



December 2014

MCCARTHY QUARRY

Environmental Compliance Approval Annual Report

Submitted to:

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

REPORT



Report Number: 1407634

Distribution:

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Environmental Compliance Approval No. 4731-987KM8

APPENDIX B

Permit To Take Water No. 8271-8VQJGU

APPENDIX C

Water Quality Results



1.0 INTRODUCTION

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

The following report includes a summary of the requirements listed in Section 10(5) of the ECA for the period from October 1, 2013 to October 1, 2014. Included herein are a summary of:

- Effluent monitoring data including the water quality results and flow measurements;
- Any operation problems encountered;
- Maintenance work completed on any part of the sewage works;
- Effluent quality assurance or control measures undertaken; and,
- Calibration and maintenance carried out on the effluent monitoring equipment.

2.0 BACKGROUND

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

The dewatering activities from the McCarthy Quarry are currently carried out under the existing Permit to Take Water (PTTW) No. 8271-8VQJGU (Appendix B) issued on July 11, 2012. Under the current PTTW Coco is permitted to pump water from the quarry sump at a rate of 4,545 L/min.

3.0 EFFLUENT MONITORING

3.1 Effluent Monitoring Requirements

Effluent monitoring is required by the ECA at three locations, as shown on Figure 1:

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

Condition 7(2)

Weekly effluent monitoring is required at the McCarthy Pond for Total Suspended Solids (TSS), Oil and Grease and Phenols (4AAP). These results are summarized in Table 1 and the monthly averages are summarized in Table 2.



The weekly effluent samples were collected by Whitewater Hydrogeology Ltd. until August 2014 after which Golder staff continued effluent monitoring until October 1, 2014 when McCarthy Quarry staff began the effluent monitoring. From October 2013 to August 2014 the effluent samples were sent to Testmark Laboratories for analysis after which the effluent samples were sent to Maxxam Analytics Laboratory for analysis. The laboratory analysis results are included in Appendix C.

Condition 7(3)

Weekly effluent monitored was also required at the McCarthy Pond, SW1 and SW2. The parameters required for the effluent monitoring are listed in Table 3 of the ECA and the effluent limits are summarized in Table 1 of the ECA. As of May 2014, the effluent monitoring at the McCarthy Pond, SW1 and SW2 was carried out semi-annually as per Condition 7(7). These results can be found in Tables 2 to 5.

The weekly/semi-annual effluent samples were collected by Whitewater Hydrogeology Ltd. until August 1, 2014 after which Golder staff continued sampling of the effluent. From October 2013 to August 2014 the effluent samples were sent to Testmark Laboratories for analysis after which the effluent samples were sent to Maxxam Analytics Laboratory for analysis. The laboratory analysis results are included in Appendix C.

Condition 7(8)

An inline flow meter was installed in the discharge line of the sump pump in order to measure continuous flow rates. The flow rates are recorded and provided to Golder by staff at the McCarthy Quarry. These results are summarized in Table 7.

Condition 8

Monthly lethality monitoring for Rainbow Trout and *Daphna magna* is also required and these results are summarized in Table 6.

The monthly lethality testing was carried out by Testmark Laboratories until August, 2014 after which analysis was completed by AquaTox Testing & Consulting Inc. The laboratory analysis results are included in Appendix C.

4.0 EFFLUENT MONITORING RESULTS

Condition 7(2)

Exceedances of the daily TSS limit of 30 mg/L occurred on three dates April 18, 2013, August 15, 2014 and October 1, 2014 (Table 1) where TSS was 43, 48 and 36 mg/L, respectively. The monthly TSS limit of 15 mg/L was also exceeded for the months of April 2013, May 2013 and August 2014 (Table 2). These exceedances were reported via email to the District Manager of the MOE, Cindy Hood. No other exceedances occurred during this monitoring period. The pH, Oil and Grease, Phenols (4AAP) concentrations were all below the monthly concentration limits of the ECA.

The TSS exceedances observed at the site are most likely the result of the small quarry footprint. The quarry is in its initial stages and area in which the work is being completed is relatively small. The dust that is generated from the quarry activities settles on the quarry floor which is then repeatedly disturbed by the quarry traffic. In addition to this the sump is located within this work area which does not allow the rock dust to settle out before it reaches the sump. As the quarry expands and working space increases the amount of dust entering the sump



should decrease. With less dust entering the sump the TSS concentrations seen at the McCarthy Pond should also decrease.

To reduce the TSS concentrations at the McCarthy Pond it is recommended that Coco prepare an operations plan that will address quarry floor drainage and reduce the suspended solids entering the quarry sump. Coco has committed to preparing this review prior to the commencement of 2015 quarrying operations.

Condition 7(3)

At the McCarthy Pond all of the parameters tested are below the Provincial Water Quality Objectives (PWQO) with the exception of phosphorous on October 31, 2013, November 7, 2013, April 18, 2014, May 2, 2014 and October 16, 2104 as well as iron on November 7, 2013 and pH on August 1, 2014 (Table 3).

At SW1, the phosphorous concentrations exceeded the PWQO on October 31, 2013, November 7, 2013, November 17, 2013, March 10, 2014 and April 11, 2014. All the other parameters tested are below the PWQO with the exception of phenols on November 7, 2013 and March 28, 2014 as well as cadmium on November 29, 2013 (Table 4).

At SW2 all the parameters tested are below the PWQO with the exception of phenols on November 17, 2013, April 25, 2014 and May 2, 2014 as well as phosphorous on November 17, 2013 (Table 5).

Elevated phosphorous concentrations are observed upstream, on site, and downstream ditch locations. The presence of elevated phosphorus at all three locations indicates that the phosphorous is most likely the result of farming activities in the area. There are a number of cattle farms in the area which could be attributing to the high phosphorous concentrations at SW1, SW2, and the McCarthy Pond.

Condition 8

The effluent was found to be non-lethal to Rainbow Trout and *Daphnia magna* between October, 2013 and October, 2014 (Table 6). For both *Daphnia magna* and Rainbow Trout there has been 0% mortality since the sampling in October, 2013. On January 15, 2014 there was insufficient sample to test the acute lethality for Rainbow Trout.

5.0 MEASURED DISCHARGE FROM QUARRY SUMP

The rate and volume of discharge from the quarry is measured on site by an inline flow meter in the discharge line from the quarry sump. The pump records are provided by McCarthy Quarry staff. The pump records for October 2013 to October 2014 are found in Table 7. The discharge rates between October 2013 and October 2014 were below the permitted rate of 4,545 L/min (76 L/sec).

Additionally, there has been no indication of erosion and/or flooding of the downstream ditches.

6.0 OPERATIONAL PROBLEMS AND CORRECTIVE ACTIONS TAKEN

No operational problems were encountered with the dewatering system during the monitoring period of October 2013 to October 2014. Additionally, no spills occurred during the October 2013 to October 2014 monitoring period.



7.0 MAINTENANCE OF SEWAGE WORKS

No upgrades or maintenance works were carried out on any part of the sewage works during the October 2013 to October 2014 monitoring period.

8.0 EFFLUENT QUALITY ASSURANCE OR CONTROL MEASURES

The shoreline of the settling pond was reseeded during this monitoring period in order to prevent erosion. No other effluent quality assurance or control measures were put in place during this monitoring period.

9.0 CALIBRATION AND MAINTENANCE OF THE EFFLUENT MONITORING EQUIPMENT

No calibration or maintenance of the effluent monitoring equipment was completed between October 2013 and October 2014.

10.0 SUMMARY

- Condition 7(2):
 - All of the weekly effluent monitoring samples from the McCarthy Pond were below the daily concentration limits with the exception of April 18, 2013, August 15, 2014 and October 1, 2014;
 - All of the monthly effluent concentrations for the McCarthy Pond were below the monthly concentration limits with the exception of April 2013, May 2013 and August 2014.
- To reduce the TSS concentrations at the McCarthy Pond Coko has committed to preparing an operations plan to reduce the suspended solids entering the quarry sump. Condition 7(3):
 - At the McCarthy Pond, all parameters were below the PWQO with the exception of phosphorous on October 31, 2013, November 7, 2013, April 18, 2014 and May 2014. Additionally, iron concentrations and pH exceeded the PWQO on November 7, 2013 and August 1, 2014, respectively;
 - At SW1 phosphorous concentrations consistently exceeded the PWQO since the initial water quality testing in October 2013. All other parameters were below the PWQO with the exception of phenols on November 7, 2013 and March 28, 2014 as well as cadmium on November 29, 2013;
 - At SW2 all parameters were below the PWQO with the exception of phenols on November 17, 2013, April 25, 2014 and May 2, 2014 as well as phosphorous on November 17, 2013.
- Condition 8:
 - The effluent has been non-lethal to Rainbow Trout and *Daphnia magna* throughout the monitoring period (October 2013 to October 2014).
- Condition 7(8):
 - A continuous record of flow rates has been maintained throughout this monitoring period and all water takings were below the permitted rate of 4,545 L/min.



Report Signature Page

GOLDER ASSOCIATES LTD.

Alicia Beynon, B.Sc., G.I.T.
Geoscientist in Training

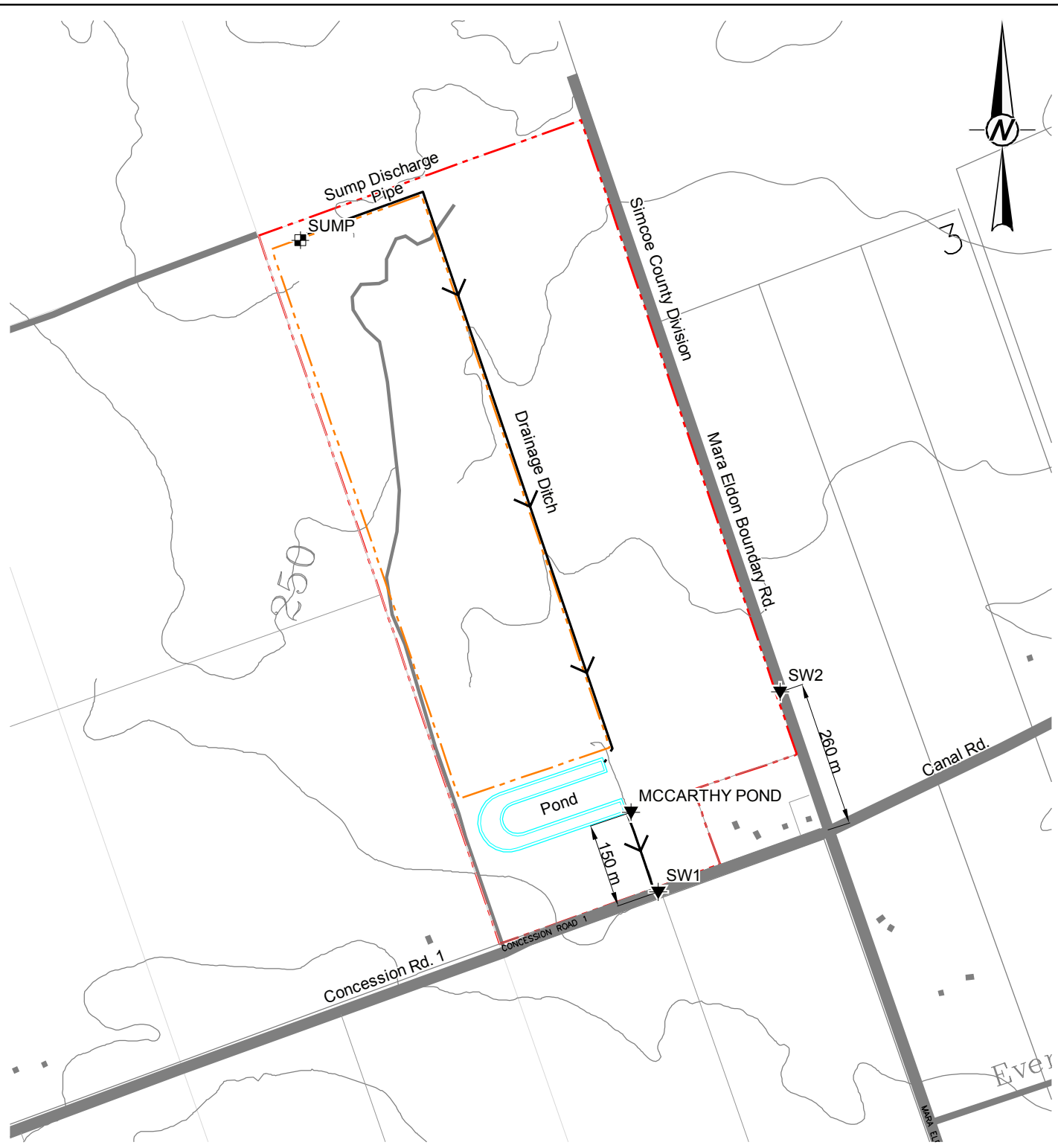
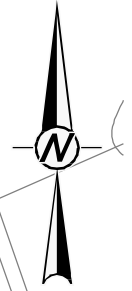
John Easton, M.Sc., P.Geo.
Associate Senior Hydrogeologist

ALB/JAE/plc

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FIGURES

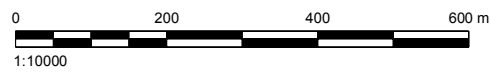


LEGEND

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

REFERENCES AND NOTES

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



CLIENT
COCO / QBJR AGGREGATES INC.

PROJECT
STAN MCCARTHY QUARRY

TITLE
LOCATION MAP

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



PROJECT No. 14-07634	SCALE AS SHOWN	Rev. AB	Figure 1
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS/A 25 mm



TABLES

Table 1: Condition 7(2) McCarthy Pond Weekly Water Quality Results

Sample ID	Unit	RDL	PWQO ¹	Daily Limit ²	McCarthy Quarry													
					Pond													
Date					31-Oct-13	07-Nov-13	17-Nov-13	22-Nov-13	29-Nov-13	05-Dec-13	12-Dec-13	19-Dec-13	15-Jan-14	28-Mar-14	03-Apr-14	09-Apr-14	18-Apr-14	24-Apr-14
Conductivity	umho/cm	n/a			7.7	7.3	7.45	7.62	7.36	8.09	7.86	7.93	7.82	7.79	7.97	7.76	7.38	8.19
pH	pH	n/a		6.0-9.5														
Temperature	°C	n/a																
Total Suspended Solids	mg/L	1		30	13	10.4	<4	<2	<2	<2	2	2.8	3.3	4.5	20	4	43.1	2.9
Total Oil and Grease	mg/L	0.5	Note 3	30	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.5	<1	1.2
Phenols (4AAP)	mg/L	<0.0010		0.04	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001	<0.001	0.0078	<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 1: Condition 7(2) McCarthy Pond Weekly Water Quality Results

Sample ID	Unit	RDL	PWQO ¹	Daily Limit ²	McCarthy Quarry													
					Pond													
Date					02-May-14	12-May-14	16-May-14	28-May-14	06-Jun-14	14-Jun-14	18-Jun-14	26-Jun-14	04-Jul-14	08-Jul-14	16-Jul-14	01-Aug-14	08-Aug-14	11-Aug-14
Conductivity	umho/cm	n/a			7.65	7.56	7.85	7.67	7.7	7.1	7.12	7	7.7	7.07	7.3	4.9	6.95	
pH	pH	n/a		6.0-9.5														
Temperature	°C	n/a																
Total Suspended Solids	mg/L	1		30	40	10.8	5.6	6.8	5.7	2.8	4.7	2.6	9.1	4.4	<2	2.9	7	5
Total Oil and Grease	mg/L	0.5	Note 3	30	<1	<1	<1	4.11	1.4	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5
Phenols (4AAP)	mg/L	<0.0010		0.04	1.7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010

Notes

1. Provincial Water Quality Objectives (PWQO); shaded cells denote PWQO exceedance; some PWQOs are dependent on other water quality parameters hence the 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 discolour 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 1: Condition 7(2) McCarthy Pond Weekly Water Quality Results

Sample ID	Unit	RDL	PWQO ¹	Daily Limit ²	McCarthy Quarry										
					Pond										
Date					15-Aug-14	20-Aug-14	26-Aug-14	03-Sep-14	10-Sep-14	15-Sep-14	23-Sep-14	01-Oct-14	09-Oct-14	17-Oct-14	06-Nov-14
Conductivity	umho/cm	n/a			7.59	6.43	6.51	7.73	6.92	8.58	7.52		8.16		
pH	pH	n/a		6.0-9.5	16.9			24.1	21.1	14.8	19.3				
Temperature	°C	n/a			12.4	13	17.8	20.4	20.6		6.04				
Total Suspended Solids	mg/L	1		30	48	10	18	23	14	15	6	36	8	12	4
Total Oil and Grease	mg/L	0.5	Note 3	30	<0.50	<0.5	1.1	<0.5	<0.5	<1.0	0.8	<0.5	<0.5	<0.5	2.7
Phenols (4AAP)	mg/L	<0.0010		0.04	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0059	0.0022	0.0014	0.0032

Notes

range in	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.
tion on the	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 2: Condition 7(2) McCarthy Pond Monthly Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Monthly Concentration Limit ²	McCarthy Quarry											
					Pond											
Date					November	December	January	March	April	May	June	July	August	September	October	
Total Suspended Solids	mg/L	1		15	11.7	2.4	3.3	4.5	17.5	15.8	3.95	6.75	17.6	14.5	14.9	
Total Oil and Grease	mg/L	0.5	Note 3	15	<1	<1	<1	<1	1.35	4.11	1.4	<1	1.1	0.8	0.95	
Phenols (4AAP)	mg/L	<0.0010		0.02	<0.001	<0.001	<0.001	0.0078	<0.001	1.7	<0.001	<0.001	0.0011	<0.0010	0.00256	

Notes

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

Table 3: Condition 7(3) McCarthy Pond Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry						
					Pond						
Date					31-Oct-13	07-Nov-13	17-Nov-13	22-Nov-13	29-Nov-13	05-Dec-13	12-Dec-13
pH	units	n/a	6.5-8.5		7.7	7.3	7.45	7.62	7.36	8.09	7.86
Anions	Sum	N/A									
Cations	Sum	N/A									
Hardness (as CaCO ₃)	mg/L	1.0			239	198	237	229	244	2.2	1.4
Ammonia	mg/L	0.050			0.137	0.17	0.285	0.33	0.409	0.389	0.362
Conductivity	uS/cm	1.0									
Total Dissolved Solids	mg/L	10			364	388	430	410	479	450	500
Flouride	mg/L	0.10			<0.3	<0.3	0.3	<0.3	0.36	0.27	0.34
Total Kjeldahl Nitrogen	mg/L	0.10			<0.2	0.96	1	1.2	1.2	0.52	1.2
Dissolved Organic Carbon	mg/L	0.20			4.82	4.54	4.42	4.37	5.1	7.23	7.09
Phenols	ug/L	0.0010	1		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorous	mg/L	0.002		0.02 ^{5b}	0.0275	0.0221	0.0153	0.007	0.0102	0.0081	0.0113
Total Suspended Solids	mg/L	10			13	10.4	<4	<2	<2	<2	2
Sulphate	mg/L	1			109	111	110	108	128	111	107
Alkalinity (CaCO ₃)	mg/L	1.0			204	181	219	219	254	188	207
Chloride	mg/L	1			23.4	23	29.2	29.2	37.3	32	32
Nitrite (N)	mg/L	0.010			<0.09	<0.09	<0.09	<0.09	<0.09	<0.03	0.16
Nitrate (N)	mg/L	0.10			3.62	3.69	4	3.66	4.57	3.8	3.63
Total Oil and Grease	mg/L	0.50	Note 3								
Arsenic	ug/L	1.0	100	5	<1	1.3	<1	<1	<1	<1	<1
Cadmium	ug/L	0.10	0.2	0.1-0.5 ^{5d}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium	mg/L	200			75.1	73.9	67.5	61.9	66.2	70.2	75
Chromium	ug/L	5.0	1-89 ^{5e}		1.9	<1	2.2	<1	<1	<1	2.4
Copper	ug/L	1.0	5	1-5 ^{5f}	2.4	1.7	2.2	2.3	2.4	1.4	1
Iron	mg/L	100	0.3		0.133	0.376	0.082	0.038	0.026	<0.02	0.15
Lead	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}	0.16	<1	<1	<1	<1	<1	<1
Magnesium	mg/L	50			12.6	15.8	15.3	21.3	17.4	20.9	23.1
Manganese	ug/L	2.0			11	21.8	25.8	9	10.5	12.5	19.3
Nickel	ug/L	1.0	25		<1	2	1.6	1.4	<1	2.4	2.1
Potassium	mg/L	200			4.1	5.51	5.61	5.41	6.39	6.73	7.04
Sodium	mg/L	100			27.6	34.2	39.5	39.1	46.1	48.4	64.6
Zinc	ug/L	5.0		20	3.2	2.1	7.8	1.9	1.9	2.4	4.1

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 PWQO 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 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).

<i>5d. Cadmium: (Interim)</i>	If Hardness 0-100 mg/L (CaCO ₃), then use 0.1 ug/L
	If Hardness >100 mg/L (CaCO ₃), then use 0.5 ug/L
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI)
	8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper: (Interim)</i>	If Hardness as CaCO ₃ (mg/L) is 0 - 20, then use 1 ug/L
	If Hardness as CaCO ₃ (mg/L) is >20, then use 5 ug/L

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	If Alkalinity as CaCO ₃ (mg/L) is < 20, use 5 ug/L
	If Alkalinity as CaCO ₃ (mg/L) is 20 to 40, use 10 ug/L
	If Alkalinity as CaCO ₃ (mg/L) is 40 to 80, use 20 ug/L
<i>5h. Lead: (Interim)</i>	If Alkalinity as CaCO ₃ (mg/L) is > 80, use 25 ug/L
	If Hardness as CaCO ₃ (mg/L) is < 30, then use 1 ug/L
	If Hardness as CaCO ₃ (mg/L) is 30 to 80, then use 3 ug/L
	If Hardness as CaCO ₃ (mg/L) is > 80, then use 5 ug/L

Table 3: Condition 7(3) McCarthy Pond Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry						
					Pond						
Date					19-Dec-13	15-Jan-14	28-Mar-14	18-Apr-14	25-Apr-14	02-May-14	12-May-14
pH	units	n/a	6.5-8.5		7.93	7.82	7.79	7.38	8.19	7.65	7.56
Anions	Sum	N/A					3.78	3.19	3.94	4.07	4.25
Cations	Sum	N/A					8.15	3.95	4.98	5.35	4.72
Hardness (as CaCO3)	mg/L	1.0			1.8	1.4	311	153	218	170	151
Ammonia	mg/L	0.050			0.356	0.571	0.543	0.253	0.05	0.275	0.184
Conductivity	uS/cm	1.0					729	409	462	492	190
Total Dissolved Solids	mg/L	10			540	350	340	290	320	280	340
Flouride	mg/L	0.10			0.4	0.25	0.32	0.24	<0.1	0.29	0.28
Total Kjeldahl Nitrogen	mg/L	0.10			0.83	1.3	1.3	0.85	1.1	0.63	1.1
Dissolved Organic Carbon	mg/L	0.20			8.62	5.68	3.4	1.9	6.54	2.3	3.9
Phenols	ug/L	0.0010	1		<0.001	<0.001	0.0078	<0.001	<0.001	0.0017	<0.001
Phosphorous	mg/L	0.002		0.02 ^{5b}	0.0049	0.0069	0.0151	0.0331	0.01	0.0562	0.0091
Total Suspended Solids	mg/L	10			2.8	3.3	20	43.1	2.9	40	10.8
Sulphate	mg/L	1			124	84.8	76.8	39.5	34.3	54.2	59.7
Alkalinity (CaCO3)	mg/L	1.0			224	219	201	111	187	146	143
Chloride	mg/L	1			41.6	34.3	47	19.7	7.72	20.6	24.7
Nitrite (N)	mg/L	0.010			<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Nitrate (N)	mg/L	0.10			3.49	1.59	2.01	1.04	0.66	1.13	1.06
Total Oil and Grease	mg/L	0.50	Note 3								
Arsenic	ug/L	1.0	100	5	<1	<1	<1	<1	<1	<1	<1
Cadmium	ug/L	0.10	0.2	0.1-0.5 ^{5d}	0.12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium	mg/L	200			81.7	50.2	94.4	44.5	102	60.9	46.9
Chromium	ug/L	5.0	1-89 ^{5e}		<1	2.7		2.1	3	<1	<1
Copper	ug/L	1.0	5	1-5 ^{5f}	3.1	2.3	1.2	<1	<1	1.4	1.4
Iron	mg/L	100	0.3		<0.02	<0.02	0.083	0.288	0.163	0.296	0.108
Lead	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}	<1	0.16	0.1	<0.1	<1	<1	<1
Magnesium	mg/L	50			21.7	21.3	15.3	8.2	6.55	11	11.7
Manganese	ug/L	2.0			16	29.7	35.5	20.5	16	17.6	9
Nickel	ug/L	1.0	25		2.2	5.4	4.2	2	2.8	3.4	3.4
Potassium	mg/L	200			7.11	8.77	5.52	3.73	2.5	5.4	6.18
Sodium	mg/L	100			50.1	54.9	49.8	26.5	10.3	33.1	36.4
Zinc	ug/L	5.0		20	2.4	1.6	7.2	<1	1.3	3.1	<1

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 PWQO 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 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).

<i>5d. Cadmium: (Interim)</i>	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
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper: (Interim)</i>	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

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	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
<i>5h. Lead: (Interim)</i>	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/L If Hardness as CaCO3 (mg/L) is > 80, then use 5 ug/L

Table 3: Condition 7(3) McCarthy Pond Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry						
					Pond						
Date					16-May-14	28-May-14	29-May-14	06-Jun-14	14-Jun-14	18-Jun-14	26-Jun-14
pH	units	n/a	6.5-8.5		7.85	7.67	7.8	7.7	7.1	7.12	7
Anions	Sum	N/A			4.87	4.13					
Cations	Sum	N/A			4.65	4.8					
Hardness (as CaCO ₃)	mg/L	1.0			1.1	143					155
Ammonia	mg/L	0.050			0.103	0.027					
Conductivity	uS/cm	1.0			509	508					
Total Dissolved Solids	mg/L	10			<30	250					
Flouride	mg/L	0.10			<0.1	<0.1					
Total Kjeldahl Nitrogen	mg/L	0.10			0.92	0.73					
Dissolved Organic Carbon	mg/L	0.20			4.44	3.5					
Phenols	ug/L	0.0010	1		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorous	mg/L	0.002		0.02 ^{5b}	0.0156	0.0152					
Total Suspended Solids	mg/L	10			5.6	6.8	7.2	5.7	2.8	4.7	2.6
Sulphate	mg/L	1			80	59.6					
Alkalinity (CaCO ₃)	mg/L	1.0			161	132					
Chloride	mg/L	1			21.2	27.3					
Nitrite (N)	mg/L	0.010			<0.03	<0.03					
Nitrate (N)	mg/L	0.10			1.17	0.84					
Total Oil and Grease	mg/L	0.50	Note 3								
Arsenic	ug/L	1.0	100	5	<1	<1					
Cadmium	ug/L	0.10	0.2	0.1-0.5 ^{5d}	<0.1	<0.1					
Calcium	mg/L	200			49.3	40.1					37.8
Chromium	ug/L	5.0	1-89 ^{5e}		1.3	<1					
Copper	ug/L	1.0	5	1-5 ^{5f}	<1	1.5					
Iron	mg/L	100	0.3		0.034	<0.02					
Lead	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}	<0.1	<1					
Magnesium	mg/L	50			11	11.4					14.6
Manganeese	ug/L	2.0			<1	<1					
Nickel	ug/L	1.0	25		2.4	2.4					
Potassium	mg/L	200			4.83	6.14					
Sodium	mg/L	100			26.5	36.9					
Zinc	ug/L	5.0		20	<1	1.3					

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

<i>5d. Cadmium: (Interim)</i>	If Hardness 0-100 mg/L (CaCO ₃), then use 0.1 ug/L If Hardness >100 mg/L (CaCO ₃), then use 0.5 ug/L
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper: (Interim)</i>	If Hardness as CaCO ₃ (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO ₃ (mg/L) is >20, then use 5 ug/L

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	If Alkalinity as CaCO ₃ (mg/L) is < 20, use 5 ug/L If Alkalinity as CaCO ₃ (mg/L) is 20 to 40, use 10 ug/L If Alkalinity as CaCO ₃ (mg/L) is 40 to 80, use 20 ug/L If Alkalinity as CaCO ₃ (mg/L) is > 80, use 25 ug/L
<i>5h. Lead: (Interim)</i>	If Hardness as CaCO ₃ (mg/L) is < 30, then use 1 ug/L If Hardness as CaCO ₃ (mg/L) is 30 to 80, then use 3 ug/L If Hardness as CaCO ₃ (mg/L) is > 80, then use 5 ug/L

Table 3: Condition 7(3) McCarthy Pond Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry				
					Pond				
Date					04-Jul-14	08-Jul-14	16-Jul-14	01-Aug-14	16-Oct-14
pH	units	n/a	6.5-8.5		7.7	7.07	7.3	4.9	8.11
Anions	Sum	N/A							7.17
Cations	Sum	N/A							7.53
Hardness (as CaCO ₃)	mg/L	1.0						147	200
Ammonia	mg/L	0.050							0.12
Conductivity	uS/cm	1.0							720
Total Dissolved Solids	mg/L	10							408
Flouride	mg/L	0.10							0.53
Total Kjeldahl Nitrogen	mg/L	0.10							0.83
Dissolved Organic Carbon	mg/L	0.20							6.2
Phenols	ug/L	0.0010	1		<0.001	<0.001	<0.001	<0.001	0.0014
Phosphorous	mg/L	0.002		0.02 ^{5b}					0.023
Total Suspended Solids	mg/L	10			9.1	4.4	<2	2.9	12
Sulphate	mg/L	1							150
Alkalinity (CaCO ₃)	mg/L	1.0							100
Chloride	mg/L	1							68
Nitrite (N)	mg/L	0.010							0.03
Nitrate (N)	mg/L	0.10							0.65
Total Oil and Grease	mg/L	0.50	Note 3						<0.5
Arsenic	ug/L	1.0	100	5					<1
Cadmium	ug/L	0.10	0.2	0.1-0.5 ^{5d}					<0.1
Calcium	mg/L	200						26.1	97
Chromium	ug/L	5.0	1-89 ^{5e}						<5
Copper	ug/L	1.0	5	1-5 ^{5f}					<1
Iron	mg/L	100	0.3						<0.1
Lead	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}					<0.5
Magnesium	mg/L	50						19.9	22
Manganese	ug/L	2.0							6.6
Nickel	ug/L	1.0	25						<1
Potassium	mg/L	200							9.4
Sodium	mg/L	100							55
Zinc	ug/L	5.0		20					<5

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 PWQO 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 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).

<i>5d. Cadmium: (Interim)</i>	If Hardness 0-100 mg/L (CaCO ₃), then use 0.1 ug/L
	If Hardness >100 mg/L (CaCO ₃), then use 0.5 ug/L
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI)
	8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper: (Interim)</i>	If Hardness as CaCO ₃ (mg/L) is 0 - 20, then use 1 ug/L
	If Hardness as CaCO ₃ (mg/L) is >20, then use 5 ug/L

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	If Alkalinity as CaCO ₃ (mg/L) is < 20, use 5 ug/L
	If Alkalinity as CaCO ₃ (mg/L) is 20 to 40, use 10 ug/L
	If Alkalinity as CaCO ₃ (mg/L) is 40 to 80, use 20 ug/L
<i>5h. Lead: (Interim)</i>	If Alkalinity as CaCO ₃ (mg/L) is > 80, use 25 ug/L
	If Hardness as CaCO ₃ (mg/L) is < 30, then use 1 ug/L
	If Hardness as CaCO ₃ (mg/L) is 30 to 80, then use 3 ug/L
	If Hardness as CaCO ₃ (mg/L) is > 80, then use 5 ug/L

Table 4: Condition 7(3) SW1 Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry						
					SW1						
Date					31-Oct-13	07-Nov-13	17-Nov-13	22-Nov-13	29-Nov-13	05-Dec-13	12-Dec-13
pH	pH	n/a	6.5-8.5		7.35	7	6.94	7.51	7.2	7.89	7.78
Anion Sum	me/L	N/A									
Cation Sum	me/L	N/A									
Hardness (CaCO3)	mg/L	1.0			305	207	244	256	300	286	290
Total Ammonia-N	mg/L	0.050			0.021	0.032	0.066	0.069	0.183	0.11	0.091
Conductivity	umho/cm	1.0									
Total Dissolved Solids	mg/L	10			338	324	392	350	451	470	440
Fluoride (F-)	mg/L	0.10			<0.1	<0.3	<0.3	<0.3	<0.3	<0.1	<0.1
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10			0.44	0.6	1.1	0.97	1	0.95	1.3
Dissolved Organic Carbon	mg/L	0.20			8.39	7.67	7.35	7.45	7.71	9.85	10.2
Phenols-4AAP	mg/L	0.0010	0.001		<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Total Phosphorus	mg/L	0.002		0.02 ^{5b}	0.0317	0.047	0.0955	0.0098	0.0083	0.0103	0.0038
Total Suspended Solids	mg/L	10			9.2	<4	22.8	<2	<2	<2	<2
Dissolved Sulphate (SO4)	mg/L	1			55.6	56.7	57.4	47.8	81	60.5	50.6
Alkalinity (Total as CaCO3)	mg/L	1.0			<2	264	239	282	330	232	261
Dissolved Chloride (Cl)	mg/L	1			7.84	7.44	6.72	9	17.3	11.2	10.1
Nitrite (N)	mg/L	0.010			<0.03	<0.09	<0.09	<0.09	<0.09	<0.03	<0.03
Nitrate (N)	mg/L	0.10			0.818	0.976	0.976	0.962	2.11	1.05	0.85
Total Oil & Grease	mg/L	0.50	Note 3								
Total Arsenic (As)	ug/L	1.0	100	5	<1	<1	<1	<1	1.1	<1	<1
Total Cadmium (Cd)	ug/L	0.10	0.2	0.1-0.5 ^{5d}	<0.1	<0.1	<0.1	<0.1	0.76	<0.1	<0.1
Total Calcium (Ca)	mg/L	200			109	83.6	82.8	92.2	99.5	95.9	98.2
Total Chromium (Cr)	ug/L	5.0	1-89 ^{5e}		1.4	1	<1	<1	<1	<1	4.2
Total Copper (Cu)	ug/L	1.0	5	1-5 ^{5f}	<1	2.8	1.8	2.1	1.7	1.1	2.9
Total Iron (Fe)	ug/L	100	0.3		0.137	<0.02	0.273	0.158	0.027	0.055	0.053
Total Lead (Pb)	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}	0.21	<1	<1	<1	<1	<1	<1
Total Magnesium (Mg)	ug/L	50			8	7.67	7.09	8.18	12.8	12	10.4
Total Manganese (Mn)	ug/L	2.0			14.4	6.3	34.2	7.6	5.4	6.6	7.4
Total Nickel (Ni)	ug/L	1.0	25		<1	1.2	1.9	1.7	<1	1.5	2
Total Potassium (K)	ug/L	200			3.74	2.95	3.09	2.59	3.26	3.21	2.75
Total Sodium (Na)	ug/L	100			7.79	8.85	8.2	11.6	21.2	16.4	16
Total Zinc (Zn)	ug/L	5.0		20	2.4	2.6	3.4	2.5	2.2	1.6	<1

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 PWQO 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 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).

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

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.	
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/L If Hardness as CaCO3 (mg/L) is > 80, then use 5 ug/L

Table 4: Condition 7(3) SW1 Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry						
					SW1						
Date					19-Dec-13	10-Mar-14	28-Mar-14	11-Apr-14	18-Apr-14	25-Apr-14	02-May-14
pH	pH	n/a	6.5-8.5		7.67	7.7	7.75	7.7	8.28	7.8	8.08
Anion Sum	me/L	N/A				2.79	4.9	2.79	3.65	3.85	4.52
Cation Sum	me/L	N/A				3.5	7.24	3.5	4.68	5.72	5.52
Hardness (CaCO ₃)	mg/L	1.0			293	<1	328	140	191	228	233
Total Ammonia-N	mg/L	0.050			0.161	0.096	0.299	0.096	0.095	0.029	0.066
Conductivity	umho/cm	1.0				359	460	359	404	465	507
Total Dissolved Solids	mg/L	10			340	160	340	160	350	200	330
Fluoride (F ⁻)	mg/L	0.10			0.34	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10			0.97	0.75	0.86	0.75	0.91	1.1	0.44
Dissolved Organic Carbon	mg/L	0.20			12	4.88	5.41	4.88	5.28	6.13	6.79
Phenols-4AAP	mg/L	0.0010	0.001		<0.001	<0.001	0.0096	<0.001	<0.001	<0.001	<0.001
Total Phosphorus	mg/L	0.002		0.02 ^{5b}	0.0037	0.0236	0.0073	0.0236	0.0146	0.0122	0.0114
Total Suspended Solids	mg/L	10			<2	12.7	4.4	12.7	3.9	2.3	<0.8
Dissolved Sulphate (SO ₄)	mg/L	1			77.8	16.9	43.2	16.9	21	11.5	39.5
Alkalinity (Total as CaCO ₃)	mg/L	1.0			246	145	216	145	191	214	214
Dissolved Chloride (Cl)	mg/L	1			21	4.45	18.6	4.45	4.97	6.25	9.02
Nitrite (N)	mg/L	0.010			<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Nitrate (N)	mg/L	0.10			1.5	0.28	1.07	0.28	0.38	<0.1	0.61
Total Oil & Grease	mg/L	0.50	Note 3								
Total Arsenic (As)	ug/L	1.0	100	5	<1	<1	<1	<1	<1	<1	<1
Total Cadmium (Cd)	ug/L	0.10	0.2	0.1-0.5 ^{5d}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Calcium (Ca)	mg/L	200			91.3	59.1	106	57.6	77.9	112	98.5
Total Chromium (Cr)	ug/L	5.0	1-89 ^{5e}		<1	<1		<1	1.9	3.6	<1
Total Copper (Cu)	ug/L	1.0	5	1-5 ^{5f}	1.5	<1	<1	<1	1.1	<1	<1
Total Iron (Fe)	ug/L	100	0.3		<0.02	0.122	0.082	0.122	<0.02	0.025	0.045
Total Lead (Pb)	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}	<1	0.14	0.35	0.14	<0.1	<0.1	<0.1
Total Magnesium (Mg)	ug/L	50			13.4	3.74	7.99	3.74	4.8	6.23	7.77
Total Manganese (Mn)	ug/L	2.0			5.9	17.7	15.8	17.7	10.8	1.7	4
Total Nickel (Ni)	ug/L	1.0	25		1.8	2.3	3.5	2.3	<1	<1	<1
Total Potassium (K)	ug/L	200			4.29	1.77	2.09	1.99	2.32	0.82	2.74
Total Sodium (Na)	ug/L	100			26.8	4.59	20	4.66	6.85	4.27	14
Total Zinc (Zn)	ug/L	5.0		20	<1	<1	2.9	<1	2.5	4.5	9.4

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 PWQO 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 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).

<i>5d. Cadmium (Interim):</i>	If Hardness 0-100 mg/L (CaCO ₃), then use 0.1 ug/L If Hardness >100 mg/L (CaCO ₃), then use 0.5 ug/L
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper (Interim):</i>	If Hardness as CaCO ₃ (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO ₃ (mg/L) is >20, then use 5 ug/L

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	If Alkalinity as CaCO ₃ (mg/L) is < 20, use 5 ug/L If Alkalinity as CaCO ₃ (mg/L) is 20 to 40, use 10 ug/L If Alkalinity as CaCO ₃ (mg/L) is 40 to 80, use 20 ug/L If Alkalinity as CaCO ₃ (mg/L) is > 80, use 25 ug/L
<i>5h. Lead (Interim):</i>	If Hardness as CaCO ₃ (mg/L) is < 30, then use 1 ug/L If Hardness as CaCO ₃ (mg/L) is 30 to 80, then use 3 ug/L If Hardness as CaCO ₃ (mg/L) is > 80, then use 5 ug/L

Table 4: Condition 7(3) SW1 Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry						
					SW1						
Date					12-May-14	16-May-14	28-May-14	29-May-14	06-Jun-14	14-Jun-14	18-Jun-14
pH	pH	n/a	6.5-8.5		8.07	7.68	7.76	7.3	7.5	7.3	7.2
Anion Sum	me/L	N/A			4.69	4.9	4.73				
Cation Sum	me/L	N/A			5.71	5.44	5.61				
Hardness (CaCO3)	mg/L	1.0			241	236	219				
Total Ammonia-N	mg/L	0.050			0.038	0.048	0.037				
Conductivity	umho/cm	1.0			318	523	559				
Total Dissolved Solids	mg/L	10			340	160	360				
Fluoride (F-)	mg/L	0.10			<0.1	0.22	<0.1				
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10			0.58	0.92	1				
Dissolved Organic Carbon	mg/L	0.20			6.8	6.58	7.31				
Phenols-4AAP	mg/L	0.0010	0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Phosphorus	mg/L	0.002		0.02 ^{5b}	0.0063	0.0168	0.0089				
Total Suspended Solids	mg/L	10			1.2	8	1.6	3.9	2.6	5.8	10.1
Dissolved Sulphate (SO4)	mg/L	1			51.7	84	49.7				
Alkalinity (Total as CaCO3)	mg/L	1.0			204	177	207				
Dissolved Chloride (Cl)	mg/L	1			11.8	10.6	13.2				
Nitrite (N)	mg/L	0.010			<0.03	<0.03	<0.03				
Nitrate (N)	mg/L	0.10			0.41	0.9	0.23				
Total Oil & Grease	mg/L	0.50	Note 3								
Total Arsenic (As)	ug/L	1.0	100	5	<1	<1	<1				
Total Cadmium (Cd)	ug/L	0.10	0.2	0.1-0.5 ^{5d}	<0.1	<0.1	<0.1				
Total Calcium (Ca)	mg/L	200			81.7	80.2	78.5				
Total Chromium (Cr)	ug/L	5.0	1-89 ^{5e}		<1	1.4	<1				
Total Copper (Cu)	ug/L	1.0	5	1-5 ^{5f}	1.1	<1	<1				
Total Iron (Fe)	ug/L	100	0.3		0.117	0.044	0.066				
Total Lead (Pb)	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}	<0.1	<0.1	<0.1				
Total Magnesium (Mg)	ug/L	50			9.9	9.23	9.73				
Total Manganese (Mn)	ug/L	2.0			4.1	<1	9.7				
Total Nickel (Ni)	ug/L	1.0	25		<1	<1	<1				
Total Potassium (K)	ug/L	200			3.51	3.86	3.76				
Total Sodium (Na)	ug/L	100			18.1	13.4	17.8				
Total Zinc (Zn)	ug/L	5.0		20	<1	<1	<1				

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 PWQO 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 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).

<i>5d. Cadmium: (Interim)</i>	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
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI)
	8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper: (Interim)</i>	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

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	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
<i>5h. Lead: (Interim)</i>	If Alkalinity as CaCO3 (mg/L) is > 80, use 25 ug/L
	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/L
	If Hardness as CaCO3 (mg/L) is > 80, then use 5 ug/L

Table 4: Condition 7(3) SW1 Water Quality Results

	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry	
Sample ID					SW1	
Date					26-Jun-14	16-Oct-14
pH	pH	n/a	6.5-8.5		7.1	7.95
Anion Sum	me/L	N/A				8.87
Cation Sum	me/L	N/A				8.98
Hardness (CaCO ₃)	mg/L	1.0				320
Total Ammonia-N	mg/L	0.050				0.071
Conductivity	umho/cm	1.0				850
Total Dissolved Solids	mg/L	10				546
Fluoride (F ⁻)	mg/L	0.10				0.37
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10				0.85
Dissolved Organic Carbon	mg/L	0.20				5.5
Phenols-4AAP	mg/L	0.0010	0.001		<0.001	<0.001
Total Phosphorus	mg/L	0.002		0.02 ^{5b}		0.0012
Total Suspended Solids	mg/L	10			4.5	<10
Dissolved Sulphate (SO ₄)	mg/L	1				220
Alkalinity (Total as CaCO ₃)	mg/L	1.0				140
Dissolved Chloride (Cl)	mg/L	1				40
Nitrite (N)	mg/L	0.010				0.048
Nitrate (N)	mg/L	0.10				2.49
Total Oil & Grease	mg/L	0.50	Note 3			<0.5
Total Arsenic (As)	ug/L	1.0	100	5		<1
Total Cadmium (Cd)	ug/L	0.10	0.2	0.1-0.5 ^{5d}		<0.10
Total Calcium (Ca)	mg/L	200				97
Total Chromium (Cr)	ug/L	5.0	1-89 ^{5e}			<5
Total Copper (Cu)	ug/L	1.0	5	1-5 ^{5f}		<1
Total Iron (Fe)	ug/L	100	0.3			<0.1
Total Lead (Pb)	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}		<0.5
Total Magnesium (Mg)	ug/L	50				22
Total Manganese (Mn)	ug/L	2.0				6.6
Total Nickel (Ni)	ug/L	1.0	25			<1.0
Total Potassium (K)	ug/L	200				9.4
Total Sodium (Na)	ug/L	100				55
Total Zinc (Zn)	ug/L	5.0		20		<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 PWQO 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 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).

<i>5d. Cadmium: (Interim)</i>	If Hardness 0-100 mg/L (CaCO ₃), then use 0.1 ug/L If Hardness >100 mg/L (CaCO ₃), then use 0.5 ug/L
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper: (Interim)</i>	If Hardness as CaCO ₃ (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO ₃ (mg/L) is >20, then use 5 ug/L

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	If Alkalinity as CaCO ₃ (mg/L) is < 20, use 5 ug/L
	If Alkalinity as CaCO ₃ (mg/L) is 20 to 40, use 10 ug/L
	If Alkalinity as CaCO ₃ (mg/L) is 40 to 80, use 20 ug/L
<i>5h. Lead: (Interim)</i>	If Alkalinity as CaCO ₃ (mg/L) is > 80, use 25 ug/L
	If Hardness as CaCO ₃ (mg/L) is < 30, then use 1 ug/L
	If Hardness as CaCO ₃ (mg/L) is 30 to 80, then use 3 ug/L
	If Hardness as CaCO ₃ (mg/L) is > 80, then use 5 ug/L

Table 5: Condition 7(3) SW2 Water Quality Results

Sample ID	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry						
					SW2						
Date					31-Oct-13	07-Nov-13	17-Nov-13	10-Mar-14	11-Apr-14	25-Apr-14	02-May-14
pH	pH	n/a	6.5-8.5		7.31	7.2	6.9	7.76	7.76	7.85	7.8
Anion Sum	me/L	N/A						2.76	2.76	3.94	4.97
Cation Sum	me/L	N/A						4.37	4.37	4.99	6.18
Hardness (CaCO ₃)	mg/L	1.0			311	309	317	215	215	224	261
Total Ammonia-N	mg/L	0.050			<0.01	0.015	0.032	0.076	0.076	0.057	0.036
Conductivity	umho/cm	1.0						355	355	463	738
Total Dissolved Solids	mg/L	10			280	326	354	<30	<30	280	370
Fluoride (F ⁻)	mg/L	0.10			<0.1	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10			0.24	0.44	1.6	0.78	0.78	0.98	0.35
Dissolved Organic Carbon	mg/L	0.20			6.92	6.47	6.26	4.8	4.8	6.63	4.57
Phenols-4AAP	mg/L	0.0010	0.001		<0.001	0.0017	<0.001	<0.001	<0.001	0.0027	0.003
Total Phosphorus	mg/L	0.002		0.02 ^{5b}	0.016	0.0089	0.0334	0.0192	0.0192	0.0107	0.0144
Total Suspended Solids	mg/L	10			<4	<4	18	7	7	3.9	0.8
Dissolved Sulphate (SO ₄)	mg/L	1			22.8	24.8	17.8	16.8	16.8	36.3	17.2
Alkalinity (Total as CaCO ₃)	mg/L	1.0			<2	<2	277	144	144	184	250
Dissolved Chloride (Cl)	mg/L	1			20.1	27.8	14	4.17	4.17	7.78	21.9
Nitrite (N)	mg/L	0.010			<0.03	<0.09	<0.09	<0.03	<0.03	<0.03	<0.03
Nitrate (N)	mg/L	0.10			0.11	0.18	<0.09	0.22	0.22	0.63	<0.1
Total Oil & Grease	mg/L	0.50	Note 3								
Total Arsenic (As)	ug/L	1.0	100	5	<1	<1	<1	<1	<1	<1	<1
Total Cadmium (Cd)	ug/L	0.10	0.2	0.1-0.5 ^{5d}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Calcium (Ca)	mg/L	200									
Total Chromium (Cr)	ug/L	5.0	1-89 ^{5a}		1.6	1	2.4	1	1	3.6	<1
Total Copper (Cu)	ug/L	1.0	5	1-5 ^{5f}	<1	2.3	4.5	<1	<1	<1	1.1
Total Iron (Fe)	ug/L	100	0.3		0.029	<0.02	0.158	0.133	0.133	0.149	0.069
Total Lead (Pb)	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}	0.16	<1	<1	<1	<1	<1	<1
Total Magnesium (Mg)	ug/L	50			9.34	9.57	12.4	3.93	3.93	6.67	6.91
Total Manganese (Mn)	ug/L	2.0			12.8	12	38.8	13.9	13.9	9.3	6
Total Nickel (Ni)	ug/L	1.0	25		<1	<1	<1	1.6	1.6	1.6	<1
Total Potassium (K)	ug/L	200			2.56	1.5	1.65	1.79	1.79	2.87	0.83
Total Sodium (Na)	ug/L	100			8.43	9.96	11.1	4.69	4.69	12	5.53
Total Zinc (Zn)	ug/L	5.0		20	3.7	3.7	5.3	1	1	<1	4.1

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 PWQO 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 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).

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

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.

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/L
If Hardness as CaCO₃ (mg/L) is > 80, then use 5 ug/L

Table 5: Condition 7(3) SW2 Water Quality Results

	Unit	Reportable Detection Limit (RDL)	PWQO ¹	Interim PWQO ²	McCarthy Quarry	
Sample ID					SW2	
Date					25-Apr-14	02-May-14
pH	pH	n/a	6.5-8.5			
Anion Sum	me/L	N/A				
Cation Sum	me/L	N/A				
Hardness (CaCO ₃)	mg/L	1.0			3.9	0.8
Total Ammonia-N	mg/L	0.050			0.0107	0.0144
Conductivity	umho/cm	1.0			4.99	6.18
Total Dissolved Solids	mg/L	10				
Fluoride (F ⁻)	mg/L	0.10				
Total Kjeldahl Nitrogen (TKN)	mg/L	0.10			7.85	7.8
Dissolved Organic Carbon	mg/L	0.20			7.78	21.9
Phenols-4AAP	mg/L	0.0010	0.001		<0.001	<0.001
Total Phosphorus	mg/L	0.002		0.02 ^{5b}		
Total Suspended Solids	mg/L	10				
Dissolved Sulphate (SO ₄)	mg/L	1			6.63	4.57
Alkalinity (Total as CaCO ₃)	mg/L	1.0				
Dissolved Chloride (Cl)	mg/L	1			3.6	<1
Nitrite (N)	mg/L	0.010				
Nitrate (N)	mg/L	0.10				
Total Oil & Grease	mg/L	0.50	Note 3			
Total Arsenic (As)	ug/L	1.0	100	5		
Total Cadmium (Cd)	ug/L	0.10	0.2	0.1-0.5 ^{5d}		
Total Calcium (Ca)	mg/L	200				
Total Chromium (Cr)	ug/L	5.0	1-89 ^{5e}			
Total Copper (Cu)	ug/L	1.0	5	1-5 ^{5f}		
Total Iron (Fe)	ug/L	100	0.3			
Total Lead (Pb)	ug/L	0.50	5-25 ^{5g}	1-5 ^{5h}		
Total Magnesium (Mg)	ug/L	50			2.87	0.83
Total Manganese (Mn)	ug/L	2.0				
Total Nickel (Ni)	ug/L	1.0	25			
Total Potassium (K)	ug/L	200			9.3	6
Total Sodium (Na)	ug/L	100			0.057	0.036
Total Zinc (Zn)	ug/L	5.0		20		

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 PWQO 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 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).

<i>5d. Cadmium: (Interim)</i>	If Hardness 0-100 mg/L (CaCO ₃), then use 0.1 ug/L If Hardness >100 mg/L (CaCO ₃), then use 0.5 ug/L
<i>5e. Chromium:</i>	1 ug/L for hexavalent chromium (Cr VI) 8.9 ug/L for trivalent chromium (Cr III)
<i>5f. Copper: (Interim)</i>	If Hardness as CaCO ₃ (mg/L) is 0 - 20, then use 1 ug/L If Hardness as CaCO ₃ (mg/L) is >20, then use 5 ug/L

<i>5b. Phosphorus (Interim):</i>	
- 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.	
<i>5g. Lead:</i>	If Alkalinity as CaCO ₃ (mg/L) is < 20, use 5 ug/L If Alkalinity as CaCO ₃ (mg/L) is 20 to 40, use 10 ug/L If Alkalinity as CaCO ₃ (mg/L) is 40 to 80, use 20 ug/L If Alkalinity as CaCO ₃ (mg/L) is > 80, use 25 ug/L
<i>5h. Lead: (Interim)</i>	If Hardness as CaCO ₃ (mg/L) is < 30, then use 1 ug/L If Hardness as CaCO ₃ (mg/L) is 30 to 80, then use 3 ug/L If Hardness as CaCO ₃ (mg/L) is > 80, then use 5 ug/L

Table 6: Lethality Monitoring at McCarthy Pond

Sample ID	Unit	Mortality Limit	McCarthy Quarry											
			Pond											
Date			31-Oct-13	17-Nov-13	19-Dec-13	15-Jan-14	28-Mar-14	18-Apr-14	02-May-14	26-Jun-14	01-Aug-14	10-Sep-14	16-Oct-14	
Rainbow Trout	% Mortality Rate*	<50%	0	0	0	NA	0	0	0	3.33	0	0	0	
Daphnia Magna	% Mortality Rate*	<50%	0	0	0	0	0	0	0	0	0	0	0	

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

Table 7: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Min.	Total Litres	Rate of Taking L/min	Rate of Taking L/s
ECA Permitted Rate				6,550,000.00	4,545.00	76.00
24-Oct-13	5:30am	5:00pm	570	342000	600	10
24-Oct-13	6am	8:30am	150	90000	600	10
28-Oct-13	6:15am	12:30pm	375	225000	600	10
29-Oct-13	8am	11:30am	210	126000	600	10
30-Oct-13	7am	9am	120	72000	600	10
31-Oct-13	6:30am	3:30pm	540	324000	600	10
01-Nov-13	6:30am	10:30am	240	144000	600	10
04-Nov-13	8am	3:30pm	450	270000	600	10
05-Nov-13	6:30am	11:30am	300	180000	600	10
06-Nov-13	6am	8:30am	150	90000	600	10
08-Nov-13	6am	10:30am	270	162000	600	10
11-Nov-13	4:30am	3pm	630	378000	600	10
12-Nov-13	5:30am	8:30am	180	108000	600	10
13-Nov-13	10am	1:30pm	210	126000	600	10
14-Nov-13	10am	1:30pm	210	126000	600	10
15-Nov-13	7:30am	11:30am	240	144000	600	10
18-Nov-13	6am	12:30pm	390	234000	600	10
19-Nov-13	5:30am	9:30am	240	144000	600	10
20-Nov-13	5:30am	11am	330	693000	2100	35
21-Nov-13	12:30pm	3:30pm	180	378000	2100	35
22-Nov-13	7am	12pm	300	630000	2100	35
26-Nov-13	9am	3pm	360	756000	2100	35
27-Nov-13	5:30am	3pm	570	1197000	2100	35
28-Nov-13	2pm	3:30pm	90	189000	2100	35
02-Dec-13	8:30am	2:30pm	360	756000	2100	35
03-Dec-13	1pm	4pm	180	378000	2100	35
04-Dec-13	10am	4pm	360	756000	2100	35
05-Dec-13	6am	10am	240	504000	2100	35
06-Dec-13	7am	12pm	300	630000	2100	35
09-Dec-13	5:30am	3pm	570	1197000	2100	35
10-Dec-13	9am	2pm	300	630000	2100	35
13-Dec-13	8am	2:30pm	390	819000	2100	35
18-Dec-13	9:30am	3:30pm	360	756000	2100	35
19-Dec-13	6:30am	2:30pm	480	1008000	2100	35
05-Jan-14	9am	Jan.6 -12pm	694	3402000	4902	82
12-Jan-14	2pm	Jan.13 - 3pm	694	3150000	4538	76
14-Jan-14	5:30am	3pm	694	1197000	1724	29
15-Jan-14	9am	2:30pm	694	693000	998	17
16-Jan-14	1pm	3:30pm	694	315000	454	8
17-Jan-14	9:30am	1:30pm	694	504000	726	12
20-Jan-14	8:30am	2:30pm	694	756000	1089	18
27-Jan-14	11:30am	3:30pm	694	504000	726	12
29-Jan-14	7:30am	2pm	694	819000	1179	20
30-Jan-14	9am	3:30pm	694	819000	1179	20
31-Jan-14	9am	2pm	695	630000	907	15
03-Feb-14	12pm	3:30pm	695	441000	635	11
04-Feb-14	12pm	3pm	695	378000	544	9
05-Feb-14	9:30am	2pm	695	567000	816	14
07-Feb-14	11am	2pm	695	378000	544	9
10-Feb-14	9am	3pm	695	756000	1088	18
11-Feb-14	10:30am	3pm	695	567000	816	14
14-Feb-14	6:30am	1:30pm	695	882000	1270	21
18-Feb-14	8am	3pm	695	882000	1269	21
20-Feb-14	7:30am	1:30pm	695	756000	1088	18
21-Feb-14	7:30am	11am	695	441000	635	11
25-Feb-14	8:30am	3:30pm	695	882000	1269	21
26-Feb-14	7:30am	2:30pm	695	882000	1269	21
03-Mar-14	8:30am	3pm	695	819000	1178	20
04-Mar-14	9am	1pm	695	504000	725	12
05-Mar-14	1pm	3pm	695	252000	363	6
07-Mar-14	8am	11am	695	378000	544	9
10-Mar-14	10am	3pm	300	630000	2100	35
11-Mar-14	5:30am	3pm	695	1197000	1722	29

Table 7: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Min.	Total Litres	Rate of Taking L/min	Rate of Taking L/s
ECA Permitted Rate				6,550,000.00	4,545.00	76.00
12-Mar-14	6:30am	1pm	695	819000	1178	20
14-Mar-14	7am	11am	695	504000	725	12
18-Mar-14	7am	3pm	695	1008000	1450	24
19-Mar-14	11am	3pm	695	504000	725	12
20-Mar-14	11am	3pm	695	504000	725	12
24-Mar-14	9am	3pm	695	756000	1087	18
25-Mar-14	7am	3pm	480	1008000	2100	35
26-Mar-14	10am	3pm	300	630000	2100	35
02-Apr-14	5am	3pm	600	1260000	2100	35
08-Apr-14	6am	3pm	540	1134000	2100	35
10-Apr-14	12pm	3:30pm	210	441000	2100	35
14-Apr-14	5am	3pm	600	1260000	2100	35
16-Apr-14	5am	3pm	600	1260000	2100	35
23-Apr-14	5am	4pm	660	1386000	2100	35
20-Apr-14	6am	12pm	360	756000	2100	35
23-May-14	5am	11am	360	756000	2100	35
30-May-14	7am	11am	240	504000	2100	35
02-Jun-14	7am	2:30pm	450	945000	2100	35
03-Jun-14	7:30am	2:30pm	420	882000	2100	35
04-Jun-14	7am	2:pm	420	882000	2100	35
05-Jun-14	7:30am	2:30pm	420	882000	2100	35
06-Jun-14	No pump		0	0	-	-
09-Jun-14	9:30am	2:30pm	300	630000	2100	35
10-Jun-14	No pump		0	0	-	-
11-Jun-14	No pump		0	0	-	-
12-Jun-14	No pump		0	0	-	-
13-Jun-14	No pump		0	0	-	-
16-Jun-14	8am	2pm	360	756000	2100	35
17-Jun-14	No pump		0	0	-	-
18-Jun-14	9am	2pm	300	630000	2100	35
19-Jun-14	No pump		0	0	-	-
20-Jun-14	8am	2pm	360	756000	2100	35
23-Jun-14	No pump		0	0	-	-
24-Jun-14	No pump		0	0	-	-
25-Jun-14	8am	3pm	420	882000	2100	35
26-Jun-14	7:30am	2:30pm	420	882000	2100	35
27-Jun-14	7am	2pm	420	882000	2100	35
02-Jun-14	8am	2pm	360	756000	2100	35
03-Jul-14	7am	11:30am	270	567000	2100	35
04-Jul-14	No pumping		0	0	-	-
07-Jul-14	7:30am	11:30am	240	504000	2100	35
08-Jul-04	No pumping		0	0	-	-
09-Jul-14	No pumping		0	0	-	-
10-Jul-14	No pumping		0	0	-	-
11-Jul-14	7am	2pm	420	882000	2100	35
14-Jul-14	6am	12pm	360	756000	2100	35
15-Jul-14	7am	3pm	480	1008000	2100	35
16-Jul-14	9am	1pm	240	504000	2100	35
17-Jul-14	No pumping		0	0	-	-
21-Jul-14	6am	9am	180	378000	2100	35
22-Jul-14	9am	11am	120	252000	2100	35
23-Jul-14	9am	11am	120	252000	2100	35
24-Jul-14	9am	12pm	180	378000	2100	35
25-Jul-14	No pumping		0	0	-	-
28-Jul-14	7am	2pm	420	882000	2100	35
29-Jul-14	No pumping		0	0	-	-
30-Jul-14	7am	3pm	480	1008000	2100	35
31-Jul-14	No pumping		0	0	-	-
01-Aug-14	8AM	10AM	120	252000	2100	35
05-Aug-14	9AM	12PM	180	378000	2100	35
06-Aug-14	9AM	12PM	180	378000	2100	35
07-Aug-14	NO PUMP		0	0	-	-
08-Aug-14	NO PUMP		0	0	-	-

Table 7: Measured Water Volume and Rate of Discharge from Quarry Sump

Date	Start	Stop	Total Min.	Total Litres	Rate of Taking L/min	Rate of Taking L/s
ECA Permitted Rate				6,550,000.00	4,545.00	76.00
11-Aug-14	7AM	12PM	300	630000	2100	35
12-Aug-14	9AM	3PM	360	75600	210	4
13-Aug-14	6AM	12PM	360	756000	2100	35
14-Aug-14	NO PUMP		0	0	-	-
15-Aug-14	NO PUMP		0	0	-	-
18-Aug-14	7AM	3PM	480	1008000	2100	35
19-Aug-14	NO PUMP		0	0	-	-
20-Aug-14	NO PUMP		0	0	-	-
21-Aug-14	7AM	2PM	420	882000	2100	35
22-Aug-14	6AM	12PM	360	756000	2100	35
25-Aug-14	9AM	12PM	180	378000	2100	35
26-Aug-14	NO PUMP		0	0	-	-
27-Aug-14	7AM	11AM	698	504000	722	12
28-Aug-14	NO PUMP		698	0	0	0
29-Aug-14	9AM	2PM	698	630000	903	15
02-Sep-14	9am	12pm	180	378000	2100	35
03-Sep-14	No Pump		0	0	-	-
04-Sep-14	No Pump		0	0	-	-
05-Sep-14	No Pump		0	0	-	-
08-Sep-14	8am	11am	180	378000	2100	35
09-Sep-14	No Pump		0	0	-	-
10-Sep-14	No Pump		0	0	-	-
11-Sep-14	6am	9am	180	378000	2100	35
12-Sep-14	6am	9am	180	378000	2100	35
15-Sep-14	9am	12pm	180	378000	2100	35
16-Sep-14	No Pump		0	0	-	-
17-Sep-14	No Pump		0	0	-	-
18-Sep-14	6am	9am	180	378000	2100	35
19-Sep-14	6am	9am	180	378000	2100	35
22-Sep-14	7am	3pm	480	1008000	2100	35
23-Sep-14	No Pump		0	0	-	-
24-Sep-14	No Pump		0	0	-	-
25-Sep-14	No Pump		0	0	-	-
26-Sep-14	No Pump		0	0	-	-
29-Sep-14	7am	2pm	420	882000	2100	35
30-Sep-14	No Pump		0	0	-	-
01-Oct-14	11AM	3PM	240	504000	2100	35
02-Oct-14	7AM	12PM	300	630000	2100	35
03-Oct-14	NO PUMP		0		-	-
06-Oct-14	9AM	12PM	180	378000	2100	35
07-Oct-14	9AM	12PM	180	378000	2100	35
08-Oct-14	9AM	12PM	180	378000	2100	35
09-Oct-14	NO PUMP		0		-	-
10-Oct-14	NO PUMP		0		-	-
14-Oct-14	7AM	12PM	300	630000	2100	35
15-Oct-14	7AM	12PM	300	630000	2100	35
16-Oct-14	9AM	12PM	180	378000	2100	35
17-Oct-14	9AM	12PM	180	378000	2100	35
20-Oct-14	6AM	12PM	360	756000	2100	35
21-Oct-14	6AM	12PM	360	756000	2100	35
22-Oct-14	6AM	12PM	360	756000	2100	35
23-Oct-14	NO PUMP		0		-	-
24-Oct-14	NO PUMP		0		-	-
27-Oct-14	6AM	12PM	360	756000	2100	35
28-Oct-14	NO PUMP		0		-	-
29-Oct-14	6AM	12PM	360	756000	2100	35
30-Oct-14	6AM	12PM	360	756000	2100	35
31-Oct-14	6AM	12PM	360	756000	2100	35



APPENDIX A

Environmental Compliance Approval No. 4731-987KM8



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Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 4731-987KM8

Issue Date: October 15, 2013

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TERMS AND CONDITIONS

1. GENERAL CONDITION

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

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

2. CHANGE OF OWNER

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

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

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

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

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

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

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

3. CHANGES IN PROCESSES OR PROCESS MATERIALS

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

4. OPERATIONS MANUAL

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

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

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

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

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

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

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

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

5. EFFLUENT LIMITS

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

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

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

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

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

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

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

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

6. EFFLUENT - VISUAL OBSERVATIONS

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

7. EFFLUENT MONITORING AND RECORDING

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

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

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

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

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

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

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

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

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

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

8. LETHALITY MONITORING

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

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

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

9. RECEIVER INSPECTION

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

10. REPORTING

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

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

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

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

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

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

Schedule A

Environmental Compliance Approval (ECA) supporting documents:

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

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

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

The Notice should also include:

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

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

This Notice must be served upon:

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

AND

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

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

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

DATED AT TORONTO this 15th day of October, 2013



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



APPENDIX B

Permit To Take Water No. 8271-8VQJGU

AMENDED PERMIT TO TAKE WATER
Surface and Ground Water
NUMBER 8271-8VQJGU

Pursuant to Section 34 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

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

For the water taking from: McCarthy Quarry - Quarry Sump

Located at: Lot 1, Concession 1, Geographic Township of Mara
Ramara, County of Simcoe

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment.
- (d) "District Office" means the Barrie District Office.
- (e) "Permit" means this Permit to Take Water No. 8271-8VQJGU including its Schedules, if any, issued in accordance with Section 34 of the OWRA.
- (f) "Permit Holder" means QBJR Aggregates Inc..
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined

below:

TERMS AND CONDITIONS

1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated September 10, 2007 and signed by Quinn Moyer, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

- (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or
- (b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including

the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 Expiry

This Permit expires on **December 31, 2014**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Quarry Sump	Pond Quarry	Pits and Quarries	Dewatering	4,545	24	6,544,800	150	17 651344 4932393
						Total Taking:	6,550,000		

3.3 There is an additional water taking limitation per year for Source 1 described as Quarry Sump within Table A. The maximum taking per year from the Quarry Sump is 196,500,000 litres.

4. Monitoring

4.1 The Permit Holder shall not lower the water in the quarry below an elevation of 232.0 metres above sea level.

4.2 The Permit Holder shall establish and maintain a weather station on-site that collects and records, at a minimum, the following climatic data on a daily basis:

- a) Precipitation (rain and/or snow); and
- b) Temperature (maximum and minimum).

4.3 The Permit Holder shall conduct daily water level monitoring with the use of pressure transducers and data loggers at:

- a) The residential well, known by the MOE Water Well Record Number 5727662, if granted permission by the property owner.
- b) The monitoring wells named TW2-1, OW4-1, OW4-2, OW5-1, OW6-1, and OW6-2 (shown on Figure 2, McCarthy Quarry Hydrogeological Assessment, April 2008, as described in Item 2, of Schedule A of this Permit).
- c) The Bored Well (shown on Figure 1 and described in McCarthy Quarry, Supporting Documentation for the Application for a Permit to Take Water - Bored Well Testing, Azimuth Environmental Consulting, Inc. November 2008, as described in Item 3, of Schedule A of this Permit).
- d) The monitoring well, once constructed and operational, as described within the Ontario Municipal Board Minutes of Settlement, dated March 24, 2003.

Prior to any dewatering these pressure transducers and data loggers shall be installed, operational, and recording data.

- 4.4 The Permit Holder shall conduct monthly water level monitoring with the use of a manual water level meter at:
- a) The residential well, known by the MOE Water Well Record Number 5727662, if granted permission by the property owner.
 - b) The residential wells named DW1, DW2, and DW4, (shown on Figure 2, McCarthy Quarry Hydrogeological Assessment, April 2008, as described in Item 2, of Schedule A of this Permit), if granted permission by the property owner.
 - c) The monitoring wells named AM1b, AM2, AM7b, AMx, AMy, TW1-1, TW1-2, TW2-1, TW3, OW4-1, OW4-2, OW5-1, OW5-2, OW5-3, OW6-1, OW6-2, OW6-3, OW7-1, OW7-2, OW7-3, OW8-1, OW8-2, and OW8-3 (shown on Figure 2, McCarthy Quarry Hydrogeological Assessment, April 2008, as described in Item 2, of Schedule A of this Permit).
 - d) The Bored Well (shown on Figure 1, McCarthy Quarry, Supporting Documentation for the Application for a Permit to Take Water - Bored Well Testing, Azimuth Environmental Consulting, Inc. November 2008, as described in Item 3, of Schedule A of this Permit).
 - e) The monitoring well, once constructed and operational, as described within the Ontario Municipal Board Minutes of Settlement, dated March 24, 2003.
- 4.5 The Permit Holder shall, if granted permission by the property owner, measure and record monthly static water levels in all accessible private wells located within the 1000 m offset from the quarry extraction area, commencing at least six (6) months prior to the commencement of dewatering, and thereafter at least once in every two (2) month period during which water is taken from the quarry.
- 4.6 The Permit Holder shall notify the Director within 30 days if the monitoring of any well listed under conditions 4.3, 4.4, and 4.5 is not possible, including being denied access to a private well. In the event of damage or loss of any monitoring devices or related equipment, the Permit Holder shall be allowed 30 calendar days from the date of discovery of the occurrence to repair or replace equipment. The Permit Holder shall inspect and download the data loggers at least every two (2) months.
- 4.7 The Permit Holder shall, if granted permission by the property owner, on a semi-annual basis collect raw water samples from the residential wells named DW1 and DW2, in addition to the well identified in condition 4.3(a). Each sample shall be tested, at a minimum, for the parameters listed in Table 1 below:

Table 1: Water Quality Parameters for Residential Wells

pH	Sulphate	DOC	Copper	Thallium
Alkalinity (CaCO ₃)	Magnesium	Colour	Iron	Titanium
Bicarbonate	Calcium	Turbidity	Lead	Uranium
Conductivity	Sodium	Aluminium	Manganese	Vanadium
Fluoride	Potassium	Arsenic	Molybdenum	Zinc
Chloride	Ammonia (N)	Barium	Nickel	TDS (iron sum calc.)
Nitrate	Phosphate	Boron	Selenium	Hardness (CaCO ₃)
Nitrite	Phosphorus	Cadmium	Silver	Methane
Bromide	Silicon	Chromium	Strontium	EC (calc.) / EC (actual)
Tannins	SAR	Anion Sum	Cation Sum	% Difference
Total Petroleum Hydrocarbons	Ion Ratio	Conductivity (calc.)	TDS (cal.) / EC (actual)	Langelier Index

The Permit Holder shall immediately report to the respective well owner, the Director, and District Office any sampling result that exceeds the Ontario Drinking Water Quality Standards as prescribed by O.Reg. 169/03, as amended.

- 4.8 The Permit Holder shall on a semi-annual basis conduct the groundwater quality monitoring from the on-site groundwater monitors listed in Table 2. Each sample shall be tested, at a minimum, for the parameters listed in Table 3.

Table 2: On-Site Groundwater Monitors for Water Quality Sampling

AM1b	TW1-1	OW4-II	OW6-II	OW8-I
AM2	TW1-2	OW5-I	OW6-III	OW8-II
AM7b	TW2-2	OW5-II	OW7-I	OW8-III
AMx	TW3	OW5-III	OW7-II	Bored Well
AMy	OW4-I	OW6-I	OW7-III	

Table 3: Water Quality Parameters for On-Site Groundwater Monitors

pH	Sulphate	DOC	Copper	Thallium
Alkalinity	Magnesium	Colour	Iron	Titanium
Bicarbonate	Calcium	Turbidity	Lead	Uranium
Conductivity	Sodium	Aluminium	Manganese	Vanadium
Fluoride	Potassium	Arsenic	Molybdenum	Zinc
Chloride	Ammonia	Barium	Nickel	TDS
Nitrate	Phosphate	Boron	Selenium	
Nitrite	Phosphorus	Cadmium	Silver	
Bromide	Silicon	Chromium	Strontium	

- 4.9 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured or calculated amounts for water pumped per day for each day that water is taken under the authorization of this Permit.
- 4.10 The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.
- 4.11 The Permit Holder shall provide to the Director a semi-annual monitoring report no later than February 1 and August 1 each year during the life of this Permit, beginning August 1, 2012.

The semi-annual monitoring report shall be prepared by an individual with P.Geo. or equivalent qualifications and shall include, at a minimum:

- a) The review and assessment of all monitoring data required by this Permit.
- b) An up-date of the quarry operations and predicted quarrying and dewatering for the next six (6) months.
- c) An assessment of the groundwater trends using the on-site on off-site monitoring data. This analysis should state the actual impact area of quarry dewatering and determine the potential for off-site impacts. If any impacts are predicted then a detailed mitigation plan shall be included within this report.
- d) Analysis that includes amount of water pumped, precipitation data, and an estimate of how much groundwater was pumped versus surface water.
- e) Figures that include site maps with current quarry depths, groundwater contour maps, impact area of quarry dewatering, groundwater elevation graphs, and geological cross-sections.
- f) Any groundwater interference complaints.
- g) Description of all communication with the public.
- h) Conclusions and recommendations, if any, to improve the monitoring and reporting at the site.

An electronic copy of the data collected must also accompany the report.

- 4.12 The Permit Holder shall make available on a publicly-accessible site on the internet the water quality and quantity data that it is required to monitor and record under this Permit and O.Reg. 387/04, as amended, and a copy of every report that is required to be prepared under this Permit. For greater clarity, the Permit Holder shall not publish any personal information as defined by the *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F.31, as amended.
- 4.13 The Permit Holder shall establish a Public Liaison Committee ("PLC") comprised of not more than seven (7) members that will meet at least once every four (4) months, unless the majority of the PLC decide that more or less frequent meetings are required. The Permit Holder shall invite the Township and the County to appoint one (1) member each. Two (2) members shall be appointed by the Permit Holder -- one of whom shall act as Chairperson. The Permit Holder shall invite the public to appoint three (3) members who must be permanent residents within a 3 kilometre radius of the quarry property. The PLC shall serve in an advisory / community liaison role and shall have no powers to direct the Permit Holder or the Ministry.
- 4.14 The Permit Holder shall provide notification of, and hold, a public meeting within three (3) months of this Permit being issued. The public meeting shall include, at a minimum, a review of the provisions of this Permit, the operations associated with this Permit, and the establishment of the PLC.
- 4.15 Any request for an amendment or renewal of this Permit must be accompanied by a report prepared by an individual with P.Geo. or equivalent qualifications and shall include, at a minimum:
- a) The review and assessment of all monitoring data required by this Permit.
 - b) An up-date of the quarry operations and predicted quarrying and dewatering for the duration of the requested permit.
 - c) An assessment of the groundwater trends using the on-site on off-site monitoring data. This analysis should state the actual impact area of quarry dewatering and determine the potential for off-site impacts. If any impacts are predicted then a detailed mitigation plan shall be included within this report.
 - d) Analysis that includes amount of water pumped, precipitation data, and an estimate of how much groundwater was pumped versus surface water.
 - e) Figures that include site maps with current quarry depths, groundwater contour maps, impact area of quarry dewatering, groundwater elevation graphs, and geological cross-sections.
 - f) Any groundwater interference complaints.
 - g) Description of all communication with the public.
 - h) Conclusions and recommendations, if any, to improve the monitoring and reporting at the site.
- An electronic copy of the data collected must also accompany the report. Any application for renewal of this Permit must be submitted to the Ministry at least ninety (90) days prior to the expiry of this Permit.

4.16 The Permit Holder shall, as directed by the Ministry, participate in a cumulative impact assessment for the Carden Plain Area with other quarry operators who have been issued a permit to take water in this area.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

For Groundwater Takings

If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.

If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

5.2.1 Where the water supply provided by the well known by MOE Water Well Record Number 5727662 is restored in accordance with Condition 5.2, the Permit Holder shall restore the supply in a manner satisfactory to the Director, taking into account the residential needs, requirements and preferences of the persons serviced by the well.

5.3 Upon the receipt of a groundwater interference complaint, the Permit Holder shall:

- a) Implement the McCarthy Quarry Complaint Process as described in Item 6, of Schedule A of this Permit.
- b) In addition, appropriate notification and actions must be taken as described in conditions 5.1 and 5.2 of this Permit. The provisions of conditions 5.1 and 5.2 shall take precedence over the provisions of condition 5.3(a) if there is a conflict.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

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

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, 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 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:

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

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

*The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5
Fax: (416) 314-4506
Email: ERTTribunalsecretary@ontario.ca*

AND

*The Director, Section 34
Ministry of the Environment
8th Floor
5775 Yonge St
Toronto ON M2M 4J1
Fax: (416)325-6347*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600

by fax at (416) 314-4506

by e-mail at www.ert.gov.on.ca

This Permit cancels and replaces Permit Number 7461-8NQQLA, issued on 2011/11/21.

Dated at Toronto this 11th day of July, 2012.



Kathryn Baker
Director, Section 34
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 8271-8VQJGU, dated July 11, 2012.

- 1) Permit To Take Water Application, signed by Quinn Moyer, September 10, 2007.
- 2) McCarthy Quarry Hydrogeological Assessment, Azimuth Environmental Consulting, Inc. and EarthFX Incorporated. April 2008.
- 3) McCarthy Quarry, Supporting Documentation for the Application for a Permit to Take Water - Bored Well Testing, Azimuth Environmental Consulting, Inc. November 2008.
- 4) Ontario Municipal Board Minutes of Settlement between Stan and Barbara McCarthy and William Bruce Hunter -and- The Corporation of the City of Kawartha Lakes, dated March 24, 2003.
- 5) Authorization and Direction to Mr. Christopher Munro to issue the Permit to Take Water for the McCarthy Quarry in the joint names of Thomas Stan McCarthy, Barbara McCarthy, and M.A.Q. Aggregates, Inc., signed by Thomas Stan McCarthy, Barbara McCarthy, and Quinn Moyer, President of M.A.Q. Aggregates Inc. and dated May 27, 2009.
- 6) McCarthy Quarry Complaint Process, as described within the letter addressed to Mr. Christopher Munro, Ministry of the Environment by Tecia White, Azimuth Environmental Consulting, Inc., and dated June 11, 2009.
- 7) Additional 72-hour Pumping Test Results - McCarthy Quarry, Azimuth Environmental Consulting, Inc. December 1, 2009.
- 8) Minister's Letter titled "Appeals of a decision by the Environmental Review Tribunal of Case Numbers 09-198/09-186" signed by The Honourable John Wilkinson, Minister of the Environment, and dated June 23, 2011.
- 9) Request for an Administrative Amendment to Permit to Take Water No. 7461-8NQQLA. QBJR Aggregates Inc. June 11, 2012.



APPENDIX C

Water Quality Results



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 206848

Sample Data:

Sample Name: Mc Carthy Pond

Date: 3/28/2014

Matrix: Surface Water

Lab #: 547352

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	201	mg/L as CaCO3	20140401.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.661	mg/L	20140402.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	47	mg/L	20140402.R5B
Fluoride	0.1	0.32	mg/L	20140402.R5B
Nitrate (as N)	0.1	2.01	mg/L	20140402.R5B
Nitrite (as N)	0.03	<0.03	mg/L	20140402.R5B
Sulphate	1	76.8	mg/L	20140402.R5B

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	200	mg/L as CaCO3	20140407.R94A
Carbonate	1	1.2	mg/L as CaCO3	20140407.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	3.4	mg/L	20140403.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO3)	0.1	311	mg/L	20140407.R13.1A

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	92100	ug/L	20140402.R13na2
Dissolved Magnesium	4	15800	ug/L	20140402.R13na2
Dissolved Potassium	1000	5550	ug/L	20140402.R13na2
Dissolved Sodium	100	47900	ug/L	20140402.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140402.R13na5
Total Cadmium	0.1	<0.1	ug/L	20140402.R13na5
Total Calcium	50	94400	ug/L	20140402.R13na5
Total Copper	1	1.2	ug/L	20140402.R13na5
Total Iron	20	83	ug/L	20140402.R13na5
Total Lead	1	<1	ug/L	20140402.R13na5
Total Magnesium	4	15300	ug/L	20140402.R13na5
Total Manganese	1	35.5	ug/L	20140402.R13na5
Total Nickel	1	4.2	ug/L	20140402.R13na5
Total Potassium	1000	5520	ug/L	20140402.R13na5
Total Sodium	100	49800	ug/L	20140402.R13na5
Total Zinc	1	7.2	ug/L	20140402.R13na5

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Whitewater Hydrogeology Ltd.

Work Order: 206848

Sample Name: Mc Carthy Pond

Date: 3/28/2014

Matrix: Surface Water

Lab #: 547352

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Arsenic	1	<1	ug/L	20140407.R13.1A
Cadmium	0.1	<0.1	ug/L	20140407.R13.1A
Calcium	50	97200	ug/L	20140407.R13.1A
Copper	1	1.2	ug/L	20140407.R13.1A
Iron	20	50	ug/L	20140407.R13.1A
Lead	0.1	0.1	ug/L	20140407.R13.1A
Magnesium	4	16700	ug/L	20140407.R13.1A
Manganese	1	40.1	ug/L	20140407.R13.1A
Nickel	1	3.1	ug/L	20140407.R13.1A
Potassium	1000	5930	ug/L	20140407.R13.1A
Sodium	100	50200	ug/L	20140407.R13.1A
Zinc	1	8.9	ug/L	20140407.R13.1A

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	6.2	meq	20140407.R91A
Cation Sum	N/A	8.15	meq	20140407.R91A
Ion Balance	N/A	13.59	%	20140407.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140407.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.79	pH	20140401.R2C

Single Conc DM				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140401.R63C
% Mortality at 100% Effluent	N/A	0	%	20140401.R63B

Single Conc RBT				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140402.R62A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	729	µS/cm	20140404.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	4.5	mg/L	20140408.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	0.0078	mg/L	20140403.T38A

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Work Order: 206848

Sample Name: Mc Carthy Pond **Date: 3/28/2014** **Matrix: Surface Water** **Lab #: 547352**

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	340	mg/L	20140401.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	1.3	mg/L	20140403.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0151	mg/L	20140402.R23.2A

Sample Name: SW1 **Date: 3/28/2014** **Matrix: Surface Water** **Lab #: 547353**

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	216	mg/L as CaCO ₃	20140401.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.299	mg/L	20140402.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	18.6	mg/L	20140402.R5B
Fluoride	0.1	<0.1	mg/L	20140402.R5B
Nitrate (as N)	0.1	1.07	mg/L	20140402.R5B
Nitrite (as N)	0.03	<0.03	mg/L	20140402.R5B
Sulphate	1	43.2	mg/L	20140402.R5B

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	215	mg/L as CaCO ₃	20140407.R94A
Carbonate	1	1.1	mg/L as CaCO ₃	20140407.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	5.41	mg/L	20140403.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	328	mg/L	20140402.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	114000	ug/L	20140402.R13na2
Dissolved Magnesium	40	7740	ug/L	20140402.R13na2
Dissolved Potassium	1000	2620	ug/L	20140402.R13na2
Dissolved Sodium	100	19100	ug/L	20140402.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140402.R13na5

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Whitewater Hydrogeology Ltd.

Work Order: 206848

Sample Name: SW1

Date: 3/28/2014

Matrix: Surface Water

Lab #: 547353

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Cadmium	0.1	<0.1	ug/L	20140402.R13na5
Total Calcium	50	116000	ug/L	20140402.R13na5
Total Copper	1	<1	ug/L	20140402.R13na5
Total Iron	20	82	ug/L	20140402.R13na5
Total Lead	1	<1	ug/L	20140402.R13na5
Total Magnesium	40	7990	ug/L	20140402.R13na5
Total Manganese	1	15.8	ug/L	20140402.R13na5
Total Nickel	1	3.5	ug/L	20140402.R13na5
Total Potassium	100	2900	ug/L	20140402.R13na5
Total Sodium	100	18700	ug/L	20140402.R13na5
Total Zinc	1	1.9	ug/L	20140402.R13na5

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Arsenic	1	<1	ug/L	20140402.R13na3
Cadmium	0.1	<0.1	ug/L	20140402.R13na3
Calcium	50	119000	ug/L	20140402.R13na3
Copper	1	<1	ug/L	20140402.R13na3
Iron	20	52	ug/L	20140402.R13na3
Lead	0.1	0.35	ug/L	20140402.R13na3
Magnesium	40	7430	ug/L	20140402.R13na3
Manganese	1	15.6	ug/L	20140402.R13na3
Nickel	1	2.8	ug/L	20140402.R13na3
Potassium	100	3280	ug/L	20140402.R13na3
Sodium	100	20000	ug/L	20140402.R13na3
Zinc	1	2.9	ug/L	20140402.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.9	meq	20140407.R91A
Cation Sum	N/A	7.24	meq	20140407.R91A
Ion Balance	N/A	19.28	%	20140407.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140407.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.75	pH	20140401.R2C

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	460	µS/cm	20140404.T12A
Conductivity (Dup)	1	458	µS/cm	20140404.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2	mg/L	20140408.T27A

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Whitewater Hydrogeology Ltd.

Work Order: 206848

Sample Name: SW1

Date: 3/28/2014

Matrix: Surface Water

Lab #: 547353

T27-TSS				
Parameter	MDL	Result	Units	QAQCID

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	0.0096	mg/L	20140403.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	340	mg/L	20140401.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.86	mg/L	20140403.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0073	mg/L	20140402.R23.2A

Sample Name: DM Control

Date:

Matrix: Water

Lab #: 547555

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	41.9	mg/L	20140402.R13nr2
Magnesium	0.04	8.48	mg/L	20140402.R13nr2
Total Hardness (as CaCO ₃)	0.1	140	mg/L	20140402.R13nr2



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Work Order: 206848

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Whitewater Hydrogeology Ltd.

Work Order: 207223

Sample Data:

Sample Name: Mc Carthy Pond

Date:

Matrix: Wastewater

Lab #: 548324

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	125	mg/L as CaCO ₃	20140408.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.543	mg/L	20140408.R42.1B

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140407.R5C
Chloride	0.2	24.8	mg/L	20140407.R5C
Fluoride	0.1	0.27	mg/L	20140407.R5C
Nitrate (as N)	0.1	1.44	mg/L	20140407.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140407.R5C
Sulphate	1	49.7	mg/L	20140407.R5C

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	124	mg/L as CaCO ₃	20140410.R94A
Carbonate	1	1.1	mg/L as CaCO ₃	20140410.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	2.7	mg/L	20140408.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	189	mg/L	20140408.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	66300	ug/L	20140408.R13na
Dissolved Magnesium	40	8720	ug/L	20140408.R13na
Dissolved Potassium	1000	4170	ug/L	20140408.R13na
Dissolved Sodium	1000	28300	ug/L	20140408.R13na

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140408.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140408.R13na4
Total Calcium	50	60600	ug/L	20140408.R13na4
Total Copper	1	1.6	ug/L	20140408.R13na4
Total Iron	20	65	ug/L	20140408.R13na4
Total Lead	1	<1	ug/L	20140408.R13na4
Total Magnesium	4	9500	ug/L	20140408.R13na4
Total Manganese	1	16.7	ug/L	20140408.R13na4
Total Nickel	1	3.2	ug/L	20140408.R13na4
Total Potassium	100	4540	ug/L	20140408.R13na4
Total Sodium	100	29100	ug/L	20140408.R13na4

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Whitewater Hydrogeology Ltd.

Work Order: 207223

Sample Name: Mc Carthy Pond

Date:

Matrix: Wastewater

Lab #: 548324

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Zinc	1	1.5	ug/L	20140408.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Arsenic	1	<1	ug/L	20140408.R13na3
Cadmium	0.1	<0.1	ug/L	20140408.R13na3
Calcium	50	60000	ug/L	20140408.R13na3
Copper	1	1.6	ug/L	20140408.R13na3
Iron	20	51	ug/L	20140408.R13na3
Lead	0.1	0.17	ug/L	20140408.R13na3
Magnesium	4	9570	ug/L	20140408.R13na3
Manganese	1	17.5	ug/L	20140408.R13na3
Nickel	1	3.4	ug/L	20140408.R13na3
Potassium	100	4690	ug/L	20140408.R13na3
Sodium	100	29200	ug/L	20140408.R13na3
Zinc	1	2.1	ug/L	20140408.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.78	meq	20140410.R91A
Cation Sum	N/A	5.38	meq	20140410.R91A
Ion Balance	N/A	17.47	%	20140410.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140409.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.97	pH	20140408.R2C

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	425	µS/cm	20140408.T12B
Conductivity (Dup)	1	429	µS/cm	20140408.T12B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	20	mg/L	20140409.T27D

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140409.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	480	mg/L	20140407.R27A



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Work Order: 207223

Sample Name: Mc Carthy Pond **Date:** **Matrix: Wastewater** **Lab #: 548324**

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	1.2	mg/L	20140409.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0095	mg/L	20140408.R23.2A

Sample Name: SW1 **Date:** **Matrix: Wastewater** **Lab #: 548325**

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	176	mg/L as CaCO ₃	20140408.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.138	mg/L	20140408.R42.1B

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140407.R5C
Chloride	0.2	7.39	mg/L	20140407.R5C
Fluoride	0.1	<0.1	mg/L	20140407.R5C
Nitrate (as N)	0.1	0.4	mg/L	20140407.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140407.R5C
Sulphate	1	20.1	mg/L	20140407.R5C

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	175	mg/L as CaCO ₃	20140410.R94A
Carbonate	1	1.1	mg/L as CaCO ₃	20140410.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	5.96	mg/L	20140408.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	271	mg/L	20140408.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	106000	ug/L	20140408.R13na
Dissolved Magnesium	40	4300	ug/L	20140408.R13na
Dissolved Potassium	1000	2090	ug/L	20140408.R13na
Dissolved Sodium	1000	6660	ug/L	20140408.R13na

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140408.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140408.R13na4
Total Calcium	50	96400	ug/L	20140408.R13na4

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Work Order: 207223

Sample Name: SW1

Date:

Matrix: Wastewater

Lab #: 548325

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Copper	1	<1	ug/L	20140408.R13na4
Total Iron	20	149	ug/L	20140408.R13na4
Total Lead	1	<1	ug/L	20140408.R13na4
Total Magnesium	4	4980	ug/L	20140408.R13na4
Total Manganese	1	12.1	ug/L	20140408.R13na4
Total Nickel	1	3.6	ug/L	20140408.R13na4
Total Potassium	100	2410	ug/L	20140408.R13na4
Total Sodium	100	7680	ug/L	20140408.R13na4
Total Zinc	1	2.6	ug/L	20140408.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Arsenic	1	<1	ug/L	20140408.R13na3
Cadmium	0.1	<0.1	ug/L	20140408.R13na3
Calcium	50	100000	ug/L	20140408.R13na3
Copper	1	<1	ug/L	20140408.R13na3
Iron	20	134	ug/L	20140408.R13na3
Lead	0.1	<0.1	ug/L	20140408.R13na3
Magnesium	4	5200	ug/L	20140408.R13na3
Manganese	1	13	ug/L	20140408.R13na3
Nickel	1	3.1	ug/L	20140408.R13na3
Potassium	100	2470	ug/L	20140408.R13na3
Sodium	100	7930	ug/L	20140408.R13na3
Zinc	1	2.8	ug/L	20140408.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.45	meq	20140410.R91A
Cation Sum	N/A	6	meq	20140410.R91A
Ion Balance	N/A	26.98	%	20140410.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140409.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.84	pH	20140408.R2C

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	411	µS/cm	20140408.T12B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	4.4	mg/L	20140409.T27D



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Whitewater Hydrogeology Ltd.

Work Order: 207223

Sample Name: SW1

Date:

Matrix: Wastewater

Lab #: 548325

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140409.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	540	mg/L	20140407.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.87	mg/L	20140409.R58A
Total Kjeldahl Nitrogen (Dup)	0.2	0.84	mg/L	20140409.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0104	mg/L	20140408.R23.2A

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Data:

Sample Name: Lafarge

Date:

Matrix: Surface Water

Lab #: 549575

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.111	mg/L	20140415.R42.1A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140416.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.4	pH	20140414.T02A
pH (Dup)	N/A	7.4	pH	20140414.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	6.6	mg/L	20140415.T27A

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	145	mg/L as CaCO ₃	20140414.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.096	mg/L	20140415.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140414.R5C
Chloride	0.2	4.45	mg/L	20140414.R5C
Fluoride	0.1	<0.1	mg/L	20140414.R5C
Nitrate (as N)	0.1	0.28	mg/L	20140414.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140414.R5C
Sulphate	1	16.9	mg/L	20140414.R5C

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	144	mg/L as CaCO ₃	20140416.R94B
Carbonate	1	<1	mg/L as CaCO ₃	20140416.R94B

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.88	mg/L	20140417.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	140	mg/L	20140417.R13na3



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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	500	59100	ug/L	20140417.R13na2
Dissolved Magnesium	4	3620	ug/L	20140417.R13na2
Dissolved Potassium	100	1770	ug/L	20140417.R13na2
Dissolved Sodium	100	4590	ug/L	20140417.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Aluminum	1	230	ug/L	20140417.R13na4
Total Antimony	0.5	<0.5	ug/L	20140417.R13na4
Total Arsenic	1	<1	ug/L	20140417.R13na4
Total Barium	1	13.9	ug/L	20140417.R13na4
Total Beryllium	0.5	<0.5	ug/L	20140417.R13na4
Total Bismuth	1	<1	ug/L	20140417.R13na4
Total Boron	2	32.2	ug/L	20140417.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140417.R13na4
Total Calcium	500	57600	ug/L	20140417.R13na4
Total Cerium	1	<1	ug/L	20140417.R13na4
Total Cesium	1	<1	ug/L	20140417.R13na4
Total Chromium	1	<1	ug/L	20140417.R13na4
Total Cobalt	0.1	0.25	ug/L	20140417.R13na4
Total Copper	1	<1	ug/L	20140417.R13na4
Total Europium	1	<1	ug/L	20140417.R13na4
Total Gallium	1	<1	ug/L	20140417.R13na4
Total Iron	20	176	ug/L	20140417.R13na4
Total Lanthanum	1	<1	ug/L	20140417.R13na4
Total Lead	1	<1	ug/L	20140417.R13na4
Total Lithium	5	<5	ug/L	20140417.R13na4
Total Magnesium	4	3940	ug/L	20140417.R13na4
Total Manganese	1	18.2	ug/L	20140417.R13na4
Total Mercury	0.1	<0.1	ug/L	20140417.R13na4
Total Molybdenum	1	<1	ug/L	20140417.R13na4
Total Nickel	1	2.4	ug/L	20140417.R13na4
Total Niobium	1	<1	ug/L	20140417.R13na4
Total Potassium	100	2190	ug/L	20140417.R13na4
Total Rubidium	1	1.9	ug/L	20140417.R13na4
Total Scandium	1	<1	ug/L	20140417.R13na4
Total Selenium	1	<1	ug/L	20140417.R13na4
Total Silicon	600	1450	ug/L	20140417.R13na4
Total Silver	0.1	<0.1	ug/L	20140417.R13na4
Total Sodium	100	4810	ug/L	20140417.R13na4
Total Strontium	1	158	ug/L	20140417.R13na4
Total Sulphur	800	5130	ug/L	20140417.R13na4
Total Tellurium	1	<1	ug/L	20140417.R13na4
Total Thallium	0.1	1.61	ug/L	20140417.R13na4
Total Thorium	1	<1	ug/L	20140417.R13na4
Total Tin	1	<1	ug/L	20140417.R13na4

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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Titanium	1	6.1	ug/L	20140417.R13na4
Total Tungsten	1	<1	ug/L	20140417.R13na4
Total Uranium	1	<1	ug/L	20140417.R13na4
Total Vanadium	1	<1	ug/L	20140417.R13na4
Total Yttrium	1	<1	ug/L	20140417.R13na4
Total Zinc	1	<1	ug/L	20140417.R13na4
Total Zirconium	1	<1	ug/L	20140417.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	122	ug/L	20140417.R13na3
Aluminum (Dup)	1	125	ug/L	20140417.R13na3
Antimony	0.5	<0.5	ug/L	20140417.R13na3
Antimony (Dup)	0.5	<0.5	ug/L	20140417.R13na3
Arsenic	1	<1	ug/L	20140417.R13na3
Arsenic (Dup)	1	<1	ug/L	20140417.R13na3
Barium	1	18.4	ug/L	20140417.R13na3
Barium (Dup)	1	18.3	ug/L	20140417.R13na3
Beryllium	0.5	<0.5	ug/L	20140417.R13na3
Beryllium (Dup)	0.5	<0.5	ug/L	20140417.R13na3
Bismuth	1	<1	ug/L	20140417.R13na3
Bismuth (Dup)	1	<1	ug/L	20140417.R13na3
Boron	2	31.1	ug/L	20140417.R13na3
Boron (Dup)	2	31.4	ug/L	20140417.R13na3
Cadmium	0.1	<0.1	ug/L	20140417.R13na3
Cadmium (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Calcium	500	50000	ug/L	20140417.R13na3
Calcium (Dup)	500	54900	ug/L	20140417.R13na3
Cerium	1	<1	ug/L	20140417.R13na3
Cerium (Dup)	1	<1	ug/L	20140417.R13na3
Cesium	1	<1	ug/L	20140417.R13na3
Cesium (Dup)	1	<1	ug/L	20140417.R13na3
Chromium	1	<1	ug/L	20140417.R13na3
Chromium (Dup)	1	<1	ug/L	20140417.R13na3
Cobalt	0.1	0.26	ug/L	20140417.R13na3
Cobalt (Dup)	0.1	0.19	ug/L	20140417.R13na3
Copper	1	<1	ug/L	20140417.R13na3
Copper (Dup)	1	<1	ug/L	20140417.R13na3
Europium	1	<1	ug/L	20140417.R13na3
Europium (Dup)	1	<1	ug/L	20140417.R13na3
Gallium	1	<1	ug/L	20140417.R13na3
Gallium (Dup)	1	<1	ug/L	20140417.R13na3
Iron	20	122	ug/L	20140417.R13na3
Iron (Dup)	20	126	ug/L	20140417.R13na3
Lanthanum	1	<1	ug/L	20140417.R13na3
Lanthanum (Dup)	1	<1	ug/L	20140417.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Lead	0.1	0.14	ug/L	20140417.R13na3
Lead (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Lithium	5	<5	ug/L	20140417.R13na3
Lithium (Dup)	5	<5	ug/L	20140417.R13na3
Magnesium	4	3740	ug/L	20140417.R13na3
Magnesium (Dup)	4	3790	ug/L	20140417.R13na3
Manganese	1	17.7	ug/L	20140417.R13na3
Manganese (Dup)	1	17	ug/L	20140417.R13na3
Mercury	0.1	<0.1	ug/L	20140417.R13na3
Mercury (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Molybdenum	1	<1	ug/L	20140417.R13na3
Molybdenum (Dup)	1	<1	ug/L	20140417.R13na3
Nickel	1	2.3	ug/L	20140417.R13na3
Nickel (Dup)	1	2	ug/L	20140417.R13na3
Niobium	1	<1	ug/L	20140417.R13na3
Niobium (Dup)	1	<1	ug/L	20140417.R13na3
Potassium	100	1990	ug/L	20140417.R13na3
Potassium (Dup)	100	2010	ug/L	20140417.R13na3
Rubidium	1	1.7	ug/L	20140417.R13na3
Rubidium (Dup)	1	1.7	ug/L	20140417.R13na3
Scandium	1	<1	ug/L	20140417.R13na3
Scandium (Dup)	1	<1	ug/L	20140417.R13na3
Selenium	1	<1	ug/L	20140417.R13na3
Selenium (Dup)	1	<1	ug/L	20140417.R13na3
Silicon	600	1360	ug/L	20140417.R13na3
Silicon (Dup)	600	1500	ug/L	20140417.R13na3
Silver	0.1	<0.1	ug/L	20140417.R13na3
Silver (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Sodium	100	4660	ug/L	20140417.R13na3
Sodium (Dup)	100	4720	ug/L	20140417.R13na3
Strontium	1	150	ug/L	20140417.R13na3
Strontium (Dup)	1	158	ug/L	20140417.R13na3
Sulphur	800	5410	ug/L	20140417.R13na3
Sulphur (Dup)	800	5670	ug/L	20140417.R13na3
Tellurium	1	<1	ug/L	20140417.R13na3
Tellurium (Dup)	1	<1	ug/L	20140417.R13na3
Thallium	0.1	1.14	ug/L	20140417.R13na3
Thallium (Dup)	0.1	1	ug/L	20140417.R13na3
Thorium	1	<1	ug/L	20140417.R13na3
Thorium (Dup)	1	<1	ug/L	20140417.R13na3
Tin	1	<1	ug/L	20140417.R13na3
Tin (Dup)	1	<1	ug/L	20140417.R13na3
Titanium	1	5.4	ug/L	20140417.R13na3
Titanium (Dup)	1	7.1	ug/L	20140417.R13na3
Tungsten	1	<1	ug/L	20140417.R13na3
Tungsten (Dup)	1	<1	ug/L	20140417.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Uranium	1	<1	ug/L	20140417.R13na3
Uranium (Dup)	1	<1	ug/L	20140417.R13na3
Vanadium	1	<1	ug/L	20140417.R13na3
Vanadium (Dup)	1	<1	ug/L	20140417.R13na3
Yttrium	1	<1	ug/L	20140417.R13na3
Yttrium (Dup)	1	<1	ug/L	20140417.R13na3
Zinc	1	<1	ug/L	20140417.R13na3
Zinc (Dup)	1	<1	ug/L	20140417.R13na3
Zirconium	1	<1	ug/L	20140417.R13na3
Zirconium (Dup)	1	<1	ug/L	20140417.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	2.79	meq	20140421.R91A
Cation Sum	N/A	3.5	meq	20140421.R91A
Ion Balance	N/A	11.29	%	20140421.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140416.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.7	pH	20140414.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	359	µS/cm	20140411.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	12.7	mg/L	20140415.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140414.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	160	mg/L	20140415.R27B

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.75	mg/L	20140416.R58B

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0236	mg/L	20140415.R23.2B



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Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 549577

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	144	mg/L as CaCO3	20140414.R1A
M-Alkalinity (pH 4.5) (Dup)	1	143	mg/L as CaCO3	20140414.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.076	mg/L	20140415.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140414.R5C
Chloride	0.2	4.17	mg/L	20140414.R5C
Fluoride	0.1	<0.1	mg/L	20140414.R5C
Nitrate (as N)	0.1	0.22	mg/L	20140414.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140414.R5C
Sulphate	1	16.8	mg/L	20140414.R5C

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	143	mg/L as CaCO3	20140416.R94B
Carbonate	1	<1	mg/L as CaCO3	20140416.R94B

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.8	mg/L	20140417.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO3)	0.1	215	mg/L	20140417.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	76300	ug/L	20140417.R13na2
Dissolved Magnesium	4	3670	ug/L	20140417.R13na2
Dissolved Potassium	100	1740	ug/L	20140417.R13na2
Dissolved Sodium	100	4750	ug/L	20140417.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Aluminum	1	139	ug/L	20140417.R13na4
Total Antimony	0.5	<0.5	ug/L	20140417.R13na4
Total Arsenic	1	<1	ug/L	20140417.R13na4
Total Barium	1	16.1	ug/L	20140417.R13na4
Total Beryllium	0.5	<0.5	ug/L	20140417.R13na4
Total Bismuth	1	<1	ug/L	20140417.R13na4
Total Boron	2	27.8	ug/L	20140417.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140417.R13na4
Total Calcium	50	84000	ug/L	20140417.R13na4
Total Cerium	1	<1	ug/L	20140417.R13na4
Total Cesium	1	<1	ug/L	20140417.R13na4

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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 549577

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Chromium	1	1	ug/L	20140417.R13na4
Total Cobalt	0.1	0.2	ug/L	20140417.R13na4
Total Copper	1	<1	ug/L	20140417.R13na4
Total Europium	1	<1	ug/L	20140417.R13na4
Total Gallium	1	<1	ug/L	20140417.R13na4
Total Iron	20	133	ug/L	20140417.R13na4
Total Lanthanum	1	<1	ug/L	20140417.R13na4
Total Lead	1	<1	ug/L	20140417.R13na4
Total Lithium	5	<5	ug/L	20140417.R13na4
Total Magnesium	4	3930	ug/L	20140417.R13na4
Total Manganese	1	13.9	ug/L	20140417.R13na4
Total Mercury	0.1	<0.1	ug/L	20140417.R13na4
Total Molybdenum	1	<1	ug/L	20140417.R13na4
Total Nickel	1	2.2	ug/L	20140417.R13na4
Total Niobium	1	<1	ug/L	20140417.R13na4
Total Potassium	100	1890	ug/L	20140417.R13na4
Total Rubidium	1	1.6	ug/L	20140417.R13na4
Total Scandium	1	<1	ug/L	20140417.R13na4
Total Selenium	1	<1	ug/L	20140417.R13na4
Total Silicon	600	1290	ug/L	20140417.R13na4
Total Silver	0.1	<0.1	ug/L	20140417.R13na4
Total Sodium	100	4960	ug/L	20140417.R13na4
Total Strontium	1	161	ug/L	20140417.R13na4
Total Sulphur	800	5710	ug/L	20140417.R13na4
Total Tellurium	1	<1	ug/L	20140417.R13na4
Total Thallium	0.1	0.52	ug/L	20140417.R13na4
Total Thorium	1	<1	ug/L	20140417.R13na4
Total Tin	1	<1	ug/L	20140417.R13na4
Total Titanium	1	9	ug/L	20140417.R13na4
Total Tungsten	1	<1	ug/L	20140417.R13na4
Total Uranium	1	<1	ug/L	20140417.R13na4
Total Vanadium	1	<1	ug/L	20140417.R13na4
Total Yttrium	1	<1	ug/L	20140417.R13na4
Total Zinc	1	1.8	ug/L	20140417.R13na4
Total Zirconium	1	<1	ug/L	20140417.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	121	ug/L	20140417.R13na3
Antimony	0.5	<0.5	ug/L	20140417.R13na3
Arsenic	1	<1	ug/L	20140417.R13na3
Barium	1	16.1	ug/L	20140417.R13na3
Beryllium	0.5	<0.5	ug/L	20140417.R13na3
Bismuth	1	<1	ug/L	20140417.R13na3
Boron	2	27.5	ug/L	20140417.R13na3
Cadmium	0.1	<0.1	ug/L	20140417.R13na3



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 549577

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Calcium	50	80100	ug/L	20140417.R13na3
Cerium	1	<1	ug/L	20140417.R13na3
Cesium	1	<1	ug/L	20140417.R13na3
Chromium	1	1.2	ug/L	20140417.R13na3
Cobalt	0.1	0.24	ug/L	20140417.R13na3
Copper	1	<1	ug/L	20140417.R13na3
Europium	1	<1	ug/L	20140417.R13na3
Gallium	1	<1	ug/L	20140417.R13na3
Iron	20	132	ug/L	20140417.R13na3
Lanthanum	1	<1	ug/L	20140417.R13na3
Lead	0.1	<0.1	ug/L	20140417.R13na3
Lithium	5	<5	ug/L	20140417.R13na3
Magnesium	4	3570	ug/L	20140417.R13na3
Manganese	1	13.1	ug/L	20140417.R13na3
Mercury	0.1	<0.1	ug/L	20140417.R13na3
Molybdenum	1	<1	ug/L	20140417.R13na3
Nickel	1	1.6	ug/L	20140417.R13na3
Niobium	1	<1	ug/L	20140417.R13na3
Potassium	100	1790	ug/L	20140417.R13na3
Rubidium	1	1.6	ug/L	20140417.R13na3
Scandium	1	<1	ug/L	20140417.R13na3
Selenium	1	<1	ug/L	20140417.R13na3
Silicon	600	1290	ug/L	20140417.R13na3
Silver	0.1	<0.1	ug/L	20140417.R13na3
Sodium	100	4690	ug/L	20140417.R13na3
Strontium	1	160	ug/L	20140417.R13na3
Sulphur	800	5830	ug/L	20140417.R13na3
Tellurium	1	<1	ug/L	20140417.R13na3
Thallium	0.1	0.86	ug/L	20140417.R13na3
Thorium	1	<1	ug/L	20140417.R13na3
Tin	1	<1	ug/L	20140417.R13na3
Titanium	1	4.6	ug/L	20140417.R13na3
Tungsten	1	<1	ug/L	20140417.R13na3
Uranium	1	<1	ug/L	20140417.R13na3
Vanadium	1	<1	ug/L	20140417.R13na3
Yttrium	1	<1	ug/L	20140417.R13na3
Zinc	1	1	ug/L	20140417.R13na3
Zirconium	1	<1	ug/L	20140417.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	2.76	meq	20140421.R91A
Cation Sum	N/A	4.37	meq	20140421.R91A
Ion Balance	N/A	22.58	%	20140421.R91A



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Work Order: 207836

Sample Name: SW2 **Date:** **Matrix: Surface Water** **Lab #: 549577**

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140416.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.76	pH	20140414.R2A
pH (Dup)	N/A	7.76	pH	20140414.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	355	µS/cm	20140411.T12A
Conductivity (Dup)	1	353	µS/cm	20140411.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	7	mg/L	20140415.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140414.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	<30	mg/L	20140415.R27B

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.78	mg/L	20140416.R58B

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0192	mg/L	20140415.R23.2B

Sample Name: Mc Carthy Quarry **Date:** **Matrix: Surface Water** **Lab #: 549578**

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	144	mg/L as CaCO3	20140414.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.06	mg/L	20140415.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140414.R5C
Chloride	0.2	4.23	mg/L	20140414.R5C
Fluoride	0.1	<0.1	mg/L	20140414.R5C
Nitrate (as N)	0.1	0.32	mg/L	20140414.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140414.R5C
Sulphate	1	17.5	mg/L	20140414.R5C



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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	143	mg/L as CaCO ₃	20140416.R94B
Carbonate	1	<1	mg/L as CaCO ₃	20140416.R94B

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.91	mg/L	20140417.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	217	mg/L	20140417.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	73000	ug/L	20140417.R13na2
Dissolved Calcium (Dup)	50	74300	ug/L	20140417.R13na2
Dissolved Magnesium	4	3430	ug/L	20140417.R13na2
Dissolved Magnesium (Dup)	4	3390	ug/L	20140417.R13na2
Dissolved Potassium	100	1440	ug/L	20140417.R13na2
Dissolved Potassium (Dup)	100	1570	ug/L	20140417.R13na2
Dissolved Sodium	100	4520	ug/L	20140417.R13na2
Dissolved Sodium (Dup)	100	4430	ug/L	20140417.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Aluminum	1	169	ug/L	20140417.R13na4
Total Antimony	0.5	<0.5	ug/L	20140417.R13na4
Total Arsenic	1	<1	ug/L	20140417.R13na4
Total Barium	1	14.1	ug/L	20140417.R13na4
Total Beryllium	0.5	<0.5	ug/L	20140417.R13na4
Total Bismuth	1	<1	ug/L	20140417.R13na4
Total Boron	2	29	ug/L	20140417.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140417.R13na4
Total Calcium	50	83000	ug/L	20140417.R13na4
Total Cerium	1	<1	ug/L	20140417.R13na4
Total Cesium	1	<1	ug/L	20140417.R13na4
Total Chromium	1	<1	ug/L	20140417.R13na4
Total Cobalt	0.1	0.18	ug/L	20140417.R13na4
Total Copper	1	1	ug/L	20140417.R13na4
Total Europium	1	<1	ug/L	20140417.R13na4
Total Gallium	1	<1	ug/L	20140417.R13na4
Total Iron	20	105	ug/L	20140417.R13na4
Total Lanthanum	1	<1	ug/L	20140417.R13na4
Total Lead	1	<1	ug/L	20140417.R13na4
Total Lithium	5	<5	ug/L	20140417.R13na4
Total Magnesium	4	3690	ug/L	20140417.R13na4
Total Manganese	1	14.8	ug/L	20140417.R13na4
Total Mercury	0.1	<0.1	ug/L	20140417.R13na4
Total Molybdenum	1	<1	ug/L	20140417.R13na4

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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Nickel	1	2.5	ug/L	20140417.R13na4
Total Niobium	1	<1	ug/L	20140417.R13na4
Total Potassium	100	1970	ug/L	20140417.R13na4
Total Rubidium	1	1.7	ug/L	20140417.R13na4
Total Scandium	1	<1	ug/L	20140417.R13na4
Total Selenium	1	<1	ug/L	20140417.R13na4
Total Silicon	600	1370	ug/L	20140417.R13na4
Total Silver	0.1	<0.1	ug/L	20140417.R13na4
Total Sodium	100	4640	ug/L	20140417.R13na4
Total Strontium	1	156	ug/L	20140417.R13na4
Total Sulphur	800	5510	ug/L	20140417.R13na4
Total Tellurium	1	<1	ug/L	20140417.R13na4
Total Thallium	0.1	0.3	ug/L	20140417.R13na4
Total Thorium	1	<1	ug/L	20140417.R13na4
Total Tin	1	<1	ug/L	20140417.R13na4
Total Titanium	1	7.5	ug/L	20140417.R13na4
Total Tungsten	1	<1	ug/L	20140417.R13na4
Total Uranium	1	<1	ug/L	20140417.R13na4
Total Vanadium	1	<1	ug/L	20140417.R13na4
Total Yttrium	1	<1	ug/L	20140417.R13na4
Total Zinc	1	<1	ug/L	20140417.R13na4
Total Zirconium	1	<1	ug/L	20140417.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	134	ug/L	20140417.R13na3
Antimony	0.5	<0.5	ug/L	20140417.R13na3
Arsenic	1	<1	ug/L	20140417.R13na3
Barium	1	17.2	ug/L	20140417.R13na3
Beryllium	0.5	<0.5	ug/L	20140417.R13na3
Bismuth	1	<1	ug/L	20140417.R13na3
Boron	2	31.6	ug/L	20140417.R13na3
Cadmium	0.1	<0.1	ug/L	20140417.R13na3
Calcium	50	80900	ug/L	20140417.R13na3
Cerium	1	<1	ug/L	20140417.R13na3
Cesium	1	<1	ug/L	20140417.R13na3
Chromium	1	<1	ug/L	20140417.R13na3
Cobalt	0.1	0.22	ug/L	20140417.R13na3
Copper	1	<1	ug/L	20140417.R13na3
Europium	1	<1	ug/L	20140417.R13na3
Gallium	1	<1	ug/L	20140417.R13na3
Iron	20	65	ug/L	20140417.R13na3
Lanthanum	1	<1	ug/L	20140417.R13na3
Lead	0.1	<0.1	ug/L	20140417.R13na3
Lithium	5	<5	ug/L	20140417.R13na3
Magnesium	4	3690	ug/L	20140417.R13na3

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Work Order: 207836

Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Manganese	1	13.7	ug/L	20140417.R13na3
Mercury	0.1	<0.1	ug/L	20140417.R13na3
Molybdenum	1	<1	ug/L	20140417.R13na3
Nickel	1	2.4	ug/L	20140417.R13na3
Niobium	1	<1	ug/L	20140417.R13na3
Potassium	100	1820	ug/L	20140417.R13na3
Rubidium	1	1.6	ug/L	20140417.R13na3
Scandium	1	<1	ug/L	20140417.R13na3
Selenium	1	<1	ug/L	20140417.R13na3
Silicon	600	1400	ug/L	20140417.R13na3
Silver	0.1	<0.1	ug/L	20140417.R13na3
Sodium	100	4730	ug/L	20140417.R13na3
Strontium	1	158	ug/L	20140417.R13na3
Sulphur	800	5060	ug/L	20140417.R13na3
Tellurium	1	<1	ug/L	20140417.R13na3
Thallium	0.1	0.25	ug/L	20140417.R13na3
Thorium	1	<1	ug/L	20140417.R13na3
Tin	1	<1	ug/L	20140417.R13na3
Titanium	1	4.1	ug/L	20140417.R13na3
Tungsten	1	<1	ug/L	20140417.R13na3
Uranium	1	<1	ug/L	20140417.R13na3
Vanadium	1	<1	ug/L	20140417.R13na3
Yttrium	1	<1	ug/L	20140417.R13na3
Zinc	1	<1	ug/L	20140417.R13na3
Zirconium	1	<1	ug/L	20140417.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	2.78	meq	20140421.R91A
Cation Sum	N/A	4.17	meq	20140421.R91A
Ion Balance	N/A	20	%	20140421.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	1.5	mg/L	20140416.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.76	pH	20140414.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	352	µS/cm	20140411.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	4	mg/L	20140415.T27A



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Whitewater Hydrogeology Ltd.

Work Order: 207836

Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140414.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	200	mg/L	20140415.R27B
Total Dissolved Solids (Dup)	30	100	mg/L	20140415.R27B

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	2.36	mg/L	20140416.R58B

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.022	mg/L	20140415.R23.2B

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Whitewater Hydrogeology Ltd.

Work Order: 208535

Sample Data:

Sample Name: SW 1

Date: 4/18/2014

Matrix: Surface Water

Lab #: 551233

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	191	mg/L as CaCO ₃	20140423.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.095	mg/L	20140424.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140423.R5E
Chloride	0.2	4.97	mg/L	20140423.R5E
Fluoride	0.1	<0.1	mg/L	20140423.R5E
Nitrate (as N)	0.1	0.38	mg/L	20140423.R5E
Nitrite (as N)	0.03	<0.03	mg/L	20140423.R5E
Sulphate	1	21	mg/L	20140423.R5E

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	188	mg/L as CaCO ₃	20140429.R94A
Carbonate	1	3.4	mg/L as CaCO ₃	20140429.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	5.28	mg/L	20140423.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	68.4	mg/L	20140424.R13na2
Magnesium	0.04	4.85	mg/L	20140424.R13na2
Total Hardness (as CaCO ₃)	0.1	191	mg/L	20140424.R13na2

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	9.3	ug/L	20140423.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140423.R13na3
Dissolved Arsenic	1	<1	ug/L	20140423.R13na3
Dissolved Barium	1	17.9	ug/L	20140423.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140423.R13na3
Dissolved Bismuth	1	<1	ug/L	20140423.R13na3
Dissolved Boron	2	47.3	ug/L	20140423.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Calcium	50	77900	ug/L	20140423.R13na3
Dissolved Cerium	1	<1	ug/L	20140423.R13na3
Dissolved Cesium	1	<1	ug/L	20140423.R13na3
Dissolved Chromium	1	1.9	ug/L	20140423.R13na3
Dissolved Cobalt	0.1	0.1	ug/L	20140423.R13na3
Dissolved Copper	1	1.1	ug/L	20140423.R13na3
Dissolved Europium	1	<1	ug/L	20140423.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 208535

Sample Name: SW 1

Date: 4/18/2014

Matrix: Surface Water

Lab #: 551233

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Gallium	1	<1	ug/L	20140423.R13na3
Dissolved Iron	20	<20	ug/L	20140423.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140423.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Lithium	5	<5	ug/L	20140423.R13na3
Dissolved Magnesium	4	5120	ug/L	20140423.R13na3
Dissolved Manganese	1	10.8	ug/L	20140423.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Molybdenum	1	5.6	ug/L	20140423.R13na3
Dissolved Nickel	1	1.3	ug/L	20140423.R13na3
Dissolved Niobium	1	<1	ug/L	20140423.R13na3
Dissolved Phosphorus	50	<50	ug/L	20140423.R13na3
Dissolved Potassium	100	2320	ug/L	20140423.R13na3
Dissolved Rubidium	1	1.3	ug/L	20140423.R13na3
Dissolved Scandium	1	<1	ug/L	20140423.R13na3
Dissolved Selenium	1	<1	ug/L	20140423.R13na3
Dissolved Silicon	600	1530	ug/L	20140423.R13na3
Dissolved Silver	0.1	0.87	ug/L	20140423.R13na3
Dissolved Sodium	100	6850	ug/L	20140423.R13na3
Dissolved Strontium	1	267	ug/L	20140423.R13na3
Dissolved Sulfur	800	8160	ug/L	20140423.R13na3
Dissolved Tellurium	1	<1	ug/L	20140423.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Thorium	1	<1	ug/L	20140423.R13na3
Dissolved Tin	1	<1	ug/L	20140423.R13na3
Dissolved Titanium	1	<1	ug/L	20140423.R13na3
Dissolved Tungsten	1	<1	ug/L	20140423.R13na3
Dissolved Uranium	1	<1	ug/L	20140423.R13na3
Dissolved Vanadium	1	<1	ug/L	20140423.R13na3
Dissolved Yttrium	1	<1	ug/L	20140423.R13na3
Dissolved Zinc	1	2.5	ug/L	20140423.R13na3
Dissolved Zirconium	1	<1	ug/L	20140423.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140424.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140424.R13na4
Total Calcium	500	64800	ug/L	20140424.R13na4
Total Copper	1	<1	ug/L	20140424.R13na4
Total Iron	20	111	ug/L	20140424.R13na4
Total Lead	1	<1	ug/L	20140424.R13na4
Total Magnesium	40	4800	ug/L	20140424.R13na4
Total Manganese	1	17.3	ug/L	20140424.R13na4
Total Nickel	1	2.3	ug/L	20140424.R13na4
Total Potassium	100	2480	ug/L	20140424.R13na4
Total Sodium	100	7690	ug/L	20140424.R13na4

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Work Order: 208535

Sample Name: SW 1

Date: 4/18/2014

Matrix: Surface Water

Lab #: 551233

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Zinc	1	<1	ug/L	20140424.R13na4

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.65	meq	20140429.R91A
Cation Sum	N/A	4.68	meq	20140429.R91A
Ion Balance	N/A	12.36	%	20140429.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140428.R54A
Oil and Grease, Total	1	<1	mg/L	20140428.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	8.28	pH	20140423.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	404	µS/cm	20140425.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	3.9	mg/L	20140424.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140424.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	350	mg/L	20140424.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.91	mg/L	20140424.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0146	mg/L	20140424.R23.2A

Sample Name: McCarthy Pond

Date: 4/18/2014

Matrix: Surface Water

Lab #: 551234

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	111	mg/L as CaCO3	20140423.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.253	mg/L	20140424.R42.1A



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Whitewater Hydrogeology Ltd.

Work Order: 208535

Sample Name: McCarthy Pond

Date: 4/18/2014

Matrix: Surface Water

Lab #: 551234

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140423.R5E
Chloride	0.2	19.7	mg/L	20140423.R5E
Fluoride	0.1	0.24	mg/L	20140423.R5E
Nitrate (as N)	0.1	1.04	mg/L	20140423.R5E
Nitrite (as N)	0.03	<0.03	mg/L	20140423.R5E
Sulphate	1	39.5	mg/L	20140423.R5E

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	111	mg/L as CaCO ₃	20140429.R94A
Carbonate	1	<1	mg/L as CaCO ₃	20140429.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	1.9	mg/L	20140423.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	47.7	mg/L	20140424.R13na2
Magnesium	0.04	8.2	mg/L	20140424.R13na2
Total Hardness (as CaCO ₃)	0.1	153	mg/L	20140424.R13na2

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	11.1	ug/L	20140423.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140423.R13na3
Dissolved Arsenic	1	<1	ug/L	20140423.R13na3
Dissolved Barium	1	19.4	ug/L	20140423.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140423.R13na3
Dissolved Bismuth	1	<1	ug/L	20140423.R13na3
Dissolved Boron	2	158	ug/L	20140423.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Calcium	50	39400	ug/L	20140423.R13na3
Dissolved Cerium	1	<1	ug/L	20140423.R13na3
Dissolved Cesium	1	<1	ug/L	20140423.R13na3
Dissolved Chromium	1	2.1	ug/L	20140423.R13na3
Dissolved Cobalt	0.1	0.12	ug/L	20140423.R13na3
Dissolved Copper	1	1.1	ug/L	20140423.R13na3
Dissolved Europium	1	<1	ug/L	20140423.R13na3
Dissolved Gallium	1	<1	ug/L	20140423.R13na3
Dissolved Iron	20	<20	ug/L	20140423.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140423.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Lithium	5	19.4	ug/L	20140423.R13na3
Dissolved Magnesium	4	8620	ug/L	20140423.R13na3
Dissolved Manganese	1	5.2	ug/L	20140423.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Molybdenum	1	3.1	ug/L	20140423.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 208535

Sample Name: McCarthy Pond

Date: 4/18/2014

Matrix: Surface Water

Lab #: 551234

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Nickel	1	1.1	ug/L	20140423.R13na3
Dissolved Niobium	1	<1	ug/L	20140423.R13na3
Dissolved Phosphorus	50	<50	ug/L	20140423.R13na3
Dissolved Potassium	100	3690	ug/L	20140423.R13na3
Dissolved Rubidium	1	1.9	ug/L	20140423.R13na3
Dissolved Scandium	1	<1	ug/L	20140423.R13na3
Dissolved Selenium	1	<1	ug/L	20140423.R13na3
Dissolved Silicon	600	760	ug/L	20140423.R13na3
Dissolved Silver	0.1	1.34	ug/L	20140423.R13na3
Dissolved Sodium	100	26700	ug/L	20140423.R13na3
Dissolved Strontium	1	488	ug/L	20140423.R13na3
Dissolved Sulfur	800	14300	ug/L	20140423.R13na3
Dissolved Tellurium	1	<1	ug/L	20140423.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140423.R13na3
Dissolved Thorium	1	<1	ug/L	20140423.R13na3
Dissolved Tin	1	<1	ug/L	20140423.R13na3
Dissolved Titanium	1	<1	ug/L	20140423.R13na3
Dissolved Tungsten	1	<1	ug/L	20140423.R13na3
Dissolved Uranium	1	<1	ug/L	20140423.R13na3
Dissolved Vanadium	1	<1	ug/L	20140423.R13na3
Dissolved Yttrium	1	<1	ug/L	20140423.R13na3
Dissolved Zinc	1	<1	ug/L	20140423.R13na3
Dissolved Zirconium	1	<1	ug/L	20140423.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140424.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140424.R13na4
Total Calcium	500	44500	ug/L	20140424.R13na4
Total Copper	1	<1	ug/L	20140424.R13na4
Total Iron	20	288	ug/L	20140424.R13na4
Total Lead	1	<1	ug/L	20140424.R13na4
Total Magnesium	4	8680	ug/L	20140424.R13na4
Total Manganese	1	20.5	ug/L	20140424.R13na4
Total Nickel	1	2	ug/L	20140424.R13na4
Total Potassium	100	3730	ug/L	20140424.R13na4
Total Sodium	100	26500	ug/L	20140424.R13na4
Total Zinc	1	1.7	ug/L	20140424.R13na4

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.19	meq	20140429.R91A
Cation Sum	N/A	3.95	meq	20140429.R91A
Ion Balance	N/A	10.64	%	20140429.R91A



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Whitewater Hydrogeology Ltd.

Work Order: 208535

Sample Name: McCarthy Pond **Date: 4/18/2014** **Matrix: Surface Water** **Lab #: 551234**

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140428.R54A
Oil and Grease, Total	1	<1	mg/L	20140428.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.38	pH	20140423.R2A

Single Conc DM				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140423.R63B

Single Conc RBT				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140423.R62B

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	409	µS/cm	20140425.T12A
Conductivity (Dup)	1	408	µS/cm	20140425.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	43.1	mg/L	20140424.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140424.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	290	mg/L	20140424.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.85	mg/L	20140424.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0331	mg/L	20140424.R23.2A

Sample Name: DM Control **Date:** **Matrix: Water** **Lab #: 551667**

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	51.8	mg/L	20140424.R13nr2
Magnesium	0.04	12	mg/L	20140424.R13nr2
Total Hardness (as CaCO3)	0.1	179	mg/L	20140424.R13nr2



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Work Order: 208535

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Data:

Sample Name: McCarthy Pond

Date:

Matrix: Surface Water

Lab #: 552478

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	187	mg/L as CaCO3	20140428.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.05	mg/L	20140501.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140428.R5D
Chloride	0.2	7.72	mg/L	20140428.R5D
Fluoride	0.1	<0.1	mg/L	20140428.R5D
Nitrate (as N)	0.1	0.66	mg/L	20140428.R5D
Nitrite (as N)	0.03	<0.03	mg/L	20140428.R5D
Sulphate	1	34.3	mg/L	20140428.R5D

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	184	mg/L as CaCO3	20140429.R94A
Carbonate	1	2.7	mg/L as CaCO3	20140429.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.54	mg/L	20140429.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	76.4	mg/L	20140502.R13.1B
Magnesium	0.04	6.55	mg/L	20140502.R13.1B
Total Hardness (as CaCO3)	0.1	218	mg/L	20140502.R13.1B

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	6.1	ug/L	20140430.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Arsenic	1	<1	ug/L	20140430.R13na3
Dissolved Barium	1	22.7	ug/L	20140430.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Bismuth	1	<1	ug/L	20140430.R13na3
Dissolved Boron	2	74.3	ug/L	20140430.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Calcium	500	76700	ug/L	20140430.R13na3
Dissolved Cerium	1	<1	ug/L	20140430.R13na3
Dissolved Cesium	1	<1	ug/L	20140430.R13na3
Dissolved Chromium	1	3	ug/L	20140430.R13na3
Dissolved Cobalt	0.1	0.14	ug/L	20140430.R13na3
Dissolved Copper	1	<1	ug/L	20140430.R13na3
Dissolved Europium	1	<1	ug/L	20140430.R13na3

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Work Order: 208980

Sample Name: McCarthy Pond

Date:

Matrix: Surface Water

Lab #: 552478

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Gallium	1	<1	ug/L	20140430.R13na3
Dissolved Iron	20	24	ug/L	20140430.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140430.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Lithium	5	8.6	ug/L	20140430.R13na3
Dissolved Magnesium	4	6920	ug/L	20140430.R13na3
Dissolved Manganese	1	9.9	ug/L	20140430.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Molybdenum	1	3.4	ug/L	20140430.R13na3
Dissolved Nickel	1	1.9	ug/L	20140430.R13na3
Dissolved Niobium	1	<1	ug/L	20140430.R13na3
Dissolved Potassium	100	2740	ug/L	20140430.R13na3
Dissolved Rubidium	1	1.5	ug/L	20140430.R13na3
Dissolved Scandium	1	<1	ug/L	20140430.R13na3
Dissolved Selenium	1	1.4	ug/L	20140430.R13na3
Dissolved Silicon	600	1630	ug/L	20140430.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Sodium	100	11600	ug/L	20140430.R13na3
Dissolved Strontium	1	358	ug/L	20140430.R13na3
Dissolved Sulfur	800	13400	ug/L	20140430.R13na3
Dissolved Tellurium	1	<1	ug/L	20140430.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Thorium	1	<1	ug/L	20140430.R13na3
Dissolved Tin	1	<1	ug/L	20140430.R13na3
Dissolved Titanium	1	<1	ug/L	20140430.R13na3
Dissolved Tungsten	1	<1	ug/L	20140430.R13na3
Dissolved Uranium	1	<1	ug/L	20140430.R13na3
Dissolved Vanadium	1	1.1	ug/L	20140430.R13na3
Dissolved Yttrium	1	<1	ug/L	20140430.R13na3
Dissolved Zinc	1	1.3	ug/L	20140430.R13na3
Dissolved Zirconium	1	<1	ug/L	20140430.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140502.R13.2A
Total Cadmium	0.1	<0.1	ug/L	20140502.R13.2A
Total Calcium	50	102000	ug/L	20140502.R13.2A
Total Copper	1	<1	ug/L	20140502.R13.2A
Total Iron	20	163	ug/L	20140502.R13.2A
Total Lead	1	<1	ug/L	20140502.R13.2A
Total Magnesium	40	6520	ug/L	20140502.R13.2A
Total Manganese	1	16	ug/L	20140502.R13.2A
Total Nickel	1	2.8	ug/L	20140502.R13.2A
Total Potassium	1000	2500	ug/L	20140502.R13.2A
Total Sodium	1000	10300	ug/L	20140502.R13.2A
Total Zinc	1	1	ug/L	20140502.R13.2A

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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: McCarthy Pond **Date:** **Matrix: Surface Water** **Lab #: 552478**

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.94	meq	20140502.R91A
Cation Sum	N/A	4.98	meq	20140502.R91A
Ion Balance	N/A	11.66	%	20140502.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140502.R54A
Oil and Grease, Total	1	1.2	mg/L	20140502.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	8.19	pH	20140428.R2B

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	462	µS/cm	20140430.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.9	mg/L	20140429.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140428.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	320	mg/L	20140429.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	1.1	mg/L	20140430.R58A
Total Kjeldahl Nitrogen (Dup)	0.2	1.1	mg/L	20140430.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.01	mg/L	20140429.R23.2B

Sample Name: SW1 **Date:** **Matrix: Surface Water** **Lab #: 552479**

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	214	mg/L as CaCO3	20140428.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.029	mg/L	20140429.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140429.R5A



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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 552479

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	6.25	mg/L	20140429.R5A
Fluoride	0.1	<0.1	mg/L	20140429.R5A
Nitrate (as N)	0.1	<0.1	mg/L	20140429.R5A
Nitrite (as N)	0.03	<0.03	mg/L	20140429.R5A
Sulphate	1	11.5	mg/L	20140429.R5A

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	213	mg/L as CaCO ₃	20140429.R94A
Carbonate	1	1.3	mg/L as CaCO ₃	20140429.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.13	mg/L	20140429.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	81.2	mg/L	20140502.R13.1B
Magnesium	0.04	6.04	mg/L	20140502.R13.1B
Total Hardness (as CaCO ₃)	0.1	228	mg/L	20140502.R13.1B

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	3	ug/L	20140430.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Arsenic	1	<1	ug/L	20140430.R13na3
Dissolved Barium	1	27.5	ug/L	20140430.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Bismuth	1	<1	ug/L	20140430.R13na3
Dissolved Boron	2	9	ug/L	20140430.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Calcium	50	99300	ug/L	20140430.R13na3
Dissolved Cerium	1	<1	ug/L	20140430.R13na3
Dissolved Cesium	1	<1	ug/L	20140430.R13na3
Dissolved Chromium	1	3.6	ug/L	20140430.R13na3
Dissolved Cobalt	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Copper	1	<1	ug/L	20140430.R13na3
Dissolved Europium	1	<1	ug/L	20140430.R13na3
Dissolved Gallium	1	<1	ug/L	20140430.R13na3
Dissolved Iron	20	25	ug/L	20140430.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140430.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Lithium	5	<5	ug/L	20140430.R13na3
Dissolved Magnesium	4	6630	ug/L	20140430.R13na3
Dissolved Manganese	1	1.7	ug/L	20140430.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Molybdenum	1	<1	ug/L	20140430.R13na3
Dissolved Nickel	1	1.7	ug/L	20140430.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 552479

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Niobium	1	<1	ug/L	20140430.R13na3
Dissolved Potassium	100	820	ug/L	20140430.R13na3
Dissolved Rubidium	1	<1	ug/L	20140430.R13na3
Dissolved Scandium	1	1.4	ug/L	20140430.R13na3
Dissolved Selenium	1	<1	ug/L	20140430.R13na3
Dissolved Silicon	600	3060	ug/L	20140430.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Sodium	100	4270	ug/L	20140430.R13na3
Dissolved Strontium	1	137	ug/L	20140430.R13na3
Dissolved Sulfur	800	4930	ug/L	20140430.R13na3
Dissolved Tellurium	1	<1	ug/L	20140430.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Thorium	1	<1	ug/L	20140430.R13na3
Dissolved Tin	1	<1	ug/L	20140430.R13na3
Dissolved Titanium	1	<1	ug/L	20140430.R13na3
Dissolved Tungsten	1	<1	ug/L	20140430.R13na3
Dissolved Uranium	1	<1	ug/L	20140430.R13na3
Dissolved Vanadium	1	1.1	ug/L	20140430.R13na3
Dissolved Yttrium	1	<1	ug/L	20140430.R13na3
Dissolved Zinc	1	4.5	ug/L	20140430.R13na3
Dissolved Zirconium	1	<1	ug/L	20140430.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140502.R13.2A
Total Cadmium	0.1	<0.1	ug/L	20140502.R13.2A
Total Calcium	50	112000	ug/L	20140502.R13.2A
Total Copper	1	<1	ug/L	20140502.R13.2A
Total Iron	20	64	ug/L	20140502.R13.2A
Total Lead	1	<1	ug/L	20140502.R13.2A
Total Magnesium	40	6230	ug/L	20140502.R13.2A
Total Manganese	1	5.4	ug/L	20140502.R13.2A
Total Nickel	1	2	ug/L	20140502.R13.2A
Total Potassium	100	830	ug/L	20140502.R13.2A
Total Sodium	1000	4190	ug/L	20140502.R13.2A
Total Zinc	1	2.7	ug/L	20140502.R13.2A

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.85	meq	20140502.R91A
Cation Sum	N/A	5.72	meq	20140502.R91A
Ion Balance	N/A	19.54	%	20140502.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140502.R54A
Oil and Grease, Total	1	<1	mg/L	20140502.R54A

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TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 552480

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.63	mg/L	20140429.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	78.6	mg/L	20140502.R13.1B
Magnesium	0.04	6.67	mg/L	20140502.R13.1B
Total Hardness (as CaCO3)	0.1	224	mg/L	20140502.R13.1B

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	5.3	ug/L	20140430.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Arsenic	1	<1	ug/L	20140430.R13na3
Dissolved Barium	1	22.5	ug/L	20140430.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Bismuth	1	<1	ug/L	20140430.R13na3
Dissolved Boron	2	76.6	ug/L	20140430.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Calcium	500	76300	ug/L	20140430.R13na3
Dissolved Cerium	1	<1	ug/L	20140430.R13na3
Dissolved Cesium	1	<1	ug/L	20140430.R13na3
Dissolved Chromium	1	3.6	ug/L	20140430.R13na3
Dissolved Cobalt	0.1	0.15	ug/L	20140430.R13na3
Dissolved Copper	1	<1	ug/L	20140430.R13na3
Dissolved Europium	1	<1	ug/L	20140430.R13na3
Dissolved Gallium	1	<1	ug/L	20140430.R13na3
Dissolved Iron	20	27	ug/L	20140430.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140430.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Lithium	5	8.4	ug/L	20140430.R13na3
Dissolved Magnesium	4	6970	ug/L	20140430.R13na3
Dissolved Manganese	1	9.3	ug/L	20140430.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Molybdenum	1	<1	ug/L	20140430.R13na3
Dissolved Nickel	1	1.6	ug/L	20140430.R13na3
Dissolved Niobium	1	<1	ug/L	20140430.R13na3
Dissolved Potassium	100	2870	ug/L	20140430.R13na3
Dissolved Rubidium	1	1.6	ug/L	20140430.R13na3
Dissolved Scandium	1	<1	ug/L	20140430.R13na3
Dissolved Selenium	1	<1	ug/L	20140430.R13na3
Dissolved Silicon	600	1760	ug/L	20140430.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Sodium	100	12000	ug/L	20140430.R13na3
Dissolved Strontium	1	354	ug/L	20140430.R13na3
Dissolved Sulfur	800	13800	ug/L	20140430.R13na3
Dissolved Tellurium	1	<1	ug/L	20140430.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140430.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 552480

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Thorium	1	<1	ug/L	20140430.R13na3
Dissolved Tin	1	<1	ug/L	20140430.R13na3
Dissolved Titanium	1	<1	ug/L	20140430.R13na3
Dissolved Tungsten	1	<1	ug/L	20140430.R13na3
Dissolved Uranium	1	<1	ug/L	20140430.R13na3
Dissolved Vanadium	1	1.2	ug/L	20140430.R13na3
Dissolved Yttrium	1	<1	ug/L	20140430.R13na3
Dissolved Zinc	1	<1	ug/L	20140430.R13na3
Dissolved Zirconium	1	<1	ug/L	20140430.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140502.R13.2A
Total Cadmium	0.1	<0.1	ug/L	20140502.R13.2A
Total Calcium	50	104000	ug/L	20140502.R13.2A
Total Copper	1	<1	ug/L	20140502.R13.2A
Total Iron	20	149	ug/L	20140502.R13.2A
Total Lead	1	<1	ug/L	20140502.R13.2A
Total Magnesium	4	7750	ug/L	20140502.R13.2A
Total Manganese	1	15.9	ug/L	20140502.R13.2A
Total Nickel	1	6.4	ug/L	20140502.R13.2A
Total Potassium	100	3140	ug/L	20140502.R13.2A
Total Sodium	1000	10300	ug/L	20140502.R13.2A
Total Zinc	1	1.7	ug/L	20140502.R13.2A

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.94	meq	20140502.R91A
Cation Sum	N/A	4.99	meq	20140502.R91A
Ion Balance	N/A	11.76	%	20140502.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140502.R54A
Oil and Grease, Total	1	<1	mg/L	20140502.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.85	pH	20140428.R2B

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	463	µS/cm	20140430.T12A
Conductivity (Dup)	1	465	µS/cm	20140430.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	3.9	mg/L	20140429.T27A
Total Suspended Solids (Dup)	2	3.7	mg/L	20140429.T27A

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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 552480

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	0.0027	mg/L	20140430.T38A
TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	280	mg/L	20140429.R27A
TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.98	mg/L	20140430.R58A
TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0107	mg/L	20140429.R23.2B

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Whitewater Hydrogeology Ltd.

Work Order: 209016

Sample Data:

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	145	mg/L as CaCO ₃	20140414.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.096	mg/L	20140415.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140414.R5C
Chloride	0.2	4.45	mg/L	20140414.R5C
Fluoride	0.1	<0.1	mg/L	20140414.R5C
Nitrate (as N)	0.1	0.28	mg/L	20140414.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140414.R5C
Sulphate	1	16.9	mg/L	20140414.R5C

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	144	mg/L as CaCO ₃	20140416.R94B
Carbonate	1	<1	mg/L as CaCO ₃	20140416.R94B

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.88	mg/L	20140417.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	140	mg/L	20140417.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	500	59100	ug/L	20140417.R13na2
Dissolved Magnesium	4	3620	ug/L	20140417.R13na2
Dissolved Potassium	100	1770	ug/L	20140417.R13na2
Dissolved Sodium	100	4590	ug/L	20140417.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Aluminum	1	230	ug/L	20140417.R13na4
Total Antimony	0.5	<0.5	ug/L	20140417.R13na4
Total Arsenic	1	<1	ug/L	20140417.R13na4
Total Barium	1	13.9	ug/L	20140417.R13na4
Total Beryllium	0.5	<0.5	ug/L	20140417.R13na4
Total Bismuth	1	<1	ug/L	20140417.R13na4
Total Boron	2	32.2	ug/L	20140417.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140417.R13na4
Total Calcium	500	57600	ug/L	20140417.R13na4
Total Cerium	1	<1	ug/L	20140417.R13na4
Total Cesium	1	<1	ug/L	20140417.R13na4

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Whitewater Hydrogeology Ltd.

Work Order: 209016

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Chromium	1	<1	ug/L	20140417.R13na4
Total Cobalt	0.1	0.25	ug/L	20140417.R13na4
Total Copper	1	<1	ug/L	20140417.R13na4
Total Europium	1	<1	ug/L	20140417.R13na4
Total Gallium	1	<1	ug/L	20140417.R13na4
Total Iron	20	176	ug/L	20140417.R13na4
Total Lanthanum	1	<1	ug/L	20140417.R13na4
Total Lead	1	<1	ug/L	20140417.R13na4
Total Lithium	5	<5	ug/L	20140417.R13na4
Total Magnesium	4	3940	ug/L	20140417.R13na4
Total Manganese	1	18.2	ug/L	20140417.R13na4
Total Mercury	0.1	<0.1	ug/L	20140417.R13na4
Total Molybdenum	1	<1	ug/L	20140417.R13na4
Total Nickel	1	2.4	ug/L	20140417.R13na4
Total Niobium	1	<1	ug/L	20140417.R13na4
Total Potassium	100	2190	ug/L	20140417.R13na4
Total Rubidium	1	1.9	ug/L	20140417.R13na4
Total Scandium	1	<1	ug/L	20140417.R13na4
Total Selenium	1	<1	ug/L	20140417.R13na4
Total Silicon	600	1450	ug/L	20140417.R13na4
Total Silver	0.1	<0.1	ug/L	20140417.R13na4
Total Sodium	100	4810	ug/L	20140417.R13na4
Total Strontium	1	158	ug/L	20140417.R13na4
Total Sulphur	800	5130	ug/L	20140417.R13na4
Total Tellurium	1	<1	ug/L	20140417.R13na4
Total Thallium	0.1	1.61	ug/L	20140417.R13na4
Total Thorium	1	<1	ug/L	20140417.R13na4
Total Tin	1	<1	ug/L	20140417.R13na4
Total Titanium	1	6.1	ug/L	20140417.R13na4
Total Tungsten	1	<1	ug/L	20140417.R13na4
Total Uranium	1	<1	ug/L	20140417.R13na4
Total Vanadium	1	<1	ug/L	20140417.R13na4
Total Yttrium	1	<1	ug/L	20140417.R13na4
Total Zinc	1	<1	ug/L	20140417.R13na4
Total Zirconium	1	<1	ug/L	20140417.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	122	ug/L	20140417.R13na3
Aluminum (Dup)	1	125	ug/L	20140417.R13na3
Antimony	0.5	<0.5	ug/L	20140417.R13na3
Antimony (Dup)	0.5	<0.5	ug/L	20140417.R13na3
Arsenic	1	<1	ug/L	20140417.R13na3
Arsenic (Dup)	1	<1	ug/L	20140417.R13na3
Barium	1	18.4	ug/L	20140417.R13na3
Barium (Dup)	1	18.3	ug/L	20140417.R13na3

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Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 209016

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Beryllium	0.5	<0.5	ug/L	20140417.R13na3
Beryllium (Dup)	0.5	<0.5	ug/L	20140417.R13na3
Bismuth	1	<1	ug/L	20140417.R13na3
Bismuth (Dup)	1	<1	ug/L	20140417.R13na3
Boron	2	31.1	ug/L	20140417.R13na3
Boron (Dup)	2	31.4	ug/L	20140417.R13na3
Cadmium	0.1	<0.1	ug/L	20140417.R13na3
Cadmium (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Calcium	500	50000	ug/L	20140417.R13na3
Calcium (Dup)	500	54900	ug/L	20140417.R13na3
Cerium	1	<1	ug/L	20140417.R13na3
Cerium (Dup)	1	<1	ug/L	20140417.R13na3
Cesium	1	<1	ug/L	20140417.R13na3
Cesium (Dup)	1	<1	ug/L	20140417.R13na3
Chromium	1	<1	ug/L	20140417.R13na3
Chromium (Dup)	1	<1	ug/L	20140417.R13na3
Cobalt	0.1	0.26	ug/L	20140417.R13na3
Cobalt (Dup)	0.1	0.19	ug/L	20140417.R13na3
Copper	1	<1	ug/L	20140417.R13na3
Copper (Dup)	1	<1	ug/L	20140417.R13na3
Europium	1	<1	ug/L	20140417.R13na3
Europium (Dup)	1	<1	ug/L	20140417.R13na3
Gallium	1	<1	ug/L	20140417.R13na3
Gallium (Dup)	1	<1	ug/L	20140417.R13na3
Iron	20	122	ug/L	20140417.R13na3
Iron (Dup)	20	126	ug/L	20140417.R13na3
Lanthanum	1	<1	ug/L	20140417.R13na3
Lanthanum (Dup)	1	<1	ug/L	20140417.R13na3
Lead	0.1	0.14	ug/L	20140417.R13na3
Lead (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Lithium	5	<5	ug/L	20140417.R13na3
Lithium (Dup)	5	<5	ug/L	20140417.R13na3
Magnesium	4	3740	ug/L	20140417.R13na3
Magnesium (Dup)	4	3790	ug/L	20140417.R13na3
Manganese	1	17.7	ug/L	20140417.R13na3
Manganese (Dup)	1	17	ug/L	20140417.R13na3
Mercury	0.1	<0.1	ug/L	20140417.R13na3
Mercury (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Molybdenum	1	<1	ug/L	20140417.R13na3
Molybdenum (Dup)	1	<1	ug/L	20140417.R13na3
Nickel	1	2.3	ug/L	20140417.R13na3
Nickel (Dup)	1	2	ug/L	20140417.R13na3
Niobium	1	<1	ug/L	20140417.R13na3
Niobium (Dup)	1	<1	ug/L	20140417.R13na3
Potassium	100	1990	ug/L	20140417.R13na3
Potassium (Dup)	100	2010	ug/L	20140417.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 209016

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Rubidium	1	1.7	ug/L	20140417.R13na3
Rubidium (Dup)	1	1.7	ug/L	20140417.R13na3
Scandium	1	<1	ug/L	20140417.R13na3
Scandium (Dup)	1	<1	ug/L	20140417.R13na3
Selenium	1	<1	ug/L	20140417.R13na3
Selenium (Dup)	1	<1	ug/L	20140417.R13na3
Silicon	600	1360	ug/L	20140417.R13na3
Silicon (Dup)	600	1500	ug/L	20140417.R13na3
Silver	0.1	<0.1	ug/L	20140417.R13na3
Silver (Dup)	0.1	<0.1	ug/L	20140417.R13na3
Sodium	100	4660	ug/L	20140417.R13na3
Sodium (Dup)	100	4720	ug/L	20140417.R13na3
Strontium	1	150	ug/L	20140417.R13na3
Strontium (Dup)	1	158	ug/L	20140417.R13na3
Sulphur	800	5410	ug/L	20140417.R13na3
Sulphur (Dup)	800	5670	ug/L	20140417.R13na3
Tellurium	1	<1	ug/L	20140417.R13na3
Tellurium (Dup)	1	<1	ug/L	20140417.R13na3
Thallium	0.1	1.14	ug/L	20140417.R13na3
Thallium (Dup)	0.1	1	ug/L	20140417.R13na3
Thorium	1	<1	ug/L	20140417.R13na3
Thorium (Dup)	1	<1	ug/L	20140417.R13na3
Tin	1	<1	ug/L	20140417.R13na3
Tin (Dup)	1	<1	ug/L	20140417.R13na3
Titanium	1	5.4	ug/L	20140417.R13na3
Titanium (Dup)	1	7.1	ug/L	20140417.R13na3
Tungsten	1	<1	ug/L	20140417.R13na3
Tungsten (Dup)	1	<1	ug/L	20140417.R13na3
Uranium	1	<1	ug/L	20140417.R13na3
Uranium (Dup)	1	<1	ug/L	20140417.R13na3
Vanadium	1	<1	ug/L	20140417.R13na3
Vanadium (Dup)	1	<1	ug/L	20140417.R13na3
Yttrium	1	<1	ug/L	20140417.R13na3
Yttrium (Dup)	1	<1	ug/L	20140417.R13na3
Zinc	1	<1	ug/L	20140417.R13na3
Zinc (Dup)	1	<1	ug/L	20140417.R13na3
Zirconium	1	<1	ug/L	20140417.R13na3
Zirconium (Dup)	1	<1	ug/L	20140417.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	2.79	meq	20140421.R91A
Cation Sum	N/A	3.5	meq	20140421.R91A
Ion Balance	N/A	11.29	%	20140421.R91A



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Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 209016

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 549576

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140416.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.7	pH	20140414.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	359	µS/cm	20140411.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	12.7	mg/L	20140415.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140414.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	160	mg/L	20140415.R27B

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.75	mg/L	20140416.R58B

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0236	mg/L	20140415.R23.2B

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 549577

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	144	mg/L as CaCO ₃	20140414.R1A
M-Alkalinity (pH 4.5) (Dup)	1	143	mg/L as CaCO ₃	20140414.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.076	mg/L	20140415.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140414.R5C
Chloride	0.2	4.17	mg/L	20140414.R5C
Fluoride	0.1	<0.1	mg/L	20140414.R5C
Nitrate (as N)	0.1	0.22	mg/L	20140414.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140414.R5C
Sulphate	1	16.8	mg/L	20140414.R5C



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Whitewater Hydrogeology Ltd.

Work Order: 209016

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 549577

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	143	mg/L as CaCO ₃	20140416.R94B
Carbonate	1	<1	mg/L as CaCO ₃	20140416.R94B

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.8	mg/L	20140417.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	215	mg/L	20140417.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	76300	ug/L	20140417.R13na2
Dissolved Magnesium	4	3670	ug/L	20140417.R13na2
Dissolved Potassium	100	1740	ug/L	20140417.R13na2
Dissolved Sodium	100	4750	ug/L	20140417.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Aluminum	1	139	ug/L	20140417.R13na4
Total Antimony	0.5	<0.5	ug/L	20140417.R13na4
Total Arsenic	1	<1	ug/L	20140417.R13na4
Total Barium	1	16.1	ug/L	20140417.R13na4
Total Beryllium	0.5	<0.5	ug/L	20140417.R13na4
Total Bismuth	1	<1	ug/L	20140417.R13na4
Total Boron	2	27.8	ug/L	20140417.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140417.R13na4
Total Calcium	50	84000	ug/L	20140417.R13na4
Total Cerium	1	<1	ug/L	20140417.R13na4
Total Cesium	1	<1	ug/L	20140417.R13na4
Total Chromium	1	1	ug/L	20140417.R13na4
Total Cobalt	0.1	0.2	ug/L	20140417.R13na4
Total Copper	1	<1	ug/L	20140417.R13na4
Total Europium	1	<1	ug/L	20140417.R13na4
Total Gallium	1	<1	ug/L	20140417.R13na4
Total Iron	20	133	ug/L	20140417.R13na4
Total Lanthanum	1	<1	ug/L	20140417.R13na4
Total Lead	1	<1	ug/L	20140417.R13na4
Total Lithium	5	<5	ug/L	20140417.R13na4
Total Magnesium	4	3930	ug/L	20140417.R13na4
Total Manganese	1	13.9	ug/L	20140417.R13na4
Total Mercury	0.1	<0.1	ug/L	20140417.R13na4
Total Molybdenum	1	<1	ug/L	20140417.R13na4
Total Nickel	1	2.2	ug/L	20140417.R13na4
Total Niobium	1	<1	ug/L	20140417.R13na4
Total Potassium	100	1890	ug/L	20140417.R13na4
Total Rubidium	1	1.6	ug/L	20140417.R13na4

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Whitewater Hydrogeology Ltd.

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Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 549577

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Scandium	1	<1	ug/L	20140417.R13na4
Total Selenium	1	<1	ug/L	20140417.R13na4
Total Silicon	600	1290	ug/L	20140417.R13na4
Total Silver	0.1	<0.1	ug/L	20140417.R13na4
Total Sodium	100	4960	ug/L	20140417.R13na4
Total Strontium	1	161	ug/L	20140417.R13na4
Total Sulphur	800	5710	ug/L	20140417.R13na4
Total Tellurium	1	<1	ug/L	20140417.R13na4
Total Thallium	0.1	0.52	ug/L	20140417.R13na4
Total Thorium	1	<1	ug/L	20140417.R13na4
Total Tin	1	<1	ug/L	20140417.R13na4
Total Titanium	1	9	ug/L	20140417.R13na4
Total Tungsten	1	<1	ug/L	20140417.R13na4
Total Uranium	1	<1	ug/L	20140417.R13na4
Total Vanadium	1	<1	ug/L	20140417.R13na4
Total Yttrium	1	<1	ug/L	20140417.R13na4
Total Zinc	1	1.8	ug/L	20140417.R13na4
Total Zirconium	1	<1	ug/L	20140417.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	121	ug/L	20140417.R13na3
Antimony	0.5	<0.5	ug/L	20140417.R13na3
Arsenic	1	<1	ug/L	20140417.R13na3
Barium	1	16.1	ug/L	20140417.R13na3
Beryllium	0.5	<0.5	ug/L	20140417.R13na3
Bismuth	1	<1	ug/L	20140417.R13na3
Boron	2	27.5	ug/L	20140417.R13na3
Cadmium	0.1	<0.1	ug/L	20140417.R13na3
Calcium	50	80100	ug/L	20140417.R13na3
Cerium	1	<1	ug/L	20140417.R13na3
Cesium	1	<1	ug/L	20140417.R13na3
Chromium	1	1.2	ug/L	20140417.R13na3
Cobalt	0.1	0.24	ug/L	20140417.R13na3
Copper	1	<1	ug/L	20140417.R13na3
Europium	1	<1	ug/L	20140417.R13na3
Gallium	1	<1	ug/L	20140417.R13na3
Iron	20	132	ug/L	20140417.R13na3
Lanthanum	1	<1	ug/L	20140417.R13na3
Lead	0.1	<0.1	ug/L	20140417.R13na3
Lithium	5	<5	ug/L	20140417.R13na3
Magnesium	4	3570	ug/L	20140417.R13na3
Manganese	1	13.1	ug/L	20140417.R13na3
Mercury	0.1	<0.1	ug/L	20140417.R13na3
Molybdenum	1	<1	ug/L	20140417.R13na3
Nickel	1	1.6	ug/L	20140417.R13na3

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Matrix: Surface Water

Lab #: 549577

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Niobium	1	<1	ug/L	20140417.R13na3
Potassium	100	1790	ug/L	20140417.R13na3
Rubidium	1	1.6	ug/L	20140417.R13na3
Scandium	1	<1	ug/L	20140417.R13na3
Selenium	1	<1	ug/L	20140417.R13na3
Silicon	600	1290	ug/L	20140417.R13na3
Silver	0.1	<0.1	ug/L	20140417.R13na3
Sodium	100	4690	ug/L	20140417.R13na3
Strontium	1	160	ug/L	20140417.R13na3
Sulphur	800	5830	ug/L	20140417.R13na3
Tellurium	1	<1	ug/L	20140417.R13na3
Thallium	0.1	0.86	ug/L	20140417.R13na3
Thorium	1	<1	ug/L	20140417.R13na3
Tin	1	<1	ug/L	20140417.R13na3
Titanium	1	4.6	ug/L	20140417.R13na3
Tungsten	1	<1	ug/L	20140417.R13na3
Uranium	1	<1	ug/L	20140417.R13na3
Vanadium	1	<1	ug/L	20140417.R13na3
Yttrium	1	<1	ug/L	20140417.R13na3
Zinc	1	1	ug/L	20140417.R13na3
Zirconium	1	<1	ug/L	20140417.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	2.76	meq	20140421.R91A
Cation Sum	N/A	4.37	meq	20140421.R91A
Ion Balance	N/A	22.58	%	20140421.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140416.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.76	pH	20140414.R2A
pH (Dup)	N/A	7.76	pH	20140414.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	355	µS/cm	20140411.T12A
Conductivity (Dup)	1	353	µS/cm	20140411.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	7	mg/L	20140415.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140414.T38A

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Whitewater Hydrogeology Ltd.

Work Order: 209016

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 549577

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	<30	mg/L	20140415.R27B

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.78	mg/L	20140416.R58B

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0192	mg/L	20140415.R23.2B

Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	144	mg/L as CaCO ₃	20140414.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.06	mg/L	20140415.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140414.R5C
Chloride	0.2	4.23	mg/L	20140414.R5C
Fluoride	0.1	<0.1	mg/L	20140414.R5C
Nitrate (as N)	0.1	0.32	mg/L	20140414.R5C
Nitrite (as N)	0.03	<0.03	mg/L	20140414.R5C
Sulphate	1	17.5	mg/L	20140414.R5C

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	143	mg/L as CaCO ₃	20140416.R94B
Carbonate	1	<1	mg/L as CaCO ₃	20140416.R94B

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.91	mg/L	20140417.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	217	mg/L	20140417.R13na3

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	50	73000	ug/L	20140417.R13na2
Dissolved Calcium (Dup)	50	74300	ug/L	20140417.R13na2
Dissolved Magnesium	4	3430	ug/L	20140417.R13na2
Dissolved Magnesium (Dup)	4	3390	ug/L	20140417.R13na2

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Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Potassium	100	1440	ug/L	20140417.R13na2
Dissolved Potassium (Dup)	100	1570	ug/L	20140417.R13na2
Dissolved Sodium	100	4520	ug/L	20140417.R13na2
Dissolved Sodium (Dup)	100	4430	ug/L	20140417.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Aluminum	1	169	ug/L	20140417.R13na4
Total Antimony	0.5	<0.5	ug/L	20140417.R13na4
Total Arsenic	1	<1	ug/L	20140417.R13na4
Total Barium	1	14.1	ug/L	20140417.R13na4
Total Beryllium	0.5	<0.5	ug/L	20140417.R13na4
Total Bismuth	1	<1	ug/L	20140417.R13na4
Total Boron	2	29	ug/L	20140417.R13na4
Total Cadmium	0.1	<0.1	ug/L	20140417.R13na4
Total Calcium	50	83000	ug/L	20140417.R13na4
Total Cerium	1	<1	ug/L	20140417.R13na4
Total Cesium	1	<1	ug/L	20140417.R13na4
Total Chromium	1	<1	ug/L	20140417.R13na4
Total Cobalt	0.1	0.18	ug/L	20140417.R13na4
Total Copper	1	1	ug/L	20140417.R13na4
Total Europium	1	<1	ug/L	20140417.R13na4
Total Gallium	1	<1	ug/L	20140417.R13na4
Total Iron	20	105	ug/L	20140417.R13na4
Total Lanthanum	1	<1	ug/L	20140417.R13na4
Total Lead	1	<1	ug/L	20140417.R13na4
Total Lithium	5	<5	ug/L	20140417.R13na4
Total Magnesium	4	3690	ug/L	20140417.R13na4
Total Manganese	1	14.8	ug/L	20140417.R13na4
Total Mercury	0.1	<0.1	ug/L	20140417.R13na4
Total Molybdenum	1	<1	ug/L	20140417.R13na4
Total Nickel	1	2.5	ug/L	20140417.R13na4
Total Niobium	1	<1	ug/L	20140417.R13na4
Total Potassium	100	1970	ug/L	20140417.R13na4
Total Rubidium	1	1.7	ug/L	20140417.R13na4
Total Scandium	1	<1	ug/L	20140417.R13na4
Total Selenium	1	<1	ug/L	20140417.R13na4
Total Silicon	600	1370	ug/L	20140417.R13na4
Total Silver	0.1	<0.1	ug/L	20140417.R13na4
Total Sodium	100	4640	ug/L	20140417.R13na4
Total Strontium	1	156	ug/L	20140417.R13na4
Total Sulphur	800	5510	ug/L	20140417.R13na4
Total Tellurium	1	<1	ug/L	20140417.R13na4
Total Thallium	0.1	0.3	ug/L	20140417.R13na4
Total Thorium	1	<1	ug/L	20140417.R13na4
Total Tin	1	<1	ug/L	20140417.R13na4

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Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Titanium	1	7.5	ug/L	20140417.R13na4
Total Tungsten	1	<1	ug/L	20140417.R13na4
Total Uranium	1	<1	ug/L	20140417.R13na4
Total Vanadium	1	<1	ug/L	20140417.R13na4
Total Yttrium	1	<1	ug/L	20140417.R13na4
Total Zinc	1	<1	ug/L	20140417.R13na4
Total Zirconium	1	<1	ug/L	20140417.R13na4

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	134	ug/L	20140417.R13na3
Antimony	0.5	<0.5	ug/L	20140417.R13na3
Arsenic	1	<1	ug/L	20140417.R13na3
Barium	1	17.2	ug/L	20140417.R13na3
Beryllium	0.5	<0.5	ug/L	20140417.R13na3
Bismuth	1	<1	ug/L	20140417.R13na3
Boron	2	31.6	ug/L	20140417.R13na3
Cadmium	0.1	<0.1	ug/L	20140417.R13na3
Calcium	50	80900	ug/L	20140417.R13na3
Cerium	1	<1	ug/L	20140417.R13na3
Cesium	1	<1	ug/L	20140417.R13na3
Chromium	1	<1	ug/L	20140417.R13na3
Cobalt	0.1	0.22	ug/L	20140417.R13na3
Copper	1	<1	ug/L	20140417.R13na3
Europium	1	<1	ug/L	20140417.R13na3
Gallium	1	<1	ug/L	20140417.R13na3
Iron	20	65	ug/L	20140417.R13na3
Lanthanum	1	<1	ug/L	20140417.R13na3
Lead	0.1	<0.1	ug/L	20140417.R13na3
Lithium	5	<5	ug/L	20140417.R13na3
Magnesium	4	3690	ug/L	20140417.R13na3
Manganese	1	13.7	ug/L	20140417.R13na3
Mercury	0.1	<0.1	ug/L	20140417.R13na3
Molybdenum	1	<1	ug/L	20140417.R13na3
Nickel	1	2.4	ug/L	20140417.R13na3
Niobium	1	<1	ug/L	20140417.R13na3
Potassium	100	1820	ug/L	20140417.R13na3
Rubidium	1	1.6	ug/L	20140417.R13na3
Scandium	1	<1	ug/L	20140417.R13na3
Selenium	1	<1	ug/L	20140417.R13na3
Silicon	600	1400	ug/L	20140417.R13na3
Silver	0.1	<0.1	ug/L	20140417.R13na3
Sodium	100	4730	ug/L	20140417.R13na3
Strontium	1	158	ug/L	20140417.R13na3
Sulphur	800	5060	ug/L	20140417.R13na3
Tellurium	1	<1	ug/L	20140417.R13na3

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Work Order: 209016

Sample Name: Mc Carthy Quarry

Date:

Matrix: Surface Water

Lab #: 549578

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Thallium	0.1	0.25	ug/L	20140417.R13na3
Thorium	1	<1	ug/L	20140417.R13na3
Tin	1	<1	ug/L	20140417.R13na3
Titanium	1	4.1	ug/L	20140417.R13na3
Tungsten	1	<1	ug/L	20140417.R13na3
Uranium	1	<1	ug/L	20140417.R13na3
Vanadium	1	<1	ug/L	20140417.R13na3
Yttrium	1	<1	ug/L	20140417.R13na3
Zinc	1	<1	ug/L	20140417.R13na3
Zirconium	1	<1	ug/L	20140417.R13na3

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	2.78	meq	20140421.R91A
Cation Sum	N/A	4.17	meq	20140421.R91A
Ion Balance	N/A	20	%	20140421.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	1.5	mg/L	20140416.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.76	pH	20140414.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	352	µS/cm	20140411.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	4	mg/L	20140415.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140414.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	200	mg/L	20140415.R27B
Total Dissolved Solids (Dup)	30	100	mg/L	20140415.R27B

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	2.36	mg/L	20140416.R58B

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.022	mg/L	20140415.R23.2B



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MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Quality Control Data:

Alka

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	N/A	%	0	0.7	20	20140414.R1A

Lab Control Sample 155

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	N/A	%	85	94	115	20140414.R1A

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	1	mg/L	<1	<1	5	20140414.R1A

Ammonia Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	N/A	%	0	0.4	20	20140415.R42.1A

Lab Control Sample 250

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	0.2	0.277	0.3	20140415.R42.1A

Lab Control Sample 500

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	0.4	0.508	0.6	20140415.R42.1A

Matrix Spike

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	N/A	% Rec	75	98.4	125	20140415.R42.1A

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	<0.01	0.016	0.03	20140415.R42.1A

Anions Water

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	%	0	N/A	20	20140414.R5C
Chloride	N/A	%	0	13.9	20	20140414.R5C
Fluoride	N/A	%	0	N/A	20	20140414.R5C
Nitrate (as N)	N/A	%	0	N/A	20	20140414.R5C
Nitrite (as N)	N/A	%	0	N/A	20	20140414.R5C
Sulphate	N/A	%	0	N/A	20	20140414.R5C

Lab Control Sample 1

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	80	94	115	20140414.R5C
Chloride	N/A	% Rec	80	91	115	20140414.R5C

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Anions Water

Lab Control Sample 1						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Fluoride	N/A	% Rec	80	103	115	20140414.R5C
Nitrate (as N)	N/A	% Rec	75	98	115	20140414.R5C
Nitrite (as N)	N/A	% Rec	80	89	115	20140414.R5C
Sulphate	N/A	% Rec	80	98	115	20140414.R5C

Lab Control Sample 2						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	85	91	115	20140414.R5C
Chloride	N/A	% Rec	85	99	115	20140414.R5C
Fluoride	N/A	% Rec	85	101	115	20140414.R5C
Nitrate (as N)	N/A	% Rec	85	105	115	20140414.R5C
Nitrite (as N)	N/A	% Rec	85	93	115	20140414.R5C
Sulphate	N/A	% Rec	78	100	115	20140414.R5C

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	70	99	130	20140414.R5C
Chloride	N/A	% Rec	70	91.4	130	20140414.R5C
Fluoride	N/A	% Rec	70	111	130	20140414.R5C
Nitrate (as N)	N/A	% Rec	70	103	130	20140414.R5C
Nitrite (as N)	N/A	% Rec	70	90	130	20140414.R5C
Sulphate	N/A	% Rec	70	100	130	20140414.R5C

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	0.1	mg/L	<0.1	<0.1	0.2	20140414.R5C
Chloride	0.2	mg/L	<0.2	<0.2	0.3	20140414.R5C
Fluoride	0.1	mg/L	<0.1	<0.1	0.2	20140414.R5C
Nitrate (as N)	0.1	mg/L	<0.1	<0.1	0.2	20140414.R5C
Nitrite (as N)	0.03	mg/L	<0.03	<0.03	0.04	20140414.R5C
Sulphate	1	mg/L	<1	<1	1.1	20140414.R5C

DOC Water

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	%	0	N/A	20	20140417.R55.1A

Lab Control Sample 20						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	17	20.2	23	20140417.R55.1A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	% Rec	75	95.1	125	20140417.R55.1A



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DOC Water

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	<0.4	<0.4	0.4	20140417.R55.1A

ICPMS Dis. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Calcium	N/A	%	0	1.8	20	20140417.R13na2
Dissolved Magnesium	N/A	%	0	1.2	20	20140417.R13na2
Dissolved Potassium	N/A	%	0	8.6	20	20140417.R13na2
Dissolved Sodium	N/A	%	0	2	20	20140417.R13na2

EU-L-3

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Calcium	50	ug/L	1720	2000	2450	20140417.R13na2

Lab Control Sample

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Calcium	N/A	%	80	91	120	20140417.R13na2
Dissolved Magnesium	N/A	%	80	91	120	20140417.R13na2
Dissolved Sodium	N/A	%	80	86	120	20140417.R13na2

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Calcium	50	ug/L	<50	<50	50	20140417.R13na2
Dissolved Magnesium	4	ug/L	<4	<4	4	20140417.R13na2

ICPMS Tot. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID

EU-L-3

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Aluminum	1	ug/L	47.8	71.9	177.8	20140417.R13na4
Total Antimony	0.5	ug/L	12.8	19.9	24	20140417.R13na4
Total Arsenic	1	ug/L	73.2	83.5	93.8	20140417.R13na4
Total Barium	1	ug/L	103	118	145	20140417.R13na4
Total Beryllium	1	ug/L	10.8	13.6	13.7	20140417.R13na4
Total Cadmium	0.1	ug/L	18.6	21.6	27	20140417.R13na4
Total Calcium	50	ug/L	1720	2140	2450	20140417.R13na4
Total Chromium	1	ug/L	48.7	65.8	76.6	20140417.R13na4
Total Copper	1	ug/L	87.1	112	125	20140417.R13na4
Total Iron	20	ug/L	50.4	68	70	20140417.R13na4
Total Lead	1	ug/L	36.1	46.1	49	20140417.R13na4
Total Manganese	1	ug/L	107	132	138	20140417.R13na4
Total Molybdenum	1	ug/L	32.7	40	46.7	20140417.R13na4
Total Nickel	1	ug/L	73.1	90	93.8	20140417.R13na4
Total Selenium	1	ug/L	13.7	23.6	42.2	20140417.R13na4

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ICPMS Tot. Water

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Vanadium	1	ug/L	43.4	53.2	55.7	20140417.R13na4
Total Zinc	1	ug/L	12.5	26.1	48.4	20140417.R13na4

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Aluminum	N/A	%	80	105	120	20140417.R13na4
Total Arsenic	N/A	%	80	94	120	20140417.R13na4
Total Barium	N/A	%	80	97	120	20140417.R13na4
Total Beryllium	N/A	%	80	106	120	20140417.R13na4
Total Boron	N/A	%	80	100	120	20140417.R13na4
Total Cadmium	N/A	%	80	97	120	20140417.R13na4
Total Calcium	N/A	%	80	104	120	20140417.R13na4
Total Chromium	N/A	%	90	107	120	20140417.R13na4
Total Cobalt	N/A	%	80	110	120	20140417.R13na4
Total Copper	N/A	%	80	105	120	20140417.R13na4
Total Iron	N/A	%	80	94	120	20140417.R13na4
Total Lead	N/A	%	80	112	120	20140417.R13na4
Total Magnesium	N/A	%	80	98	120	20140417.R13na4
Total Manganese	N/A	%	80	109	120	20140417.R13na4
Total Molybdenum	N/A	%	80	101	120	20140417.R13na4
Total Nickel	N/A	%	80	107	120	20140417.R13na4
Total Selenium	N/A	%	80	90	120	20140417.R13na4
Total Sodium	N/A	%	80	97	120	20140417.R13na4
Total Sulphur	N/A	%	80	95	120	20140417.R13na4
Total Thallium	N/A	%	80	112	120	20140417.R13na4
Total Vanadium	N/A	%	80	109	120	20140417.R13na4
Total Zinc	N/A	%	80	98	120	20140417.R13na4

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Aluminum	1	ug/L	<1	<1	1	20140417.R13na4
Total Antimony	1	ug/L	<1	<1	1	20140417.R13na4
Total Arsenic	1	ug/L	<1	<1	1	20140417.R13na4
Total Barium	1	ug/L	<1	<1	1	20140417.R13na4
Total Beryllium	1	ug/L	<1	<1	1	20140417.R13na4
Total Bismuth	1	ug/L	<1	<1	1	20140417.R13na4
Total Boron	2	ug/L	<2	<2	6	20140417.R13na4
Total Cadmium	1	ug/L	<1	<1	1	20140417.R13na4
Total Cerium	1	ug/L	<1	<1	1	20140417.R13na4
Total Cesium	1	ug/L	<1	<1	1	20140417.R13na4
Total Chromium	1	ug/L	<1	<1	1	20140417.R13na4
Total Cobalt	1	ug/L	<1	<1	1	20140417.R13na4
Total Copper	1	ug/L	<1	<1	1	20140417.R13na4
Total Europium	1	ug/L	<1	<1	1	20140417.R13na4
Total Gallium	1	ug/L	<1	<1	1	20140417.R13na4
Total Iron	20	ug/L	<20	<20	60	20140417.R13na4
Total Lanthanum	1	ug/L	<1	<1	1	20140417.R13na4

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ICPMS Tot. Water

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Lead	1	ug/L	<1	<1	1	20140417.R13na4
Total Lithium	1	ug/L	<1	<1	1	20140417.R13na4
Total Magnesium	4	ug/L	<4	<4	12	20140417.R13na4
Total Manganese	1	ug/L	<1	<1	1	20140417.R13na4
Total Mercury	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na4
Total Molybdenum	1	ug/L	<1	<1	1	20140417.R13na4
Total Nickel	1	ug/L	<1	<1	1	20140417.R13na4
Total Niobium	1	ug/L	<1	<1	1	20140417.R13na4
Total Rubidium	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na4
Total Selenium	1	ug/L	<1	<1	1	20140417.R13na4
Total Silver	5	ug/L	<5	<5	5	20140417.R13na4
Total Sodium	100	ug/L	<100	<100	300	20140417.R13na4
Total Strontium	1	ug/L	<1	<1	1	20140417.R13na4
Total Thallium	1	ug/L	<1	<1	1	20140417.R13na4
Total Thorium	1	ug/L	<1	<1	1	20140417.R13na4
Total Tin	1	ug/L	<1	<1	1	20140417.R13na4
Total Tungsten	1	ug/L	<1	<1	1	20140417.R13na4
Total Uranium	1	ug/L	<1	<1	1	20140417.R13na4
Total Vanadium	1	ug/L	<1	<1	1	20140417.R13na4
Total Yttrium	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na4
Total Zinc	1	ug/L	<1	<1	1	20140417.R13na4
Total Zirconium	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na4

ICPMS Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Aluminum	N/A	%	0	2.4	20	20140417.R13na3
Antimony	N/A	%	0	N/A	20	20140417.R13na3
Arsenic	N/A	%	0	N/A	20	20140417.R13na3
Barium	N/A	%	0	0.5	20	20140417.R13na3
Beryllium	N/A	%	0	N/A	20	20140417.R13na3
Bismuth	N/A	%	0	N/A	20	20140417.R13na3
Boron	N/A	%	0	1	20	20140417.R13na3
Cadmium	N/A	%	0	N/A	20	20140417.R13na3
Cerium	N/A	%	0	N/A	20	20140417.R13na3
Cesium	N/A	%	0	N/A	20	20140417.R13na3
Chromium	N/A	%	0	N/A	20	20140417.R13na3
Cobalt	N/A	%	0	N/A	20	20140417.R13na3
Copper	N/A	%	0	N/A	20	20140417.R13na3
Europium	N/A	%	0	N/A	20	20140417.R13na3
Gallium	N/A	%	0	N/A	20	20140417.R13na3
Iron	N/A	%	0	N/A	20	20140417.R13na3
Lanthanum	N/A	%	0	N/A	20	20140417.R13na3
Lead	N/A	%	0	N/A	20	20140417.R13na3
Lithium	N/A	%	0	N/A	20	20140417.R13na3

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ICPMS Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Manganese	N/A	%	0	4	20	20140417.R13na3
Mercury	N/A	%	0	N/A	20	20140417.R13na3
Molybdenum	N/A	%	0	N/A	20	20140417.R13na3
Nickel	N/A	%	0	N/A	20	20140417.R13na3
Niobium	N/A	%	0	N/A	20	20140417.R13na3
Potassium	N/A	%	0	1	20	20140417.R13na3
Rubidium	N/A	%	0	N/A	20	20140417.R13na3
Scandium	N/A	%	0	N/A	20	20140417.R13na3
Selenium	N/A	%	0	N/A	20	20140417.R13na3
Silicon	N/A	%	0	N/A	20	20140417.R13na3
Silver	N/A	%	0	N/A	20	20140417.R13na3
Sodium	N/A	%	0	1.3	20	20140417.R13na3
Strontium	N/A	%	0	5.2	20	20140417.R13na3
Sulphur	N/A	%	0	N/A	20	20140417.R13na3
Tellurium	N/A	%	0	N/A	20	20140417.R13na3
Thallium	N/A	%	0	13.1	20	20140417.R13na3
Thorium	N/A	%	0	N/A	20	20140417.R13na3
Tin	N/A	%	0	N/A	20	20140417.R13na3
Titanium	N/A	%	0	N/A	20	20140417.R13na3
Tungsten	N/A	%	0	N/A	20	20140417.R13na3
Uranium	N/A	%	0	N/A	20	20140417.R13na3
Vanadium	N/A	%	0	N/A	20	20140417.R13na3
Yttrium	N/A	%	0	N/A	20	20140417.R13na3
Zinc	N/A	%	0	N/A	20	20140417.R13na3
Zirconium	N/A	%	0	N/A	20	20140417.R13na3

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Aluminum	1	ug/L	47.8	71.3	77.8	20140417.R13na3
Antimony	0.5	ug/L	12.8	19.7	24	20140417.R13na3
Arsenic	1	ug/L	73.2	89.6	93.8	20140417.R13na3
Barium	1	ug/L	103	127	145	20140417.R13na3
Boron	2	ug/L	96	109	138	20140417.R13na3
Cadmium	0.1	ug/L	18.6	24.6	27	20140417.R13na3
Calcium	50	ug/L	1720	2020	2450	20140417.R13na3
Chromium	1	ug/L	48.7	60.6	76.6	20140417.R13na3
Cobalt	0.1	ug/L	76.2	85.2	88.8	20140417.R13na3
Copper	1	ug/L	87.1	109	125	20140417.R13na3
Iron	20	ug/L	50.4	65	70	20140417.R13na3
Lead	1	ug/L	36.1	43.9	47.5	20140417.R13na3
Manganese	1	ug/L	107	120	138	20140417.R13na3
Molybdenum	1	ug/L	32.7	38.7	46.7	20140417.R13na3
Nickel	1	ug/L	73.1	85.7	93.8	20140417.R13na3
Potassium	0.1	ug/L	1680	1940	2470	20140417.R13na3
Selenium	1	ug/L	13.7	26.6	42.2	20140417.R13na3
Sodium	100	ug/L	4480	4920	5950	20140417.R13na3

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ICPMS Water

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Thallium	0.1	ug/L	72.3	88.5	95.1	20140417.R13na3
Vanadium	1	ug/L	43.4	51.3	55.7	20140417.R13na3
Zinc	1	ug/L	12.5	29.3	48.4	20140417.R13na3

Lab Control Sample

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Aluminum	N/A	%	80	94	120	20140417.R13na3
Arsenic	N/A	%	80	108	120	20140417.R13na3
Barium	N/A	%	80	98	120	20140417.R13na3
Beryllium	N/A	%	80	109	120	20140417.R13na3
Boron	N/A	%	80	92	120	20140417.R13na3
Cadmium	N/A	%	80	106	120	20140417.R13na3
Calcium	N/A	%	80	93	120	20140417.R13na3
Chromium	N/A	%	90	100	120	20140417.R13na3
Cobalt	N/A	%	80	97	120	20140417.R13na3
Copper	N/A	%	80	100	120	20140417.R13na3
Iron	N/A	%	80	81	120	20140417.R13na3
Lead	N/A	%	80	102	120	20140417.R13na3
Magnesium	N/A	%	80	92	120	20140417.R13na3
Manganese	N/A	%	80	102	120	20140417.R13na3
Molybdenum	N/A	%	80	98	120	20140417.R13na3
Nickel	N/A	%	80	101	120	20140417.R13na3
Selenium	N/A	%	80	107	120	20140417.R13na3
Sodium	N/A	%	80	89	120	20140417.R13na3
Thallium	N/A	%	80	100	120	20140417.R13na3
Vanadium	N/A	%	80	104	120	20140417.R13na3
Zinc	N/A	%	80	109	120	20140417.R13na3

Matrix Spike

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Aluminum	N/A	% Rec	70	114	130	20140417.R13na3
Antimony	N/A	% Rec	70	114	130	20140417.R13na3
Arsenic	N/A	% Rec	70	112	130	20140417.R13na3
Barium	N/A	% Rec	70	108	130	20140417.R13na3
Beryllium	N/A	% Rec	70	116	130	20140417.R13na3
Boron	N/A	% Rec	70	95.9	130	20140417.R13na3
Cadmium	N/A	% Rec	70	109	130	20140417.R13na3
Chromium	N/A	% Rec	70	109	130	20140417.R13na3
Cobalt	N/A	% Rec	70	105	130	20140417.R13na3
Copper	N/A	% Rec	70	103	130	20140417.R13na3
Lead	N/A	% Rec	70	106	130	20140417.R13na3
Manganese	N/A	% Rec	70	106	130	20140417.R13na3
Molybdenum	N/A	% Rec	70	106	130	20140417.R13na3
Nickel	N/A	% Rec	70	105	130	20140417.R13na3
Selenium	N/A	% Rec	70	118	130	20140417.R13na3
Thallium	N/A	% Rec	70	104	130	20140417.R13na3
Vanadium	N/A	% Rec	70	110	130	20140417.R13na3

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ICPMS Water

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Zinc	N/A	% Rec	70	115	130	20140417.R13na3

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Aluminum	1	ug/L	<1	<1	1	20140417.R13na3
Antimony	0.5	ug/L	<0.5	<0.5	0.5	20140417.R13na3
Arsenic	1	ug/L	<1	<1	1	20140417.R13na3
Barium	0.5	ug/L	<0.5	<0.5	0.5	20140417.R13na3
Beryllium	1	ug/L	<1	<1	1	20140417.R13na3
Bismuth	1	ug/L	<1	<1	3	20140417.R13na3
Boron	1	ug/L	<1	<1	1	20140417.R13na3
Cadmium	1	ug/L	<1	<1	1	20140417.R13na3
Calcium	50	ug/L	<50	<50	150	20140417.R13na3
Cerium	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na3
Cesium	1	ug/L	<1	<1	1	20140417.R13na3
Chromium	1	ug/L	<1	<1	1	20140417.R13na3
Cobalt	1	ug/L	<1	<1	1	20140417.R13na3
Europium	1	ug/L	<1	<1	1	20140417.R13na3
Gallium	1	ug/L	<1	<1	1	20140417.R13na3
Iron	20	ug/L	<20	<20	20	20140417.R13na3
Lanthanum	1	ug/L	<1	<1	1	20140417.R13na3
Lead	1	ug/L	<1	<1	1	20140417.R13na3
Lithium	5	ug/L	<5	<5	5	20140417.R13na3
Magnesium	4	ug/L	<4	<4	4	20140417.R13na3
Manganese	1	ug/L	<1	<1	1	20140417.R13na3
Mercury	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na3
Molybdenum	1	ug/L	<1	<1	1	20140417.R13na3
Nickel	1	ug/L	<1	<1	1	20140417.R13na3
Niobium	1	ug/L	<1	<1	1	20140417.R13na3
Rubidium	1	ug/L	<1	<1	1	20140417.R13na3
Scandium	1	ug/L	<1	<1	1	20140417.R13na3
Selenium	1	ug/L	<1	<1	1	20140417.R13na3
Silver	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na3
Strontium	1	ug/L	<1	<1	1	20140417.R13na3
Tellurium	1	ug/L	<1	<1	1	20140417.R13na3
Thallium	1	ug/L	<1	<1	1	20140417.R13na3
Thorium	1	ug/L	<1	<1	1	20140417.R13na3
Tin	1	ug/L	<1	<1	1	20140417.R13na3
Titanium	0.1	ug/L	<0.1	<0.1	0.1	20140417.R13na3
Tungsten	1	ug/L	<1	<1	1	20140417.R13na3
Uranium	1	ug/L	<1	<1	1	20140417.R13na3
Vanadium	1	ug/L	<1	<1	1	20140417.R13na3
Yttrium	1	ug/L	<1	<1	1	20140417.R13na3
Zinc	1	ug/L	<1	<1	1	20140417.R13na3
Zirconium	1	ug/L	<1	<1	1	20140417.R13na3



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Work Order: 209016

Oil and Grease

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	<1	<1	3	20140416.R54A

Control(20)

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	16	18.1	24	20140416.R54A

pHWater

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	0	0	0.3	20140414.R2A

Lab Control Sample 8

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	7.8	8.15	8.2	20140414.R2A

T12-CONDWATER

Control QC-C						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Conductivity	1	µS/cm	117.84	149	176.76	20140411.T12A

ERA S200-698

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Conductivity	1	µS/cm	610	681	746	20140411.T12A

T27-TSS

200 mg/L Control						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	2	mg/L	160	190	240	20140415.T27A

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	2	mg/L	<2	<2	<2	20140415.T27A

T38-Phenols 4AAP

25 ppb Control						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.02	0.0253	0.03	20140414.T38A

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	<0.001	<0.001	0.003	20140414.T38A

ERA P166-502

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.445	0.54	0.725	20140414.T38A

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Work Order: 209016

T38-Phenols 4AAP

ERA P166-502

TDS

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	N/A	%	0	N/A	20	20140415.R27B

Lab Control Sample

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	30	mg/L	180	200	220	20140415.R27B

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	30	mg/L	<30	<30	50	20140415.R27B

TKN Water Dig.

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	N/A	%	0	N/A	20	20140416.R58B

Lab Control 10

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	8	9.2	12	20140416.R58B

Lab Control 25

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	20	22.9	30	20140416.R58B

Matrix Spike

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	N/A	% Rec	80	90.2	120	20140416.R58B

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	<1	<1	1	20140416.R58B

TP Water

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	N/A	%	0	3.3	20	20140415.R23.2B

Lab Control Sample .05

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	0.04	0.0451	0.06	20140415.R23.2B

Lab Control Sample .2

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	0.18	0.199	0.22	20140415.R23.2B

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Work Order: 209016

TP Water

Lab Control Sample .2

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	N/A	% Rec	75	96.3	125	20140415.R23.2B

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	<0.001	0.003	0.005	20140415.R23.2B

UCL Upper Control Limit

LCL Lower Control Limit



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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Data:

Sample Name: McCarthy Pond

Date:

Matrix: Surface Water

Lab #: 552478

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	187	mg/L as CaCO ₃	20140428.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.05	mg/L	20140501.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140428.R5D
Chloride	0.2	7.72	mg/L	20140428.R5D
Fluoride	0.1	<0.1	mg/L	20140428.R5D
Nitrate (as N)	0.1	0.66	mg/L	20140428.R5D
Nitrite (as N)	0.03	<0.03	mg/L	20140428.R5D
Sulphate	1	34.3	mg/L	20140428.R5D

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	184	mg/L as CaCO ₃	20140429.R94A
Carbonate	1	2.7	mg/L as CaCO ₃	20140429.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.54	mg/L	20140429.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	76.4	mg/L	20140502.R13.1B
Magnesium	0.04	6.55	mg/L	20140502.R13.1B
Total Hardness (as CaCO ₃)	0.1	218	mg/L	20140502.R13.1B

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	6.1	ug/L	20140430.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Arsenic	1	<1	ug/L	20140430.R13na3
Dissolved Barium	1	22.7	ug/L	20140430.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Bismuth	1	<1	ug/L	20140430.R13na3
Dissolved Boron	2	74.3	ug/L	20140430.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Calcium	500	76700	ug/L	20140430.R13na3
Dissolved Cerium	1	<1	ug/L	20140430.R13na3
Dissolved Cesium	1	<1	ug/L	20140430.R13na3
Dissolved Chromium	1	3	ug/L	20140430.R13na3
Dissolved Cobalt	0.1	0.14	ug/L	20140430.R13na3
Dissolved Copper	1	<1	ug/L	20140430.R13na3
Dissolved Europium	1	<1	ug/L	20140430.R13na3

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Work Order: 208980

Sample Name: McCarthy Pond

Date:

Matrix: Surface Water

Lab #: 552478

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Gallium	1	<1	ug/L	20140430.R13na3
Dissolved Iron	20	24	ug/L	20140430.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140430.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Lithium	5	8.6	ug/L	20140430.R13na3
Dissolved Magnesium	4	6920	ug/L	20140430.R13na3
Dissolved Manganese	1	9.9	ug/L	20140430.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Molybdenum	1	3.4	ug/L	20140430.R13na3
Dissolved Nickel	1	1.9	ug/L	20140430.R13na3
Dissolved Niobium	1	<1	ug/L	20140430.R13na3
Dissolved Potassium	100	2740	ug/L	20140430.R13na3
Dissolved Rubidium	1	1.5	ug/L	20140430.R13na3
Dissolved Scandium	1	<1	ug/L	20140430.R13na3
Dissolved Selenium	1	1.4	ug/L	20140430.R13na3
Dissolved Silicon	600	1630	ug/L	20140430.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Sodium	100	11600	ug/L	20140430.R13na3
Dissolved Strontium	1	358	ug/L	20140430.R13na3
Dissolved Sulfur	800	13400	ug/L	20140430.R13na3
Dissolved Tellurium	1	<1	ug/L	20140430.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Thorium	1	<1	ug/L	20140430.R13na3
Dissolved Tin	1	<1	ug/L	20140430.R13na3
Dissolved Titanium	1	<1	ug/L	20140430.R13na3
Dissolved Tungsten	1	<1	ug/L	20140430.R13na3
Dissolved Uranium	1	<1	ug/L	20140430.R13na3
Dissolved Vanadium	1	1.1	ug/L	20140430.R13na3
Dissolved Yttrium	1	<1	ug/L	20140430.R13na3
Dissolved Zinc	1	1.3	ug/L	20140430.R13na3
Dissolved Zirconium	1	<1	ug/L	20140430.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140502.R13.2A
Total Cadmium	0.1	<0.1	ug/L	20140502.R13.2A
Total Calcium	50	102000	ug/L	20140502.R13.2A
Total Copper	1	<1	ug/L	20140502.R13.2A
Total Iron	20	163	ug/L	20140502.R13.2A
Total Lead	1	<1	ug/L	20140502.R13.2A
Total Magnesium	40	6520	ug/L	20140502.R13.2A
Total Manganese	1	16	ug/L	20140502.R13.2A
Total Nickel	1	2.8	ug/L	20140502.R13.2A
Total Potassium	1000	2500	ug/L	20140502.R13.2A
Total Sodium	1000	10300	ug/L	20140502.R13.2A
Total Zinc	1	1	ug/L	20140502.R13.2A

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Work Order: 208980

Sample Name: McCarthy Pond **Date:** **Matrix: Surface Water** **Lab #: 552478**

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.94	meq	20140502.R91A
Cation Sum	N/A	4.98	meq	20140502.R91A
Ion Balance	N/A	11.66	%	20140502.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140502.R54A
Oil and Grease, Total	1	1.2	mg/L	20140502.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	8.19	pH	20140428.R2B

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	462	µS/cm	20140430.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.9	mg/L	20140429.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140428.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	320	mg/L	20140429.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	1.1	mg/L	20140430.R58A
Total Kjeldahl Nitrogen (Dup)	0.2	1.1	mg/L	20140430.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.01	mg/L	20140429.R23.2B

Sample Name: SW1 **Date:** **Matrix: Surface Water** **Lab #: 552479**

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	214	mg/L as CaCO3	20140428.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.029	mg/L	20140429.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140429.R5A



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Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 552479

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	6.25	mg/L	20140429.R5A
Fluoride	0.1	<0.1	mg/L	20140429.R5A
Nitrate (as N)	0.1	<0.1	mg/L	20140429.R5A
Nitrite (as N)	0.03	<0.03	mg/L	20140429.R5A
Sulphate	1	11.5	mg/L	20140429.R5A

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	213	mg/L as CaCO3	20140429.R94A
Carbonate	1	1.3	mg/L as CaCO3	20140429.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.13	mg/L	20140429.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	81.2	mg/L	20140502.R13.1B
Magnesium	0.04	6.04	mg/L	20140502.R13.1B
Total Hardness (as CaCO3)	0.1	228	mg/L	20140502.R13.1B

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	3	ug/L	20140430.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Arsenic	1	<1	ug/L	20140430.R13na3
Dissolved Barium	1	27.5	ug/L	20140430.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Bismuth	1	<1	ug/L	20140430.R13na3
Dissolved Boron	2	9	ug/L	20140430.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Calcium	50	99300	ug/L	20140430.R13na3
Dissolved Cerium	1	<1	ug/L	20140430.R13na3
Dissolved Cesium	1	<1	ug/L	20140430.R13na3
Dissolved Chromium	1	3.6	ug/L	20140430.R13na3
Dissolved Cobalt	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Copper	1	<1	ug/L	20140430.R13na3
Dissolved Europium	1	<1	ug/L	20140430.R13na3
Dissolved Gallium	1	<1	ug/L	20140430.R13na3
Dissolved Iron	20	25	ug/L	20140430.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140430.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Lithium	5	<5	ug/L	20140430.R13na3
Dissolved Magnesium	4	6630	ug/L	20140430.R13na3
Dissolved Manganese	1	1.7	ug/L	20140430.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Molybdenum	1	<1	ug/L	20140430.R13na3
Dissolved Nickel	1	1.7	ug/L	20140430.R13na3

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Work Order: 208980

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 552479

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Niobium	1	<1	ug/L	20140430.R13na3
Dissolved Potassium	100	820	ug/L	20140430.R13na3
Dissolved Rubidium	1	<1	ug/L	20140430.R13na3
Dissolved Scandium	1	1.4	ug/L	20140430.R13na3
Dissolved Selenium	1	<1	ug/L	20140430.R13na3
Dissolved Silicon	600	3060	ug/L	20140430.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Sodium	100	4270	ug/L	20140430.R13na3
Dissolved Strontium	1	137	ug/L	20140430.R13na3
Dissolved Sulfur	800	4930	ug/L	20140430.R13na3
Dissolved Tellurium	1	<1	ug/L	20140430.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Thorium	1	<1	ug/L	20140430.R13na3
Dissolved Tin	1	<1	ug/L	20140430.R13na3
Dissolved Titanium	1	<1	ug/L	20140430.R13na3
Dissolved Tungsten	1	<1	ug/L	20140430.R13na3
Dissolved Uranium	1	<1	ug/L	20140430.R13na3
Dissolved Vanadium	1	1.1	ug/L	20140430.R13na3
Dissolved Yttrium	1	<1	ug/L	20140430.R13na3
Dissolved Zinc	1	4.5	ug/L	20140430.R13na3
Dissolved Zirconium	1	<1	ug/L	20140430.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140502.R13.2A
Total Cadmium	0.1	<0.1	ug/L	20140502.R13.2A
Total Calcium	50	112000	ug/L	20140502.R13.2A
Total Copper	1	<1	ug/L	20140502.R13.2A
Total Iron	20	64	ug/L	20140502.R13.2A
Total Lead	1	<1	ug/L	20140502.R13.2A
Total Magnesium	40	6230	ug/L	20140502.R13.2A
Total Manganese	1	5.4	ug/L	20140502.R13.2A
Total Nickel	1	2	ug/L	20140502.R13.2A
Total Potassium	100	830	ug/L	20140502.R13.2A
Total Sodium	1000	4190	ug/L	20140502.R13.2A
Total Zinc	1	2.7	ug/L	20140502.R13.2A

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.85	meq	20140502.R91A
Cation Sum	N/A	5.72	meq	20140502.R91A
Ion Balance	N/A	19.54	%	20140502.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140502.R54A
Oil and Grease, Total	1	<1	mg/L	20140502.R54A

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TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 552480

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.63	mg/L	20140429.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	78.6	mg/L	20140502.R13.1B
Magnesium	0.04	6.67	mg/L	20140502.R13.1B
Total Hardness (as CaCO3)	0.1	224	mg/L	20140502.R13.1B

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	5.3	ug/L	20140430.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Arsenic	1	<1	ug/L	20140430.R13na3
Dissolved Barium	1	22.5	ug/L	20140430.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140430.R13na3
Dissolved Bismuth	1	<1	ug/L	20140430.R13na3
Dissolved Boron	2	76.6	ug/L	20140430.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Calcium	500	76300	ug/L	20140430.R13na3
Dissolved Cerium	1	<1	ug/L	20140430.R13na3
Dissolved Cesium	1	<1	ug/L	20140430.R13na3
Dissolved Chromium	1	3.6	ug/L	20140430.R13na3
Dissolved Cobalt	0.1	0.15	ug/L	20140430.R13na3
Dissolved Copper	1	<1	ug/L	20140430.R13na3
Dissolved Europium	1	<1	ug/L	20140430.R13na3
Dissolved Gallium	1	<1	ug/L	20140430.R13na3
Dissolved Iron	20	27	ug/L	20140430.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140430.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Lithium	5	8.4	ug/L	20140430.R13na3
Dissolved Magnesium	4	6970	ug/L	20140430.R13na3
Dissolved Manganese	1	9.3	ug/L	20140430.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Molybdenum	1	<1	ug/L	20140430.R13na3
Dissolved Nickel	1	1.6	ug/L	20140430.R13na3
Dissolved Niobium	1	<1	ug/L	20140430.R13na3
Dissolved Potassium	100	2870	ug/L	20140430.R13na3
Dissolved Rubidium	1	1.6	ug/L	20140430.R13na3
Dissolved Scandium	1	<1	ug/L	20140430.R13na3
Dissolved Selenium	1	<1	ug/L	20140430.R13na3
Dissolved Silicon	600	1760	ug/L	20140430.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140430.R13na3
Dissolved Sodium	100	12000	ug/L	20140430.R13na3
Dissolved Strontium	1	354	ug/L	20140430.R13na3
Dissolved Sulfur	800	13800	ug/L	20140430.R13na3
Dissolved Tellurium	1	<1	ug/L	20140430.R13na3
Dissolved Thallium	0.1	<0.1	ug/L	20140430.R13na3

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Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 552480

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Thorium	1	<1	ug/L	20140430.R13na3
Dissolved Tin	1	<1	ug/L	20140430.R13na3
Dissolved Titanium	1	<1	ug/L	20140430.R13na3
Dissolved Tungsten	1	<1	ug/L	20140430.R13na3
Dissolved Uranium	1	<1	ug/L	20140430.R13na3
Dissolved Vanadium	1	1.2	ug/L	20140430.R13na3
Dissolved Yttrium	1	<1	ug/L	20140430.R13na3
Dissolved Zinc	1	<1	ug/L	20140430.R13na3
Dissolved Zirconium	1	<1	ug/L	20140430.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140502.R13.2A
Total Cadmium	0.1	<0.1	ug/L	20140502.R13.2A
Total Calcium	50	104000	ug/L	20140502.R13.2A
Total Copper	1	<1	ug/L	20140502.R13.2A
Total Iron	20	149	ug/L	20140502.R13.2A
Total Lead	1	<1	ug/L	20140502.R13.2A
Total Magnesium	4	7750	ug/L	20140502.R13.2A
Total Manganese	1	15.9	ug/L	20140502.R13.2A
Total Nickel	1	6.4	ug/L	20140502.R13.2A
Total Potassium	100	3140	ug/L	20140502.R13.2A
Total Sodium	1000	10300	ug/L	20140502.R13.2A
Total Zinc	1	1.7	ug/L	20140502.R13.2A

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	3.94	meq	20140502.R91A
Cation Sum	N/A	4.99	meq	20140502.R91A
Ion Balance	N/A	11.76	%	20140502.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140502.R54A
Oil and Grease, Total	1	<1	mg/L	20140502.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.85	pH	20140428.R2B

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	463	µS/cm	20140430.T12A
Conductivity (Dup)	1	465	µS/cm	20140430.T12A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	3.9	mg/L	20140429.T27A
Total Suspended Solids (Dup)	2	3.7	mg/L	20140429.T27A

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Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 208980

Sample Name: SW2

Date:

Matrix: Surface Water

Lab #: 552480

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	0.0027	mg/L	20140430.T38A
TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	280	mg/L	20140429.R27A
TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.98	mg/L	20140430.R58A
TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0107	mg/L	20140429.R23.2B

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Whitewater Hydrogeology Ltd.

Work Order: 209762

Sample Data:

Sample Name: SW1

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554559

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	214	mg/L as CaCO3	20140507.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.066	mg/L	20140508.R42.1B

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	9.02	mg/L	20140508.R5B
Fluoride	0.1	<0.1	mg/L	20140508.R5B
Nitrate (as N)	0.1	0.61	mg/L	20140508.R5B
Nitrite (as N)	0.03	<0.03	mg/L	20140508.R5B
Sulphate	1	39.5	mg/L	20140508.R5B

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	212	mg/L as CaCO3	20140513.R94A
Carbonate	1	2.4	mg/L as CaCO3	20140513.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.79	mg/L	20140507.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	82	mg/L	20140508.R13na6
Magnesium	0.04	6.84	mg/L	20140508.R13na6
Total Hardness (as CaCO3)	0.1	233	mg/L	20140508.R13na6

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	6.8	ug/L	20140508.R13na3
Dissolved Aluminum (Dup)	1	6	ug/L	20140508.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Antimony (Dup)	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Arsenic	1	<1	ug/L	20140508.R13na3
Dissolved Arsenic (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Barium	1	28.8	ug/L	20140508.R13na3
Dissolved Barium (Dup)	1	29.1	ug/L	20140508.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Beryllium (Dup)	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Bismuth	1	<1	ug/L	20140508.R13na3
Dissolved Bismuth (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Boron	2	<2	ug/L	20140508.R13na3
Dissolved Boron (Dup)	2	<2	ug/L	20140508.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Cadmium (Dup)	0.1	<0.1	ug/L	20140508.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 209762

Sample Name: SW1

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554559

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Calcium	500	83900	ug/L	20140508.R13na3
Dissolved Calcium (Dup)	500	82600	ug/L	20140508.R13na3
Dissolved Cerium	1	<1	ug/L	20140508.R13na3
Dissolved Cerium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Cesium	1	<1	ug/L	20140508.R13na3
Dissolved Cesium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Chromium	1	<1	ug/L	20140508.R13na3
Dissolved Chromium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Cobalt	0.1	0.24	ug/L	20140508.R13na3
Dissolved Cobalt (Dup)	0.1	0.21	ug/L	20140508.R13na3
Dissolved Copper	1	<1	ug/L	20140508.R13na3
Dissolved Copper (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Europium	1	<1	ug/L	20140508.R13na3
Dissolved Europium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Gallium	1	<1	ug/L	20140508.R13na3
Dissolved Gallium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Iron	20	45	ug/L	20140508.R13na3
Dissolved Iron (Dup)	20	46	ug/L	20140508.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140508.R13na3
Dissolved Lanthanum (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Lead (Dup)	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Lithium	5	11.8	ug/L	20140508.R13na3
Dissolved Lithium (Dup)	5	10.8	ug/L	20140508.R13na3
Dissolved Magnesium	40	7750	ug/L	20140508.R13na3
Dissolved Magnesium (Dup)	40	7320	ug/L	20140508.R13na3
Dissolved Manganese	1	4	ug/L	20140508.R13na3
Dissolved Manganese (Dup)	1	3.6	ug/L	20140508.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Mercury (Dup)	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Molybdenum	1	<1	ug/L	20140508.R13na3
Dissolved Molybdenum (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Nickel	1	3.6	ug/L	20140508.R13na3
Dissolved Nickel (Dup)	1	4.8	ug/L	20140508.R13na3
Dissolved Niobium	1	<1	ug/L	20140508.R13na3
Dissolved Niobium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Potassium	1000	2740	ug/L	20140508.R13na3
Dissolved Potassium (Dup)	1000	2790	ug/L	20140508.R13na3
Dissolved Rubidium	1	1.6	ug/L	20140508.R13na3
Dissolved Rubidium (Dup)	1	1.5	ug/L	20140508.R13na3
Dissolved Scandium	1	<1	ug/L	20140508.R13na3
Dissolved Scandium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Selenium	1	<1	ug/L	20140508.R13na3
Dissolved Selenium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Silicon	600	<600	ug/L	20140508.R13na3
Dissolved Silicon (Dup)	600	<600	ug/L	20140508.R13na3

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Whitewater Hydrogeology Ltd.

Work Order: 209762

Sample Name: SW1

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554559

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Silver	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Silver (Dup)	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Sodium	100	14000	ug/L	20140508.R13na3
Dissolved Sodium (Dup)	100	14200	ug/L	20140508.R13na3
Dissolved Strontium	1	424	ug/L	20140508.R13na3
Dissolved Strontium (Dup)	1	417	ug/L	20140508.R13na3
Dissolved Sulfur	800	13400	ug/L	20140508.R13na3
Dissolved Sulfur (Dup)	800	13000	ug/L	20140508.R13na3
Dissolved Tellurium	1	<1	ug/L	20140508.R13na3
Dissolved Tellurium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Thallium	0.1	0.98	ug/L	20140508.R13na3
Dissolved Thallium (Dup)	0.1	0.35	ug/L	20140508.R13na3
Dissolved Thorium	1	<1	ug/L	20140508.R13na3
Dissolved Thorium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Tin	1	<1	ug/L	20140508.R13na3
Dissolved Tin (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Titanium	1	<1	ug/L	20140508.R13na3
Dissolved Titanium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Tungsten	1	<1	ug/L	20140508.R13na3
Dissolved Tungsten (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Uranium	1	1.4	ug/L	20140508.R13na3
Dissolved Uranium (Dup)	1	1.2	ug/L	20140508.R13na3
Dissolved Vanadium	1	<1	ug/L	20140508.R13na3
Dissolved Vanadium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Yttrium	1	<1	ug/L	20140508.R13na3
Dissolved Yttrium (Dup)	1	<1	ug/L	20140508.R13na3
Dissolved Zinc	1	1.9	ug/L	20140508.R13na3
Dissolved Zinc (Dup)	1	1.4	ug/L	20140508.R13na3
Dissolved Zirconium	1	<1	ug/L	20140508.R13na3
Dissolved Zirconium (Dup)	1	<1	ug/L	20140508.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140508.R13na8
Total Cadmium	0.1	<0.1	ug/L	20140508.R13na8
Total Calcium	50	98500	ug/L	20140508.R13na8
Total Copper	1	<1	ug/L	20140508.R13na8
Total Iron	20	139	ug/L	20140508.R13na8
Total Lead	1	<1	ug/L	20140508.R13na8
Total Magnesium	4	7770	ug/L	20140508.R13na8
Total Manganese	1	10.6	ug/L	20140508.R13na8
Total Nickel	1	3.8	ug/L	20140508.R13na8
Total Potassium	100	2900	ug/L	20140508.R13na8
Total Sodium	100	13300	ug/L	20140508.R13na8
Total Zinc	1	9.4	ug/L	20140508.R13na8

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Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 209762

Sample Name: SW1

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554559

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.52	meq	20140513.R91A
Cation Sum	N/A	5.52	meq	20140513.R91A
Ion Balance	N/A	9.96	%	20140513.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Animal	1	<1	mg/L	20140513.R54A
Oil and Grease, Mineral	1	<1	mg/L	20140513.R54A
Oil and Grease, Total	1	<1	mg/L	20140513.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	8.08	pH	20140507.R2B

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	507	µS/cm	20140507.T12A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140513.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	330	mg/L	20140508.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.44	mg/L	20140509.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0114	mg/L	20140509.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	<0.8	mg/L	20140508.R27C

Sample Name: SW2

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554560

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	250	mg/L as CaCO3	20140507.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.036	mg/L	20140508.R42.1B
Ammonia (as N) (Dup)	0.01	0.055	mg/L	20140508.R42.1B



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 209762

Sample Name: SW2

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554560

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	21.9	mg/L	20140508.R5B
Fluoride	0.1	<0.1	mg/L	20140508.R5B
Nitrate (as N)	0.1	<0.1	mg/L	20140508.R5B
Nitrite (as N)	0.03	<0.03	mg/L	20140508.R5B
Sulphate	1	17.2	mg/L	20140508.R5B

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	248	mg/L as CaCO3	20140513.R94A
Carbonate	1	1.5	mg/L as CaCO3	20140513.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.57	mg/L	20140507.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	93.1	mg/L	20140508.R13na6
Magnesium	0.04	6.91	mg/L	20140508.R13na6
Total Hardness (as CaCO3)	0.1	261	mg/L	20140508.R13na6

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	4	ug/L	20140508.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Arsenic	1	<1	ug/L	20140508.R13na3
Dissolved Barium	1	49.2	ug/L	20140508.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Bismuth	1	<1	ug/L	20140508.R13na3
Dissolved Boron	2	<2	ug/L	20140508.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Calcium	500	107000	ug/L	20140508.R13na3
Dissolved Cerium	1	<1	ug/L	20140508.R13na3
Dissolved Cesium	1	<1	ug/L	20140508.R13na3
Dissolved Chromium	1	<1	ug/L	20140508.R13na3
Dissolved Cobalt	0.1	0.26	ug/L	20140508.R13na3
Dissolved Copper	1	<1	ug/L	20140508.R13na3
Dissolved Europium	1	<1	ug/L	20140508.R13na3
Dissolved Gallium	1	<1	ug/L	20140508.R13na3
Dissolved Iron	20	42	ug/L	20140508.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140508.R13na3
Dissolved Lead	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Lithium	5	<5	ug/L	20140508.R13na3
Dissolved Magnesium	4	6910	ug/L	20140508.R13na3
Dissolved Manganese	1	1.2	ug/L	20140508.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Molybdenum	1	<1	ug/L	20140508.R13na3
Dissolved Nickel	1	2.6	ug/L	20140508.R13na3

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Work Order: 209762

Sample Name: SW2

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554560

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Niobium	1	<1	ug/L	20140508.R13na3
Dissolved Potassium	100	830	ug/L	20140508.R13na3
Dissolved Rubidium	1	<1	ug/L	20140508.R13na3
Dissolved Scandium	1	<1	ug/L	20140508.R13na3
Dissolved Selenium	1	<1	ug/L	20140508.R13na3
Dissolved Silicon	600	<600	ug/L	20140508.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Sodium	100	5530	ug/L	20140508.R13na3
Dissolved Strontium	1	162	ug/L	20140508.R13na3
Dissolved Sulfur	800	4120	ug/L	20140508.R13na3
Dissolved Tellurium	1	<1	ug/L	20140508.R13na3
Dissolved Thallium	0.1	0.3	ug/L	20140508.R13na3
Dissolved Thorium	1	<1	ug/L	20140508.R13na3
Dissolved Tin	1	<1	ug/L	20140508.R13na3
Dissolved Titanium	1	<1	ug/L	20140508.R13na3
Dissolved Tungsten	1	<1	ug/L	20140508.R13na3
Dissolved Uranium	1	<1	ug/L	20140508.R13na3
Dissolved Vanadium	1	<1	ug/L	20140508.R13na3
Dissolved Yttrium	1	<1	ug/L	20140508.R13na3
Dissolved Zinc	1	4.1	ug/L	20140508.R13na3
Dissolved Zirconium	1	<1	ug/L	20140508.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140508.R13na8
Total Cadmium	0.1	<0.1	ug/L	20140508.R13na8
Total Calcium	50	111000	ug/L	20140508.R13na8
Total Copper	1	1.1	ug/L	20140508.R13na8
Total Iron	20	69	ug/L	20140508.R13na8
Total Lead	1	<1	ug/L	20140508.R13na8
Total Magnesium	4	8000	ug/L	20140508.R13na8
Total Manganese	1	6	ug/L	20140508.R13na8
Total Nickel	1	3.2	ug/L	20140508.R13na8
Total Potassium	100	900	ug/L	20140508.R13na8
Total Sodium	100	6670	ug/L	20140508.R13na8
Total Zinc	1	3.1	ug/L	20140508.R13na8

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.97	meq	20140513.R91A
Cation Sum	N/A	6.18	meq	20140513.R91A
Ion Balance	N/A	10.85	%	20140513.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Animal	1	<1	mg/L	20140513.R54A
Oil and Grease, Mineral	1	<1	mg/L	20140513.R54A

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Work Order: 209762

Sample Name: SW2

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554560

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140513.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.8	pH	20140507.R2B

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	738	µS/cm	20140507.T12A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	0.003	mg/L	20140513.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	370	mg/L	20140508.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.35	mg/L	20140509.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0144	mg/L	20140509.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	0.8	mg/L	20140508.R27C

Sample Name: McCarthy Pond

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554561

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	146	mg/L as CaCO3	20140507.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.275	mg/L	20140508.R42.1B

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	20.6	mg/L	20140508.R5B
Fluoride	0.1	0.29	mg/L	20140508.R5B
Nitrate (as N)	0.1	1.13	mg/L	20140508.R5B
Nitrite (as N)	0.03	<0.03	mg/L	20140508.R5B
Sulphate	1	54.2	mg/L	20140508.R5B

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	145	mg/L as CaCO3	20140513.R94A

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Work Order: 209762

Sample Name: McCarthy Pond

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554561

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Carbonate	1	<1	mg/L as CaCO ₃	20140513.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	2.3	mg/L	20140507.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	49.8	mg/L	20140507.R13na6
Magnesium	0.04	11	mg/L	20140507.R13na6
Total Hardness (as CaCO ₃)	0.1	170	mg/L	20140507.R13na6

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	9.2	ug/L	20140508.R13na3
Dissolved Antimony	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Arsenic	1	<1	ug/L	20140508.R13na3
Dissolved Barium	1	23.2	ug/L	20140508.R13na3
Dissolved Beryllium	0.5	<0.5	ug/L	20140508.R13na3
Dissolved Bismuth	1	<1	ug/L	20140508.R13na3
Dissolved Boron	2	130	ug/L	20140508.R13na3
Dissolved Cadmium	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Calcium	50	54500	ug/L	20140508.R13na3
Dissolved Cerium	1	<1	ug/L	20140508.R13na3
Dissolved Cesium	1	<1	ug/L	20140508.R13na3
Dissolved Chromium	1	<1	ug/L	20140508.R13na3
Dissolved Cobalt	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Copper	1	<1	ug/L	20140508.R13na3
Dissolved Europium	1	<1	ug/L	20140508.R13na3
Dissolved Gallium	1	<1	ug/L	20140508.R13na3
Dissolved Iron	20	32	ug/L	20140508.R13na3
Dissolved Lanthanum	1	<1	ug/L	20140508.R13na3
Dissolved Lead	0.1	0.1	ug/L	20140508.R13na3
Dissolved Lithium	5	29.6	ug/L	20140508.R13na3
Dissolved Magnesium	40	11500	ug/L	20140508.R13na3
Dissolved Manganese	1	<1	ug/L	20140508.R13na3
Dissolved Mercury	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Molybdenum	1	1.8	ug/L	20140508.R13na3
Dissolved Nickel	1	3.9	ug/L	20140508.R13na3
Dissolved Niobium	1	<1	ug/L	20140508.R13na3
Dissolved Potassium	1000	5270	ug/L	20140508.R13na3
Dissolved Rubidium	1	2.9	ug/L	20140508.R13na3
Dissolved Scandium	1	<1	ug/L	20140508.R13na3
Dissolved Selenium	1	<1	ug/L	20140508.R13na3
Dissolved Silicon	600	<600	ug/L	20140508.R13na3
Dissolved Silver	0.1	<0.1	ug/L	20140508.R13na3
Dissolved Sodium	100	35100	ug/L	20140508.R13na3

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Work Order: 209762

Sample Name: McCarthy Pond

Date: 5/2/2014

Matrix: Surface Water

Lab #: 554561

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Strontium	1	955	ug/L	20140508.R13na3
Dissolved Sulfur	800	13600	ug/L	20140508.R13na3
Dissolved Tellurium	1	<1	ug/L	20140508.R13na3
Dissolved Thallium	0.1	0.44	ug/L	20140508.R13na3
Dissolved Thorium	1	<1	ug/L	20140508.R13na3
Dissolved Tin	1	<1	ug/L	20140508.R13na3
Dissolved Titanium	1	<1	ug/L	20140508.R13na3
Dissolved Tungsten	1	<1	ug/L	20140508.R13na3
Dissolved Uranium	1	<1	ug/L	20140508.R13na3
Dissolved Vanadium	1	<1	ug/L	20140508.R13na3
Dissolved Yttrium	1	<1	ug/L	20140508.R13na3
Dissolved Zinc	1	3.1	ug/L	20140508.R13na3
Dissolved Zirconium	1	<1	ug/L	20140508.R13na3

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140508.R13na8
Total Cadmium	0.1	<0.1	ug/L	20140508.R13na8
Total Calcium	50	60900	ug/L	20140508.R13na8
Total Copper	1	1.4	ug/L	20140508.R13na8
Total Iron	20	296	ug/L	20140508.R13na8
Total Lead	1	<1	ug/L	20140508.R13na8
Total Magnesium	4	11800	ug/L	20140508.R13na8
Total Manganese	1	17.6	ug/L	20140508.R13na8
Total Nickel	1	3.4	ug/L	20140508.R13na8
Total Potassium	100	5400	ug/L	20140508.R13na8
Total Sodium	100	33100	ug/L	20140508.R13na8
Total Zinc	1	4.8	ug/L	20140508.R13na8

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.07	meq	20140513.R91A
Cation Sum	N/A	5.35	meq	20140513.R91A
Ion Balance	N/A	13.59	%	20140513.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Animal	1	<1	mg/L	20140513.R54A
Oil and Grease, Mineral	1	<1	mg/L	20140513.R54A
Oil and Grease, Total	1	<1	mg/L	20140513.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.65	pH	20140507.R2B

Single Conc DM				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140508.R63C

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Work Order: 209762

Sample Name: McCarthy Pond **Date: 5/2/2014** **Matrix: Surface Water** **Lab #: 554561**

Single Conc RBT				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140507.R62C

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	492	µS/cm	20140508.T12A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	0.0017	mg/L	20140513.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	280	mg/L	20140508.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.63	mg/L	20140509.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0562	mg/L	20140509.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	40	mg/L	20140508.R27C

Sample Name: DM Control **Date:** **Matrix: Water** **Lab #: 555092**

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	43.9	mg/L	20140507.R13na6
Magnesium	0.04	9.56	mg/L	20140507.R13na6
Total Hardness (as CaCO3)	0.1	149	mg/L	20140507.R13na6

Sample Name: McCarthy Pond Daphnia Dup **Date: 5/2/2014** **Matrix: Water** **Lab #: 555093**

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	49.3	mg/L	20140507.R13na6
Magnesium	0.04	11.1	mg/L	20140507.R13na6
Total Hardness (as CaCO3)	0.1	169	mg/L	20140507.R13na6

Single Conc DM				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140508.R63B

Sample Name: DM Control Dup **Date: 5/7/2014** **Matrix: Water** **Lab #: 555094**

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	43	mg/L	20140507.R13na6



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Work Order: 210499

Sample Data:

Sample Name: SW1

Date: 5/12/2014

Matrix: Water

Lab #: 556322

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	204	mg/L as CaCO ₃	20140514.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.038	mg/L	20140515.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140514.R5A
Chloride	0.2	11.8	mg/L	20140514.R5A
Fluoride	0.1	<0.1	mg/L	20140514.R5A
Nitrate (as N)	0.1	0.41	mg/L	20140514.R5A
Nitrite (as N)	0.03	<0.03	mg/L	20140514.R5A
Sulphate	1	51.7	mg/L	20140514.R5A

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	202	mg/L as CaCO ₃	20140521.R94A
Carbonate	1	2.2	mg/L as CaCO ₃	20140521.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.8	mg/L	20140516.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	82.8	mg/L	20140520.R13na9
Magnesium	0.04	8.27	mg/L	20140520.R13na9
Total Hardness (as CaCO ₃)	0.1	241	mg/L	20140520.R13na9

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	10	ug/L	20140520.R13na4
Dissolved Antimony	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Arsenic	1	<1	ug/L	20140520.R13na4
Dissolved Barium	1	35.3	ug/L	20140520.R13na4
Dissolved Beryllium	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Bismuth	1	<1	ug/L	20140520.R13na4
Dissolved Boron	2	132	ug/L	20140520.R13na4
Dissolved Cadmium	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Calcium	50	81700	ug/L	20140520.R13na4
Dissolved Cerium	1	<1	ug/L	20140520.R13na4
Dissolved Cesium	1	<1	ug/L	20140520.R13na4
Dissolved Chromium	1	<1	ug/L	20140520.R13na4
Dissolved Cobalt	0.1	0.31	ug/L	20140520.R13na4
Dissolved Copper	1	1.1	ug/L	20140520.R13na4
Dissolved Europium	1	<1	ug/L	20140520.R13na4

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Work Order: 210499

Sample Name: SW1

Date: 5/12/2014

Matrix: Water

Lab #: 556322

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Gallium	1	<1	ug/L	20140520.R13na4
Dissolved Iron	20	58	ug/L	20140520.R13na4
Dissolved Lanthanum	1	<1	ug/L	20140520.R13na4
Dissolved Lead	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Lithium	5	15.2	ug/L	20140520.R13na4
Dissolved Magnesium	40	8940	ug/L	20140520.R13na4
Dissolved Manganese	1	4.1	ug/L	20140520.R13na4
Dissolved Mercury	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Molybdenum	1	1.2	ug/L	20140520.R13na4
Dissolved Nickel	1	4	ug/L	20140520.R13na4
Dissolved Niobium	1	<1	ug/L	20140520.R13na4
Dissolved Potassium	100	3510	ug/L	20140520.R13na4
Dissolved Rubidium	1	2	ug/L	20140520.R13na4
Dissolved Scandium	1	<1	ug/L	20140520.R13na4
Dissolved Selenium	1	<1	ug/L	20140520.R13na4
Dissolved Silicon	600	<600	ug/L	20140520.R13na4
Dissolved Silver	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Sodium	100	18100	ug/L	20140520.R13na4
Dissolved Strontium	1	618	ug/L	20140520.R13na4
Dissolved Sulfur	8000	17300	ug/L	20140520.R13na4
Dissolved Tellurium	1	<1	ug/L	20140520.R13na4
Dissolved Thallium	0.1	0.91	ug/L	20140520.R13na4
Dissolved Thorium	1	<1	ug/L	20140520.R13na4
Dissolved Tin	1	<1	ug/L	20140520.R13na4
Dissolved Titanium	1	<1	ug/L	20140520.R13na4
Dissolved Tungsten	1	<1	ug/L	20140520.R13na4
Dissolved Uranium	1	1.3	ug/L	20140520.R13na4
Dissolved Vanadium	1	<1	ug/L	20140520.R13na4
Dissolved Yttrium	1	<1	ug/L	20140520.R13na4
Dissolved Zinc	1	<1	ug/L	20140520.R13na4
Dissolved Zirconium	1	<1	ug/L	20140520.R13na4

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140520.R13na10
Total Cadmium	0.1	<0.1	ug/L	20140520.R13na10
Total Calcium	50	81900	ug/L	20140520.R13na10
Total Copper	1	1.1	ug/L	20140520.R13na10
Total Iron	20	117	ug/L	20140520.R13na10
Total Lead	1	<1	ug/L	20140520.R13na10
Total Magnesium	4	9900	ug/L	20140520.R13na10
Total Manganese	1	13.7	ug/L	20140520.R13na10
Total Nickel	1	5.1	ug/L	20140520.R13na10
Total Potassium	100	3480	ug/L	20140520.R13na10
Total Sodium	100	18400	ug/L	20140520.R13na10
Total Zinc	1	<1	ug/L	20140520.R13na10

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Work Order: 210499

Sample Name: SW1

Date: 5/12/2014

Matrix: Water

Lab #: 556322

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.69	meq	20140521.R91A
Cation Sum	N/A	5.71	meq	20140521.R91A
Ion Balance	N/A	9.81	%	20140521.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140520.R54A
Oil and Grease, Total	1	<1	mg/L	20140520.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	8.07	pH	20140514.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	318	µS/cm	20140521.T12B
Conductivity (Dup)	1	320	µS/cm	20140521.T12B

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140515.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	340	mg/L	20140515.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.58	mg/L	20140516.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0063	mg/L	20140515.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	1.2	mg/L	20140515.R27B

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556322

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	143	mg/L as CaCO3	20140514.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.184	mg/L	20140515.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140514.R5A

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Work Order: 210499

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556323

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	24.7	mg/L	20140514.R5A
Fluoride	0.1	0.28	mg/L	20140514.R5A
Nitrate (as N)	0.1	1.06	mg/L	20140514.R5A
Nitrite (as N)	0.03	<0.03	mg/L	20140514.R5A
Sulphate	1	59.7	mg/L	20140514.R5A

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	142	mg/L as CaCO ₃	20140521.R94A
Carbonate	1	<1	mg/L as CaCO ₃	20140521.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	3.9	mg/L	20140515.R55.1C

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	41	mg/L	20140520.R13na9
Magnesium	0.04	11.7	mg/L	20140520.R13na9
Total Hardness (as CaCO ₃)	0.1	151	mg/L	20140520.R13na9

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	8	ug/L	20140520.R13na4
Dissolved Antimony	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Arsenic	1	<1	ug/L	20140520.R13na4
Dissolved Barium	1	26.2	ug/L	20140520.R13na4
Dissolved Beryllium	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Bismuth	1	<1	ug/L	20140520.R13na4
Dissolved Boron	2	276	ug/L	20140520.R13na4
Dissolved Cadmium	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Calcium	500	40100	ug/L	20140520.R13na4
Dissolved Cerium	1	<1	ug/L	20140520.R13na4
Dissolved Cesium	1	<1	ug/L	20140520.R13na4
Dissolved Chromium	1	<1	ug/L	20140520.R13na4
Dissolved Cobalt	0.1	0.19	ug/L	20140520.R13na4
Dissolved Copper	1	1.2	ug/L	20140520.R13na4
Dissolved Europium	1	<1	ug/L	20140520.R13na4
Dissolved Gallium	1	<1	ug/L	20140520.R13na4
Dissolved Iron	20	40	ug/L	20140520.R13na4
Dissolved Lanthanum	1	<1	ug/L	20140520.R13na4
Dissolved Lead	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Lithium	5	29.4	ug/L	20140520.R13na4
Dissolved Magnesium	40	12000	ug/L	20140520.R13na4
Dissolved Manganese	1	<1	ug/L	20140520.R13na4
Dissolved Mercury	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Molybdenum	1	2	ug/L	20140520.R13na4
Dissolved Nickel	1	2.8	ug/L	20140520.R13na4

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Work Order: 210499

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556323

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Niobium	1	<1	ug/L	20140520.R13na4
Dissolved Potassium	100	6050	ug/L	20140520.R13na4
Dissolved Rubidium	1	3.1	ug/L	20140520.R13na4
Dissolved Scandium	1	<1	ug/L	20140520.R13na4
Dissolved Selenium	1	1.2	ug/L	20140520.R13na4
Dissolved Silicon	600	<600	ug/L	20140520.R13na4
Dissolved Silver	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Sodium	100	35700	ug/L	20140520.R13na4
Dissolved Strontium	1	1020	ug/L	20140520.R13na4
Dissolved Sulfur	800	21100	ug/L	20140520.R13na4
Dissolved Tellurium	1	<1	ug/L	20140520.R13na4
Dissolved Thallium	0.1	0.46	ug/L	20140520.R13na4
Dissolved Thorium	1	<1	ug/L	20140520.R13na4
Dissolved Tin	1	<1	ug/L	20140520.R13na4
Dissolved Titanium	1	<1	ug/L	20140520.R13na4
Dissolved Tungsten	1	<1	ug/L	20140520.R13na4
Dissolved Uranium	1	<1	ug/L	20140520.R13na4
Dissolved Vanadium	1	<1	ug/L	20140520.R13na4
Dissolved Yttrium	1	<1	ug/L	20140520.R13na4
Dissolved Zinc	1	<1	ug/L	20140520.R13na4
Dissolved Zirconium	1	<1	ug/L	20140520.R13na4

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140520.R13na10
Total Cadmium	0.1	<0.1	ug/L	20140520.R13na10
Total Calcium	50	46900	ug/L	20140520.R13na10
Total Copper	1	1.4	ug/L	20140520.R13na10
Total Iron	20	108	ug/L	20140520.R13na10
Total Lead	1	<1	ug/L	20140520.R13na10
Total Magnesium	4	12900	ug/L	20140520.R13na10
Total Manganese	1	9	ug/L	20140520.R13na10
Total Nickel	1	3.4	ug/L	20140520.R13na10
Total Potassium	100	6180	ug/L	20140520.R13na10
Total Sodium	100	36400	ug/L	20140520.R13na10
Total Zinc	1	<1	ug/L	20140520.R13na10

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.25	meq	20140521.R91A
Cation Sum	N/A	4.72	meq	20140521.R91A
Ion Balance	N/A	5.24	%	20140521.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140520.R54A
Oil and Grease, Total	1	<1	mg/L	20140520.R54A

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Work Order: 210499

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556323

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.56	pH	20140514.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	190	µS/cm	20140521.T12B

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140515.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	340	mg/L	20140515.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	1.1	mg/L	20140516.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0091	mg/L	20140515.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	10.8	mg/L	20140515.R27B



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MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Quality Control Data:

Alka

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	N/A	%	0	0.9	20	20140514.R1A

Lab Control Sample 155

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	N/A	%	85	95	115	20140514.R1A

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	1	mg/L	<1	<1	5	20140514.R1A

Ammonia Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	N/A	%	0	1.8	20	20140515.R42.1A

Lab Control Sample 250

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	0.2	0.253	0.3	20140515.R42.1A

Lab Control Sample 500

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	0.4	0.504	0.6	20140515.R42.1A

Matrix Spike

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	N/A	% Rec	75	107	125	20140515.R42.1A

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	<0.01	0.016	0.03	20140515.R42.1A

Anions Water

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	%	0	N/A	20	20140514.R5A
Chloride	N/A	%	0	0.5	20	20140514.R5A
Fluoride	N/A	%	0	N/A	20	20140514.R5A
Nitrate (as N)	N/A	%	0	2.7	20	20140514.R5A
Nitrite (as N)	N/A	%	0	N/A	20	20140514.R5A
Sulphate	N/A	%	0	7.8	20	20140514.R5A

Lab Control Sample 1

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	80	102	115	20140514.R5A
Chloride	N/A	% Rec	80	84	115	20140514.R5A

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Anions Water

Lab Control Sample 1						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Fluoride	N/A	% Rec	80	102	115	20140514.R5A
Nitrate (as N)	N/A	% Rec	75	93	115	20140514.R5A
Nitrite (as N)	N/A	% Rec	80	92	115	20140514.R5A
Sulphate	N/A	% Rec	80	85	115	20140514.R5A

Lab Control Sample 2						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	85	98	115	20140514.R5A
Chloride	N/A	% Rec	85	91	115	20140514.R5A
Fluoride	N/A	% Rec	85	111	115	20140514.R5A
Nitrate (as N)	N/A	% Rec	85	99	115	20140514.R5A
Nitrite (as N)	N/A	% Rec	85	96	115	20140514.R5A
Sulphate	N/A	% Rec	78	90	115	20140514.R5A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	70	96	130	20140514.R5A
Chloride	N/A	% Rec	70	88.3	130	20140514.R5A
Fluoride	N/A	% Rec	70	100	130	20140514.R5A
Nitrate (as N)	N/A	% Rec	70	94	130	20140514.R5A
Nitrite (as N)	N/A	% Rec	70	93.5	130	20140514.R5A
Sulphate	N/A	% Rec	70	97.4	130	20140514.R5A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	0.1	mg/L	<0.1	<0.1	0.2	20140514.R5A
Chloride	0.2	mg/L	<0.2	<0.2	0.3	20140514.R5A
Fluoride	0.1	mg/L	<0.1	<0.1	0.2	20140514.R5A
Nitrate (as N)	0.1	mg/L	<0.1	<0.1	0.2	20140514.R5A
Nitrite (as N)	0.03	mg/L	<0.03	<0.03	0.04	20140514.R5A
Sulphate	1	mg/L	<1	<1	1.1	20140514.R5A

DOC Water

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	%	0	2.3	20	20140515.R55.1C
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	%	0	N/A	20	20140516.R55.1A

Lab Control Sample 20						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	17	21.2	23	20140516.R55.1A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	% Rec	75	83.9	125	20140515.R55.1C

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DOC Water

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	% Rec	75	97.3	125	20140516.R55.1A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	<0.4	<0.4	0.4	20140515.R55.1C
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	<0.4	<0.4	0.4	20140516.R55.1A

ICPMS Dis. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	N/A	%	0	9.9	20	20140520.R13na4
Dissolved Antimony	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Arsenic	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Barium	N/A	%	0	1.7	20	20140520.R13na4
Dissolved Beryllium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Bismuth	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Boron	N/A	%	0	5.1	20	20140520.R13na4
Dissolved Cadmium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Calcium	N/A	%	0	1.1	20	20140520.R13na4
Dissolved Cerium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Cesium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Chromium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Cobalt	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Copper	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Europium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Gallium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Iron	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Lanthanum	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Lead	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Lithium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Magnesium	N/A	%	0	2.4	20	20140520.R13na4
Dissolved Manganese	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Mercury	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Molybdenum	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Nickel	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Niobium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Potassium	N/A	%	0	2.2	20	20140520.R13na4
Dissolved Rubidium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Scandium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Selenium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Silicon	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Silver	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Sodium	N/A	%	0	3.8	20	20140520.R13na4
Dissolved Strontium	N/A	%	0	4	20	20140520.R13na4
Dissolved Sulfur	N/A	%	0	N/A	20	20140520.R13na4

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ICPMS Dis. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Tellurium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Thallium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Thorium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Tin	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Titanium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Uranium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Vanadium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Yttrium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Zinc	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Zirconium	N/A	%	0	N/A	20	20140520.R13na4

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	1	ug/L	47.8	66.4	77.8	20140520.R13na4
Dissolved Antimony	0.5	ug/L	12.8	22.2	24	20140520.R13na4
Dissolved Arsenic	1	ug/L	73.2	88.6	93.8	20140520.R13na4
Dissolved Barium	1	ug/L	103	125	145	20140520.R13na4
Dissolved Beryllium	0.5	ug/L	10.8	13.2	13.7	20140520.R13na4
Dissolved Cadmium	0.1	ug/L	18.6	22.3	27	20140520.R13na4
Dissolved Calcium	50	ug/L	1720	2110	2450	20140520.R13na4
Dissolved Chromium	1	ug/L	48.7	62.1	76.6	20140520.R13na4
Dissolved Cobalt	0.1	ug/L	76.2	84.1	88.8	20140520.R13na4
Dissolved Copper	1	ug/L	87.1	108	125	20140520.R13na4
Dissolved Iron	20	ug/L	50.4	67	70	20140520.R13na4
Dissolved Lead	1	ug/L	36.1	41.3	47.5	20140520.R13na4
Dissolved Magnesium	4	ug/L	753	908	1124	20140520.R13na4
Dissolved Manganese	1	ug/L	107	126	138	20140520.R13na4
Dissolved Molybdenum	1	ug/L	32.7	38.8	46.7	20140520.R13na4
Dissolved Nickel	1	ug/L	73.1	86.4	93.8	20140520.R13na4
Dissolved Selenium	1	ug/L	13.7	27	42.2	20140520.R13na4
Dissolved Strontium	1	ug/L	102	131	177	20140520.R13na4
Dissolved Thallium	0.1	ug/L	72.3	82.4	95.1	20140520.R13na4
Dissolved Uranium	1	ug/L	89.7	101	119	20140520.R13na4
Dissolved Vanadium	1	ug/L	43.4	49.9	55.7	20140520.R13na4
Dissolved Zinc	1	ug/L	12.5	28.4	48.4	20140520.R13na4

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	N/A	%	80	107	120	20140520.R13na4
Dissolved Arsenic	N/A	%	80	103	120	20140520.R13na4
Dissolved Barium	N/A	%	80	99	120	20140520.R13na4
Dissolved Beryllium	N/A	%	80	105	120	20140520.R13na4
Dissolved Boron	N/A	%	80	109	120	20140520.R13na4
Dissolved Cadmium	N/A	%	80	94	120	20140520.R13na4
Dissolved Calcium	N/A	%	80	88	120	20140520.R13na4
Dissolved Chromium	N/A	%	90	101	120	20140520.R13na4
Dissolved Cobalt	N/A	%	80	98	120	20140520.R13na4

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Work Order: 210499

ICPMS Dis. Water

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Copper	N/A	%	80	98	120	20140520.R13na4
Dissolved Iron	N/A	%	80	92	120	20140520.R13na4
Dissolved Lead	N/A	%	80	95	120	20140520.R13na4
Dissolved Magnesium	N/A	%	80	96	120	20140520.R13na4
Dissolved Manganese	N/A	%	80	102	120	20140520.R13na4
Dissolved Molybdenum	N/A	%	80	100	120	20140520.R13na4
Dissolved Nickel	N/A	%	80	99	120	20140520.R13na4
Dissolved Selenium	N/A	%	80	100	120	20140520.R13na4
Dissolved Sodium	N/A	%	80	91	120	20140520.R13na4
Dissolved Thallium	N/A	%	80	97	120	20140520.R13na4
Dissolved Vanadium	N/A	%	80	103	120	20140520.R13na4
Dissolved Zinc	N/A	%	80	100	120	20140520.R13na4

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	N/A	% Rec	70	100	130	20140520.R13na4
Dissolved Antimony	N/A	% Rec	70	119	130	20140520.R13na4
Dissolved Arsenic	N/A	% Rec	70	108	130	20140520.R13na4
Dissolved Barium	N/A	% Rec	70	97.4	130	20140520.R13na4
Dissolved Beryllium	N/A	% Rec	70	98.2	130	20140520.R13na4
Dissolved Cadmium	N/A	% Rec	70	96.6	130	20140520.R13na4
Dissolved Chromium	N/A	% Rec	70	101	130	20140520.R13na4
Dissolved Cobalt	N/A	% Rec	70	101	130	20140520.R13na4
Dissolved Copper	N/A	% Rec	70	98.2	130	20140520.R13na4
Dissolved Iron	N/A	% Rec	70	93.1	130	20140520.R13na4
Dissolved Lead	N/A	% Rec	70	95.9	130	20140520.R13na4
Dissolved Manganese	N/A	% Rec	70	100	130	20140520.R13na4
Dissolved Molybdenum	N/A	% Rec	70	105	130	20140520.R13na4
Dissolved Nickel	N/A	% Rec	70	103	130	20140520.R13na4
Dissolved Selenium	N/A	% Rec	70	108	130	20140520.R13na4
Dissolved Thallium	N/A	% Rec	70	94.3	130	20140520.R13na4
Dissolved Vanadium	N/A	% Rec	70	103	130	20140520.R13na4
Dissolved Zinc	N/A	% Rec	70	97.2	130	20140520.R13na4

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Antimony	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Arsenic	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Barium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Beryllium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Bismuth	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Boron	2	ug/L	<2	<2	2	20140520.R13na4
Dissolved Cadmium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Calcium	50	ug/L	<50	<50	50	20140520.R13na4
Dissolved Cerium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Cesium	1	ug/L	<1	<1	1	20140520.R13na4

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ICPMS Dis. Water

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Chromium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Cobalt	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Copper	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Europium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Gallium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Iron	20	ug/L	<20	<20	20	20140520.R13na4
Dissolved Lanthanum	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Lead	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Lithium	5	ug/L	<5	<5	5	20140520.R13na4
Dissolved Magnesium	4	ug/L	<4	<4	4	20140520.R13na4
Dissolved Manganese	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Mercury	0.1	ug/L	<0.1	<0.1	0.1	20140520.R13na4
Dissolved Molybdenum	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Nickel	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Niobium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Rubidium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Scandium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Selenium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Silver	5	ug/L	<5	<5	5	20140520.R13na4
Dissolved Strontium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Thallium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Thorium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Tin	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Titanium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Tungsten	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Uranium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Vanadium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Yttrium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Zinc	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Zirconium	1	ug/L	<1	<1	1	20140520.R13na4

ICPMS Tot. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	N/A	%	0	N/A	20	20140520.R13na10
Total Cadmium	N/A	%	0	N/A	20	20140520.R13na10
Total Calcium	N/A	%	0	0.3	20	20140520.R13na10
Total Copper	N/A	%	0	N/A	20	20140520.R13na10
Total Iron	N/A	%	0	2.1	20	20140520.R13na10
Total Lead	N/A	%	0	N/A	20	20140520.R13na10
Total Magnesium	N/A	%	0	0.8	20	20140520.R13na10
Total Manganese	N/A	%	0	1.7	20	20140520.R13na10
Total Nickel	N/A	%	0	N/A	20	20140520.R13na10
Total Zinc	N/A	%	0	N/A	20	20140520.R13na10



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ICPMS Tot. Water

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	1	ug/L	73.2	75.8	93.8	20140520.R13na10
Total Cadmium	0.1	ug/L	18.6	21.5	27	20140520.R13na10
Total Calcium	50	ug/L	1720	2160	2450	20140520.R13na10
Total Copper	1	ug/L	87.1	105	125	20140520.R13na10
Total Iron	20	ug/L	50.4	70	70	20140520.R13na10
Total Lead	1	ug/L	36.1	42.4	49	20140520.R13na10
Total Magnesium	4	ug/L	753	911	1124	20140520.R13na10
Total Manganese	1	ug/L	107	130	138	20140520.R13na10
Total Nickel	1	ug/L	73.1	84.6	93.8	20140520.R13na10
Total Zinc	1	ug/L	12.5	21.2	48.4	20140520.R13na10

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	N/A	%	80	86	120	20140520.R13na10
Total Cadmium	N/A	%	80	96	120	20140520.R13na10
Total Calcium	N/A	%	80	94	120	20140520.R13na10
Total Copper	N/A	%	80	100	120	20140520.R13na10
Total Iron	N/A	%	80	92	120	20140520.R13na10
Total Lead	N/A	%	80	99	120	20140520.R13na10
Total Magnesium	N/A	%	80	100	120	20140520.R13na10
Total Manganese	N/A	%	80	106	120	20140520.R13na10
Total Nickel	N/A	%	80	103	120	20140520.R13na10
Total Sodium	N/A	%	80	100	120	20140520.R13na10
Total Zinc	N/A	%	80	81	120	20140520.R13na10

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	N/A	% Rec	70	98.7	130	20140520.R13na10
Total Cadmium	N/A	% Rec	70	97	130	20140520.R13na10
Total Copper	N/A	% Rec	70	109.8	130	20140520.R13na10
Total Iron	N/A	% Rec	70	116	130	20140520.R13na10
Total Lead	N/A	% Rec	70	102	130	20140520.R13na10
Total Manganese	N/A	% Rec	70	109	130	20140520.R13na10
Total Nickel	N/A	% Rec	70	110	130	20140520.R13na10
Total Zinc	N/A	% Rec	70	90.2	130	20140520.R13na10

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	1	ug/L	<1	<1	1	20140520.R13na10
Total Cadmium	1	ug/L	<1	<1	1	20140520.R13na10
Total Copper	1	ug/L	<1	<1	1	20140520.R13na10
Total Iron	20	ug/L	<20	<20	60	20140520.R13na10
Total Lead	1	ug/L	<1	<1	1	20140520.R13na10
Total Magnesium	4	ug/L	<4	<4	12	20140520.R13na10
Total Manganese	1	ug/L	<1	<1	1	20140520.R13na10
Total Nickel	1	ug/L	<1	<1	1	20140520.R13na10
Total Sodium	100	ug/L	<100	<100	300	20140520.R13na10

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Work Order: 210499

ICPMS Tot. Water

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Zinc	1	ug/L	<1	<1	1	20140520.R13na10

ICPMS Water

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Calcium	50	ug/L	1720	1950	2450	20140520.R13na9
Magnesium	4	ug/L	753	800	1124	20140520.R13na9

Lab Control Sample

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Calcium	N/A	%	80	89	120	20140520.R13na9
Magnesium	N/A	%	80	93	120	20140520.R13na9

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Calcium	50	ug/L	<50	<50	150	20140520.R13na9
Magnesium	4	ug/L	<4	<4	4	20140520.R13na9

Oil and Grease

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	<1	<1	3	20140520.R54A

Control(20)

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	16	17.1	24	20140520.R54A

pHWater

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	0	0.01	0.3	20140514.R2A

Lab Control Sample 8

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	7.8	7.89	8.2	20140514.R2A

T12-CONDWATER

Control QC-C						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Conductivity	1	µS/cm	117.84	146	176.76	20140521.T12B

ERA S200-698

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Conductivity	1	µS/cm	610	652	746	20140521.T12B



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Work Order: 210499

T38-Phenols 4AAP

25 ppb Control						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.02	0.0232	0.03	20140515.T38A

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	<0.001	<0.001	0.003	20140515.T38A

ERA P166-502						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.445	0.531	0.725	20140515.T38A

TDS

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	N/A	%	0	0.9	20	20140515.R27A

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	30	mg/L	180	210	220	20140515.R27A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	30	mg/L	<30	<30	50	20140515.R27A

TKN Water Dig.

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	N/A	%	0	2.3	20	20140516.R58A

Lab Control 10						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	8	9.1	12	20140516.R58A

Lab Control 25						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	20	23.1	30	20140516.R58A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	N/A	% Rec	80	93.5	120	20140516.R58A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	<1	<1	1	20140516.R58A

TP Water



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Work Order: 210499

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	N/A	%	0	5.5	20	20140515.R23.2A

Lab Control Sample .05						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	0.04	0.0486	0.06	20140515.R23.2A

Lab Control Sample .2						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	0.18	0.199	0.22	20140515.R23.2A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	N/A	% Rec	75	101	125	20140515.R23.2A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	<0.001	<0.001	0.005	20140515.R23.2A

TSS - 500

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	N/A	%	0	N/A	20	20140515.R27B

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	6	mg/L	1850	1930	2150	20140515.R27B

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	6	mg/L	<6	<6	10	20140515.R27B

UCL Upper Control Limit

LCL Lower Control Limit



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Work Order: 210499

Sample Data:

Sample Name: SW1

Date: 5/12/2014

Matrix: Water

Lab #: 556322

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	204	mg/L as CaCO ₃	20140514.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.038	mg/L	20140515.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140514.R5A
Chloride	0.2	11.8	mg/L	20140514.R5A
Fluoride	0.1	<0.1	mg/L	20140514.R5A
Nitrate (as N)	0.1	0.41	mg/L	20140514.R5A
Nitrite (as N)	0.03	<0.03	mg/L	20140514.R5A
Sulphate	1	51.7	mg/L	20140514.R5A

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	202	mg/L as CaCO ₃	20140521.R94A
Carbonate	1	2.2	mg/L as CaCO ₃	20140521.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.8	mg/L	20140516.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	82.8	mg/L	20140520.R13na9
Magnesium	0.04	8.27	mg/L	20140520.R13na9
Total Hardness (as CaCO ₃)	0.1	241	mg/L	20140520.R13na9

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	10	ug/L	20140520.R13na4
Dissolved Antimony	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Arsenic	1	<1	ug/L	20140520.R13na4
Dissolved Barium	1	35.3	ug/L	20140520.R13na4
Dissolved Beryllium	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Bismuth	1	<1	ug/L	20140520.R13na4
Dissolved Boron	2	132	ug/L	20140520.R13na4
Dissolved Cadmium	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Calcium	50	81700	ug/L	20140520.R13na4
Dissolved Cerium	1	<1	ug/L	20140520.R13na4
Dissolved Cesium	1	<1	ug/L	20140520.R13na4
Dissolved Chromium	1	<1	ug/L	20140520.R13na4
Dissolved Cobalt	0.1	0.31	ug/L	20140520.R13na4
Dissolved Copper	1	1.1	ug/L	20140520.R13na4
Dissolved Europium	1	<1	ug/L	20140520.R13na4

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Work Order: 210499

Sample Name: SW1

Date: 5/12/2014

Matrix: Water

Lab #: 556322

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Gallium	1	<1	ug/L	20140520.R13na4
Dissolved Iron	20	58	ug/L	20140520.R13na4
Dissolved Lanthanum	1	<1	ug/L	20140520.R13na4
Dissolved Lead	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Lithium	5	15.2	ug/L	20140520.R13na4
Dissolved Magnesium	40	8940	ug/L	20140520.R13na4
Dissolved Manganese	1	4.1	ug/L	20140520.R13na4
Dissolved Mercury	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Molybdenum	1	1.2	ug/L	20140520.R13na4
Dissolved Nickel	1	4	ug/L	20140520.R13na4
Dissolved Niobium	1	<1	ug/L	20140520.R13na4
Dissolved Potassium	100	3510	ug/L	20140520.R13na4
Dissolved Rubidium	1	2	ug/L	20140520.R13na4
Dissolved Scandium	1	<1	ug/L	20140520.R13na4
Dissolved Selenium	1	<1	ug/L	20140520.R13na4
Dissolved Silicon	600	<600	ug/L	20140520.R13na4
Dissolved Silver	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Sodium	100	18100	ug/L	20140520.R13na4
Dissolved Strontium	1	618	ug/L	20140520.R13na4
Dissolved Sulfur	8000	17300	ug/L	20140520.R13na4
Dissolved Tellurium	1	<1	ug/L	20140520.R13na4
Dissolved Thallium	0.1	0.91	ug/L	20140520.R13na4
Dissolved Thorium	1	<1	ug/L	20140520.R13na4
Dissolved Tin	1	<1	ug/L	20140520.R13na4
Dissolved Titanium	1	<1	ug/L	20140520.R13na4
Dissolved Tungsten	1	<1	ug/L	20140520.R13na4
Dissolved Uranium	1	1.3	ug/L	20140520.R13na4
Dissolved Vanadium	1	<1	ug/L	20140520.R13na4
Dissolved Yttrium	1	<1	ug/L	20140520.R13na4
Dissolved Zinc	1	<1	ug/L	20140520.R13na4
Dissolved Zirconium	1	<1	ug/L	20140520.R13na4

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140520.R13na10
Total Cadmium	0.1	<0.1	ug/L	20140520.R13na10
Total Calcium	50	81900	ug/L	20140520.R13na10
Total Copper	1	1.1	ug/L	20140520.R13na10
Total Iron	20	117	ug/L	20140520.R13na10
Total Lead	1	<1	ug/L	20140520.R13na10
Total Magnesium	4	9900	ug/L	20140520.R13na10
Total Manganese	1	13.7	ug/L	20140520.R13na10
Total Nickel	1	5.1	ug/L	20140520.R13na10
Total Potassium	100	3480	ug/L	20140520.R13na10
Total Sodium	100	18400	ug/L	20140520.R13na10
Total Zinc	1	<1	ug/L	20140520.R13na10

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Whitewater Hydrogeology Ltd.

Work Order: 210499

Sample Name: SW1

Date: 5/12/2014

Matrix: Water

Lab #: 556322

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.69	meq	20140521.R91A
Cation Sum	N/A	5.71	meq	20140521.R91A
Ion Balance	N/A	9.81	%	20140521.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140520.R54A
Oil and Grease, Total	1	<1	mg/L	20140520.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	8.07	pH	20140514.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	318	µS/cm	20140521.T12B
Conductivity (Dup)	1	320	µS/cm	20140521.T12B

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140515.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	340	mg/L	20140515.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.58	mg/L	20140516.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0063	mg/L	20140515.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	1.2	mg/L	20140515.R27B

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556322

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	143	mg/L as CaCO3	20140514.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.184	mg/L	20140515.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140514.R5A

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Whitewater Hydrogeology Ltd.

Work Order: 210499

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556323

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	24.7	mg/L	20140514.R5A
Fluoride	0.1	0.28	mg/L	20140514.R5A
Nitrate (as N)	0.1	1.06	mg/L	20140514.R5A
Nitrite (as N)	0.03	<0.03	mg/L	20140514.R5A
Sulphate	1	59.7	mg/L	20140514.R5A

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	142	mg/L as CaCO ₃	20140521.R94A
Carbonate	1	<1	mg/L as CaCO ₃	20140521.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	3.9	mg/L	20140515.R55.1C

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	41	mg/L	20140520.R13na9
Magnesium	0.04	11.7	mg/L	20140520.R13na9
Total Hardness (as CaCO ₃)	0.1	151	mg/L	20140520.R13na9

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	8	ug/L	20140520.R13na4
Dissolved Antimony	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Arsenic	1	<1	ug/L	20140520.R13na4
Dissolved Barium	1	26.2	ug/L	20140520.R13na4
Dissolved Beryllium	0.5	<0.5	ug/L	20140520.R13na4
Dissolved Bismuth	1	<1	ug/L	20140520.R13na4
Dissolved Boron	2	276	ug/L	20140520.R13na4
Dissolved Cadmium	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Calcium	500	40100	ug/L	20140520.R13na4
Dissolved Cerium	1	<1	ug/L	20140520.R13na4
Dissolved Cesium	1	<1	ug/L	20140520.R13na4
Dissolved Chromium	1	<1	ug/L	20140520.R13na4
Dissolved Cobalt	0.1	0.19	ug/L	20140520.R13na4
Dissolved Copper	1	1.2	ug/L	20140520.R13na4
Dissolved Europium	1	<1	ug/L	20140520.R13na4
Dissolved Gallium	1	<1	ug/L	20140520.R13na4
Dissolved Iron	20	40	ug/L	20140520.R13na4
Dissolved Lanthanum	1	<1	ug/L	20140520.R13na4
Dissolved Lead	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Lithium	5	29.4	ug/L	20140520.R13na4
Dissolved Magnesium	40	12000	ug/L	20140520.R13na4
Dissolved Manganese	1	<1	ug/L	20140520.R13na4
Dissolved Mercury	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Molybdenum	1	2	ug/L	20140520.R13na4
Dissolved Nickel	1	2.8	ug/L	20140520.R13na4

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Whitewater Hydrogeology Ltd.

Work Order: 210499

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556323

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Niobium	1	<1	ug/L	20140520.R13na4
Dissolved Potassium	100	6050	ug/L	20140520.R13na4
Dissolved Rubidium	1	3.1	ug/L	20140520.R13na4
Dissolved Scandium	1	<1	ug/L	20140520.R13na4
Dissolved Selenium	1	1.2	ug/L	20140520.R13na4
Dissolved Silicon	600	<600	ug/L	20140520.R13na4
Dissolved Silver	0.1	<0.1	ug/L	20140520.R13na4
Dissolved Sodium	100	35700	ug/L	20140520.R13na4
Dissolved Strontium	1	1020	ug/L	20140520.R13na4
Dissolved Sulfur	800	21100	ug/L	20140520.R13na4
Dissolved Tellurium	1	<1	ug/L	20140520.R13na4
Dissolved Thallium	0.1	0.46	ug/L	20140520.R13na4
Dissolved Thorium	1	<1	ug/L	20140520.R13na4
Dissolved Tin	1	<1	ug/L	20140520.R13na4
Dissolved Titanium	1	<1	ug/L	20140520.R13na4
Dissolved Tungsten	1	<1	ug/L	20140520.R13na4
Dissolved Uranium	1	<1	ug/L	20140520.R13na4
Dissolved Vanadium	1	<1	ug/L	20140520.R13na4
Dissolved Yttrium	1	<1	ug/L	20140520.R13na4
Dissolved Zinc	1	<1	ug/L	20140520.R13na4
Dissolved Zirconium	1	<1	ug/L	20140520.R13na4

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140520.R13na10
Total Cadmium	0.1	<0.1	ug/L	20140520.R13na10
Total Calcium	50	46900	ug/L	20140520.R13na10
Total Copper	1	1.4	ug/L	20140520.R13na10
Total Iron	20	108	ug/L	20140520.R13na10
Total Lead	1	<1	ug/L	20140520.R13na10
Total Magnesium	4	12900	ug/L	20140520.R13na10
Total Manganese	1	9	ug/L	20140520.R13na10
Total Nickel	1	3.4	ug/L	20140520.R13na10
Total Potassium	100	6180	ug/L	20140520.R13na10
Total Sodium	100	36400	ug/L	20140520.R13na10
Total Zinc	1	<1	ug/L	20140520.R13na10

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.25	meq	20140521.R91A
Cation Sum	N/A	4.72	meq	20140521.R91A
Ion Balance	N/A	5.24	%	20140521.R91A

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Mineral	1	<1	mg/L	20140520.R54A
Oil and Grease, Total	1	<1	mg/L	20140520.R54A

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Work Order: 210499

Sample Name: McCarthy Pond

Date: 5/12/2014

Matrix: Water

Lab #: 556323

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.56	pH	20140514.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	190	µS/cm	20140521.T12B

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140515.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	340	mg/L	20140515.R27A

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	1.1	mg/L	20140516.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0091	mg/L	20140515.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	10.8	mg/L	20140515.R27B



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MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Quality Control Data:

Alka

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	N/A	%	0	0.9	20	20140514.R1A

Lab Control Sample 155

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	N/A	%	85	95	115	20140514.R1A

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
M-Alkalinity (pH 4.5)	1	mg/L	<1	<1	5	20140514.R1A

Ammonia Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	N/A	%	0	1.8	20	20140515.R42.1A

Lab Control Sample 250

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	0.2	0.253	0.3	20140515.R42.1A

Lab Control Sample 500

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	0.4	0.504	0.6	20140515.R42.1A

Matrix Spike

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	N/A	% Rec	75	107	125	20140515.R42.1A

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Ammonia (as N)	0.01	mg/L	<0.01	0.016	0.03	20140515.R42.1A

Anions Water

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	%	0	N/A	20	20140514.R5A
Chloride	N/A	%	0	0.5	20	20140514.R5A
Fluoride	N/A	%	0	N/A	20	20140514.R5A
Nitrate (as N)	N/A	%	0	2.7	20	20140514.R5A
Nitrite (as N)	N/A	%	0	N/A	20	20140514.R5A
Sulphate	N/A	%	0	7.8	20	20140514.R5A

Lab Control Sample 1

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	80	102	115	20140514.R5A
Chloride	N/A	% Rec	80	84	115	20140514.R5A

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Anions Water

Lab Control Sample 1						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Fluoride	N/A	% Rec	80	102	115	20140514.R5A
Nitrate (as N)	N/A	% Rec	75	93	115	20140514.R5A
Nitrite (as N)	N/A	% Rec	80	92	115	20140514.R5A
Sulphate	N/A	% Rec	80	85	115	20140514.R5A

Lab Control Sample 2						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	85	98	115	20140514.R5A
Chloride	N/A	% Rec	85	91	115	20140514.R5A
Fluoride	N/A	% Rec	85	111	115	20140514.R5A
Nitrate (as N)	N/A	% Rec	85	99	115	20140514.R5A
Nitrite (as N)	N/A	% Rec	85	96	115	20140514.R5A
Sulphate	N/A	% Rec	78	90	115	20140514.R5A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	N/A	% Rec	70	96	130	20140514.R5A
Chloride	N/A	% Rec	70	88.3	130	20140514.R5A
Fluoride	N/A	% Rec	70	100	130	20140514.R5A
Nitrate (as N)	N/A	% Rec	70	94	130	20140514.R5A
Nitrite (as N)	N/A	% Rec	70	93.5	130	20140514.R5A
Sulphate	N/A	% Rec	70	97.4	130	20140514.R5A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Bromide	0.1	mg/L	<0.1	<0.1	0.2	20140514.R5A
Chloride	0.2	mg/L	<0.2	<0.2	0.3	20140514.R5A
Fluoride	0.1	mg/L	<0.1	<0.1	0.2	20140514.R5A
Nitrate (as N)	0.1	mg/L	<0.1	<0.1	0.2	20140514.R5A
Nitrite (as N)	0.03	mg/L	<0.03	<0.03	0.04	20140514.R5A
Sulphate	1	mg/L	<1	<1	1.1	20140514.R5A

DOC Water

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	%	0	2.3	20	20140515.R55.1C
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	%	0	N/A	20	20140516.R55.1A

Lab Control Sample 20						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	17	21.2	23	20140516.R55.1A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	% Rec	75	83.9	125	20140515.R55.1C

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Work Order: 210499

DOC Water

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	N/A	% Rec	75	97.3	125	20140516.R55.1A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	<0.4	<0.4	0.4	20140515.R55.1C
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Organic Carbon	0.4	mg/L	<0.4	<0.4	0.4	20140516.R55.1A

ICPMS Dis. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	N/A	%	0	9.9	20	20140520.R13na4
Dissolved Antimony	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Arsenic	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Barium	N/A	%	0	1.7	20	20140520.R13na4
Dissolved Beryllium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Bismuth	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Boron	N/A	%	0	5.1	20	20140520.R13na4
Dissolved Cadmium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Calcium	N/A	%	0	1.1	20	20140520.R13na4
Dissolved Cerium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Cesium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Chromium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Cobalt	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Copper	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Europium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Gallium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Iron	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Lanthanum	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Lead	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Lithium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Magnesium	N/A	%	0	2.4	20	20140520.R13na4
Dissolved Manganese	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Mercury	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Molybdenum	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Nickel	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Niobium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Potassium	N/A	%	0	2.2	20	20140520.R13na4
Dissolved Rubidium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Scandium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Selenium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Silicon	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Silver	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Sodium	N/A	%	0	3.8	20	20140520.R13na4
Dissolved Strontium	N/A	%	0	4	20	20140520.R13na4
Dissolved Sulfur	N/A	%	0	N/A	20	20140520.R13na4

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ICPMS Dis. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Tellurium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Thallium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Thorium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Tin	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Titanium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Uranium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Vanadium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Yttrium	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Zinc	N/A	%	0	N/A	20	20140520.R13na4
Dissolved Zirconium	N/A	%	0	N/A	20	20140520.R13na4

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	1	ug/L	47.8	66.4	77.8	20140520.R13na4
Dissolved Antimony	0.5	ug/L	12.8	22.2	24	20140520.R13na4
Dissolved Arsenic	1	ug/L	73.2	88.6	93.8	20140520.R13na4
Dissolved Barium	1	ug/L	103	125	145	20140520.R13na4
Dissolved Beryllium	0.5	ug/L	10.8	13.2	13.7	20140520.R13na4
Dissolved Cadmium	0.1	ug/L	18.6	22.3	27	20140520.R13na4
Dissolved Calcium	50	ug/L	1720	2110	2450	20140520.R13na4
Dissolved Chromium	1	ug/L	48.7	62.1	76.6	20140520.R13na4
Dissolved Cobalt	0.1	ug/L	76.2	84.1	88.8	20140520.R13na4
Dissolved Copper	1	ug/L	87.1	108	125	20140520.R13na4
Dissolved Iron	20	ug/L	50.4	67	70	20140520.R13na4
Dissolved Lead	1	ug/L	36.1	41.3	47.5	20140520.R13na4
Dissolved Magnesium	4	ug/L	753	908	1124	20140520.R13na4
Dissolved Manganese	1	ug/L	107	126	138	20140520.R13na4
Dissolved Molybdenum	1	ug/L	32.7	38.8	46.7	20140520.R13na4
Dissolved Nickel	1	ug/L	73.1	86.4	93.8	20140520.R13na4
Dissolved Selenium	1	ug/L	13.7	27	42.2	20140520.R13na4
Dissolved Strontium	1	ug/L	102	131	177	20140520.R13na4
Dissolved Thallium	0.1	ug/L	72.3	82.4	95.1	20140520.R13na4
Dissolved Uranium	1	ug/L	89.7	101	119	20140520.R13na4
Dissolved Vanadium	1	ug/L	43.4	49.9	55.7	20140520.R13na4
Dissolved Zinc	1	ug/L	12.5	28.4	48.4	20140520.R13na4

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	N/A	%	80	107	120	20140520.R13na4
Dissolved Arsenic	N/A	%	80	103	120	20140520.R13na4
Dissolved Barium	N/A	%	80	99	120	20140520.R13na4
Dissolved Beryllium	N/A	%	80	105	120	20140520.R13na4
Dissolved Boron	N/A	%	80	109	120	20140520.R13na4
Dissolved Cadmium	N/A	%	80	94	120	20140520.R13na4
Dissolved Calcium	N/A	%	80	88	120	20140520.R13na4
Dissolved Chromium	N/A	%	90	101	120	20140520.R13na4
Dissolved Cobalt	N/A	%	80	98	120	20140520.R13na4

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ICPMS Dis. Water

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Copper	N/A	%	80	98	120	20140520.R13na4
Dissolved Iron	N/A	%	80	92	120	20140520.R13na4
Dissolved Lead	N/A	%	80	95	120	20140520.R13na4
Dissolved Magnesium	N/A	%	80	96	120	20140520.R13na4
Dissolved Manganese	N/A	%	80	102	120	20140520.R13na4
Dissolved Molybdenum	N/A	%	80	100	120	20140520.R13na4
Dissolved Nickel	N/A	%	80	99	120	20140520.R13na4
Dissolved Selenium	N/A	%	80	100	120	20140520.R13na4
Dissolved Sodium	N/A	%	80	91	120	20140520.R13na4
Dissolved Thallium	N/A	%	80	97	120	20140520.R13na4
Dissolved Vanadium	N/A	%	80	103	120	20140520.R13na4
Dissolved Zinc	N/A	%	80	100	120	20140520.R13na4

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	N/A	% Rec	70	100	130	20140520.R13na4
Dissolved Antimony	N/A	% Rec	70	119	130	20140520.R13na4
Dissolved Arsenic	N/A	% Rec	70	108	130	20140520.R13na4
Dissolved Barium	N/A	% Rec	70	97.4	130	20140520.R13na4
Dissolved Beryllium	N/A	% Rec	70	98.2	130	20140520.R13na4
Dissolved Cadmium	N/A	% Rec	70	96.6	130	20140520.R13na4
Dissolved Chromium	N/A	% Rec	70	101	130	20140520.R13na4
Dissolved Cobalt	N/A	% Rec	70	101	130	20140520.R13na4
Dissolved Copper	N/A	% Rec	70	98.2	130	20140520.R13na4
Dissolved Iron	N/A	% Rec	70	93.1	130	20140520.R13na4
Dissolved Lead	N/A	% Rec	70	95.9	130	20140520.R13na4
Dissolved Manganese	N/A	% Rec	70	100	130	20140520.R13na4
Dissolved Molybdenum	N/A	% Rec	70	105	130	20140520.R13na4
Dissolved Nickel	N/A	% Rec	70	103	130	20140520.R13na4
Dissolved Selenium	N/A	% Rec	70	108	130	20140520.R13na4
Dissolved Thallium	N/A	% Rec	70	94.3	130	20140520.R13na4
Dissolved Vanadium	N/A	% Rec	70	103	130	20140520.R13na4
Dissolved Zinc	N/A	% Rec	70	97.2	130	20140520.R13na4

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Aluminum	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Antimony	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Arsenic	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Barium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Beryllium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Bismuth	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Boron	2	ug/L	<2	<2	2	20140520.R13na4
Dissolved Cadmium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Calcium	50	ug/L	<50	<50	50	20140520.R13na4
Dissolved Cerium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Cesium	1	ug/L	<1	<1	1	20140520.R13na4

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Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Dissolved Chromium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Cobalt	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Copper	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Europium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Gallium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Iron	20	ug/L	<20	<20	20	20140520.R13na4
Dissolved Lanthanum	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Lead	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Lithium	5	ug/L	<5	<5	5	20140520.R13na4
Dissolved Magnesium	4	ug/L	<4	<4	4	20140520.R13na4
Dissolved Manganese	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Mercury	0.1	ug/L	<0.1	<0.1	0.1	20140520.R13na4
Dissolved Molybdenum	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Nickel	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Niobium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Rubidium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Scandium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Selenium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Silver	5	ug/L	<5	<5	5	20140520.R13na4
Dissolved Strontium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Thallium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Thorium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Tin	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Titanium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Tungsten	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Uranium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Vanadium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Yttrium	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Zinc	1	ug/L	<1	<1	1	20140520.R13na4
Dissolved Zirconium	1	ug/L	<1	<1	1	20140520.R13na4

ICPMS Tot. Water

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	N/A	%	0	N/A	20	20140520.R13na10
Total Cadmium	N/A	%	0	N/A	20	20140520.R13na10
Total Calcium	N/A	%	0	0.3	20	20140520.R13na10
Total Copper	N/A	%	0	N/A	20	20140520.R13na10
Total Iron	N/A	%	0	2.1	20	20140520.R13na10
Total Lead	N/A	%	0	N/A	20	20140520.R13na10
Total Magnesium	N/A	%	0	0.8	20	20140520.R13na10
Total Manganese	N/A	%	0	1.7	20	20140520.R13na10
Total Nickel	N/A	%	0	N/A	20	20140520.R13na10
Total Zinc	N/A	%	0	N/A	20	20140520.R13na10



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ICPMS Tot. Water

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	1	ug/L	73.2	75.8	93.8	20140520.R13na10
Total Cadmium	0.1	ug/L	18.6	21.5	27	20140520.R13na10
Total Calcium	50	ug/L	1720	2160	2450	20140520.R13na10
Total Copper	1	ug/L	87.1	105	125	20140520.R13na10
Total Iron	20	ug/L	50.4	70	70	20140520.R13na10
Total Lead	1	ug/L	36.1	42.4	49	20140520.R13na10
Total Magnesium	4	ug/L	753	911	1124	20140520.R13na10
Total Manganese	1	ug/L	107	130	138	20140520.R13na10
Total Nickel	1	ug/L	73.1	84.6	93.8	20140520.R13na10
Total Zinc	1	ug/L	12.5	21.2	48.4	20140520.R13na10

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	N/A	%	80	86	120	20140520.R13na10
Total Cadmium	N/A	%	80	96	120	20140520.R13na10
Total Calcium	N/A	%	80	94	120	20140520.R13na10
Total Copper	N/A	%	80	100	120	20140520.R13na10
Total Iron	N/A	%	80	92	120	20140520.R13na10
Total Lead	N/A	%	80	99	120	20140520.R13na10
Total Magnesium	N/A	%	80	100	120	20140520.R13na10
Total Manganese	N/A	%	80	106	120	20140520.R13na10
Total Nickel	N/A	%	80	103	120	20140520.R13na10
Total Sodium	N/A	%	80	100	120	20140520.R13na10
Total Zinc	N/A	%	80	81	120	20140520.R13na10

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	N/A	% Rec	70	98.7	130	20140520.R13na10
Total Cadmium	N/A	% Rec	70	97	130	20140520.R13na10
Total Copper	N/A	% Rec	70	109.8	130	20140520.R13na10
Total Iron	N/A	% Rec	70	116	130	20140520.R13na10
Total Lead	N/A	% Rec	70	102	130	20140520.R13na10
Total Manganese	N/A	% Rec	70	109	130	20140520.R13na10
Total Nickel	N/A	% Rec	70	110	130	20140520.R13na10
Total Zinc	N/A	% Rec	70	90.2	130	20140520.R13na10

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Arsenic	1	ug/L	<1	<1	1	20140520.R13na10
Total Cadmium	1	ug/L	<1	<1	1	20140520.R13na10
Total Copper	1	ug/L	<1	<1	1	20140520.R13na10
Total Iron	20	ug/L	<20	<20	60	20140520.R13na10
Total Lead	1	ug/L	<1	<1	1	20140520.R13na10
Total Magnesium	4	ug/L	<4	<4	12	20140520.R13na10
Total Manganese	1	ug/L	<1	<1	1	20140520.R13na10
Total Nickel	1	ug/L	<1	<1	1	20140520.R13na10
Total Sodium	100	ug/L	<100	<100	300	20140520.R13na10

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Work Order: 210499

ICPMS Tot. Water

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Zinc	1	ug/L	<1	<1	1	20140520.R13na10

ICPMS Water

EU-L-3						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Calcium	50	ug/L	1720	1950	2450	20140520.R13na9
Magnesium	4	ug/L	753	800	1124	20140520.R13na9

Lab Control Sample

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Calcium	N/A	%	80	89	120	20140520.R13na9
Magnesium	N/A	%	80	93	120	20140520.R13na9

Method Blank

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Calcium	50	ug/L	<50	<50	150	20140520.R13na9
Magnesium	4	ug/L	<4	<4	4	20140520.R13na9

Oil and Grease

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	<1	<1	3	20140520.R54A

Control(20)

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	16	17.1	24	20140520.R54A

pHWater

%RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	0	0.01	0.3	20140514.R2A

Lab Control Sample 8

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	7.8	7.89	8.2	20140514.R2A

T12-CONDWATER

Control QC-C						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Conductivity	1	µS/cm	117.84	146	176.76	20140521.T12B

ERA S200-698

Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Conductivity	1	µS/cm	610	652	746	20140521.T12B



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Work Order: 210499

T38-Phenols 4AAP

25 ppb Control						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.02	0.0232	0.03	20140515.T38A

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	<0.001	<0.001	0.003	20140515.T38A

ERA P166-502						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.445	0.531	0.725	20140515.T38A

TDS

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	N/A	%	0	0.9	20	20140515.R27A

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	30	mg/L	180	210	220	20140515.R27A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Dissolved Solids	30	mg/L	<30	<30	50	20140515.R27A

TKN Water Dig.

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	N/A	%	0	2.3	20	20140516.R58A

Lab Control 10						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	8	9.1	12	20140516.R58A

Lab Control 25						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	20	23.1	30	20140516.R58A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	N/A	% Rec	80	93.5	120	20140516.R58A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Kjeldahl Nitrogen	1	mg/L	<1	<1	1	20140516.R58A

TP Water



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Work Order: 210499

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	N/A	%	0	5.5	20	20140515.R23.2A

Lab Control Sample .05						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	0.04	0.0486	0.06	20140515.R23.2A

Lab Control Sample .2						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	0.18	0.199	0.22	20140515.R23.2A

Matrix Spike						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	N/A	% Rec	75	101	125	20140515.R23.2A

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phosphorus (as P)	0.001	mg/L	<0.001	<0.001	0.005	20140515.R23.2A

TSS - 500

% RPD						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	N/A	%	0	N/A	20	20140515.R27B

Lab Control Sample						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	6	mg/L	1850	1930	2150	20140515.R27B

Method Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	6	mg/L	<6	<6	10	20140515.R27B

UCL Upper Control Limit

LCL Lower Control Limit



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Work Order: 211293

This report has been approved by:

Mark Charbonneau, Ph.D.

Lab Director



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 211293

Sample Data:

Sample Name: SW1

Date: 5/16/2014

Matrix: Surface Water

Lab #: 558505

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	177	mg/L as CaCO ₃	20140523.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.048	mg/L	20140523.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140526.R5H
Chloride	0.2	10.6	mg/L	20140526.R5H
Fluoride	0.1	0.22	mg/L	20140526.R5H
Nitrate (as N)	0.1	0.9	mg/L	20140526.R5H
Nitrite (as N)	0.03	<0.03	mg/L	20140526.R5H
Sulphate	1	84	mg/L	20140526.R5H

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	176	mg/L as CaCO ₃	20140526.R94A
Carbonate	1	<1	mg/L as CaCO ₃	20140526.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	6.58	mg/L	20140526.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	236	mg/L	20140528.R13nr2

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	6.7	ug/L	20140528.R13.3A
Dissolved Antimony	0.5	<0.5	ug/L	20140528.R13.3A
Dissolved Arsenic	1	<1	ug/L	20140528.R13.3A
Dissolved Barium	1	31.2	ug/L	20140528.R13.3A
Dissolved Beryllium	0.5	<0.5	ug/L	20140528.R13.3A
Dissolved Bismuth	1	<1	ug/L	20140528.R13.3A
Dissolved Boron	2	115	ug/L	20140528.R13.3A
Dissolved Cadmium	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Calcium	50	80200	ug/L	20140528.R13.3A
Dissolved Cerium	1	<1	ug/L	20140528.R13.3A
Dissolved Cesium	1	<1	ug/L	20140528.R13.3A
Dissolved Chromium	1	1.4	ug/L	20140528.R13.3A
Dissolved Cobalt	0.1	0.26	ug/L	20140528.R13.3A
Dissolved Copper	1	<1	ug/L	20140528.R13.3A
Dissolved Europium	1	<1	ug/L	20140528.R13.3A
Dissolved Gallium	1	1.1	ug/L	20140528.R13.3A
Dissolved Iron	20	44	ug/L	20140528.R13.3A



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Work Order: 211293

Sample Name: SW1

Date: 5/16/2014

Matrix: Surface Water

Lab #: 558505

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Lanthanum	1	<1	ug/L	20140528.R13.3A
Dissolved Lead	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Lithium	5	12.2	ug/L	20140528.R13.3A
Dissolved Magnesium	4	8920	ug/L	20140528.R13.3A
Dissolved Manganese	1	<1	ug/L	20140528.R13.3A
Dissolved Mercury	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Molybdenum	1	1.2	ug/L	20140528.R13.3A
Dissolved Nickel	1	4.1	ug/L	20140528.R13.3A
Dissolved Niobium	1	<1	ug/L	20140528.R13.3A
Dissolved Potassium	100	3860	ug/L	20140528.R13.3A
Dissolved Rubidium	1	2.2	ug/L	20140528.R13.3A
Dissolved Scandium	1	<1	ug/L	20140528.R13.3A
Dissolved Selenium	1	<1	ug/L	20140528.R13.3A
Dissolved Silicon	600	1020	ug/L	20140528.R13.3A
Dissolved Silver	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Sodium	100	13500	ug/L	20140528.R13.3A
Dissolved Strontium	1	437	ug/L	20140528.R13.3A
Dissolved Sulfur	800	24000	ug/L	20140528.R13.3A
Dissolved Tellurium	1	<1	ug/L	20140528.R13.3A
Dissolved Thallium	0.1	0.78	ug/L	20140528.R13.3A
Dissolved Thorium	1	<1	ug/L	20140528.R13.3A
Dissolved Tin	1	<1	ug/L	20140528.R13.3A
Dissolved Titanium	1	<1	ug/L	20140528.R13.3A
Dissolved Tungsten	1	<1	ug/L	20140528.R13.3A
Dissolved Uranium	1	1	ug/L	20140528.R13.3A
Dissolved Vanadium	1	<1	ug/L	20140528.R13.3A
Dissolved Yttrium	1	<1	ug/L	20140528.R13.3A
Dissolved Zinc	1	1.4	ug/L	20140528.R13.3A
Dissolved Zirconium	1	<1	ug/L	20140528.R13.3A

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	155	ug/L	20140528.R13nr2
Antimony	0.5	<0.5	ug/L	20140528.R13nr2
Arsenic	1	<1	ug/L	20140528.R13nr2
Barium	1	31.3	ug/L	20140528.R13nr2
Beryllium	0.5	<0.5	ug/L	20140528.R13nr2
Bismuth	1	<1	ug/L	20140528.R13nr2
Boron	2	113	ug/L	20140528.R13nr2
Cadmium	0.1	<0.1	ug/L	20140528.R13nr2
Calcium	50	79300	ug/L	20140528.R13nr2
Cerium	1	<1	ug/L	20140528.R13nr2
Cesium	1	<1	ug/L	20140528.R13nr2
Chromium	1	2	ug/L	20140528.R13nr2
Cobalt	0.1	0.33	ug/L	20140528.R13nr2
Copper	1	<1	ug/L	20140528.R13nr2

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Whitewater Hydrogeology Ltd.

Work Order: 211293

Sample Name: SW1

Date: 5/16/2014

Matrix: Surface Water

Lab #: 558505

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Europium	1	<1	ug/L	20140528.R13nr2
Gallium	1	1.4	ug/L	20140528.R13nr2
Iron	20	197	ug/L	20140528.R13nr2
Lanthanum	1	<1	ug/L	20140528.R13nr2
Lead	0.1	<0.1	ug/L	20140528.R13nr2
Lithium	5	12	ug/L	20140528.R13nr2
Magnesium	4	9230	ug/L	20140528.R13nr2
Manganese	1	30	ug/L	20140528.R13nr2
Mercury	0.1	<0.1	ug/L	20140528.R13nr2
Molybdenum	1	1.1	ug/L	20140528.R13nr2
Nickel	1	3.9	ug/L	20140528.R13nr2
Niobium	1	<1	ug/L	20140528.R13nr2
Potassium	100	3960	ug/L	20140528.R13nr2
Rubidium	1	2.2	ug/L	20140528.R13nr2
Scandium	1	1.1	ug/L	20140528.R13nr2
Selenium	1	<1	ug/L	20140528.R13nr2
Silicon	600	1330	ug/L	20140528.R13nr2
Silver	0.1	<0.1	ug/L	20140528.R13nr2
Sodium	100	13400	ug/L	20140528.R13nr2
Strontium	1	434	ug/L	20140528.R13nr2
Sulphur	800	24300	ug/L	20140528.R13nr2
Tellurium	1	<1	ug/L	20140528.R13nr2
Thallium	0.1	0.9	ug/L	20140528.R13nr2
Thorium	1	<1	ug/L	20140528.R13nr2
Tin	1	<1	ug/L	20140528.R13nr2
Titanium	1	4.5	ug/L	20140528.R13nr2
Tungsten	1	<1	ug/L	20140528.R13nr2
Uranium	1	<1	ug/L	20140528.R13nr2
Vanadium	1	<1	ug/L	20140528.R13nr2
Yttrium	1	<1	ug/L	20140528.R13nr2
Zinc	1	<1	ug/L	20140528.R13nr2
Zirconium	1	<1	ug/L	20140528.R13nr2

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.9	meq	20140528.R91B
Cation Sum	N/A	5.44	meq	20140528.R91B
Ion Balance	N/A	5.22	%	20140528.R91B

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140526.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.68	pH	20140523.R2A



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Whitewater Hydrogeology Ltd.

Work Order: 211293

Sample Name: SW1

Date: 5/16/2014

Matrix: Surface Water

Lab #: 558505

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	523	µS/cm	20140521.T12B

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140523.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	160	mg/L	20140526.R27C

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.92	mg/L	20140526.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0168	mg/L	20140523.R23.2C

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	8	mg/L	20140526.R27F

Sample Name: McCarthy Pond

Date: 5/16/2014

Matrix: Surface Water

Lab #: 558506

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	161	mg/L as CaCO ₃	20140523.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.103	mg/L	20140523.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Bromide	0.1	<0.1	mg/L	20140526.R5D
Chloride	0.2	21.2	mg/L	20140526.R5D
Fluoride	0.1	<0.1	mg/L	20140526.R5D
Nitrate (as N)	0.1	1.17	mg/L	20140526.R5D
Nitrite (as N)	0.03	<0.03	mg/L	20140526.R5D
Sulphate	1	80	mg/L	20140526.R5D

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	160	mg/L as CaCO ₃	20140526.R94A
Carbonate	1	1.1	mg/L as CaCO ₃	20140526.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	4.44	mg/L	20140526.R55.1A



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Whitewater Hydrogeology Ltd.

Work Order: 211293

Sample Name: McCarthy Pond

Date: 5/16/2014

Matrix: Surface Water

Lab #: 558506

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Total Hardness (as CaCO ₃)	0.1	181	mg/L	20140528.R13nr2

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	8.3	ug/L	20140528.R13.3A
Dissolved Antimony	0.5	<0.5	ug/L	20140528.R13.3A
Dissolved Arsenic	1	<1	ug/L	20140528.R13.3A
Dissolved Barium	1	28.4	ug/L	20140528.R13.3A
Dissolved Beryllium	0.5	<0.5	ug/L	20140528.R13.3A
Dissolved Bismuth	1	<1	ug/L	20140528.R13.3A
Dissolved Boron	2	207	ug/L	20140528.R13.3A
Dissolved Cadmium	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Calcium	50	49300	ug/L	20140528.R13.3A
Dissolved Cerium	1	<1	ug/L	20140528.R13.3A
Dissolved Cesium	1	<1	ug/L	20140528.R13.3A
Dissolved Chromium	1	1.3	ug/L	20140528.R13.3A
Dissolved Cobalt	0.1	0.21	ug/L	20140528.R13.3A
Dissolved Copper	1	<1	ug/L	20140528.R13.3A
Dissolved Europium	1	<1	ug/L	20140528.R13.3A
Dissolved Gallium	1	<1	ug/L	20140528.R13.3A
Dissolved Iron	20	34	ug/L	20140528.R13.3A
Dissolved Lanthanum	1	<1	ug/L	20140528.R13.3A
Dissolved Lead	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Lithium	5	25.8	ug/L	20140528.R13.3A
Dissolved Magnesium	4	10900	ug/L	20140528.R13.3A
Dissolved Manganese	1	<1	ug/L	20140528.R13.3A
Dissolved Mercury	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Molybdenum	1	1.3	ug/L	20140528.R13.3A
Dissolved Nickel	1	2.4	ug/L	20140528.R13.3A
Dissolved Niobium	1	<1	ug/L	20140528.R13.3A
Dissolved Potassium	100	4830	ug/L	20140528.R13.3A
Dissolved Rubidium	1	2.5	ug/L	20140528.R13.3A
Dissolved Scandium	1	<1	ug/L	20140528.R13.3A
Dissolved Selenium	1	<1	ug/L	20140528.R13.3A
Dissolved Silicon	600	700	ug/L	20140528.R13.3A
Dissolved Silver	0.1	<0.1	ug/L	20140528.R13.3A
Dissolved Sodium	100	26500	ug/L	20140528.R13.3A
Dissolved Strontium	1	582	ug/L	20140528.R13.3A
Dissolved Sulfur	800	21900	ug/L	20140528.R13.3A
Dissolved Tellurium	1	<1	ug/L	20140528.R13.3A
Dissolved Thallium	0.1	0.41	ug/L	20140528.R13.3A
Dissolved Thorium	1	<1	ug/L	20140528.R13.3A
Dissolved Tin	1	<1	ug/L	20140528.R13.3A
Dissolved Titanium	1	<1	ug/L	20140528.R13.3A
Dissolved Tungsten	1	<1	ug/L	20140528.R13.3A
Dissolved Uranium	1	<1	ug/L	20140528.R13.3A

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Whitewater Hydrogeology Ltd.

Work Order: 211293

Sample Name: McCarthy Pond

Date: 5/16/2014

Matrix: Surface Water

Lab #: 558506

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Vanadium	1	<1	ug/L	20140528.R13.3A
Dissolved Yttrium	1	<1	ug/L	20140528.R13.3A
Dissolved Zinc	1	<1	ug/L	20140528.R13.3A
Dissolved Zirconium	1	<1	ug/L	20140528.R13.3A

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Aluminum	1	242	ug/L	20140528.R13nr2
Antimony	0.5	<0.5	ug/L	20140528.R13nr2
Arsenic	1	<1	ug/L	20140528.R13nr2
Barium	1	27.8	ug/L	20140528.R13nr2
Beryllium	0.5	<0.5	ug/L	20140528.R13nr2
Bismuth	1	<1	ug/L	20140528.R13nr2
Boron	2	232	ug/L	20140528.R13nr2
Cadmium	0.1	<0.1	ug/L	20140528.R13nr2
Calcium	50	54200	ug/L	20140528.R13nr2
Cerium	1	<1	ug/L	20140528.R13nr2
Cesium	1	<1	ug/L	20140528.R13nr2
Chromium	1	1.4	ug/L	20140528.R13nr2
Cobalt	0.1	0.28	ug/L	20140528.R13nr2
Copper	1	1.1	ug/L	20140528.R13nr2
Europium	1	<1	ug/L	20140528.R13nr2
Gallium	1	1.3	ug/L	20140528.R13nr2
Iron	20	177	ug/L	20140528.R13nr2
Lanthanum	1	<1	ug/L	20140528.R13nr2
Lead	0.1	0.11	ug/L	20140528.R13nr2
Lithium	5	25.6	ug/L	20140528.R13nr2
Magnesium	4	11000	ug/L	20140528.R13nr2
Manganese	1	16	ug/L	20140528.R13nr2
Mercury	0.1	<0.1	ug/L	20140528.R13nr2
Molybdenum	1	1.6	ug/L	20140528.R13nr2
Nickel	1	3	ug/L	20140528.R13nr2
Niobium	1	<1	ug/L	20140528.R13nr2
Potassium	100	5090	ug/L	20140528.R13nr2
Rubidium	1	2.7	ug/L	20140528.R13nr2
Scandium	1	<1	ug/L	20140528.R13nr2
Selenium	1	<1	ug/L	20140528.R13nr2
Silicon	600	800	ug/L	20140528.R13nr2
Silver	0.1	<0.1	ug/L	20140528.R13nr2
Sodium	100	26500	ug/L	20140528.R13nr2
Strontium	1	604	ug/L	20140528.R13nr2
Sulphur	800	21600	ug/L	20140528.R13nr2
Tellurium	1	<1	ug/L	20140528.R13nr2
Thallium	0.1	0.37	ug/L	20140528.R13nr2
Thorium	1	<1	ug/L	20140528.R13nr2
Tin	1	<1	ug/L	20140528.R13nr2

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Whitewater Hydrogeology Ltd.

Work Order: 211293

Sample Name: McCarthy Pond **Date: 5/16/2014** **Matrix: Surface Water** **Lab #: 558506**

ICPMS Water				
Parameter	MDL	Result	Units	QAQCID
Titanium	1	6.5	ug/L	20140528.R13nr2
Tungsten	1	<1	ug/L	20140528.R13nr2
Uranium	1	<1	ug/L	20140528.R13nr2
Vanadium	1	<1	ug/L	20140528.R13nr2
Yttrium	1	<1	ug/L	20140528.R13nr2
Zinc	1	<1	ug/L	20140528.R13nr2
Zirconium	1	<1	ug/L	20140528.R13nr2

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.87	meq	20140528.R91B
Cation Sum	N/A	4.65	meq	20140528.R91B
Ion Balance	N/A	-2.31	%	20140528.R91B

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140526.R54A

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.85	pH	20140523.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	509	µS/cm	20140521.T12B

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140523.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	<30	mg/L	20140526.R27C

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.92	mg/L	20140526.R58A

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0156	mg/L	20140523.R23.2C

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	5.6	mg/L	20140526.R27F

Sample Name: SW2(McCarthy Pond Duplicate) **Date: 5/16/2014** **Matrix: Surface Water** **Lab #: 558507**

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.5	mg/L	20140523.T27A



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Whitewater Hydrogeology Ltd.

Work Order: 211293

Sample Name: SW2(McCarthy Pond Duplicate) Date: 5/16/2014 Matrix: Surface Water Lab #: 558507

T27-TSS				
Parameter	MDL	Result	Units	QAQCID

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



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Whitewater Hydrogeology Ltd.

Work Order: 212035

Sample Data:

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 560613

Alka				
Parameter	MDL	Result	Units	QAQCID
M-Alkalinity (pH 4.5)	1	207	mg/L as CaCO ₃	20140530.R1A

Ammonia Water				
Parameter	MDL	Result	Units	QAQCID
Ammonia (as N)	0.01	0.037	mg/L	20140602.R42.1A

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Chloride	0.2	13.2	mg/L	20140601.R5D
Fluoride	0.1	<0.1	mg/L	20140601.R5D
Nitrate (as N)	0.1	0.23	mg/L	20140601.R5D
Nitrite (as N)	0.03	<0.03	mg/L	20140601.R5D
Sulphate	1	49.7	mg/L	20140601.R5D

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	206	mg/L as CaCO ₃	20140603.R94A
Carbonate	1	1.1	mg/L as CaCO ₃	20140603.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	7.31	mg/L	20140603.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	72.9	mg/L	20140530.R13na4
Magnesium	0.04	9.04	mg/L	20140530.R13na4
Total Hardness (as CaCO ₃)	0.1	219	mg/L	20140530.R13na4

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	3.7	ug/L	20140530.R13na2
Dissolved Antimony	0.5	<0.5	ug/L	20140530.R13na2
Dissolved Arsenic	1	<1	ug/L	20140530.R13na2
Dissolved Barium	1	34.8	ug/L	20140530.R13na2
Dissolved Beryllium	0.5	<0.5	ug/L	20140530.R13na2
Dissolved Bismuth	1	<1	ug/L	20140530.R13na2
Dissolved Boron	2	136	ug/L	20140530.R13na2
Dissolved Cadmium	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Calcium	500	78500	ug/L	20140530.R13na2
Dissolved Cerium	1	<1	ug/L	20140530.R13na2
Dissolved Cesium	1	<1	ug/L	20140530.R13na2
Dissolved Chromium	1	<1	ug/L	20140530.R13na2
Dissolved Cobalt	0.1	0.13	ug/L	20140530.R13na2
Dissolved Copper	1	<1	ug/L	20140530.R13na2
Dissolved Europium	1	<1	ug/L	20140530.R13na2
Dissolved Gallium	1	<1	ug/L	20140530.R13na2

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Whitewater Hydrogeology Ltd.

Work Order: 212035

Sample Name: SW1

Date:

Matrix: Surface Water

Lab #: 560613

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Iron	20	66	ug/L	20140530.R13na2
Dissolved Lanthanum	1	<1	ug/L	20140530.R13na2
Dissolved Lead	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Lithium	5	16.6	ug/L	20140530.R13na2
Dissolved Magnesium	40	9780	ug/L	20140530.R13na2
Dissolved Manganese	1	<1	ug/L	20140530.R13na2
Dissolved Mercury	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Molybdenum	1	1	ug/L	20140530.R13na2
Dissolved Nickel	1	2.7	ug/L	20140530.R13na2
Dissolved Niobium	1	<1	ug/L	20140530.R13na2
Dissolved Potassium	100	3760	ug/L	20140530.R13na2
Dissolved Rubidium	1	1.7	ug/L	20140530.R13na2
Dissolved Scandium	1	<1	ug/L	20140530.R13na2
Dissolved Selenium	1	<1	ug/L	20140530.R13na2
Dissolved Silicon	600	<600	ug/L	20140530.R13na2
Dissolved Silver	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Sodium	1000	17800	ug/L	20140530.R13na2
Dissolved Strontium	1	524	ug/L	20140530.R13na2
Dissolved Sulfur	800	18700	ug/L	20140530.R13na2
Dissolved Tellurium	1	<1	ug/L	20140530.R13na2
Dissolved Thallium	0.1	0.1	ug/L	20140530.R13na2
Dissolved Thorium	1	<1	ug/L	20140530.R13na2
Dissolved Tin	1	<1	ug/L	20140530.R13na2
Dissolved Titanium	1	<1	ug/L	20140530.R13na2
Dissolved Tungsten	1	<1	ug/L	20140530.R13na2
Dissolved Uranium	1	1	ug/L	20140530.R13na2
Dissolved Vanadium	1	<1	ug/L	20140530.R13na2
Dissolved Yttrium	1	<1	ug/L	20140530.R13na2
Dissolved Zinc	1	<1	ug/L	20140530.R13na2
Dissolved Zirconium	1	<1	ug/L	20140530.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140530.R13na6
Total Cadmium	0.1	<0.1	ug/L	20140530.R13na6
Total Calcium	500	76500	ug/L	20140530.R13na6
Total Copper	1	<1	ug/L	20140530.R13na6
Total Iron	20	76	ug/L	20140530.R13na6
Total Lead	1	<1	ug/L	20140530.R13na6
Total Magnesium	4	9730	ug/L	20140530.R13na6
Total Manganese	1	9.7	ug/L	20140530.R13na6
Total Nickel	1	3	ug/L	20140530.R13na6
Total Potassium	100	3760	ug/L	20140530.R13na6
Total Sodium	100	17700	ug/L	20140530.R13na6
Total Zinc	1	<1	ug/L	20140530.R13na6



TESTMARK Laboratories

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Whitewater Hydrogeology Ltd.

Work Order: 212035

Sample Name: McCarthy Pond

Date:

Matrix: Surface Water

Lab #: 560614

Anions Water				
Parameter	MDL	Result	Units	QAQCID
Fluoride	0.1	<0.1	mg/L	20140602.R5B
Nitrate (as N)	0.1	0.84	mg/L	20140602.R5B
Nitrite (as N)	0.03	<0.03	mg/L	20140602.R5B
Sulphate	1	59.6	mg/L	20140602.R5B

Carbonate				
Parameter	MDL	Result	Units	QAQCID
Bicarbonate	1	131	mg/L as CaCO ₃	20140603.R94A
Carbonate	1	<1	mg/L as CaCO ₃	20140603.R94A

DOC Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Organic Carbon	0.4	3.5	mg/L	20140603.R55.1A

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	38.5	mg/L	20140530.R13na4
Magnesium	0.04	11.4	mg/L	20140530.R13na4
Total Hardness (as CaCO ₃)	0.1	143	mg/L	20140530.R13na4

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Aluminum	1	7.5	ug/L	20140530.R13na2
Dissolved Antimony	0.5	<0.5	ug/L	20140530.R13na2
Dissolved Arsenic	1	<1	ug/L	20140530.R13na2
Dissolved Barium	1	25.5	ug/L	20140530.R13na2
Dissolved Beryllium	0.5	<0.5	ug/L	20140530.R13na2
Dissolved Bismuth	1	<1	ug/L	20140530.R13na2
Dissolved Boron	2	272	ug/L	20140530.R13na2
Dissolved Cadmium	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Calcium	500	40600	ug/L	20140530.R13na2
Dissolved Cerium	1	<1	ug/L	20140530.R13na2
Dissolved Cesium	1	<1	ug/L	20140530.R13na2
Dissolved Chromium	1	<1	ug/L	20140530.R13na2
Dissolved Cobalt	0.1	0.1	ug/L	20140530.R13na2
Dissolved Copper	1	1	ug/L	20140530.R13na2
Dissolved Europium	1	<1	ug/L	20140530.R13na2
Dissolved Gallium	1	<1	ug/L	20140530.R13na2
Dissolved Iron	20	<20	ug/L	20140530.R13na2
Dissolved Lanthanum	1	<1	ug/L	20140530.R13na2
Dissolved Lead	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Lithium	5	31.5	ug/L	20140530.R13na2
Dissolved Magnesium	40	12000	ug/L	20140530.R13na2
Dissolved Manganese	1	<1	ug/L	20140530.R13na2
Dissolved Mercury	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Molybdenum	1	1.8	ug/L	20140530.R13na2
Dissolved Nickel	1	2.4	ug/L	20140530.R13na2
Dissolved Niobium	1	<1	ug/L	20140530.R13na2

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Whitewater Hydrogeology Ltd.

Work Order: 212035

Sample Name: McCarthy Pond

Date:

Matrix: Surface Water

Lab #: 560614

ICPMS Dis. Water				
Parameter	MDL	Result	Units	QAQCID
Dissolved Potassium	100	6140	ug/L	20140530.R13na2
Dissolved Rubidium	1	2.7	ug/L	20140530.R13na2
Dissolved Scandium	1	<1	ug/L	20140530.R13na2
Dissolved Selenium	1	<1	ug/L	20140530.R13na2
Dissolved Silicon	600	<600	ug/L	20140530.R13na2
Dissolved Silver	0.1	<0.1	ug/L	20140530.R13na2
Dissolved Sodium	100	36900	ug/L	20140530.R13na2
Dissolved Strontium	1	1010	ug/L	20140530.R13na2
Dissolved Sulfur	800	22600	ug/L	20140530.R13na2
Dissolved Tellurium	1	<1	ug/L	20140530.R13na2
Dissolved Thallium	0.1	0.23	ug/L	20140530.R13na2
Dissolved Thorium	1	<1	ug/L	20140530.R13na2
Dissolved Tin	1	<1	ug/L	20140530.R13na2
Dissolved Titanium	1	<1	ug/L	20140530.R13na2
Dissolved Tungsten	1	<1	ug/L	20140530.R13na2
Dissolved Uranium	1	<1	ug/L	20140530.R13na2
Dissolved Vanadium	1	<1	ug/L	20140530.R13na2
Dissolved Yttrium	1	<1	ug/L	20140530.R13na2
Dissolved Zinc	1	1.3	ug/L	20140530.R13na2
Dissolved Zirconium	1	<1	ug/L	20140530.R13na2

ICPMS Tot. Water				
Parameter	MDL	Result	Units	QAQCID
Total Arsenic	1	<1	ug/L	20140530.R13na6
Total Cadmium	0.1	<0.1	ug/L	20140530.R13na6
Total Calcium	500	40100	ug/L	20140530.R13na6
Total Copper	1	1.5	ug/L	20140530.R13na6
Total Iron	20	122	ug/L	20140530.R13na6
Total Lead	1	<1	ug/L	20140530.R13na6
Total Magnesium	4	12300	ug/L	20140530.R13na6
Total Manganese	1	8.1	ug/L	20140530.R13na6
Total Nickel	1	2.6	ug/L	20140530.R13na6
Total Potassium	100	5970	ug/L	20140530.R13na6
Total Sodium	100	34000	ug/L	20140530.R13na6
Total Zinc	1	2.5	ug/L	20140530.R13na6

Ion Balance				
Parameter	MDL	Result	Units	QAQCID
Anion Sum	N/A	4.13	meq	20140604.R91B
Cation Sum	N/A	4.8	meq	20140604.R91B
Ion Balance	N/A	7.5	%	20140604.R91B

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Animal	0.001	<0.001	mg/L	20140604.R54A
Oil and Grease, Mineral	0.001	<0.001	mg/L	20140604.R54A
Oil and Grease, Total	0.001	4.11	mg/L	20140604.R54A

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Whitewater Hydrogeology Ltd.

Work Order: 212035

Sample Name: **McCarthy Pond** Date: Matrix: **Surface Water** Lab #: **560614**

pHWater				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.67	pH	20140530.R2A

T12-CONDWATER				
Parameter	MDL	Result	Units	QAQCID
Conductivity	1	508	µS/cm	20140530.T12A
Conductivity (Dup)	1	508	µS/cm	20140530.T12A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140528.T38A

TDS				
Parameter	MDL	Result	Units	QAQCID
Total Dissolved Solids	30	250	mg/L	20140530.R27C

TKN Water Dig.				
Parameter	MDL	Result	Units	QAQCID
Total Kjeldahl Nitrogen	0.2	0.73	mg/L	20140602.R58B

TP Water				
Parameter	MDL	Result	Units	QAQCID
Total Phosphorus (as P)	0.001	0.0152	mg/L	20140530.R23.2A

TSS - 500				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	0.8	6.8	mg/L	20140530.R27D



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 212035

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 212463

Sample Data:

Sample Name: SW1

Date: 5/29/2014

Matrix: Surface Water

Lab #: 561683

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140606.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.3	pH	20140604.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	3.9	mg/L	20140604.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140604.T38A

Sample Name: McCarthy Pond

Date: 5/29/2014

Matrix: Surface Water

Lab #: 561684

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140606.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.8	pH	20140604.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	7.2	mg/L	20140604.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140604.T38A



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 212463

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 213373

Sample Data:

Sample Name: SW1

Date: 6/6/2014

Matrix: Surface Water

Lab #: 564048

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140616.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.5	pH	20140611.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.6	mg/L	20140613.T27A
Total Suspended Solids (Dup)	2	2.8	mg/L	20140613.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140611.T38B

Sample Name: McCarthy Pond

Date: 6/6/2014

Matrix: Surface Water

Lab #: 564049

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	1.4	mg/L	20140616.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.7	pH	20140611.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	5.7	mg/L	20140613.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140611.T38B



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 213373

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 213373

Quality Control Data:

Oil and Grease

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	<1	<1	3	20140616.R54A

Control(20)						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Oil and Grease, Total	1	mg/L	16	17.6	24	20140616.R54A

T02-pH Water

ERA 129881						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	6.65	6.8	6.93	20140611.T02A

QC-A Control 7.41						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
pH	N/A	pH	7.3	7.31	7.5	20140611.T02A

T27-TSS

200 mg/L Control						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	2	mg/L	160	182	240	20140613.T27A

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Suspended Solids	2	mg/L	<2	<2	<2	20140613.T27A

T38-Phenols 4AAP

25 ppb Control						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.02	0.0229	0.03	20140611.T38B

Blank						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	<0.001	<0.001	0.003	20140611.T38B

ERA P166-502						
Parameter	MDL	Units	LCL	Result	UCL	QAQCID
Total Phenols	0.001	mg/L	0.445	0.516	0.725	20140611.T38B

UCL Upper Control Limit

LCL Lower Control Limit



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 214063

Sample Data:

Sample Name: SW1

Date: 6/14/2014

Matrix: Surface Water

Lab #: 566001

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140620.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.3	pH	20140618.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	5.8	mg/L	20140623.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140619.T38A

Sample Name: McCarthy Pond

Date: 6/14/2014

Matrix: Surface Water

Lab #: 566002

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140620.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.1	pH	20140618.T02A
pH (Dup)	N/A	7.1	pH	20140618.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.8	mg/L	20140623.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140619.T38A



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 214063

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 214552

Sample Data:

Sample Name: SW1

Date: 6/18/2014

Matrix: Surface Water

Lab #: 567390

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140630.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.2	pH	20140625.T02B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	10.1	mg/L	20140625.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140625.T38B

Sample Name: McCarthy Pond

Date: 6/18/2014

Matrix: Surface Water

Lab #: 567391

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140630.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.12	pH	20140625.T02B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	4.7	mg/L	20140625.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140625.T38B



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 214552

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 215266

Sample Data:

Sample Name: SW 1

Date: 6/26/2014

Matrix: Surface Water

Lab #: 569358

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140703.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.1	pH	20140630.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	4.5	mg/L	20140703.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140709.T38C

Sample Name: McCarthy Pond

Date: 6/26/2014

Matrix: Surface Water

Lab #: 569359

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	37.8	mg/L	20140702.R13nr
Magnesium	0.04	14.6	mg/L	20140702.R13nr
Total Hardness (as CaCO ₃)	0.1	155	mg/L	20140702.R13nr

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140703.R54A

Single Conc DM				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140701.R63B
% Mortality at 100% Effluent	N/A	3.33	%	20140701.R63A

Single Conc RBT				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140701.R62A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7	pH	20140630.T02A
pH (Dup)	N/A	7	pH	20140630.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.6	mg/L	20140703.T27A
Total Suspended Solids (Dup)	2	2.7	mg/L	20140703.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140709.T38C



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 215266

Sample Name: DM control

Date:

Matrix: Water

Lab #: 569694

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	41.4	mg/L	20140702.R13nr
Magnesium	0.04	12.9	mg/L	20140702.R13nr
Total Hardness (as CaCO ₃)	0.1	156	mg/L	20140702.R13nr

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 216042

Sample Data:

Sample Name: McCarthy Pond

Date: 7/4/2014

Matrix: Surface Water

Lab #: 571244

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140715.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.7	pH	20140709.T02B
pH (Dup)	N/A	7.7	pH	20140709.T02B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	9.1	mg/L	20140709.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140709.T38C

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 217425

Sample Data:

Sample Name: McCarthy Pond

Date: 7/16/2014

Matrix: Surface Water

Lab #: 574599

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140724.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.3	pH	20140722.T02A
pH (Dup)	N/A	7.3	pH	20140722.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	<2	mg/L	20140724.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140723.T38A
Total Phenols (Dup)	0.001	<0.001	mg/L	20140723.T38A

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 218631

Sample Data:

Sample Name: McCarthy Pond

Date: 8/1/2014

Matrix: Surface Water

Lab #: 577770

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	26.1	mg/L	20140807.R13na4
Magnesium	0.04	19.9	mg/L	20140807.R13na4
Total Hardness (as CaCO ₃)	0.1	147	mg/L	20140807.R13na4

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140811.R54A

Single Conc DM				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140806.R63A
% Mortality at 100% Effluent	N/A	0	%	20140806.R63B

Single Conc RBT				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140807.R62A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	4.9	pH	20140806.T02B
pH (Dup)	N/A	4.7	pH	20140806.T02B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.9	mg/L	20140808.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140811.T38A

Sample Name: DM Control

Date:

Matrix: Water

Lab #: 578115

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	38.4	mg/L	20140807.R13na4
Magnesium	0.04	12.9	mg/L	20140807.R13na4
Total Hardness (as CaCO ₃)	0.1	149	mg/L	20140807.R13na4

Sample Name: DM Control Dup

Date:

Matrix: Water

Lab #: 578116

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	39.8	mg/L	20140807.R13na4
Magnesium	0.04	13.3	mg/L	20140807.R13na4
Total Hardness (as CaCO ₃)	0.1	154	mg/L	20140807.R13na4



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 218631

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 216042

Sample Data:

Sample Name: McCarthy Pond

Date: 7/4/2014

Matrix: Surface Water

Lab #: 571244

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140715.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.7	pH	20140709.T02B
pH (Dup)	N/A	7.7	pH	20140709.T02B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	9.1	mg/L	20140709.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140709.T38C

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 216647

Sample Data:

Sample Name: McCarthy Pond

Date: 7/8/2014

Matrix: Surface Water

Lab #: 572783

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140718.R54A
T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.07	pH	20140714.T02A
T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	4.4	mg/L	20140717.T27A
T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140716.T38A

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 217425

Sample Data:

Sample Name: McCarthy Pond

Date: 7/16/2014

Matrix: Surface Water

Lab #: 574599

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140724.R54A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	7.3	pH	20140722.T02A
pH (Dup)	N/A	7.3	pH	20140722.T02A

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	<2	mg/L	20140724.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140723.T38A
Total Phenols (Dup)	0.001	<0.001	mg/L	20140723.T38A

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 218631

Sample Data:

Sample Name: McCarthy Pond

Date: 8/1/2014

Matrix: Surface Water

Lab #: 577770

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	26.1	mg/L	20140807.R13na4
Magnesium	0.04	19.9	mg/L	20140807.R13na4
Total Hardness (as CaCO ₃)	0.1	147	mg/L	20140807.R13na4

Oil and Grease				
Parameter	MDL	Result	Units	QAQCID
Oil and Grease, Total	1	<1	mg/L	20140811.R54A

Single Conc DM				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140806.R63A
% Mortality at 100% Effluent	N/A	0	%	20140806.R63B

Single Conc RBT				
Parameter	MDL	Result	Units	QAQCID
% Mortality at 100% Effluent	N/A	0	%	20140807.R62A

T02-pH Water				
Parameter	MDL	Result	Units	QAQCID
pH	N/A	4.9	pH	20140806.T02B
pH (Dup)	N/A	4.7	pH	20140806.T02B

T27-TSS				
Parameter	MDL	Result	Units	QAQCID
Total Suspended Solids	2	2.9	mg/L	20140808.T27A

T38-Phenols 4AAP				
Parameter	MDL	Result	Units	QAQCID
Total Phenols	0.001	<0.001	mg/L	20140811.T38A

Sample Name: DM Control

Date:

Matrix: Water

Lab #: 578115

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	38.4	mg/L	20140807.R13na4
Magnesium	0.04	12.9	mg/L	20140807.R13na4
Total Hardness (as CaCO ₃)	0.1	149	mg/L	20140807.R13na4

Sample Name: DM Control Dup

Date:

Matrix: Water

Lab #: 578116

Hardness/ICP				
Parameter	MDL	Result	Units	QAQCID
Calcium	0.5	39.8	mg/L	20140807.R13na4
Magnesium	0.04	13.3	mg/L	20140807.R13na4
Total Hardness (as CaCO ₃)	0.1	154	mg/L	20140807.R13na4



TESTMARK Laboratories

Committed to Quality and Service

Whitewater Hydrogeology Ltd.

Work Order: 218631

MDL Method detection limit or minimum reporting limit.

% Rec Surrogate compounds are added to the sample in some cases and the recovery is reported as a percent recovered.

QAQCID This is a unique reference to the quality control data set used to generate the reported value.

Data reported for organic analysis in soil samples are corrected for moisture content

Matrix If the matrix is a leachate, the sample was extracted according to regulation 558.

INT Interferences

TNTC Too numerous to count

ND Not detected

NDOGN No Data, Overgrown with Non-Target

NDOGT No Data, Overgrown with Target

NDOGHPC No Data, Overgrown HPC

Maxxam Job #: B4E2697
 Report Date: 2014/08/15

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		XA9829	XA9829		
Sampling Date		2014/08/08 09:30	2014/08/08 09:30		
COC Number		18177	18177		
	Units	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	<0.50		0.50	3706439
Inorganics					
Phenols-4AAP	mg/L	<0.0010	<0.0010	0.0010	3712669
Total Suspended Solids	mg/L	7		1	3709624
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	<0.50		0.50	3708831
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50		0.50	3708832
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate					

Maxxam Job #: B4E2697
 Report Date: 2014/08/15

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

TEST SUMMARY

Maxxam ID: XA9829
Sample ID: POND
Matrix: Water

Collected: 2014/08/08
Shipped:
Received: 2014/08/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3706439	N/A	2014/08/13	Automated Statchk
Total Oil and Grease	BAL	3708831	2014/08/13	2014/08/13	Francis Afonso
Phenols (4AAP)	TECH/PHEN	3712669	N/A	2014/08/15	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3708832	2014/08/13	2014/08/13	Francis Afonso
Low Level Total Suspended Solids	SLDS	3709624	N/A	2014/08/13	Bansari Ray

Maxxam ID: XA9829 Dup
Sample ID: POND
Matrix: Water

Collected: 2014/08/08
Shipped:
Received: 2014/08/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Phenols (4AAP)	TECH/PHEN	3712669	N/A	2014/08/15	Bramdeo Motiram

Maxxam Job #: B4E2697
Report Date: 2014/08/15

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

GENERAL COMMENTS

Samples received with temp >10 C and analysis conducted with client's consent.

Results relate only to the items tested.

Maxxam Job #: B4E2697
 Report Date: 2014/08/15

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

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3708831	FA	Spiked Blank	Total Oil & Grease	2014/08/13		99	%	85 - 115
3708831	FA	RPD	Total Oil & Grease	2014/08/13	3.9		%	25
3708831	FA	Method Blank	Total Oil & Grease	2014/08/13	<0.50		mg/L	
3708832	FA	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/08/13		92	%	85 - 115
3708832	FA	RPD	Total Oil & Grease Mineral/Synthetic	2014/08/13	1.6		%	25
3708832	FA	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/08/13	<0.50		mg/L	
3709624	RAY	QC Standard	Total Suspended Solids	2014/08/13		98	%	85 - 115
3709624	RAY	Method Blank	Total Suspended Solids	2014/08/13	<1		mg/L	
3712669	BMO	Matrix Spike [XA9829-04]	Phenols-4AAP	2014/08/15		97	%	80 - 120
3712669	BMO	Spiked Blank	Phenols-4AAP	2014/08/15		98	%	85 - 115
3712669	BMO	Method Blank	Phenols-4AAP	2014/08/15	<0.0010		mg/L	
3712669	BMO	RPD [XA9829-04]	Phenols-4AAP	2014/08/15	NC		%	20

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

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

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B4E2697
Report Date: 2014/08/15

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

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 that reads "Cristina Carriere".

Cristina Carriere, Scientific Services

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

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 48173301, 481733-01-01

Attention:Alicia Beynon

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

Report Date: 2014/08/22
 Report #: R3131287
 Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4E8132

Received: 2014/08/16, 09:25

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/08/20	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/08/19	2014/08/20	CAM SOP-00326	EPA 1664B m
Phenols (4AAP)	1	N/A	2014/08/22	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/08/19	2014/08/20	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/08/19	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

=====

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

Maxxam Job #: B4E8132
 Report Date: 2014/08/22

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		XD7107		
Sampling Date		2014/08/15 10:00		
COC Number		481733-01-01		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	3714711
Inorganics				
Phenols-4AAP	mg/L	0.0011	0.0010	3718493
Total Suspended Solids	mg/L	48	1	3715992
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	3717036
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	3717065
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				

Maxxam Job #: B4E8132
Report Date: 2014/08/22

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

TEST SUMMARY

Maxxam ID: XD7107
Sample ID: POND
Matrix: Water

Collected: 2014/08/15
Shipped:
Received: 2014/08/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3714711	N/A	2014/08/20	Automated Statchk
Total Oil and Grease	BAL	3717036	2014/08/19	2014/08/20	Amjad Mir
Phenols (4AAP)	TECH/PHEN	3718493	N/A	2014/08/22	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3717065	2014/08/19	2014/08/20	Amjad Mir
Low Level Total Suspended Solids	SLDS	3715992	N/A	2014/08/19	Bansari Ray

Maxxam Job #: B4E8132
Report Date: 2014/08/22

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

GENERAL COMMENTS

Samples received with temp>10 C and analysis conducted with client's consent.

Results relate only to the items tested.

Maxxam Job #: B4E8132
 Report Date: 2014/08/22

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

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3715992	RAY	QC Standard	Total Suspended Solids	2014/08/19		98	%	85 - 115
3715992	RAY	Method Blank	Total Suspended Solids	2014/08/19	<1		mg/L	
3717036	AMJ	Spiked Blank	Total Oil & Grease	2014/08/20		96	%	85 - 115
3717036	AMJ	RPD	Total Oil & Grease	2014/08/20	1.8		%	25
3717036	AMJ	Method Blank	Total Oil & Grease	2014/08/20	<0.50		mg/L	
3717065	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/08/20		94	%	85 - 115
3717065	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2014/08/20	0.5		%	25
3717065	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/08/20	<0.50		mg/L	
3718493	BMO	Matrix Spike	Phenols-4AAP	2014/08/22		98	%	80 - 120
3718493	BMO	Spiked Blank	Phenols-4AAP	2014/08/22		100	%	85 - 115
3718493	BMO	Method Blank	Phenols-4AAP	2014/08/22	<0.0010		mg/L	

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.

Maxxam Job #: B4E8132
Report Date: 2014/08/22

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

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 that reads "Cristina Carriere".

Cristina Carriere, Scientific Services

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

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 48196601, 481966-01-01

Attention: Alicia Beynon
 Golder Associates Ltd
 121 Commerce Park Drive
 Unit L
 Barrie, ON
 L4N 8X1

Report Date: 2014/08/28
Report #: R3138337
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4F3483
Received: 2014/08/22, 09:50

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Animal and Vegetable Oil & Grease	1	N/A	2014/08/28	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/08/28	2014/08/28	CAM SOP-00326	EPA 1664B m
Phenols (4AAP)	1	N/A	2014/08/25	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/08/28	2014/08/28	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/08/26	CAM SOP-00428	SM 22 2540D m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

* Results relate only to the items tested.

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

Maxxam Job #: B4F3483
Report Date: 2014/08/28

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

-2-

Encryption Key

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

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

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

Total cover pages: 2

Maxxam Job #: B4F3483
Report Date: 2014/08/28

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		XG3437	XG3437		
Sampling Date		2014/08/20 12:00	2014/08/20 12:00		
	Units	POND	POND Lab-Dup	RDL	QC Batch
Calculated Parameters					
Total Animal/Vegetable Oil and Grease	mg/L	<0.50		0.50	3721269
Inorganics					
Phenols-4AAP	mg/L	<0.0010		0.0010	3723141
Total Suspended Solids	mg/L	10	11	1	3723377
Petroleum Hydrocarbons					
Total Oil & Grease	mg/L	<0.50		0.50	3728019
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50		0.50	3728025

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B4F3483
Report Date: 2014/08/28

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

Test Summary

Maxxam ID XG3437
Sample ID POND
Matrix Water

Collected 2014/08/20
Shipped
Received 2014/08/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3721269	N/A	2014/08/28	Automated Statchk
Total Oil and Grease	BAL	3728019	2014/08/28	2014/08/28	Amjad Mir
Phenols (4AAP)	TECH/PHEN	3723141	N/A	2014/08/25	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3728025	2014/08/28	2014/08/28	Amjad Mir
Low Level Total Suspended Solids	SLDS	3723377	N/A	2014/08/26	Deepak Sharma

Maxxam ID XG3437 Dup
Sample ID POND
Matrix Water

Collected 2014/08/20
Shipped
Received 2014/08/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Low Level Total Suspended Solids	SLDS	3723377	N/A	2014/08/26	Deepak Sharma

Maxxam Job #: B4F3483
Report Date: 2014/08/28

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

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3723141	Phenols-4AAP	2014/08/25	99	80 - 120	101	85 - 115	<0.0010	mg/L	NC	20		
3723377	Total Suspended Solids	2014/08/26					<1	mg/L	6.2	25	97	85 - 115
3728019	Total Oil & Grease	2014/08/28			98	85 - 115	<0.50	mg/L	1.3	25		
3728025	Total Oil & Grease Mineral/Synthetic	2014/08/28			96	85 - 115	<0.50	mg/L	1.0	25		

N/A = Not Applicable

RPD = Relative Percent Difference

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

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

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

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


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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Validation Signature Page

Maxxam Job #: B4F3483

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



Cristina Carriere, Scientific Services

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

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 48196602, 481966-02-01

Attention:Alicia Beynon

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

Report Date: 2014/09/03
 Report #: R3143344
 Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4F7774

Received: 2014/08/28, 09:47

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/09/02	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/09/02	2014/09/02	CAM SOP-00326	EPA 1664B m
Phenols (4AAP)	1	N/A	2014/09/02	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/09/02	2014/09/02	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/09/02	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

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

Maxxam Job #: B4F7774
Report Date: 2014/09/03

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		XI5428		
Sampling Date		2014/08/26 15:00		
COC Number		481966-02-01		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	1.1	0.50	3728119
Inorganics				
Phenols-4AAP	mg/L	<0.0010	0.0010	3731717
Total Suspended Solids	mg/L	18	1	3732593
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	1.1	0.50	3732191
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	3732192
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				

Maxxam Job #: B4F7774
Report Date: 2014/09/03

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

TEST SUMMARY

Maxxam ID: XI5428
Sample ID: POND
Matrix: Water

Collected: 2014/08/26
Shipped:
Received: 2014/08/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3728119	N/A	2014/09/02	Automated Statchk
Total Oil and Grease	BAL	3732191	2014/09/02	2014/09/02	Francis Afonso
Phenols (4AAP)	TECH/PHEN	3731717	N/A	2014/09/02	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3732192	2014/09/02	2014/09/02	Francis Afonso
Low Level Total Suspended Solids	SLDS	3732593	N/A	2014/09/02	Niki Shah

Maxxam Job #: B4F7774
Report Date: 2014/09/03

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

GENERAL COMMENTS

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

Results relate only to the items tested.

Maxxam Job #: B4F7774
Report Date: 2014/09/03

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

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3731717	BMO	Matrix Spike	Phenols-4AAP	2014/09/02		92	%	80 - 120
3731717	BMO	Spiked Blank	Phenols-4AAP	2014/09/02		101	%	85 - 115
3731717	BMO	Method Blank	Phenols-4AAP	2014/09/02	<0.0010		mg/L	
3731717	BMO	RPD	Phenols-4AAP	2014/09/02	NC		%	20
3732191	FA	Matrix Spike	Total Oil & Grease	2014/09/02		93	%	75 - 125
3732191	FA	Spiked Blank	Total Oil & Grease	2014/09/02		99	%	85 - 115
3732191	FA	RPD	Total Oil & Grease	2014/09/02	1.5		%	25
			Total Oil & Grease	2014/09/02	NC		%	25
3732191	FA	Method Blank	Total Oil & Grease	2014/09/02	<0.50		mg/L	
3732192	FA	Matrix Spike	Total Oil & Grease Mineral/Synthetic	2014/09/02		91	%	75 - 125
3732192	FA	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/09/02		95	%	85 - 115
3732192	FA	RPD	Total Oil & Grease Mineral/Synthetic	2014/09/02	2.7		%	25
			Total Oil & Grease Mineral/Synthetic	2014/09/02	NC		%	25
3732192	FA	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/09/02	<0.50		mg/L	
3732593	NS1	QC Standard	Total Suspended Solids	2014/09/02		98	%	85 - 115
3732593	NS1	Method Blank	Total Suspended Solids	2014/09/02	<1		mg/L	
3732593	NS1	RPD	Total Suspended Solids	2014/09/02	16		%	25

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

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

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B4F7774
Report Date: 2014/09/03

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

VALIDATION SIGNATURE PAGE

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



Brad Newman, Scientific Specialist

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

Your Project #: 1407634
 Site#: 1407634
 Site Location: MCCARTHY
 Your C.O.C. #: 48196603, 481966-03-01

Attention: Alicia Beynon

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

Report Date: 2014/09/09
 Report #: R3149527
 Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4G1591
Received: 2014/09/04, 09:35

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/09/05	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/09/05	2014/09/05	CAM SOP-00326	EPA 1664B m
Phenols (4AAP)	1	N/A	2014/09/07	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/09/05	2014/09/05	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/09/05	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

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Maxxam Job #: B4G1591
Report Date: 2014/09/09

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		XK5241		
Sampling Date		2014/09/03 12:30		
COC Number		481966-03-01		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	3735741
Inorganics				
Phenols-4AAP	mg/L	<0.0010	0.0010	3738533
Total Suspended Solids	mg/L	23	1	3737583
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	3738037
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	3738044
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				

Maxxam Job #: B4G1591
Report Date: 2014/09/09

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

TEST SUMMARY

Maxxam ID: XK5241
Sample ID: POND
Matrix: Water

Collected: 2014/09/03
Shipped:
Received: 2014/09/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3735741	N/A	2014/09/05	Automated Statchk
Total Oil and Grease	BAL	3738037	2014/09/05	2014/09/05	Amjad Mir
Phenols (4AAP)	TECH/PHEN	3738533	N/A	2014/09/07	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3738044	2014/09/05	2014/09/05	Amjad Mir
Low Level Total Suspended Solids	SLDS	3737583	N/A	2014/09/05	Niki Shah

Maxxam Job #: B4G1591
Report Date: 2014/09/09

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

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B4G1591
Report Date: 2014/09/09

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

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3737583	NS1	QC Standard	Total Suspended Solids	2014/09/05		97	%	85 - 115
3737583	NS1	Method Blank	Total Suspended Solids	2014/09/05	<1		mg/L	
3737583	NS1	RPD	Total Suspended Solids	2014/09/05	4.3		%	25
3738037	AMJ	Spiked Blank	Total Oil & Grease	2014/09/05		98	%	85 - 115
3738037	AMJ	RPD	Total Oil & Grease	2014/09/05	3.4		%	25
3738037	AMJ	Method Blank	Total Oil & Grease	2014/09/05	<0.50		mg/L	
3738044	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/09/05		96	%	85 - 115
3738044	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2014/09/05	3.7		%	25
3738044	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/09/05	<0.50		mg/L	
3738533	BMO	Matrix Spike	Phenols-4AAP	2014/09/07		NC	%	80 - 120
3738533	BMO	Spiked Blank	Phenols-4AAP	2014/09/07		99	%	85 - 115
3738533	BMO	Method Blank	Phenols-4AAP	2014/09/07	<0.0010		mg/L	
3738533	BMO	RPD	Phenols-4AAP	2014/09/07	NC		%	20

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

Maxxam Job #: B4G1591
Report Date: 2014/09/09

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

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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

Your Project #: 1407634
Site#: 1407634
Your C.O.C. #: 48196606, 481966-06-01

Attention:Alicia Beynon

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

Report Date: 2014/09/17
Report #: R3159163
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4G8192
Received: 2014/09/12, 10:45

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/09/16	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/09/16	2014/09/16	CAM SOP-00326	EPA 1664B m
Phenols (4AAP)	1	N/A	2014/09/16	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/09/16	2014/09/16	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/09/15	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

=====
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Maxxam Job #: B4G8192
Report Date: 2014/09/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

RESULTS OF ANALYSES OF WATER

Maxxam ID		XN6527		
Sampling Date		2014/09/10 13:30		
COC Number		481966-06-01		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	3745745
Inorganics				
Phenols-4AAP	mg/L	<0.0010	0.0010	3748050
Total Suspended Solids	mg/L	14	1	3747884
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	3749910
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	3749967
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				

Maxxam Job #: B4G8192
Report Date: 2014/09/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

TEST SUMMARY

Maxxam ID: XN6527
Sample ID: POND
Matrix: Water

Collected: 2014/09/10
Shipped:
Received: 2014/09/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3745745	N/A	2014/09/16	Automated Statchk
Total Oil and Grease	BAL	3749910	2014/09/16	2014/09/16	Amjad Mir
Phenols (4AAP)	TECH/PHEN	3748050	N/A	2014/09/16	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3749967	2014/09/16	2014/09/16	Amjad Mir
Low Level Total Suspended Solids	SLDS	3747884	N/A	2014/09/15	Deepak Sharma

Maxxam Job #: B4G8192
Report Date: 2014/09/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B4G8192
Report Date: 2014/09/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

QUALITY ASSURANCE REPORT

QA/QC				Date				
Batch	Init	QC Type	Parameter	Analyzed	Value	Recovery	Units	QC Limits
3747884	DSR	QC Standard	Total Suspended Solids	2014/09/15		97	%	85 - 115
3747884	DSR	Method Blank	Total Suspended Solids	2014/09/15	<1		mg/L	
3747884	DSR	RPD	Total Suspended Solids	2014/09/15	3.0		%	25
3748050	BMO	Matrix Spike	Phenols-4AAP	2014/09/16		NC	%	80 - 120
3748050	BMO	Spiked Blank	Phenols-4AAP	2014/09/16		99	%	85 - 115
3748050	BMO	Method Blank	Phenols-4AAP	2014/09/16	<0.0010		mg/L	
3748050	BMO	RPD	Phenols-4AAP	2014/09/16	11		%	20
3749910	AMJ	Spiked Blank	Total Oil & Grease	2014/09/16		101	%	85 - 115
3749910	AMJ	RPD	Total Oil & Grease	2014/09/16	5.9		%	25
3749910	AMJ	Method Blank	Total Oil & Grease	2014/09/16	<0.50		mg/L	
3749967	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/09/16		97	%	85 - 115
3749967	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2014/09/16	7.0		%	25
3749967	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/09/16	<0.50		mg/L	

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

Maxxam Job #: B4G8192
Report Date: 2014/09/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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

Your Project #: 1407637
 Site#: 1407637
 Site Location: MCCARTHY
 Your C.O.C. #: 18182

Attention:Alicia Beynon

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

Report Date: 2014/09/22
 Report #: R3164528
 Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4H1830
Received: 2014/09/17, 10:40

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/09/19	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/09/18	2014/09/19	CAM SOP-00326	EPA 1664B m
Phenols (4AAP)	1	N/A	2014/09/19	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/09/18	2014/09/19	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/09/19	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

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

Maxxam Job #: B4H1830
Report Date: 2014/09/22

Golder Associates Ltd
Client Project #: 1407637
Site Location: MCCARTHY
Sampler Initials: AB

RESULTS OF ANALYSES OF WATER

Maxxam ID		XP3759		
Sampling Date		2014/09/15 18:40		
COC Number		18182		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<1.0	1.0	3752084
Inorganics				
Phenols-4AAP	mg/L	<0.0010	0.0010	3754442
Total Suspended Solids	mg/L	15	1	3749404
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<1.0	1.0	3753599
Total Oil & Grease Mineral/Synthetic	mg/L	<1.0	1.0	3753628
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

Maxxam Job #: B4H1830
Report Date: 2014/09/22

Golder Associates Ltd
Client Project #: 1407637
Site Location: MCCARTHY
Sampler Initials: AB

TEST SUMMARY

Maxxam ID: XP3759
Sample ID: POND
Matrix: Water

Collected: 2014/09/15
Shipped:
Received: 2014/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3752084	N/A	2014/09/19	Automated Statchk
Total Oil and Grease	BAL	3753599	2014/09/18	2014/09/19	Amjad Mir
Phenols (4AAP)	TECH/PHEN	3754442	N/A	2014/09/19	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3753628	2014/09/18	2014/09/19	Amjad Mir
Low Level Total Suspended Solids	SLDS	3749404	N/A	2014/09/19	Deepak Sharma

Maxxam Job #: B4H1830
Report Date: 2014/09/22

Golder Associates Ltd
Client Project #: 1407637
Site Location: MCCARTHY
Sampler Initials: AB

GENERAL COMMENTS

O&G &TPH Analysis: Due to limited amount of sample available for analysis, a smaller than usual portion of the sample was used. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Job #: B4H1830
Report Date: 2014/09/22

Golder Associates Ltd
Client Project #: 1407637
Site Location: MCCARTHY
Sampler Initials: AB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3749404	DSR	QC Standard	Total Suspended Solids	2014/09/19		98	%	85 - 115
3749404	DSR	Method Blank	Total Suspended Solids	2014/09/19	<1		mg/L	
3749404	DSR	RPD	Total Suspended Solids	2014/09/19	7.1		%	25
3753599	AMJ	Spiked Blank	Total Oil & Grease	2014/09/19		97	%	85 - 115
3753599	AMJ	RPD	Total Oil & Grease	2014/09/19	4.3		%	25
3753599	AMJ	Method Blank	Total Oil & Grease	2014/09/19	<0.50		mg/L	
3753628	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/09/19		93	%	85 - 115
3753628	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2014/09/19	2.1		%	25
3753628	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/09/19	<0.50		mg/L	
3754442	BMO	Matrix Spike	Phenols-4AAP	2014/09/19		99	%	80 - 120
3754442	BMO	Spiked Blank	Phenols-4AAP	2014/09/19		99	%	85 - 115
3754442	BMO	Method Blank	Phenols-4AAP	2014/09/19	<0.0010		mg/L	
3754442	BMO	RPD	Phenols-4AAP	2014/09/19	NC		%	20

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

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

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B4H1830
Report Date: 2014/09/22

Golder Associates Ltd
Client Project #: 1407637
Site Location: MCCARTHY
Sampler Initials: AB

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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

Your Project #: 1407634
Site#: 1407634
Your C.O.C. #: 481966-05-01

Attention:Alicia Beynon

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

Report Date: 2014/09/26
Report #: R3170274
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4H7270
Received: 2014/09/24, 14:30

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/09/25	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/09/25	2014/09/25	CAM SOP-00326	EPA 1664B m
Phenols (4AAP)	1	N/A	2014/09/26	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/09/25	2014/09/25	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/09/25	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

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

Maxxam Job #: B4H7270
Report Date: 2014/09/26

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

RESULTS OF ANALYSES OF WATER

Maxxam ID		XS0991		
Sampling Date		2014/09/23 16:00		
COC Number		481966-05-01		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	0.80	0.50	3760281
Inorganics				
Phenols-4AAP	mg/L	<0.0010	0.0010	3762272
Total Suspended Solids	mg/L	6	1	3761580
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	0.80	0.50	3762369
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	3762375
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				

Maxxam Job #: B4H7270
Report Date: 2014/09/26

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

TEST SUMMARY

Maxxam ID: XS0991
Sample ID: POND
Matrix: Water

Collected: 2014/09/23
Shipped:
Received: 2014/09/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3760281	N/A	2014/09/25	Automated Statchk
Total Oil and Grease	BAL	3762369	2014/09/25	2014/09/25	Francis Afonso
Phenols (4AAP)	TECH/PHEN	3762272	N/A	2014/09/26	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3762375	2014/09/25	2014/09/25	Francis Afonso
Low Level Total Suspended Solids	SLDS	3761580	N/A	2014/09/25	Deepak Sharma

Maxxam Job #: B4H7270
Report Date: 2014/09/26

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B4H7270
Report Date: 2014/09/26

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

QUALITY ASSURANCE REPORT

QA/QC				Date				
Batch	Init	QC Type	Parameter	Analyzed	Value	Recovery	Units	QC Limits
3761580	DSR	QC Standard	Total Suspended Solids	2014/09/25		98	%	85 - 115
3761580	DSR	Method Blank	Total Suspended Solids	2014/09/25	<1		mg/L	
3761580	DSR	RPD	Total Suspended Solids	2014/09/25	NC		%	25
3762272	BMO	Matrix Spike	Phenols-4AAP	2014/09/26		NC	%	80 - 120
3762272	BMO	Spiked Blank	Phenols-4AAP	2014/09/26		102	%	85 - 115
3762272	BMO	Method Blank	Phenols-4AAP	2014/09/26	<0.0010		mg/L	
3762272	BMO	RPD	Phenols-4AAP	2014/09/26	NC		%	20
3762369	FA	Spiked Blank	Total Oil & Grease	2014/09/25		97	%	85 - 115
3762369	FA	RPD	Total Oil & Grease	2014/09/25	2.6		%	25
3762369	FA	Method Blank	Total Oil & Grease	2014/09/25	<0.50		mg/L	
3762375	FA	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/09/25		97	%	85 - 115
3762375	FA	RPD	Total Oil & Grease Mineral/Synthetic	2014/09/25	3.2		%	25
3762375	FA	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/09/25	<0.50		mg/L	

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

Maxxam Job #: B4H7270
Report Date: 2014/09/26

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: AB

VALIDATION SIGNATURE PAGE

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



Brad Newman, Scientific Specialist

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

Your Project #: 1407634
Site#: 1407634
Your C.O.C. #: 485991-01-01

Attention:Alicia Beynon

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

Report Date: 2014/10/07
Report #: R3181585
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4I3910

Received: 2014/10/02, 10:10

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/10/07	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/10/07	2014/10/07	CAM SOP-00326	EPA 1664B m
pH	1	N/A	2014/10/04	CAM SOP-00413	SM 4500H+ B
Phenols (4AAP)	1	N/A	2014/10/06	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/10/07	2014/10/07	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/10/03	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

=====

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Maxxam Job #: B4I3910
Report Date: 2014/10/07

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

RESULTS OF ANALYSES OF WATER

Maxxam ID		XV6517		
Sampling Date		2014/10/01 13:30		
COC Number		485991-01-01		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	3770637
Inorganics				
pH	pH	8.04	N/A	3772386
Phenols-4AAP	mg/L	0.0059	0.0020	3773717
Total Suspended Solids	mg/L	36	2	3772983
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	3775822
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	3776122
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				

Maxxam Job #: B4I3910
Report Date: 2014/10/07

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

TEST SUMMARY

Maxxam ID: XV6517
Sample ID: POND
Matrix: Water

Collected: 2014/10/01
Shipped:
Received: 2014/10/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3770637	N/A	2014/10/07	Automated Statchk
Total Oil and Grease	BAL	3775822	2014/10/07	2014/10/07	Amjad Mir
pH	PH	3772386	N/A	2014/10/04	Neil Dassanayake
Phenols (4AAP)	TECH/PHEN	3773717	N/A	2014/10/06	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3776122	2014/10/07	2014/10/07	Amjad Mir
Low Level Total Suspended Solids	SLDS	3772983	N/A	2014/10/03	Bansari Ray

Maxxam Job #: B4I3910
Report Date: 2014/10/07

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B4I3910
Report Date: 2014/10/07

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

QUALITY ASSURANCE REPORT

QA/QC				Date				
Batch	Init	QC Type	Parameter	Analyzed	Value	Recovery	Units	QC Limits
3772386	NYS	Spiked Blank	pH	2014/10/04		102	%	98 - 103
3772386	NYS	RPD	pH	2014/10/04	0.27		%	N/A
3772983	RAY	QC Standard	Total Suspended Solids	2014/10/03		97	%	85 - 115
3772983	RAY	Method Blank	Total Suspended Solids	2014/10/03	<1		mg/L	
3772983	RAY	RPD	Total Suspended Solids	2014/10/03	NC		%	25
3773717	BMO	Matrix Spike	Phenols-4AAP	2014/10/06		99	%	80 - 120
3773717	BMO	Spiked Blank	Phenols-4AAP	2014/10/06		100	%	85 - 115
3773717	BMO	Method Blank	Phenols-4AAP	2014/10/06	<0.0010		mg/L	
3773717	BMO	RPD	Phenols-4AAP	2014/10/06	NC		%	20
3775822	AMJ	Matrix Spike	Total Oil & Grease	2014/10/07		103	%	75 - 125
3775822	AMJ	Spiked Blank	Total Oil & Grease	2014/10/07		97	%	85 - 115
3775822	AMJ	RPD	Total Oil & Grease	2014/10/07	0.78		%	25
3775822	AMJ	Method Blank	Total Oil & Grease	2014/10/07	<0.50		mg/L	
3776122	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/10/07		94	%	85 - 115
3776122	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2014/10/07	0.53		%	25
3776122	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/10/07	<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 (one or both samples < 5x RDL).

Maxxam Job #: B4I3910
Report Date: 2014/10/07

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

VALIDATION SIGNATURE PAGE

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




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

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Your Project #: 1407634
 Site#: 1407634
 Your C.O.C. #: 485991-06-01

Attention:Alicia Beynon

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

Report Date: 2014/10/17
 Report #: R3192245
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4J0195

Received: 2014/10/10, 10:05

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Animal and Vegetable Oil & Grease	1	N/A	2014/10/16	CAM SOP-00326	SM 5520 B
Total Oil and Grease	1	2014/10/15	2014/10/16	CAM SOP-00326	EPA 1664B m
pH	1	N/A	2014/10/16	CAM SOP-00413	SM 4500H+ B
Phenols (4AAP)	1	N/A	2014/10/16	CAM SOP-00444	OMOE E3179 m
TPH (Heavy Oil) (1)	1	2014/10/15	2014/10/16	CAM SOP-00326	SM 22 5520F m
Low Level Total Suspended Solids	1	N/A	2014/10/15	CAM SOP-00428	SM 22 2540D m

* 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

Encryption Key

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

Antonella Brasil, Senior Project Manager

Email: ABrasil@maxxam.ca

Phone# (905)817-5817

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Maxxam Job #: B4J0195
Report Date: 2014/10/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

RESULTS OF ANALYSES OF WATER

Maxxam ID		XY7714		
Sampling Date		2014/10/09 11:30		
COC Number		485991-06-01		
	Units	POND	RDL	QC Batch
Calculated Parameters				
Total Animal/Vegetable Oil and Grease	mg/L	<0.50	0.50	3783459
Inorganics				
pH	pH	8.16	N/A	3786382
Phenols-4AAP	mg/L	0.0022	0.0010	3786294
Total Suspended Solids	mg/L	8	1	3785065
Petroleum Hydrocarbons				
Total Oil & Grease	mg/L	<0.50	0.50	3785837
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	3785845
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable				

Maxxam Job #: B4J0195
Report Date: 2014/10/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

TEST SUMMARY

Maxxam ID: XY7714
Sample ID: POND
Matrix: Water

Collected: 2014/10/09
Shipped:
Received: 2014/10/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Animal and Vegetable Oil & Grease	BAL	3783459	N/A	2014/10/16	Automated Statchk
Total Oil and Grease	BAL	3785837	2014/10/15	2014/10/16	Amjad Mir
pH	PH	3786382	N/A	2014/10/16	Surinder Rai
Phenols (4AAP)	TECH/PHEN	3786294	N/A	2014/10/16	Bramdeo Motiram
TPH (Heavy Oil)	BAL	3785845	2014/10/15	2014/10/16	Amjad Mir
Low Level Total Suspended Solids	SLDS	3785065	N/A	2014/10/15	Bansari Ray

Maxxam Job #: B4J0195
Report Date: 2014/10/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B4J0195
Report Date: 2014/10/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

QUALITY ASSURANCE REPORT

QA/QC				Date				
Batch	Init	QC Type	Parameter	Analyzed	Value	Recovery	Units	QC Limits
3785065	RAY	QC Standard	Total Suspended Solids	2014/10/15		97	%	85 - 115
3785065	RAY	Method Blank	Total Suspended Solids	2014/10/15	<1		mg/L	
3785065	RAY	RPD	Total Suspended Solids	2014/10/15	NC		%	25
3785837	AMJ	Spiked Blank	Total Oil & Grease	2014/10/16		96	%	85 - 115
3785837	AMJ	RPD	Total Oil & Grease	2014/10/16	1.0		%	25
3785837	AMJ	Method Blank	Total Oil & Grease	2014/10/16	<0.50		mg/L	
3785845	AMJ	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2014/10/16		93	%	85 - 115
3785845	AMJ	RPD	Total Oil & Grease Mineral/Synthetic	2014/10/16	1.6		%	25
3785845	AMJ	Method Blank	Total Oil & Grease Mineral/Synthetic	2014/10/16	<0.50		mg/L	
3786294	BMO	Matrix Spike	Phenols-4AAP	2014/10/16		101	%	80 - 120
3786294	BMO	Spiked Blank	Phenols-4AAP	2014/10/16		101	%	85 - 115
3786294	BMO	Method Blank	Phenols-4AAP	2014/10/16	<0.0010		mg/L	
3786294	BMO	RPD	Phenols-4AAP	2014/10/16	NC		%	20
3786382	SAU	Spiked Blank	pH	2014/10/16		102	%	98 - 103
3786382	SAU	RPD	pH	2014/10/16	0.22		%	N/A

N/A = Not Applicable

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

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

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B4J0195
Report Date: 2014/10/17

Golder Associates Ltd
Client Project #: 1407634
Sampler Initials: SG

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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

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