


FW: Sewage Lagoon Decant - Fort Providence

Erica Janes <ejanes@mvlwb.com>

Thu 13-Jun-2024 9:14 AM

To: Meg McCluskie <mmcluskie@mvlwb.com>

 1 attachments (211 KB)

Spring inspection results - Prov.pdf;

Hi Meg,

Please post to MV2016L3-0001 – 5 Reports and Studies – Operations and Notifications

Title: Inspector authorization of decant and SNP results from stations 1412-1 1412-2 2016-1 and 2016-3 on May 28_24

Thanks!

From: Joshua Gauthier <Joshua_Gauthier@gov.nt.ca>**Sent:** Wednesday, June 12, 2024 4:50 PM**To:** Susan Christie <sao@fortprovidence.ca>**Cc:** Emmanuel Belgrave <saotrainee@fortprovidence.ca>; 'works@fortprovidence.ca'

<works@fortprovidence.ca>; Erica Janes <ejanes@mvlwb.com>; Wendy Bidwell <Wendy_Bidwell@gov.nt.ca>

Subject: Sewage Lagoon Decant - Fort Providence

Hi Susan,

The Hamlet is authorized to proceed with decant operations at Cell #5 of the Sewage Disposal Facilities as required. I have attached the pre-decant sample results in this email. I have noticed that the Fecal Coliform parameter was unfortunately not able to be analyzed due to sample holding time. In previous years, this parameter has not been a concern, but I also understand that Clifford will likely be taking another batch of samples during the decant process so not too much of a concern here. An uncontrolled release is more of a threat at this point due to free board levels.

In addition, **please let me know when decant commences and ends. If decant is longer than a week, a weekly sample will be required for every week that the Hamlet decants as per the license (see below table).** Total effluent discharge volumes will need to be included in the annual water license report, so it's important that this information is tracked and recorded as well.

SNP station	Location	Sampling Frequency	Sampling Parameters	Rationale
1412-2	Sewage effluent from the Sewage Disposal Facilities	Prior to discharge and weekly during discharge	pH, CBOD5, Total Suspended Solids, Ammonia, Total Phosphorus, Nitrate, Nitrite, Faecal Coliforms, Oil and Grease	Site of compliance. To monitor final effluent quality prior to discharge to the Receiving Environment.

If either of you have any questions regarding decant operations, don't hesitate to contact me.

Thank you,

Mársı | Kinanāskomitin | Thank you | Merci | Hąı' | Quana | Qujannamiik | Quyanainni | Máhsı |
Máhsı | Mahsi

Joshua Gauthier
Water Resource Officer
South Slave Region
Department of Environment and Climate Change
Government of the Northwest Territories

Highway #5
PO Box 900
Fort Smith, NT X0E 0P0
Cell: 867-872-0750

www.gov.nt.ca

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

Taiga Batch No.:
240666

- FINAL REPORT -

Prepared For: Fort Smith District Office

Address: Box 900
Fort Smith, NT
X0E 0P0

Attn: Joshua Gauthier

Facsimile: (867) 872-4250

Final report has been reviewed and approved by:

A handwritten signature in black ink that reads "Shalene Manickum". The signature is written in a cursive style.

Shalene Manickum
Laboratory Manager

NOTES:

- Test 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;
 - Environment Canada
 - 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.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Monday, June 10, 2024

Print Date: *Monday, June 10, 2024*

Page 1 of 10



Taiga Environmental Laboratory

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Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:
240666

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **1412-1**

Taiga Sample ID: **001**

Client Project: Hamlet of Fort Providence

Sample Type: Raw Water

Received Date: 31-May-24

Sampling Date: 28-May-24

Sampling Time: 9:02

Location: WTP and Sewage Lagoon Outflow

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Cations by ICP-MS</u>						
Calcium	30.0	0.1	mg/L	05-Jun-24	TEL035	
Hardness	103	0.7	mg/L	05-Jun-24	TEL035	
Magnesium	6.8	0.1	mg/L	05-Jun-24	TEL035	
Potassium	1.2	0.1	mg/L	05-Jun-24	TEL035	
Sodium	8.0	0.1	mg/L	05-Jun-24	TEL035	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	< 0.005	0.005	mg/L	03-Jun-24	TEL068	
Phosphorous, Total	0.010	0.002	mg/L	05-Jun-24	TEL069	
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO ₃)	77.8	0.4	mg/L	31-May-24	TEL060	
Colour, Apparent	28	5	CU	05-Jun-24	TEL051	
Conductivity, Specific (@25C)	235	0.4	µS/cm	31-May-24	TEL059	
pH	7.94		pH units	31-May-24	TEL058	
Solids, Total Dissolved	155	10	mg/L	04-Jun-24	TEL009	

ReportDate: Monday, June 10, 2024

Print Date: *Monday, June 10, 2024*

Page 2 of 10



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Taiga Batch No.:

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- CERTIFICATE OF ANALYSIS -

Client Sample ID: **1412-1**

Taiga Sample ID: **001**

Solids, Total Suspended	< 3	3	mg/L	04-Jun-24	TEL008	
Turbidity	5.80	0.05	NTU	31-May-24	TEL006	233
<u>Major Ions</u>						
Chloride	8.0	0.7	mg/L	01-Jun-24	TEL055	
Fluoride	< 0.1	0.1	mg/L	01-Jun-24	TEL055	
Nitrate as Nitrogen	< 0.01	0.01	mg/L	01-Jun-24	TEL055	
Nitrate+Nitrite as Nitrogen	< 0.01	0.01	mg/L	01-Jun-24	TEL055	
Nitrite as Nitrogen	< 0.01	0.01	mg/L	01-Jun-24	TEL055	
Sulphate	26	1	mg/L	01-Jun-24	TEL055	
<u>Microbiology</u>						
Coliforms, Fecal		1	CFU/100mL	31-May-24	TEL017	105
<u>Trace Metals, Total</u>						
Cadmium	< 0.04	0.04	µg/L	07-Jun-24	TEL035	
Chromium	0.2	0.1	µg/L	07-Jun-24	TEL035	
Cobalt	0.1	0.1	µg/L	07-Jun-24	TEL035	
Copper	1.4	0.2	µg/L	07-Jun-24	TEL035	
Iron	212	5	µg/L	07-Jun-24	TEL035	
Lead	1.8	0.1	µg/L	07-Jun-24	TEL035	
Manganese	11.5	0.1	µg/L	07-Jun-24	TEL035	
Nickel	1.3	0.1	µg/L	07-Jun-24	TEL035	
Zinc	26.2	0.4	µg/L	07-Jun-24	TEL035	

ReportDate: Monday, June 10, 2024

Print Date: *Monday, June 10, 2024*

Page 3 of 10



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Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:
240666

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **1412-2**

Taiga Sample ID: **002**

Client Project: Hamlet of Fort Providence

Sample Type: Treated Sewage

Received Date: 31-May-24

Sampling Date: 28-May-24

Sampling Time: 9:44

Location: WTP and Sewage Lagoon Outflow

Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Cations by ICP-MS</u>						
Calcium	59.0	0.1	mg/L	05-Jun-24	TEL035	
Hardness	250	0.7	mg/L	05-Jun-24	TEL035	
Magnesium	25.0	0.1	mg/L	05-Jun-24	TEL035	
Potassium	35.7	0.1	mg/L	05-Jun-24	TEL035	
Sodium	91.6	0.1	mg/L	05-Jun-24	TEL035	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	33.5	0.105	mg/L	03-Jun-24	TEL068	210
CBOD	23	2	mg/L	31-May-24	TEL019	246
Phosphorous, Total	8.49	0.022	mg/L	05-Jun-24	TEL069	210
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO3)	367	0.4	mg/L	31-May-24	TEL060	
Colour, Apparent	317	5	CU	05-Jun-24	TEL051	
Conductivity, Specific (@25C)	1200	0.4	µS/cm	31-May-24	TEL059	
pH	8.44		pH units	31-May-24	TEL058	
Solids, Total Dissolved	649	10	mg/L	04-Jun-24	TEL009	
Solids, Total Suspended	47	3	mg/L	04-Jun-24	TEL008	

ReportDate: Monday, June 10, 2024

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Taiga Batch No.:
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- CERTIFICATE OF ANALYSIS -

Client Sample ID: 1412-2

Taiga Sample ID: 002

Turbidity	29.0	0.05	NTU	31-May-24	TEL006	233
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Major Ions

Chloride	117	0.7	mg/L	01-Jun-24	TEL055
Fluoride	0.1	0.1	mg/L	01-Jun-24	TEL055
Nitrate as Nitrogen	0.05	0.01	mg/L	01-Jun-24	TEL055
Nitrate+Nitrite as Nitrogen	0.05	0.01	mg/L	01-Jun-24	TEL055
Nitrite as Nitrogen	< 0.01	0.01	mg/L	01-Jun-24	TEL055
Sulphate	61	1	mg/L	01-Jun-24	TEL055

Microbiology

Coliforms, Fecal		1	CFU/100mL	31-May-24	TEL017	105
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Organics

Hexane Extractable Material	< 2.0	2	mg/L	03-Jun-24	TEL072
Oil and Grease, visible	Non-visible			10-Jun-24	Visual Exam

Trace Metals, Total

Cadmium	< 0.04	0.04	µg/L	07-Jun-24	TEL035
Chromium	0.3	0.1	µg/L	07-Jun-24	TEL035
Cobalt	0.7	0.1	µg/L	07-Jun-24	TEL035
Copper	1.5	0.2	µg/L	07-Jun-24	TEL035
Iron	186	5	µg/L	07-Jun-24	TEL035
Lead	0.2	0.1	µg/L	07-Jun-24	TEL035
Manganese	29.9	0.1	µg/L	07-Jun-24	TEL035
Nickel	4.1	0.1	µg/L	07-Jun-24	TEL035
Zinc	2.8	0.4	µg/L	07-Jun-24	TEL035

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Taiga Batch No.:
240666

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **2016-1**

Taiga Sample ID: **003**

Client Project: Hamlet of Fort Providence

Sample Type: Sewage Effluent Post Wetland

Received Date: 31-May-24

Sampling Date: 28-May-24

Sampling Time: 10:24

Location: WTP and Sewage Lagoon Outflow

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	0.019	0.005	mg/L	03-Jun-24	TEL068	
CBOD	14	2	mg/L	31-May-24	TEL019	
Phosphorous, Total	0.602	0.002	mg/L	05-Jun-24	TEL069	
<u>Inorganics - Physicals</u>						
pH	7.36		pH units	31-May-24	TEL058	
Solids, Total Suspended	46	3	mg/L	04-Jun-24	TEL008	
<u>Major Ions</u>						
Nitrate+Nitrite as Nitrogen	0.01	0.01	mg/L	01-Jun-24	TEL055	
<u>Microbiology</u>						
Coliforms, Fecal		1	CFU/100mL	31-May-24	TEL017	105
<u>Organics</u>						
Hexane Extractable Material	< 2.0	2	mg/L	03-Jun-24	TEL072	

ReportDate: Monday, June 10, 2024

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Taiga Batch No.:
240666

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **2016-3**

Taiga Sample ID: **004**

Client Project: Hamlet of Fort Providence

Sample Type: Poned Water - Construction

Received Date: 31-May-24

Sampling Date: 28-May-24

Sampling Time: 10:47

Location: WTP and Sewage Lagoon Outflow

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Cations by ICP-MS</u>						
Calcium	102	0.1	mg/L	05-Jun-24	TEL035	
Hardness	381	0.7	mg/L	05-Jun-24	TEL035	
Magnesium	30.8	0.1	mg/L	05-Jun-24	TEL035	
Potassium	20.7	0.1	mg/L	05-Jun-24	TEL035	
Sodium	30.9	0.1	mg/L	05-Jun-24	TEL035	
<u>Inorganics - Nutrients</u>						
Phosphorous, Total	0.038	0.002	mg/L	05-Jun-24	TEL069	
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO3)	138	0.4	mg/L	31-May-24	TEL060	
Conductivity, Specific (@25C)	900	0.4	µS/cm	31-May-24	TEL059	
pH	7.85		pH units	31-May-24	TEL058	
Solids, Total Dissolved	598	10	mg/L	04-Jun-24	TEL009	
Solids, Total Suspended	9	3	mg/L	04-Jun-24	TEL008	
<u>Major Ions</u>						
Chloride	51.1	0.7	mg/L	01-Jun-24	TEL055	
Fluoride	0.1	0.1	mg/L	01-Jun-24	TEL055	

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240666

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 2016-3

Taiga Sample ID: 004

Nitrate as Nitrogen	0.03	0.01	mg/L	01-Jun-24	TEL055	
Nitrate+Nitrite as Nitrogen	0.03	0.01	mg/L	01-Jun-24	TEL055	
Nitrite as Nitrogen	< 0.01	0.01	mg/L	01-Jun-24	TEL055	
Sulphate	248	11	mg/L	01-Jun-24	TEL055	210

Organics

Benzene	< 2.00	2	µg/L	31-May-24	TEL037	
Ethylbenzene	< 2.00	2	µg/L	31-May-24	TEL037	
Hexane Extractable Material	< 2.0	2	mg/L	03-Jun-24	TEL072	
Oil and Grease, visible	Non-visible			10-Jun-24	Visual Exam	
Toluene	< 2.00	2	µg/L	31-May-24	TEL037	
Xylenes	< 2.00	2	µg/L	31-May-24	TEL037	

Subcontracted Organics

F2: C10-C16	< 0.10	0.1	mg/L	06-Jun-24	EPA3510	
F3: C16-C34	< 0.25	0.25	mg/L	06-Jun-24	EPA3510	
F4: C34-C50	< 0.25	0.25	mg/L	06-Jun-24	EPA3510	

Trace Metals, Total

Cadmium	< 0.04	0.04	µg/L	07-Jun-24	TEL035	
Chromium	< 0.1	0.1	µg/L	07-Jun-24	TEL035	
Cobalt	0.2	0.1	µg/L	07-Jun-24	TEL035	
Copper	1.0	0.2	µg/L	07-Jun-24	TEL035	
Iron	205	5	µg/L	07-Jun-24	TEL035	
Lead	< 0.1	0.1	µg/L	07-Jun-24	TEL035	
Manganese	76.5	0.1	µg/L	07-Jun-24	TEL035	
Mercury	0.01	0.01	µg/L	07-Jun-24	TEL035	
Nickel	1.6	0.1	µg/L	07-Jun-24	TEL035	

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Taiga Batch No.:
240666

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **2016-3**

Taiga Sample ID: **004**

Zinc 1.5 0.4 µg/L 07-Jun-24 TEL035



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Taiga Batch No.:

240666

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 2016-3

Taiga Sample ID: 004

- DATA QUALIFIERS -

Data Qualifier Descriptions:

- 105 *Sample received past hold time; analysis not possible*
- 210 *Detection limit adjusted for required dilution.*
- 233 *Equipment failure; sample analyzed past hold time.*
- 246 *pH adjusted before 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

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Page 10 of 10