

ENVIRONMENTAL WASTE PROCESSING FACILITY

2021 ANNUAL REPORT



Nunavut Water Board
c/o Manager of Licensing
PO Box 119
Gjoa Haven, Nunavut X0B 1J0

May 17, 2022

O/Ref.: QE20-400-2

Confidential document



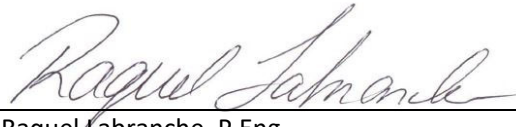
Environmental Waste Processing Facility

2021 ANNUAL REPORT

Confidential document presented to

NUNAVUT WATER BOARD

Prepared and verified by:



Raquel Labranche, P.Eng.
NAPEG Licence No. L4172
Project Manager

Approved by:



Jennifer Godin
Director

LIST OF APPENDICES

APPENDIX A	Inspection Report and Actions Taken
APPENDIX B	NIRB Screening Decision Report
APPENDIX C	Certificate of Analysis

NWB Annual Report

Year being reported:

2021

License No: 1BR-TH12027

Issued Date: January 1, 2020

Expiry Date: December 31, 2027

Project Name:

Hydrocarbon-Impacted Water and Soil
Treatment Facility Project

Licensee:

Qikiqtaaluk Environmental Inc.

Mailing Address:

PO Box 2110
2027 Iqaluit Lane
Iqaluit, Nunavut X0A 0H0Name of Company filing Annual Report (if different from Name of Licensee please clarify
relationship between the two entities, if applicable):

Same

General Background Information on the Project (*optional):

Licence Requirements: the licensee must provide the following information in accordance with

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):

No water used

Water Quantity:

0	Quantity Allowable Domestic (cu.m)
0	Actual Quantity Used Domestic (cu.m)
0	Quantity Allowable Drilling (cu.m)
0	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

In 2021, approximately 127,160 litres of liquid waste and approximately 123 m.t. of solid waste in Quatrex bags, drums and crates were disposed of at various accredited southern facilities.

In 2021, 300 m³ of soils were treated and 1,100 m³ of treated soils remain in storage onsite.

Hydrocarbon-Impacted Water

Additional Details:

A list of unauthorized discharges and a summary of follow-up actions takenSpill No.: (as reported to the Spill Hot-line)Date of Spill: Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc.)

Revisions to the Spill Contingency Plan

Additional Details:

Revisions to the Abandonment and Restoration Plan

Additional Details:

NWB Amendment – Renewal Water Licence No. 1BR-THI2027**Progressive Reclamation Work Undertaken**

Additional Details (i.e., work completed and future works proposed)

Results of the Monitoring Program including:**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;**

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

Additional Details: (date of request, analysis of results, data attached, etc.)

An inspection was done in June 2021 (see attached).

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

Additional Details: (Attached or provided below)

N/A

Any responses or follow-up actions on inspection/compliance reports

Additional Details: (Dates of Report, Follow-up by the Licensee)

An amendment was approved in 2021 for the addition of an Incinerator. NIRB screening decision 15XN051 (see attached). The current plans will be updated in 2022 to include the addition of the incinerator.

Any additional comments or information for the Board to consider

Attached are the analytical results for treated water samples collected at the raw water pond and soil treatment pond between June 15 and July 11, 2021 ($\approx 200,000$ L of water was treated and discharged in 2021 and $\approx 350\,000$ L is to be treated in 2022).

Date Submitted:

May 2, 2022

Submitted/Prepared by:

Raquel Labranche

Contact Information:**Tel:** 514 208-5981**Fax:** N/A**email:** rlabranche@genv.ca



APPENDIX A

Inspection Report and Actions Taken

WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
Qikiqtaaluk Environmental Inc.	Catalin Cenan
Licence No. / Expiry	Representative's Title
1BR-THI2027	Project Manager
Land / Other Authorizations	Land / Other Authorizations
	--
Date of Inspection	Inspector
6/3/2021	Jonathan MESHER
Activities Inspected	
☐ Camp	☐ Drilling
☐ Roads/Hauling	☐ Other:
☐ Mining	☐ Construction
	☐ Other: Land Farm
☐ Reclamation	☐ Fuel Storage

Conditions: **A - Acceptable** **C - Concern** **U - Unacceptable** **NA – Not Applicable** **NI – Not Inspected**

Water Use	Condition	Comment	Site Conditions	Condition	Comment	Haz/Mat Management	Condition	Comment
Intake/Screen	NA		Water Management Structures	NA		Storage	C	2 & 3
Flow Measure. Device	NA		Culverts / Bridges	NA		Spills	NA	
Source:	NA		Drainage	NA		Spill Plan	NA	
Water Use:	NA		Erosion / Sediment	NA				
Recirculation (y /n)	NA		Mitigation Measures	NA		Administrative		
			Reclamation Activities	NA		Records	NA	
			Materials Storage	NA		Reports	NA	
Waste Disposal			Signage			Plans	NA	
Waste Water	NA					Notifications	NA	
Solid Waste	NA		Monitoring			Other		
Hazardous Waste	NA		Sample Collection / Analysis	A		Follow-up from previous inspection	NA	
*The number in the comments field will correspond with specific comments provided below.								
Samples taken by Inspector:			Location(s):					
☐ Yes ☒ No								

SECTION 1 ☒ Comments ☐ Non-Compliance with Act or Licence ☐ Action Required

Background

The Licensee currently operates three facilities or units at the Environmental Waste Processing Facility (EWPF). Two units are intended to treat contaminated Waters and soils and the third one is to store / transfer hazardous Waste.

Inspection

On Wednesday June 3rd, 2021 I Jonathan Mesher, Crown Indigenous Affairs and Northern Relations Canada Inspector, did perform an inspection of the Water Licence 1BR-THI2027 located in Iqaluit, Nunavut, the below observations were noted.

Observations

1. During the inspection the licensee was managing a flood of the pad, the licensee was attempting to temporarily manage the flood by pumping the water from one side of the pad to ditches on the other side of the pad. This flood appears to be caused by ditches surrounding the facility being blocked with snow and ice, the inspector is requesting the licensee ensure the diversion ditches are cleared prior to freshet. see photo 1 for the flood and photo 2 for the ditch behind the facility.

2. During the inspection the licensee was storing Hazardous waste outside of secondary containment. See photo 3 for the hazardous waste outside of secondary containment.



3. The inspector noted that in Cell A there was no defined berm wall in some areas, the contaminated soil was flush with the berm walls which may cause waste to flow outside this cell. There are two access ramps into this cell, in the engineered drawings located in appendix A of the approved operations and management plan.

SECTION 2	☐ Comments	☐ Non-Compliance with Act or Licence	☒ Action Required
The following is a list of actions required by the licensee, the inspector is requesting that the licensee provide a follow up to this report by June 11, 2021. 1. The inspector is requesting the licensee clear the ditches surrounding the facility prior to freshet to ensure the water management structures are not blocked and operating as intended. 2. The licensee is to move the waste identified in photo 3 and ensure the following condition of their licensee is adhered to, Part H, item 7, of the licenece 1BR-THI2027 states that; “The Licensee shall provide secondary containment for fuel, chemical and contaminated Water storage as required by applicable standards and acceptable industry practice.” 3. The licensee is to organize the waste in Cell A in the approved manner and the licensee is to ensure all waste management facility’s are operated and managed as stated in the approved operations and management plan.			
Inspector’s Name			
Jonathan MESHER			
Signature			
			
Date			
June 4, 2021			

Water Resource Officer, Nunavut Region
Crown Indigenous Relations and Northern Affairs Canada – CIRNAC
Jonathan.mesher@canada.ca
Office #: 867-975-4296
Fax: 867 979-6445

Date	Camera	Inspector	Authorization
	Samgsung S9 (work cell phone)	J.Mesher	1BR-THI
Photo Log			
Photo 1			
			
Description: flooding of the pad.			

Date	Camera	Inspector	Authorization
	Samgsung S9 (work cell phone)	J.Mesher	1BR-THI
Photo Log			
Photo 2			
			
Description: blocked diversion ditches.			

Date	Camera	Inspector	Authorization
	Samgsung S9 (work cell phone)	J.Mesher	1BR-THI

Photo Log

Photo 4



Description: Access ramp to Cell A not depicted in the engineered drawings and a undefined Berm on West Side on West side of Cell A.

Date	Camera	Inspector	Authorization
	Samgsung S9 (work cell phone)	J.Mesher	1BR-THI

Photo Log

Photo 3



Description: Waste outside of containment.

Date	Camera	Inspector	Authorization
	Samgsung S9 (work cell phone)	J.Mesher	1BR-THI
Photo Log			
Photo 4			
			
Description: in defined Cell wall on the East side on Cell A.			

Celine Meyer

De: ccenan@qenv.ca
Envoyé: June 4, 2021 3:54 PM
À: 'Mesher, Jonathan (AADNC/AANDC)'
Cc: jgodin@qenv.ca
Objet: RE: Waste Information
Pièces jointes: res_20210603_083838.jpg; res_20210603_144623.jpg; res_20210603_144849.jpg; res_20210603_164449.jpg; res_20210604_150753.jpg; res_20210604_150834.jpg

Good afternoon Jonathan,

Please find below the information you requested:

Soil/waste storage pad
Area: 2,700 m²
Storage capacity: 6,000 m³
In storage as of June 3, 2021: 1,500 m³

Soil treatment pads
Area: 400 m² x 2
Treatment capacity: 450 m³ x 2
In treatment, as of June 3, 2021: A-Pad: 450 m³, B-Pad: 250 m³

Also please find attached the photographs showing the corrective measure applied to follow your visit.

The photographs showing the clear bermed separation inside the soil treatment pad will be sent on Monday as we didn't address yet one of the two entering points for the heavy machinery.

Should you have any questions or comments please don't hesitate to contact us.

Thank you and have a great weekend,

Catalin Cenani, B.Sc.Env.
Project Manager – Northern Projects



2027 Iqaluit Lane, PO Box 2110
Iqaluit, Nunavut X0A 0H0 Canada
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Phone: 450-466-2123 # 215
Cell: 867-222-8194
www.qenv.ca

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Le présent document est sujet à notre [politique de protection des renseignements](#) disponible sur notre site Internet.



Think green, is it really necessary to print this message? Pensez vert, est-ce nécessaire d'imprimer ce message?

De : Mesher, Jonathan (AADNC/AANDC) <jonathan.mesher@canada.ca>
Envoyé : Thursday, June 3, 2021 2:35 PM

À : ccenan@qenv.ca

Objet : Waste Information

Hello,

Thank you for assisting on the inspection earlier today, I am emailing you to request the current amount of soil in each cell at the landfarm and the capacities for each cell in metres squared.

Regards,

Jonathan Mesher

Resource Managment Officer, Nunavut Region

Crown Indigenous Relations and Northern Affairs Canada – CIRNAC

Jonathan.mesher@canada.ca

Office #: 867-975-4296

Fax: 867 979-6445

Cell #: 867-222-0118



APPENDIX B

NIRB Screening Decision Report



NIRB File No.: 15XN051

NPC File No.: 149361

Related to NPC File No.: 148158 and 149195

NWB File No.: 1BR-THI2027

September 1, 2020

To: The Honourable Lorne Kusugak
Minister of Community & Government Services
Government of Nunavut
P.O Box 2410
Iqaluit, NU X0A 0H0

Sent via email: lkusugak@gov.nu.ca and rkennedy@gov.nu.ca

Re: Screening Decision for Qikiqtaaluk Environmental Inc.'s "Installation of an Incinerator" Project Proposal, Qikiqtani (South Baffin) Region

Dear Honourable Minister:

On May 25, 2020 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen Qikiqtaaluk Environmental Inc.'s "Installation of an Incinerator" project proposal from the Nunavut Planning Commission (Commission), which noted that the project proposal is outside the area of an applicable regional land use plan. The Commission noted that the previous conformity determination issued on November 24, 2015 for the activities associated with the current proposal continues to apply and has determined that the project proposal is a significant modification to the project because of the installation and operation of a biomedical waste incinerator that was not part of the previously screened project proposal.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the NIRB commenced screening this project proposal. Due to the proposal containing activities that were sufficiently related to previously assessed activities under NIRB file number **15XN051**, the NIRB viewed this project proposal as an amendment to the previously screened project and assigned this proposal with this previous file number.

Following the assessment of all material information provided, the NIRB is recommending that a review of Qikiqtaaluk Environmental Inc.'s "Installation of an Incinerator" project is not required pursuant to paragraph 92(1)(a) of the *NuPPAA*.

Pursuant to its discretion under paragraph 92(2)(a) of the *NuPPAA*, the NIRB has determined that specific terms and conditions are appropriate for this project.

Accordingly, the NIRB is issuing the attached Screening Decision Report dated September 1, 2020 to the responsible Minister. The Screening Decision Report provides, among other things, the regulatory framework, project overview and the NIRB's assessment process, factors relevant for the determining significance of impacts and recommended project-specific terms and conditions.

Please note that the project proposal will not be enclosed due to the size of the electronic document and the limited bandwidth. However, an electronic copy of the project proposal is accessible online from the NIRB's online public registry at <https://www.nirb.ca/project/125540>.

Please note that, the Board only directly addresses these notice letters to those individuals considered to be a "responsible Minister with decision-making authority" for the project as set out under the *NuPPAA*. However, regulatory authorities and other authorizing agencies associated with a proposed project (e.g. Regional Inuit Associations, Nunavut Water Board) will continue to be copied on the Notice of Release of the Screening Decision Report. The NIRB is providing these parties with notice and access to the Board's Screening Decision Report as required under s. 200(2) and in support of these parties in the fulfillment of their responsibilities under the *NuPPAA* and the *Nunavut Agreement* to address, and as appropriate, implement, to the fullest extent possible, any relevant NIRB recommendations contained in the Screening Decision Report.

We look forward to receiving a response from the responsible Minister and the NIRB remains available for consultation with the Minister regarding this report as necessary. If you have any questions or require clarification, please do not hesitate to contact the NIRB's Director, Technical Services, Tara Arko at (867) 983-4611 or tarko@nirb.ca.

Sincerely,



Kaviq Kaluraq
Chairperson
Nunavut Impact Review Board

Enclosure (2): Screening Decision Report (English and Inuktitut), NIRB File No.: 15XN051 (September 1, 2020)

cc: Lootie Toomasie, Chairperson, Nunavut Water Board
The Honourable Dan Vandal, P.C., M.P Minister of Northern Affairs, Government of Canada



**NOTICE OF RELEASE OF SCREENING DECISION REPORT
NIRB FILE NO.: 15XN051**

NPC File No.: NPC File No.: 149361
Related to NPC File No.: 148158 and 149195
NWB File No.: 1BR-THI2027

September 1, 2020

To: Robert Chapple
Director Planning and Lands
Community and Government Services
Government of Nunavut
P.O. Box 272
Kugluktuk, NU X0B 0E0

Sent via email: rchapple@gov.nu.ca

**Re: Notice of Release of Screening Decision Report for Qikiqtaaluk Environmental Inc.'s
"Installation of an Incinerator" Project Proposal, Qikiqtani (South Baffin) Region**

Dear Robert Chapple:

Enclosed is the Nunavut Impact Review Board's (NIRB or Board) Screening Decision Report to the Honourable Lorne Kusugak, Minister of Community & Government Services - Government of Nunavut for Qikiqtaaluk Environmental Inc.'s "Installation of an Incinerator" in the Qikiqtani (South Baffin) Region, dated September 1, 2020.

The NIRB has assessed this project proposal for ecosystemic and socio-economic impacts taking into consideration the comments from relevant authorities and communities. Based on this assessment, the Board has indicated to the responsible Minister that **a review of the project is not required** in accordance with s. 92(1)(a) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*). Accordingly, the NIRB awaits a response from the Minister.

In the absence of a response from the Minister, regulatory authorities should take note of s. 75(1)(e) of the *NuPPAA*, which provides: "A regulatory authority is not authorized to issue a licence, permit or other authorization in respect of a project if the responsible Minister has decided either that the project could be modified and an amended project submitted to the Commission or that it is not to proceed." Contravention of s. 75(1) of the *NuPPAA* will render a licence, permit or other authorization issued of no force or effect.

Please contact the undersigned at (867) 983-4605 or info@nirb.ca if you have any questions or require additional clarification.

Sincerely,



Cassel Kapolak
Environmental Administrator
Nunavut Impact Review Board

Enclosure (2): NIRB Screening Decision Report (English and Inuktitut), File No.:
15XN051 (September 1, 2020)

cc:

Raquel Labranche, Qikiqtaaluk Environmental Inc.
Richard Dwyer, Nunavut Water Board
Tracey McCaie, Crown-Indigenous Relations and Northern Affairs
Canada Distribution List

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	lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1035/index.html) 3. ᐃᓕᑦᑲᑦᑐᓂᑦ ᖅᗴᒋᓚᑦᑲᑦᑐᓂᑦ ᐱᓪᑯᔭᑦᑲ (https://laws-lois.justice.gc.ca/eng/acts/s-15.3/). ᐅᓪᑲᑦᓕᓕᑲᑦᑐᓂᑦ ᐃᓄᑦᑲᑦᑐᓂᑦ ᐸᐸᑦᑲᑦᑐᓂᑦ ᐱᓪᑯᔭᑦᑲ 4. ᐃᓕᑦᑲᑦᑐᓂᑦ ᐱᓪᑯᔭᑦᑲ (ᐆᑯᑳᑦ) ᐊᓕᓕ ᐱᓪᑯᔭᑦᑲ ᐊᑯᑦᑲᑦᑐᓂᑦ (http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html). ᐊᓕᑦᑐᓂᑦ ᓇᑦᑲ, ᐱᓕᓕᑦᓕᑦᑐᓂᑦ ᐅᓪᑲᑦᑐᓂᑦᑲᑦᑐᓂᑦᑲᑦᑐᓂᑦ ᓕᑦᑐᓂᑦ ᐊᑯᑦᑐᓂᑦ ᐊᑯᑦᑐᓂᑦ ᐊᑯᑦᑐᓂᑦ ᐊᑯᑦᑐᓂᑦᑐᓂᑦᑐᓂᑦᑐᓂᑦᑐᓂᑦ ᐱᓕᓕᑦᓕᑦᑐᓂᑦᑐᓂᑦᑐᓂᑦ ᐱᓕᓕᑦᑐᓂᑦ: 5. ᐅᐸᑦᑲᑦᑐᓂᑦᑐᓂᑦ ᐸᓕᑦᑐᓂᑦ ᑲᐸᓕᑦᑐᓂᑦ ᐱᓪᑯᔭᑦᑲ (http://laws-lois.justice.gc.ca/eng/acts/M-7.01/), ᐅᐸᑦᑲᑦᑐᓂᑦᑐᓂᑦ ᐸᓕᑦᑐᓂᑦ ᓕᑦᑐᓂᑦᑐᓂᑦᑐᓂᑦ (https://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1035/index.html) ᐊᓕᓕ ᐅᐸᑦᑲᑦᑐᓂᑦᑐᓂᑦ ᐸᓕᑦᑐᓂᑦ ᖅᗴᒋᓚᑦᑲᑦᑐᓂᑦ ᓕᑦᑐᓂᑦᑐᓂᑦᑐᓂᑦ (https://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1036/index.html). 6. ᐃᓕᑦᑲᑦᑐᓂᑦ ᐱᓪᑯᔭᑦᑲ (ᐆᑯᑳᑦ) ᐊᓕᓕ ᐱᓪᑯᔭᑦᑲ ᐊᑯᑦᑲᑦᑐᓂᑦ (http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html).
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[illegible]

ክፍል 5-ኛውን ደንብ ለማረጋገጥ ማስፈጸሙን ማረጋገጥ ለሚችል ማረጋገጫ ማቅረብ አለበት፡፡

ርዕስ

28. የዋናውን ማረጋገጫ ማስፈጸሙን ማረጋገጥ (ከሚፈጸሙበት ሰዓት ጀምሮ) ለሚፈጸሙበት ሰዓት ማረጋገጫ ማቅረብ አለበት፡፡
29. ለዋናውን ማረጋገጫ ማስፈጸሙን ማረጋገጥ ለሚችል ማረጋገጫ ማቅረብ አለበት፡፡
30. ከሚፈጸሙበት ሰዓት ጀምሮ ማረጋገጫ ማቅረብ አለበት፡፡
31. ከሚፈጸሙበት ሰዓት ጀምሮ ማረጋገጫ ማቅረብ አለበት፡፡

ጥያቄዎች

32. ከሚፈጸሙበት ሰዓት ጀምሮ ማረጋገጫ ማቅረብ አለበት፡፡
33. ከሚፈጸሙበት ሰዓት ጀምሮ ማረጋገጫ ማቅረብ አለበት፡፡

ጥያቄዎች ለሚፈጸሙበት ሰዓት

34. ከሚፈጸሙበት ሰዓት ጀምሮ ማረጋገጫ ማቅረብ አለበት፡፡
35. ከሚፈጸሙበት ሰዓት ጀምሮ ማረጋገጫ ማቅረብ አለበት፡፡
36. ከሚፈጸሙበት ሰዓት ጀምሮ ማረጋገጫ ማቅረብ አለበት፡፡

the quality of the report produced. Facilities to conduct fieldwork, analysis, and report preparation should be available to this individual through institutional, agency, or company affiliations. Responsibility for the curation of objects recovered during field work while under study and for documents generated in the course of the study as well as remittance of artifacts, specimens and documents to the repository specified on the permit accrue to the contract archaeologist or palaeontologist. This individual is also bound by the legal requirements of the *Nunavut Archaeological and Palaeontological Sites Regulations*.

Types of Development

In general, those developments that cause concern for the safety of heritage resources will include one or more of the following kinds of surface disturbances. These categories, in combination, are comprehensive of the major kinds of developments commonly proposed in Nunavut. For any single development proposal, several kinds of these disturbances may be involved

- *Linear disturbances: including the construction of highways, roads, winter roads, transmission lines, and pipelines;*
- *Extractive disturbances: including mining, gravel removal, quarrying, and land filling;*
- *Impoundment disturbances: including dams, reservoirs, and tailings ponds;*
- *Intensive land use disturbances: including industrial, residential, commercial, recreational, and land reclamation work, and use of heritage resources as tourist developments.*
- *Mineral, oil and gas exploration: establishment of camps, temporary airstrips, access routes, well sites, or quarries all have potential for impacting heritage resources.*

Types of Studies Undertaken to Preserve Heritage Resources

Overview: An overview study of heritage resources should be conducted at the same time as the development project is being designed or its feasibility addressed. They usually lack specificity with regard to the exact location(s) and form(s) of impact and involve limited, if any, field surveys. Their main aim is to accumulate, evaluate, and synthesize the existing knowledge of the heritage of the known area of impact. The overview study provides managers with baseline data from which recommendations for future research and forecasts of potential impacts can be made. A Class I Permit is required for this type of study if field surveys are undertaken.

Reconnaissance: This is done to provide a judgmental appraisal of a region sufficient to provide the developer, the consultant, and government managers with recommendations for further development planning. This study may be implemented as a preliminary step to inventory and assessment investigations except in cases where a reconnaissance may

Surveillance and monitoring: These may be required as part of the mitigation program.

Surveillance may be conducted during the construction phase of a project to ensure that the developer has complied with the recommendations.

Monitoring involves identification and inspection of residual and long-term impacts of a development (i.e. shoreline stability of a reservoir); or the use of impacts to disclose the presence of heritage resources, for example, the uncovering of buried sites during the construction of a pipeline.



APPENDIX C

Certificate of Analysis

C.O.C.: ---

REPORT No. B20-16820

Report To:

Qikiqtaaluk Env Inc
9935, rue de Chateauneuf, Entrée 1
Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 17-Jun-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 22-Jun-20

P.O. NUMBER: 430002982 Raw Water Soil

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.		RWST-200615			
			Sample I.D.		B20-16820-1			
			Date Collected		15-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Hardness (as CaCO ₃)	mg/L	1	SM 3120	18-Jun-20/O	169			
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	17-Jun-20/O	157			
pH @25°C	pH Units		SM 4500H	17-Jun-20/O	7.60			
Conductivity @25°C	µmho/cm	1	SM 2510B	17-Jun-20/O	360			
Total Suspended Solids	mg/L	3	SM2540D	18-Jun-20/K	140			
Chloride	mg/L	0.5	SM4110C	18-Jun-20/O	10.4			
Nitrite (N)	mg/L	0.1	SM4110C	18-Jun-20/O	< 0.1			
Nitrate (N)	mg/L	0.1	SM4110C	18-Jun-20/O	0.1			
Sulphate	mg/L	1	SM4110C	18-Jun-20/O	7			
Aluminum	mg/L	0.01	SM 3120	18-Jun-20/O	0.04			
Antimony	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0006			
Arsenic	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0010			
Barium	mg/L	0.001	SM 3120	18-Jun-20/O	0.023			
Beryllium	mg/L	0.002	SM 3120	18-Jun-20/O	< 0.002			
Boron	mg/L	0.005	SM 3120	18-Jun-20/O	0.007			
Cadmium	mg/L	0.000015	EPA 200.8	19-Jun-20/O	0.000093			
Calcium	mg/L	0.02	SM 3120	18-Jun-20/O	52.0			
Chromium	mg/L	0.001	EPA 200.8	19-Jun-20/O	0.001			
Chromium (VI)	mg/L	0.001	MOE E3056	18-Jun-20/O	< 0.001			
Cobalt	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0052			
Copper	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0053			
Iron	mg/L	0.005	SM 3120	18-Jun-20/O	3.44			
Lead	mg/L	0.00002	EPA 200.8	19-Jun-20/O	0.00039			
Magnesium	mg/L	0.02	SM 3120	18-Jun-20/O	9.58			
Manganese	mg/L	0.001	SM 3120	18-Jun-20/O	1.60			
Mercury	mg/L	0.00002	SM 3112 B	18-Jun-20/O	< 0.00002			
Molybdenum	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0022			



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

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Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 17-Jun-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 22-Jun-20

P.O. NUMBER: 430002982 Raw Water Soil

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWST-200615			
			Sample I.D.	B20-16820-1			
			Date Collected	15-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Nickel	mg/L	0.0002	EPA 200.8	19-Jun-20/O	0.0062		
Potassium	mg/L	0.1	SM 3120	18-Jun-20/O	8.1		
Selenium	mg/L	0.001	EPA 200.8	19-Jun-20/O	< 0.001		
Silver	mg/L	0.0001	EPA 200.8	19-Jun-20/O	< 0.0001		
Sodium	mg/L	0.2	SM 3120	18-Jun-20/O	6.9		
Strontium	mg/L	0.001	SM 3120	18-Jun-20/O	0.144		
Tin	mg/L	0.05	SM 3120	18-Jun-20/O	< 0.05		
Titanium	mg/L	0.005	SM 3120	18-Jun-20/O	< 0.005		
Uranium	mg/L	0.00005	EPA 200.8	19-Jun-20/O	0.00019		
Vanadium	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0011		
Yttrium	mg/L	0.005	SM 3120	18-Jun-20/O	< 0.005		
Zinc	mg/L	0.005	SM 3120	18-Jun-20/O	0.038		
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	19-Jun-20/K	0.22		
Phenolics	mg/L	0.002	MOEE 3179	18-Jun-20/K	0.002		
Benzene	µg/L	0.5	EPA 8260	18-Jun-20/R	< 0.5		
Toluene	µg/L	0.5	EPA 8260	18-Jun-20/R	< 0.5		
Ethylbenzene	µg/L	0.5	EPA 8260	18-Jun-20/R	< 0.5		
Xylene, m,p-	µg/L	1.0	EPA 8260	18-Jun-20/R	< 1.0		
Xylene, o-	µg/L	0.5	EPA 8260	18-Jun-20/R	< 0.5		
Xylene, m,p,o-	µg/L	1.1	EPA 8260	18-Jun-20/R	< 1.1		
Toluene-d8 (SS)	% rec.		EPA 8260	18-Jun-20/R	104		
PHC F1 (C6-C10)	µg/L	50	MOE E3421	18-Jun-20/R	< 50		
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	19-Jun-20/K	< 50		
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	19-Jun-20/K	< 400		
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	19-Jun-20/K	< 400		
Oil & Grease-Total	mg/L	1.0	SM 5520	19-Jun-20/K	1.4		



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 17-Jun-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 22-Jun-20

P.O. NUMBER: 430002982 Raw Water Soil

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWST-200615			
			Sample I.D.	B20-16820-1			
			Date Collected	15-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Acenaphthylene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1	¹	
Anthracene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Benzo(a)anthracene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Benzo(a)pyrene	µg/L	0.01	EPA 8270	22-Jun-20/K	0.028		
Benzo(b)fluoranthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Benzo(b+k)fluoranthene	µg/L	0.1	EPA 8270	22-Jun-20/K	< 0.3		
Benzo(g,h,i)perylene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Benzo(k)fluoranthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Chrysene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Dibenzo(a,h)anthracene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Fluoranthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Fluorene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Methylnaphthalene,1-	µg/L	0.05	EPA 8270	22-Jun-20/K	0.14		
Methylnaphthalene,2-	µg/L	0.08	EPA 8270	22-Jun-20/K	< 0.2		
Methylnaphthalene 2-(1-)	µg/L	1	EPA 8270	22-Jun-20/K	< 1		
Naphthalene	µg/L	0.05	EPA 8270	22-Jun-20/K	0.25		
Phenanthrene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Pyrene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.1		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	22-Jun-20/K	94.0		

¹ NOTE: Elevated RLs due to sample matrix interferences.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: ---

REPORT No. B20-16822

Report To:

Qikiqtaaluk Env Inc

9935, rue de Chateauneuf, Entrée 1
Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 17-Jun-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 22-Jun-20

P.O. NUMBER: 430002982 Raw Water - Pond

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWP_20061 6			
			Sample I.D.	B20-16822-1			
			Date Collected	16-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hardness (as CaCO ₃)	mg/L	1	SM 3120	18-Jun-20/O	44		
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	17-Jun-20/O	38		
pH @25°C	pH Units		SM 4500H	17-Jun-20/O	7.61		
Conductivity @25°C	µmho/cm	1	SM 2510B	17-Jun-20/O	126		
Total Suspended Solids	mg/L	3	SM2540D	18-Jun-20/K	6		
Chloride	mg/L	0.5	SM4110C	18-Jun-20/O	8.6		
Nitrite (N)	mg/L	0.1	SM4110C	18-Jun-20/O	< 0.1		
Nitrate (N)	mg/L	0.1	SM4110C	18-Jun-20/O	< 0.1		
Sulphate	mg/L	1	SM4110C	18-Jun-20/O	7		
Aluminum	mg/L	0.01	SM 3120	18-Jun-20/O	0.10		
Antimony	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0003		
Arsenic	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0004		
Barium	mg/L	0.001	SM 3120	18-Jun-20/O	0.004		
Beryllium	mg/L	0.002	SM 3120	18-Jun-20/O	< 0.002		
Boron	mg/L	0.005	SM 3120	18-Jun-20/O	0.008		
Cadmium	mg/L	0.000015	EPA 200.8	19-Jun-20/O	0.000017		
Calcium	mg/L	0.02	SM 3120	18-Jun-20/O	14.2		
Chromium	mg/L	0.001	EPA 200.8	19-Jun-20/O	< 0.001		
Chromium (VI)	mg/L	0.001	MOE E3056	18-Jun-20/O	< 0.001		
Cobalt	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0004		
Copper	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0024		
Iron	mg/L	0.005	SM 3120	18-Jun-20/O	0.407		
Lead	mg/L	0.00002	EPA 200.8	19-Jun-20/O	0.00105		
Magnesium	mg/L	0.02	SM 3120	18-Jun-20/O	2.14		
Manganese	mg/L	0.001	SM 3120	18-Jun-20/O	0.216		
Mercury	mg/L	0.00002	SM 3112 B	18-Jun-20/O	< 0.00002		
Molybdenum	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0010		



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Qikiqtaaluk Env Inc
9935, rue de Chateauneuf, Entrée 1
Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 17-Jun-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 22-Jun-20

P.O. NUMBER: 430002982 Raw Water - Pond

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWP_20061 6			
			Sample I.D.	B20-16822-1			
			Date Collected	16-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Nickel	mg/L	0.0002	EPA 200.8	19-Jun-20/O	0.0011		
Potassium	mg/L	0.1	SM 3120	18-Jun-20/O	1.7		
Selenium	mg/L	0.001	EPA 200.8	19-Jun-20/O	< 0.001		
Silver	mg/L	0.0001	EPA 200.8	19-Jun-20/O	< 0.0001		
Sodium	mg/L	0.2	SM 3120	18-Jun-20/O	5.1		
Strontium	mg/L	0.001	SM 3120	18-Jun-20/O	0.040		
Tin	mg/L	0.05	SM 3120	18-Jun-20/O	< 0.05		
Titanium	mg/L	0.005	SM 3120	18-Jun-20/O	< 0.005		
Uranium	mg/L	0.00005	EPA 200.8	19-Jun-20/O	0.00020		
Vanadium	mg/L	0.0001	EPA 200.8	19-Jun-20/O	0.0006		
Yttrium	mg/L	0.005	SM 3120	18-Jun-20/O	< 0.005		
Zinc	mg/L	0.005	SM 3120	18-Jun-20/O	0.005		
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	19-Jun-20/K	0.39		
Phenolics	mg/L	0.002	MOEE 3179	18-Jun-20/K	< 0.002		
Benzene	µg/L	0.5	EPA 8260	18-Jun-20/R	< 0.5		
Toluene	µg/L	0.5	EPA 8260	18-Jun-20/R	< 0.5		
Ethylbenzene	µg/L	0.5	EPA 8260	18-Jun-20/R	< 0.5		
Xylene, m,p-	µg/L	1.0	EPA 8260	18-Jun-20/R	< 1.0		
Xylene, o-	µg/L	0.5	EPA 8260	18-Jun-20/R	0.6		
Xylene, m,p,o-	µg/L	1.1	EPA 8260	18-Jun-20/R	< 1.1		
Toluene-d8 (SS)	% rec.		EPA 8260	18-Jun-20/R	103		
PHC F1 (C6-C10)	µg/L	50	MOE E3421	18-Jun-20/R	< 50		
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	19-Jun-20/K	200		
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	19-Jun-20/K	< 400		
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	19-Jun-20/K	< 400		
Oil & Grease-Total	mg/L	1.0	SM 5520	19-Jun-20/K	2.1		



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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C.O.C.: ---

REPORT No. B20-16822

Report To:

Qikiqtaaluk Env Inc
9935, rue de Chateauneuf, Entrée 1
Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

2378 Holly Lane
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Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 17-Jun-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 22-Jun-20

P.O. NUMBER: 430002982 Raw Water - Pond

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWP_20061 6			
			Sample I.D.	B20-16822-1			
			Date Collected	16-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Acenaphthylene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09 ¹		
Anthracene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Benzo(a)anthracene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Benzo(a)pyrene	µg/L	0.01	EPA 8270	22-Jun-20/K	< 0.02		
Benzo(b)fluoranthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Benzo(b+k)fluoranthene	µg/L	0.1	EPA 8270	22-Jun-20/K	< 0.2		
Benzo(g,h,i)perylene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Benzo(k)fluoranthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Chrysene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Dibenzo(a,h)anthracene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Fluoranthene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Fluorene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Methylnaphthalene,1-	µg/L	0.05	EPA 8270	22-Jun-20/K	0.14		
Methylnaphthalene,2-	µg/L	0.08	EPA 8270	22-Jun-20/K	< 0.1		
Methylnaphthalene 2-(1-)	µg/L	1	EPA 8270	22-Jun-20/K	< 1		
Naphthalene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Phenanthrene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Pyrene	µg/L	0.05	EPA 8270	22-Jun-20/K	< 0.09		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	22-Jun-20/K	111		

¹ NOTE: Elevated RLs due to sample matrix interferences.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: ---

REPORT No. B20-18449

Report To:

Qikiqtaaluk Env Inc
9935, rue de Chateauneuf, Entrée 1
Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 02-Jul-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 10-Jul-20

P.O. NUMBER: 430002982 RW Pond Batch 2

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWP_20063 0			
			Sample I.D.	B20-18449-1			
			Date Collected	30-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hardness (as CaCO ₃)	mg/L	1	SM 3120	02-Jul-20/O	318		
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	03-Jul-20/O	284		
pH @25°C	pH Units		SM 4500H	03-Jul-20/O	7.78		
Conductivity @25°C	µmho/cm	1	SM 2510B	03-Jul-20/O	867		
Total Suspended Solids	mg/L	3	SM2540D	06-Jul-20/K	70		
Chloride	mg/L	0.5	SM4110C	06-Jul-20/O	64.0		
Nitrite (N)	mg/L	0.1	SM4110C	06-Jul-20/O	< 0.1		
Nitrate (N)	mg/L	0.1	SM4110C	06-Jul-20/O	< 0.1		
Sulphate	mg/L	1	SM4110C	06-Jul-20/O	36		
Aluminum	mg/L	0.01	SM 3120	02-Jul-20/O	0.28		
Antimony	mg/L	0.0001	EPA 200.8	03-Jul-20/O	0.0005		
Arsenic	mg/L	0.0001	EPA 200.8	03-Jul-20/O	0.0022		
Barium	mg/L	0.001	SM 3120	02-Jul-20/O	0.041		
Beryllium	mg/L	0.002	SM 3120	02-Jul-20/O	< 0.002		
Boron	mg/L	0.005	SM 3120	02-Jul-20/O	0.151		
Cadmium	mg/L	0.00015	EPA 200.8	03-Jul-20/O	0.000110		
Calcium	mg/L	0.02	SM 3120	02-Jul-20/O	99.1		
Chromium	mg/L	0.001	EPA 200.8	03-Jul-20/O	0.001		
Chromium (VI)	mg/L	0.001	MOE E3056	06-Jul-20/O	< 0.003		
Cobalt	mg/L	0.0001	EPA 200.8	03-Jul-20/O	0.0034		
Copper	mg/L	0.0001	EPA 200.8	03-Jul-20/O	0.0067		
Iron	mg/L	0.005	SM 3120	02-Jul-20/O	4.63		
Lead	mg/L	0.00002	EPA 200.8	03-Jul-20/O	0.00228		
Magnesium	mg/L	0.02	SM 3120	02-Jul-20/O	17.1		
Manganese	mg/L	0.001	SM 3120	02-Jul-20/O	1.87		
Mercury	mg/L	0.00002	SM 3112 B	08-Jul-20/O	< 0.00002		
Molybdenum	mg/L	0.0001	EPA 200.8	03-Jul-20/O	0.0018		

NOTE: Elevated RL's for select parameters due to sample matrix interferences. Non-Homogenous Sample.



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Lab Manager - Ottawa District

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REPORT No. B20-18449

Report To:

Qikiqtaaluk Env Inc
9935, rue de Chateauneuf, Entrée 1
Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

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DATE RECEIVED: 02-Jul-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 10-Jul-20

P.O. NUMBER: 430002982 RW Pond Batch 2

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWP_20063 0			
			Sample I.D.	B20-18449-1			
			Date Collected	30-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Nickel	mg/L	0.0002	EPA 200.8	03-Jul-20/O	0.0056		
Potassium	mg/L	0.1	SM 3120	02-Jul-20/O	16.4		
Selenium	mg/L	0.001	EPA 200.8	03-Jul-20/O	< 0.001		
Silver	mg/L	0.0001	EPA 200.8	03-Jul-20/O	< 0.0001		
Sodium	mg/L	0.2	SM 3120	02-Jul-20/O	34.6		
Strontium	mg/L	0.001	SM 3120	02-Jul-20/O	0.332		
Tin	mg/L	0.05	SM 3120	02-Jul-20/O	< 0.05		
Titanium	mg/L	0.005	SM 3120	02-Jul-20/O	0.007		
Uranium	mg/L	0.00005	EPA 200.8	03-Jul-20/O	0.00078		
Vanadium	mg/L	0.0001	EPA 200.8	03-Jul-20/O	0.0035		
Yttrium	mg/L	0.005	SM 3120	02-Jul-20/O	< 0.005		
Zinc	mg/L	0.005	SM 3120	02-Jul-20/O	0.040		
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	03-Jul-20/K	2.81		
Phenolics	mg/L	0.002	MOEE 3179	06-Jul-20/K	0.150		
Benzene	µg/L	0.5	EPA 8260	03-Jul-20/R	< 30		
Toluene	µg/L	0.5	EPA 8260	03-Jul-20/R	37.5		
Ethylbenzene	µg/L	0.5	EPA 8260	03-Jul-20/R	< 30		
Xylene, m,p-	µg/L	1.0	EPA 8260	03-Jul-20/R	62.5		
Xylene, o-	µg/L	0.5	EPA 8260	03-Jul-20/R	69.5		
Xylene, m,p,o-	µg/L	1.1	EPA 8260	03-Jul-20/R	132		
Toluene-d8 (SS)	% rec.		EPA 8260	03-Jul-20/R	96.0		
PHC F1 (C6-C10)	µg/L	50	MOE E3421	03-Jul-20/R	2600		
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	03-Jul-20/K	8810		
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	03-Jul-20/K	1200		
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	03-Jul-20/K	< 400		
Oil & Grease-Total	mg/L	1.0	SM 5520	03-Jul-20/K	5.6		

NOTE: Elevated RL's for select parameters due to sample matrix interferences. Non-Homogenous Sample.



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Lab Manager - Ottawa District

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Qikiqtaaluk Env Inc
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Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

Caduceon Environmental Laboratories

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Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 02-Jul-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 10-Jul-20

P.O. NUMBER: 430002982 RW Pond Batch 2

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	RWP_20063 0			
			Sample I.D.	B20-18449-1			
			Date Collected	30-Jun-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Acenaphthylene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Anthracene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Benzo(a)anthracene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Benzo(a)pyrene	µg/L	0.01	EPA 8270	07-Jul-20/K	< 0.2		
Benzo(b)fluoranthene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Benzo(b+k)fluoranthene	µg/L	0.1	EPA 8270	07-Jul-20/K	< 2		
Benzo(g,h,i)perylene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Benzo(k)fluoranthene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Chrysene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Dibenzo(a,h)anthracene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Fluoranthene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Fluorene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Methylnaphthalene,1-	µg/L	0.05	EPA 8270	07-Jul-20/K	7.81		
Methylnaphthalene,2-	µg/L	0.08	EPA 8270	07-Jul-20/K	9.06		
Methylnaphthalene 2-(1-)	µg/L	1	EPA 8270	07-Jul-20/K	16.9		
Naphthalene	µg/L	0.05	EPA 8270	07-Jul-20/K	11.7		
Phenanthrene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Pyrene	µg/L	0.05	EPA 8270	07-Jul-20/K	< 0.8		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	07-Jul-20/K	100		

NOTE: Elevated RL's for select parameters due to sample matrix interferences. Non-Homogenous Sample.

R.L. = Reporting Limit

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: ---

REPORT No. B20-20579

Report To:

Qikiqtaaluk Env Inc

9935, rue de Chateauneuf, Entrée 1
Brossard Quebec J4Z 3V4 Canada

Attention: Jennifer Godin

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DATE RECEIVED: 17-Jul-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 23-Jul-20

P.O. NUMBER: 430002982 - TW Batch 2

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	TW-B2_200711			
			Sample I.D.	B20-20579-1			
			Date Collected	11-Jul-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hardness (as CaCO ₃)	mg/L	1	SM 3120	20-Jul-20/O	324		
pH @25°C	pH Units		SM 4500H	17-Jul-20/O	7.71		
Total Suspended Solids	mg/L	3	SM2540D	21-Jul-20/K	34		
Aluminum	mg/L	0.01	SM 3120	20-Jul-20/O	2.29		
Antimony	mg/L	0.0001	EPA 200.8	20-Jul-20/O	0.0004		
Arsenic	mg/L	0.0001	EPA 200.8	20-Jul-20/O	0.0053		
Barium	mg/L	0.001	SM 3120	20-Jul-20/O	0.042		
Beryllium	mg/L	0.002	SM 3120	20-Jul-20/O	< 0.002		
Boron	mg/L	0.005	SM 3120	20-Jul-20/O	< 0.005		
Cadmium	mg/L	0.000015	EPA 200.8	20-Jul-20/O	0.000021		
Calcium	mg/L	0.02	SM 3120	20-Jul-20/O	102		
Chromium	mg/L	0.001	EPA 200.8	20-Jul-20/O	< 0.001		
Chromium (VI)	mg/L	0.001	MOE E3056	20-Jul-20/O	< 0.001		
Cobalt	mg/L	0.0001	EPA 200.8	20-Jul-20/O	0.0023		
Copper	mg/L	0.0001	EPA 200.8	20-Jul-20/O	0.0071		
Iron	mg/L	0.005	SM 3120	20-Jul-20/O	1.88		
Lead	mg/L	0.00002	EPA 200.8	20-Jul-20/O	0.00099		
Magnesium	mg/L	0.02	SM 3120	20-Jul-20/O	16.8		
Manganese	mg/L	0.001	SM 3120	20-Jul-20/O	1.87		
Mercury	mg/L	0.00002	SM 3112 B	22-Jul-20/O	< 0.00002		
Molybdenum	mg/L	0.0001	EPA 200.8	20-Jul-20/O	0.0003		
Nickel	mg/L	0.0002	EPA 200.8	20-Jul-20/O	0.0221		
Potassium	mg/L	0.1	SM 3120	20-Jul-20/O	17.3		
Selenium	mg/L	0.001	EPA 200.8	20-Jul-20/O	< 0.001		
Silver	mg/L	0.0001	EPA 200.8	20-Jul-20/O	< 0.0001		
Sodium	mg/L	0.2	SM 3120	20-Jul-20/O	37.0		
Strontium	mg/L	0.001	SM 3120	20-Jul-20/O	0.312		



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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Brossard Quebec J4Z 3V4 Canada

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Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 17-Jul-20

JOB/PROJECT NO.: Water Treatment EWPF

DATE REPORTED: 23-Jul-20

P.O. NUMBER: 430002982 - TW Batch 2

SAMPLE MATRIX: Surface Water

WATERWORKS NO.

			Client I.D.	TW-B2_200711			
			Sample I.D.	B20-20579-1			
			Date Collected	11-Jul-20			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Tin	mg/L	0.05	SM 3120	20-Jul-20/O	< 0.05		
Titanium	mg/L	0.005	SM 3120	20-Jul-20/O	< 0.005		
Uranium	mg/L	0.00005	EPA 200.8	20-Jul-20/O	0.00016		
Vanadium	mg/L	0.0001	EPA 200.8	20-Jul-20/O	0.0010		
Yttrium	mg/L	0.005	SM 3120	20-Jul-20/O	< 0.005		
Zinc	mg/L	0.005	SM 3120	20-Jul-20/O	0.066		
Benzene	µg/L	0.5	EPA 8260	21-Jul-20/R	< 0.5		
Toluene	µg/L	0.5	EPA 8260	21-Jul-20/R	< 0.5		
Ethylbenzene	µg/L	0.5	EPA 8260	21-Jul-20/R	< 0.5		
Xylene, m,p-	µg/L	1.0	EPA 8260	21-Jul-20/R	< 1.0		
Xylene, o-	µg/L	0.5	EPA 8260	21-Jul-20/R	< 0.5		
Xylene, m,p,o-	µg/L	1.1	EPA 8260	21-Jul-20/R	< 1.1		
Toluene-d8 (SS)	% rec.		EPA 8260	21-Jul-20/R	100		
PHC F1 (C6-C10)	µg/L	50	MOE E3421	21-Jul-20/R	< 50		
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	21-Jul-20/K	< 50		
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	21-Jul-20/K	< 400		
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	21-Jul-20/K	< 400		
Oil & Grease-Total	mg/L	1.0	SM 5520	22-Jul-20/K	1.9		

1 Chromium (VI) result is based on total Chromium

R.L. = Reporting Limit

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie



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The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.



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