



February 2017

MCCARTHY QUARRY

Environmental Compliance Approval Quarterly Monitoring Report (November 2016 to February 2017)

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

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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 EFFLUENT MONITORING RESULTS

Weekly monitoring of the effluent 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 effluent 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 effluent 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 2016. 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 12, 2016 and January 27, 2017. Therefore the weekly water quality sample was not collected.

4.0 EFFLUENT MONITORING RESULTS

Results of the weekly effluent monitoring are presented in Table 1; the monthly averages for the effluent monitoring are presented in Table 2 and the acute lethality results are presented in Table 3. All laboratory certificates of analysis for the November 2016 to February 2017 monitoring period are included in Appendix B.

- The TSS, pH, Oil and Grease and Phenol (4AAP) concentrations were all below the daily and monthly concentration limits of the ECA.
- The quarry discharge between November 2016 and February 2017 was found to be non-lethal to rainbow trout and *Daphnia magna* (Table 4).

The rate and volume of discharge from the quarry is measured on-Site by an inline flow meter in the discharge line from the quarry sump. The pump records are provided by McCarthy Quarry staff. The record of pumping for November 2016 to February 2017 is found in Table 6. The maximum discharge rate between November 2016 and February 2017 was below the permitted rate of 4,545 L/min (76 L/sec).

5.0 SUMMARY AND RECOMMENDATIONS

- All samples met the daily 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.



Report Signature Page

GOLDER ASSOCIATES LTD.

Handwritten signature of Jamie Bonany in blue ink.

Jamie Bonany, M.A.Sc.
Project Scientist

Handwritten signature of John Easton in blue ink.

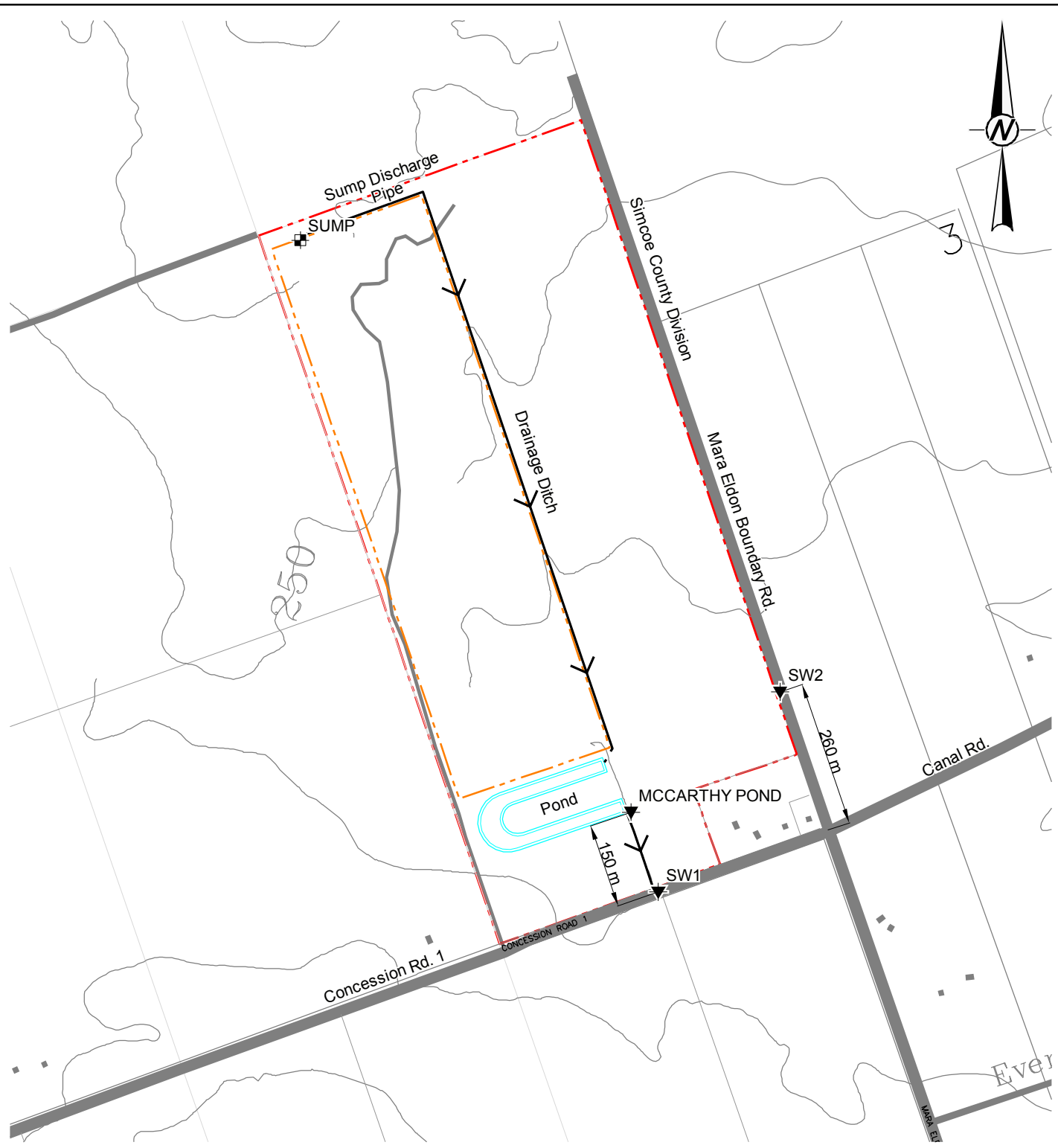
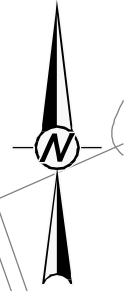
John Easton, M.Sc., P.Ge.
Associate Senior Hydrogeologist

JEB/JAE/plc

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FIGURE

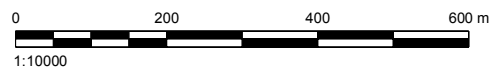


LEGEND

	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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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 2016 to February 2017)

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Daily Concentration Limit ²	McCarthy Quarry					
					Pond					
Date					3-Nov-16	10-Nov-16	17-Nov-16	24-Nov-16	1-Dec-16	8-Dec-16
pH	pH	n/a		6.0-9.5	8.12	8.21	8.20	8.06	8.13	8.06
Total Suspended Solids	mg/L	1		30	3	4	2	4	3	9
Total Oil and Grease	mg/L	0.5	Note 3	30	2.9	<0.5	<0.5	1.1	1.3	2.8
Phenols (4AAP)	mg/L	<0.0010		0.04	<0.001	<0.001	<0.001	<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 2016 to February 2017)

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	3.3	6.0	-
Total Oil and Grease	mg/L	0.5	Note 3	15	1.3	2.1	-
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			16-Nov-16	6-Dec-16	18-Jan-17
Daphnia Magna	% Mortality Rate*	<50%	0	3.3	0
Rainbow Trout	% Mortality Rate*	<50%	10	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-16	10AM	12PM	7200	120	252,000	35	2,100
2-Nov-16	6:30AM	11AM	16200	270	567,000	35	2,100
3-Nov-16	8:15AM	10AM	6300	105	220,500	35	2,100
4-Nov-16	NO PUMP		0	0	-	-	-
5-Nov-16	NO PUMP		0	0	-	-	-
6-Nov-16	NO PUMP		0	0	-	-	-
7-Nov-16	NO PUMP		0	0	-	-	-
8-Nov-16	NO PUMP		0	0	-	-	-
9-Nov-16	6:30AM	12PM	19800	330	693,000	35	2,100
10-Nov-16	7:30AM	12PM	16200	270	567,000	35	2,100
11-Nov-16	6:30AM	12:30PM	21600	360	756,000	35	2,100
12-Nov-16	NO PUMP		0	0	-	-	-
13-Nov-16	NO PUMP		0	0	-	-	-
14-Nov-16	6:30AM	12PM	19800	330	693,000	35	2,100
15-Nov-16	6:30AM	12PM	19800	330	693,000	35	2,100
16-Nov-16	NO PUMP		0	0	-	-	-
17-Nov-16	6:30AM	12PM	19800	330	693,000	35	2,100
18-Nov-16	NO PUMP		0	0	-	-	-
19-Nov-16	NO PUMP		0	0	-	-	-
20-Nov-16	NO PUMP		0	0	-	-	-
21-Nov-16	NO PUMP		0	0	-	-	-
22-Nov-16	NO PUMP		0	0	-	-	-
23-Nov-16	NO PUMP		0	0	-	-	-
24-Nov-16	NO PUMP		0	0	-	-	-
25-Nov-16	6:30AM	1:30PM	25200	420	882,000	35	2,100
26-Nov-16	NO PUMP		0	0	-	-	-
27-Nov-16	NO PUMP		0	0	-	-	-
28-Nov-16	10AM	6PM	28800	480	1,008,000	35	2,100
29-Nov-16	6:30AM	12:30PM	21600	360	756,000	35	2,100
30-Nov-16	6:30AM	4PM	34200	570	1,197,000	35	2,100
1-Dec-16	7AM	1PM	21600	360	756,000	35	2,100
2-Dec-16	NO PUMP		0	0	-	-	-
3-Dec-16	NO PUMP		0	0	-	-	-
4-Dec-16	NO PUMP		0	0	-	-	-
5-Dec-16	7AM	3PM	28800	480	1,008,000	35	2,100
6-Dec-16	7AM	10AM	10800	180	378,000	35	2,100
7-Dec-16	7AM	9AM	7200	120	252,000	35	2,100
8-Dec-16	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-16	NO PUMP		0	0	-	-	-
10-Dec-16	NO PUMP		0	0	-	-	-
11-Dec-16	NO PUMP		0	0	-	-	-
12-Dec-16	7AM	3:30PM	30600	510	1,071,000	35	2,100
13-Dec-16	7AM	12PM	18000	300	630,000	35	2,100
14-Dec-16	NO PUMP		0	0	-	-	-
15-Dec-16	7AM	2PM	25200	420	882,000	35	2,100
16-Dec-16	NO PUMP		0	0	-	-	-
17-Dec-16	NO PUMP		0	0	-	-	-
18-Dec-16	NO PUMP		0	0	-	-	-
19-Dec-16	7AM	3PM	28800	480	1,008,000	35	2,100
20-Dec-16	7AM	1PM	21600	360	756,000	35	2,100
21-Dec-16	NO PUMP		0	0	-	-	-
22-Dec-16	7AM	7PM	43200	720	1,512,000	35	2,100
23-Dec-16	NO PUMP		0	0	-	-	-
24-Dec-16	NO PUMP		0	0	-	-	-
25-Dec-16	NO PUMP		0	0	-	-	-
26-Dec-16	NO PUMP		0	0	-	-	-
27-Dec-16	7AM	7PM	43200	720	1,512,000	35	2,100
28-Dec-16	7AM	7PM	43200	720	1,512,000	35	2,100
29-Dec-16	7AM	7PM	43200	720	1,512,000	35	2,100
30-Dec-16	7AM	7PM	43200	720	1,512,000	35	2,100
31-Dec-16	NO PUMP		0	0	-	-	-
1-Jan-17	NO PUMP		0	0	-	-	-
2-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
3-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
4-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
5-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
6-Jan-17	NO PUMP		0	0	-	-	-
7-Jan-17	NO PUMP		0	0	-	-	-
8-Jan-17	NO PUMP		0	0	-	-	-
9-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
10-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
11-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
12-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
13-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
14-Jan-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
15-Jan-17	NO PUMP		0	0	-	-	-
16-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
17-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
18-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
19-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
20-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
21-Jan-17	NO PUMP		0	0	-	-	-
22-Jan-17	NO PUMP		0	0	-	-	-
23-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
24-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
25-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
26-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
27-Jan-17	7AM	5PM	36000	600	1,260,000	35	2,100
28-Jan-17	NO PUMP		0	0	-	-	-
29-Jan-17	NO PUMP		0	0	-	-	-
30-Jan-17	NO PUMP		0	0	-	-	-
31-Jan-17	NO PUMP		0	0	-	-	-



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. #: 583850-02-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/11
 Report #: R4243704
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6N9600
Received: 2016/11/04, 09:04

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/11/10	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/11/09	2016/11/10	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/11/08	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/11/10	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/11/09	2016/11/10	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2016/11/07	2016/11/09	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.

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. #: 583850-02-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/11
Report #: R4243704
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6N9600
Received: 2016/11/04, 09:04

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

=====
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		DJS117		
Sampling Date		2016/11/03 13:00		
COC Number		583850-02-01		
	UNITS	577938 POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	2.9	0.50	4733608
Inorganics				
pH	pH	8.12		4737341
Phenols-4AAP	mg/L	ND	0.0010	4736652
Total Suspended Solids	mg/L	3	1	4736950
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	2.9	0.50	4740475
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50	4740484
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected				

GENERAL COMMENTS

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

Package 1	13.0°C
-----------	--------

Sample containers received with temp >10 C and analyses conducted with client's consent.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4736652	Phenols-4AAP	2016/11/10	90	80 - 120	97	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4736950	Total Suspended Solids	2016/11/09					ND,RDL=1	mg/L	NC	25	96	85 - 115
4737341	pH	2016/11/08			102	98 - 103			0.19	N/A		
4740475	Total Oil & Grease	2016/11/10			96	85 - 115	ND, RDL=0.50	mg/L	2.6	25		
4740484	Total Oil & Grease Mineral/Synthetic	2016/11/10			93	85 - 115	ND, RDL=0.50	mg/L	3.2	25		

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 (one or both samples < 5x 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 Services

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.



Maxxam Analytics International Corporation of a Maxxam Analytics
 6740 Campobello Road, Mississauga, Ontario L4V 1R7, Canada Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

IMMEDIATE TEST

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292	Maxxam Job #:		Bottle Order #:	583850	
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P O #: 1407634	COC #:		Project Manager:	Antonella Brasil	
Address: 949 Wilson Ave Toronto ON M3K 1G2	Address: 121 Commerce Park Drive Unit L Barrie ON L4N 8X1	Project Name: MCCARTHY	Site #:		C4583850-02-01		
Tel: (416) 633-9670	Tel: (705) 722-4492	Sampled By: <u>DARREN LANEY</u>					
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com, Jamie_Bonany@golder.com						

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)		Other Regulations		Special Instructions
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Sanitary Sewer Bylaw	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> Reg 556	
<input type="checkbox"/> Table			<input type="checkbox"/> Storm Sewer Bylaw	
			<input type="checkbox"/> MISA Municipality	
			<input type="checkbox"/> PWOO	
			<input type="checkbox"/> Other	

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										
Field Filtered (please circle):	Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (4AAP)	pH					

Turnaround Time (TAT) Required:
 Please provide advance notice for rush projects

Regular (Standard) TAT:
 (will be applied if Rush TAT is not specified)
 Standard TAT = 5-7 Working days for most tests.
 Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 4 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
 Date Required: _____ Time Required: _____
 Rush Confirmation Number: _____ (call lab for #)

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle):	Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (4AAP)	pH	# of Bottles	Comments
57938	POND	16/11/03	1:00 PM	DW	✓	✓	✓	✓	✓	✓		

04-Nov-16 09:04
 Antonella Brasil

 B6N9600
 TK1 ENV-757

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
<u>Jodi Pascoe</u>		16/11/03	1:00 PM	<u>Mrs. Jean TAVERKAZOME</u>		16/11/04	09:04		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
<u>Jodi Pascoe</u>		16/11/03	1:00 PM							13, 13, 13	Present		✓
											Intact		✓

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 583850-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/16
 Report #: R4249010
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B605863
Received: 2016/11/11, 09:53

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/11/15	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/11/15	2016/11/15	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/11/15	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/11/16	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/11/15	2016/11/15	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2016/11/14	2016/11/14	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.

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. #: 583850-01-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/16
Report #: R4249010
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B605863
Received: 2016/11/11, 09:53

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		DKY643		DKY643	
Sampling Date		2016/11/10 13:30		2016/11/10 13:30	
COC Number		583850-01-01		583850-01-01	
	UNITS	577938 POND	RDL	577938 POND Lab-Dup	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	ND	0.50		4744338
Inorganics					
pH	pH	8.21		8.22	4748314
Phenols-4AAP	mg/L	ND	0.0010		4748146
Total Suspended Solids	mg/L	4	1		4746799
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	ND	0.50		4748757
Total Oil & Grease Mineral/Synthetic	mg/L	ND	0.50		4748766
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

GENERAL COMMENTS

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

Package 1	15.7°C
-----------	--------

Samples received at a temperature above 10 C. Analysis performed with client's consent.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4746799	Total Suspended Solids	2016/11/14					ND,RDL=1	mg/L	NC	25	97	85 - 115
4748146	Phenols-4AAP	2016/11/16	97	80 - 120	101	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4748314	pH	2016/11/15			102	98 - 103			0.11	N/A		
4748757	Total Oil & Grease	2016/11/15			95	85 - 115	ND, RDL=0.50	mg/L	2.1	25		
4748766	Total Oil & Grease Mineral/Synthetic	2016/11/15			94	85 - 115	ND, RDL=0.50	mg/L	1.6	25		

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 (one or both samples < 5x 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 Services

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INVOICE TO:
 Company Name: #26238 Coco Paving Inc
 Attention: Teresa Cronk
 Address: 949 Wilson Ave
 Toronto ON M3K 1G2
 Tel: (416) 633-9670 Fax:
 Email: TCronk@cocogroup.com

REPORT TO:
 Company Name: #17930 Golder Associates Ltd
 Attention: Dawn Hoyle/Jamie Bonany
 Address: 121 Commerce Park Drive Unit L
 Barrie ON L4N 8X1
 Tel: (705) 722-4492 Fax:
 Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com

PROJECT INFORMATION:
 Quotation #: B47292
 P.O. #:
 Project: 1407634
 Project Name:
 Site #: MCCARTHY
 Sampled By: DARCY LASCOR

Laboratory Use Only:
 Maxxam Job #: 583850
 Bottle Order #: 
 COC #:  C#583850-01-01
 Project Manager: Antonella Brasil

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
 Table 1 Res/Park Medium/Fine
 Table 2 Ind/Comm Coarse
 Table 3 Agri/Other For RSC
 Table

Other Regulations
 CCME Sanitary Sewer Bylaw
 Reg 558 Storm Sewer Bylaw
 MISA Municipality
 PWQO
 Other

Special Instructions

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Field Filtered (please circle): Metals / Hg / Cr / VI	Low Level Total Suspended Solids	Oil & Grease - AWWMT	Phenols (4AP)	pH
--	----------------------------------	----------------------	---------------	----

Turnaround Time (TAT) Required:
 Please provide advance notice for rush projects

Regular (Standard) TAT:
 (will be applied if Rush TAT is not specified)
 Standard TAT = 5-7 Working days for most tests.
 Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
 Date Required: _____ Time Required: _____
 Rush Confirmation Number: _____ (call lab for #)

Include Criteria on Certificate of Analysis (Y/N)?

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr / VI	Low Level Total Suspended Solids	Oil & Grease - AWWMT	Phenols (4AP)	pH
577938	POND	Nov 10th	1:30 pm	S/W	✓	✓	✓	✓	✓
	POND								
	POND								
	POND								
	POND								
	POND								

11-Nov-16 09:53
 Antonella Brasil

 B6O5863
 PS4 ENV-1292

RELINQUISHED BY: (Signature/Print)
 Jodi Pascoe
 Jodi Pascoe

Date: (YY/MM/DD) 16/11/10
Time 1:30 pm

RECEIVED BY: (Signature/Print)
 Dawn Hoyle
 Dawn Hoyle

Date: (YY/MM/DD) 2016/11/11
Time 09:53

jars used and not submitted

Laboratory Use Only
 Time Sensitive:
 Temperature (°C) on Receipt: 16.15/16
 Intact:
 Custody Seal:
 Present:
 Yes:
 No:

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Your Project #: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 573853-02-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/25
 Report #: R4261537
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6P1513

Received: 2016/11/18, 11:02

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/11/22	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/11/22	2016/11/22	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/11/21	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/11/23	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/11/22	2016/11/22	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	2016/11/21	2016/11/21	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.

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 Location: MCCARTHY
Your C.O.C. #: 573853-02-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/11/25
Report #: R4261537
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6P1513
Received: 2016/11/18, 11:02

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: EGitej@maxxam.ca
Phone# (905)817-5829

=====
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		DMA904	DMA904		
Sampling Date		2016/11/17 12:30	2016/11/17 12:30		
COC Number		573853-02-01	573853-02-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	ND		0.50	4754418
Inorganics					
pH	pH	8.20			4756741
Phenols-4AAP	mg/L	ND	ND	0.0010	4759566
Total Suspended Solids	mg/L	2	2	1	4757692
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	ND		0.50	4759516
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4759523
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

GENERAL COMMENTS

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

Package 1	13.0°C
-----------	--------

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4756741	pH	2016/11/21			102	98 - 103			0.23	N/A		
4757692	Total Suspended Solids	2016/11/21					ND,RDL=1	mg/L	NC	25	98	85 - 115
4759516	Total Oil & Grease	2016/11/22			95	85 - 115	ND, RDL=0.50	mg/L	2.6	25		
4759523	Total Oil & Grease Mineral/Synthetic	2016/11/22			92	85 - 115	ND, RDL=0.50	mg/L	2.2	25		
4759566	Phenols-4AAP	2016/11/23	100	80 - 120	101	85 - 115	ND, RDL=0.0010	mg/L	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 (one or both samples < 5x 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 Services

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INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #26238 Coco Paving Inc	Company Name: #17930 Golder Associates Ltd	Quotation #: B47292	Maxxam Job #:	Bottle Order #:	573853		
Attention: Teresa Cronk	Attention: Dawn Hoyle/Jamie Bonany	P.O. #:	COC #:		Project Manager:		
Address: 949 Wilson Ave	Address: 121 Commerce Park Drive Unit L	Project: 1407634	COC #:		Erna Gitej		
Tel: (416) 633-9670	Tel: (705) 722-4492	Project Name: MCCARTHY	COC #:		Erna Gitej		
Email: TCronk@cocogroup.com	Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com	Site #: MCCARTHY	COC #:		Erna Gitej		
		Sampled By: <i>DAPHNE LANDRY</i>	COC #:		Erna Gitej		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
<input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table _____	<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA Municipality _____ <input type="checkbox"/> PWOO <input type="checkbox"/> Other _____	

Field Filtered (please circle) Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (AAP)	pH							
--	----------------------------------	----------------------	---------------	----	--	--	--	--	--	--	--

Turnaround Time (TAT) Required
 Please provide advance notice for rush projects

Regular (Standard) TAT:
 (will be applied if Rush TAT is not specified)
 Standard-TAT = 5-7 Working days for most tests.
 Please note: Standard TAT for certain tests such as BOD and Divinylfurans are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission)
 Date Required: _____ Time Required: _____
 Rush Confirmation Number: _____ (call lab for #)

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr / V	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (AAP)	pH							# of Bottles	Comments
561479	POUD	100 17th	12:30 Pm	S/W	✓	✓	✓	✓	✓								

18-Nov-16 11:02
 Ema Gitej
 B6P1513
 GK1 ENV-1137

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
<i>JODI PASCOE</i>	16/11/17	12:30	<i>PAH</i>	2018/11/18			Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
<i>JODI PASCOE</i>	16/11/17	12:30	<i>PAH</i>	2018/11/18	11:02			13/13/13 no ice	Present		✓
									Intact		

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam, Yellow: Client

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 587674-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/12/01
 Report #: R4270878
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6P7367

Received: 2016/11/25, 09:25

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/11/29	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/11/29	2016/11/29	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/11/29	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/11/30	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/11/29	2016/11/29	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	2016/11/28	2016/11/28	CAM SOP-00428	SM 22 2540D m

Remarks:

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* 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. #: 587674-01-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/12/01
Report #: R4270878
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6P7367
Received: 2016/11/25, 09:25

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		DND018	DND018		
Sampling Date		2016/11/24 14:00	2016/11/24 14:00		
COC Number		587674-01-01	587674-01-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	1.1		0.50	4767090
Inorganics					
pH	pH	8.06			4768844
Phenols-4AAP	mg/L	ND		0.0010	4771494
Total Suspended Solids	mg/L	4	4	1	4768536
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	1.1		0.50	4769406
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4769411
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

GENERAL COMMENTS

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

Package 1	12.0°C
-----------	--------

Sample received with temp >10 C and analyses conducted with client's consent.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4768536	Total Suspended Solids	2016/11/28					ND,RDL=1	mg/L	NC	25	100	85 - 115
4768844	pH	2016/11/29			102	98 - 103			0.023	N/A		
4769406	Total Oil & Grease	2016/11/29			97	85 - 115	ND, RDL=0.50	mg/L	3.1	25		
4769411	Total Oil & Grease Mineral/Synthetic	2016/11/29			96	85 - 115	ND, RDL=0.50	mg/L	2.7	25		
4771494	Phenols-4AAP	2016/11/30	97	80 - 120	102	85 - 115	ND, RDL=0.0010	mg/L	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 (one or both samples < 5x 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 Specialist

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Maxxam Analytics International Corporation o/a Maxxam Analytics
 6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-593-6266 Fax: (905) 817-5777 www.maxxam.ca

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO: Company Name: #26238 Coco Paving Inc Attention: Teresa Cronk Address: 949 Wilson Ave Toronto ON M3K 1G2 Tel: (416) 633-9670 Fax: _____ Email: TCronk@cocogroup.com		REPORT TO: Company Name: #17930 Golder Associates Ltd Attention: Dawn Hoyle/Jamie Bonany Address: 121 Commerce Park Drive Unit L Barrie ON L4N 8X1 Tel: (705) 722-4492 Fax: _____ Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com		PROJECT INFORMATION: Quotation #: B47292 P.O. #: _____ Project: 1407634 Project Name: MCCARTHY Site #: _____ Sampled By: BOB TOORE		Laboratory Use Only: Maxxam Job #: _____ Bottle Order #: _____ COC #: _____ Project Manager: Antonella Brasil C#587674-01-01	
---	--	--	--	---	--	--	--

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)					Turnaround Time (TAT) Required: Please provide advance notice for rush projects			
Regulation 153 (2011)			Other Regulations		Special Instructions		Field Filtered (please circle): Metals /Hg /Cr /VI	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (AAP)	pH	Regular (Standard) TAT: <i>(will be applied if Rush TAT is not specified.)</i> Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
Table 1	Res/Park	Medium/Fine	CCME	Sanitary Sewer Bylaw									
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								# of Bottles	Comments
1	387674	POND	NOV 24 PM	2:00 PM	7W	✓	✓	✓	✓	✓			
2		POND											
3		POND											
4		POND											
5		POND											
6		POND											
7													
8													
9													
10													

25-Nov-16 09:25
 Antonella Brasil

 B6P7367
 RK6 ENV-970

* RELINQUISHED BY: (Signature/Print) Jodi Pascoe		Date: (YY/MM/DD) 16/11/24	Time 2:00 PM	RECEIVED BY: (Signature/Print) Ash/SMA		Date: (YY/MM/DD) 2016/11/25	Time 09:25	# jars used and not submitted	Laboratory Use Only			
								Time Sensitive	Temperature (°C) on Receipt 12/12/12	Custody Seal	Yes	No
										Present		Y
										Intact		

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

no ke

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 583850-06-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/12/07
 Report #: R4278161
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6Q2914
Received: 2016/12/02, 10:36

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/12/07	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2016/12/06	2016/12/07	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	N/A	2016/12/05	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/12/07	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/12/06	2016/12/07	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2016/12/05	2016/12/06	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. #: 583850-06-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/12/07
Report #: R4278161
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6Q2914
Received: 2016/12/02, 10:36

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		DOG488	DOG488		
Sampling Date		2016/12/01 13:00	2016/12/01 13:00		
COC Number		583850-06-01	583850-06-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	1.3		0.50	4775956
Inorganics					
pH	pH	8.13			4777825
Phenols-4AAP	mg/L	ND		0.0010	4779994
Total Suspended Solids	mg/L	3	2	1	4778506
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	1.3		0.50	4780036
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4780041
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

GENERAL COMMENTS

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

Package 1	13.3°C
-----------	--------

Sample containers received with temp >10 C and analyses conducted with client's consent.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4777825	pH	2016/12/05			102	98 - 103			1.1	N/A		
4778506	Total Suspended Solids	2016/12/06					ND,RDL=1	mg/L	NC	25	95	85 - 115
4779994	Phenols-4AAP	2016/12/07	100	80 - 120	100	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4780036	Total Oil & Grease	2016/12/07			99	85 - 115	ND, RDL=0.50	mg/L	1.8	25		
4780041	Total Oil & Grease Mineral/Synthetic	2016/12/07			95	85 - 115	ND, RDL=0.50	mg/L	1.6	25		

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 (one or both samples < 5x 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 Services

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. #: 587674-06-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/12/14
 Report #: R4286595
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6Q8527

Received: 2016/12/09, 09:25

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2016/12/13	CAM SOP-00326	EPA1664B m, SM5520B m
Total Oil and Grease	1	2016/12/13	2016/12/13	CAM SOP-00326	EPA1664B m, SM5520A m
pH	1	N/A	2016/12/12	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2016/12/13	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2016/12/13	2016/12/13	CAM SOP-00326	EPA1664B m, SM5520F m
Low Level Total Suspended Solids	1	2016/12/13	2016/12/13	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.

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.

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. #: 587674-06-01

Attention:Dawn Hoyle/Jamie Bonany

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

Report Date: 2016/12/14
Report #: R4286595
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6Q8527
Received: 2016/12/09, 09:25

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		DPG625	DPG625		
Sampling Date		2016/12/08 14:00	2016/12/08 14:00		
COC Number		587674-06-01	587674-06-01		
	UNITS	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	2.8		0.50	4786013
Inorganics					
pH	pH	8.06			4787893
Phenols-4AAP	mg/L	ND		0.0010	4789980
Total Suspended Solids	mg/L	9	8	1	4790318
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	2.8		0.50	4790499
Total Oil & Grease Mineral/Synthetic	mg/L	ND		0.50	4790508
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected					

GENERAL COMMENTS

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

Package 1	7.0°C
-----------	-------

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
4787893	pH	2016/12/12			102	98 - 103			0.48	N/A		
4789980	Phenols-4AAP	2016/12/13	100	80 - 120	97	85 - 115	ND, RDL=0.0010	mg/L	NC	20		
4790318	Total Suspended Solids	2016/12/13					ND,RDL=1	mg/L	2.4	25	96	85 - 115
4790499	Total Oil & Grease	2016/12/13			95	85 - 115	ND, RDL=0.50	mg/L	2.1	25		
4790508	Total Oil & Grease Mineral/Synthetic	2016/12/13			93	85 - 115	ND, RDL=0.50	mg/L	2.1	25		

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 (one or both samples < 5x 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 Services

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Maxxam Analytics International Corporation of/a Maxxam Analytics
 6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

CHAIN OF CUSTODY RECORD

Page of

INVOICE TO: Company Name: #26238 Coco Paving Inc Attention: Teresa Cronk Address: 949 Wilson Ave Toronto ON M3K 1G2 Tel: (416) 633-9670 Fax: _____ Email: TCronk@cocogroup.com		REPORT TO: Company Name: #17930 Golder Associates Ltd Attention: Dawn Hoyle/Jamie Bonany Address: 121 Commerce Park Drive Unit L Barrie ON L4N 8X1 Tel: (705) 722-4492 Fax: _____ Email: Dawn_Hoyle@golder.com; Jamie_Bonany@golder.com		PROJECT INFORMATION: Quotation #: B47292 P.O. #: _____ Project: 1407634 Project Name: _____ Site #: MCCARTHY Sampled By: DARRYL ANOBY		Laboratory Use Only: Maxxam Job #: _____ Bottle Order #: _____ Barcode: 587574 CDC #: _____ Project Manager: Antonella Brasil Barcode: C#587574-06-01	
---	--	--	--	--	--	--	--

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required										
Regulation 153 (2011)			Other Regulations			Special Instructions	Field Filtered (please circle)	Metals / Hg / Cr-VI	Low Level Total Suspended Solids	Oil & Grease - AV/MT	Phenols (404P)	pH														
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw																						
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw																						
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality _____																						
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO																							
Include Criteria on Certificate of Analysis (Y/N)?																										
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																						
587674	POUD	DEC 8th	2:00 PM	SLW	✓	✓	✓	✓	✓																	

Regular (Standard) TAT: _____
 (will be applied if Rush TAT is not specified)
 Standard TAT = 5-7 Working days for most tests.
 Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
 Date Required: _____ Time Required: _____
 Rush Confirmation Number: _____ (call lab for #)

of Bottles: _____
 Comments: _____

09-Dec-16 09:25
 Antonella Brasil
 B6Q8527
 SEL ENV-1313

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
JODI PASCOE		16/12/08	2:00 PM	Jodie Pascoe		2016/12/07	09:36		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
Jodie Pascoe		16/12/08	2:00 PM	Jodie Pascoe						7/7/7	Present		✓
											Intact		

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM. White: Maxxam Yellow: Client



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

ATTENTION TO: Ryan Abrams

PROJECT: 1407634

AGAT WORK ORDER: 16T161088

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Dec 09, 2016

PAGES (INCLUDING COVER): 5

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



Certificate of Analysis

AGAT WORK ORDER: 16T161088

PROJECT: 1407634

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

Daphnia Lethality (D. magna) single concentration-48h

DATE RECEIVED: 2016-11-17

DATE REPORTED: 2016-12-09

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		2016-11-16	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-48h		8020097
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
8020097 Refer to the annex for analysis details.
Conclusion legend:
Acute lethality: NO (mortality: 50% or less)
Acute lethality: YES (mortality: more than 50%)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16T161088

PROJECT: 1407634

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

Rainbow Trout Lethality (O. mykiss) single concentration-96h					
DATE RECEIVED: 2016-11-17			DATE REPORTED: 2016-12-09		
SAMPLE DESCRIPTION:		Pond			
SAMPLE TYPE:		Water			
DATE SAMPLED:		2016-11-16			
Parameter	Unit	G / S	RDL	8020097	
Mortality 100% v/v	% mortality-96h			10	
Acute Lethality				NO	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 8020097 Refer to the annex for analysis details.
 Conclusion legend:
 Acute lethality: NO (mortality: 50% or less)
 Acute lethality: YES (mortality: more than 50%)

Certified By:





Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 16T161088

PROJECT: 1407634

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
ECOTOX Analysis			
Mortality 100% v/v			NA
Acute Lethality			
Mortality 100% v/v	ECO-152-20000F	EPS1/RM/13	

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

ATTENTION TO: Ryan Abrams

PROJECT: 1407634

AGAT WORK ORDER: 16T168230

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Jan 04, 2017

PAGES (INCLUDING COVER): 5

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



Certificate of Analysis

AGAT WORK ORDER: 16T168230

PROJECT: 1407634

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

Daphnia Lethality (D. magna) single concentration-48h

DATE RECEIVED: 2016-12-07

DATE REPORTED: 2017-01-04

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		2016-12-06	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-48h		8071992
Acute Lethality			3.3
			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 8071992 Refer to the annex for analysis details.

Acute lethality: NO (mortality: 50% or less)
 Acute lethality: YES (mortality: more than 50%)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16T168230

PROJECT: 1407634

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

Rainbow Trout Lethality (O. mykiss) single concentration-96h

DATE RECEIVED: 2016-12-07

DATE REPORTED: 2017-01-04

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		2016-12-06	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-96h		8071992
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 8071992 Refer to the annex for analysis details.

Acute lethality: NO (mortality: 50% or less)
 Acute lethality: YES (mortality: more than 50%)

Certified By:



Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 16T168230

PROJECT: 1407634

ATTENTION TO: Ryan Abrams

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
ECOTOX Analysis			
Mortality 100% v/v			NA
Acute Lethality			
Mortality 100% v/v	ECO-152-20000F	EPS1/RM/13	



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

ATTENTION TO: Ryan Abrams

PROJECT: 1407634 McCarthy

AGAT WORK ORDER: 17T179406

ECOTOX ANALYSIS REVIEWED BY: Virginie Bérubé, biologiste

DATE REPORTED: Feb 02, 2017

PAGES (INCLUDING COVER): 5

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



Certificate of Analysis

AGAT WORK ORDER: 17T179406

PROJECT: 1407634 McCarthy

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

SAMPLING SITE:McCarthy

ATTENTION TO: Ryan Abrams

SAMPLED BY:RPA

Daphnia Lethality (D. magna) single concentration-48h

DATE RECEIVED: 2017-01-19

DATE REPORTED: 2017-02-02

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		2017-01-18	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-48h		8135986
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 8135986 Refer to the annex for analysis details.
 Acute lethality: NO (mortality: 50% or less)
 Acute lethality: YES (mortality: more than 50%)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 17T179406

PROJECT: 1407634 McCarthy

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

SAMPLING SITE:McCarthy

ATTENTION TO: Ryan Abrams

SAMPLED BY:RPA

Rainbow Trout Lethality (O. mykiss) single concentration-96h

DATE RECEIVED: 2017-01-19

DATE REPORTED: 2017-02-02

SAMPLE DESCRIPTION:		Pond	
SAMPLE TYPE:		Water	
DATE SAMPLED:		2017-01-18	
Parameter	Unit	G / S	RDL
Mortality 100% v/v	% mortality-96h		8135986
			0
Acute Lethality			NO

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 8135986 Refer to the annex for analysis details.
 Acute lethality: NO (mortality: 50% or less)
 Acute lethality: YES (mortality: more than 50%)

Certified By:



Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 17T179406

PROJECT: 1407634 McCarthy

ATTENTION TO: Ryan Abrams

SAMPLING SITE:McCarthy

SAMPLED BY:RPA

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
ECOTOX Analysis			
Mortality 100% v/v			NA
Acute Lethality			
Mortality 100% v/v	ECO-152-20000F	EPS1/RM/13	



AGAT

Laboratories

5835 Coopers Avenue
 Mississauga, Ontario L4Z 1Y2
 Ph: 905.712.5100 Fax: 905.712.5122
 webearth.agatlabs.com

Laboratory Use Only

Work Order #: AT179406Cooler Quantity: _____
Arrival Temperatures: 17-4 77-3 17-1Custody Seal Intact: Yes No N/A
Notes: _____

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Report Information:

Company: Goldier Associates
 Contact: Ryan Abrams
 Address: 121 Commerce Park Drive
 Phone: 705-722-4492 Fax: _____
 Reports to be sent to:
 1. Email: rabrams@golder.com
 2. Email: jbonany@golder.com

Regulatory Requirements: No Regulatory Requirement

(Please check all applicable boxes)

Regulation 153/04 Sewer Use Regulation 558
 Sanitary CCME
 Storm Prov. Water Quality Objectives (PWQO)
 Other
 Table Indicate One
 Ind/Com
 Res/Park
 Agriculture
 Soil Texture (Check One) Coarse Fine
 Region Indicate One

Project Information:

Project: 1407634 McCarthy
 Site Location: McCarthy RPA
 Sampled By: 60738 PO: _____
 AGAT Quote #: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a Record of Site Condition?

 Yes No

Report Guideline on Certificate of Analysis

 Yes No

Invoice Information:

Company: Goldier Associates Bill To Same: Yes No
 Contact: Patti Chapple
 Address: _____
 Email: pchapple@golder.com

Sample Matrix Legend

B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Field Filtered - Metals, Hg, CWI	Reg 153	Metals and Inorganics	ORPs	Full Metals Scan	Regulation/Custom Metals	Nutrients	Volatiles	CCME Fractions 1 to 4	ABNS	PAHs	PCBs: Total	Organochlorine Pesticides	TCLP: M&I	Sewer Use
		<input type="checkbox"/> All Metals <input type="checkbox"/> 153 Metals (excl. Hydrides)	<input type="checkbox"/> B-HWS <input type="checkbox"/> Cr <input type="checkbox"/> CN <input type="checkbox"/> Cu <input type="checkbox"/> EC <input type="checkbox"/> FOC <input type="checkbox"/> Hg <input type="checkbox"/> pH <input type="checkbox"/> SAR			<input type="checkbox"/> TP <input type="checkbox"/> NH ₃ <input type="checkbox"/> TKN <input type="checkbox"/> NO ₃ <input type="checkbox"/> NO ₂ <input type="checkbox"/> NO _x	<input type="checkbox"/> VOC <input type="checkbox"/> BTEX <input type="checkbox"/> THM				<input type="checkbox"/> Total <input type="checkbox"/> Aroclors	<input type="checkbox"/> M&I <input type="checkbox"/> ABNS <input type="checkbox"/> B(a)P <input type="checkbox"/> PCBs		<input type="checkbox"/> Sewer Use
														<u>Rain bow to Daphnia single C</u>

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/Special Instructions	Y / N
<u>pond</u>	<u>18-Jan</u>	<u>1:30pm</u>	<u>1</u>	<u>SW</u>		

Samples Relinquished By (Print Name and Sign): <u>Ryan Abrams</u>	Date: <u>18-Jan</u>	Time: <u>2:30pm</u>	Samples Received By (Print Name and Sign): <u>Marian Weber</u>	Date: <u>Jan. 19/17</u>	Time: <u>11:00am</u>
Samples Relinquished By (Print Name and Sign): _____	Date: _____	Time: _____	Samples Received By (Print Name and Sign): _____	Date: _____	Time: _____
Samples Relinquished By (Print Name and Sign): _____	Date: _____	Time: _____	Samples Received By (Print Name and Sign): _____	Date: _____	Time: _____

Page ____ of ____
No: **T 041990**

As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

For more information, visit golder.com

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 44 1628 851851
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

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121 Commerce Park Drive, Unit L
Barrie, Ontario, L4N 8X1
Canada
T: +1 (705) 722 4492

