Total Suspended	4	3	mg/L	26-Sep-23	TEL008	
Major Ions						
Nitrate as Nitrogen	0.02	0.01	mg/L	22-Sep-23	TEL055	
Nitrate+Nitrite as Nitrogen	0.02	0.01	mg/L	22-Sep-23	TEL055	
Nitrite as Nitrogen	< 0.01	0.01	mg/L	22-Sep-23	TEL055	
<u>Microbiology</u>						
Coliforms, Fecal	1	1	CFU/100mL	22-Sep-23	TEL017	
<u>Organics</u>						
Hexane Extractable Material	< 2.0	2	mg/L	05-Oct-23	TEL072	

ReportDate: October 6, 2023



Taiga Batch No.: 231373

4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(1) Taiga Sample ID: 003

Oil and Grease, visible Non-visible 22-Sep-23 Visual Exam

ReportDate: October 6, 2023

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Taiga Batch No.: 231373

4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9 Tel: (867)-767-9235 Fax: (867)-920-8740

### - CERTIFICATE OF ANALYSIS -

Client Sample ID: S18L3-003-(1) Taiga Sample ID: 003

\* Taiga analytical methods are based on the following standard analytical methods

SM - Standard Methods for the Examination of Water and Wastewater EPA - United States Environmental Protection Agency

ReportDate: October 6, 2023