

ANNUAL REPORT FOR THE KUGAARUK LANDFARM

YEAR BEING REPORTED: 2021

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water License No. 1BR-KRK1929 issued to the Government of Nunavut Department of Community and Government Services.

a) A summary report of Waste disposal activities including:

i. quantity and quality of effluent discharged from Landfarm; and

600 m³

ii. quantity and characterization of soils placed within the Landfarm for treatment.

No new soil was placed into the landfarm in 2021.

b) Quantity of Waste backhauled to an approved facility for disposal;

None

c) A list of unauthorized discharges and a summary of follow-up actions taken;

None

d) Any revisions to the management plans, as required by Part B, Item 6, submitted in the form of an Addendum;

None

e) A description of all progressive and/or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;

- None

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- f) A summary of all information requested and results of the Monitoring Program, an analysis and interpretation of the results, and any follow-up measures that may be required;

Table 1. Monitoring Program Station SW2 Effluent Results

Parameter	Maximum Concentration (mg/L)	SW2 September 8, 2021 (mg/L)
pH	6.5-9	8.24
TSS	50	8
Oil and Grease	15 and no visible sheen	Non-visible
Total Lead	0.001	<0.0001
Benzene	0.37	<0.0005
Toluene	0.002	<0.0005
Ethylbenzene	0.09	<0.0005

Table 2. Monitoring Program Station SW1 Effluent Results

Parameters	Unit	SW1 September 8, 2021
pH		8.23
TSS	mg/L	8
Chloride	mg/L	4.1
Nitrate+Nitrite as Nitrogen	mg/L	0.01
Sulphate	mg/L	4
HC Extractable	mg/L	-
Calcium	µg/L	34
Magnesium	mg/L	7.67
Potassium	mg/L	3.86
Sodium	mg/L	6.58
Benzene	mg/L	<0.0005
Ethylbenzene	mg/L	<0.0005
Toluene	mg/L	<0.0005
Xylenes	mg/L	<0.0005
Aluminium	µg/L	75.6
Arsenic	µg/L	0.6
Cadmium	µg/L	<0.1
Chromium	µg/L	0.2
Cobalt	µg/L	<0.1

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Copper	µg/L	1.8
Iron	µg/L	82
Lead	µg/L	0.1
Manganese	µg/L	8.5
Mercury	µg/L	<0.01
Nickel	µg/L	0.6
Zinc	µg/L	<5
Total Phenol	mg/L	-
Hardness	mg/L	116
PAH	mg/L	-
Conductivity	mg/L	241
Ammonia Nitrogen	mg/L	0.008
Oil and grease (visual)	mg/L	Non-visible
Alkalinity	mg/L	121
Phosphorous	mg/L	0.012

Table 3. Petroleum Hydrocarbon Contaminant Levels at Soil Locations LF1-LF4

	CCME Guideline for Industrial Land Use	September 8, 2021 (ppm)			
Parameter	Coarse (ppm)	LF-1	LF-2	LF-3	LF-4
Benzene	0.03	<0.005	<0.005	<0.005	<0.005
Toluene	0.37	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.082	<0.015	<0.01	<0.01	<0.01
Xylenes	11	<0.075	<0.1	<0.1	<0.1
F1	320	<5	<10	<10	<10
F2	260	-	-	-	-
F3	1700	-	-	-	-
F4	3300	-	-	-	-
Lead	600	4.87	4.42	9.58	6.60

- Groundwater is not observed within the monitoring wells M1-M6.

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g) A summary, including photographic records before, during and after any relevant construction activities or Modifications and/or major maintenance work carried out on facilities under this Licence and an outline of any work anticipated for the next year;

- None

h) A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;

- None

i) Any other details on Waste disposal requested by the Board by the 1st November of the year being reported.

- None

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- Not all parameters were tested in 2021 due to lack of trained CGS staff available in Kugaaruk. Sampling training will take place prior to 2022 sampling. No soil was removed from the landfarm.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- A CIRNAC inspection did not take place in 2021

List of Appendices

Appendix A: Laboratory Certificate of Analysis – September 8, 2021 – 16 pages

Appendix B: CIRNAC Inspection Report - 1 pages

**ANNUAL REPORT
FOR THE KUGAARUK LANDFARM**

Appendix A: Laboratory Certificate of Analysis



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

Taiga Batch No.:
211730

- FINAL REPORT -

Prepared For: Hamlet of Kugaaruk

Address: Box 205
Kugaaruk, NU, X0B 1K0

Attn: Chantal Dowden

Facsimile: 867-769-6069

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

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: September-23-21

Print Date: *September-23-21*

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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.:
211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **LF-1**

Taiga Sample ID: **001**

Client Project:

Sample Type: Soil

Received Date: 09-Sep-21

Sampling Date: 08-Sep-21

Sampling Time: 9:00

Location: Kugaaruk Landfarm

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Subcontracted Metals</u>						
Aluminum	5040	50	mg/kg	15-Sep-21	EPA200.2	
Antimony	< 0.10	0.1	mg/kg	15-Sep-21	EPA200.2	
Arsenic	1.27	0.1	mg/kg	15-Sep-21	EPA200.2	
Barium	19.3	0.5	mg/kg	15-Sep-21	EPA200.2	
Beryllium	0.32	0.1	mg/kg	15-Sep-21	EPA200.2	
Boron	< 5.0	5	mg/kg	15-Sep-21	EPA200.2	
Cadmium	0.032	0.02	mg/kg	15-Sep-21	EPA200.2	
Chromium	11.3	0.5	mg/kg	15-Sep-21	EPA200.2	
Cobalt	3.44	0.1	mg/kg	15-Sep-21	EPA200.2	
Copper	4.01	0.5	mg/kg	15-Sep-21	EPA200.2	
Iron	10300	50	mg/kg	15-Sep-21	EPA200.2	
Lead	4.87	0.5	mg/kg	15-Sep-21	EPA200.2	
Manganese	142	1	mg/kg	15-Sep-21	EPA200.2	
Molybdenum	0.34	0.1	mg/kg	15-Sep-21	EPA200.2	

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Taiga Batch No.:
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- CERTIFICATE OF ANALYSIS -

Client Sample ID: LF-1

Taiga Sample ID: 001

Nickel	5.86	0.5	mg/kg	15-Sep-21	EPA200.2
Selenium	< 0.20	0.2	mg/kg	15-Sep-21	EPA200.2
Strontium	8.21	0.5	mg/kg	15-Sep-21	EPA200.2
Thallium	0.086	0.05	mg/kg	15-Sep-21	EPA200.2
Titanium	353	1	mg/kg	15-Sep-21	EPA200.2
Uranium	1.70	0.05	mg/kg	15-Sep-21	EPA200.2
Vanadium	16.5	0.2	mg/kg	15-Sep-21	EPA200.2
Zinc	21.1	2	mg/kg	15-Sep-21	EPA200.2

Subcontracted Organics

Benzene	< 0.0050	0.005	mg/kg	16-Sep-21	CCME CWS PHC
Ethylbenzene	< 0.015	0.015	mg/kg	16-Sep-21	CCME CWS PHC
F1: C6-C10	< 5	5	mg/kg	16-Sep-21	CCME CWS PHC
Toluene	< 0.050	0.05	mg/kg	16-Sep-21	CCME CWS PHC
Xylenes	< 0.075	0.075	mg/kg	16-Sep-21	CCME CWS PHC

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

Taiga Batch No.:
211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **LF-2**

Taiga Sample ID: **002**

Client Project:

Sample Type: Soil

Received Date: 09-Sep-21

Sampling Date: 08-Sep-21

Sampling Time: 9:00

Location: Kugaaruk Landfarm

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Subcontracted Metals</u>						
Aluminum	4410	50	mg/kg	15-Sep-21	EPA200.2	
Antimony	0.48	0.1	mg/kg	15-Sep-21	EPA200.2	
Arsenic	1.23	0.1	mg/kg	15-Sep-21	EPA200.2	
Barium	16.6	0.5	mg/kg	15-Sep-21	EPA200.2	
Beryllium	0.23	0.1	mg/kg	15-Sep-21	EPA200.2	
Boron	< 5.0	5	mg/kg	15-Sep-21	EPA200.2	
Cadmium	0.066	0.02	mg/kg	15-Sep-21	EPA200.2	
Chromium	9.06	0.5	mg/kg	15-Sep-21	EPA200.2	
Cobalt	2.92	0.1	mg/kg	15-Sep-21	EPA200.2	
Copper	5.25	0.5	mg/kg	15-Sep-21	EPA200.2	
Iron	9180	50	mg/kg	15-Sep-21	EPA200.2	
Lead	4.42	0.5	mg/kg	15-Sep-21	EPA200.2	
Manganese	170	1	mg/kg	15-Sep-21	EPA200.2	
Molybdenum	0.27	0.1	mg/kg	15-Sep-21	EPA200.2	
Nickel	5.08	0.5	mg/kg	15-Sep-21	EPA200.2	
Selenium	< 0.20	0.2	mg/kg	15-Sep-21	EPA200.2	

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- CERTIFICATE OF ANALYSIS -

Client Sample ID: LF-2

Taiga Sample ID: 002

Strontium	7.12	0.5	mg/kg	15-Sep-21	EPA200.2
Thallium	0.071	0.05	mg/kg	15-Sep-21	EPA200.2
Titanium	325	1	mg/kg	15-Sep-21	EPA200.2
Uranium	1.31	0.05	mg/kg	15-Sep-21	EPA200.2
Vanadium	14.4	0.2	mg/kg	15-Sep-21	EPA200.2
Zinc	22.8	2	mg/kg	15-Sep-21	EPA200.2

Subcontracted Organics

Benzene	< 0.0050	0.005	mg/kg	16-Sep-21	CCME CWS PHC
Ethylbenzene	< 0.015	0.015	mg/kg	16-Sep-21	CCME CWS PHC
F1: C6-C10	< 5	5	mg/kg	16-Sep-21	CCME CWS PHC
Toluene	< 0.050	0.05	mg/kg	16-Sep-21	CCME CWS PHC
Xylenes	< 0.075	0.075	mg/kg	16-Sep-21	CCME CWS PHC

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

Taiga Batch No.:

211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **LF-3**

Taiga Sample ID: **003**

Client Project:

Sample Type: Soil

Received Date: 09-Sep-21

Sampling Date: 08-Sep-21

Sampling Time: 9:00

Location: Kugaaruk Landfarm

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Subcontracted Metals</u>						
Aluminum	4350	50	mg/kg	15-Sep-21	EPA200.2	
Antimony	< 0.10	0.1	mg/kg	15-Sep-21	EPA200.2	
Arsenic	1.30	0.1	mg/kg	15-Sep-21	EPA200.2	
Barium	20.0	0.5	mg/kg	15-Sep-21	EPA200.2	
Beryllium	0.24	0.1	mg/kg	15-Sep-21	EPA200.2	
Boron	< 5.0	5	mg/kg	15-Sep-21	EPA200.2	
Cadmium	0.030	0.02	mg/kg	15-Sep-21	EPA200.2	
Chromium	11.5	0.5	mg/kg	15-Sep-21	EPA200.2	
Cobalt	2.88	0.1	mg/kg	15-Sep-21	EPA200.2	
Copper	3.95	0.5	mg/kg	15-Sep-21	EPA200.2	
Iron	8760	50	mg/kg	15-Sep-21	EPA200.2	
Lead	9.58	0.5	mg/kg	15-Sep-21	EPA200.2	
Manganese	109	1	mg/kg	15-Sep-21	EPA200.2	
Molybdenum	0.24	0.1	mg/kg	15-Sep-21	EPA200.2	
Nickel	5.02	0.5	mg/kg	15-Sep-21	EPA200.2	
Selenium	< 0.20	0.2	mg/kg	15-Sep-21	EPA200.2	

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Taiga Batch No.:
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- CERTIFICATE OF ANALYSIS -

Client Sample ID: LF-3

Taiga Sample ID: 003

Strontium	5.73	0.5	mg/kg	15-Sep-21	EPA200.2
Thallium	0.074	0.05	mg/kg	15-Sep-21	EPA200.2
Titanium	363	1	mg/kg	15-Sep-21	EPA200.2
Uranium	1.39	0.05	mg/kg	15-Sep-21	EPA200.2
Vanadium	15.4	0.2	mg/kg	15-Sep-21	EPA200.2
Zinc	20.1	2	mg/kg	15-Sep-21	EPA200.2

Subcontracted Organics

Benzene	< 0.0050	0.005	mg/kg	16-Sep-21	CCME CWS PHC
Ethylbenzene	< 0.015	0.015	mg/kg	16-Sep-21	CCME CWS PHC
F1: C6-C10	< 5	5	mg/kg	16-Sep-21	CCME CWS PHC
Toluene	< 0.050	0.05	mg/kg	16-Sep-21	CCME CWS PHC
Xylenes	< 4350	4350	mg/kg	16-Sep-21	CCME CWS PHC



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Taiga Batch No.:
211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **LF-4**

Taiga Sample ID: **004**

Client Project:

Sample Type: Soil

Received Date: 09-Sep-21

Sampling Date: 08-Sep-21

Sampling Time: 9:00

Location: Kugaaruk Landfarm

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Subcontracted Metals</u>						
Aluminum	5500	50	mg/kg	15-Sep-21	EPA200.2	
Antimony	< 0.10	0.1	mg/kg	15-Sep-21	EPA200.2	
Arsenic	1.50	0.1	mg/kg	15-Sep-21	EPA200.2	
Barium	20.9	0.5	mg/kg	15-Sep-21	EPA200.2	
Beryllium	0.36	0.1	mg/kg	15-Sep-21	EPA200.2	
Boron	< 5.0	5	mg/kg	15-Sep-21	EPA200.2	
Cadmium	0.042	0.02	mg/kg	15-Sep-21	EPA200.2	
Chromium	11.4	0.5	mg/kg	15-Sep-21	EPA200.2	
Cobalt	3.51	0.1	mg/kg	15-Sep-21	EPA200.2	
Copper	5.04	0.5	mg/kg	15-Sep-21	EPA200.2	
Iron	11000	50	mg/kg	15-Sep-21	EPA200.2	
Lead	6.60	0.5	mg/kg	15-Sep-21	EPA200.2	
Manganese	152	1	mg/kg	15-Sep-21	EPA200.2	
Molybdenum	0.28	0.1	mg/kg	15-Sep-21	EPA200.2	
Nickel	6.04	0.5	mg/kg	15-Sep-21	EPA200.2	
Selenium	< 0.20	0.2	mg/kg	15-Sep-21	EPA200.2	

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

Taiga Batch No.:
211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: LF-4

Taiga Sample ID: 004

Strontium	6.61	0.5	mg/kg	15-Sep-21	EPA200.2
Thallium	0.094	0.05	mg/kg	15-Sep-21	EPA200.2
Titanium	391	1	mg/kg	15-Sep-21	EPA200.2
Uranium	2.31	0.05	mg/kg	15-Sep-21	EPA200.2
Vanadium	18.2	0.2	mg/kg	15-Sep-21	EPA200.2
Zinc	25.0	2	mg/kg	15-Sep-21	EPA200.2

Subcontracted Organics

Benzene	< 0.0050	0.005	mg/kg	16-Sep-21	CCME CWS PHC
Ethylbenzene	< 0.015	0.015	mg/kg	16-Sep-21	CCME CWS PHC
F1: C6-C10	< 5	5	mg/kg	16-Sep-21	CCME CWS PHC
Toluene	< 0.050	0.05	mg/kg	16-Sep-21	CCME CWS PHC
Xylenes	< 0.750	0.75	mg/kg	16-Sep-21	CCME CWS PHC

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

Taiga Batch No.:

211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **SW1**

Taiga Sample ID: **005**

Client Project:

Sample Type: Water Retention Cell

Received Date: 09-Sep-21

Sampling Date: 08-Sep-21

Sampling Time: 9:00

Location: Kugaaruk Landfarm

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	0.008	0.005	mg/L	10-Sep-21	TEL068	
Phosphorous, Total	0.012	0.002	mg/L	10-Sep-21	TEL069	
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO ₃)	121	0.4	mg/L	09-Sep-21	TEL060	
Conductivity, Specific (@25C)	241	0.4	µS/cm	09-Sep-21	TEL059	
pH	8.23		pH units	09-Sep-21	TEL058	
Solids, Total Dissolved	142	10	mg/L	14-Sep-21	TEL009	
Solids, Total Suspended	8	3	mg/L	14-Sep-21	TEL008	
<u>Major Ions</u>						
Chloride	4.1	0.7	mg/L	10-Sep-21	TEL055	
Nitrate as Nitrogen	0.01	0.01	mg/L	10-Sep-21	TEL055	
Nitrate+Nitrite as Nitrogen	0.01	0.01	mg/L	10-Sep-21	TEL055	
Nitrite as Nitrogen	< 0.01	0.01	mg/L	10-Sep-21	TEL055	
Sulphate	4	1	mg/L	10-Sep-21	TEL055	
<u>Organics</u>						
Oil and Grease, visible	Non-visible			09-Sep-21	Visual Exam	

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

Taiga Batch No.:
211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **SW1**

Taiga Sample ID: **005**

Subcontracted Inorganics

Calcium	34.0	0.05	mg/L	16-Sep-21	EPA200.2
Hardness	116	0.5	mg/L	16-Sep-21	EPA200.2
Magnesium	7.67	0.005	mg/L	16-Sep-21	EPA200.2
Potassium	3.86	0.05	mg/L	16-Sep-21	EPA200.2
Sodium	6.58	0.05	mg/L	16-Sep-21	EPA200.2

Subcontracted Organics

Benzene	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021
Ethylbenzene	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021
F1: C6-C10	< 0.10	0.1	mg/L	16-Sep-21	CCME CWS PHC
F2: C10-C16	< 0.30	0.3	mg/L	16-Sep-21	EPA3510
F3: C16-C34	< 0.30	0.3	mg/L	16-Sep-21	EPA3510
F4: C34-C50	< 0.30	0.3	mg/L	16-Sep-21	EPA3510
Phenols, Total	< 0.0010	0.001	mg/L	15-Sep-21	AB ENV.06537
Toluene	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021
Xylenes	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021

Trace Metals, Total

Aluminum	75.6	5	µg/L	21-Sep-21	TEL035
Antimony	0.1	0.1	µg/L	21-Sep-21	TEL035
Arsenic	0.6	0.2	µg/L	21-Sep-21	TEL035
Barium	7.6	0.1	µg/L	21-Sep-21	TEL035
Beryllium	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Bismuth	< 0.2	0.2	µg/L	21-Sep-21	TEL035
Boron	40.8	0.9	µg/L	21-Sep-21	TEL035
Cadmium	< 0.1	0.1	µg/L	21-Sep-21	TEL035

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

Taiga Batch No.:
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- CERTIFICATE OF ANALYSIS -

Client Sample ID: SW1

Taiga Sample ID: 005

Cesium	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Chromium	0.2	0.1	µg/L	21-Sep-21	TEL035
Cobalt	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Copper	1.8	0.2	µg/L	21-Sep-21	TEL035
Iron	82	5	µg/L	21-Sep-21	TEL035
Lead	0.1	0.1	µg/L	21-Sep-21	TEL035
Manganese	8.5	0.1	µg/L	21-Sep-21	TEL035
Mercury	< 0.01	0.01	µg/L	21-Sep-21	TEL035
Molybdenum	2.0	0.1	µg/L	21-Sep-21	TEL035
Nickel	0.6	0.1	µg/L	21-Sep-21	TEL035
Rubidium	1.1	0.1	µg/L	21-Sep-21	TEL035
Selenium	< 0.5	0.5	µg/L	21-Sep-21	TEL035
Silver	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Strontium	196	0.1	µg/L	21-Sep-21	TEL035
Thallium	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Titanium	3.4	0.1	µg/L	21-Sep-21	TEL035
Uranium	8.5	0.1	µg/L	21-Sep-21	TEL035
Vanadium	0.2	0.1	µg/L	21-Sep-21	TEL035
Zinc	< 5.0	5	µg/L	21-Sep-21	TEL035

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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.:

211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **SW2**

Taiga Sample ID: **006**

Client Project:

Sample Type: Water Discharge

Received Date: 09-Sep-21

Sampling Date: 08-Sep-21

Sampling Time: 9:00

Location: Kugaaruk Landfarm

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	0.009	0.005	mg/L	10-Sep-21	TEL068	
Phosphorous, Total	0.014	0.002	mg/L	10-Sep-21	TEL069	
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO ₃)	120	0.4	mg/L	09-Sep-21	TEL060	
Conductivity, Specific (@25C)	245	0.4	µS/cm	09-Sep-21	TEL059	
pH	8.24		pH units	09-Sep-21	TEL058	
Solids, Total Dissolved	144	10	mg/L	14-Sep-21	TEL009	
Solids, Total Suspended	8	3	mg/L	14-Sep-21	TEL008	
<u>Major Ions</u>						
Chloride	4.0	0.7	mg/L	10-Sep-21	TEL055	
Nitrate as Nitrogen	0.01	0.01	mg/L	10-Sep-21	TEL055	
Nitrate+Nitrite as Nitrogen	0.01	0.01	mg/L	10-Sep-21	TEL055	
Nitrite as Nitrogen	< 0.01	0.01	mg/L	10-Sep-21	TEL055	
Sulphate	4	1	mg/L	10-Sep-21	TEL055	
<u>Organics</u>						
Oil and Grease, visible	Non-visible			09-Sep-21	Visual Exam	

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Taiga Sample ID: **006**

Subcontracted Inorganics

Calcium	33.9	0.05	mg/L	16-Sep-21	EPA200.2
Hardness	118	0.5	mg/L	16-Sep-21	EPA200.2
Magnesium	8.10	0.005	mg/L	16-Sep-21	EPA200.2
Potassium	3.81	0.05	mg/L	16-Sep-21	EPA200.2
Sodium	6.48	0.05	mg/L	16-Sep-21	EPA200.2

Subcontracted Organics

Benzene	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021
Ethylbenzene	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021
F1: C6-C10	< 0.10	0.1	mg/L	16-Sep-21	CCME CWS PHC
F2: C10-C16	< 0.30	0.3	mg/L	16-Sep-21	EPA3510
F3: C16-C34	< 0.30	0.3	mg/L	16-Sep-21	EPA3510
F4: C34-C50	< 0.30	0.3	mg/L	16-Sep-21	EPA3510
Phenols, Total	< 0.0010	0.001	mg/L	15-Sep-21	AB ENV.06537
Toluene	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021
Xylenes	< 0.00050	0.0005	mg/L	16-Sep-21	EPA 5021

Trace Metals, Total

Aluminum	60.3	5	µg/L	21-Sep-21	TEL035
Antimony	0.1	0.1	µg/L	21-Sep-21	TEL035
Arsenic	0.6	0.2	µg/L	21-Sep-21	TEL035
Barium	8.1	0.1	µg/L	21-Sep-21	TEL035
Beryllium	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Bismuth	< 0.2	0.2	µg/L	21-Sep-21	TEL035
Boron	43.0	0.9	µg/L	21-Sep-21	TEL035
Cadmium	< 0.1	0.1	µg/L	21-Sep-21	TEL035

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

Taiga Batch No.:
211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: SW2

Taiga Sample ID: 006

Cesium	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Chromium	0.2	0.1	µg/L	21-Sep-21	TEL035
Cobalt	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Copper	1.9	0.2	µg/L	21-Sep-21	TEL035
Iron	78	5	µg/L	21-Sep-21	TEL035
Lead	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Manganese	6.9	0.1	µg/L	21-Sep-21	TEL035
Mercury	< 0.01	0.01	µg/L	21-Sep-21	TEL035
Molybdenum	2.1	0.1	µg/L	21-Sep-21	TEL035
Nickel	0.6	0.1	µg/L	21-Sep-21	TEL035
Rubidium	1.1	0.1	µg/L	21-Sep-21	TEL035
Selenium	< 0.5	0.5	µg/L	21-Sep-21	TEL035
Silver	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Strontium	205	0.1	µg/L	21-Sep-21	TEL035
Thallium	< 0.1	0.1	µg/L	21-Sep-21	TEL035
Titanium	3.4	0.1	µg/L	21-Sep-21	TEL035
Uranium	8.8	0.1	µg/L	21-Sep-21	TEL035
Vanadium	0.2	0.1	µg/L	21-Sep-21	TEL035
Zinc	< 5.0	5	µg/L	21-Sep-21	TEL035

ReportDate: September-23-21
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Taiga Batch No.:
211730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **SW2**

Taiga Sample ID: **006**

- DATA QUALIFIERS -

Data Qualifier Descriptions:

249 *Taiga Environmental Laboratory is not accredited for this test.*

*** 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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ANNUAL REPORT FOR THE KUGAARUK LANDFARM

Appendix B: CIRNAC Inspection Report

The CIRNAC inspection did not take place in 2021.