REPORT

Environmental Compliance Approval Quarterly Monitoring Report (August to October 2024)

McCarthy Quarry

Submitted to:

Chris Hyde

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

Submitted by:

WSP Canada Inc.

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

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November 2024

Distribution List

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APPENDICES

1.0 INTRODUCTION

WSP Canada Inc. (WSP) was retained by GIP Aggregates Inc. (GIP) to prepare a quarterly monitoring 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 August and October 2024.

2.0 BACKGROUND

The dewatering activities at the McCarthy Quarry in 2024 are regulated under Permit to Take Water (PTTW) No. 5184-CQ7MWS (Formally No. 1603-BKTPQH), issued on March 27th, 2023 and expiring on January 31st, 2025. Under PTTW No. 5184-CQ7MWS GIP is permitted to pump water from the quarry sump at a maximum rate of 4,545 L/min (76 L/sec). The quarry discharge monitoring plan and effluent quality limits are established in the ECA.

The McCarthy Quarry dewatering system includes a sump originally 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 pump which is rated for a maximum discharge rate of up to 2,100 L/min (35 L/sec) and is attached to a discharge line. On April 11, 2023, McCarthy staff replaced the pump with a rental from Sunbelt following issues with the previous pump. This pump is rated for a maximum discharge rate of up to 1417 L/min (24 L/sec) and is attached to the discharge line. Water is pumped from the quarry floor up the quarry face via the discharge line to a pipeline that directs the water to a 14,000 m^3 settling pond (Figure 1). GIP finalized set-up of a new sump location in the southeast corner of the quarry floor in March 2022 and started utilized this new sump location for pumping in April 2022. The initial sump location was creating operational issues as GIP was not able to properly dewater the southern portion of the quarry. In addition, the previous set up was very inefficient due to the length of piping required from the sump to the horse-shoe shaped settling pond. The new sump location is shown on the attached Figure 1; GIP has also adjusted the discharge piping that runs from the pump to the horse-shoe shaped settling pond. No changes were made to the discharge pond. 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 approximately 1.1 km downstream of the Quarry, which eventually 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 SWM POND on Figure 1); and
- Semi-annual monitoring of effluent quality at three locations: 1) the SWM Pond outfall; 2) the culvert along Concession Road 1 at the McCarthy property; and 3) 260 m north of the intersection of Concession Road 1 and the Mara Eldon Boundary Road. 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 $CaCO_3$), alkalinity(as $CaCO_3$), 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 McCarthy staff directly from the discharge outfall from the settling pond. However, due to a lack of discharge from the outfall during this period caused from minimal dewatering no samples were collected by McCarthy staff due to insufficient water discharging from the outflow pipe from the pond. It was also noted by WSP staff during this period that water was not observed discharging from the outfall pipe during the monthly visits to site. The weekly water quality samples when collected are sent to Bureau Veritas Laboratories of Mississauga, Ontario for analysis. These weekly water quality results when collected are compared to the daily concentration limits of the ECA (Table 1). A monthly average is calculated from the weekly water quality results and compared to the monthly concentration limits of the ECA (Table 2).

No weekly water quality sample were collected from the McCarthy Pond location during the period of August to October 2024 due to limited discharge from the outfall at the pond caused by minimal dewatering during this period resulting in the water level in the settling pond not reaching high enough to allow for water to exit through the outfall of the settling pond. It is also noted that the October semi-annual sample at the McCarthy Pond was collected directly from the Pond as a grab sample due to no water discharging from the outfall pipe during the site visit where it is normally collected.

4.0 MONITORING RESULTS

All laboratory certificates of analysis for the August to October 2024 monitoring period for the weekly and semi-annual monitoring events are provided in Appendix B. Results of the quarry discharge sample analyses are summarized below:

- The daily discharge rate between August to October 2024 was below the permitted rate of 4,545 L/min (76 L/sec) (Table 4). Dewatering at the site was reported to occur for 8 days of the August to October period.
- No weekly samples were collected by McCarthy staff due to limited discharge from the outfall at the pond caused by minimal dewatering during this period resulting in the water level in the settling pond not reaching high enough to allow water from the pond to exit through the outfall pipe.
- The McCarthy semi-annual surface water sample collected during the October visit to site was collected directly from the McCarthy Pond and not the outfall pipe due to a lack of discharge caused by the lower water level in the Pond. Additionally, no sample was collected at SW2 due to the location being dry during the visit to site. A follow up attempt was made on November 25th to collect the SW2 sample, however the location did not have sufficient water present at the SW2 location.
- The semi-annual surface water sampling results were below the PWQO (Table 3) with the exception of an exceedance of Total Iron, Phenols, and Total Phosphorous at SW1. It is to be noted that exceedances in Total Iron, Phenols, and Total Phosphorous have been encountered in the past during sampling events when discharge from the Pond is low and the flow of water at SW1 is slow with minimal water column. The elevated total Iron is likely also attributed to entrained sediment in the sample.

5.0 CLOSURE

We trust this report meets your current requirements. Should you have any questions please do not hesitate to contact the undersigned.

Signature Page

WSP Canada Inc.

Colin Imrie, G.I.T.
Geoscientist-in-Training

Sean McFarland, Ph.D., P.Geo.
Senior Hydrogeologist, Senior Principal/Fellow

CSI/SM/lb

Tables

Table 1: McCarthy Pond Weekly Water Quality Results (August to October 2024)

	Unit	Reportable Detection Limit (RDL)	PWQO [1]	Daily Concentration Limit[2]	McCarthy Quarry		
Sample ID					**Pond**		
Date					-	-	-
pH	pH	n/a		6.0-9.5	-	-	-
Total Suspended Solids	mg/L	1		30	-	-	-
Total Oil and Grease	mg/L	0.5	Note 3	30	-	-	-
Phenols (4AAP)	mg/L	<0.0010		0.04	-	-	-

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 Environmental Compliance Approval (ECA) 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 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 preceeded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).

Table 2: McCarthy Pond Monthly Water Quality Results (August to October 2024)

	Unit	Reportable Detection Limit (RDL)	PWQO [1]	Monthly Concentration Limit[2]	McCarthy Quarry		
Sample ID					**Pond**		
Date					August	September	October
Total Suspended Solids	mg/L	1		15	-	-	-
Total Oil and Grease	mg/L	0.5	Note 3	15	-	-	-
Phenols (4AAP)	mg/L	<0.0010		0.02	-	-	-

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 Environmental Compliance Approval (ECA) 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 preceeded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).

Table 3: McCarthy Semi-Annual Water Quality Monitoring Results

	Unit	Reportable Detection Limit (RDL)	PWQO [1]	Interim PWQO [2]	ECA Effluent Limits	McCarthy Quarry		
Sample ID						**Pond**	**SW1**	**SW2**
Date						**22-Oct-24**	**22-Oct-24**	**-**
Field Measured Parameters								
Conductivity	µS/cm					1680	2185	-
pH	pH	n/a	6.5-8.5		6.0-9.5	7.97	6.89	-
Temperature	°C	n/a				17.4	14.7	-
Calculated Parameters								
Hardness (CaCO3)	mg/L	1.0				420	640	-
Inorganics								
Total Ammonia-N	mg/L	0.050				0.079	0.87	-
Conductivity	ms/cm	0.001				1.80	2.20	-
Total Dissolved Solids	mg/L	10				1100	1400	-
Fluoride (F-)	mg/L	0.10				0.44	0.48	-
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10				0.78	1.70	-
Dissolved Organic Carbon	mg/L	0.50				8.4	7.9	-
pH	pH	N/A	6.5-8.5		6.0-9.5	7.91	7.71	-
Phenols-4AAP	mg/L	0.0010	0.001		0.04	<0.0010	0.0013	-
Total Phosphorus	mg/L	0.020		0.03[5b]		0.013	*0.089*	-
Total Suspended Solids	mg/L	10			30	19	20	-
Dissolved Sulphate (SO4)	mg/L	1				270	310	-
Alkalinity (Total as CaCO3)	mg/L	1.0				81	210	-
Dissolved Chloride (Cl)	mg/L	1				330	380	-
Nitrite (N)	mg/L	0.010				<0.010	0.012	-
Nitrate (N)	mg/L	0.10				<0.10	<0.10	-
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	0.50	Note 3		30	<0.50	<0.50	-
Metals								
Total Arsenic (As)	ug/L	1	100	5		<1.0	<1.0	-
Total Cadmium (Cd)	ug/L	0.09	0.2	0.1-0.5[5d]		<0.09	<0.09	-
Dissolved Calcium (Ca)	mg/L	0.05				90	160	-
Total Calcium (Ca)	ug/L	200				96000	160000	-
Total Chromium (Cr)	ug/L	5	1-89[5e]			<5.0	<5.0	-
Total Copper (Cu)	ug/L	0.9	5	1-5[5f]		<0.90	1.2	-
Total Iron (Fe)	ug/L	100	300			260	490	-
Total Lead (Pb)	ug/L	0.5	5-25[5g]	1-5[5h]		<0.50	<0.50	-
Dissolved Magnesium (Mg)	mg/L	0.05				48	57	-
Total Magnesium (Mg)	ug/L	50				49000	57000	-
Total Manganese (Mn)	ug/L	2				39	180	-
Total Nickel (Ni)	ug/L	1	25			1.4	1.7	-
Dissolved Potassium (K)	mg/L	1				15.0	15.0	-
Total Potassium (K)	ug/L	200				16000	16000	-
Dissolved Sodium (Na)	mg/L	0.5				170	190	-
Total Sodium (Na)	ug/L	100				180000	190000	-
Total Zinc (Zn)	ug/L	5	30	20		<5.0	<5.0	-

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. Interim Provincial Water Quality Objectives (Interim PWQO); *shaded cells and italics denote Interim PWQO exceedance* ; some PWQOs are dependent on other water quality parameters hence the range in guideline values, refer to PQWO notes.

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 preceeded by "<" denote concentrations that are below the laboratory Reportable Detection Limit (RDL).

5a. Aluminum (Interim):

- At pH 4.5 to 5.5 the Interim PWQO is 15 ug/L based on inorganic monomeric aluminum measured in clay-free samples.
- At pH >5.5 to 6.5, no condition should be permitted which would increase the acid soluble inorganic aluminum concentration in clay-free samples to more than 10% above natural background concentrations for waters representative of that geological area of the Province that are unaffected by man-made inputs.
- At pH >6.5 to 9.0, the Interim PWQO is 75 ug/L based on total aluminum measured in clay-free samples.
- If natural background aluminum concentrations in water bodies unaffected by manmade inputs are greater than the numerical Interim PWQO (above), no condition is permitted that would increase the aluminum concentration in clay-free samples by more than 10% of the natural background level.

5b. Phosphorus (Interim):

- Current scientific evidence is insufficient to develop a firm Objective at this time.
- Accordingly, the following phosphorus concentrations should be considered as general guidelines which should be supplemented by site-specific studies:

(a) To avoid nuisance concentrations of algae in lakes, average total phosphorus concentrations for the ice-free period should not exceed 20 ug/L;
(b) A high level of protection against aesthetic deterioration will be provided by a total phosphorus concentration for the ice-free period of 10 ug/L or less. This should apply to all lakes naturally below this value;
(c) Excessive plant growth in rivers and streams should be eliminated at a total phosphorus concentration below 30 ug/L.

5c. Beryllium :	If Hardness <75 mg/L (CaCO3), use 11 ug/L If Hardness >75 mg/L (CaCO3), use 1100 ug/L
5d. Cadmium: (Interim)	If Hardness 0-100 mg/L (CaCO3), then use 0.1 ug/L If Hardness >100 mg/L (CaCO3), then use 0.5 ug/L
5e. Chromium	1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)
5f. Copper: (Interim)	If Hardness as CaCO3 (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO3 (mg/L) is >20, then use 5 ug/L
5g. Lead :	If Alkalinity as CaCO3 (mg/L) is < 20, use 5 ug/L If Alkalinity as CaCO3 (mg/L) is 20 to 40, use 10 ug/L If Alkalinity as CaCO3 (mg/L) is 40 to 80, use 20 ug/L If Alkalinity as CaCO3 (mg/L) is > 80, use 25 ug/L
5h. Lead: (Interim)	If Hardness as CaCO3 (mg/L) is < 30, then use 1 ug/L If Hardness as CaCO3 (mg/L) is 30 to 80, then use 3 ug/ If Hardness as CaCO3 (mg/L) is > 80, then use 5 ug/L

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-Aug-24	NO PUMP		0	0	-	-	-
2-Aug-24	7:00 AM	2:00 PM	25200	420	595,140	24	1,417
3-Aug-24	NO PUMP		0	0	-	-	-
4-Aug-24	NO PUMP		0	0	-	-	-
5-Aug-24	NO PUMP		0	0	-	-	-
6-Aug-24	NO PUMP		0	0	-	-	-
7-Aug-24	NO PUMP		0	0	-	-	-
8-Aug-24	NO PUMP		0	0	-	-	-
9-Aug-24	NO PUMP		0	0	-	-	-
10-Aug-24	NO PUMP		0	0	-	-	-
11-Aug-24	NO PUMP		0	0	-	-	-
12-Aug-24	NO PUMP		0	0	-	-	-
13-Aug-24	NO PUMP		0	0	-	-	-
14-Aug-24	NO PUMP		0	0	-	-	-
15-Aug-24	NO PUMP		0	0	-	-	-
16-Aug-24	NO PUMP		0	0	-	-	-
17-Aug-24	NO PUMP		0	0	-	-	-
18-Aug-24	NO PUMP		0	0	-	-	-
19-Aug-24	NO PUMP		0	0	-	-	-
20-Aug-24	NO PUMP		0	0	-	-	-
21-Aug-24	7:00 AM	5:00 PM	36000	600	850,200	24	1,417
22-Aug-24	NO PUMP		0	0	-	-	-
23-Aug-24	NO PUMP		0	0	-	-	-
24-Aug-24	NO PUMP		0	0	-	-	-
25-Aug-24	NO PUMP		0	0	-	-	-
26-Aug-24	NO PUMP		0	0	-	-	-
27-Aug-24	NO PUMP		0	0	-	-	-
28-Aug-24	NO PUMP		0	0	-	-	-
29-Aug-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
30-Aug-24	7:00 AM	4:00 PM	32400	540	765,180	24	1,417
31-Aug-24	NO PUMP		0	0	-	-	-
1-Sep-24	NO PUMP		0	0	-	-	-
2-Sep-24	NO PUMP		0	0	-	-	-
3-Sep-24	NO PUMP		0	0	-	-	-
4-Sep-24	NO PUMP		0	0	-	-	-
5-Sep-24	NO PUMP		0	0	-	-	-
6-Sep-24	NO PUMP		0	0	-	-	-
7-Sep-24	NO PUMP		0	0	-	-	-
8-Sep-24	NO PUMP		0	0	-	-	-
9-Sep-24	NO PUMP		0	0	-	-	-
10-Sep-24	NO PUMP		0	0	-	-	-
11-Sep-24	7:00 AM	2:00 PM	25200	420	595,140	24	1,417

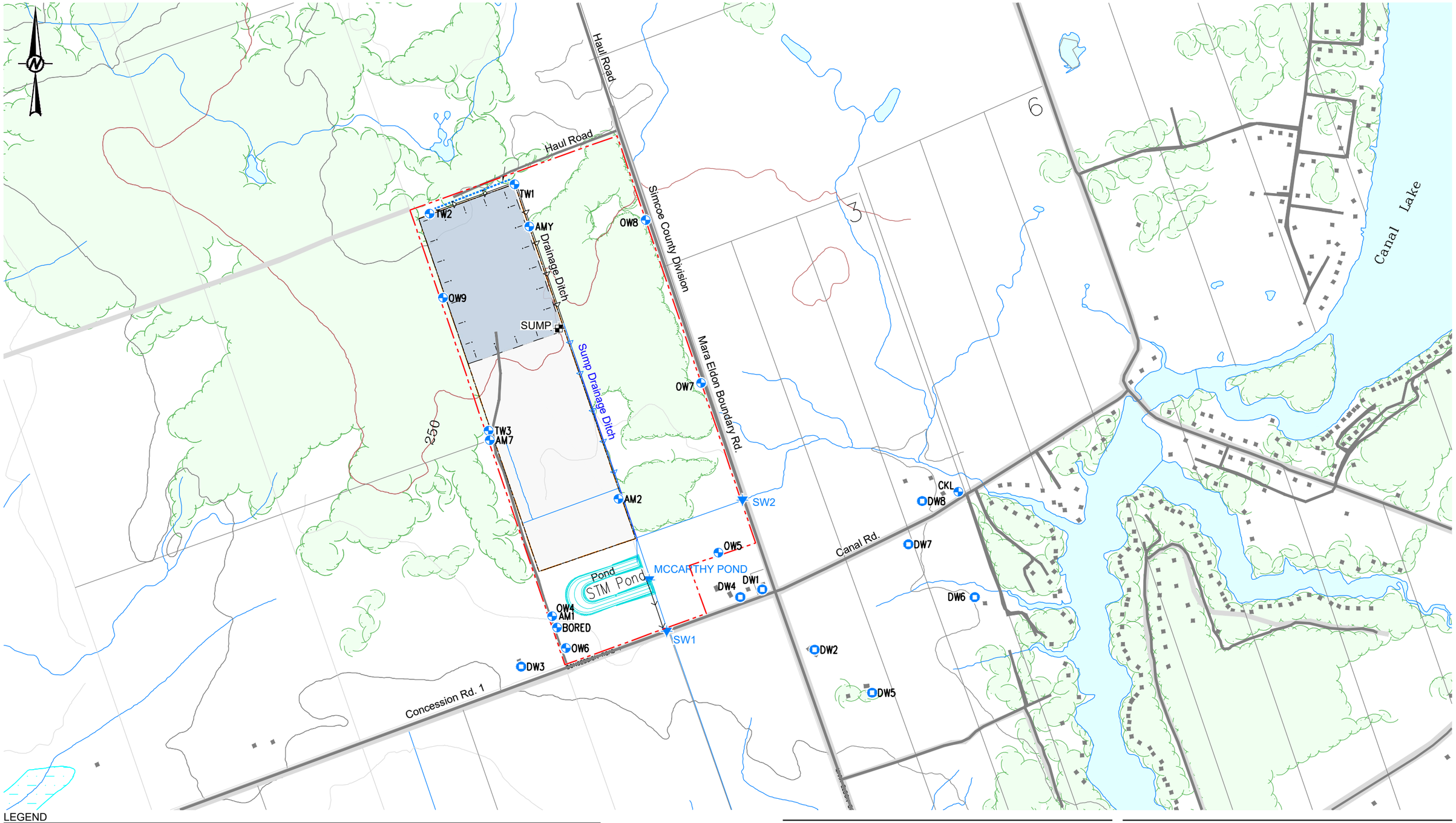
Table 4: Measured Water Volume and Rate of Discharge from Quarry Sump

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**
12-Sep-24	NO PUMP		0	0	-	-	-
13-Sep-24	NO PUMP		0	0	-	-	-
14-Sep-24	NO PUMP		0	0	-	-	-
15-Sep-24	NO PUMP		0	0	-	-	-
16-Sep-24	NO PUMP		0	0	-	-	-
17-Sep-24	NO PUMP		0	0	-	-	-
18-Sep-24	NO PUMP		0	0	-	-	-
19-Sep-24	NO PUMP		0	0	-	-	-
20-Sep-24	NO PUMP		0	0	-	-	-
21-Sep-24	NO PUMP		0	0	-	-	-
22-Sep-24	NO PUMP		0	0	-	-	-
23-Sep-24	NO PUMP		0	0	-	-	-
24-Sep-24	NO PUMP		0	0	-	-	-
25-Sep-24	7:00 AM	5:00 PM	36000	600	850,200	24	1,417
26-Sep-24	NO PUMP		0	0	-	-	-
27-Sep-24	NO PUMP		0	0	-	-	-
28-Sep-24	NO PUMP		0	0	-	-	-
29-Sep-24	NO PUMP		0	0	-	-	-
30-Sep-24	NO PUMP		0	0	-	-	-
1-Oct-24	NO PUMP		0	0	-	-	-
2-Oct-24	NO PUMP		0	0	-	-	-
3-Oct-24	NO PUMP		0	0	-	-	-
4-Oct-24	NO PUMP		0	0	-	-	-
5-Oct-24	NO PUMP		0	0	-	-	-
6-Oct-24	NO PUMP		0	0	-	-	-
7-Oct-24	NO PUMP		0	0	-	-	-
8-Oct-24	NO PUMP		0	0	-	-	-
9-Oct-24	NO PUMP		0	0	-	-	-
10-Oct-24	NO PUMP		0	0	-	-	-
11-Oct-24	7:00 AM	3:00 PM	28800	480	680,160	24	1,417
12-Oct-24	NO PUMP		0	0	-	-	-
13-Oct-24	NO PUMP		0	0	-	-	-
14-Oct-24	NO PUMP		0	0	-	-	-
15-Oct-24	NO PUMP		0	0	-	-	-
16-Oct-24	NO PUMP		0	0	-	-	-
17-Oct-24	NO PUMP		0	0	-	-	-
18-Oct-24	NO PUMP		0	0	-	-	-
19-Oct-24	NO PUMP		0	0	-	-	-
20-Oct-24	NO PUMP		0	0	-	-	-
21-Oct-24	NO PUMP		0	0	-	-	-
22-Oct-24	NO PUMP		0	0	-	-	-
23-Oct-24	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**
24-Oct-24	NO PUMP		0	0	-	-	-
25-Oct-24	7:00 AM	5:00 PM	36000	600	850,200	24	1,417
26-Oct-24	NO PUMP		0	0	-	-	-
27-Oct-24	NO PUMP		0	0	-	-	-
28-Oct-24	NO PUMP		0	0	-	-	-
29-Oct-24	NO PUMP		0	0	-	-	-
30-Oct-24	NO PUMP		0	0	-	-	-
31-Oct-24	NO PUMP		0	0	-	-	-
			Totals		5,951,400		8

Figures



LEGEND

- Property Boundary
- Approximate Licenced Boundary
- Approximate Extent of Quarry
- Private Well Monitoring Location
- Observation Well Monitoring Location
- Surface Water Sampling Location

REFERENCES AND NOTES

1. Projection UTM NAD83 Zone 17
2. Mapping based on ESRI Geography Network OBM Features and 2012 Road Network
3. All Mapped features are Approximate and Not to Scale

0 250 500
1:10,000 METRES

CLIENT
GIP AGGREGATES INC.

PROJECT
STAN McCARTHY QUARRY

CONSULTANT
wsp

YYYY-MM-DD	2024-09-12
PREPARED	JPR
DESIGN	
REVIEW	CSI
APPROVED	DPD

TITLE
LOCATION MAP

PROJECT No.	CONTROL	Rev.	FIGURE
CA0023633	0002	----	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

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APPENDIX A

ECA No. 7737-BH6QEA

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

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	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.

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 #: CA0023633.8620
Your C.O.C. #: C#1017698-01-01

Attention: Colin Imrie

WSP Canada Inc.
121 Commerce Park Drive
Unit L
Barrie, ON
CANADA L4N 8X1

Report Date: 2024/10/30
Report #: R8382919
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4X3362
Received: 2024/10/23, 12:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	3	N/A	2024/10/28	CAM SOP-00448	SM 24 2320 B m
Carbonate, Bicarbonate and Hydroxide	3	N/A	2024/10/29	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	3	N/A	2024/10/25	CAM SOP-00463	SM 24 4500-Cl E m
Conductivity	3	N/A	2024/10/28	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	3	N/A	2024/10/24	CAM SOP-00446	SM 24 5310 B m
Fluoride	3	2024/10/24	2024/10/28	CAM SOP-00449	SM 24 4500-F C m
Hardness (calculated as CaCO3)	3	N/A	2024/10/25	CAM SOP 00102/00408/00447	SM 2340 B
Lab Filtered Metals by ICPMS	3	2024/10/24	2024/10/25	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	2	2024/10/25	2024/10/25	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	1	2024/10/29	2024/10/29	CAM SOP-00447	EPA 6020B m
Anion and Cation Sum	3	N/A	2024/10/29		
Total Ammonia-N	3	N/A	2024/10/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	3	N/A	2024/10/25	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Animal and Vegetable Oil and Grease	3	N/A	2024/10/27	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	3	2024/10/27	2024/10/27	CAM SOP-00326	EPA1664B m,SM5520B m
pH (3)	3	2024/10/24	2024/10/28	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	3	N/A	2024/10/28	CAM SOP-00444	OMOE E3179 m
Orthophosphate	3	N/A	2024/10/25	CAM SOP-00461	SM 24 4500-P E
Sat. pH and Langelier Index (@ 20C)	3	N/A	2024/10/29		Auto Calc
Sat. pH and Langelier Index (@ 4C)	3	N/A	2024/10/29		Auto Calc
Sulphate by Automated Turbidimetry	3	N/A	2024/10/28	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	3	2024/10/24	2024/10/25	CAM SOP-00428	SM 24 2540C m
Total Kjeldahl Nitrogen in Water	3	2024/10/25	2024/10/28	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	3	2024/10/28	2024/10/29	CAM SOP-00407	SM 24 4500-P I
Mineral/Synthetic O & G (TPH Heavy Oil) (4)	3	2024/10/27	2024/10/27	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids	3	2024/10/24	2024/10/25	CAM SOP-00428	SM 24 2540D m
Turbidity	3	N/A	2024/10/24	CAM SOP-00417	SM 24 2130 B

Remarks:

Your Project #: CA0023633.8620
Your C.O.C. #: C#1017698-01-01

Attention: Colin Imrie

WSP Canada Inc.
121 Commerce Park Drive
Unit L
Barrie, ON
CANADA L4N 8X1

Report Date: 2024/10/30
Report #: R8382919
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4X3362

Received: 2024/10/23, 12:00

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

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, results relate to the supplied samples tested.

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) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

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

Your Project #: CA0023633.8620
Your C.O.C. #: C#1017698-01-01

Attention: Colin Imrie

WSP Canada Inc.
121 Commerce Park Drive
Unit L
Barrie, ON
CANADA L4N 8X1

Report Date: 2024/10/30
Report #: R8382919
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4X3362
Received: 2024/10/23, 12:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Ankita Bhalla, Project Manager
Email: Ankita.Bhalla@bureauveritas.com
Phone# (905) 817-5700

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This report has been generated and distributed using a secure automated process.
Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4X3362
Report Date: 2024/10/30

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CI

OIL & GREASE - A/V/M/T (WATER)

Bureau Veritas ID			AGSM07	AGSM08	AGSM10		
Sampling Date			2024/10/22 12:30	2024/10/22 12:40	2024/10/22		
COC Number			C#1017698-01-01	C#1017698-01-01	C#1017698-01-01		
	UNITS	Criteria	POND	SW 1	DUP 3	RDL	QC Batch
Calculated Parameters							
Total Animal/Vegetable Oil and Grease	mg/L	-	<0.50	<0.50	<0.50	0.50	9718404
Petroleum Hydrocarbons							
Total Oil & Grease	mg/L	-	<0.50	<0.50	<0.50	0.50	9727409
Total Oil & Grease Mineral/Synthetic	mg/L	0.5	<0.50	<0.50	<0.50	0.50	9727410

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Provincial Water Quality Objectives
Ref. to MOEE Water Management document dated Feb.1999

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C4X3362
Report Date: 2024/10/30

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CI

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			AGSM07	AGSM08			AGSM08		
Sampling Date			2024/10/22 12:30	2024/10/22 12:40			2024/10/22 12:40		
COC Number			C#1017698-01-01	C#1017698-01-01			C#1017698-01-01		
	UNITS	Criteria	POND	SW 1	RDL	QC Batch	SW 1 Lab-Dup	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	-	16.6	21.3	N/A	9719775			
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	81	210	1.0	9719147			
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	<1.0	1.0	1.0	9719147			
Cation Sum	me/L	-	16.4	21.6	N/A	9719775			
Hardness (CaCO3)	mg/L	-	420	640	1.0	9720555			
Langelier Index (@ 20C)	N/A	-	0.213	0.645		9719777			
Langelier Index (@ 4C)	N/A	-	-0.0330	0.401		9719778			
Saturation pH (@ 20C)	N/A	-	7.70	7.06		9719777			
Saturation pH (@ 4C)	N/A	-	7.95	7.31		9719778			
Inorganics									
Total Ammonia-N	mg/L	-	0.079	0.87	0.050	9726353			
Conductivity	umho/cm	-	1800	2200	1.0	9722448	2200	1.0	9722448
Total Dissolved Solids	mg/L	-	1110	1400	10	9721577			
Fluoride (F-)	mg/L	-	0.44	0.48	0.10	9722449	0.47	0.10	9722449
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.78	1.7	0.10	9725417			
Dissolved Organic Carbon	mg/L	-	8.4	7.9	0.40	9722510			
Orthophosphate (P)	mg/L	-	<0.010	0.016	0.010	9723733			
pH	pH	6.5:8.5	7.91	7.71		9722451	7.71		9722451
Phenols-4AAP	mg/L	0.001	<0.0010	**0.0013**	0.0010	9728474			
Total Phosphorus	mg/L	0.01	**0.013**	**0.089**	0.004	9728180			
Total Suspended Solids	mg/L	-	19	20	10	9721849			
Dissolved Sulphate (SO4)	mg/L	-	270	310	2.0	9723732			
Turbidity	NTU	-	8.3	49	0.1	9722367			
Alkalinity (Total as CaCO3)	mg/L	-	81	210	1.0	9722445	210	1.0	9722445
Dissolved Chloride (Cl-)	mg/L	-	330	380	3.0	9723731			
Nitrite (N)	mg/L	-	<0.010	0.012	0.010	9722394			
Nitrate (N)	mg/L	-	<0.10	<0.10	0.10	9722394			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Provincial Water Quality Objectives
Ref. to MOEE Water Management document dated Feb.1999
N/A = Not Applicable

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RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			AGSM10		
Sampling Date			2024/10/22		
COC Number			C#1017698-01-01		
	UNITS	Criteria	DUP 3	RDL	QC Batch
Calculated Parameters					
Anion Sum	me/L	-	21.2	N/A	9719775
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	210	1.0	9719147
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1.0	1.0	9719147
Cation Sum	me/L	-	22.5	N/A	9719775
Hardness (CaCO3)	mg/L	-	670	1.0	9720555
Langelier Index (@ 20C)	N/A	-	0.663		9719777
Langelier Index (@ 4C)	N/A	-	0.418		9719778
Saturation pH (@ 20C)	N/A	-	7.04		9719777
Saturation pH (@ 4C)	N/A	-	7.29		9719778
Inorganics					
Total Ammonia-N	mg/L	-	0.90	0.050	9726353
Conductivity	umho/cm	-	2200	1.0	9722448
Total Dissolved Solids	mg/L	-	1380	10	9721577
Fluoride (F-)	mg/L	-	0.48	0.10	9722449
Total Kjeldahl Nitrogen (TKN)	mg/L	-	1.8	0.10	9725417
Dissolved Organic Carbon	mg/L	-	7.9	0.40	9722510
Orthophosphate (P)	mg/L	-	0.024	0.010	9723733
pH	pH	6.5:8.5	7.70		9722451
Phenols-4AAP	mg/L	0.001	**0.0017**	0.0010	9728474
Total Phosphorus	mg/L	0.01	**0.14**	0.004	9728180
Total Suspended Solids	mg/L	-	110	10	9721849
Dissolved Sulphate (SO4)	mg/L	-	300	2.0	9723732
Turbidity	NTU	-	130	0.1	9722367
Alkalinity (Total as CaCO3)	mg/L	-	210	1.0	9722445
Dissolved Chloride (Cl-)	mg/L	-	380	3.0	9723731
Nitrite (N)	mg/L	-	0.019	0.010	9722394
Nitrate (N)	mg/L	-	<0.10	0.10	9722394

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

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

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Bureau Veritas Job #: C4X3362
Report Date: 2024/10/30

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CI

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			AGSM07	AGSM08		AGSM10		
Sampling Date			2024/10/22 12:30	2024/10/22 12:40		2024/10/22		
COC Number			C#1017698-01-01	C#1017698-01-01		C#1017698-01-01		
	UNITS	Criteria	POND	SW 1	QC Batch	DUP 3	RDL	QC Batch
Metals								
Total Arsenic (As)	ug/L	100	<1.0	<1.0	9724109	<1.0	1.0	9730516
Total Cadmium (Cd)	ug/L	0.2	<0.090	<0.090	9724109	<0.090	0.090	9730516
Dissolved Calcium (Ca)	ug/L	-	90000	160000	9722708	170000	200	9722708
Total Calcium (Ca)	ug/L	-	96000	160000	9724109	180000	200	9730516
Total Chromium (Cr)	ug/L	-	<5.0	<5.0	9724109	<5.0	5.0	9730516
Total Copper (Cu)	ug/L	5	<0.90	1.2	9724109	2.4	0.90	9730516
Total Iron (Fe)	ug/L	300	260	**490**	9724109	**1500**	100	9730516
Total Lead (Pb)	ug/L	5	<0.50	<0.50	9724109	0.80	0.50	9730516
Dissolved Magnesium (Mg)	ug/L	-	48000	57000	9722708	59000	50	9722708
Total Magnesium (Mg)	ug/L	-	49000	57000	9724109	57000	50	9730516
Total Manganese (Mn)	ug/L	-	39	180	9724109	210	2.0	9730516
Total Nickel (Ni)	ug/L	25	1.4	1.7	9724109	2.5	1.0	9730516
Dissolved Potassium (K)	ug/L	-	15000	15000	9722708	16000	200	9722708
Total Potassium (K)	ug/L	-	16000	16000	9724109	17000	200	9730516
Dissolved Sodium (Na)	ug/L	-	170000	190000	9722708	200000	100	9722708
Total Sodium (Na)	ug/L	-	180000	190000	9724109	190000	100	9730516
Total Zinc (Zn)	ug/L	30	<5.0	<5.0	9724109	9.0	5.0	9730516

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Provincial Water Quality Objectives
Ref. to MOEE Water Management document dated Feb.1999

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TEST SUMMARY

Bureau Veritas ID: AGSM07 **Collected:** 2024/10/22
Sample ID: POND **Shipped:**
Matrix: Water **Received:** 2024/10/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9722445	N/A	2024/10/28	Nachiketa Gohil
Carbonate, Bicarbonate and Hydroxide	CALC	9719147	N/A	2024/10/29	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9723731	N/A	2024/10/25	Alina Dobreanu
Conductivity	AT	9722448	N/A	2024/10/28	Nachiketa Gohil
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9722510	N/A	2024/10/24	Gyulshen Idriz
Fluoride	ISE	9722449	2024/10/24	2024/10/28	Nachiketa Gohil
Hardness (calculated as CaCO3)		9720555	N/A	2024/10/25	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	9722708	2024/10/24	2024/10/25	Nan Raykha
Total Metals Analysis by ICPMS	ICP/MS	9724109	2024/10/25	2024/10/25	Nan Raykha
Anion and Cation Sum	CALC	9719775	N/A	2024/10/29	Automated Statchk
Total Ammonia-N	SKAL/NH4	9726353	N/A	2024/10/28	Muskan
Nitrate & Nitrite as Nitrogen in Water	LACH	9722394	N/A	2024/10/25	Chandra Nandlal
Animal and Vegetable Oil and Grease	BAL	9718404	N/A	2024/10/27	Automated Statchk
Total Oil and Grease	BAL	9727409	2024/10/27	2024/10/27	Navneet Singh
pH	AT	9722451	2024/10/24	2024/10/28	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9728474	N/A	2024/10/28	Sachi Patel
Orthophosphate	SKAL	9723733	N/A	2024/10/25	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9719777	N/A	2024/10/29	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9719778	N/A	2024/10/29	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9723732	N/A	2024/10/28	Massarat Jan
Total Dissolved Solids	BAL	9721577	2024/10/24	2024/10/25	Razieh Tabesh
Total Kjeldahl Nitrogen in Water	SKAL	9725417	2024/10/25	2024/10/28	Kruti Jitesh Patel
Total Phosphorus (Colourimetric)	SKAL/P	9728180	2024/10/28	2024/10/29	Vidhi Khatri
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9727410	2024/10/27	2024/10/27	Navneet Singh
Total Suspended Solids	BAL	9721849	2024/10/24	2024/10/25	Razieh Tabesh
Turbidity	AT	9722367	N/A	2024/10/24	Gurparteek KAUR

Bureau Veritas ID: AGSM08 **Collected:** 2024/10/22
Sample ID: SW 1 **Shipped:**
Matrix: Water **Received:** 2024/10/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9722445	N/A	2024/10/28	Nachiketa Gohil
Carbonate, Bicarbonate and Hydroxide	CALC	9719147	N/A	2024/10/29	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9723731	N/A	2024/10/25	Alina Dobreanu
Conductivity	AT	9722448	N/A	2024/10/28	Nachiketa Gohil
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9722510	N/A	2024/10/24	Gyulshen Idriz
Fluoride	ISE	9722449	2024/10/24	2024/10/28	Nachiketa Gohil
Hardness (calculated as CaCO3)		9720555	N/A	2024/10/25	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	9722708	2024/10/24	2024/10/25	Nan Raykha
Total Metals Analysis by ICPMS	ICP/MS	9724109	2024/10/25	2024/10/25	Nan Raykha
Anion and Cation Sum	CALC	9719775	N/A	2024/10/29	Automated Statchk
Total Ammonia-N	SKAL/NH4	9726353	N/A	2024/10/28	Muskan
Nitrate & Nitrite as Nitrogen in Water	LACH	9722394	N/A	2024/10/25	Chandra Nandlal
Animal and Vegetable Oil and Grease	BAL	9718404	N/A	2024/10/27	Automated Statchk

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TEST SUMMARY

Bureau Veritas ID: AGSM08 **Collected:** 2024/10/22
Sample ID: SW 1 **Shipped:**
Matrix: Water **Received:** 2024/10/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Oil and Grease	BAL	9727409	2024/10/27	2024/10/27	Navneet Singh
pH	AT	9722451	2024/10/24	2024/10/28	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9728474	N/A	2024/10/28	Sachi Patel
Orthophosphate	SKAL	9723733	N/A	2024/10/25	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9719777	N/A	2024/10/29	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9719778	N/A	2024/10/29	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9723732	N/A	2024/10/28	Massarat Jan
Total Dissolved Solids	BAL	9721577	2024/10/24	2024/10/25	Razieh Tabesh
Total Kjeldahl Nitrogen in Water	SKAL	9725417	2024/10/25	2024/10/28	Kruti Jitesh Patel
Total Phosphorus (Colourimetric)	SKAL/P	9728180	2024/10/28	2024/10/29	Vidhi Khatri
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9727410	2024/10/27	2024/10/27	Navneet Singh
Total Suspended Solids	BAL	9721849	2024/10/24	2024/10/25	Razieh Tabesh
Turbidity	AT	9722367	N/A	2024/10/24	Gurparteek KAUR

Bureau Veritas ID: AGSM08 Dup **Collected:** 2024/10/22
Sample ID: SW 1 **Shipped:**
Matrix: Water **Received:** 2024/10/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9722445	N/A	2024/10/28	Nachiketa Gohil
Conductivity	AT	9722448	N/A	2024/10/28	Nachiketa Gohil
Fluoride	ISE	9722449	2024/10/24	2024/10/28	Nachiketa Gohil
pH	AT	9722451	2024/10/24	2024/10/28	Nachiketa Gohil

Bureau Veritas ID: AGSM10 **Collected:** 2024/10/22
Sample ID: DUP 3 **Shipped:**
Matrix: Water **Received:** 2024/10/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9722445	N/A	2024/10/28	Nachiketa Gohil
Carbonate, Bicarbonate and Hydroxide	CALC	9719147	N/A	2024/10/29	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9723731	N/A	2024/10/25	Alina Dobreanu
Conductivity	AT	9722448	N/A	2024/10/28	Nachiketa Gohil
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9722510	N/A	2024/10/24	Gyulshen Idriz
Fluoride	ISE	9722449	2024/10/24	2024/10/28	Nachiketa Gohil
Hardness (calculated as CaCO3)		9720555	N/A	2024/10/25	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	9722708	2024/10/24	2024/10/25	Nan Raykha
Total Metals Analysis by ICPMS	ICP/MS	9730516	2024/10/29	2024/10/29	Prempal Bhatti
Anion and Cation Sum	CALC	9719775	N/A	2024/10/29	Automated Statchk
Total Ammonia-N	SKAL/NH4	9726353	N/A	2024/10/28	Muskan
Nitrate & Nitrite as Nitrogen in Water	LACH	9722394	N/A	2024/10/25	Chandra Nandlal
Animal and Vegetable Oil and Grease	BAL	9718404	N/A	2024/10/27	Automated Statchk
Total Oil and Grease	BAL	9727409	2024/10/27	2024/10/27	Navneet Singh
pH	AT	9722451	2024/10/24	2024/10/28	Nachiketa Gohil
Phenols (4AAP)	TECH/PHEN	9728474	N/A	2024/10/28	Sachi Patel

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Bureau Veritas Job #: C4X3362
Report Date: 2024/10/30

WSP Canada Inc.
Client Project #: CA0023633.8620
Sampler Initials: CI

TEST SUMMARY

Bureau Veritas ID: AGSM10
Sample ID: DUP 3
Matrix: Water

Collected: 2024/10/22
Shipped:
Received: 2024/10/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Orthophosphate	SKAL	9723733	N/A	2024/10/25	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9719777	N/A	2024/10/29	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9719778	N/A	2024/10/29	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9723732	N/A	2024/10/28	Massarat Jan
Total Dissolved Solids	BAL	9721577	2024/10/24	2024/10/25	Razieh Tabesh
Total Kjeldahl Nitrogen in Water	SKAL	9725417	2024/10/25	2024/10/28	Kruti Jitesh Patel
Total Phosphorus (Colourimetric)	SKAL/P	9728180	2024/10/28	2024/10/29	Vidhi Khatri
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9727410	2024/10/27	2024/10/27	Navneet Singh
Total Suspended Solids	BAL	9721849	2024/10/24	2024/10/25	Razieh Tabesh
Turbidity	AT	9722367	N/A	2024/10/24	Gurparteek KAUR

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GENERAL COMMENTS

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

Package 1	7.7°C

Sample AGSM08 [SW 1] : Total Phosphorus < ortho-Phosphate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9721577	RTB	Spiked Blank	Total Dissolved Solids	2024/10/25		98	%	80 - 120
9721577	RTB	Method Blank	Total Dissolved Solids	2024/10/25	<10		mg/L	
9721577	RTB	RPD	Total Dissolved Solids	2024/10/25	0.12		%	20
9721849	RTB	Spiked Blank	Total Suspended Solids	2024/10/25		100	%	80 - 120
9721849	RTB	Method Blank	Total Suspended Solids	2024/10/25	<10		mg/L	
9721849	RTB	RPD	Total Suspended Solids	2024/10/25	NC		%	20
9722367	GTK	Spiked Blank	Turbidity	2024/10/24		102	%	80 - 120
9722367	GTK	Method Blank	Turbidity	2024/10/24	<0.1		NTU	
9722367	GTK	RPD	Turbidity	2024/10/24	15		%	20
9722394	C_N	Matrix Spike	Nitrite (N)	2024/10/25		110	%	80 - 120
			Nitrate (N)	2024/10/25		99	%	80 - 120
9722394	C_N	Spiked Blank	Nitrite (N)	2024/10/25		104	%	80 - 120
			Nitrate (N)	2024/10/25		98	%	80 - 120
9722394	C_N	Method Blank	Nitrite (N)	2024/10/25	<0.010		mg/L	
			Nitrate (N)	2024/10/25	<0.10		mg/L	
9722394	C_N	RPD	Nitrate (N)	2024/10/25	0.57		%	20
9722445	NGI	Spiked Blank	Alkalinity (Total as CaCO3)	2024/10/28		94	%	85 - 115
9722445	NGI	Method Blank	Alkalinity (Total as CaCO3)	2024/10/28	<1.0		mg/L	
9722445	NGI	RPD [AGSM08-02]	Alkalinity (Total as CaCO3)	2024/10/28	0.53		%	20
9722448	NGI	Spiked Blank	Conductivity	2024/10/28		101	%	85 - 115
9722448	NGI	Method Blank	Conductivity	2024/10/28	<1.0		umho/cm	
9722448	NGI	RPD [AGSM08-02]	Conductivity	2024/10/28	0.94		%	10
9722449	NGI	Matrix Spike [AGSM08-02]	Fluoride (F-)	2024/10/28		109	%	80 - 120
9722449	NGI	Spiked Blank	Fluoride (F-)	2024/10/28		103	%	80 - 120
9722449	NGI	Method Blank	Fluoride (F-)	2024/10/28	<0.10		mg/L	
9722449	NGI	RPD [AGSM08-02]	Fluoride (F-)	2024/10/28	3.3		%	20
9722451	NGI	Spiked Blank	pH	2024/10/28		102	%	98 - 103
9722451	NGI	RPD [AGSM08-02]	pH	2024/10/28	0.082		%	N/A
9722510	GID	Matrix Spike	Dissolved Organic Carbon	2024/10/24		93	%	80 - 120
9722510	GID	Spiked Blank	Dissolved Organic Carbon	2024/10/24		96	%	80 - 120
9722510	GID	Method Blank	Dissolved Organic Carbon	2024/10/24	<0.40		mg/L	
9722510	GID	RPD	Dissolved Organic Carbon	2024/10/24	3.1		%	20
9722708	N_R	Matrix Spike	Dissolved Calcium (Ca)	2024/10/25		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2024/10/25		NC	%	80 - 120
			Dissolved Potassium (K)	2024/10/25		98	%	80 - 120
			Dissolved Sodium (Na)	2024/10/25		94	%	80 - 120
9722708	N_R	Spiked Blank	Dissolved Calcium (Ca)	2024/10/25		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/10/25		100	%	80 - 120
			Dissolved Potassium (K)	2024/10/25		97	%	80 - 120
			Dissolved Sodium (Na)	2024/10/25		99	%	80 - 120
9722708	N_R	Method Blank	Dissolved Calcium (Ca)	2024/10/25	<200		ug/L	
			Dissolved Magnesium (Mg)	2024/10/25	<50		ug/L	
			Dissolved Potassium (K)	2024/10/25	<200		ug/L	
			Dissolved Sodium (Na)	2024/10/25	<100		ug/L	
9722708	N_R	RPD	Dissolved Calcium (Ca)	2024/10/25	0.92		%	20
			Dissolved Magnesium (Mg)	2024/10/25	1.2		%	20
			Dissolved Potassium (K)	2024/10/25	0.064		%	20
			Dissolved Sodium (Na)	2024/10/25	2.7		%	20
9723731	ADB	Matrix Spike	Dissolved Chloride (Cl-)	2024/10/25		NC	%	80 - 120
9723731	ADB	Spiked Blank	Dissolved Chloride (Cl-)	2024/10/25		104	%	80 - 120
9723731	ADB	Method Blank	Dissolved Chloride (Cl-)	2024/10/25	<1.0		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9723731	ADB	RPD	Dissolved Chloride (Cl-)	2024/10/25	2.1		%	20
9723732	MJ1	Matrix Spike	Dissolved Sulphate (SO4)	2024/10/29		NC	%	75 - 125
9723732	MJ1	Spiked Blank	Dissolved Sulphate (SO4)	2024/10/29		102	%	80 - 120
9723732	MJ1	Method Blank	Dissolved Sulphate (SO4)	2024/10/29	<1.0		mg/L	
9723732	MJ1	RPD	Dissolved Sulphate (SO4)	2024/10/29	0.85		%	20
9723733	ADB	Matrix Spike	Orthophosphate (P)	2024/10/25		92	%	75 - 125
9723733	ADB	Spiked Blank	Orthophosphate (P)	2024/10/25		98	%	80 - 120
9723733	ADB	Method Blank	Orthophosphate (P)	2024/10/25	<0.010		mg/L	
9723733	ADB	RPD	Orthophosphate (P)	2024/10/25	NC		%	20
9724109	N_R	Matrix Spike [AGSM10-04]	Total Arsenic (As)	2024/10/25		103	%	80 - 120
			Total Cadmium (Cd)	2024/10/25		98	%	80 - 120
			Total Calcium (Ca)	2024/10/25		NC	%	80 - 120
			Total Chromium (Cr)	2024/10/25		96	%	80 - 120
			Total Copper (Cu)	2024/10/25		98	%	80 - 120
			Total Iron (Fe)	2024/10/25		98	%	80 - 120
			Total Lead (Pb)	2024/10/25		95	%	80 - 120
			Total Magnesium (Mg)	2024/10/25		NC	%	80 - 120
			Total Manganese (Mn)	2024/10/25		96	%	80 - 120
			Total Nickel (Ni)	2024/10/25		94	%	80 - 120
			Total Potassium (K)	2024/10/25		98	%	80 - 120
			Total Sodium (Na)	2024/10/25		NC	%	80 - 120
			Total Zinc (Zn)	2024/10/25		98	%	80 - 120
9724109	N_R	Spiked Blank	Total Arsenic (As)	2024/10/25		102	%	80 - 120
			Total Cadmium (Cd)	2024/10/25		99	%	80 - 120
			Total Calcium (Ca)	2024/10/25		96	%	80 - 120
			Total Chromium (Cr)	2024/10/25		96	%	80 - 120
			Total Copper (Cu)	2024/10/25		97	%	80 - 120
			Total Iron (Fe)	2024/10/25		99	%	80 - 120
			Total Lead (Pb)	2024/10/25		98	%	80 - 120
			Total Magnesium (Mg)	2024/10/25		98	%	80 - 120
			Total Manganese (Mn)	2024/10/25		97	%	80 - 120
			Total Nickel (Ni)	2024/10/25		96	%	80 - 120
			Total Potassium (K)	2024/10/25		99	%	80 - 120
			Total Sodium (Na)	2024/10/25		98	%	80 - 120
			Total Zinc (Zn)	2024/10/25		104	%	80 - 120
9724109	N_R	Method Blank	Total Arsenic (As)	2024/10/25	<1.0		ug/L	
			Total Cadmium (Cd)	2024/10/25	<0.090		ug/L	
			Total Calcium (Ca)	2024/10/25	<200		ug/L	
			Total Chromium (Cr)	2024/10/25	<5.0		ug/L	
			Total Copper (Cu)	2024/10/25	<0.90		ug/L	
			Total Iron (Fe)	2024/10/25	<100		ug/L	
			Total Lead (Pb)	2024/10/25	<0.50		ug/L	
			Total Magnesium (Mg)	2024/10/25	<50		ug/L	
			Total Manganese (Mn)	2024/10/25	<2.0		ug/L	
			Total Nickel (Ni)	2024/10/25	<1.0		ug/L	
			Total Potassium (K)	2024/10/25	<200		ug/L	
			Total Sodium (Na)	2024/10/25	<100		ug/L	
			Total Zinc (Zn)	2024/10/25	<5.0		ug/L	
9725417	KJP	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2024/10/28		105	%	80 - 120
9725417	KJP	QC Standard	Total Kjeldahl Nitrogen (TKN)	2024/10/28		97	%	80 - 120
9725417	KJP	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2024/10/28		100	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9725417	KJP	Method Blank	Total Kjeldahl Nitrogen (TKN)	2024/10/28	<0.10		mg/L	
9725417	KJP	RPD	Total Kjeldahl Nitrogen (TKN)	2024/10/28	1.8		%	20
9726353	MUM	Matrix Spike	Total Ammonia-N	2024/10/28		95	%	75 - 125
9726353	MUM	Spiked Blank	Total Ammonia-N	2024/10/28		97	%	80 - 120
9726353	MUM	Method Blank	Total Ammonia-N	2024/10/28	<0.050		mg/L	
9726353	MUM	RPD	Total Ammonia-N	2024/10/28	0.27		%	20
9727409	NSG	Spiked Blank	Total Oil & Grease	2024/10/27		98	%	80 - 110
9727409	NSG	RPD	Total Oil & Grease	2024/10/27	0.25		%	25
9727409	NSG	Method Blank	Total Oil & Grease	2024/10/27	<0.50		mg/L	
9727410	NSG	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2024/10/27		96	%	65 - 130
9727410	NSG	RPD	Total Oil & Grease Mineral/Synthetic	2024/10/27	0.52		%	25
9727410	NSG	Method Blank	Total Oil & Grease Mineral/Synthetic	2024/10/27	<0.50		mg/L	
9728180	VKH	Matrix Spike	Total Phosphorus	2024/10/29		116	%	80 - 120
9728180	VKH	QC Standard	Total Phosphorus	2024/10/29		110	%	80 - 120
9728180	VKH	Spiked Blank	Total Phosphorus	2024/10/29		90	%	80 - 120
9728180	VKH	Method Blank	Total Phosphorus	2024/10/29	<0.004		mg/L	
9728180	VKH	RPD	Total Phosphorus	2024/10/29	0.37		%	20
9728474	SPC	Matrix Spike	Phenols-4AAP	2024/10/29		102	%	80 - 120
9728474	SPC	Spiked Blank	Phenols-4AAP	2024/10/28		101	%	80 - 120
9728474	SPC	Method Blank	Phenols-4AAP	2024/10/28	<0.0010		mg/L	
9728474	SPC	RPD	Phenols-4AAP	2024/10/28	NC		%	20
9730516	PBA	Matrix Spike	Total Arsenic (As)	2024/10/29		99	%	80 - 120
			Total Cadmium (Cd)	2024/10/29		98	%	80 - 120
			Total Calcium (Ca)	2024/10/29		NC	%	80 - 120
			Total Chromium (Cr)	2024/10/29		98	%	80 - 120
			Total Copper (Cu)	2024/10/29		97	%	80 - 120
			Total Iron (Fe)	2024/10/29		99	%	80 - 120
			Total Lead (Pb)	2024/10/29		98	%	80 - 120
			Total Magnesium (Mg)	2024/10/29		97	%	80 - 120
			Total Manganese (Mn)	2024/10/29		96	%	80 - 120
			Total Nickel (Ni)	2024/10/29		94	%	80 - 120
			Total Potassium (K)	2024/10/29		99	%	80 - 120
			Total Sodium (Na)	2024/10/29		NC	%	80 - 120
			Total Zinc (Zn)	2024/10/29		97	%	80 - 120
9730516	PBA	Spiked Blank	Total Arsenic (As)	2024/10/29		99	%	80 - 120
			Total Cadmium (Cd)	2024/10/29		98	%	80 - 120
			Total Calcium (Ca)	2024/10/29		102	%	80 - 120
			Total Chromium (Cr)	2024/10/29		97	%	80 - 120
			Total Copper (Cu)	2024/10/29		97	%	80 - 120
			Total Iron (Fe)	2024/10/29		99	%	80 - 120
			Total Lead (Pb)	2024/10/29		97	%	80 - 120
			Total Magnesium (Mg)	2024/10/29		99	%	80 - 120
			Total Manganese (Mn)	2024/10/29		98	%	80 - 120
			Total Nickel (Ni)	2024/10/29		95	%	80 - 120
			Total Potassium (K)	2024/10/29		99	%	80 - 120
			Total Sodium (Na)	2024/10/29		100	%	80 - 120
			Total Zinc (Zn)	2024/10/29		99	%	80 - 120
9730516	PBA	Method Blank	Total Arsenic (As)	2024/10/29	<1.0		ug/L	
			Total Cadmium (Cd)	2024/10/29	<0.090		ug/L	
			Total Calcium (Ca)	2024/10/29	<200		ug/L	
			Total Chromium (Cr)	2024/10/29	<5.0		ug/L	
			Total Copper (Cu)	2024/10/29	<0.90		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Iron (Fe)	2024/10/29	<100		ug/L	
			Total Lead (Pb)	2024/10/29	<0.50		ug/L	
			Total Magnesium (Mg)	2024/10/29	<50		ug/L	
			Total Manganese (Mn)	2024/10/29	<2.0		ug/L	
			Total Nickel (Ni)	2024/10/29	<1.0		ug/L	
			Total Potassium (K)	2024/10/29	<200		ug/L	
			Total Sodium (Na)	2024/10/29	<100		ug/L	
			Total Zinc (Zn)	2024/10/29	<5.0		ug/L	
9730516	PBA	RPD	Total Arsenic (As)	2024/10/29	5.3		%	20
			Total Cadmium (Cd)	2024/10/29	NC		%	20
			Total Calcium (Ca)	2024/10/29	0.15		%	20
			Total Chromium (Cr)	2024/10/29	NC		%	20
			Total Copper (Cu)	2024/10/29	1.4		%	20
			Total Iron (Fe)	2024/10/29	0.82		%	20
			Total Lead (Pb)	2024/10/29	2.1		%	20
			Total Magnesium (Mg)	2024/10/29	1.7		%	20
			Total Manganese (Mn)	2024/10/29	1.5		%	20
			Total Nickel (Ni)	2024/10/29	1.1		%	20
			Total Potassium (K)	2024/10/29	1.7		%	20
			Total Sodium (Na)	2024/10/29	2.5		%	20
			Total Zinc (Zn)	2024/10/29	0.75		%	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 (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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).

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Exceedance Summary Table – Prov. Water Quality Obj.

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
POND	AGSM07-07	Total Phosphorus	0.01	0.013	0.004	mg/L
SW 1	AGSM08-04	Total Iron (Fe)	300	490	100	ug/L
SW 1	AGSM08-06	Phenols-4AAP	0.001	0.0013	0.0010	mg/L
SW 1	AGSM08-07	Total Phosphorus	0.01	0.089	0.004	mg/L
DUP 3	AGSM10-04	Total Iron (Fe)	300	1500	100	ug/L
DUP 3	AGSM10-06	Phenols-4AAP	0.001	0.0017	0.0010	mg/L
DUP 3	AGSM10-07	Total Phosphorus	0.01	0.14	0.004	mg/L

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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