



GOLDER

REPORT

**Environmental Compliance Approval Quarterly
Monitoring Report (February to April)**

McCarthy Quarry

Submitted to:

Cindy Hood

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

Submitted by:

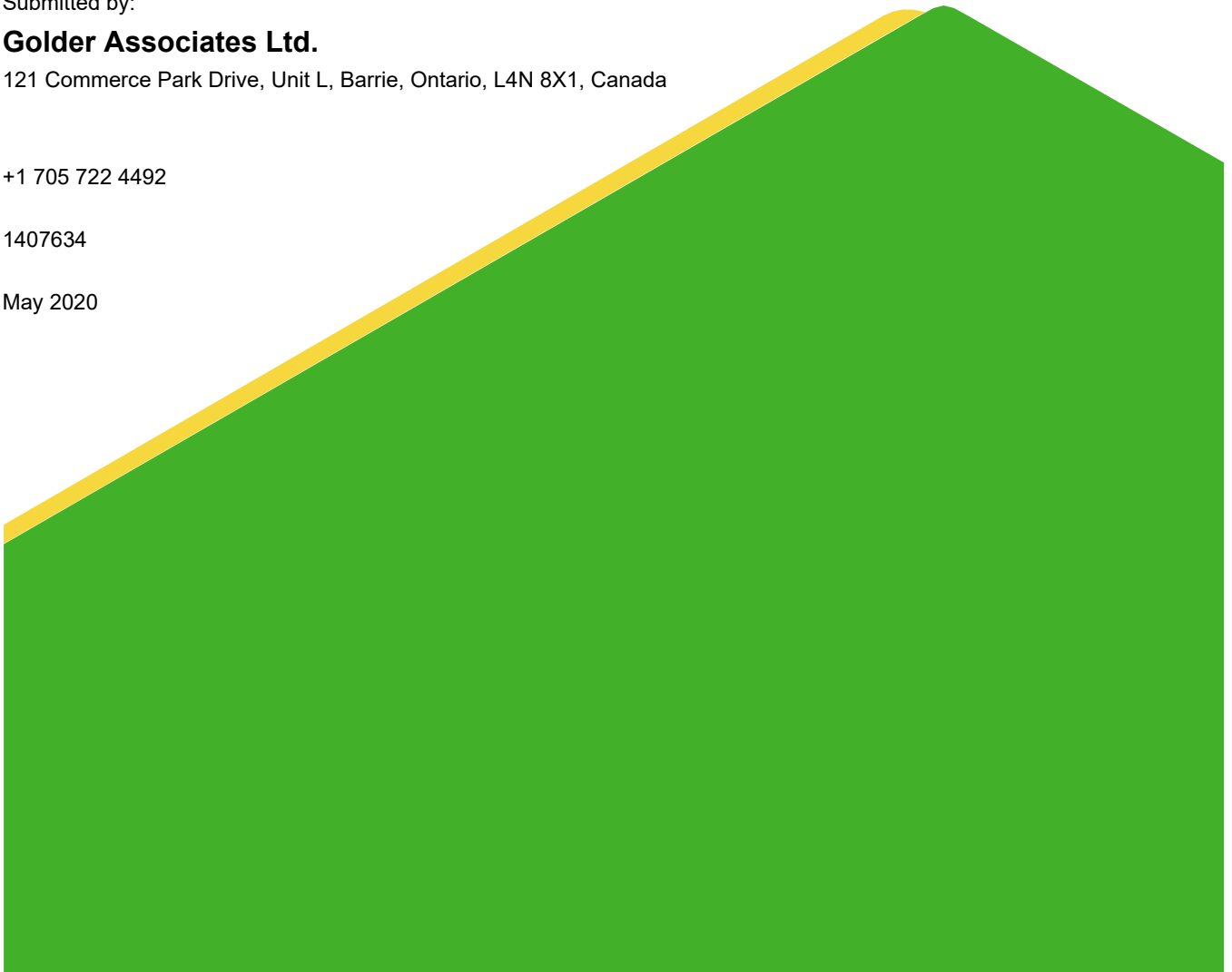
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1407634

May 2020



Distribution List

Distribution:

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ECA No. 7737-BH6QEA

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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 preparation of a quarterly monitoring report is a requirement of the Environmental Compliance Approval (ECA) No. 7737-BH6QEA (the 'ECA') issued on October 22, 2019. A copy of the ECA is provided in Appendix A. The following report is intended to fulfill the requirements of Section 8 (4) of the ECA and documents the results of the monitoring program activities described in Section 6 of the ECA for the period between February and April 2020.

2.0 BACKGROUND

The dewatering activities at the McCarthy Quarry in 2020 are regulated under Permit to Take Water (PTTW) No. 1603-BKTPQH, issued on January 31, 2020 and expiring on January 31, 2025. Under PTTW No. 1603-BKTPQH Coco is permitted to pump water from the quarry sump at a maximum rate of 4,545 L/min (76 L/sec).

The McCarthy Quarry dewatering system includes a sump located in the northwest corner of the quarry floor which collects groundwater and surface water (hereafter referred to as "quarry discharge") accumulating at the base of the quarry. The sump is equipped with a 4-inch Grindex pump which is rated for a maximum discharge rate of up to 35 L/sec (2,100 L/min) and is attached to a 4-inch (101 mm nominal) diameter discharge line. Water is pumped from the quarry floor up the quarry face via the discharge line to a 4-inch (101 mm nominal) diameter pipeline that directs the water to a 14,000 m³ settling pond (Figure 1). The settling pond is equipped with a Hickenbottom control structure via which the water discharges 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 discharges to the Talbot River, which in turn discharges into Lake Simcoe.

3.0 QUARRY DISCHARGE MONITORING PLAN

The technical requirements of the quarry discharge monitoring plan are listed in Section 4 (Effluent [quality] Limits), Section 5 (Effluent – Visual Observations), and Section 6 (Monitoring and Recording) of the ECA. The monitoring requirements consist of:

- Weekly monitoring of the effluent quality (Total Suspended Solids [TSS], oil and grease, phenolics [4AAP] and pH) at the outfall of the settling pond (labelled as McCarthy Pond on Figure 1); and
- Semi-annual monitoring of effluent quality at three locations; the McCarthy Pond outfall, the culvert along Concession Road 1 at the McCarthy property (SW1 on Figure 1), 260 m north of the intersection of Concession Road 1 and the Mara Eldon Boundary Road (SW2 on Figure 1). The parameters required for semi-annual water quality monitoring (as listed in Table 3 of the ECA) include TSS, copper, lead, nickel, zinc, arsenic, oil and grease, phenolics (4AAP), hardness (as CaCO₃), alkalinity(as CaCO₃), conductivity, pH, fluoride, chloride, nitrate (as N), nitrite (as N), sulphate, calcium, magnesium, sodium, potassium, ammonia (as N), dissolved organic carbon, iron, total Kjeldahl nitrogen, phosphorus (total), cadmium, chromium, manganese, anions (sum), cations (sum) and total dissolved solids.

The weekly quarry discharge quality sampling was conducted by Coco staff. The weekly water quality samples were sent to Maxxam Analytics Laboratory of Mississauga, Ontario for analysis.

Weekly water quality samples were not collected from the McCarthy Pond location on the periods of February 3 to 28, 2020 and March 9 to April 10 as quarry staff reported as limited discharge was present at the sampling

location at the time of sampling. In addition, Coco staff reported the pump was broken down between February 5 and March 22, 2020. The pump was repaired in March and pumping from the quarry sump resumed on March 23, 2020.

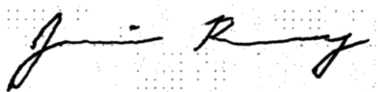
4.0 MONITORING RESULTS AND RECOMMENDATIONS

All laboratory certificates of analysis for the February to April 2020 monitoring period for both weekly and semi-annual monitoring events are provided in Appendix B. Results of the quarry discharge sample analyses are summarized below:

- The TSS, pH, Oil and Grease, and Phenol (4AAP) concentrations were reported to be below their respective concentration limits stipulated in the ECA (Table 1) for all weekly samples, with the exception of the TSS sample from on April 30, the concentration of which (37 mg/L) exceeded the 30 mg/L limit. The result from the first two samples collected subsequently in May 2020 reported TSS concentrations below the ECA guideline. As a result the sample collected on April 30 is considered a short-term anomaly, rather than being indicative of a chronic issue with the discharge treatment system;
- The calculated monthly average of the TSS, Oil and Grease, and Phenol (4AAP) concentrations were all below the monthly concentration limits stipulated in the ECA (Table 2), with the exception of the average TSS in April (16 mg/L), which exceeded the 15 mg/L limit. This exceedance was due to the TSS concentration reported for April 30 sample (see above);
- The daily discharge rate between February to April 2020 was below the permitted rate of 4,545 L/min (76 L/sec) (Table 3).

Signature Page

Golder Associates Ltd.



Jamie Bonany, M.A.Sc.
Project Scientist



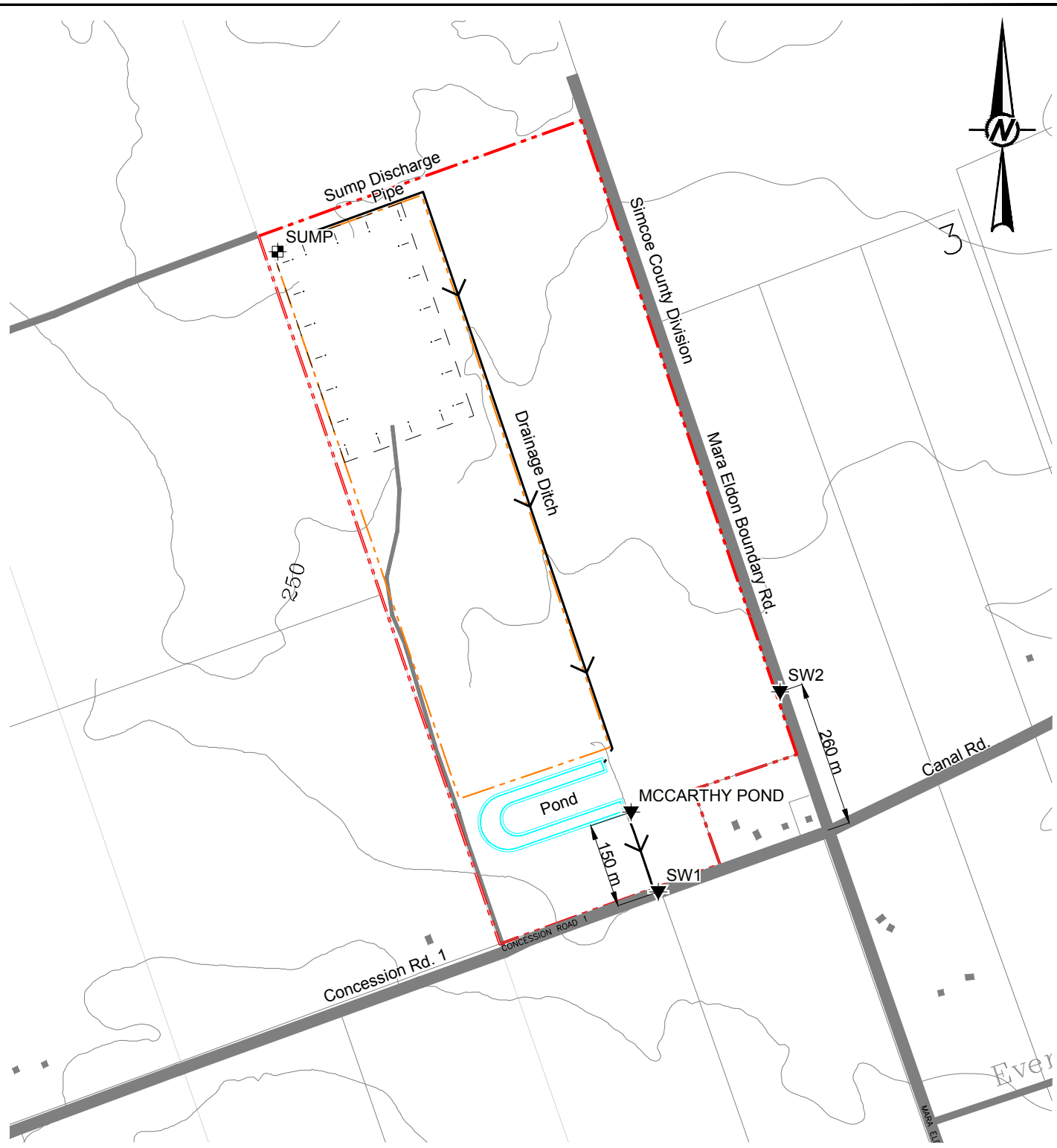
John Easton, M.Sc., P.Geol.
Associate Senior Hydrogeologist

JB/DD/JE/cdr

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Figures



LEGEND

- - - Approximate Property Boundary
- - - Approximate Licenced Boundary
- 5 m Contour Line
- ▼ Surface Water Sampling Location
- | | | Approximate Extent of Quarry

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	2019-11-08
PREPARED	STB	
DESIGN		
REVIEW		
APPROVED		



PROJECT No. 14-07634 SCALE AS SHOWN Rev. A Figure 1

Tables

Table 1: McCarthy Pond Weekly Water Quality Results (February 2020 to April 2020)

	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Daily Concentration Limit ²	McCarthy Quarry			
Sample ID					Pond			
Date					05-Mar-20	16-Apr-20	23-Apr-20	30-Apr-20
pH	pH	n/a		6.0-9.5	7.54	7.86	8.11	7.88
Total Suspended Solids	mg/L	1		30	3	3	8	37
Total Oil and Grease	mg/L	0.5	Note 3	30	<0.5	<0.5	<0.5	<0.5
Phenols (4AAP)	mg/L	<0.0010		0.04	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 (February to April 2020)

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Monthly Concentration Limit ²	McCarthy Quarry		
					Pond		
Date					February	March	April
Total Suspended Solids	mg/L	1		15	-	3.0	16.0
Total Oil and Grease	mg/L	0.5	Note 3	15	-	<0.5	<0.5
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 discolouration 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 3: 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-Feb-20	NO PUMP		0	0	-	-	-
2-Feb-20	NO PUMP		0	0	-	-	-
3-Feb-20	7AM	4PM	32400	540	648,000	20	1,200
4-Feb-20	7AM	4PM	32400	540	648,000	20	1,200
5-Feb-20	NO PUMP		0	0	-	-	-
6-Feb-20	NO PUMP		0	0	-	-	-
7-Feb-20	NO PUMP		0	0	-	-	-
8-Feb-20	NO PUMP		0	0	-	-	-
9-Feb-20	NO PUMP		0	0	-	-	-
10-Feb-20	NO PUMP		0	0	-	-	-
11-Feb-20	NO PUMP		0	0	-	-	-
12-Feb-20	NO PUMP		0	0	-	-	-
13-Feb-20	NO PUMP		0	0	-	-	-
14-Feb-20	NO PUMP		0	0	-	-	-
15-Feb-20	NO PUMP		0	0	-	-	-
16-Feb-20	NO PUMP		0	0	-	-	-
17-Feb-20	NO PUMP		0	0	-	-	-
18-Feb-20	NO PUMP		0	0	-	-	-
19-Feb-20	NO PUMP		0	0	-	-	-
20-Feb-20	NO PUMP		0	0	-	-	-
21-Feb-20	NO PUMP		0	0	-	-	-
22-Feb-20	NO PUMP		0	0	-	-	-
23-Feb-20	NO PUMP		0	0	-	-	-
24-Feb-20	NO PUMP		0	0	-	-	-
25-Feb-20	NO PUMP		0	0	-	-	-
26-Feb-20	NO PUMP		0	0	-	-	-
27-Feb-20	NO PUMP		0	0	-	-	-
28-Feb-20	NO PUMP		0	0	-	-	-
29-Feb-20	NO PUMP		0	0	-	-	-
1-Mar-20	NO PUMP		0	0	-	-	-
2-Mar-20	NO PUMP		0	0	-	-	-
3-Mar-20	NO PUMP		0	0	-	-	-
4-Mar-20	NO PUMP		0	0	-	-	-
5-Mar-20	NO PUMP		0	0	-	-	-
6-Mar-20	NO PUMP		0	0	-	-	-
7-Mar-20	NO PUMP		0	0	-	-	-
8-Mar-20	NO PUMP		0	0	-	-	-
9-Mar-20	NO PUMP		0	0	-	-	-
10-Mar-20	NO PUMP		0	0	-	-	-
11-Mar-20	NO PUMP		0	0	-	-	-
12-Mar-20	NO PUMP		0	0	-	-	-
13-Mar-20	NO PUMP		0	0	-	-	-
14-Mar-20	NO PUMP		0	0	-	-	-

Table 3: 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-Mar-20	NO PUMP		0	0	-	-	-
16-Mar-20	NO PUMP		0	0	-	-	-
17-Mar-20	NO PUMP		0	0	-	-	-
18-Mar-20	NO PUMP		0	0	-	-	-
19-Mar-20	NO PUMP		0	0	-	-	-
20-Mar-20	NO PUMP		0	0	-	-	-
21-Mar-20	NO PUMP		0	0	-	-	-
22-Mar-20	NO PUMP		0	0	-	-	-
23-Mar-20	7AM	4PM	32400	540	648,000	20	1,200
24-Mar-20	7AM	4PM	32400	540	648,000	20	1,200
25-Mar-20	7AM	4PM	32400	540	648,000	20	1,200
26-Mar-20	7AM	4PM	32400	540	648,000	20	1,200
27-Mar-20	7AM	4PM	32400	540	648,000	20	1,200
28-Mar-20	NO PUMP		0	0	-	-	-
29-Mar-20	NO PUMP		0	0	-	-	-
30-Mar-20	7AM	4PM	32400	540	648,000	20	1,200
31-Mar-20	7AM	4PM	32400	540	648,000	20	1,200
1-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
2-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
3-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
4-Apr-20	NO PUMP		0	0	-	-	-
5-Apr-20	NO PUMP		0	0	-	-	-
6-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
7-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
8-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
9-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
10-Apr-20	NO PUMP		0	0	-	-	-
11-Apr-20	NO PUMP		0	0	-	-	-
12-Apr-20	NO PUMP		0	0	-	-	-
13-Apr-20	NO PUMP		0	0	-	-	-
14-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
15-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
16-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
17-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
18-Apr-20	NO PUMP		0	0	-	-	-
19-Apr-20	NO PUMP		0	0	-	-	-
20-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
21-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
22-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
23-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
24-Apr-20	7AM	4PM	32400	540	648,000	20	1,200
25-Apr-20	NO PUMP		0	0	-	-	-
26-Apr-20	NO PUMP		0	0	-	-	-

Table 3: 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
27-Apr-20	NO PUMP		0	0	-	-	-
28-Apr-20	NO PUMP		0	0	-	-	-
29-Apr-20	NO PUMP		0	0	-	-	-
30-Apr-20	NO PUMP		0	0	-	-	-

APPENDIX A

ECA No. 7737-BH6QEA

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 7737-BH6QEA
Issue Date: October 22, 2019

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

Site Location: McCarthy Quarry
Lot 1, Concession 1,
Original Township of Mara
Township of Ramara
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:

sewage works for the collection, transmission, treatment and disposal of stormwater and groundwater collecting within the confines of the 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; and
- 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:

"Application" means the application for an environmental compliance approval submitted to the Ministry for approval by or on behalf of the Owner and dated August 8, 2019.

"Approval" means this environmental compliance approval, 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 appropriate local District Office of the Ministry, where the Works are geographically located;

"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 includes its successors and assignees;

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

"Works" means the sewage works described in the 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) The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- (2) Except as otherwise provided by these terms and conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with this Approval.
- (3) Where there is a conflict between a provision of this environmental compliance approval and any document submitted by the Owner, the conditions in this environmental compliance approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Owner, the Application shall take precedence

unless it is clear that the purpose of the document was to amend the Application

- (4) Where there is a conflict between the documents listed in the Schedule A, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.
- (5) The terms and conditions of this Approval are severable. If any term and condition of this environmental compliance approval, or the application of any requirement of this environmental compliance approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.
- (6) The issuance of, and compliance with the conditions of, this Approval does not:
 - a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approval from the local conservation authority necessary to construct or operate the sewage Works; or
 - b) limit in any way the authority of the Ministry to require certain steps be taken to require the Owner to furnish any further information related to compliance with this Approval.

2. CHANGE OF OWNER

- (1) The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within **thirty (30) days** of the change occurring:
 - (a) change of address of Owner or operating authority;
 - (b) change of Owner or operating authority or both, including address of new Owner or operating authority, or both;
 - (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 *Business Names Act, R.S.O. 1990, c. B.17* ; and
 - (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 “Initial Return” or “Notice of Change” filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* , 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 Approval, 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 refer to the number at the top of this environmental compliance approval.

3. OPERATION AND MAINTENANCE

- (1) The Owner shall prepare an operations manual of the Works that includes, but is not 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 to be 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 a potential spill, bypasses or any other abnormal situations, including notifying the District Manager of the situation; and
 - (e) procedures for receiving and responding to public complaints.
- (2) The Owner shall ensure that the Works and related equipment and appurtenances which are installed or used to achieve compliance with this Approval are properly operated and maintained.
- (3) The Owner shall inspect the sump, discharge pump and settling pond on a monthly basis and keep a log or record of the inspections at the Quarry.
- (4) The Owner shall carry out on an as-needed basis, specific maintenance requirements like removing build-up, associated with the sump, pump and settling pond.
- (5) The Owner shall, upon identification of a loss of oil and fuel, take immediate action to prevent the further occurrence of such loss and prevent the spill from entering into the sump and/or the settling pond.
- (6) In furtherance of, but without limiting the generality of, the obligation imposed by subsection (2), the Owner shall ensure that equipment and material for the containment, clean-up and disposal of oil and fuel and materials contaminated with oil or fuel are kept on hand and in good repair for immediate use in the event of:
 - (a) loss of oil or fuel during refuelling or equipment maintenance;

- (b) a spill within the meaning of Part X of the Environmental Protection Act; and/or
- (c) the identification of an abnormal amount of oil or fuel in the sump and/or settling pond.

4. EFFLUENT LIMITS

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

Table 1 - Effluent Limits		
Effluent Parameter	Daily Concentration (milligrams per litre unless otherwise indicated)	Monthly Average Concentration (milligrams per litre unless otherwise indicated)
Column 1	Column 2	Column 3
Oil and Grease	30	15
Phenolics (4AAP)	0.04	0.02
Total Suspended Solids	30	15
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times		

- (2) For the purposes of determining compliance with and enforcing subsection (1):
 - (a) non-compliance with respect to a Daily Concentration is deemed to have occurred when any single grab sample analyzed for a parameter named in Column 1 of subsection (1) is greater than the corresponding daily concentration set out in Column 2 of subsection (1);
 - (b) non-compliance with respect to an Monthly Average Concentration is deemed to have occurred when the arithmetic mean concentration of all samples taken in a month, analyzed for a parameter named in Column 1 of subsection (1) is greater than the corresponding monthly average concentration set out in Column 3 of subsection (1); and
 - (c) non-compliance with respect to pH is deemed to have occurred when any single measurement is outside of the indicated range.

5. EFFLUENT - VISUAL OBSERVATIONS

- (1) 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.
- (2) Notwithstanding any other condition in this Approval, the Owner shall ensure that the

effluent from the Works shall not cause flooding or erosion to the downstream receiver and in particular Road flooding.

6. MONITORING AND RECORDING

The Owner shall, upon the Issuance of this Approval, carry out the following monitoring program:

- (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:

Table 2 - Effluent Monitoring	
Sample Point	Outfall of settling pond approximately 150 metres north of Concession 1 (i.e. end of pipe discharge).
Frequency	Weekly
Sample Type	Grab
Parameters	Oil and Grease, Phenolics (4AAP), and Total Suspended Solid (TSS).

Table 3 - Effluent and Surface Water Monitoring	
Sample Point	<ol style="list-style-type: none"> 1. Outfall of settling pond approximately 150 metres north of Concession 1 (i.e. end of pipe discharge). 2. Box culvert on Eldon-Ramara Townline approximately 260 metres north of the intersection of Ramara Concession 1 and Eldon-Ramara Townline (i.e. upgradient of end of pipe discharge). 3. 80 centimetre CSP located at Concession 1 Road on McCarthy property (i.e. downgradient of end of pipe discharge).
Frequency	Semi-Annually during discharge event.
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.

- (3) 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; and
 - (b) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions.
- (4) The Owner shall measure, record and calculate the discharge rate and volume from the Works on a daily basis during discharging period.
- (5) The Owner shall retain for a minimum of **five (5) years** from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

7. RECEIVER INSPECTION

- (1) 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.

8. REPORTING

- (1) The Owner shall report to the District Manager or designate, any exceedance of any parameter specified in condition 4 orally, forthwith, and in writing within **seven (7) days** of the exceedance.
- (2) In addition to the obligations under Part X of the EPA, the Owner shall, within **ten (10) working days** of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, 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.
- (3) The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.
- (4) The Owner shall submit quarterly reports of the information obtained under condition 6 within **30 days** of the end of each quarter.
- (5) The Owner shall prepare, and submit to the District Manager, a **performance report**, on

an annual basis, on or before March 31st. 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 4, 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;
- (e) any other information the District Manager requires from time to time.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. Condition 1.(6) is included to emphasize that the issuance of this Approval does not diminish any other statutory and regulatory obligations to which the Owner is subject in the construction, maintenance and operation of the Works. The Condition specifically highlights the need to obtain any necessary conservation authority approvals. The Condition also emphasizes the fact that this Approval doesn't limit the authority of the Ministry to require further information.
2. Condition 2 is included to ensure that the Ministry records are kept accurate and current with respect to approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the works in compliance with it.
3. Condition 3 is included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner and made available to the Ministry. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Works. The condition is also included to ensure that the Works will be operated and maintained in a manner enabling compliance with the terms and conditions of this Approval, such that the environment is protected and deterioration, loss, injury or damage to

any person or property is minimised and/or prevented.

4. Conditions 4 and 5 are imposed to ensure that the effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver.
5. Condition 6 is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the Approval and that the Works does not cause any impairment to the receiver.
6. Condition 7 is included in order to determine if the ongoing discharge of quarry water is having a negative impact on the downstream ditches so that abatement measures can be taken to prevent such occurrences.
7. Condition 8 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

SCHEDULE 'A'

1. Environmental Compliance Approval Application for Industrial Sewage Works submitted by John Easton, P.Geo., Golder Associates Ltd., and signed by Mr. Anthony Rossi, Director Land Development & Government Relations, QBJR Aggregates Inc., dated August 8, 2019; and all supporting documentation and information.

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s).
4731-987KM8 issued on October 15, 2013.**

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

- a. 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;
- b. 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:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. 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, Conservation and
Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** 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) 326-5370 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 22nd day of October, 2019



Fariha Pannu, P.Eng.

Director

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

AA/

c: District Manager, MECP Barrie District Office
John Easton, P.Geo., Golder Associates Ltd.

APPENDIX B

Water Quality Data



Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 752753-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/03/11
 Report #: R6106341
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C061052

Received: 2020/03/06, 08:48

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2020/03/11	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2020/03/11	2020/03/11	CAM SOP-00326	EPA1664B m,SM5520A m
pH	1	2020/03/07	2020/03/09	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2020/03/09	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2020/03/11	2020/03/11	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2020/03/07	2020/03/09	CAM SOP-00428	SM 23 2540D m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs 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. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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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. When sampling is not conducted by BV Labs, results relate to the supplied 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. #: 752753-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/03/11
Report #: R6106341
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C061052
Received: 2020/03/06, 08:48

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager

Email: Ema.Gitej@bvlabs.com

Phone# (905)817-5829

=====

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



RESULTS OF ANALYSES OF WATER

BV Labs ID			MEJ107		
Sampling Date			2020/03/05 11:44		
COC Number			752753-01-01		
	UNITS	Criteria	POND	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	-	<0.50	0.50	6622743
Inorganics					
pH	pH	6.5:8.5	7.54	N/A	6624695
Phenols-4AAP	mg/L	0.001	0.0010	0.0010	6625508
Total Suspended Solids	mg/L	-	3	1	6624723
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	-	<0.50	0.50	6629669
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	0.50	6629673
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 N/A = Not Applicable					



BUREAU
VERITAS

BV Labs Job #: C061052
Report Date: 2020/03/11

Golder Associates Ltd
Client Project #: 1407634
Site Location: MCCARTHY
Sampler Initials: BR

GENERAL COMMENTS

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

Package 1	12.7°C
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Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: C061052
Report Date: 2020/03/11

Golder Associates Ltd
Client Project #: 1407634
Site Location: MCCARTHY
Sampler Initials: BR

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6624695	SAU	Spiked Blank	pH	2020/03/09		101	%	98 - 103
6624695	SAU	RPD	pH	2020/03/09	0.57		%	N/A
6624723	MKX	QC Standard	Total Suspended Solids	2020/03/09		102	%	85 - 115
6624723	MKX	Method Blank	Total Suspended Solids	2020/03/09	<1		mg/L	
6624723	MKX	RPD	Total Suspended Solids	2020/03/09	15		%	25
6625508	BMO	Matrix Spike	Phenols-4AAP	2020/03/09		97	%	80 - 120
6625508	BMO	Spiked Blank	Phenols-4AAP	2020/03/09		101	%	80 - 120
6625508	BMO	Method Blank	Phenols-4AAP	2020/03/09	<0.0010		mg/L	
6625508	BMO	RPD	Phenols-4AAP	2020/03/09	0		%	20
6629669	FA	Spiked Blank	Total Oil & Grease	2020/03/11		94	%	85 - 115
6629669	FA	RPD	Total Oil & Grease	2020/03/11	4.4		%	25
6629669	FA	Method Blank	Total Oil & Grease	2020/03/11	<0.50		mg/L	
6629673	FA	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2020/03/11		92	%	85 - 115
6629673	FA	RPD	Total Oil & Grease Mineral/Synthetic	2020/03/11	2.2		%	25
6629673	FA	Method Blank	Total Oil & Grease Mineral/Synthetic	2020/03/11	<0.50		mg/L	

N/A = Not Applicable

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: C061052
Report Date: 2020/03/11

Golder Associates Ltd
Client Project #: 1407634
Site Location: MCCARTHY
Sampler Initials: BR

VALIDATION SIGNATURE PAGE

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

A handwritten signature in black ink, appearing to read 'Anastassia Hamanov', written over a horizontal line.

Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Your Project #: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 766888-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/04/27
 Report #: R6156884
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C096446

Received: 2020/04/17, 08:56

Sample Matrix: Surface Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2020/04/27	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2020/04/27	2020/04/27	CAM SOP-00326	EPA1664B m,SM5520B m
pH	1	2020/04/21	2020/04/21	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2020/04/22	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2020/04/27	2020/04/27	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2020/04/21	2020/04/22	CAM SOP-00428	SM 23 2540D m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

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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. When sampling is not conducted by BV Labs, results relate to the supplied 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. #: 766888-01-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/04/27
Report #: R6156884
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C096446
Received: 2020/04/17, 08:56

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager

Email: Ema.Gitej@bvlabs.com

Phone# (905)817-5829

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RESULTS OF ANALYSES OF SURFACE WATER

BV Labs ID			MLV045		
Sampling Date			2020/04/16 09:45		
COC Number			766888-01-01		
	UNITS	Criteria	POND	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	-	<0.50	0.50	6688099
Inorganics					
pH	pH	6.5:8.5	7.86	N/A	6690434
Phenols-4AAP	mg/L	0.001	<0.0010	0.0010	6691711
Total Suspended Solids	mg/L	-	3	1	6690045
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	-	<0.50	0.50	6698753
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	0.50	6698754
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 N/A = Not Applicable					



BUREAU
VERITAS

BV Labs Job #: C096446

Report Date: 2020/04/27

Golder Associates Ltd

Client Project #: 1407634

Site Location: MCCARTHY

GENERAL COMMENTS

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

Package 1	10.0°C
-----------	--------

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: C096446
Report Date: 2020/04/27

Golder Associates Ltd
Client Project #: 1407634
Site Location: MCCARTHY

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6690045	JS7	QC Standard	Total Suspended Solids	2020/04/22		95	%	85 - 115
6690045	JS7	Method Blank	Total Suspended Solids	2020/04/22	<1		mg/L	
6690045	JS7	RPD	Total Suspended Solids	2020/04/22	NC		%	25
6690434	YPA	Spiked Blank	pH	2020/04/21		101	%	98 - 103
6690434	YPA	RPD	pH	2020/04/21	2.0		%	N/A
6691711	BMO	Matrix Spike	Phenols-4AAP	2020/04/22		100	%	80 - 120
6691711	BMO	Spiked Blank	Phenols-4AAP	2020/04/22		100	%	80 - 120
6691711	BMO	Method Blank	Phenols-4AAP	2020/04/22	<0.0010		mg/L	
6691711	BMO	RPD	Phenols-4AAP	2020/04/22	NC		%	20
6698753	GSG	Spiked Blank	Total Oil & Grease	2020/04/27		98	%	85 - 115
6698753	GSG	RPD	Total Oil & Grease	2020/04/27	1.8		%	25
6698753	GSG	Method Blank	Total Oil & Grease	2020/04/27	<0.50		mg/L	
6698754	GSG	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2020/04/27		95	%	85 - 115
6698754	GSG	RPD	Total Oil & Grease Mineral/Synthetic	2020/04/27	3.2		%	25
6698754	GSG	Method Blank	Total Oil & Grease Mineral/Synthetic	2020/04/27	<0.50		mg/L	

N/A = Not Applicable

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

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: C096446

Report Date: 2020/04/27

Golder Associates Ltd

Client Project #: 1407634

Site Location: MCCARTHY

VALIDATION SIGNATURE PAGE

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

A handwritten signature in black ink, appearing to read "A. Hamanov", written over a horizontal line.

Anastassia Hamanov, Scientific Specialist

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Your Project #: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 762593-06-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/05/04
 Report #: R6163763
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: COA1936
Received: 2020/04/24, 09:23

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2020/05/04	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2020/05/04	2020/05/04	CAM SOP-00326	EPA1664B m,SM5520B m
pH	1	2020/04/30	2020/04/30	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2020/04/28	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2020/05/04	2020/05/04	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2020/04/29	2020/04/29	CAM SOP-00428	SM 23 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.

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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 Location: MCCARTHY
Your C.O.C. #: 762593-06-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/05/04
Report #: R6163763
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0A1936
Received: 2020/04/24, 09:23

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager

Email: Ema.Gitej@bvlabs.com

Phone# (905)817-5829

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RESULTS OF ANALYSES OF WATER

BV Labs ID			MMW353		
Sampling Date			2020/04/23 14:00		
COC Number			762593-06-01		
	UNITS	Criteria	POND	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	-	<0.50	0.50	6695786
Inorganics					
pH	pH	6.5:8.5	8.11	N/A	6704117
Phenols-4AAP	mg/L	0.001	<0.0010	0.0010	6698448
Total Suspended Solids	mg/L	-	8	1	6700324
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	-	<0.50	0.50	6708525
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	0.50	6708528
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 N/A = Not Applicable					



BUREAU
VERITAS

BV Labs Job #: COA1936

Report Date: 2020/05/04

Golder Associates Ltd

Client Project #: 1407634

Site Location: MCCARTHY

Sampler Initials: SA

GENERAL COMMENTS

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

Package 1	12.3°C
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Results relate only to the items tested.



QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6698448	BMO	Matrix Spike	Phenols-4AAP	2020/04/27		95	%	80 - 120
6698448	BMO	Spiked Blank	Phenols-4AAP	2020/04/27		95	%	80 - 120
6698448	BMO	Method Blank	Phenols-4AAP	2020/04/27	<0.0010		mg/L	
6698448	BMO	RPD	Phenols-4AAP	2020/04/27	NC		%	20
6700324	JS7	QC Standard	Total Suspended Solids	2020/04/29		100	%	85 - 115
6700324	JS7	Method Blank	Total Suspended Solids	2020/04/29	<1		mg/L	
6700324	JS7	RPD	Total Suspended Solids	2020/04/29	NC		%	25
6704117	SAU	Spiked Blank	pH	2020/04/30		102	%	98 - 103
6704117	SAU	RPD	pH	2020/04/30	0.0077		%	N/A
6708525	GSG	Spiked Blank	Total Oil & Grease	2020/05/04		99	%	85 - 115
6708525	GSG	RPD	Total Oil & Grease	2020/05/04	2.3		%	25
6708525	GSG	Method Blank	Total Oil & Grease	2020/05/04	<0.50		mg/L	
6708528	GSG	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2020/05/04		98	%	85 - 115
6708528	GSG	RPD	Total Oil & Grease Mineral/Synthetic	2020/05/04	5.2		%	25
6708528	GSG	Method Blank	Total Oil & Grease Mineral/Synthetic	2020/05/04	<0.50		mg/L	

N/A = Not Applicable

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

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

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

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

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

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



BUREAU
VERITAS

BV Labs Job #: COA1936

Report Date: 2020/05/04

Golder Associates Ltd

Client Project #: 1407634

Site Location: MCCARTHY

Sampler Initials: SA

VALIDATION SIGNATURE PAGE

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

A handwritten signature in black ink, appearing to read 'Brad Newman', positioned above a horizontal line.

Brad Newman, Scientific Service Specialist

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Your Project #: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 752753-04-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/05/09
 Report #: R6169339
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0A7320

Received: 2020/05/01, 09:05

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Animal and Vegetable Oil and Grease	1	N/A	2020/05/09	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2020/05/09	2020/05/09	CAM SOP-00326	EPA1664B m,SM5520B m
pH	1	2020/05/05	2020/05/05	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2020/05/05	CAM SOP-00444	OMOE E3179 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2020/05/09	2020/05/09	CAM SOP-00326	EPA1664B m,SM5520F m
Low Level Total Suspended Solids	1	2020/05/05	2020/05/06	CAM SOP-00428	SM 23 2540D m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs 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. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs 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 BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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. When sampling is not conducted by BV Labs, results relate to the supplied 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 Location: MCCARTHY
Your C.O.C. #: 752753-04-01

Attention: Dawn Hoyle/Jamie Bonany

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

Report Date: 2020/05/09
Report #: R6169339
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0A7320
Received: 2020/05/01, 09:05

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager

Email: Ema.Gitej@bvlabs.com

Phone# (905)817-5829

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RESULTS OF ANALYSES OF WATER

BV Labs ID			MNX540		
Sampling Date			2020/04/30 10:05		
COC Number			752753-04-01		
	UNITS	Criteria	POND	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	-	<0.50	0.50	6708580
Inorganics					
pH	pH	6.5:8.5	7.88	N/A	6710330
Phenols-4AAP	mg/L	0.001	<0.0010	0.0010	6709948
Total Suspended Solids	mg/L	-	37	1	6710372
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	-	<0.50	0.50	6717581
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	0.50	6717582
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 N/A = Not Applicable					



BUREAU
VERITAS

BV Labs Job #: COA7320
Report Date: 2020/05/09

Golder Associates Ltd
Client Project #: 1407634
Site Location: MCCARTHY

GENERAL COMMENTS

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

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



BUREAU
VERITAS

BV Labs Job #: COA7320
Report Date: 2020/05/09

Golder Associates Ltd
Client Project #: 1407634
Site Location: MCCARTHY

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
6709948	BMO	Matrix Spike	Phenols-4AAP	2020/05/05		97	%	80 - 120
6709948	BMO	Spiked Blank	Phenols-4AAP	2020/05/05		99	%	80 - 120
6709948	BMO	Method Blank	Phenols-4AAP	2020/05/05	<0.0010		mg/L	
6709948	BMO	RPD	Phenols-4AAP	2020/05/05	NC		%	20
6710330	GTO	Spiked Blank	pH	2020/05/05		99	%	98 - 103
6710330	GTO	RPD	pH	2020/05/05	0.34		%	N/A
6710372	JS7	QC Standard	Total Suspended Solids	2020/05/06		98	%	85 - 115
6710372	JS7	Method Blank	Total Suspended Solids	2020/05/06	<1		mg/L	
6710372	JS7	RPD	Total Suspended Solids	2020/05/06	NC		%	25
6717581	GSG	Spiked Blank	Total Oil & Grease	2020/05/09		99	%	85 - 115
6717581	GSG	RPD	Total Oil & Grease	2020/05/09	1.8		%	25
6717581	GSG	Method Blank	Total Oil & Grease	2020/05/09	<0.50		mg/L	
6717582	GSG	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2020/05/09		97	%	85 - 115
6717582	GSG	RPD	Total Oil & Grease Mineral/Synthetic	2020/05/09	4.8		%	25
6717582	GSG	Method Blank	Total Oil & Grease Mineral/Synthetic	2020/05/09	<0.50		mg/L	

N/A = Not Applicable

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

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

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VERITAS

BV Labs Job #: COA7320

Report Date: 2020/05/09

Golder Associates Ltd

Client Project #: 1407634

Site Location: MCCARTHY

VALIDATION SIGNATURE PAGE

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

A handwritten signature in black ink, appearing to read "A. Hamanov", written over a horizontal line.

Anastassia Hamanov, Scientific Specialist

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