

Leonard DeBastien
Executive Director
Gwich'in Land and Water Board
Box 2018
Inuvik, N.W.T.
XOE 0T0

March 31, 2025

Project #
60600398

Dear Sir:

**Subject: Town of Inuvik – Water Licence No. G17L3-001
2024 Summary Report**

On behalf of the Town of Inuvik, we are pleased to provide the Annual Report for 2024.

WATER DEMANDS, STATION 0036-1

The total volume of water used from the East Channel is listed in Table G17L3-001-1 attached. Water use remained well within the Licence limit throughout the year. It was also at ordinary levels relative to recent times: about 4.9% more than consumption in 2023. Water License G17L3-001 dictated the maximum volume of water that can be withdrawn from the East Channel is 1,000,000 m³ per year. The total water demand in 2024 was approximately 77% of the maximum withdraw volume.

WASTEWATER VOLUMES

Annually, about 97 percent of the wastewater reaching Inuvik's lagoon is distributed and re-collected by the Town's above ground utilidor system. About three percent is distributed from Inuvik's truck fill point and is then re-collected by wastewater trucks.

There is no extraneous inflow, and rarely much loss to leakage. Inuvik will accept wastewater from sources other than the Town's water supply on a fee for service basis, but volumes being received are negligible. There are a few water uses which do not contribute to sewage (such as firefighting, and in summer, gardening and vehicle washing) but these represent a very small portion of the total water usage, and can be neglected. For practical purposes, inflow into the lagoon is essentially equal to the Town's metered production of water, reported in Table G17L3-001-1.

It is Inuvik's practice to obtain assurance from waste hauling contractors and waste generators that discharges to the lagoon from trucks will be restricted to wastewater of domestic origin and character. This wastewater shall not be contaminated by solvents, petroleum products, glycol, drilling fluids, or any other industrial waste of any sort in concentrations exceeding what would ordinarily be expected from domestic activities, such as washing of clothes and hands. Inuvik did not accept wastewater from sources outside the Town's boundaries during this year.

SEWAGE EFFLUENT QUANTITIES

Inuvik's lagoon is normally operated at a constant level, with a dike freeboard of 1.0 m or slightly more. Therefore, in normal operation, monthly quantities of effluent are about equal to monthly water use. The Lagoon level was normal and consistent throughout 2024.

Information on the Town's sludge removal activities can be found in the relevant section below.

SOLID WASTE DISPOSAL FACILITY OPERATIONS AND MAINTENANCE

In 2024, Inuvik's solid waste disposal facility was operated routinely. Based on rates from the Municipal Solid Waste Facility O&M Manual - Appendix A, the estimated municipal solid waste generated in 2024 was approximately 5,901 tonnes of Municipal Solid Waste, which used approximately 19,669 m³ of space at the Municipal Solid Waste Facility. Detailed estimates are presented in Table G17L3-001-2, attached.

No other projects were undertaken, beyond routine covering and compaction of completed cells. Typically, Inuvik will accept Municipal Solid Waste from outside sources, though the quantities tend to be very low. The Town of Inuvik did not receive additional solid waste from outside sources in 2024.

In 2024, no collection event for household hazardous waste was undertaken.

SEWAGE EFFLUENT QUALITY MONITORING, STATION G17L3-0036-3

Lagoon effluent is sampled monthly, and laboratory test results are listed in Table G17L3-001-3, attached.

Generally, results are within typical ranges for the time of year. With the exception of oil and grease, which is over the limit of 5 mg/L since the sample was collected by skimming the surface of the discharge due to an insufficient amount of flow or a vertical dip in the winter months. Running averages of parameters measured in routine monthly samples, and pH measurements (which are not averaged), remained within license limits during the year.

BOD₅ monitoring was changed to CBOD monitoring in the license renewal; The limit for CBOD was set at 135 mg/L, compared to 150 mg/L for BOD₅. There were no concerns with this parameter during the year. It is relevant that the full effluent CBOD load in the East Channel is not exerted at or close to Inuvik, in a concentrated way. Rather, it is distributed quite thinly far downstream, due to the slow BOD exertion rate in a northern river environment, especially at winter temperatures.

There were no concerns with Suspended Solids; the results were well below the license limit of 70 mg/L.

For fecal coliforms, the results were below the license limit of 1,000,000 CFU/100 mL for the majority of the year. The month of January 2024 saw an elevated reading of 4,000,000 CFU/100 mL, exceeding the license allowable limit. For this reading, a non-conformance was noted for holding time; the recommended holding time for microbiological analysis is 24 hours. This sample (Lot ID: 1708778) was taken and shipped on January 16th 2024, landed in Edmonton on January 17th 2024, but not received by Element until January 25th, 2024. It is anticipated that this shipping delay caused an elevated reading of fecal coliforms for the month of January. The results for this parameter were significantly lower in the previous and subsequent months (6,000 and 60,000 CFU/100mL respectively). The town will continue to monitor this parameter for elevated readings, and seek to eliminate any future shipping delays.

The Town does not have a standard for ammonia but is required to monitor for it. The ammonia levels all appeared to be within normal ranges.

SOLID WASTE DISPOSAL FACILITY RUN-OFF QUALITY MONITORING, STATIONS G06L3-001-4, -5 AND -9

Runoff from the Mt. Baldy Solid Waste Disposal Facility is sampled monthly during periods of flow. Station 0036-4 monitors flow westward; Station 0036-5 monitors near-shore water quality in a pond to the east; and SNP 0036-9 was added in the latest license renewal to monitor potential impacts of the Solid Waste Disposal Facilities on surface water at Boot Creek. Sample results are shown in Tables G17L3-001-4, -5, and -9 respectively.

Four tests were taken at each SNP station in 2024, during months of flow: June, July, August, and September.

PONDS AT LAGOON, STATIONS G17L3-001-6 AND -7; CONTROL STATION G17L3-001-8

Sampling of ponds adjacent to the lagoon is completed once per year, in September, starting in 2007. The purpose is to monitor for possible evidence of leakage from the lagoon. Samples are tested for the same parameters as lagoon effluent.

"Gate Pond", Station 6, occupies a former small gravel quarry just outside the lagoon system's west dike, adjacent to the west sludge cell. "Far Pond", Station 7, is located just outside the lagoon system's west dike, opposite the middle-north part of the secondary cell, about 800 m northwest of Gate Pond and 250 m direct distance south of the outlet structure. Twin Lake is used as a background benchmark, and its Station 8 is located at the south end of North Twin Lake.

The 2024 sample results for these stations' traditional parameters are shown in Table G17L3-001-6, 7 & 8. They are in line with the patterns of preceding years. Complete data for the stations is presented in the results appendix.

SOLID WASTE FACILITY FENCING PLAN

The Solid Waste Fencing Plan requirement (Part D, Item 15) was added to the 2017 licence renewal. The Plan was submitted on May 21, 2019. A design and tender was completed in 2022 for a new electric fence to close in the solid waste facility. Construction started in 2024, and is anticipated for completion in 2025.

SURVEILLANCE NETWORK PROGRAM (SNP) LOCATIONS

A map of the SNP Locations is attached. Active SNP location data is presented in the following table.

SNP #	Description	Purpose	Coordinates
0036-1	Raw Water Intake at the Mackenzie River Water Supply Facilities	To monitor monthly and annual quantity of water withdrawn for municipal purposes.	68°21'10.36" N, 133°43'35.53" W
0036-3	Decant Structure at Sewage Treatment Facilities	Site of Compliance. To monitor final effluent quality prior to discharge to the receiving environment and in case of an emergency decant.	68°22'20.58" N, 133°45'38.85" W
0036-4	Run-off below the Solid Waste Disposal Facilities	To monitor potential impacts of the Solid Waste Disposal Facilities on Surface water.	68°21'7" N, 133°41'1.3" W
0036-5	Run-off to two (2) tundra ponds southwest of Solid Waste Disposal Facilities	To monitor potential impacts of the Solid Waste Disposal Facilities on Surface water.	68°20'36.22" N, 133°40'32.41" W
0036-6	"Gate Pond" – near SW corner of Sewage Treatment Facility	To monitor potential impacts of the Sewage Lagoon on Surface Water	68°21'51.45" N, 133°44'1.00" W
0036-7	"Far Pond" – near the NW corner of Sewage Treatment Facility	To monitor potential impacts of the Sewage Lagoon on Surface Water	68°22'15.73" N, 133°45'41.60" W
0036-8	Twin Lakes at Happy Valley	Control for Sewage Lagoon Sampling	68°21'239.14" N, 133°44'28.10" W
0036-9	Boot Creek upstream of Boot Lake	To monitor potential impacts of the Solid Waste Disposal Facilities on Surface water.	68°21'13.35" N, 133°41'51.48" W

SOLIDS REMOVED FROM SEWAGE TREATMENT FACILITY

Sludge that had accumulated in the lagoon's primary cells since their commissioning in 1980 was transferred to the adjacent sludge holding cells in July 1993. A survey done in the fall of 2006 found that that subsequent sludge accumulations were still well below levels requiring the next transfer by dredging. The apparently reduced accumulation rate (relative to 1981-1993) may be due to a lagoon conditioner that Inuvik has been adding to the primary cells since the mid 1990's.

In recent years, small amounts of settled and floating solids need to be removed from around ends of pipes passing through primary cell dikes. This is done with a backhoe; the solids being deposited in the sludge holding cells. Routine solids removal as described was not required for the year 2024.

Sludge removal was not performed in the summer of 2024.

INSPECTION OF LAGOON EARTHEN CONTAINMENT STRUCTURES

The 2024 inspection of lagoon dikes (Water Licence Condition D8) report is attached in Appendix C. There are no immediate concerns arising from the 2024 lagoon dike inspection. Routine maintenance work was done on the lagoon's earthwork dikes, and all dikes appear to be at or very near to design shapes and levels. Continued longitudinal cracking does indicate that at some point in the future, a major restoration project will be required.

A rehabilitation project is planned for the southern dike of the secondary lagoon cell in 2025. The project includes reinforcement of the dike along the two northern ponds, raising the berm to an elevation of

approximately 7 meters geodetic, and resurfacing the perimeter road. Drawings for the rehabilitation project were submitted to and approved by the GLWB in 2023.

CONSTRUCTION, MODIFICATIONS AND MAJOR MAINTENANCE WORK

In 2024, no modifications to the existing operating process were made. Routine maintenance work was completed as required.

UNAUTHORIZED DISCHARGES

There were no unauthorized discharges in 2024.

SPILL TRAINING AND COMMUNICATIONS EXERCISES

No additional training was completed. Spill kits and spill containment equipment were purchased in 2017 for implementation of actions identified in the Spill Containment Plan (2017), which was updated and submitted with the 2017 Water Licence renewal application.

ABANDONMENT, CLOSURE, AND RECLAMATION

No such projects were undertaken in 2024. The future of the Lake B – Hidden Lake water supply infrastructure needs to be confirmed but is expected to be abandoned at a future date.

CURRENT WATER LICENCE RELATED PLANS

Documents currently on file with the Water Board are summarized in the list below.

- Spill Contingency Plan: Revised February 2017 (AECOM)
- O&M Manual for the Solid Waste Disposal Facility: Revised April 2018 (AECOM)
- O&M Manual for the Water Treatment Facility: September 2018 (Napa Design and Construction)
- O&M Manual for the Sewage Treatment Facility: Revised June 2019 (AECOM)

CLOSURE

We trust that this submission fulfills the reporting requirements for the period referred to.

Sincerely,
AECOM Canada ULC

Hitendra Patel, P.Eng.
Senior Project Manager
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Encl.
cc: GLWB – Alec Sandra MacDonald, Regulatory Officer
Inuvik: Cynthia Pihlaja, S.A.O.; Daniel Dokunmu; Utilidor Shop
Inuvik Public Works Committee

Ref: 60600398

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- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

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Appendix **A**





Image © 2018 DigitalGlobe

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Google Earth

2002

Imagery Date: 8/17/2016 68°21'27.53" N 133°43'16.49" W elev 77 ft eye alt 16061 ft

INUVIK SURVEILLANCE NETWORK PROGRAM
WATER USE ("SNP")

2024

Table G17L3-001-1

Station 0036-1, Mackenzie River pumphouse.

Measure quantities daily. Report by month.

The total volumes of water used from SNP 0036-1 are listed below.

2024 Month	Intake from the East Channel m³
January	67,246
February	64,107
March	65,416
April	63,223
May	63,341
June	61,093
July	61,547
August	60,604
September	64,360
October	69,264
November	66,032
December	66,986
Total	773,219

Notes:

1. Quantities are well within Licence limits. No known concerns.

The total estimated solid waste generated is listed below.

Month 2021	Solid Waste Generated tonnes	Solid Waste Deposited m ³
January	501	1,671
February	453	1,509
March	501	1,671
April	485	1,617
May	501	1,671
June	485	1,617
July	501	1,671
August	501	1,671
September	485	1,617
October	501	1,671
November	485	1,617
December	501	1,671
Total	5,901	19,669

Notes:

1. Latest population estimates based on data from GNWT Bureau of Statistics as of July 1, 2022.
2. Solid Waste Generation estimates based on generation rates outlined in 2017 Inuvik Municipal Solid Waste Facility O&M Manual.

Station 0036-3, Sewage Discharge to Receiving Water.
SNP requirements. Sample monthly. Report parameters tabulated below.

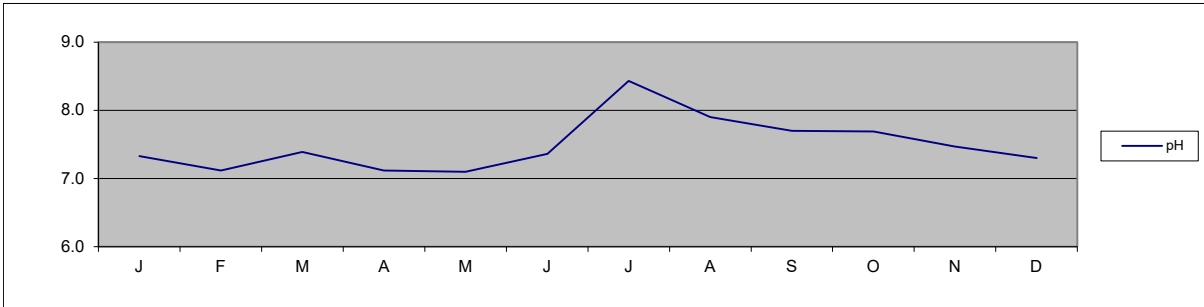
SAMPLE RESULTS										AMBIENT CONDITIONS		
Date			pH	BOD/ CBOD mg/L	SS mg/L	NH3-N mg/L	Un- ionized Ammonia mg/L	Fecal Coli CFU/dL	Oil and Grease mg/L	Temp ° C	Wind km/h	OC/ Prctp
YYYY	MM	DD										
2024	01	16	7.3	13	11	14	0.08	4,000,000	6	6	NR	NR
2024	02	14	7.1	14	20	13	0.05	60,000	6	NR	NR	NR
2024	03	12	7.4	37	10	16	0.10	114,000	8	7	NR	NR
2024	04	16	7.1	44	6	17	0.06	400,000	10	7	NR	NR
2024	05	14	7.1	40	10	14	0.05	22,600	5	4	NR	NR
2024	06	11	7.4	11	5	07	0.05	5,900	2	4	NR	NR
2024	06	11	8.4	04	19	03	0.18	1	5	2	NR	NR
2024	07	16	7.9	10	35	04	0.07	1,300	6	4	NR	NR
2024	09	17	7.7	06	8	06	0.09	50	5	4	NR	NR
2024	10	15	7.7	04	6	08	0.11	10	6	4	NR	NR
2024	11	12	7.5	07	10	10	0.08	10,200	14	4	NR	NR
2024	12	17	7.3	15	12	13	0.07	890,000	6	5	NR	NR

RUNNING AVERAGES OF SAMPLE RESULTS												
Item Unit			pH	BOD/ CBOD mg/L	SS mg/L	NH3-N mg/L	Un- ionized Ammonia mg/L	Fecal Coli CFU/dL	Oil and Grease mg/L			
Limit, avg. 4 consec.												
			6-9	135	70	none	none	1,000,000	5 mg/L			
2024	01	16	7.3	9	15	8.3	0.08	9,119	10.00			
2024	02	14	7.1	12	15	10.6	0.07	31,341	10.25			
2024	03	12	7.4	17	14	11.6	0.08	113,192	9.80			
2024	04	16	7.1	25	12	13.9	0.07	5,828	10.80			
2024	05	14	7.1	30	11	14.8	0.07	5,871	7.00			
2024	06	11	7.4	33	8	13.5	0.07	4,005	6.25			
2024	06	11	8.4	25	10	10.3	0.08	809	5.50			
2024	07	16	7.9	16	17	6.9	0.09	515	4.50			
2024	09	17	7.7	8	17	4.9	0.10	285	4.50			
2024	10	15	7.7	6	17	5.2	0.11	216	5.50			
2024	11	12	7.5	7	15	7.1	0.09	617	7.75			
2024	12	17	7.3	8	9	9.4	0.09	992	7.75			

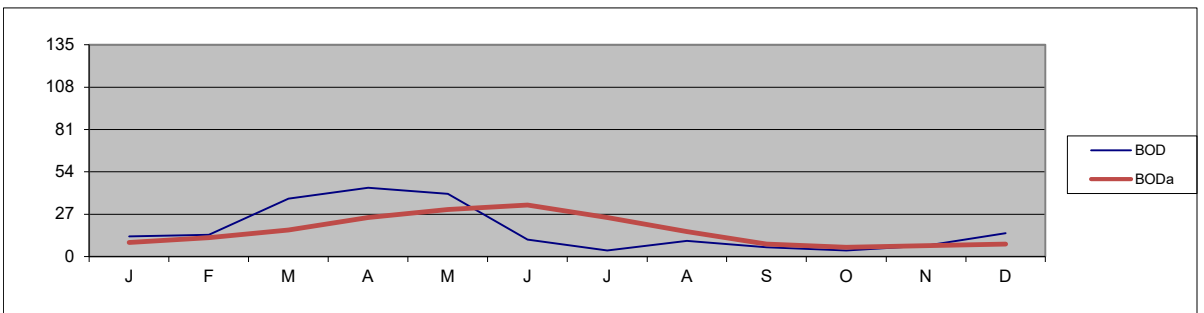
Notes:

- 1 In the table header above, "avg. 4 con" is shorthand for "average of four consecutive samples". There is no average requirement for pH, only an upper and lower limit. Values presented for pH are monthly sample results.
- 2 In the graphs below, the red line (coded with suffix "a" in the key) shows the average of four consecutive samples. The thinner line shows individual monthly readings.
- 3 NR represents not reported in this sample.
- 4 Requirements in the new licence took affect July 1, 2017. Average reported for Fecal Coliforms changed from geometric to arithmetic averages at that time. Averages for CBOD were calculated using BOD where CBOD values were unavailable.
- 5 Samples were not taken in January 2023 due to human error. Reported averages for the first four months exclude January, and are therefore based on a three month average.

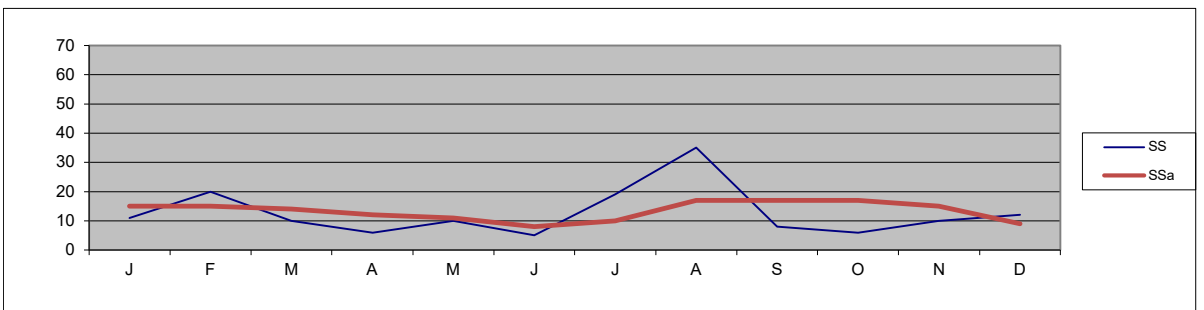
pH, BY MONTH 2024



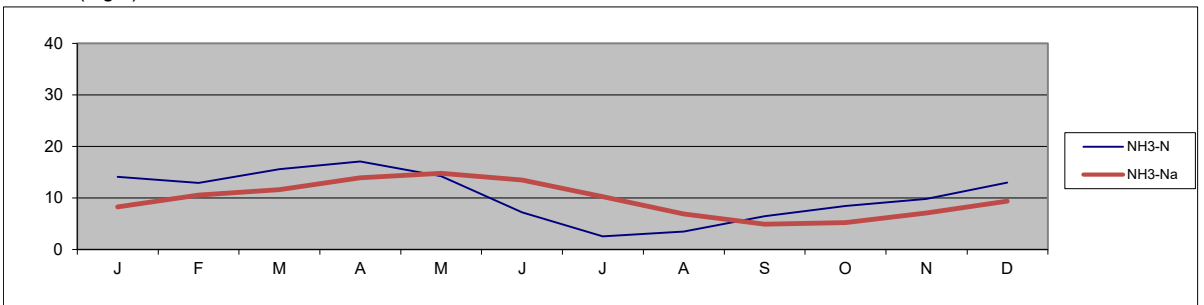
CBOD (mg/L), BY MONTH 2024



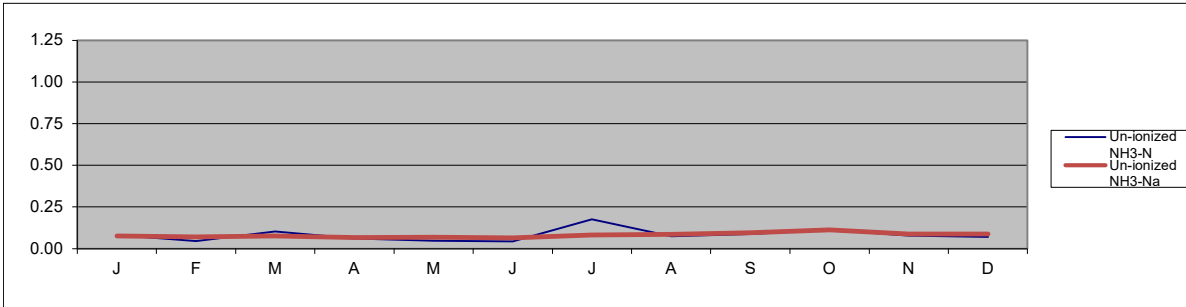
SUSPENDED SOLIDS (mg/L) BY MONTH 2024



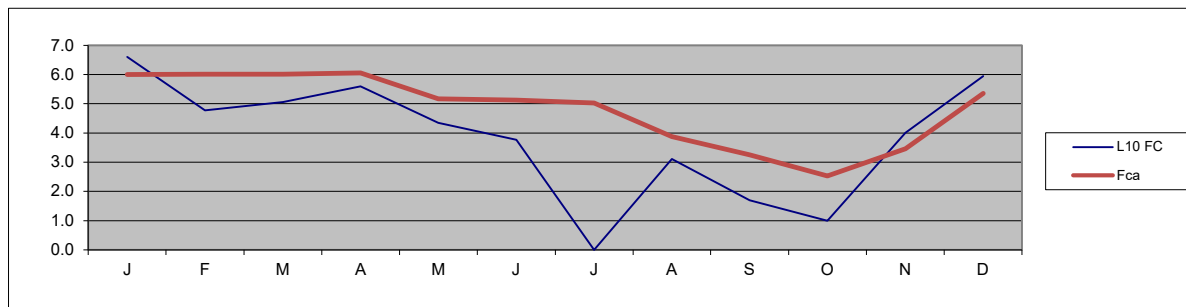
NH3-N (mg/L) BY MONTH 2024



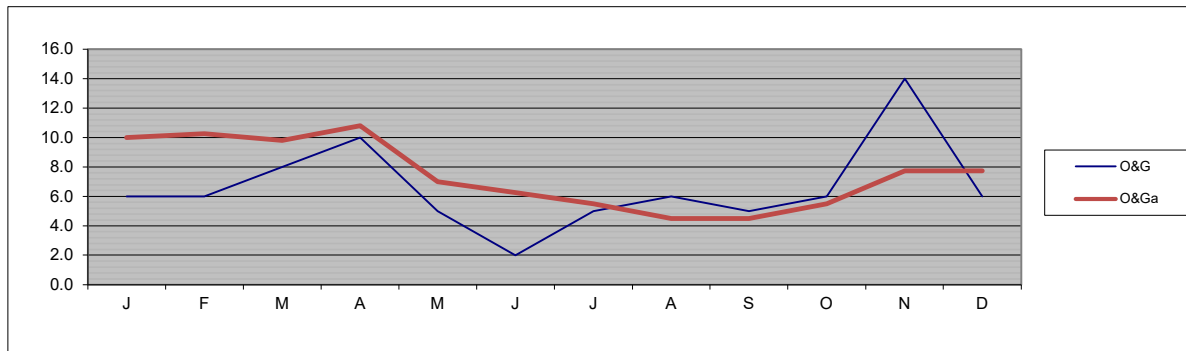
Un-ionized NH3-N (mg/L) BY MONTH 2024



FECAL COLIFORMS (LOG10 CFU/100 mL) BY MC 2024



Oil and Grease (mg/L) BY MONTH 2024



Note: the chart for Fecal Coliforms, shows the Log(10) of the measured value.

Note: Data charted are monthly measured values and running averages.
 Averages are identified by the suffix "a".

Station 0036-4 Sample monthly when there is flow. Report parameters tabulated below.

SAMPLE DATES & OBSERVATIONS			Temp ° C	Wind km/h	Sky	Prcp
May			Frozen - No Sample Taken			
June	11	2024	4	NR	NR	0
July	16	2024	2	NR	NR	0
August	13	2024	2	NR	NR	0
September	17	2024	2	NR	NR	0
October			Frozen - No Sample Taken			

SAMPLE ANALYSIS RESULTS					
Item		Date			
		Jun 11	Jul 16	Aug 13	Sep 17
pH	NA	7.95	7.86	7.96	8.09
Conductivity	uS/cm	2590.0	2450.0	2410.0	2400.0
Sodium	mg/L	176.0	185.0	175.0	185.0
Potassium	mg/L	36.0	39.0	33.0	39.0
Magnesium	mg/L	128.0	132.0	117.0	126.0
Calcium	mg/L	261.0	249.0	231.0	236.0
Cadmium	mg/L	0.000660	0.000050	<0.00005	<0.00005
Chromium	mg/L	0.0040	0.0040	<0.002	<0.002
Copper	mg/L	0.0400	0.0060	<0.005	<0.005
Iron	mg/L	9.100	5.710	2.000	0.860
Lead	mg/L	0.00960	0.00200	0.00060	<0.0005
Mercury	mg/L	0.0000740	0.0000180	0.0000230	0.0000120
Nickel	mg/L	0.01900	0.01600	0.01100	0.00990
Zinc	mg/L	0.1090	0.0350	<0.020	<0.020
Sulphate	mg/L	NR	NR	NR	NR
Phosphate	mg/L	NR	NR	NR	NR
Phenols	mg/L	0.0020	0.0020	0.0010	0.0020
CBOD5	mg/L	<4	<4	<4	<4
Oil & Grease	mg/L	NR	NR	NR	NR
Suspend. Solid	mg/L	150.0	369.0	218.0	27.0
TPH	mg/L	<0.1	<0.1	<0.1	<0.1

Notes:

1. "Phosphate" is reported as total P.
2. "NR" denotes Not Reported.
3. TPH value listed is summation of F1 and F2.

Station 0036-5 Sample monthly when there is flow. Report parameters tabulated below.

SAMPLE DATES & OBSERVATIONS			Temp ° C	Wind km/h	Sky	Prcp
May			Frozen - No Sample Taken			
June	11	2024	4	NR	NR	0
July	16	2024	2	NR	NR	0
August	13	2024	2	NR	NR	0
September	17	2024	2	NR	NR	0
October			Frozen - No Sample Taken			

SAMPLE ANALYSIS RESULTS					
Item		Date			
		Jun 11	Jul 16	Aug 13	Sep 17
pH	NA	6.87	7.21	6.83	7.05
Conductivity	uS/cm	564.0	909.0	7070.0	4020.0
Sodium	mg/L	10.60	23.60	88.60	55.40
Potassium	mg/L	43.3	75.4	883.0	474.0
Magnesium	mg/L	12.6	27.6	190.0	112.0
Calcium	mg/L	35.9	70.4	458.0	274.0
Cadmium	mg/L	0.000020	0.000060	0.000070	<0.00005
Chromium	mg/L	0.00060	0.00230	<0.002	<0.002
Copper	mg/L	0.0090	0.0070	<0.005	<0.005
Iron	mg/L	1.350	3.970	2.100	1.200
Lead	mg/L	0.00040	0.00140	0.00070	<0.0005
Mercury	mg/L	0.0000330	0.0000120	<0.000005	0.0000160
Nickel	mg/L	0.00300	0.00580	0.00500	0.01300
Zinc	mg/L	0.0110	0.0210	<0.020	<0.020
Sulphate	mg/L	NR	NR	NR	NR
Phosphate	mg/L	NR	NR	NR	NR
Phenols	mg/L	0.0010	<0.001	0.0010	0.0020
BOD5	mg/L	<4	10.0	8.0	10.0
Oil & Grease	mg/L	NR	NR	NR	NR
Suspend. Solid	mg/L	6.0	380.0	525.0	170.0
TPH	mg/L	<0.1	<0.1	<0.1	<0.1

Notes:

1. "Phosphate" is reported as total P.
2. "NR" denotes Not Reported.
3. TPH value listed is summation of F1 and F2.

Station 0036-9 Sample monthly when there is flow. Report parameters tabulated below.

SAMPLE DATES & OBSERVATIONS			Temp ° C	Wind km/h	Sky	Prcp
May			Frozen - No Sample Taken			
June	11	2024	4	NR	NR	0
July	16	2024	2	NR	NR	0
August	13	2024	2	NR	NR	0
September	17	2024	2	NR	NR	0
October			Frozen - No Sample Taken			

SAMPLE ANALYSIS RESULTS					
Item		Date			
		Jun 11	Jul 16	Aug 13	Sep 17
pH	NA	6.71	7.56	7.62	7.76
Conductivity	uS/cm	125.0	1150.0	1060.0	1510.0
Sodium	mg/L	3.90	62.20	54.00	77.70
Potassium	mg/L	1.40	3.50	2.70	3.90
Magnesium	mg/L	4.70	47.00	42.00	72.60
Calcium	mg/L	12.10	137.00	119.00	171.00
Cadmium	mg/L	0.000030	0.000010	<0.00001	0.000010
Chromium	mg/L	0.00130	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.0040	0.0020	0.0020	<0.001
Iron	mg/L	1.950	0.540	0.930	0.830
Lead	mg/L	0.00060	<0.0001	<0.0001	<0.0001
Mercury	mg/L	0.0000430	0.0000250	0.0000110	0.0000200
Nickel	mg/L	0.00760	0.00550	0.00560	0.00820
Zinc	mg/L	0.0130	0.0190	0.0070	0.0080
Sulphate	mg/L	NR	NR	NR	NR
Phosphate	mg/L	NR	NR	NR	NR
Phenols	mg/L	<0.001	<0.001	<0.001	0.0010
BOD5	mg/L	<4	<4	<4	<4
Oil & Grease	mg/L	NR	NR	NR	NR
Suspend. Solid	mg/L	31.0	2.0	6.0	5.0
TPH	mg/L	<0.1	<0.1	<0.1	<0.1

Notes:

- "Phosphate" is reported as total P.
- "NR" denotes Not Reported.
- TPH value listed is summation of F1 and F2.

**INUVIK SURVEILLANCE NETWORK PROGRAM
MONITORING OF PONDS NEAR LAGOON**

2024

Table G17L3-001-6, 7 & 8

Station 0036-6, "Gate Pond", W dike, SW, near gate. 68° 21' 51.45" N; 133° 44' 1.00" W
 Station 0036-7, "Far Pond", W dike, mid-north. 68° 22' 15.73" N; 133° 45' 41.60" W
 Station 0036-8, control, Twin Lakes at Happy Valley. 68° 21' 239.14" N; 133° 44' 28.10" W

SNP requirements. Sample annually. Report parameters tabulated below.
 Reports are due for the calendar year by March 31.

Date				SNP #	SAMPLE RESULTS					AMBIENT CONDITIONS		
					pH	BOD ₅ mg/L	SS mg/L	NH ₃ -N mg/L	Fecal Coli CFU/dL	Temp ° C	Wind km/h	Sky
2024	09	17	6	7.9	<4	6	10.70	<10	4	NR	-	
2024	09	17	7	8.0	8	20	0.04	<10				
2024	09	17	8	8.1	6	4	2.50	<10				

Note: Results from recent earlier years are included below for comparison.

Date				SNP #	SAMPLE RESULTS					AMBIENT CONDITIONS		
					pH	BOD ₅ mg/L	SS mg/L	NH ₃ -N mg/L	Fecal Coli CFU/dL	Temp ° C	Wind km/h	Sky
2023	09	12	6	8.3	<4	2	3.32	<10	3	NE 13	Cloudy	
2023	09	12	7	8.3	<4	16	<0.025	<10				
2023	09	12	8	7.9	<4	2	12.60	<10				
2022	09	20	6	7.7	<4	9	14.00	<10	7	N 3	-	
2022	09	20	7	8.1	<4	7	0.028	10				
2022	09	20	8	8.2	>4	9	2.72	<10				
2021	09	21	6	7.3	5	6	1.12	<10	2	N 26	-	
2021	09	21	7	7.9	<4	3	0.071	<10				
2021	09	21	8	8.0	<4	6	3.86	10				
2020	09	16	6	8.0	<4	5	7.6	40	4	N 15	-	
2020	09	16	7	8.3	<4	<2	<0.025	<10				
2020	09	16	8	8.1	6	12	1.9	<10				
2019	09	11	6	7.9	<4	<2	12.1	<10	17	WNW 17	Partly Cloudy	
2019	09	11	7	8.1	<4	3	<0.025	<10				
2019	09	11	8	8.2	<4	<2	1.5	20				
2018	09	12	6	7.8	<4	1	8.9	1	-4	E 13	Partly Cloudy	
2018	09	12	7	8.3	<4	3	<0.025	1				
2018	09	12	8	8.1	<4	<2	0.5	<1				
2017	09	13	6	7.8	<4	19	nd	2	11	SE 12	Clear	
2017	09	13	7	8.0	<4	<1	nd	2				
2017	09	13	8	8.0	<4	10	nd	<1				
2016	09	13	6	8.1	<4	2	14.1	<1	0	E 18	Cloudy	
2016	09	13	7	8.1	<4	<1	<0.025	<1				
2016	09	13	8	8.1	<4	2	3.1	2				
2015	09	08	6	7.7	<4	3	12.8	2	1	NW 4	Cloudy	
2015	09	08	7	8.4	<4	<7	<0.025	<1				
2015	09	08	8	8.2	<4	8	1.6	1				
2014	10	07	6	7.7	<4	4	12.4	81	-3	NW 30	Snow	
2014	10	07	7	8.0	<4	4	<0.05	<1				
2014	10	07	8	8.1	<4	47	1.9	1				
2013	09	24	6	7.8	<4	<1	14.4	2	0	NE 5	Cloudy	
2013	09	24	7	8.1	<4	15	<0.05	24				
2013	09	24	8	8.1	<4	<2	1.9	<1				
2012	09	18	6	8.1	<4	3	10.4	4	7	S 10	Clear	
2012	09	18	7	8.3	<4	<1	<0.05	1				
2012	09	18	8	8.2	<4	<2	3.4	2				
2011	09	19	6	8.0	<4	<2	13.6	<1	0	NE 15	Cloudy	
2011	09	19	7	8.3	<4	<2	<0.05	<1				
2011	09	19	8	8.1	<4	6	1.6	<1				
2010	09	21	6	7.8	<4	<1	14.3	1	1	NW 15	Cloudy	
2010	09	21	7	8.1	<4	<1	<0.05	<1				
2010	09	21	8	8.1	<4	50	2.6	<1				
2009	09	28	6	7.1	<4	3	11.2	<1	-3	NW 4	Snow	
2009	09	28	7	8.2	5	6	<0.05	<1				
2009	09	28	8	7.8	<4	6	2.8	<1				
2008	09	15	6	7.7	<4	5	10.0	1	-3	E 12	Clear	
2008	09	15	7	8.6	<4	3	<0.05	<1				
2008	09	15	8	8.3	<4	6	1.3	<1				

2007	11	14	6	7.2	<4	13	8.9	<1				
2007	11	14	7	7.3	14	303	0.3	1	-12	SE 07	Snow	
2007	11	14	8	7.4	5	6	4.3	<1				

Appendix **B**



Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1725778 Control Number: Date Received: Apr 17, 2024 Date Reported: Apr 24, 2024 Report Number: 2994059 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Accounts Payable	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: Daniel.dokunmu@inuvik.ca, stephen.odias@inuvik.ca,
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Nick Bevington	AECOM Canada Ltd	Edmonton, AB Phone: (780) 453-0710 Fax: Email: Nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Apr 19, 2024 - Sample 1725778-1; 9277634: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.


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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1725778 Control Number: Date Received: Apr 17, 2024 Date Reported: Apr 24, 2024 Report Number: 2994059 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Reference Number 1725778-1
Sample Date Apr 16, 2024
Sample Time 10:05
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 6.5
°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	44			4
Oil and Grease	Total mg/L	10			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	17.1			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0619			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Fecal Coliforms	Membrane Filtration CFU/100 mL	400000			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	6			2
Routine Water					
pH	15 °C pH	7.12			
Temp. of observed pH	°C	15			
pH		7.13			1
Temp. of observed pH	°C	20.8			

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1725778 Control Number: Date Received: Apr 17, 2024 Date Reported: Apr 24, 2024 Report Number: 2994059 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Apr 18, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Apr 24, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Apr 22, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Apr 18, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Apr 19, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Apr 23, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Apr 18, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Apr 19, 2024 - Sample 1725778-1; 9277634: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Invoice To
Report To
Additional Reports to

 Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

 Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell:
 Fax:
 E-mail 1: nick.bevington@aecom.com
 E-mail 2:
 Copy of Invoice: YES / NO

 1) Name:
 E-mail:
 2) Name:
 E-mail:
Sample Custody
 Sampled by: Arlo Clarkson
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: Arlo C
 Date/Time: April 15/2024
Project Information
 Project ID: SNP 0036-3
 Project Name:
 Project Location: Inuvik, NT
 Legal Location:
 PO/AFE#: 100104
 Proj. Acct. Code:
 Quote #:

RUSH Priority
Report Results
Requirements

-
- Same Day (200%)
-
-
- Next Day/Two Day (100%)
-
-
- Three or Four Days (50%)
-
-
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

-
- Email
-
- QA/QC
-
-
- Online
-
- PDF
-
-
- Fax
-
- Excel

-
- HCDWORG
-
- SPIGEC
-
-
- AB Tier 1
-
- BCCSR
-
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

#	Site I.D.	Sample Description	Depth		Date/Time sampled	Matrix	Sampling method
			start (in)	end (cm)			
1	SNP0036-3	Sewage Lagoon	10		April 16/24		Dip
2					10:05am		
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

#	MeOH Field Preserved?	pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease	Enter tests above (✓ relevant samples below)															
1	✓							x	x	x	x	x	x										
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

 Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)

Lot: 1725778 COC


 Temp. received: 6.5 °C Date/Time stamp: APR 17 2024
 Delivery Method: Hand
 Waybill:
 Received by: JT

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1732109 Control Number: Date Received: May 15, 2024 Date Reported: May 22, 2024 Report Number: 3004476 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Contact	Company	Address
Accounts Payable	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: Daniel.dokunmu@inuvik.ca,stephen.odias@inuvik.ca,
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Nick Bevington	AECOM Canada Ltd	Edmonton, AB Phone: (780) 453-0710 Fax: Email: Nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- May 21, 2024 - Sample 1732109-1; 9313513: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1732109 Control Number: Date Received: May 15, 2024 Date Reported: May 22, 2024 Report Number: 3004476 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Reference Number 1732109-1
Sample Date May 14, 2024
Sample Time NA
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 8"
- 8" / 4.1 °C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	40			4
Oil and Grease	Total mg/L	<5			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	14.2			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0490			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Fecal Coliforms	Membrane Filtration CFU/100 mL	22600			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	10			2
Routine Water					
pH	15 °C pH	7.10			
Temp. of observed pH	°C	15			
pH		7.44			1
Temp. of observed pH	°C	20.4			

Approved by: 

Benjamin Morris, B.Sc
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1732109 Control Number: Date Received: May 15, 2024 Date Reported: May 22, 2024 Report Number: 3004476 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	May 16, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	May 22, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	May 20, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	May 16, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	May 21, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	May 21, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	May 16, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- May 21, 2024 - Sample 1732109-1; 9313513: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Project Information

 Project ID: SNP 0036-3
 Project Name: _____
 Project Location: Inuvik, NT
 Legal Location: _____
 PO/AFE#: 100104
 Proj. Acct. Code: _____
 Quote #: _____

Invoice To	Report To	Additional Reports to	
Company: <u>Town of Inuvik</u>	Company: <u>Aecom - Edmonton</u>	1) Name: _____	
Address: <u>Box 1160, 2 Firth Street</u>	Address: <u>Suite 101 18817 Stony Plain Road</u>	E-mail: _____	
<u>Inuvik, NT X0E 0T0</u>	<u>Edmonton, AB T5S 0C2</u>	2) Name: _____	
Attention: <u>David Kendi</u>	Attention: <u>Nick Bevington</u>	E-mail: _____	
Phone: <u>(867) 777-8600</u>	Phone: <u>1 (587) 335-0050</u>	Sample Custody	
Cell: <u>(867) 678-5384</u>	Cell: _____	Sampled by: <u>Argus Dillo</u>	
Fax: <u>(867) 777-8601</u>	Fax: _____	Company: <u>Town of Inuvik</u>	
E-mail: <u>utilidor@inuvik.ca</u>	E-mail 1: <u>nick.bevington@aecom.com</u>	I authorize Element to proceed with the work indicated on this form:	
Agreement ID: <u>2909</u>	E-mail 2: _____	Signature: <u>[Signature]</u>	
Copy of Report: <u>YES / NO</u>	Copy of Invoice: <u>YES / NO</u>	Date/Time: <u>May 14, 2024</u>	

RUSH Priority

-
- Same Day (200%)
-
-
- Next Day/Two Day (100%)
-
-
- Three or Four Days (50%)
-
-
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

Report Results

-
- Email
-
- QA/QC
-
-
- Online
-
- PDF
-
-
- Fax
-
- Excel

Requirements

-
- HCDWORG
-
- SPIGEC
-
-
- AB Tier 1
-
- BCCSR
-
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth start end in cm m		Date/Time sampled	Matrix	Sampling method	#	Number of Containers	MeOH Field Preserved?	Enter tests above (✓ relevant samples below)										
										pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease					
1	SNP0036-3	3"	3"	May 14, 2024		Dip	5			X	X	X	X	X	X					
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Please indicate any potentially hazardous samples

 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)

 Page 1 of 1 Control # ED 120-005

Lot: 1732109 COC


 Temp. received: 4.1 °C Date/Time stamp: _____
 Delivery Method: curry
 Waybill: _____
 Received by: [Signature]

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4, 5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1738661 Control Number: Date Received: Jun 12, 2024 Date Reported: Jun 20, 2024 Report Number: 3014938 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Contact	Company	Address
Accounts Payable	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: Daniel.dokunmu@inuvik.ca,stephen.odias@inuvik.ca,
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Nick Bevington	AECOM Canada Ltd	Edmonton, AB Phone: (780) 453-0710 Fax: Email: Nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Jun 18, 2024 - Some trace total metal results were less than dissolved metal results for sample 1738661-1 and -2. The results were verified and are within expected measurement uncertainty.

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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4, 5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1738661 Control Number: Date Received: Jun 12, 2024 Date Reported: Jun 20, 2024 Report Number: 3014938 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

		Reference Number	1738661-1	1738661-2	1738661-3	
		Sample Date	Jun 11, 2024	Jun 11, 2024	Jun 11, 2024	
		Sample Time	08:54	08:38	09:12	
		Sample Location				
		Sample Description	SNP0036-4 / Pit NW of Dump / 4.4 °C	SNP0036-5 / Pond SE of Dump / 4.4 °C	SNP0036-9 / Creek NW of Dump / 4.4 °C	
		Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit	
Aggregate Organic Constituents						
Biochemical Oxygen Demand	Carbonaceous	mg/L	<4	<4	<4	4
Phenol		mg/L	0.002	0.001	<0.001	0.001
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.23	0.10	0.07	0.05
Total Phosphorus Preservation			Yes	Yes	Yes	
Metals Dissolved						
Subsample			Lab Filtered	Lab Filtered	Lab Filtered	
Metals Total						
Calcium	Total	mg/L	261	35.9	12.1	0.2
Iron	Total	mg/L	9.10	1.35	1.95	0.05
Magnesium	Total	mg/L	128	12.6	4.7	0.2
Manganese	Total	mg/L	1.97	0.094	0.404	0.005
Potassium	Total	mg/L	36	43.3	1.4	0.4
Silicon	Total	mg/L	12.2	0.73	1.56	0.05
Sodium	Total	mg/L	176	10.6	3.9	0.4
Sulfur	Total	mg/L	262	20.9	12.0	0.3
Mercury	Total	mg/L	0.000074	0.000033	0.000043	0.000005
Aluminum	Total	mg/L	1.36	0.199	0.618	0.005
Antimony	Total	mg/L	<0.001	<0.0002	<0.0002	0.0002
Arsenic	Total	mg/L	0.003	0.0011	0.0015	0.0002
Barium	Total	mg/L	0.079	0.039	0.027	0.001
Beryllium	Total	mg/L	<0.0005	<0.0001	<0.0001	0.0001
Bismuth	Total	mg/L	<0.002	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	1.61	0.015	0.019	0.002
Cadmium	Total	mg/L	0.00066	0.00002	0.00003	0.00001
Chromium	Total	mg/L	0.004	0.0006	0.0013	0.0005
Cobalt	Total	mg/L	0.004	0.0005	0.0016	0.0001
Copper	Total	mg/L	0.04	0.009	0.004	0.001
Lead	Total	mg/L	0.0096	0.0004	0.0006	0.0001
Lithium	Total	mg/L	0.052	0.006	0.005	0.001
Molybdenum	Total	mg/L	0.008	0.002	0.002	0.001
Nickel	Total	mg/L	0.019	0.0030	0.0076	0.0005
Selenium	Total	mg/L	<0.001	0.0002	<0.0002	0.0002
Silver	Total	mg/L	0.00006	0.00013	0.00009	0.00001
Strontium	Total	mg/L	1.05	0.119	0.044	0.001
Thallium	Total	mg/L	<0.0003	<0.00005	<0.00005	0.00005

Analytical Report


Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4, 5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1738661 Control Number: Date Received: Jun 12, 2024 Date Reported: Jun 20, 2024 Report Number: 3014938 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

		Reference Number	1738661-1	1738661-2	1738661-3	
		Sample Date	Jun 11, 2024	Jun 11, 2024	Jun 11, 2024	
		Sample Time	08:54	08:38	09:12	
		Sample Location				
		Sample Description	SNP0036-4 / Pit NW of Dump / 4.4 °C	SNP0036-5 / Pond SE of Dump / 4.4 °C	SNP0036-9 / Creek NW of Dump / 4.4 °C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Tin	Total	mg/L	<0.005	<0.001	<0.001	0.001
Titanium	Total	mg/L	0.024	0.0009	0.0053	0.0005
Uranium	Total	mg/L	<0.002	<0.0005	<0.0005	0.0005
Vanadium	Total	mg/L	0.0077	0.0014	0.0030	0.0001
Zinc	Total	mg/L	0.109	0.011	0.013	0.004
Zirconium	Total	mg/L	<0.005	<0.001	<0.001	0.001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	150	6	31	2
Routine Water						
pH			7.95	6.87	6.71	1
Temp. of observed pH		°C	21.2	21.5	21.6	
Electrical Conductivity	at 25 °C	µS/cm	2590	564	125	1
Electrical Conductivity	at 25 °C	dS/m	2.59	0.564	0.125	0.001
Calcium	Dissolved	meq/L	13.0	1.75	0.57	0.01
Calcium	Dissolved	mg/L	260	35.1	11.5	0.2
Magnesium	Dissolved	meq/L	10.7	1.03	0.38	0.01
Magnesium	Dissolved	mg/L	130	12.5	4.7	0.2
Sodium	Dissolved	meq/L	7.76	0.46	0.16	0.02
Sodium	Dissolved	mg/L	178	10.6	3.7	0.4
Potassium	Dissolved	meq/L	0.93	1.11	0.03	0.01
Potassium	Dissolved	mg/L	36	43.3	1.1	0.4
Chloride	Dissolved	mg/L	107	83.8	2.1	0.4
Chloride	Dissolved	meq/L	3.02	2.36	0.06	0.01
Sulfate (SO4)	Dissolved	mg/L	759	58.7	33.8	0.9
Sulfate-S		meq/L	15.8	1.22	0.702	
Sulfate-S	Dissolved	mg/L	253	19.6	11.3	0.3
Total Dissolved Solids	Estimated	mg/L	1660	361	80	1
SAR	Dissolved		2.2	0.4	0.2	
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	<0.001	<0.001	<0.001	0.001
Toluene		mg/L	<0.0004	<0.0004	<0.0004	0.0004
Ethylbenzene		mg/L	<0.0010	<0.0010	<0.0010	0.0010
Total Xylenes (m,p,o)		mg/L	<0.001	<0.001	<0.001	0.001
4-Bromofluorobenzene	Surrogate	%	84	83	82	70-130
Toluene-d8	Surrogate	%	98	96	97	70-130
Volatile Petroleum Hydrocarbons - Water						
F1 -BTEX		mg/L	<0.1	<0.1	<0.1	0.1

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4, 5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1738661 Control Number: Date Received: Jun 12, 2024 Date Reported: Jun 20, 2024 Report Number: 3014938 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

	Reference Number	1738661-1	1738661-2	1738661-3	
	Sample Date	Jun 11, 2024	Jun 11, 2024	Jun 11, 2024	
	Sample Time	08:54	08:38	09:12	
	Sample Location				
	Sample Description	SNP0036-4 / Pit NW of Dump / 4.4 °C	SNP0036-5 / Pond SE of Dump / 4.4 °C	SNP0036-9 / Creek NW of Dump / 4.4 °C	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Volatile Petroleum Hydrocarbons - Water - Continued					
F1 C6-C10	mg/L	<0.1	<0.1	<0.1	0.1
F2 C10-C16	mg/L	<0.1	<0.1	<0.1	0.1

Approved by: 
Benjamin Morris, B.Sc
Operations Manager

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4, 5 & 9	Lot ID: 1738661
Attn: Accounts Payable	Project Name:	Control Number:
Sampled By: Angus Dillon	Project Location: Inuvik, NT	Date Received: Jun 12, 2024
Company: Town of Inuvik	LSD:	Date Reported: Jun 20, 2024
	P.O.: 100104	Report Number: 3014938
	Proj. Acct. code:	Report Type: Final Report

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* Conductivity, 2510 B	Jun 13, 2024	Element Edmonton - Roper Road
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Jun 13, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Jun 12, 2024	Element Edmonton - Roper Road
BTEX-CCME - Water	US EPA	* Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis/Gas Chromatography Mass Spectrometry, 5021/8260	Jun 19, 2024	Element Calgary
Chloride in Water	APHA	* Automated Ferricyanide Method, 4500-Cl-E	Jun 13, 2024	Element Edmonton - Roper Road
Mercury (Total) in water	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	Jun 13, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	APHA/USEPA	* Metals By Inductively Coupled Plasma/Mass Spectrometry, APHA 3125 B / USEPA 200.2, 200.8	Jun 13, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Jun 13, 2024	Element Edmonton - Roper Road
Metals Trace (Dissolved) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Jun 13, 2024	Element Edmonton - Roper Road
Metals Trace (Total) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Jun 13, 2024	Element Edmonton - Roper Road
Phenol in water	APHA	* Direct Photometric Method, 5530 D	Jun 14, 2024	Element Edmonton - Roper Road
Phosphorus - Total in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	Jun 18, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	Jun 19, 2024	Element Edmonton - Roper Road

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Jun 18, 2024 - Some trace total metal results were less than dissolved metal results for sample 1738661-1 and -2. The results were verified and are within expected measurement uncertainty.

Methodology and Notes

Bill To: Town of Inuvik	Project ID: SNP 0036-4, 5 & 9	Lot ID: 1738661
Box 1160	Project Name:	Control Number:
2 Firth Street	Project Location: Inuvik, NT	Date Received: Jun 12, 2024
Inuvik, NT, Canada	LSD:	Date Reported: Jun 20, 2024
X0E 0T0	P.O.: 100104	Report Number: 3014938
Attn: Accounts Payable	Proj. Acct. code:	Report Type: Final Report
Sampled By: Angus Dillon		
Company: Town of Inuvik		

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Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1738663 Control Number: Date Received: Jun 12, 2024 Date Reported: Jun 20, 2024 Report Number: 3014943 Report Type: Final Report
Attn: Utilidor Sampled By: David Kendi Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	AECOM Canada Ltd	Edmonton, AB Phone: (780) 453-0710 Fax: Email: Nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
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Notes To Clients:

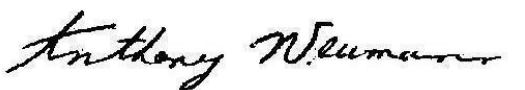
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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1738663 Control Number: Date Received: Jun 12, 2024 Date Reported: Jun 20, 2024 Report Number: 3014943 Report Type: Final Report
Attn: Utilidor Sampled By: David Kendi Company: Town of Inuvik		

Reference Number	1738663-1
Sample Date	Jun 11, 2024
Sample Time	09:00
Sample Location	
Sample Description	SNP0036-3 / Sewage Lagoon / 4.0 °C
Matrix	Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	11			4
Oil and Grease	Total mg/L	<2			2
pH adjustment	required prior to O&G extraction	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	7.22			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0453			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	5900			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	5			2
Routine Water					
pH	15 °C pH	7.36			
Temp. of observed pH	°C	15			
pH		7.44			1
Temp. of observed pH	°C	21.2			

Approved by: 
Anthony Neumann, MSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1738663 Control Number: Date Received: Jun 12, 2024 Date Reported: Jun 20, 2024 Report Number: 3014943 Report Type: Final Report
Attn: Utilidor Sampled By: David Kendi Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Jun 13, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Jun 18, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Jun 17, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Jun 13, 2024	Element Calgary
Oil and Grease in water (VAN)	BCELM	* Oil & Grease in Water - Direct Hexane Extraction (2023), Oil & Grease	Jun 18, 2024	Element Vancouver
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Jun 18, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	Jun 19, 2024	Element Edmonton - Roper Road

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
BCELM	B.C. Environmental Laboratory Manual

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

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Project Information

Project ID: SNP 0036-3
 Project Name: Inuvik, NT
 Project Location: Inuvik, NT
 Legal Location: Inuvik, NT
 PO/A/E#: 100104
 Proj. Acct. Code:
 Quote #:

Invoice To

Company: Town of Inuvik
 Address: Box 1160, 2 Fifth Street
 Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Report To

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
 Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (887) 335-0050
 Cell:
 Fax:
 E-mail 1: nick.bevington@aecocom.com
 E-mail 2:
 Copy of Invoice: YES / NO

Additional Reports to

1) Name:
 E-mail:
 2) Name:
 E-mail:
 Sampled by: David Kendi
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: [Signature]
 Date/Time: 08-11-24 9:28 am

RUSH Priority

- Same Day (200%)
 Next Day/Two Day (100%)
 Three or Four Days (50%)
 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

Report Results

- Email QA/QC
 Online PDF
 Fax Excel
 HCDWORG SPIGEC
 AB Tier 1 BCCSR
 Other (list below)

Requirements

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth start end (Dip) m	Date/Time sampled	Matrix	Sampling method	Number of Containers	MeOH Field Preserved?	pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease
1	SNP0036-3 Sewage Lagoon	101cm-105cm	08-11-24 9:28 am		Dip	5	<input checked="" type="checkbox"/>						
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													

Enter tests above (relevant samples below)

Please indicate any potentially hazardous samples

Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (https://www.element.com/terms/standard-conditions)

Lot: 1738663 COC



Page _____ of _____ Control # _____
 ED 120-005
 Temp. received: 4.0 °C Date/Time stamp: Sun 12/1
 Delivery Method: courier
 Waybill: Dale D. T
 Received by:

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1746146 Control Number: Date Received: Jul 17, 2024 Date Reported: Jul 23, 2024 Report Number: 3025946 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
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<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Some trace total metal results were less than dissolved metal results for sample 1746146-1, -2 and -3. The results were verified and are within expected measurement uncertainty.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1746146 Control Number: Date Received: Jul 17, 2024 Date Reported: Jul 23, 2024 Report Number: 3025946 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

		Reference Number	1746146-1	1746146-2	1746146-3	
		Sample Date	Jul 16, 2024	Jul 16, 2024	Jul 16, 2024	
		Sample Time	09:07	09:55	09:19	
		Sample Location				
		Sample Description	SNP0036-4 / Pit NW of Dump / 2.3°C	SNP0036-5 / Pond SE of Dump / 2.3°C	SNP0036-9 / Creek NW of Dump / 2.3°C	
		Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit	
Aggregate Organic Constituents						
Biochemical Oxygen Demand	Carbonaceous	mg/L	<4	10	<4	4
Phenol		mg/L	0.002	<0.001	<0.001	0.001
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.24	0.30	<0.05	0.05
Total Phosphorus Preservation			Yes	Yes	Yes	
Metals Dissolved						
Subsample			Lab Filtered	Lab Filtered	Lab Filtered	
Metals Total						
Calcium	Total	mg/L	249	70.4	137	0.2
Iron	Total	mg/L	5.71	3.97	0.54	0.05
Magnesium	Total	mg/L	132	27.6	47.0	0.2
Manganese	Total	mg/L	0.789	0.521	0.710	0.005
Potassium	Total	mg/L	39	75.4	3.5	0.4
Silicon	Total	mg/L	7.89	1.33	2.05	0.05
Sodium	Total	mg/L	185	23.6	62.2	0.4
Sulfur	Total	mg/L	258	38.3	166	0.3
Mercury	Total	mg/L	0.000018	0.000012	0.000025	0.000005
Aluminum	Total	mg/L	1.34	0.979	0.049	0.005
Antimony	Total	mg/L	<0.001	0.0002	<0.0002	0.0002
Arsenic	Total	mg/L	0.004	0.0035	0.0008	0.0002
Barium	Total	mg/L	0.15	0.122	0.040	0.001
Beryllium	Total	mg/L	<0.0005	<0.0001	<0.0001	0.0001
Bismuth	Total	mg/L	<0.002	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	1.86	0.031	0.146	0.002
Cadmium	Total	mg/L	0.00005	0.00006	0.00001	0.00001
Chromium	Total	mg/L	0.004	0.0023	<0.0005	0.0005
Cobalt	Total	mg/L	0.002	0.0020	0.0004	0.0001
Copper	Total	mg/L	0.006	0.007	0.002	0.001
Lead	Total	mg/L	0.002	0.0014	<0.0001	0.0001
Lithium	Total	mg/L	0.057	0.014	0.029	0.001
Molybdenum	Total	mg/L	<0.005	<0.001	<0.001	0.001
Nickel	Total	mg/L	0.016	0.0058	0.0055	0.0005
Selenium	Total	mg/L	<0.001	0.0003	<0.0002	0.0002
Silver	Total	mg/L	<0.00005	0.00002	0.00001	0.00001
Strontium	Total	mg/L	1.00	0.265	0.500	0.001
Thallium	Total	mg/L	<0.0003	<0.00005	<0.00005	0.00005

Analytical Report


Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9	Lot ID: 1746146
Attn: Utilidor	Project Name:	Control Number:
Sampled By: Arlo Clarkson	Project Location: Inuvik, NT	Date Received: Jul 17, 2024
Company: Town of Inuvik	LSD:	Date Reported: Jul 23, 2024
	P.O.: 100104	Report Number: 3025946
	Proj. Acct. code:	Report Type: Final Report

		Reference Number	1746146-1	1746146-2	1746146-3	
		Sample Date	Jul 16, 2024	Jul 16, 2024	Jul 16, 2024	
		Sample Time	09:07	09:55	09:19	
		Sample Location				
		Sample Description	SNP0036-4 / Pit NW of Dump / 2.3°C	SNP0036-5 / Pond SE of Dump / 2.3°C	SNP0036-9 / Creek NW of Dump / 2.3°C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Tin	Total	mg/L	<0.005	<0.001	<0.001	0.001
Titanium	Total	mg/L	0.018	0.0088	0.0012	0.0005
Uranium	Total	mg/L	<0.002	<0.0005	0.0009	0.0005
Vanadium	Total	mg/L	0.0084	0.0058	0.0003	0.0001
Zinc	Total	mg/L	0.035	0.021	0.019	0.004
Zirconium	Total	mg/L	<0.005	<0.001	<0.001	0.001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	369	380	2	2
Routine Water						
pH			7.86	7.21	7.56	1
Temp. of observed pH		°C	23.7	23.7	23.7	
Electrical Conductivity	at 25 °C	µS/cm	2450	909	1150	1
Electrical Conductivity	at 25 °C	dS/m	2.45	0.909	1.15	0.001
Calcium	Dissolved	meq/L	12.5	3.38	6.74	0.01
Calcium	Dissolved	mg/L	250	67.8	135	0.2
Magnesium	Dissolved	meq/L	10.6	2.16	3.77	0.01
Magnesium	Dissolved	mg/L	129	26.3	45.8	0.2
Sodium	Dissolved	meq/L	8.24	1.03	2.71	0.02
Sodium	Dissolved	mg/L	189	23.8	62.3	0.4
Potassium	Dissolved	meq/L	1.00	1.94	0.09	0.01
Potassium	Dissolved	mg/L	39	75.7	3.6	0.4
Chloride	Dissolved	mg/L	111	162	20.2	0.4
Chloride	Dissolved	meq/L	3.14	4.56	0.57	0.01
Sulfate (SO4)	Dissolved	mg/L	725	105	467	0.9
Sulfate-S		meq/L	15.1	2.19	9.71	
Sulfate-S	Dissolved	mg/L	242	35.1	156	0.3
Total Dissolved Solids	Estimated	mg/L	1570	582	735	1
SAR	Dissolved		2.4	0.6	1.2	
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	<0.001	<0.001	<0.001	0.001
Toluene		mg/L	<0.0004	<0.0004	<0.0004	0.0004
Ethylbenzene		mg/L	<0.0010	<0.0010	<0.0010	0.0010
Total Xylenes (m,p,o)		mg/L	<0.001	<0.001	<0.001	0.001
4-Bromofluorobenzene	Surrogate	%	93	91	91	70-130
Toluene-d8	Surrogate	%	97	96	98	70-130
Volatile Petroleum Hydrocarbons - Water						
F1 -BTEX		mg/L	<0.1	<0.1	<0.1	0.1

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1746146 Control Number: Date Received: Jul 17, 2024 Date Reported: Jul 23, 2024 Report Number: 3025946 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

	Reference Number	1746146-1	1746146-2	1746146-3	
	Sample Date	Jul 16, 2024	Jul 16, 2024	Jul 16, 2024	
	Sample Time	09:07	09:55	09:19	
	Sample Location				
	Sample Description	SNP0036-4 / Pit NW of Dump / 2.3°C	SNP0036-5 / Pond SE of Dump / 2.3°C	SNP0036-9 / Creek NW of Dump / 2.3°C	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Volatile Petroleum Hydrocarbons - Water - Continued					
F1 C6-C10	mg/L	<0.1	<0.1	<0.1	0.1
F2 C10-C16	mg/L	<0.1	<0.1	<0.1	0.1

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9	Lot ID: 1746146
Attn: Utilidor	Project Name:	Control Number:
Sampled By: Arlo Clarkson	Project Location: Inuvik, NT	Date Received: Jul 17, 2024
Company: Town of Inuvik	LSD:	Date Reported: Jul 23, 2024
	P.O.: 100104	Report Number: 3025946
	Proj. Acct. code:	Report Type: Final Report

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* Conductivity, 2510 B	Jul 17, 2024	Element Edmonton - Roper Road
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Jul 17, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Jul 22, 2024	Element Edmonton - Roper Road
BTEX-CCME - Water	US EPA	* Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis/Gas Chromatography Mass Spectrometry, 5021/8260	Jul 18, 2024	Element Calgary
Chloride in Water	APHA	* Automated Ferricyanide Method, 4500-Cl- E	Jul 18, 2024	Element Edmonton - Roper Road
Mercury (Total) in water	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	Jul 18, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	APHA/USEPA	* Metals By Inductively Coupled Plasma/Mass Spectrometry, APHA 3125 B / USEPA 200.2, 200.8	Jul 18, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Jul 18, 2024	Element Edmonton - Roper Road
Metals Trace (Dissolved) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Jul 18, 2024	Element Edmonton - Roper Road
Metals Trace (Total) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Jul 18, 2024	Element Edmonton - Roper Road
Phenol in water	APHA	* Direct Photometric Method, 5530 D	Jul 19, 2024	Element Edmonton - Roper Road
Phosphorus - Total in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	Jul 23, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	Jul 18, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	Jul 22, 2024	Element Edmonton - Roper Road

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Some trace total metal results were less than dissolved metal results for sample 1746146-1, -2 and -3. The results were verified and are within expected measurement uncertainty.

Methodology and Notes

Bill To: Town of Inuvik	Project ID: SNP 0036-4,5 & 9	Lot ID: 1746146
Box 1160	Project Name:	Control Number:
2 Firth Street	Project Location: Inuvik, NT	Date Received: Jul 17, 2024
Inuvik, NT, Canada	LSD:	Date Reported: Jul 23, 2024
X0E 0T0	P.O.: 100104	Report Number: 3025946
Attn: Utilidor	Proj. Acct. code:	Report Type: Final Report
Sampled By: Arlo Clarkson		
Company: Town of Inuvik		

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



Invoice To

Report To

Additional Reports to

Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell:
 Fax:
 E-mail 1: nick.bevington@aecom.com
 E-mail 2:
 Copy of Invoice: YES / NO

1) Name:
 E-mail:
 2) Name:
 E-mail:
Sample Custody
 Sampled by: Arlo Clarkson
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature:
 Date/Time: July 16, 2024

Project Information
 Project ID: SNP 0036-4,5 & 9
 Project Name:
 Project Location: Inuvik, NT
 Legal Location:
 PO/AFE#: 100104
 Proj. Acct. Code:
 Quote #:

RUSH Priority

Report Results

Requirements

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

- Email QA/QC
- Online PDF
- Fax Excel

- HCDWORG SPIGEC
- AB Tier 1 BCCSR
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method	#	MeOH Field Preserved?	Enter tests above (✓ relevant samples below)															
								CCMEBF12W	Total Metal + Total Mercury	pH	CBOD5	Suspended Solids	Total Phosphate	Sulphate	Total Phenols	Conductivity	Dissolved S.P.C						
1	SNP0036-4	Pit N/W of Dump	5" 5"	9:04		Dip	8		x	x	x	x	x	x	x	x	x	x	x	x	x		
2	SNP0036-5	Pond S/E of Dump	8" 8"	9:55am		Dip	8	✓	x	x	x	x	x	x	x	x	x	x	x	x	x		
3	SNP0036-9	Creek N/W of Dump	20" 20"	9:19am		Dip	8		x	x	x	x	x	x	x	x	x	x	x	x			
4			20" 20"	9:19am																			
5				July 16, 2024																			
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)

Indicate lot # or affix barcode here
Lot: 1746146 COC
 Town of Inuvik

Temp. received: 23 °C Date/Time stamp: JUL 17 2024
 Delivery Method: Hand



Waybill:
 Received by: PT

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1746155 Control Number: Date Received: Jul 17, 2024 Date Reported: Jul 23, 2024 Report Number: 3025973 Report Type: Final Report
Attn: Utilidor Sampled By: Dave Kendi Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Sample 1746155-1; 9407849: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.
- Sample 1746155-1; 9407849: Sample 1746155-1: There was insufficient sample volume to reach a detection limit of 5 mg/L for oil and grease analysis. The detection limit was adjusted accordingly.

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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1746155 Control Number: Date Received: Jul 17, 2024 Date Reported: Jul 23, 2024 Report Number: 3025973 Report Type: Final Report
Attn: Utilidor Sampled By: Dave Kendi Company: Town of Inuvik		

Reference Number 1746155-1
Sample Date Jul 16, 2024
Sample Time 08:45
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 2.3
°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	10			4
Oil and Grease	Total mg/L	<6			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	3.50			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0784			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	1300			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	35			2
Routine Water					
pH	15 °C	pH 7.92			
Temp. of observed pH		°C 15			
pH		8.04			1
Temp. of observed pH		°C 23.7			

Approved by: 

Benjamin Morris, B.Sc
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1746155 Control Number: Date Received: Jul 17, 2024 Date Reported: Jul 23, 2024 Report Number: 3025973 Report Type: Final Report
Attn: Utilidor Sampled By: Dave Kendi Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Jul 17, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Jul 23, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Jul 22, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Jul 18, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Jul 18, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Jul 19, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Jul 22, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1746155-1; 9407849: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.
- Sample 1746155-1; 9407849: Sample 1746155-1: There was insufficient sample volume to reach a detection limit of 5 mg/L for oil and grease analysis. The detection limit was adjusted accordingly.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



www.Element.com

Project Information

Project ID: SNP 0036-3
 Project Name: _____
 Project Location: Inuvik, NT
 Legal Location: _____
 PO/AFE#: 100104
 Proj. Acct. Code: _____
 Quote #: _____

Invoice To

Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Report To

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell: _____
 Fax: _____
 E-mail 1: nick.bevington@aecom.com
 E-mail 2: _____
 Copy of Invoice: YES / NO

Additional Reports to

1) Name: _____
 E-mail: _____
 2) Name: _____
 E-mail: _____
Sample Custody
 Sampled by: DAVE KENDI
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: [Signature]

RUSH Priority

Report Results

Requirements

Date/Time: July 16, 2024

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

- Email QA/QC
- Online PDF
- Fax Excel

- HCDWORG SPIGEC
- AB Tier 1 BCCSR
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method	#	MeOH Field Preserved?	Enter tests above (✓ relevant samples below)													
								pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease								
1	SNP0036-3	6'	07-16-24 8:45AM		Dip	5	✓	x	x	x	x	x	x								
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)

Page _____ of _____ Control #
 ED 120-005

Lot: 1746155 coc
 Town of Inuvik

Temp. received: 23 °C Date/Time stamp: JUL 17 2024
 Delivery Method: Hand
 Waybill: _____
 Received by: PA

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1752721 Control Number: Date Received: Aug 14, 2024 Date Reported: Aug 21, 2024 Report Number: 3035444 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Some trace total metal results were less than dissolved metal results for sample 1752721-2 and -3. The results were verified and are within expected measurement uncertainty.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1752721 Control Number: Date Received: Aug 14, 2024 Date Reported: Aug 21, 2024 Report Number: 3035444 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

		Reference Number	1752721-1	1752721-2	1752721-3	
		Sample Date	Aug 13, 2024	Aug 13, 2024	Aug 13, 2024	
		Sample Time	09:10	08:54	09:20	
		Sample Location				
		Sample Description	SNP0036-4 / Pit NW of Dump / 3in / 2.3°C	SNP0036-5 / Pond SE of Dump / 15in / 2.3°C	SNP0036-9 / Creek NW of Dump / 20in / 2.3°C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand Phenol	Carbonaceous	mg/L	<4	8	<4	4
		mg/L	0.001	0.001	<0.001	0.001
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.10	1.38	<0.05	0.05
Total Phosphorus Preservation			Yes	Yes	Yes	
Metals Dissolved						
Subsample			Lab Filtered	Lab Filtered	Lab Filtered	
Metals Total						
Calcium	Total	mg/L	231	458	119	0.2
Iron	Total	mg/L	2.0	2.1	0.93	0.05
Magnesium	Total	mg/L	117	190	42.0	0.2
Manganese	Total	mg/L	0.553	0.13	0.743	0.005
Potassium	Total	mg/L	33	883	2.7	0.4
Silicon	Total	mg/L	5.64	4.7	2.20	0.05
Sodium	Total	mg/L	175	88.6	54.0	0.4
Sulfur	Total	mg/L	223	197	139	0.3
Mercury	Total	mg/L	0.000023	<0.000005	0.000011	0.000005
Aluminum	Total	mg/L	0.48	0.39	0.118	0.005
Antimony	Total	mg/L	<0.001	<0.001	<0.0002	0.0002
Arsenic	Total	mg/L	0.002	0.001	0.0009	0.0002
Barium	Total	mg/L	0.14	0.13	0.019	0.001
Beryllium	Total	mg/L	<0.0005	<0.0005	<0.0001	0.0001
Bismuth	Total	mg/L	<0.002	<0.002	<0.0005	0.0005
Boron	Total	mg/L	1.29	0.053	0.108	0.002
Cadmium	Total	mg/L	<0.00005	0.00007	<0.00001	0.00001
Chromium	Total	mg/L	<0.002	<0.002	<0.0005	0.0005
Cobalt	Total	mg/L	0.001	0.002	0.0005	0.0001
Copper	Total	mg/L	<0.005	<0.005	0.002	0.001
Lead	Total	mg/L	0.0006	0.0007	<0.0001	0.0001
Lithium	Total	mg/L	0.052	0.065	0.024	0.001
Molybdenum	Total	mg/L	<0.005	<0.005	<0.001	0.001
Nickel	Total	mg/L	0.011	0.005	0.0056	0.0005
Selenium	Total	mg/L	<0.001	<0.001	<0.0002	0.0002
Silver	Total	mg/L	<0.00005	<0.00005	<0.00001	0.00001
Strontium	Total	mg/L	0.830	1.71	0.425	0.001

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9	Lot ID: 1752721
Attn: Utilidor	Project Name:	Control Number:
Sampled By: Arlo Clarkson	Project Location: Inuvik, NT	Date Received: Aug 14, 2024
Company: Town of Inuvik	LSD:	Date Reported: Aug 21, 2024
	P.O.: 100104	Report Number: 3035444
	Proj. Acct. code:	Report Type: Final Report


Reference Number	1752721-1	1752721-2	1752721-3
Sample Date	Aug 13, 2024	Aug 13, 2024	Aug 13, 2024
Sample Time	09:10	08:54	09:20
Sample Location			
Sample Description	SNP0036-4 / Pit NW of Dump / 3in / 2.3°C	SNP0036-5 / Pond SE of Dump / 15in / 2.3°C	SNP0036-9 / Creek NW of Dump / 20in / 2.3°C

Analyte	Matrix	Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Thallium	Total	mg/L	<0.0003	<0.0003	<0.00005	0.00005
Tin	Total	mg/L	<0.005	<0.005	<0.001	0.001
Titanium	Total	mg/L	0.0077	0.004	0.0029	0.0005
Uranium	Total	mg/L	<0.002	<0.002	0.0007	0.0005
Vanadium	Total	mg/L	0.003	0.002	0.0006	0.0001
Zinc	Total	mg/L	<0.020	<0.020	0.007	0.004
Zirconium	Total	mg/L	<0.005	<0.005	<0.001	0.001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	218	525	6	2
Routine Water						
pH			7.96	6.83	7.62	1
Temp. of observed pH		°C	21.2	21.3	21.4	
Electrical Conductivity	at 25 °C	µS/cm	2410	7070	1060	1
Electrical Conductivity	at 25 °C	dS/m	2.41	7.07	1.06	0.001
Calcium	Dissolved	meq/L	10.9	22.8	5.86	0.01
Calcium	Dissolved	mg/L	219	457	117	0.2
Magnesium	Dissolved	meq/L	9.23	15.6	3.41	0.01
Magnesium	Dissolved	mg/L	112	190	41.4	0.2
Sodium	Dissolved	meq/L	7.27	3.86	2.28	0.02
Sodium	Dissolved	mg/L	167	88.8	52.4	0.4
Potassium	Dissolved	meq/L	0.85	23.2	0.07	0.01
Potassium	Dissolved	mg/L	33	907	2.9	0.4
Chloride	Dissolved	mg/L	107	2010	20.6	0.4
Chloride	Dissolved	meq/L	3.03	56.6	0.58	0.01
Sulfate (SO4)	Dissolved	mg/L	612	550	393	0.9
Sulfate-S		meq/L	12.7	11.4	8.17	
Sulfate-S	Dissolved	mg/L	204	183	131	0.3
Total Dissolved Solids	Estimated	mg/L	1540	4520	678	1
SAR	Dissolved		2.3	0.9	1.1	
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	<0.001	<0.001	<0.001	0.001
Toluene		mg/L	<0.0004	<0.0004	<0.0004	0.0004
Ethylbenzene		mg/L	<0.0010	<0.0010	<0.0010	0.0010
Total Xylenes (m,p,o)		mg/L	<0.001	<0.001	<0.001	0.001
4-Bromofluorobenzene	Surrogate	%	100	102	102	70-130
Toluene-d8	Surrogate	%	101	100	99	70-130

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1752721 Control Number: Date Received: Aug 14, 2024 Date Reported: Aug 21, 2024 Report Number: 3035444 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

	Reference Number	1752721-1	1752721-2	1752721-3	
	Sample Date	Aug 13, 2024	Aug 13, 2024	Aug 13, 2024	
	Sample Time	09:10	08:54	09:20	
	Sample Location				
	Sample Description	SNP0036-4 / Pit NW of Dump / 3in / 2.3°C	SNP0036-5 / Pond SE of Dump / 15in / 2.3°C	SNP0036-9 / Creek NW of Dump / 20in / 2.3°C	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Volatile Petroleum Hydrocarbons - Water					
F1 -BTEX	mg/L	<0.1	<0.1	<0.1	0.1
F1 C6-C10	mg/L	<0.1	<0.1	<0.1	0.1
F2 C10-C16	mg/L	<0.1	<0.1	<0.1	0.1

Approved by: 

Jimmy Tran
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9	Lot ID: 1752721
Attn: Utilidor	Project Name:	Control Number:
Sampled By: Arlo Clarkson	Project Location: Inuvik, NT	Date Received: Aug 14, 2024
Company: Town of Inuvik	LSD:	Date Reported: Aug 21, 2024
	P.O.: 100104	Report Number: 3035444
	Proj. Acct. code:	Report Type: Final Report

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* Conductivity, 2510 B	Aug 15, 2024	Element Edmonton - Roper Road
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Aug 15, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Aug 14, 2024	Element Edmonton - Roper Road
BTEX-CCME - Water	US EPA	* Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis/Gas Chromatography Mass Spectrometry, 5021/8260	Aug 20, 2024	Element Calgary
Chloride in Water	APHA	* Automated Ferricyanide Method, 4500-Cl- E	Aug 15, 2024	Element Edmonton - Roper Road
Mercury (Total) in water	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	Aug 15, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	APHA/USEPA	* Metals By Inductively Coupled Plasma/Mass Spectrometry, APHA 3125 B / USEPA 200.2, 200.8	Aug 15, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Aug 15, 2024	Element Edmonton - Roper Road
Metals Trace (Dissolved) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Aug 15, 2024	Element Edmonton - Roper Road
Metals Trace (Total) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Aug 15, 2024	Element Edmonton - Roper Road
Phenol in water	APHA	* Direct Photometric Method, 5530 D	Aug 15, 2024	Element Edmonton - Roper Road
Phosphorus - Total in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	Aug 19, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	Aug 16, 2024	Element Edmonton - Roper Road

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Some trace total metal results were less than dissolved metal results for sample 1752721-2 and -3. The results were verified and are within expected measurement uncertainty.

Methodology and Notes

Bill To: Town of Inuvik	Project ID: SNP 0036-4,5 & 9	Lot ID: 1752721
Box 1160	Project Name:	Control Number:
2 Firth Street	Project Location: Inuvik, NT	Date Received: Aug 14, 2024
Inuvik, NT, Canada	LSD:	Date Reported: Aug 21, 2024
X0E 0T0	P.O.: 100104	Report Number: 3035444
Attn: Utilidor	Proj. Acct. code:	Report Type: Final Report
Sampled By: Arlo Clarkson		
Company: Town of Inuvik		

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Invoice To

Report To

Additional Reports to

Project Information

Project ID: SNP 0036-4,5 & 9
 Project Name: _____
 Project Location: Inuvik, NT
 Legal Location: _____
 PO/AFE#: 100104
 Proj. Acct. Code: _____
 Quote #: _____

Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell: _____
 Fax: _____
 E-mail 1: nick.bevington@aecom.com
 E-mail 2: _____
 Copy of Invoice: YES / NO

1) Name: _____
 E-mail: _____
 2) Name: _____
 E-mail: _____
Sample Custody
 Sampled by: Arlo Clarkson
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: Arlo C 8:54am
 Date/Time: August 13, 2024

RUSH Priority

Report Results

Requirements

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

- Email QA/QC
- Online PDF
- Fax Excel

- HCDWORG SPIGEC
- AB Tier 1 BCCSR
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method	#	MeOH Field Preserved?	Enter tests above (✓ relevant samples below)														
								CCMEBF12W	Total Metal + Total Mercury	pH	CBOD5	Suspended Solids	Total Phosphate	Sulphate	Total Phenols	Conductivity	Dissolved S.P.C					
1	SNP0036-4	Pit N/W of Dump	3 in	9:10 am		Dip	8	✓	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	SNP0036-5	Pond S/E of Dump	15 in	8:54 am		Dip	8		x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	SNP0036-9	Creek N/W of Dump	20 in	9:20 am		Dip	8		x	x	x	x	x	x	x	x	x	x	x	x	x	x
4				Aug 13/24																		
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms-and-conditions>)
 Page 2 of 2 Control #
 ED 120-005

Lot: **1752721** coc
 Town of Inuvik


Temp. received: 4.3 °C
 Date/Time stamp: Aug 14 PM 3:21
 Delivery Method: COURIER
 Waybill: _____
 Received by: Debra J. J.

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1752724 Control Number: Date Received: Aug 14, 2024 Date Reported: Aug 20, 2024 Report Number: 3035447 Report Type: Final Report
Attn: Utilidor Sampled By: David Kendi Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Sample 1752724-1; 9448101: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1752724 Control Number: Date Received: Aug 14, 2024 Date Reported: Aug 20, 2024 Report Number: 3035447 Report Type: Final Report
Attn: Utilidor Sampled By: David Kendi Company: Town of Inuvik		

Reference Number 1752724-1
Sample Date Jun 11, 2024
Sample Time 09:00
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 4.3
°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	<4			4
Oil and Grease	Total mg/L	<5			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	2.56			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.177			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	<1			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	19			2
Routine Water					
pH	15 °C	pH 8.43			
Temp. of observed pH		°C 15			
pH		8.40			1
Temp. of observed pH		°C 21.0			

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1752724 Control Number: Date Received: Aug 14, 2024 Date Reported: Aug 20, 2024 Report Number: 3035447 Report Type: Final Report
Attn: Utilidor Sampled By: David Kendi Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Aug 15, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Aug 20, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Aug 19, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Aug 15, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Aug 19, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Aug 16, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Aug 16, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1752724-1; 9448101: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



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Project Information

Project ID: SNP 0036-3
 Project Name: _____
 Project Location: Inuvik, NT
 Legal Location: _____
 PO/AFE#: 100104
 Proj. Acct. Code: _____
 Quote #: _____

Invoice To

Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Report To

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell: _____
 Fax: _____
 E-mail 1: nick.bevington@aecom.com
 E-mail 2: _____
 Copy of Invoice: YES / NO

Additional Reports to

1) Name: _____
 E-mail: _____
 2) Name: _____
 E-mail: _____
Sample Custody
 Sampled by: David Kendi
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: [Signature]
 Date/Time: 08-13-24 8:48 AM

RUSH Priority

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

Report Results

- Email QA/QC
- Online PDF
- Fax Excel

Requirements

- HCDWORG SPIGEC
- AB Tier 1 BCCSR
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method	#	MeOH Field Preserved?	Enter tests above (✓ relevant samples below)													
								pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease								
1	SNP0036-3		08-13-24 8:48		Dip	5	✓	x	x	x	x	x	x								
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Please indicate any potentially hazardous samples

Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)

Lot: 1752724 COC
 Town of Inuvik



Temp. received: 4.3 °C Date/Time stamp: AUG 14 PM3:21
 Delivery Method: Courier
 Waybill: _____
 Received by: [Signature]

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1760884 Control Number: Date Received: Sep 18, 2024 Date Reported: Sep 25, 2024 Report Number: 3047451 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:


- Sample 1760884-1; 9504347: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1760884 Control Number: Date Received: Sep 18, 2024 Date Reported: Sep 25, 2024 Report Number: 3047451 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Reference Number 1760884-1
Sample Date Sep 17, 2024
Sample Time 08:43
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 5
in / 3.9 °C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	6			4
Oil and Grease	Total mg/L	5			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	6.44			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0877			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	50			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	8			2
Routine Water					
pH	15 °C	pH 7.70			
Temp. of observed pH		°C 15			
pH		7.76			1
Temp. of observed pH		°C 21.7			

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1760884 Control Number: Date Received: Sep 18, 2024 Date Reported: Sep 25, 2024 Report Number: 3047451 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Sep 20, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Sep 25, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Sep 23, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Sep 20, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Sep 19, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Sep 20, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Sep 20, 2024	Element Edmonton - Roper Road

References

APHA Standard Methods for the Examination of Water and Wastewater
US EPA US Environmental Protection Agency Test Methods

Comments:

- Sample 1760884-1; 9504347: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



Invoice To

Report To

Additional Reports to

Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell:
 Fax:
 E-mail 1: nick.bevington@aecom.com
 E-mail 2:
 Copy of Invoice: YES / NO

1) Name:
 E-mail:
 2) Name:
 E-mail:
Sample Custody
 Sampled by: Arlo Clarkson
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: Arlo C

Project Information
 Project ID: SNP 0036-3
 Project Name:
 Project Location: Inuvik, NT
 Legal Location:
 PO/AFE#: 100104
 Proj. Acct. Code:
 Quote #:

RUSH Priority

Report Results

Requirements

Date/Time: Sept 19, 2023 10am

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

- Email QA/QC
- Online PDF
- Fax Excel

- HCDWORG SPIGEC
- AB Tier 1 BCCSR
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

	Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method
1	SNP0036-3	Sewage Lagoon	5:0	Sept 19/24		Dip
2				8:43am		
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Number of Containers	MeOH Field Preserved?	pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease	Enter tests above (✓ relevant samples below)									

SEP 18 AM 4:13

Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)
 Page 2 of 2 Control #
 ED 120-005

Lot: **1760884** COC
 Town of Inuvik

Temp. received: 3.9 °C Date/Time stamp:
 Delivery Method: Hand
 Waybill:
 Received by: PT

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-6,7,&8 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1760888 Control Number: Date Received: Sep 18, 2024 Date Reported: Sep 25, 2024 Report Number: 3047455 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

The information contained on this and all other pages transmitted, is intended for the addressee only and is considered confidential. If the reader is not the intended recipient, you are hereby notified that any use, dissemination, distribution or copy of this transmission is strictly prohibited. If you receive this transmission by error, or if this transmission is not satisfactory, please notify us by telephone.

Analytical Report

Bill To: Town of Inuvik
Box 1160
2 Firth Street
Inuvik, NT, Canada
X0E 0T0
Attn: Utilidor
Sampled By: Arlo Clarkson
Company: Town of Inuvik

Project ID: SNP 0036-6,7,&8
Project Name:
Project Location: Inuvik, NT
LSD:
P.O.: 100104
Proj. Acct. code:

Lot ID: **1760888**
Control Number:
Date Received: Sep 18, 2024
Date Reported: Sep 25, 2024
Report Number: 3047455
Report Type: Final Report

	Reference Number	1760888-1	1760888-2	1760888-3		
	Sample Date	Sep 17, 2024	Sep 17, 2024	Sep 17, 2024		
	Sample Time	09:00	08:55	09:10		
	Sample Location					
	Sample Description	SNP0036-6 / Gate Pond / 25 in / 3.9°C	SNP0036-7 / Far Pond / 15 in / 3.9°C	SNP0036-8 / Twin Lakes / 25 in / 3.9°C		
	Matrix	Water	Water	Water		
Analyte	Units	Results	Results	Results	Nominal Detection Limit	
Aggregate Organic Constituents						
Biochemical Oxygen Demand	Carbonaceous	mg/L	<4	8	6	4
Inorganic Nonmetallic Parameters						
Ammonia - N		mg/L	10.7	0.037	2.50	0.025
Un-ionized Ammonia-N	15 °C	mg/L	0.251	0.0011	0.0766	
Ammonium/Ammonia Preservation			Yes	Yes	Yes	
Microbiological Analysis						
Thermotolerant (Fecal) Coliforms	Membrane Filtration	CFU/100 mL	<10	<10	<10	1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	6	20	4	2
Routine Water						
pH	15 °C	pH	7.94	8.03	8.06	
Temp. of observed pH		°C	15	15	15	
pH			7.97	8.03	8.04	1
Temp. of observed pH		°C	21.8	21.8	21.8	

Approved by:



Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-6,7,&8	Lot ID: 1760888
Attn: Utilidor	Project Name:	Control Number:
Sampled By: Arlo Clarkson	Project Location: Inuvik, NT	Date Received: Sep 18, 2024
Company: Town of Inuvik	LSD:	Date Reported: Sep 25, 2024
	P.O.: 100104	Report Number: 3047455
	Proj. Acct. code:	Report Type: Final Report

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Sep 20, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Sep 25, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Sep 23, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Sep 20, 2024	Element Calgary
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Sep 20, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	Sep 20, 2024	Element Edmonton - Roper Road

* Reference Method Modified

References

APHA Standard Methods for the Examination of Water and Wastewater

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



www.Element.com

Project Information

Project ID: SNP 0036-6,7 & 8
 Project Name: _____
 Project Location: Inuvik, NT
 Legal Location: _____
 PO/AFE#: 100104
 Proj. Acct. Code: _____
 Quote #: _____

Invoice To

Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Report To

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell: _____
 Fax: _____
 E-mail 1: nick.bevington@aecom.com
 E-mail 2: _____
 Copy of Invoice: YES / NO

Additional Reports to

1) Name: _____
 E-mail: _____
 2) Name: _____
 E-mail: _____
Sample Custody
 Sampled by: Arlo Clarkson
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: Arlo C

RUSH Priority

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

Report Results

- Email QA/QC
- Online PDF
- Fax Excel

Requirements

- HCDWORG SPIGEC
- AB Tier 1 BCCSR

Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Date/Time: Sept 17/2024 10am

Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method	#	MeOH Field Preserved?	Enter tests above (✓ relevant samples below)													
								pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms									
1	SNP0036-6	Gate Pond	25:in	Sept 14/24	9:00am	Dip	4	X	X	X	X	X									
2	SNP0036-7	Far Pond	15:in	Sept 17/24	8:55am	Dip	4	X	X	X	X	X									
3	SNP0036-8	Twin Lakes	25:in	Sept 17/24	9:10am	Dip	4	X	X	X	X	X									
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

SEP 18 PM 4:18

Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)

Lot: 1760888 COC
 Town of Inuvik



Temp. received: 3.9 °C Date/Time stamp: _____
 Delivery Method: Hand
 Waybill: _____
 Received by: DT

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1761294 Control Number: Date Received: Sep 19, 2024 Date Reported: Sep 27, 2024 Report Number: 3047983 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Some trace total metal results were less than dissolved metal results for sample 1761294-2. The results were verified and are within expected measurement uncertainty.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1761294 Control Number: Date Received: Sep 19, 2024 Date Reported: Sep 27, 2024 Report Number: 3047983 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

		Reference Number	1761294-1	1761294-2	1761294-3	
		Sample Date	Sep 17, 2024	Sep 17, 2024	Sep 17, 2024	
		Sample Time	13:30	13:52	14:14	
		Sample Location				
		Sample Description	SNP0036-4 / Pit NW of Dump / 2in / 2.3°C	SNP0036-5 / Pond SE of Dump / 3in / 2.3°C	SNP0036-9 / Creek NW of Dump / 30in / 2.3°C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand Phenol	Carbonaceous	mg/L	<4	10	<4	4
		mg/L	0.002	0.002	0.001	0.001
Inorganic Nonmetallic Parameters						
Phosphorus Total		mg/L	0.06	0.10	<0.05	0.05
Total Phosphorus Preservation			Yes	Yes	Yes	
Metals Dissolved						
Subsample			Lab Filtered	Lab Filtered	Lab Filtered	
Metals Total						
Calcium Total		mg/L	236	274	171	0.2
Iron Total		mg/L	0.86	1.2	0.83	0.05
Magnesium Total		mg/L	126	112	72.6	0.2
Manganese Total		mg/L	0.652	0.24	1.14	0.005
Potassium Total		mg/L	39	474	3.9	0.4
Silicon Total		mg/L	4.9	2.3	2.73	0.05
Sodium Total		mg/L	185	55.4	77.7	0.4
Sulfur Total		mg/L	233	123	232	0.3
Mercury Total		mg/L	0.000012	0.000016	0.000020	0.000005
Aluminum Total		mg/L	0.14	0.12	0.062	0.005
Antimony Total		mg/L	<0.001	<0.001	<0.0002	0.0002
Arsenic Total		mg/L	0.002	<0.001	0.0007	0.0002
Barium Total		mg/L	0.15	0.086	0.026	0.001
Beryllium Total		mg/L	<0.0005	<0.0005	<0.0001	0.0001
Bismuth Total		mg/L	<0.002	<0.002	<0.0005	0.0005
Boron Total		mg/L	1.36	0.04	0.147	0.002
Cadmium Total		mg/L	<0.00005	<0.00005	0.00001	0.00001
Chromium Total		mg/L	<0.002	<0.002	<0.0005	0.0005
Cobalt Total		mg/L	0.0009	0.001	0.0006	0.0001
Copper Total		mg/L	<0.005	<0.005	<0.001	0.001
Lead Total		mg/L	<0.0005	<0.0005	<0.0001	0.0001
Lithium Total		mg/L	0.056	0.04	0.038	0.001
Molybdenum Total		mg/L	<0.005	<0.005	<0.001	0.001
Nickel Total		mg/L	0.0099	0.013	0.0082	0.0005
Selenium Total		mg/L	<0.001	<0.001	<0.0002	0.0002
Silver Total		mg/L	<0.00005	<0.00005	<0.00001	0.00001
Strontium Total		mg/L	0.897	1.02	0.658	0.001

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1761294 Control Number: Date Received: Sep 19, 2024 Date Reported: Sep 27, 2024 Report Number: 3047983 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

		Reference Number	1761294-1	1761294-2	1761294-3	
		Sample Date	Sep 17, 2024	Sep 17, 2024	Sep 17, 2024	
		Sample Time	13:30	13:52	14:14	
		Sample Location				
		Sample Description	SNP0036-4 / Pit NW of Dump / 2in / 2.3°C	SNP0036-5 / Pond SE of Dump / 3in / 2.3°C	SNP0036-9 / Creek NW of Dump / 30in / 2.3°C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Thallium	Total	mg/L	<0.0003	<0.0003	<0.00005	0.00005
Tin	Total	mg/L	<0.005	<0.005	<0.001	0.001
Titanium	Total	mg/L	0.003	<0.002	0.0012	0.0005
Uranium	Total	mg/L	<0.002	<0.002	0.0012	0.0005
Vanadium	Total	mg/L	0.002	0.001	0.0003	0.0001
Zinc	Total	mg/L	<0.020	<0.020	0.008	0.004
Zirconium	Total	mg/L	<0.005	<0.005	<0.001	0.001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	27	170	5	2
Routine Water						
pH			8.09	7.05	7.76	1
Temp. of observed pH		°C	22.7	23.4	22.9	
Electrical Conductivity	at 25 °C	µS/cm	2400	4020	1510	1
Electrical Conductivity	at 25 °C	dS/m	2.40	4.02	1.51	0.001
Calcium	Dissolved	meq/L	11.6	13.8	8.72	0.01
Calcium	Dissolved	mg/L	233	276	175	0.2
Magnesium	Dissolved	meq/L	10.2	9.29	5.93	0.01
Magnesium	Dissolved	mg/L	124	113	72.1	0.2
Sodium	Dissolved	meq/L	8.06	2.48	3.47	0.02
Sodium	Dissolved	mg/L	185	57.1	79.8	0.4
Potassium	Dissolved	meq/L	1.00	12.4	0.10	0.01
Potassium	Dissolved	mg/L	39	485	4.0	0.4
Chloride	Dissolved	mg/L	116	1010	26.3	0.4
Chloride		meq/L	3.28	28.4	0.74	0.01
Sulfate (SO4)	Dissolved	mg/L	647	353	657	0.9
Sulfate-S		meq/L	13.5	7.35	13.7	
Sulfate-S	Dissolved	mg/L	216	118	219	0.3
Total Dissolved Solids	Estimated	mg/L	1540	2570	966	1
SAR	Dissolved		2.4	0.7	1.3	
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	<0.001	<0.001	<0.001	0.001
Toluene		mg/L	<0.0004	<0.0004	<0.0004	0.0004
Ethylbenzene		mg/L	<0.0010	<0.0010	<0.0010	0.0010
Total Xylenes (m,p,o)		mg/L	<0.001	<0.001	<0.001	0.001
4-Bromofluorobenzene	Surrogate	%	95	98	90	70-130
Toluene-d8	Surrogate	%	96	96	95	70-130

Analytical Report

Bill To: Town of Inuvik
Box 1160
2 Firth Street
Inuvik, NT, Canada
X0E 0T0
Attn: Utilidor
Sampled By: Arlo Clarkson
Company: Town of Inuvik

Project ID: SNP 0036-4,5 & 9
Project Name:
Project Location: Inuvik, NT
LSD:
P.O.: 100104
Proj. Acct. code:

Lot ID: **1761294**
Control Number:
Date Received: Sep 19, 2024
Date Reported: Sep 27, 2024
Report Number: 3047983
Report Type: Final Report

Reference Number	1761294-1	1761294-2	1761294-3
Sample Date	Sep 17, 2024	Sep 17, 2024	Sep 17, 2024
Sample Time	13:30	13:52	14:14
Sample Location			
Sample Description	SNP0036-4 / Pit NW of Dump / 2in / 2.3°C	SNP0036-5 / Pond SE of Dump / 3in / 2.3°C	SNP0036-9 / Creek NW of Dump / 30in / 2.3°C
Matrix	Water	Water	Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Volatile Petroleum Hydrocarbons - Water					
F1 -BTEX	mg/L	<0.1	<0.1	<0.1	0.1
F1 C6-C10	mg/L	<0.1	<0.1	<0.1	0.1
F2 C10-C16	mg/L	<0.1	<0.1	<0.1	0.1

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-4,5 & 9	Lot ID: 1761294
Attn: Utilidor	Project Name:	Control Number:
Sampled By: Arlo Clarkson	Project Location: Inuvik, NT	Date Received: Sep 19, 2024
Company: Town of Inuvik	LSD:	Date Reported: Sep 27, 2024
	P.O.: 100104	Report Number: 3047983
	Proj. Acct. code:	Report Type: Final Report

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* Conductivity, 2510 B	Sep 20, 2024	Element Edmonton - Roper Road
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Sep 20, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Sep 20, 2024	Element Edmonton - Roper Road
BTEX-CCME - Water	US EPA	* Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis/Gas Chromatography Mass Spectrometry, 5021/8260	Sep 21, 2024	Element Calgary
Chloride in Water	APHA	* Automated Ferricyanide Method, 4500-Cl- E	Sep 20, 2024	Element Edmonton - Roper Road
Mercury (Total) in water	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	Sep 24, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	APHA/USEPA	* Metals By Inductively Coupled Plasma/Mass Spectrometry, APHA 3125 B / USEPA 200.2, 200.8	Sep 20, 2024	Element Edmonton - Roper Road
Metals ICP-MS (Total) in water	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Sep 20, 2024	Element Edmonton - Roper Road
Metals Trace (Dissolved) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Sep 20, 2024	Element Edmonton - Roper Road
Metals Trace (Total) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	Sep 20, 2024	Element Edmonton - Roper Road
Phenol in water	APHA	* Direct Photometric Method, 5530 D	Sep 24, 2024	Element Edmonton - Roper Road
Phosphorus - Total in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	Sep 26, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	Sep 24, 2024	Element Edmonton - Roper Road

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Some trace total metal results were less than dissolved metal results for sample1761294-2. The results were verified and are within expected measurement uncertainty.

Methodology and Notes

Bill To: Town of Inuvik	Project ID: SNP 0036-4,5 & 9	Lot ID: 1761294
Box 1160	Project Name:	Control Number:
2 Firth Street	Project Location: Inuvik, NT	Date Received: Sep 19, 2024
Inuvik, NT, Canada	LSD:	Date Reported: Sep 27, 2024
X0E 0T0	P.O.: 100104	Report Number: 3047983
Attn: Utilidor	Proj. Acct. code:	Report Type: Final Report
Sampled By: Arlo Clarkson		
Company: Town of Inuvik		

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Invoice To
Report To
Additional Reports to

 Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

 Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell: _____
 Fax: _____
 E-mail 1: nick.bevington@aecom.com
 E-mail 2: _____
 Copy of Invoice: YES / NO

 1) Name: _____
 E-mail: _____
 2) Name: _____
 E-mail: _____
Sample Custody
 Sampled by: Arlo Jackson
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: Arlo C
 Date/Time: Sep 17, 2024 10am
Project Information
 Project ID: SNP 0036-4,5 & 9
 Project Name: _____
 Project Location: Inuvik, NT
 Legal Location: _____
 PO/AFE#: 100104
 Proj. Acct. Code: _____
 Quote #: _____

RUSH Priority
Report Results
Requirements

-
- Same Day (200%)
-
-
- Next Day/Two Day (100%)
-
-
- Three or Four Days (50%)
-
-
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

-
- Email
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- QA/QC
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- Online
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- PDF
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- Fax
-
- Excel

-
- HCDWORG
-
- SPIGEC
-
-
- AB Tier 1
-
- BCCSR

Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method	#	Number of Containers	MeOH Field Preserved?	Enter tests above (✓ relevant samples below)													
									CCMEBF12W	Total Metal + Total Mercury	pH	CBOD5	Suspended Solids	Total Phosphate	Sulphate	Total Phenols	Conductivity	Dissolved S.P.C				
1	SNP0036-4 Pit N/W of Dump	2in	1:30pm		Dip	8			X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	SNP0036-5 Pond S/E of Dump	3in	1:52		Dip	8			X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	SNP0036-9 Creek N/W of Dump	30in	2:14pm		Dip	8			X	X	X	X	X	X	X	X	X	X	X	X	X	X
4																						
5																						
6																						
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14																						
15																						

Please indicate any potentially hazardous samples

 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)

 Page 1 of 1 Control # ED 120-005

Lot: 1761294 COC

Town of Inuvik


 Temp. received: 4.2°C Date/Time stamp: _____

 Delivery Method: Hand

Waybill: _____

 Received by: JS

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1768326 Control Number: Date Received: Oct 16, 2024 Date Reported: Oct 23, 2024 Report Number: 3060681 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:


- Sample 1768326-1; 9565385: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1768326 Control Number: Date Received: Oct 16, 2024 Date Reported: Oct 23, 2024 Report Number: 3060681 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Reference Number 1768326-1
Sample Date Oct 15, 2024
Sample Time 09:03
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 2
in / 4.3°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	<4			4
Oil and Grease	Total mg/L	<6			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	8.44			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.112			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	<10			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	6			2
Routine Water					
pH	15 °C pH	7.69			
Temp. of observed pH	°C	15			
pH		7.61			1
Temp. of observed pH	°C	21.0			

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1768326 Control Number: Date Received: Oct 16, 2024 Date Reported: Oct 23, 2024 Report Number: 3060681 Report Type: Final Report
Attn: Utilidor Sampled By: Arlo Clarkson Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Oct 17, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Oct 23, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Oct 21, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Oct 18, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Oct 17, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Oct 17, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Oct 17, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1768326-1; 9565385: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1777072 Control Number: Date Received: Nov 14, 2024 Date Reported: Nov 20, 2024 Report Number: 3078412 Report Type: Final Report
Attn: Utilidor Sampled By: Angus Dillon Company: Town of Inuvik		

Contact	Company	Address
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Upon receipt, sample had exceeded recommended temperature range for bacterial analysis.
- Sample 1777072-1; 9641536: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1777072 Control Number: Date Received: Nov 14, 2024 Date Reported: Nov 20, 2024 Report Number: 3078412 Report Type: Final Report
Attn: Utilidor Sampled By: Angus Dillon Company: Town of Inuvik		

Reference Number 1777072-1
Sample Date Nov 12, 2024
Sample Time 08:58
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 6 /
inch / 3.7 °C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	7			4
Oil and Grease	Total mg/L	14			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	9.84			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0793			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	10200			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	10			2
Routine Water					
pH	15 °C	pH 7.47			
Temp. of observed pH		°C 16			
pH		7.43			1
Temp. of observed pH		°C 20.9			

Approved by: 

Darren Crichton, BSc, PChem
Senior Operations Excellence Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1777072 Control Number: Date Received: Nov 14, 2024 Date Reported: Nov 20, 2024 Report Number: 3078412 Report Type: Final Report
Attn: Utilidor Sampled By: Angus Dillon Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Nov 15, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Nov 20, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Nov 15, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Nov 15, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Nov 18, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Nov 15, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Nov 15, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Upon receipt, sample had exceeded recommended temperature range for bacterial analysis.
- Sample 1777072-1; 9641536: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

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Invoice To

Report To

Additional Reports to

Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
 Cell: (867) 678-5384
 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell:
 Fax:
 E-mail 1: nick.bevington@aecom.com
 E-mail 2:
 Copy of Invoice: YES / NO

1) Name:
 E-mail:
 2) Name:
 E-mail:
Sample Custody
 Sampled by: Angus Dillon
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: Angus Dillon
 Date/Time: Nov 12/24 8:58 am

Project Information

Project ID: SNP 0036-3
 Project Name:
 Project Location: Inuvik, NT
 Legal Location:
 PO/AFE#: 100104
 Proj. Acct. Code:
 Quote #:

RUSH Priority

Report Results

Requirements

- Same Day (200%)
- Next Day/Two Day (100%)
- Three or Four Days (50%)
- 5 to 7 Days (Regular TAT)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

- Email QA/QC
- Online PDF
- Fax Excel

- HCDWORG SPIGEC
- AB Tier 1 BCCSR
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Site I.D.	Sample Description	Depth		Date/Time sampled	Matrix	Sampling method	Number of Containers #	MeOH Field Preserved? <input checked="" type="checkbox"/>	Enter tests above (✓ relevant samples below)											
		start	end						pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease						
1	SNP0036-3		6"	Nov 12/24 8:58 AM		Dip	5		x	x	x	x	x	x						
2																				
3																				
4																				
5																				
6																				
7																				
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11																				
12																				
13																				
14																				
15																				

Please indicate any potentially hazardous samples
 Submission of this form acknowledges acceptance of Element's Standard of terms and conditions (<https://www.element.com/terms/terms-and-conditions>)
 Page 1 of 1 Control #
 ED 120-005

Lot: **1777072** COC
 Town of Inuvik


Temp. received: 3.7 °C Date/Time stamp: Nov 14 2024 8:58
 Delivery Method:
 Waybill: PS
 Received by:

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1784779 Control Number: Date Received: Dec 18, 2024 Date Reported: Dec 30, 2024 Report Number: 3091779 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Contact	Company	Address
Accounts Payable	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: Daniel.dokunmu@inuvik.ca,stephen.odiase@inuvik.ca,
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Nick Bevington	Town of Inuvik	Inuvik, NT Phone: (000) 000-0000 Fax: Email: nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
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Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Sample 1784779-1; 9724480: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.


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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1784779 Control Number: Date Received: Dec 18, 2024 Date Reported: Dec 30, 2024 Report Number: 3091779 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Reference Number 1784779-1
Sample Date Dec 17, 2024
Sample Time 08:50
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 5.3
°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	15			4
Oil and Grease	Total mg/L	6			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	13.0			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0710			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	890000			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	12			2
Routine Water					
pH	15 °C	pH 7.30			
Temp. of observed pH		°C 15			
pH		7.50			1
Temp. of observed pH		°C 20.6			

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1784779 Control Number: Date Received: Dec 18, 2024 Date Reported: Dec 30, 2024 Report Number: 3091779 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Dec 19, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Dec 20, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Dec 23, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Dec 20, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Dec 19, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Dec 30, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Dec 19, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1784779-1; 9724480: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Invoice To
Report To
Additional Reports to

 Company: Town of Inuvik
 Address: Box 1160, 2 Firth Street
Inuvik, NT X0E 0T0
 Attention: David Kendi
 Phone: (867) 777-8600
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 Fax: (867) 777-8601
 E-mail: utilidor@inuvik.ca
 Agreement ID: 2909
 Copy of Report: YES / NO

 Company: Aecom - Edmonton
 Address: Suite 101 18817 Stony Plain Road
Edmonton, AB T5S 0C2
 Attention: Nick Bevington
 Phone: 1 (587) 335-0050
 Cell:
 Fax:
 E-mail 1: nick.bevington@aecom.com
 E-mail 2:
 Copy of Invoice: YES / NO

 1) Name:
 E-mail:
 2) Name:
 E-mail:
Sample Custody
 Sampled by: Angus Dillon
 Company: Town of Inuvik
 I authorize Element to proceed with the work indicated on this form:
 Signature: [Signature]
 Date/Time: Dec 17/24 9:19am
Project Information
 Project ID: SNP 0036-3
 Project Name:
 Project Location: Inuvik, NT
 Legal Location:
 PO/AFE#: 100104
 Proj. Acct. Code:
 Quote #:

RUSH Priority
Report Results
Requirements

-
- Same Day (200%)
-
-
- Next Day/Two Day (100%)
-
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- Three or Four Days (50%)
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-
- 5 to 7 Days (Regular TAT)

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-
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- Excel

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- HCDWORG
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- SPIGEC
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-
- AB Tier 1
-
- BCCSR
-
- Other (list below)

Date Required _____

Special Instructions/Comments (please include contact information including phone number if different from above).

Number of Containers	MeOH Field Preserved?	pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease	Enter tests above									
								(✓ relevant samples below)									

	Site I.D.	Sample Description	Depth start end in cm m	Date/Time sampled	Matrix	Sampling method	#	MeOH Field Preserved?	pH	CBOD5	Suspended Solids	Ammonia	Fecal Coliforms	Oil and Grease
1	SNP0036-3	Sewage Lagoon	6"	Dec 17/24 8:50am		Dip	5	✓	x	x	x	x	x	x
2														
3														
4														
5														
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15														

Please indicate any potentially hazardous samples

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Lot: 1784779 COC

Town of Inuvik


 Temp. received: 5.3 °C Date/Time stamp:

 Delivery Method: Carriev

Waybill:

 Received by: [Signature]

Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1708778 Control Number: Date Received: Jan 25, 2024 Date Reported: Feb 1, 2024 Report Number: 2966846 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Contact	Company	Address
Accounts Payable	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: Cynthia.pihlaja@inuvik.ca, stephen.odiasse@inuvik.ca,
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Nick Bevington	AECOM Canada Ltd	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: RFerland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
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Notes To Clients:

- Jan 25, 2024 - Upon receipt, sample had exceeded recommended holding time for BOD and bacterial analyses.
- Jan 30, 2024 - Sample 1708778-1; 9111454: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1708778 Control Number: Date Received: Jan 25, 2024 Date Reported: Feb 1, 2024 Report Number: 2966846 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Reference Number 1708778-1
Sample Date Jan 16, 2024
Sample Time 09:35
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 6 /
in / 5.9 °C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	13			4
Oil and Grease	Total mg/L	6			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	14.1			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0828			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Fecal Coliforms	Membrane Filtration CFU/100 mL	4000000			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	11			2
Routine Water					
pH	15 °C pH	7.33			
Temp. of observed pH	°C	15			
pH		7.21			1
Temp. of observed pH	°C	21.1			

Approved by: 
Anthony Neumann, MSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1708778 Control Number: Date Received: Jan 25, 2024 Date Reported: Feb 1, 2024 Report Number: 2966846 Report Type: Final Report
Attn: Accounts Payable Sampled By: Angus Dillon Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Jan 26, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Jan 31, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Jan 26, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Jan 26, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Jan 29, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Jan 30, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Jan 29, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Jan 25, 2024 - Upon receipt, sample had exceeded recommended holding time for BOD and bacterial analyses.
- Jan 30, 2024 - Sample 1708778-1; 9111454: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

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Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1718951 Control Number: Date Received: Mar 13, 2024 Date Reported: Mar 20, 2024 Report Number: 2983061 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Accounts Payable	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: Daniel.dokunmu@inuvik.ca, stephen.odias@inuvik.ca,
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Nick Bevington	AECOM Canada Ltd	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
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Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Mar 15, 2024 - Sample 1718951-1; 9240617: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.


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Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1718951 Control Number: Date Received: Mar 13, 2024 Date Reported: Mar 20, 2024 Report Number: 2983061 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Reference Number 1718951-1
Sample Date Mar 12, 2024
Sample Time 09:45
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 10
/ 6.6°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	37			4
Oil and Grease	Total mg/L	8			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	15.6			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.105			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Fecal Coliforms	Membrane Filtration CFU/100 mL	114000			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	10			2
Routine Water					
pH	15 °C pH	7.39			
Temp. of observed pH	°C	15			
pH		7.50			1
Temp. of observed pH	°C	20.4			

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

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Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1718951 Control Number: Date Received: Mar 13, 2024 Date Reported: Mar 20, 2024 Report Number: 2983061 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Mar 14, 2024	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Mar 19, 2024	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Mar 18, 2024	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Mar 14, 2024	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Mar 15, 2024	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Mar 15, 2024	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Mar 15, 2024	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Mar 15, 2024 - Sample 1718951-1; 9240617: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

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Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 01692 Proj. Acct. code:	Lot ID: 1789190 Control Number: Date Received: Jan 20, 2025 Date Reported: Jan 27, 2025 Report Number: 3098562 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Contact	Company	Address
Accounts Payable	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: Daniel.dokunmu@inuvik.ca,stephen.odiase@inuvik.ca,
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
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Nick Bevington	AECOM Canada Ltd	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Nick.bevington@aecom.com
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email	PDF	COC / Test Report
Robert Ferland	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: Robert.Ferland@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca
<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email - Merge	PDF	COC / Invoice

Notes To Clients:

- Sample 1789190-1; 9753267: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 01692 Proj. Acct. code:	Lot ID: 1789190 Control Number: Date Received: Jan 20, 2025 Date Reported: Jan 27, 2025 Report Number: 3098562 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Reference Number 1789190-1
Sample Date Jan 14, 2025
Sample Time 09:05
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 10
/ In / 8.4 °C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	12			4
Oil and Grease	Total mg/L	<5			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	13.7			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0496			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	20800			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	39			2
Routine Water					
pH	15 °C pH	7.12			
Temp. of observed pH	°C	15			
pH		7.21			1
Temp. of observed pH	°C	20.6			

Approved by: 

Benjamin Morris, B.Sc
Operations Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

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Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 01692 Proj. Acct. code:	Lot ID: 1789190 Control Number: Date Received: Jan 20, 2025 Date Reported: Jan 27, 2025 Report Number: 3098562 Report Type: Final Report
Attn: Accounts Payable Sampled By: Arlo Clarkson Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Jan 20, 2025	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Jan 22, 2025	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Jan 22, 2025	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Jan 20, 2025	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Jan 21, 2025	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Jan 20, 2025	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Jan 23, 2025	Element Edmonton - Roper Road

References

APHA	Standard Methods for the Examination of Water and Wastewater
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1789190-1; 9753267: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

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Report Transmission Cover Page

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1795370 Control Number: Date Received: Feb 18, 2025 Date Reported: Feb 24, 2025 Report Number: 3107572 Report Type: Final Report
Attn: Utilidor Sampled By: Angus Dillon Company: Town of Inuvik		

Contact	Company	Address
Finance	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: finance@inuvik.ca

Delivery	Format	Deliverables
Email - Merge	PDF	COC / Invoice

Contact	Company	Address
Nick Bevington	AECOM Canada Ltd	Edmonton, AB Phone: (780) 453-0710 Fax: Email: Nick.bevington@aecom.com

Delivery	Format	Deliverables
Email - Merge	PDF	COC / Test Report

Contact	Company	Address
Utilidor	Town of Inuvik	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@inuvik.ca

Delivery	Format	Deliverables
Email - Merge	PDF	COC / Invoice

Notes To Clients:


- Upon receipt, sample 1795370-1 had exceeded the 30 hour recommended hold time for microbiology testing. Excess time between sampling and testing may affect the validity of the test result.
- Sample 1795370-1; 9811267: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Analytical Report

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1795370 Control Number: Date Received: Feb 18, 2025 Date Reported: Feb 24, 2025 Report Number: 3107572 Report Type: Final Report
Attn: Utilidor Sampled By: Angus Dillon Company: Town of Inuvik		

Reference Number 1795370-1
Sample Date Feb 11, 2025
Sample Time 09:16
Sample Location
Sample Description SNP0036-3 /
Sewage Lagoon / 5.2
°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents					
Biochemical Oxygen Demand	Carbonaceous mg/L	14			4
Oil and Grease	Total mg/L	6			5
pH adjustment	adjustment required	No			
Inorganic Nonmetallic Parameters					
Ammonia - N	mg/L	12.9			0.025
Un-ionized Ammonia-N	15 °C mg/L	0.0465			
Ammonium/Ammonia Preservation		Yes			
Microbiological Analysis					
Thermotolerant (Fecal) Coliforms	Membrane Filtration CFU/100 mL	>60000			1
Physical and Aggregate Properties					
Solids	Total Suspended mg/L	20			2
Routine Water					
pH	15 °C	pH 7.12			
Temp. of observed pH		°C 15			
pH		7.19			1
Temp. of observed pH		°C 20.6			

Approved by: 
Mike Yohemas, BSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Town of Inuvik Box 1160 2 Firth Street Inuvik, NT, Canada X0E 0T0	Project ID: SNP 0036-3 Project Name: Project Location: Inuvik, NT LSD: P.O.: 100104 Proj. Acct. code:	Lot ID: 1795370 Control Number: Date Received: Feb 18, 2025 Date Reported: Feb 24, 2025 Report Number: 3107572 Report Type: Final Report
Attn: Utilidor Sampled By: Angus Dillon Company: Town of Inuvik		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* pH - Electrometric Method, 4500-H+ B	Feb 19, 2025	Element Edmonton - Roper Road
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	Feb 24, 2025	Element Edmonton - Roper Road
BOD (Carbonaceous) in water	APHA	* BOD: 5-Day Test, 5210 B	Feb 19, 2025	Element Edmonton - Roper Road
Coliforms - Membrane Filtration	APHA	Fecal Coliform Membrane Filter Procedure, 9222 D	Feb 19, 2025	Element Calgary
Oil and Grease in water	US EPA	* n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	Feb 19, 2025	Element Edmonton - Roper Road
pH at 15°C	APHA	* pH - Electrometric Method, 4500-H+ B	Feb 24, 2025	Element Edmonton - Roper Road
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D <i>* Reference Method Modified</i>	Feb 24, 2025	Element Edmonton - Roper Road

References

APHA Standard Methods for the Examination of Water and Wastewater
US EPA US Environmental Protection Agency Test Methods

Comments:

- Upon receipt, sample 1795370-1 had exceeded the 30 hour recommended hold time for microbiology testing. Excess time between sampling and testing may affect the validity of the test result.
- Sample 1795370-1; 9811267: Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Please direct any inquiries regarding this report to our Client Services group.

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Appendix **C**





AECOM
4916 47th Street, Floor 3
GoGa Cho Building (PO Box 1259)
Yellowknife, NT, Canada X1A 2N9
www.aecom.com

867 873 6316 tel
867 873 6407 fax

March 31, 2025.

Mr. Leonard DeBastien
Executive Director
Gwich'in Land and Water Board
Box 2018
Inuvik, N.W.T.
X0E 0T0

Mr. Rolland Malegana
Regional Environmental Assessment Coordinator
Energy and Natural Resources
Box 2749
Inuvik, N.W.T.
X0E 0T0

Dear Sir:

Project No: 60600398

**Regarding: Town of Inuvik - Water Licence No. G17L3-001
Licence Condition D8, Lagoon Earthen Water Retaining Structures**

On behalf of the Town of Inuvik, we wish to respond to Water License Condition D8 for year 2024.

Water Licence Condition D8 states, "The dams, dikes and other engineered earth structures designed to contain waste within the Sewage Disposal facilities shall be inspected annually by a professional engineer to determine the stability of the structures". In Water Licence A2, Definitions, "Professional Engineer – a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientist, and whose principal field of specialization is appropriate to address the components of the undertaking at hand".

The lagoon's west dike was built on native permafrost soils in the late 1950's. The interior dikes forming the sludge cells and primary lagoon cells were added in 1981. The west dike was rebuilt at the same time. In 1987-88, initial settlement of the new interior dikes and further erosion of the west dike were restored in a major re-grading project. In 2003, subsidence and erosion of the inner face of the west dike was again repaired, and the inner face was armored with geotextile and blast rock. In 2006, subsidence of the interior dikes was repaired by raising the dike crests back to design level. In 2015, subsidence of the dike along the north end of the lagoon was repaired by raising the dike crests back to designed level.

Inuvik has the dikes inspected by its engineers, AECOM, at least annually.

Gradual uneven settlement of the dikes has been ongoing since they were first built. Settlement is believed to be due primarily to thawing of the ice rich permafrost under the dikes, and subsequent consolidation of the soils. Sloughing narrows the dike crest. From time to time, dikes need to be restored to designed width in order to maintain water tightness, stability, and safe vehicle access along the crests. Sloughing affects all dikes, and major restoration projects have been needed roughly every ten to fifteen years. Historically, slow subsidence has not threatened the integrity or water tightness of the dikes, and it is not expected to do so if it is countered by periodic restoration.

In some years significant thaw-subsidence occurs in the portion of the lagoon system's west dike that runs between the west sludge cell and "Gate Pond" (as named in the SNP program). Gate Pond was

formed early in Inuvik's history by gravel borrowing, and is thought to have been deepened (and probably enlarged) by subsequent thaw-subsidence. Gate pond probably is the main heat source causing the recurrent dike thaw-subsidence in the vicinity. Routinely, the dike is restored to designed levels and lines whenever significant thaw-subsidence has occurred. That section of the dike was rehabilitated as part of the project to relocate the truck dump station in 2019.

Over the years the two karst ponds just outside the west dike toward its downstream end, have shown a tendency to grow. There has been some undercutting and sloughing of the outer face of the west dike along the pond shorelines. Fill was added to slope toes in the fall of 2006 and again in 2007 and 2009.

The results of a bathymetric survey of the larger karst pond carried out during summer 2020, did not show stability concerns. The other karst pond is small, it is located further away from the dike and does not appear to threaten the stability of the dike.

During spring of 2016, the Town of Inuvik hired a local contractor to drill test holes along the lagoon dikes and obtain soils samples at various depths. The samples were sent to AECOM for laboratory testing. According to the results the soil beneath the dikes generally consists of ice rich clays, silts, and sands.

The annual inspection for 2024 was carried out on September 23, 2024. It involved visually inspecting the dikes and control structures. No serious structural deficiencies such as settlement, depressions, slides, sloughing, erosion, and vegetation growth through bank protection material were noted during the inspection. Only issues such as bumps and minor longitudinal cracks were observed, which can be addressed during routine maintenance activities.

The longitudinal cracking that occurs on an annual basis confirms that subsidence and undercutting continue to occur at a slow rate, and major restoration work will be required at some point. This also underscores the need for continued maintenance. The decant structures show signs of deterioration, such as missing and rusty parts, and will require future rehabilitation work as well. Nevertheless, all dikes appear to remain at or very near to designed shapes and levels, and on that basis, we believe that all the dikes around Inuvik's lagoon at this time are safe and adequate water retaining structures.

The town has a Lagoon dyke and outlet structure rehabilitation project planned for 2025. The project includes the partial reconstruction of the secondary cell outlet structure, the replacement of the primary cell outlet structure, reinforcement of the existing dyke, and resurfacing the existing gravel perimeter road. Drawings were submitted to the Gwich'in Land and Water Board in May 2023, and were approved without comment.

We trust that this submission fulfills the requirements of the Town of Inuvik water license Condition D8 for the year 2024.

Sincerely,

AECOM Canada ULC

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