



February 2018

MCCARTHY QUARRY

Environmental Compliance Approval Quarterly Monitoring Report (November 2017 to February 2018)

Submitted to:

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Ontario Ministry of Environment
Barrie District Office
1203-54 Cedar Pointe Drive
Barrie ON L4N 5R7

REPORT



Report Number: 1407634

Distribution:

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1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by QBJR/Coco Aggregates Inc. (Coco) to prepare a quarterly compliance report for the McCarthy Quarry located in the Township of Ramara, County of Simcoe (Figure 1). The Environmental Compliance Approval (ECA) No. 4731-987KM8 issued on October 15, 2013 requires this task. A copy of the ECA No. 4731-987KM8 is found in Appendix A.

The following report addresses the requirements described in Sections 7 and 8 of the ECA. Included herein are a brief background, summary and discussion of the sampling results and data collected on-site during each sampling event.

2.0 BACKGROUND

The McCarthy Quarry dewatering system consists of the collection of groundwater and surface water at the base of the quarry floor in a quarry sump which is pumped to a settling pond, at grade, to the south of the active quarry area (Figure 1). The sump is equipped with a 4-inch Grindex pump which is rated at 35 L/sec and is attached to a 4-inch (101 mm) diameter discharge line. Water is pumped from the quarry floor up the quarry face to a 4-inch (101 mm) diameter pipeline that directs the water to the 14,000 m³ settling pond. The water in the settling pond is equipped with a Hickenbottom control structure that discharges the water to the roadside ditch along Concession Road 1. The water flows eastward along the north side of Concession Road 1 to a municipal drain and eventually to the Talbot River, which discharges into Lake Simcoe.

The dewatering activities from the McCarthy Quarry are currently carried out under the existing ECA No. 4731-987KM8 issued on October 15, 2013. Under the current ECA Coco is permitted to pump water from the quarry sump at a rate of 4,545 L/min (76 L/sec).

3.0 QUARRY DISCHARGE MONITORING RESULTS

Weekly monitoring of the quarry discharge is required by the ECA at three locations, as shown on Figure 1:

- The outfall of the settling pond (labelled as McCarthy Pond);
- The culvert along Concession Road 1 at the McCarthy property (SW1) downstream of the McCarthy Pond discharge location; and,
- 260 m north of the intersection of Concession Road 1 and the Mara Eldon Boundary Road (labelled as SW2) representing upstream conditions.

Weekly quarry discharge monitoring is required per Section 7(2) for Total Suspended Solids (TSS), Oil and Grease, Phenolics (4AAP) and pH at the McCarthy Pond. Additional water quality sampling is required under Section 7(3) at a semi-annual frequency at all three locations, recognizing that, as of April 24, 2014 this monitoring was reduced from weekly sampling frequency to a semi-annual frequency following one year of quarry operation according to Section 7(7). The parameters required for semi-annual water quality monitoring at all three locations are listed in Table 3 of the ECA. Monthly acute lethality is also required at the McCarthy Pond under Section 8.

As per Section 7(8) an inline flow meter is installed in the discharge line of the sump pump in order to measure continuous flow rates. The flow rates are recorded and provided to Golder by staff at McCarthy Quarry.



The weekly quarry discharge samples (Section 7(2)) were collected by staff at the McCarthy Quarry. The weekly water quality samples were sent to Maxxam Analytics Laboratory for analysis. The semi-annual water quality samples (Section 7(3) and Section 7(7)) are collected by Golder; the next semi-annual monitoring round will occur in May of 2018. Additionally, the monthly lethality samples were collected by Golder and sent to AGAT Laboratories Ltd.

There was no discharge from the McCarthy Pond on the seven week period between December 11, 2017 and January 26, 2018, therefore the weekly water quality sample was not collected.

4.0 QUARRY DISCHARGE MONITORING RESULTS

All laboratory certificates of analysis for the November 2017 and February 2018 monitoring period are included in Appendix B. Results of the quarry discharge monitoring are summarize below:

- The TSS, pH, Oil and Grease and Phenol (4AAP) concentrations were all below the daily concentration limits of the ECA (Table 1);
- The TSS, Oil and Grease and Phenol (4AAP) concentrations were all below the monthly concentration limits of the ECA (Table 2);
- The quarry discharge between November 2017 and February 2018 was found to be non-lethal to rainbow trout and *Daphnia magna* (Table 3); and,
- The discharge rate between November 2017 and February 2018 was below the permitted rate of 4,545 L/min (76 L/sec) (Table 4).

5.0 SUMMARY

- All samples met the daily and monthly concentration limits of the ECA No. 4731-987KM8.
- The pH of the quarry discharge was maintained between 6.0 and 9.5.
- The quarry discharge was non-lethal to rainbow trout and *Daphnia magna* at all times. Zero rainbow trout and zero *Daphnia* died during lethality testing during the past quarter.
- The discharge rate between November 2017 and February 2018 was below the permitted rate of 4,545 L/min.



Report Signature Page

GOLDER ASSOCIATES LTD.

A handwritten signature in blue ink, appearing to read "J. Bonany".

Jamie Bonany, M.A.Sc.
Project Scientist

A handwritten signature in blue ink, appearing to read "John Easton".

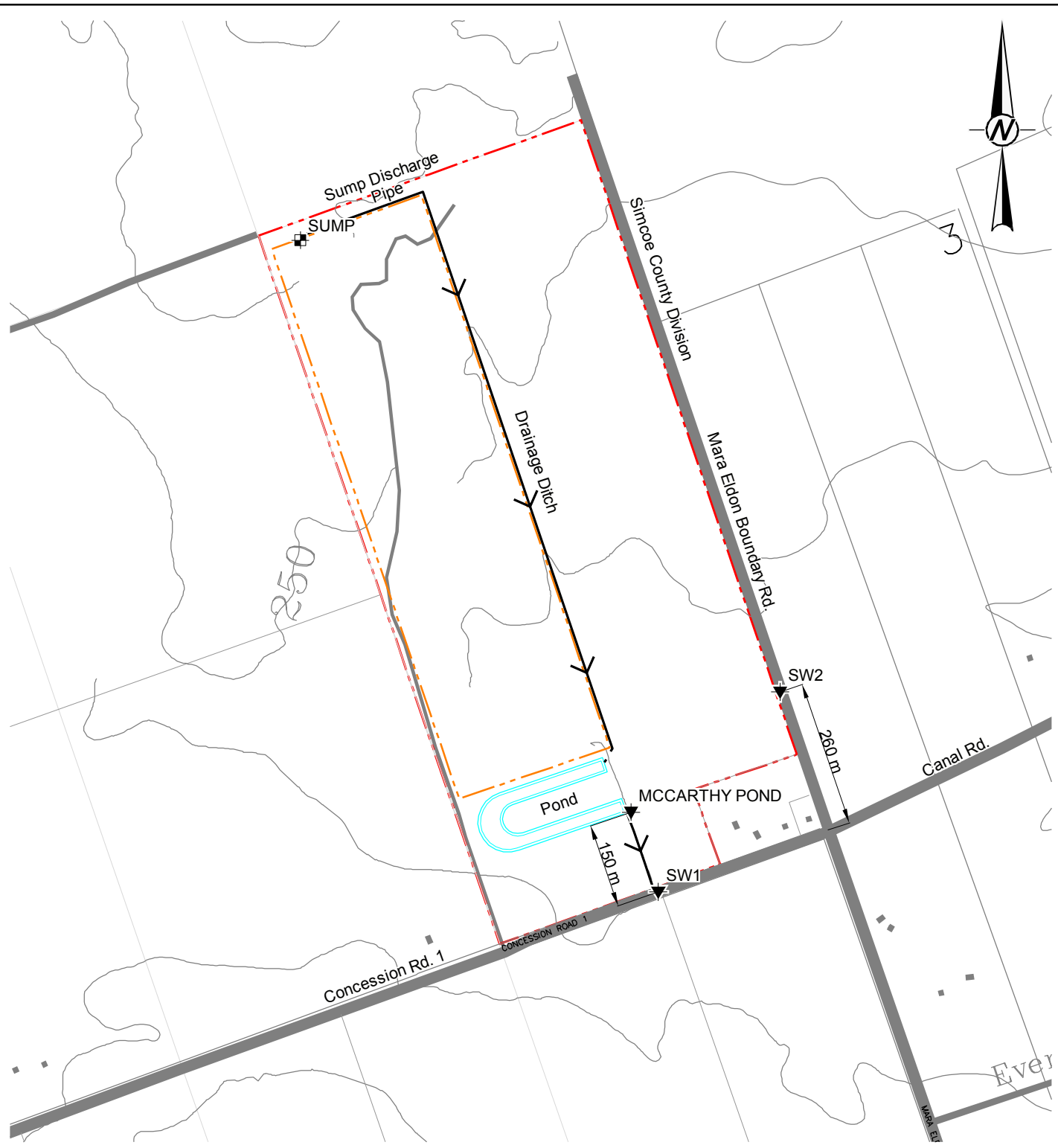
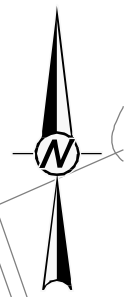
John Easton, M.Sc., P.Geo.
Associate Senior Hydrogeologist

JEB/JAE/plc

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FIGURE

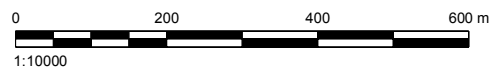


LEGEND

	Approximate Property Boundary
	Approximate Licenced Boundary
	5 m Contour Line
	Surface Water Sampling Location

REFERENCES AND NOTES

1. Projection UTM NAD83 Zone 17
2. Mapping based on ESRI Geography Network OBM Features and Bing Orthophotos



CLIENT
COCO / QBJR AGGREGATES INC.

PROJECT
STAN MCCARTHY QUARRY

TITLE
LOCATION MAP

CONSULTANT	YYYY-MM-DD	2014-09-02
	PREPARED	STB
	DESIGN	
	REVIEW	
	APPROVED	



PROJECT No. 14-07634	SCALE AS SHOWN	Rev. AB	Figure 1
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Path: \\golder\gdr\gait\barrie\CAD\Projects\2014\14-07634 (Barrie) - Coco Enviro and Hydro\0\ABA... | File Name: 1407634\SITE.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS/A 25 mm



TABLES

Table 1: McCarthy Pond Weekly Water Quality Results (November 2017 to February 2018)

	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Daily Concentration Limit ²	McCarthy Quarry					
Sample ID					Pond					
Date					02-Nov-17	09-Nov-17	16-Nov-17	23-Nov-17	30-Nov-17	07-Dec-17
pH	pH	n/a		6.0-9.5	8.19	7.63	7.59	8.04	8.16	8.2
Total Suspended Solids	mg/L	1		30	3	3	3	3	2	4
Total Oil and Grease	mg/L	0.5	Note 3	30	<0.5	1.1	<0.5	<0.5	<0.5	2.7
Phenols (4AAP)	mg/L	<0.0010		0.04	<0.001	0.0010	0.0012	<0.001	<0.001	<0.001

Notes

1. Provincial Water Quality Objectives (PWQO); shaded cells denote PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PWQO notes.
2. Daily Concentration Limit; bolded values denote exceedances in the Permit to Take Waters daily concentration limits.
3. The PWQO for Oil and Grease indicates that oil or petrochemicals should not be present in concentrations that: can be detected as a visible film, sheen or discoloration on the surface, can be detected by odour, can cause tainting of edible organisms, can form detectable deposits on shorelines and bottom sediments.
4. Results that are preceded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).

Table 2: McCarthy Pond Monthly Water Quality Results (November 2017 to February 2018)

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Monthly Concentration Limit ²	McCarthy Quarry		
					Pond		
Date					November	December	January
Total Suspended Solids	mg/L	1		15	2.8	4.0	-
Total Oil and Grease	mg/L	0.5	Note 3	15	0.6	2.7	-
Phenols (4AAP)	mg/L	<0.0010		0.02	0.001	<0.001	-

Notes

1. Provincial Water Quality Objectives (PWQO); shaded cells denote PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PWQO notes.
2. Monthly Concentration Limit; bolded values denote exceedances in the Permit to Take Waters monthly concentration limits.
3. The PWQO for Oil and Grease indicates that oil or petrochemicals should not be present in concentrations that: can be detected as a visible film, sheen or discoloration on the surface, can be detected by odour, can cause tainting of edible organisms, can form detectable deposits on shorelines and bottom sediments.
4. Results that are preceded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).
5. No samples were collected in January 2016 as there was no discharge from the McCarthy Pond.

Table 3: Lethality Monitoring at McCarthy Pond

	Unit	Mortality Limit	McCarthy Quarry		
Sample ID			Pond		
Date			30-Nov-17	13-Dec-17	28-Jan-18
Daphnia Magna	% Mortality Rate*	<50%	0	0	0
Rainbow Trout	% Mortality Rate*	<50%	0	0	0

* Test results represent acute lethality (100% effluent) of toxicants to Daphnia Magna and Rainbow Trout

Table 4: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Sec.	Total Min.	Total Litres	Rate of Taking (L/sec)	Rate of Taking (L/min)
ECA Permitted Rate					6,550,000	76	4,545
1-Nov-17	10AM	12PM	7200	120	252,000	35	2,100
2-Nov-17	6:30AM	11AM	16200	270	567,000	35	2,100
3-Nov-17	8:15AM	10AM	6300	105	220,500	35	2,100
4-Nov-17	NO PUMP		0	0	-	-	-
5-Nov-17	NO PUMP		0	0	-	-	-
6-Nov-17	NO PUMP		0	0	-	-	-
7-Nov-17	NO PUMP		0	0	-	-	-
8-Nov-17	NO PUMP		0	0	-	-	-
9-Nov-17	6:30AM	12PM	19800	330	693,000	35	2,100
10-Nov-17	7:30AM	12PM	16200	270	567,000	35	2,100
11-Nov-17	6:30AM	12:30PM	21600	360	756,000	35	2,100
12-Nov-17	NO PUMP		0	0	-	-	-
13-Nov-17	NO PUMP		0	0	-	-	-
14-Nov-17	6:30AM	12PM	19800	330	693,000	35	2,100
15-Nov-17	6:30AM	12PM	19800	330	693,000	35	2,100
16-Nov-17	NO PUMP		0	0	-	-	-
17-Nov-17	6:30AM	12PM	19800	330	693,000	35	2,100
18-Nov-17	NO PUMP		0	0	-	-	-
19-Nov-17	NO PUMP		0	0	-	-	-
20-Nov-17	NO PUMP		0	0	-	-	-
21-Nov-17	NO PUMP		0	0	-	-	-
22-Nov-17	NO PUMP		0	0	-	-	-
23-Nov-17	NO PUMP		0	0	-	-	-
24-Nov-17	NO PUMP		0	0	-	-	-
25-Nov-17	6:30AM	1:30PM	25200	420	882,000	35	2,100
26-Nov-17	NO PUMP		0	0	-	-	-
27-Nov-17	NO PUMP		0	0	-	-	-
28-Nov-17	10AM	6PM	28800	480	1,008,000	35	2,100
29-Nov-17	6:30AM	12:30PM	21600	360	756,000	35	2,100
30-Nov-17	6:30AM	4PM	34200	570	1,197,000	35	2,100
1-Dec-17	NO PUMP		0	0	-	-	-
2-Dec-17	NO PUMP		0	0	-	-	-
3-Dec-17	NO PUMP		0	0	-	-	-
4-Dec-17	7AM	4PM	32400	540	1,134,000	35	2,100
5-Dec-17	7AM	4PM	32400	540	1,134,000	35	2,100
6-Dec-17	NO PUMP		0	0	-	-	-
7-Dec-17	NO PUMP		0	0	-	-	-
8-Dec-17	NO PUMP		0	0	-	-	-

Table 4: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Sec.	Total Min.	Total Litres	Rate of Taking (L/sec)	Rate of Taking (L/min)
ECA Permitted Rate					6,550,000	76	4,545
9-Dec-17	NO PUMP		0	0	-	-	-
10-Dec-17	NO PUMP		0	0	-	-	-
11-Dec-17	NO PUMP		0	0	-	-	-
12-Dec-17	NO PUMP		0	0	-	-	-
13-Dec-17	NO PUMP		0	0	-	-	-
14-Dec-17	NO PUMP		0	0	-	-	-
15-Dec-17	NO PUMP		0	0	-	-	-
16-Dec-17	NO PUMP		0	0	-	-	-
17-Dec-17	NO PUMP		0	0	-	-	-
18-Dec-17	NO PUMP		0	0	-	-	-
19-Dec-17	NO PUMP		0	0	-	-	-
20-Dec-17	NO PUMP		0	0	-	-	-
21-Dec-17	NO PUMP		0	0	-	-	-
22-Dec-17	NO PUMP		0	0	-	-	-
23-Dec-17	NO PUMP		0	0	-	-	-
24-Dec-17	NO PUMP		0	0	-	-	-
25-Dec-17	NO PUMP		0	0	-	-	-
26-Dec-17	NO PUMP		0	0	-	-	-
27-Dec-17	NO PUMP		0	0	-	-	-
28-Dec-17	NO PUMP		0	0	-	-	-
29-Dec-17	NO PUMP		0	0	-	-	-
30-Dec-17	NO PUMP		0	0	-	-	-
31-Dec-17	NO PUMP		0	0	-	-	-
1-Jan-18	NO PUMP		0	0	-	-	-
2-Jan-18	NO PUMP		0	0	-	-	-
3-Jan-18	NO PUMP		0	0	-	-	-
4-Jan-18	NO PUMP		0	0	-	-	-
5-Jan-18	NO PUMP		0	0	-	-	-
6-Jan-18	NO PUMP		0	0	-	-	-
7-Jan-18	NO PUMP		0	0	-	-	-
8-Jan-18	NO PUMP		0	0	-	-	-
9-Jan-18	NO PUMP		0	0	-	-	-
10-Jan-18	NO PUMP		0	0	-	-	-
11-Jan-18	NO PUMP		0	0	-	-	-
12-Jan-18	NO PUMP		0	0	-	-	-
13-Jan-18	NO PUMP		0	0	-	-	-
14-Jan-18	NO PUMP		0	0	-	-	-

Table 4: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Sec.	Total Min.	Total Litres	Rate of Taking (L/sec)	Rate of Taking (L/min)
ECA Permitted Rate					6,550,000	76	4,545
15-Jan-18	NO PUMP		0	0	-	-	-
16-Jan-18	NO PUMP		0	0	-	-	-
17-Jan-18	NO PUMP		0	0	-	-	-
18-Jan-18	NO PUMP		0	0	-	-	-
19-Jan-18	NO PUMP		0	0	-	-	-
20-Jan-18	NO PUMP		0	0	-	-	-
21-Jan-18	NO PUMP		0	0	-	-	-
22-Jan-18	7AM	5PM	36000	600	1,260,000	35	2,100
23-Jan-18	NO PUMP		0	0	-	-	-
24-Jan-18	7AM	5PM	36000	600	1,260,000	35	2,100
25-Jan-18	NO PUMP		0	0	-	-	-
26-Jan-18	NO PUMP		0	0	-	-	-
27-Jan-18	NO PUMP		0	0	-	-	-
28-Jan-18	NO PUMP		0	0	-	-	-
29-Jan-18	7AM	5PM	36000	600	1,260,000	35	2,100
30-Jan-18	7AM	5PM	36000	600	1,260,000	35	2,100
31-Jan-18	7AM	5PM	36000	600	1,260,000	35	2,100



APPENDIX A

Environmental Compliance Approval No. 4731-987KM8



- AKossi
- GA

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 4731-987KM8

Issue Date: October 15, 2013

QBJR Aggregates Inc.
949 Wilson Ave
Toronto, Ontario, M3K 1G2

Site Location: McCarthy Quarry
Lot 1, Concession 1, Original Township of Mara
Lot 1, Concession 1
Ramara Township, County of Simcoe, L0K 1B0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

a sewage works for the collection, transmission, treatment and disposal of quarry water effluent from an aggregate quarry consisting of the following:

- one (1) sump, measuring 20 metres long, 10 metres wide and 3 metres deep, located at the base of the quarry floor, equipped with two (2) submersible pumps each rated at 38 litres per second with a suction intake approximately one (1) metre above the bottom of the sump, discharging to a settling pond via a 203 millimetre diameter pipeline;
- one (1) horse-shoe shaped settling pond with an approximate volume of 14,000 cubic metres (at elevation 248.2 metres), with a Hickenbottom control structure equipped with a 150 millimetre diameter orifice plate, discharging to the roadside ditch along Concession Road 1 with ultimate discharge to the Talbot River via a private ditch;
- all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works;

all in accordance with supporting documents listed in **Schedule A**.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this entire document and any schedules attached to it, and the application;

"Director" means a person appointed by the Minister pursuant to section 5 of the *EPA* for the purposes of Part II.1 of the *EPA*;

"District Manager" means the District Manager of the Barrie District Office of the Ministry;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;

"Ministry" means the ministry of the government of Ontario responsible for the *EPA* and *OWRA* and includes all officials, employees or other persons acting on its behalf;

"Owner" means QBJR Aggregates Inc. and its successors and assignees;

"OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"Quarterly" means all or part of a period of three consecutive months beginning on the first day of January, April, July or October;

"Semi-annually" means all or part of a period of six months beginning on the first day of January or July;

"Weekly" means a period of seven days, starting on Sunday and ending on Saturday; and

"Works" means the sewage works described in the Owner's application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval*.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITION

(1) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval*, the application for approval of the *Works* and the submitted supporting documents and plans and specifications as listed in this *Approval*.

(2) Where there is a conflict between a provision of any submitted document referred to in this *Approval* and the Conditions of this *Approval*, the Conditions in this *Approval* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

2. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director* , in writing, of any of the following changes within seven (7) days of the change occurring:

(a) change of *Owner* or operating authority, or both;

(b) change of address of *Owner* or operating authority or address of new owner or operating authority;

(c) change of partners where the *Owner* or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Partnerships Registration Act* ;

(d) change of name of the corporation where the *Owner* or operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (Form 1, 2 or 3 of O. Reg. 189, R.R.O. 1980, as amended from time to time), filed under the *Corporations Informations Act* shall be included in the notification to the *District Manager* ;

(2) In the event of any change in ownership of the *Works* , the *Owner* shall notify in writing the succeeding owner of the existence of this certificate, and a copy of such notice shall be forwarded to the *District Manager* .

(3) The *Owner* shall ensure that all communications made pursuant to this condition will refer to this Approval's number.

3. CHANGES IN PROCESSES OR PROCESS MATERIALS

The *Owner* shall give written notice to the *District Manager* of any plans to change the processes or process materials in the *Owner's* enterprise serviced by the *Works* where the change may significantly alter the quantity or quality of the influent to or effluent from the *Works* , and no such changes shall be made unless with the written concurrence or approval of the *District Manager* .

4. OPERATIONS MANUAL

(1) The *Owner* shall prepare an operations manual prior to the commencement of operation of the sewage *Works* , that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works* ;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works* ;

(d) contingency plans and procedures for dealing with potential spill, bypasses and any other abnormal situations and for notifying the *District Manager* ; and

(e) complaint procedures for receiving and responding to public complaints.

(2) The *Owner* shall maintain the operations manual up to date through revisions undertaken from time to time and retain a copy at the location of the sewage works. Upon request, the *Owner* shall make the manual available for inspection and copying by Ministry personnel.

(3) A copy of the operations manual required by subsection (1) shall be provided to the *Director* no later than **three (3) months** prior to the commencement of operation of the sewage works.

5. EFFLUENT LIMITS

(1) The *Owner* shall design, construct and operate the *Works* such that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the *Works* .

Effluent Parameter	Daily Concentration Limit (mg/L)	Monthly Average Concentration Limit (mg/L)
Column 1	Column 2	Column 3
Total Suspended Solids	30	15
Oil and Grease	30	15
Phenolics (4AAP)	0.04	0.02

(2) pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times.

(3) The *Owner* shall ensure that the quarry water effluent shall be non-lethal to rainbow trout and *Daphnia magna* at all times.

(4) For the purposes of determining compliance with and enforcing subsection (1), exceedance of a daily concentration is deemed to have occurred when any daily single grab sample, analyzed for a parameter named in Column 1 of Table 1, is greater than the corresponding daily concentration set in Column 2 of Table 1.

(5) For the purposes of determining compliance with and enforcing subsection (1), exceedance of a monthly average concentration is deemed to have occurred when the arithmetic mean concentration of all samples taken in a calendar month, analyzed for a parameter named in Column 1 of Table 1, is greater than the corresponding monthly average concentration set in Column 3 of Table 1.

(6) Non-compliance with respect to pH is deemed to have occurred when any single measurement is outside of the indicated range.

(7) For the purposes of determining compliance with and enforcing subsection (3), the effluent is deemed to be non-lethal if the test results, required pursuant to Condition 8, show mortality for no more than 50 percent of either test organism in each sample of undiluted effluent.

6. EFFLUENT - VISUAL OBSERVATIONS

Notwithstanding any other condition in this *Approval* the *Owner* shall ensure that the effluent from the *Works* is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters.

7. EFFLUENT MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the sewage works, carry out the following sampling from the final effluent control point (i.e. the outfall of the settling pond which is approximately 150 metres north of Concession 1) at the commencement of effluent discharge and for the duration of the discharge period, as follows:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) Samples shall be collected and analyzed at the following sampling point, at the sampling frequencies and using the sample type specified for each parameter listed:

Effluent Parameter	Frequency	Sample Type
Total Suspended Solids	Weekly	Grab
Oil and Grease	Weekly	Grab
Phenolics (4AAP)	Weekly	Grab

(3) The *Owner* shall collect effluent samples at the following locations and analyze for the parameters listed in Table 3 at a frequency of once per week:

- (a) Outfall of settling pond approximately 150 metres north of Concession 1 (i.e. end of pipe discharge);
- (b) Box culvert on Eldon-Ramara Townline approximately 260 metres north of intersection of Ramara Concession 1 and Eldon-Ramara Townline (i.e. upgradient of end of pipe discharge);

- (c) 80 centimetre CSP located at Concession 1 Road on McCarthy property (i.e. downgradient of end of pipe discharge).

Table 3 - Effluent and Surface Water Monitoring	
Frequency	Weekly
Sample Type	Grab
Parameters	Total Suspended Solids, Copper, Lead, Nickel, Zinc, Arsenic, Oil and Grease, Phenolics (4AAP), Hardness (as CaCO ₃), Alkalinity(as CaCO ₃), Conductivity, pH, Fluoride, Chloride, Nitrate (N), Nitrite (N), Sulphate, Calcium, Magnesium, Sodium, Potassium, Ammonia (N), Dissolved Organic Carbon, Iron, Total Kjeldahl Nitrogen, Phosphorus (Total), Cadmium, Chromium, Manganese, Anion (Sum), Cation (Sum) and Total Dissolved Solids

- (4) There shall be at least **four days** between successive sampling.
- (5) The methods and protocols for sampling, analysis, and recording shall conform, in order of precedence, to the methods and protocols specified in the following:
- (a) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (August 1994), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;
 - (b) the publication "Standard Methods for the Examination of Water and Wastewater" (17th edition) as amended from time to time by more recently published editions; and,
 - (c) in respect of any parameters not mentioned in (a) and (b), the written approval of the *District Manager* , shall be obtained prior to sampling.
- (6) The measurement frequencies specified in subsection (2) in respect of any parameter are minimum requirements which may, **after 48 months** of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.
- (7) The measurement frequencies specified in subsection (3) in respect of any parameter shall be changed to semi-annually after one year of quarry operation.
- (8) A continuous flow measuring device shall be installed and maintained to measure the flowrate of the effluent from the sewage works, with an accuracy to within plus or minus 15 per cent of the actual flowrate for the entire design range of the flow measuring device and the *Owner* shall measure, record and calculate the flowrate for each effluent stream on each day of sampling.
- (9) The *Owner* shall retain for a minimum of **three (3) years** from the date of their creation, all records

and information related to or resulting from the monitoring activities required by this *Approval* .

8. LETHALITY MONITORING

(1) The *Owner* shall perform rainbow trout acute lethality test and *Daphnia magna* acute lethality test at least once a month on the quarry water effluent according to procedures published in Environment Canada publications entitled "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", dated July 1990 and "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* ", dated July 1990 and as updated from time to time.

(2) The acute lethality tests shall be carried out on a grab sample as a single concentration test using 100 per cent quarry water effluent.

(3) A minimum of two samples shall be tested for either test animal per each discharge period.

9. RECEIVER INSPECTION

The *Owner* shall, at least once per year, undertake a visual inspection of the downstream ditches for evidence of erosion and/or flooding and shall report the observations in the annual report.

10. REPORTING

(1) One week prior to the start up of the operation of the *Works* , the *Owner* shall notify the *District Manager* (in writing) of the pending start up date.

(2) The *Owner* shall report to the *District Manager* or designate, any exceedance of any parameter specified in Condition 5 orally, forthwith, and in writing within seven (7) days of the exceedance.

(3) In addition to the obligations under Part X of the *Environmental Protection Act* , the *Owner* shall, within 10 working days of the occurrence of any spill, bypass or loss of any product, by product, intermediate product, oils, solvents, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(4) The *Owner* shall submit quarterly reports of the information obtained under Conditions 7 and 8 within 30 days of the end of each quarter.

(5) The *Owner* shall prepare and submit a performance report to the *District Manager* on an annual basis within sixty (60) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

- (a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 5, including an overview of the success and adequacy of the sewage works;
- (b) a description of any operating problems encountered and corrective actions taken;
- (c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the sewage works;
- (d) a summary of any effluent quality assurance or control measures undertaken in the reporting period; and
- (e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment.

Schedule A

Environmental Compliance Approval (ECA) supporting documents:

1. Application for Approval of Industrial Sewage Works submitted by Thomas S. McCarthy dated July 21, 2001 and revised January 25, 2002;
2. McCarthy Property - Certificate of Approval Application prepared by Dixon Hydrogeology Limited dated July 2001;
3. Revised Permit to Take Water - McCarthy Property prepared by Dixon Hydrogeology Limited dated April 11, 2002;
4. Letter and attachments dated January 25, 2002 from John Easton of Dixon Hydrogeology Limited to Mohamed Dhalla of the Ministry of the Environment;
5. Letter and attachments dated April 1, 2002 from Dave Hulme of Dave T. Hulme Enterprises Inc. to Stefanos Habtom of the Ministry of the Environment;
6. Letter dated April 10, 2002 from John Easton of Dixon Hydrogeology Limited to Stefanos Habtom of the Ministry of the Environment;
7. Environmental Review Amended Tribunal Decision: 02-214/02-217 and 03-188/03-189, dated May 25, 2006 - Trent Talbot River Property Owners Association, Marchand Lamarre and Jodi McIntosh v. Director, Ministry of the Environment; and
8. Notification of Change of Address/Ownership dated June 29, 2012, MOE Reference Number 3620-8VQPTZ acknowledging change in company address/ownership from Thomas S. McCarty, Rural Route No.1 Brechin, Ontario, L0K 1B0 to QBJR Aggregates Inc., 949 Wilson Ave., Toronto, Ontario, M3K 1G.

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
 Environmental Review Tribunal
 655 Bay Street, Suite 1500
 Toronto, Ontario
 M5G 1E5

AND

The Director appointed for the purposes of
 Part II.1 of the Environmental Protection Act
 Ministry of the Environment
 2 St. Clair Avenue West, Floor 12A
 Toronto, Ontario
 M4V 1L5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 15th day of October, 2013



Edgardo Tovilla
 Director
 appointed for the purposes of Part II.1 of the
Environmental Protection Act



APPENDIX B

Water Quality Results

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 635365-05-01

Attention: Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 L4N 8X1

Report Date: 2017/11/09
 Report #: R4841466
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B707483

Received: 2017/11/03, 09:31

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2017/11/07	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2017/11/07	2017/11/07	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2017/11/07	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2017/11/08	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2017/11/07	2017/11/07	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2017/11/06	2017/11/08	CAM SOP-00428	SM 22 2540D m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Your Project #: 1407634
Site#: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 635365-05-01

Attention:Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
121 Commerce Park Drive
Unit L
Barrie, ON
L4N 8X1

Report Date: 2017/11/09
Report #: R4841466
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B707483
Received: 2017/11/03, 09:31

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

Maxxam ID		FMF334		
Sampling Date		2017/11/02 12:00		
COC Number		635365-05-01		
	UNITS	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	5248706
Inorganics				
pH	pH	8.19	N/A	5250805
Phenols-4AAP	mg/L	<0.0010	0.0010	5255419
Total Suspended Solids	mg/L	3	1	5250861
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	5252389
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	5252393
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.0°C
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Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5250805	TA1	Spiked Blank	pH	2017/11/07		102	%	98 - 103
5250805	TA1	RPD	pH	2017/11/07	0.074		%	N/A
5250861	XZH	QC Standard	Total Suspended Solids	2017/11/08		99	%	85 - 115
5250861	XZH	Method Blank	Total Suspended Solids	2017/11/08	<1		mg/L	
5250861	XZH	RPD	Total Suspended Solids	2017/11/08	3.0		%	25
5252389	MA4	Spiked Blank	Total Oil & Grease	2017/11/07		98	%	85 - 115
5252389	MA4	RPD	Total Oil & Grease	2017/11/07	3.8		%	25
5252389	MA4	Method Blank	Total Oil & Grease	2017/11/07	<0.50		mg/L	
5252393	MA4	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2017/11/07		97	%	85 - 115
5252393	MA4	RPD	Total Oil & Grease Mineral/Synthetic	2017/11/07	4.1		%	25
5252393	MA4	Method Blank	Total Oil & Grease Mineral/Synthetic	2017/11/07	<0.50		mg/L	
5255419	ZSK	Matrix Spike	Phenols-4AAP	2017/11/08		94	%	80 - 120
5255419	ZSK	Spiked Blank	Phenols-4AAP	2017/11/08		96	%	80 - 120
5255419	ZSK	Method Blank	Phenols-4AAP	2017/11/08	<0.0010		mg/L	
5255419	ZSK	RPD	Phenols-4AAP	2017/11/08	NC		%	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2x$ RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Service Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 635365-06-01

Attention: Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 L4N 8X1

Report Date: 2017/11/17
 Report #: R4863154
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7P3110

Received: 2017/11/10, 09:33

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2017/11/17	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2017/11/17	2017/11/17	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2017/11/13	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2017/11/16	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2017/11/17	2017/11/17	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	2017/11/13	2017/11/13	CAM SOP-00428	SM 22 2540D m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

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Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Your Project #: 1407634
Site#: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 635365-06-01

Attention:Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
121 Commerce Park Drive
Unit L
Barrie, ON
L4N 8X1

Report Date: 2017/11/17
Report #: R4863154
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7P3110
Received: 2017/11/10, 09:33

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

=====
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RESULTS OF ANALYSES OF WATER

Maxxam ID			FNJ710		
Sampling Date			2017/11/09 12:48		
COC Number			635365-06-01		
	UNITS	Criteria	POND	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	-	1.1	0.50	5259239
Inorganics					
pH	pH	6.5:8.5	7.63	N/A	5261642
Phenols-4AAP	mg/L	0.001	0.0010	0.0010	5269718
Total Suspended Solids	mg/L	-	3	1	5263096
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	-	1.1	0.50	5271204
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	0.50	5271225
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 N/A = Not Applicable					

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.3°C
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Sample received with temp >10C and analyses conducted with client's consent.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5261642	TA1	Spiked Blank	pH	2017/11/13		101	%	98 - 103
5261642	TA1	RPD	pH	2017/11/13	0.18		%	N/A
5263096	XZH	QC Standard	Total Suspended Solids	2017/11/13		95	%	85 - 115
5263096	XZH	Method Blank	Total Suspended Solids	2017/11/13	<1		mg/L	
5263096	XZH	RPD	Total Suspended Solids	2017/11/13	18		%	25
5269718	ZSK	Matrix Spike	Phenols-4AAP	2017/11/16		101	%	80 - 120
5269718	ZSK	Spiked Blank	Phenols-4AAP	2017/11/16		96	%	80 - 120
5269718	ZSK	Method Blank	Phenols-4AAP	2017/11/16	<0.0010		mg/L	
5269718	ZSK	RPD	Phenols-4AAP	2017/11/16	NC		%	20
5271204	FA	Spiked Blank	Total Oil & Grease	2017/11/17		101	%	85 - 115
5271204	FA	RPD	Total Oil & Grease	2017/11/17	2.8		%	25
5271204	FA	Method Blank	Total Oil & Grease	2017/11/17	<0.50		mg/L	
5271225	FA	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2017/11/17		92	%	85 - 115
5271225	FA	RPD	Total Oil & Grease Mineral/Synthetic	2017/11/17	1.8		%	25
5271225	FA	Method Blank	Total Oil & Grease Mineral/Synthetic	2017/11/17	<0.50		mg/L	

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times$ RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

Cristina Carriere, Scientific Service Specialist

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Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 635365-03-01

Attention: Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 L4N 8X1

Report Date: 2017/11/24
 Report #: R4874172
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7P9258

Received: 2017/11/17, 09:49

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2017/11/23	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2017/11/23	2017/11/23	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2017/11/20	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2017/11/22	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2017/11/23	2017/11/23	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	2017/11/20	2017/11/20	CAM SOP-00428	SM 22 2540D m

Remarks:

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Your Project #: 1407634
Site#: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 635365-03-01

Attention:Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
121 Commerce Park Drive
Unit L
Barrie, ON
L4N 8X1

Report Date: 2017/11/24
Report #: R4874172
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7P9258
Received: 2017/11/17, 09:49

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

=====
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RESULTS OF ANALYSES OF WATER

Maxxam ID			FOQ241		
Sampling Date			2017/11/16 09:50		
COC Number			635365-03-01		
	UNITS	Criteria	POND	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	-	<0.50	0.50	5270959
Inorganics					
pH	pH	6.5:8.5	7.59	N/A	5273022
Phenols-4AAP	mg/L	0.001	0.0012	0.0010	5278680
Total Suspended Solids	mg/L	-	3	1	5273825
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	-	<0.50	0.50	5281331
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	0.50	5281334
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 N/A = Not Applicable					

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	12.3°C
-----------	--------

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5273022	TA1	Spiked Blank	pH	2017/11/20		102	%	98 - 103
5273022	TA1	RPD	pH	2017/11/20	1.5		%	N/A
5273825	XZH	QC Standard	Total Suspended Solids	2017/11/20		96	%	85 - 115
5273825	XZH	Method Blank	Total Suspended Solids	2017/11/20	<1		mg/L	
5273825	XZH	RPD	Total Suspended Solids	2017/11/20	5.4		%	25
5278680	ZSK	Matrix Spike	Phenols-4AAP	2017/11/22		96	%	80 - 120
5278680	ZSK	Spiked Blank	Phenols-4AAP	2017/11/22		100	%	80 - 120
5278680	ZSK	Method Blank	Phenols-4AAP	2017/11/22	<0.0010		mg/L	
5278680	ZSK	RPD	Phenols-4AAP	2017/11/22	NC		%	20
5281331	MA4	Spiked Blank	Total Oil & Grease	2017/11/23		98	%	85 - 115
5281331	MA4	RPD	Total Oil & Grease	2017/11/23	1.4		%	25
5281331	MA4	Method Blank	Total Oil & Grease	2017/11/23	<0.50		mg/L	
5281334	MA4	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2017/11/23		96	%	85 - 115
5281334	MA4	RPD	Total Oil & Grease Mineral/Synthetic	2017/11/23	2.4		%	25
5281334	MA4	Method Blank	Total Oil & Grease Mineral/Synthetic	2017/11/23	<0.50		mg/L	

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

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Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times$ RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Service Specialist

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Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 635365-04-01

Attention: Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 L4N 8X1

Report Date: 2017/11/30
 Report #: R4882567
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7Q5674

Received: 2017/11/24, 10:02

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2017/11/30	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2017/11/30	2017/11/30	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2017/11/28	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2017/11/28	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2017/11/30	2017/11/30	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	2017/11/27	2017/11/27	CAM SOP-00428	SM 22 2540D m

Remarks:

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Your Project #: 1407634
Site#: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 635365-04-01

Attention:Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
121 Commerce Park Drive
Unit L
Barrie, ON
L4N 8X1

Report Date: 2017/11/30
Report #: R4882567
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7Q5674
Received: 2017/11/24, 10:02

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

=====
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RESULTS OF ANALYSES OF WATER

Maxxam ID		FPV963		FPV963	
Sampling Date		2017/11/23 12:20		2017/11/23 12:20	
COC Number		635365-04-01		635365-04-01	
	UNITS	POND	RDL	POND Lab-Dup	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	N/A	5282934
Inorganics					
pH	pH	8.04	N/A	8.08	5286355
Phenols-4AAP	mg/L	<0.0010	0.0010	N/A	5288331
Total Suspended Solids	mg/L	3	1	N/A	5286279
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	<0.50	0.50	N/A	5292203
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	N/A	5292204
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable					

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.3°C
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Sample containers received with temp >10C and analyses was conducted with client's consent.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5286279	RAY	QC Standard	Total Suspended Solids	2017/11/27		95	%	85 - 115
5286279	RAY	Method Blank	Total Suspended Solids	2017/11/27	<1		mg/L	
5286279	RAY	RPD	Total Suspended Solids	2017/11/27	3.2		%	25
5286355	TA1	Spiked Blank	pH	2017/11/28		102	%	98 - 103
5286355	TA1	RPD [FPV963-02]	pH	2017/11/28	0.53		%	N/A
5288331	ZSK	Matrix Spike	Phenols-4AAP	2017/11/28		93	%	80 - 120
5288331	ZSK	Spiked Blank	Phenols-4AAP	2017/11/28		99	%	80 - 120
5288331	ZSK	Method Blank	Phenols-4AAP	2017/11/28	<0.0010		mg/L	
5288331	ZSK	RPD	Phenols-4AAP	2017/11/28	NC		%	20
5292203	AMJ	Spiked Blank	Total Oil & Grease	2017/11/30		96	%	85 - 115
5292203	AMJ	RPD	Total Oil & Grease	2017/11/30	3.7		%	25
5292203	AMJ	Method Blank	Total Oil & Grease	2017/11/30	<0.50		mg/L	
5292204	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2017/11/30		93	%	85 - 115
5292204	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2017/11/30	3.0		%	25
5292204	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2017/11/30	<0.50		mg/L	

N/A = Not Applicable

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Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

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NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times$ RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

Cristina Carriere, Scientific Service Specialist

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Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 628645-05-01

Attention: Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 L4N 8X1

Report Date: 2017/12/08
 Report #: R4902117
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R1669

Received: 2017/12/01, 11:04

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2017/12/07	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2017/12/06	2017/12/07	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2017/12/04	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2017/12/06	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2017/12/06	2017/12/07	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2017/12/02	2017/12/02	CAM SOP-00428	SM 22 2540D m

Remarks:

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Your Project #: 1407634
Site#: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 628645-05-01

Attention:Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
121 Commerce Park Drive
Unit L
Barrie, ON
L4N 8X1

Report Date: 2017/12/08
Report #: R4902117
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R1669
Received: 2017/12/01, 11:04

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

=====
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RESULTS OF ANALYSES OF WATER

Maxxam ID		FRB729		
Sampling Date		2017/11/30 13:18		
COC Number		628645-05-01		
	UNITS	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	5294520
Inorganics				
pH	pH	8.16	N/A	5296515
Phenols-4AAP	mg/L	<0.0010	0.0010	5302604
Total Suspended Solids	mg/L	2	1	5296360
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	5301404
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	5301411
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.0°C
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Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5296360	XZH	QC Standard	Total Suspended Solids	2017/12/02		99	%	85 - 115
5296360	XZH	Method Blank	Total Suspended Solids	2017/12/02	<1		mg/L	
5296360	XZH	RPD	Total Suspended Solids	2017/12/02	15		%	25
5296515	TA1	Spiked Blank	pH	2017/12/04		102	%	98 - 103
5296515	TA1	RPD	pH	2017/12/04	0.11		%	N/A
5301404	AMJ	Spiked Blank	Total Oil & Grease	2017/12/07		98	%	85 - 115
5301404	AMJ	RPD	Total Oil & Grease	2017/12/07	2.8		%	25
5301404	AMJ	Method Blank	Total Oil & Grease	2017/12/07	<0.50		mg/L	
5301411	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2017/12/07		94	%	85 - 115
5301411	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2017/12/07	1.2		%	25
5301411	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2017/12/07	<0.50		mg/L	
5302604	ZSK	Matrix Spike	Phenols-4AAP	2017/12/06		99	%	80 - 120
5302604	ZSK	Spiked Blank	Phenols-4AAP	2017/12/06		98	%	80 - 120
5302604	ZSK	Method Blank	Phenols-4AAP	2017/12/06	<0.0010		mg/L	
5302604	ZSK	RPD	Phenols-4AAP	2017/12/06	NC		%	20

N/A = Not Applicable

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Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

Cristina Carriere, Scientific Service Specialist

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Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 641481-05-01

Attention: Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 L4N 8X1

Report Date: 2017/12/13
 Report #: R4908671
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R8903

Received: 2017/12/08, 09:35

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2017/12/13	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2017/12/13	2017/12/13	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2017/12/12	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2017/12/12	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2017/12/13	2017/12/13	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2017/12/11	2017/12/11	CAM SOP-00428	SM 22 2540D m

Remarks:

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(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Your Project #: 1407634
Site#: 1407634
Site Location: MCCARTHY
Your C.O.C. #: 641481-05-01

Attention:Dawn Hoyle/Jamie Bonany

Golder Associates Ltd
121 Commerce Park Drive
Unit L
Barrie, ON
L4N 8X1

Report Date: 2017/12/13
Report #: R4908671
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R8903
Received: 2017/12/08, 09:35

Encryption Key

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Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

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RESULTS OF ANALYSES OF WATER

Maxxam ID		FSM780		
Sampling Date		2017/12/07 14:48		
COC Number		641481-05-01		
	UNITS	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	2.7	0.50	5307843
Inorganics				
pH	pH	8.20	N/A	5310122
Phenols-4AAP	mg/L	<0.0010	0.0010	5309785
Total Suspended Solids	mg/L	4	1	5309195
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	2.7	0.50	5312824
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	5312830
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.0°C
-----------	-------

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5309195	XZH	QC Standard	Total Suspended Solids	2017/12/11		96	%	85 - 115
5309195	XZH	Method Blank	Total Suspended Solids	2017/12/11	<1		mg/L	
5309195	XZH	RPD	Total Suspended Solids	2017/12/11	8.0		%	25
5309785	ZSK	Matrix Spike	Phenols-4AAP	2017/12/12		101	%	80 - 120
5309785	ZSK	Spiked Blank	Phenols-4AAP	2017/12/12		99	%	80 - 120
5309785	ZSK	Method Blank	Phenols-4AAP	2017/12/12	<0.0010		mg/L	
5309785	ZSK	RPD	Phenols-4AAP	2017/12/12	NC		%	20
5310122	TA1	Spiked Blank	pH	2017/12/12		102	%	98 - 103
5310122	TA1	RPD	pH	2017/12/12	0.65		%	N/A
5312824	FA	Matrix Spike	Total Oil & Grease	2017/12/13		89	%	75 - 125
5312824	FA	Spiked Blank	Total Oil & Grease	2017/12/13		94	%	85 - 115
5312824	FA	RPD	Total Oil & Grease	2017/12/13	4.4		%	25
5312824	FA	Method Blank	Total Oil & Grease	2017/12/13	<0.50		mg/L	
5312830	FA	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2017/12/13		94	%	85 - 115
5312830	FA	RPD	Total Oil & Grease Mineral/Synthetic	2017/12/13	3.0		%	25
5312830	FA	Method Blank	Total Oil & Grease Mineral/Synthetic	2017/12/13	<0.50		mg/L	

N/A = Not Applicable

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Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

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Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

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Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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**NOM DU CLIENT: GOLDER ASSOCIATES LTD.
121 COMMERCE PARK DRIVE, UNIT L
BARRIE, ON L4N8X1
(705) 722-4492**

À L'ATTENTION DE: Dawn Hoyle

N° DE PROJET: 1407634

N° BON DE TRAVAIL: 17M290835

ÉCOTOX VÉRIFIÉ PAR: Virginie Bérubé, biologiste

DATE DU RAPPORT: 2017-12-11

VERSION*: 1

NOMBRE DE PAGES: 4

Si vous désirez de l'information concernant cette analyse, S.V.P. contactez votre chargé de projets au (514) 337-1000.

*NOTES

Nous disposerons des échantillons dans les 30 jours suivants les analyses. S.V.P. Contactez le laboratoire si vous désirez avoir un délai d'entreposage.



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 17M290835

N° DE PROJET: 1407634

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

PRÉLEVÉ PAR:

À L'ATTENTION DE: Dawn Hoyle

LIEU DE PRÉLÈVEMENT:

Létalité-Daphnie (D. magna) CU-48h

DATE DE RÉCEPTION: 2017-12-02

DATE DU RAPPORT: 2017-12-11

IDENTIFICATION DE L'ÉCHANTILLON: Pond

MATRICE: Eau de surface

DATE D'ÉCHANTILLONNAGE: 2017-11-30

Paramètre	Unités	C / N	LDR	8949073
Mortalité 100% v/v	% mort-48h			0
Létalité aiguë				NO

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

8949073

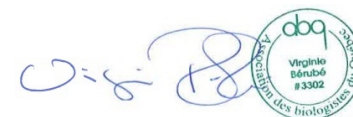
Détails de l'analyse en annexe.

Légende conclusion:

Létalité aiguë : non (50% mortalité ou moins)

Létalité aiguë : oui (plus de 50% mortalité)

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 17M290835

N° DE PROJET: 1407634

9770 ROUTE TRANSCANADIENNE
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CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

PRÉLEVÉ PAR:

À L'ATTENTION DE: Dawn Hoyle

LIEU DE PRÉLÈVEMENT:

Létalité-Truite arc-en-ciel (O. mykiss) CU-96h

DATE DE RÉCEPTION: 2017-12-02

DATE DU RAPPORT: 2017-12-11

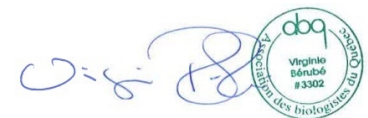
IDENTIFICATION DE L'ÉCHANTILLON: Pond
MATRICE: Eau de surface
DATE D'ÉCHANTILLONNAGE: 2017-11-30

Paramètre	Unités	C / N	LDR	8949073
Mortalité 100% v/v	% mort-96h			0
Létalité aiguë				NO

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

8949073 Détails de l'analyse en annexe.
Létalité aiguë : non (50% mortalité ou moins)
Létalité aiguë : oui (plus de 50% mortalité)

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.



Sommaire de méthode

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

N° BON DE TRAVAIL: 17M290835

N° DE PROJET: 1407634

À L'ATTENTION DE: Dawn Hoyle

PRÉLEVÉ PAR:

LIEU DE PRÉLÈVEMENT:

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse écotox					
Mortalité 100% v/v					NA
Létalité aiguë					
Mortalité 100% v/v			ECO-152-20000F	SPE1/RM/13	
Létalité aiguë					



NOM DU CLIENT: GOLDER ASSOCIATES LTD.
121 COMMERCE PARK DRIVE, UNIT L
BARRIE, ON L4N8X1
(705) 722-4492

À L'ATTENTION DE: Dawn Hoyle

N° DE PROJET:

N° BON DE TRAVAIL: 17M294826

ÉCOTOX VÉRIFIÉ PAR: Virginie Bérubé, biologiste

DATE DU RAPPORT: 2017-12-28

VERSION*: 1

NOMBRE DE PAGES: 4

Si vous désirez de l'information concernant cette analyse, S.V.P. contacter votre chargé de projets au (514) 337-1000.

*NOTES

Nous disposerons des échantillons dans les 30 jours suivants les analyses. S.V.P. Contactez le laboratoire si vous désirez avoir un délai d'entreposage.



Certificat d'analyse

N° BON DE TRAVAIL: 17M294826

N° DE PROJET:

9770 ROUTE TRANSCANADIENNE
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CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

PRÉLEVÉ PAR:

À L'ATTENTION DE: Dawn Hoyle

LIEU DE PRÉLÈVEMENT:

Létalité-Daphnie (D. magna) CU-48h

DATE DE RÉCEPTION: 2017-12-14

DATE DU RAPPORT: 2017-12-28

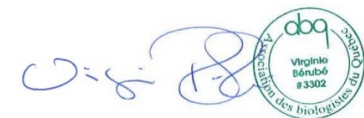
IDENTIFICATION DE L'ÉCHANTILLON: POND
MATRICE: Eau de surface
DATE D'ÉCHANTILLONNAGE: 2017-12-13

Paramètre	Unités	C / N	LDR	8974192
Mortalité 100% v/v	% mort-48h			0
Létalité aiguë				NO

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

8974192 Détails de l'analyse en annexe.
Légende conclusion:
Létalité aiguë : non (50% mortalité ou moins)
Létalité aiguë : oui (plus de 50% mortalité)

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDELCC. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDELCC.



Certificat d'analyse

N° BON DE TRAVAIL: 17M294826

N° DE PROJET:

9770 ROUTE TRANSCANADIENNE
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CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

PRÉLEVÉ PAR:

À L'ATTENTION DE: Dawn Hoyle

LIEU DE PRÉLÈVEMENT:

Létalité-Truite arc-en-ciel (O. mykiss) CU-96h

DATE DE RÉCEPTION: 2017-12-14

DATE DU RAPPORT: 2017-12-28

IDENTIFICATION DE L'ÉCHANTILLON: POND

MATRICE: Eau de surface

DATE D'ÉCHANTILLONNAGE: 2017-12-13

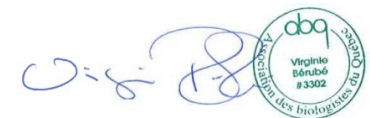
Paramètre	Unités	C / N	LDR	8974192
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Mortalité 100% v/v	% mort-96h			0
Létalité aiguë				NO

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

8974192 Détails de l'analyse en annexe.
Létalité aiguë : non (50% mortalité ou moins)
Létalité aiguë : oui (plus de 50% mortalité)

Certifié par:



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Sommaire de méthode

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

N° BON DE TRAVAIL: 17M294826

N° DE PROJET:

À L'ATTENTION DE: Dawn Hoyle

PRÉLEVÉ PAR:

LIEU DE PRÉLÈVEMENT:

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse écotox					
Mortalité 100% v/v					NA
Létalité aiguë					
Mortalité 100% v/v			ECO-152-20000F	SPE1/RM/13	
Létalité aiguë					



NOM DU CLIENT: GOLDER ASSOCIATES LTD.
121 COMMERCE PARK DRIVE, UNIT L
BARRIE, ON L4N8X1
(705) 722-4492

À L'ATTENTION DE: Jamie Bonany

N° DE PROJET: 1407634

N° BON DE TRAVAIL: 18M305604

ÉCOTOX VÉRIFIÉ PAR: Virginie Bérubé, biologiste

DATE DU RAPPORT: 2018-02-08

VERSION*: 1

NOMBRE DE PAGES: 4

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*NOTES

Nous disposerons des échantillons dans les 30 jours suivants les analyses. S.V.P. Contactez le laboratoire si vous désirez avoir un délai d'entreposage.



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 18M305604

N° DE PROJET: 1407634

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
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FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

PRÉLEVÉ PAR:

À L'ATTENTION DE: Jamie Bonany

LIEU DE PRÉLÈVEMENT:

Létalité-Daphnie (D. magna) CU-48h

DATE DE RÉCEPTION: 2018-01-26

DATE DU RAPPORT: 2018-02-08

IDENTIFICATION DE L'ÉCHANTILLON: POND

MATRICE: Eau de surface

DATE D'ÉCHANTILLONNAGE: 2018-01-25

Paramètre	Unités	C / N	LDR	9030270
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Mortalité 100% v/v	% mort-48h			0
Létalité aiguë				NO

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

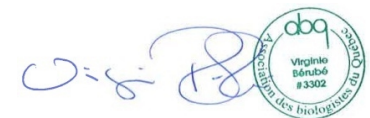
9030270 Détails de l'analyse en annexe.

Légende conclusion:

Létalité aiguë : non (50% mortalité ou moins)

Létalité aiguë : oui (plus de 50% mortalité)

Certifié par:



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Certificat d'analyse

N° BON DE TRAVAIL: 18M305604

N° DE PROJET: 1407634

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NOM DU CLIENT: GOLDER ASSOCIATES LTD.

PRÉLEVÉ PAR:

À L'ATTENTION DE: Jamie Bonany

LIEU DE PRÉLÈVEMENT:

Létalité-Truite arc-en-ciel (O. mykiss) CU-96h

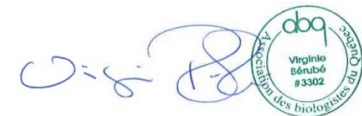
DATE DE RÉCEPTION: 2018-01-26

DATE DU RAPPORT: 2018-02-08

IDENTIFICATION DE L'ÉCHANTILLON: POND		MATRICE: Eau de surface		
DATE D'ÉCHANTILLONNAGE: 2018-01-25		LDR: 9030270		
Paramètre	Unités	C / N	LDR	9030270
Mortalité 100% v/v	% mort-96h			0
Létalité aiguë				NO

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes
9030270 Détails de l'analyse en annexe.
Létalité aiguë : non (50% mortalité ou moins)
Létalité aiguë : oui (plus de 50% mortalité)

Certifié par:



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Sommaire de méthode

NOM DU CLIENT: GOLDER ASSOCIATES LTD.

N° BON DE TRAVAIL: 18M305604

N° DE PROJET: 1407634

À L'ATTENTION DE: Jamie Bonany

PRÉLEVÉ PAR:

LIEU DE PRÉLÈVEMENT:

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse écotox					
Mortalité 100% v/v					NA
Létalité aiguë					
Mortalité 100% v/v			ECO-152-20000F	SPE1/RM/13	
Létalité aiguë					

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