

Appendix C1

Report: 2011 All Weather Private Access Road Water Quality Management Report

AGNICO-EAGLE MINES: MEADOWBANK DIVISION

**ALL WEATHER ACCESS ROAD:
2011 WATER QUALITY MANAGEMENT REPORT**

FEBRUARY 2012

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**

EXECUTIVE SUMMARY

Agnico-Eagle Mines Ltd. (AEM) is responsible to manage erosion, water quality, and the introduction of sediment along the 110 km all weather access road (AWAR) that connects the Hamlet of Baker Lake to the Meadowbank mine site. As in the past, the 2011 AWAR water quality management consisted of routine and event inspections at all of the crossings pre-freshet and post-freshet for potential or current erosional issues at all stream crossings. Water quality monitoring focused on all major crossings, and surface water sample collection at HADD crossings, representative watercourses and quarries as a follow-up from AEM (2009b) during the months of June and July.

HADD crossings R02, R06, R09 and R15 water quality results continue to suggest an improvement from post AWAR construction activities water quality data as mine operations road activity did not cause any observable significant effects on the receiving environment from the field observations and water quality data collected in 2011. AWAR surface water quality results did not present concerns to the receiving environment as there were no CCME exceedances.

In 2011, surface water samples were collected in quarries where standing water were present. Similar to 2010, only Quarry 7 contained an area of surface water where sampling was necessary. The majority of the quarries previously identified did not contain pooling due to snow melt or precipitation during the summer period.

Overall, the results of the visual inspections, monitoring and water quality chemical analysis show road operations and activities in 2011 presented no risks to receiving environments.

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SECTION 1 • INTRODUCTION AND OBJECTIVES

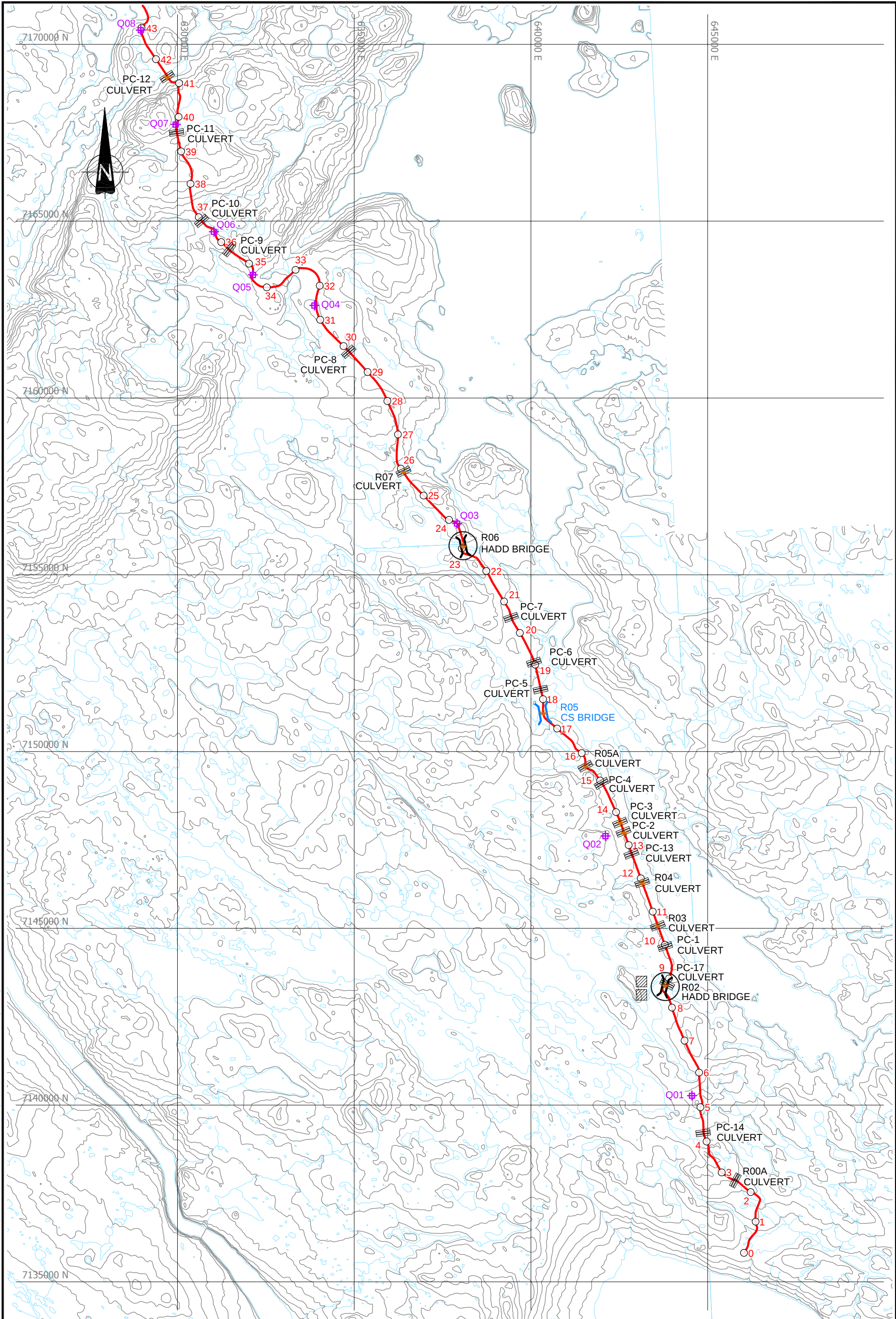
Agnico-Eagle Mines Ltd. (AEM) is responsible to manage erosion, water quality, and the introduction of sediment along the 110 km all weather access road (AWAR) that connects the Hamlet of Baker Lake to the Meadowbank mine site. As part of the water quality management, AEM personnel completed routine and event inspections at all of the crossings pre-freshet and post-freshet. The purpose of the monitoring is to prevent and manage erosion at all stream crossings, and completed routine water quality monitoring at all large crossings pre-freshet and post-freshet.

The approach taken in 2011 to evaluate and monitor erosion along the AWAR, adopted recommendations established in the 2010 AWAR Water Quality Management Report. All crossings were visually inspected for erosion and turbidity on a weekly basis during freshet and immediately after freshet (late June to early July). If turbidity was observed during the remainder of the open water season, the characteristics of the plume were monitored at the respective locations and if warranted, water samples were collected for laboratory analysis.

Water quality sampling was primarily focused on crossings that are considered fish-bearing watercourses where permitted Habitat Altered, Destructed or Disturbed (HADD) for bridge and road construction had occurred (as per DFO Authorization) (See Fig. 1 for sample locations). In 2011, water samples were collected once during freshet. These samples were collected immediately upstream and downstream of the respective crossings. Water samples were also collected at quarries where water accumulation was enough to warrant surface water collection and subsequent water quality analysis. Furthermore, oil and grease and BTEX sampling was completed at R06 as a follow-up to ensure mitigation and containment was protecting the surface water from potentially contaminated soil due to a 2010 truck turn-over.

This report documents the 2011 AWAR water quality management and reports the: AWAR turbidity and erosion monitoring, AWAR watercourse crossing water quality, AWAR Quarry water quality, QA/QC, provides the field and laboratory results and a discussion of the results. A summary of the monitoring data has been provided in the monthly reports to the NWB.

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LEGEND

- CULVERT
- HADD BRIDGE
- CLEAR-SPAN BRIDGE
- HOOP NETS INSTALLED
- LARVAL DRIFT TRAP
- EXISTING QUARRY
- KILOMETER MARKER

REFERENCES

- ROAD ALIGNMENT, BRIDGE, CULVERT AND QUARRY LOCATIONS FROM NUNA M&T SERVICES Ltd.
- BASE DRAWING FROM GOLDER ASSOCIATES Ltd.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK DIVISION

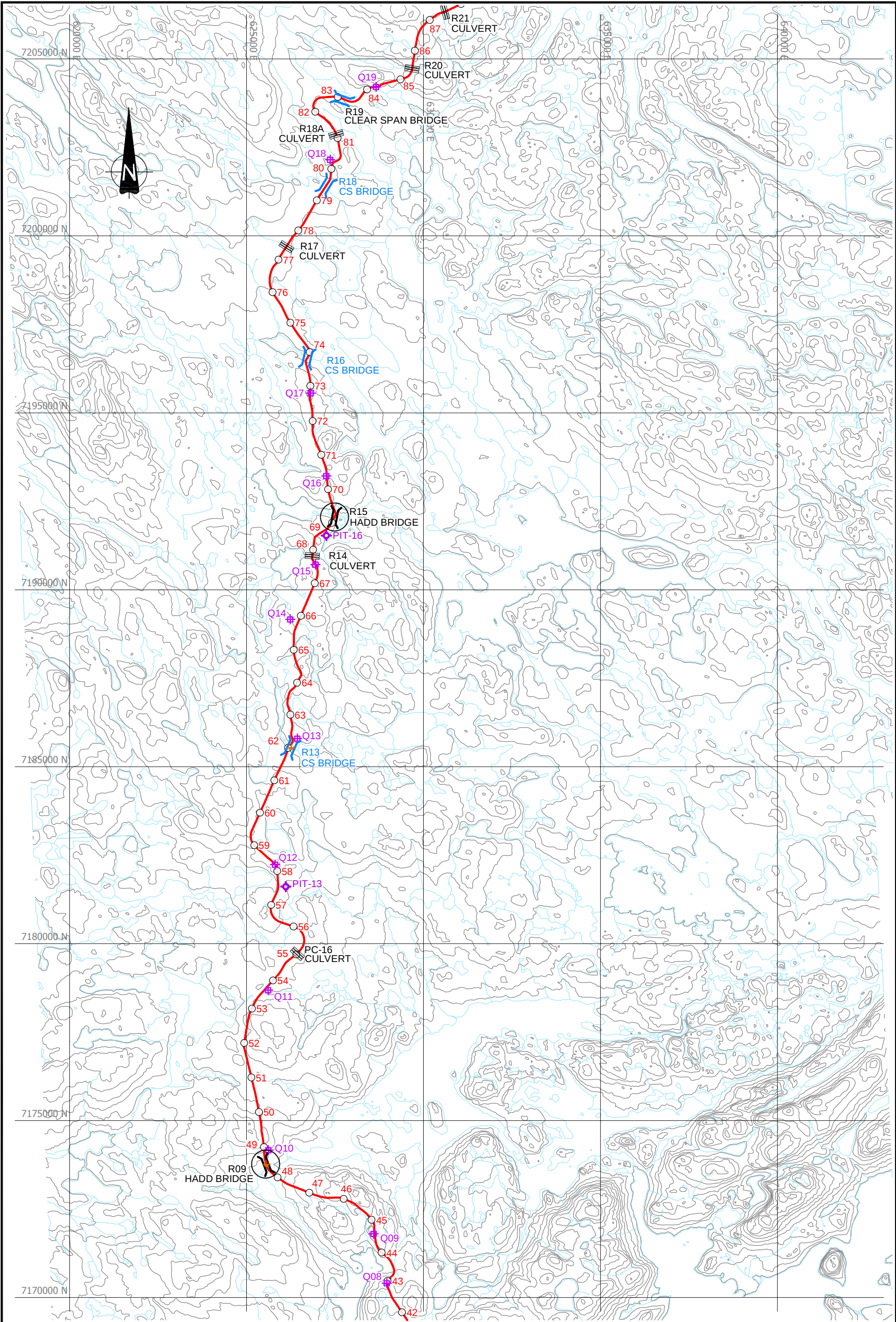
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ALL-WEATHER PRIVATE ACCESS ROAD
MONITORING LOCATIONS

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FIGURE 1a

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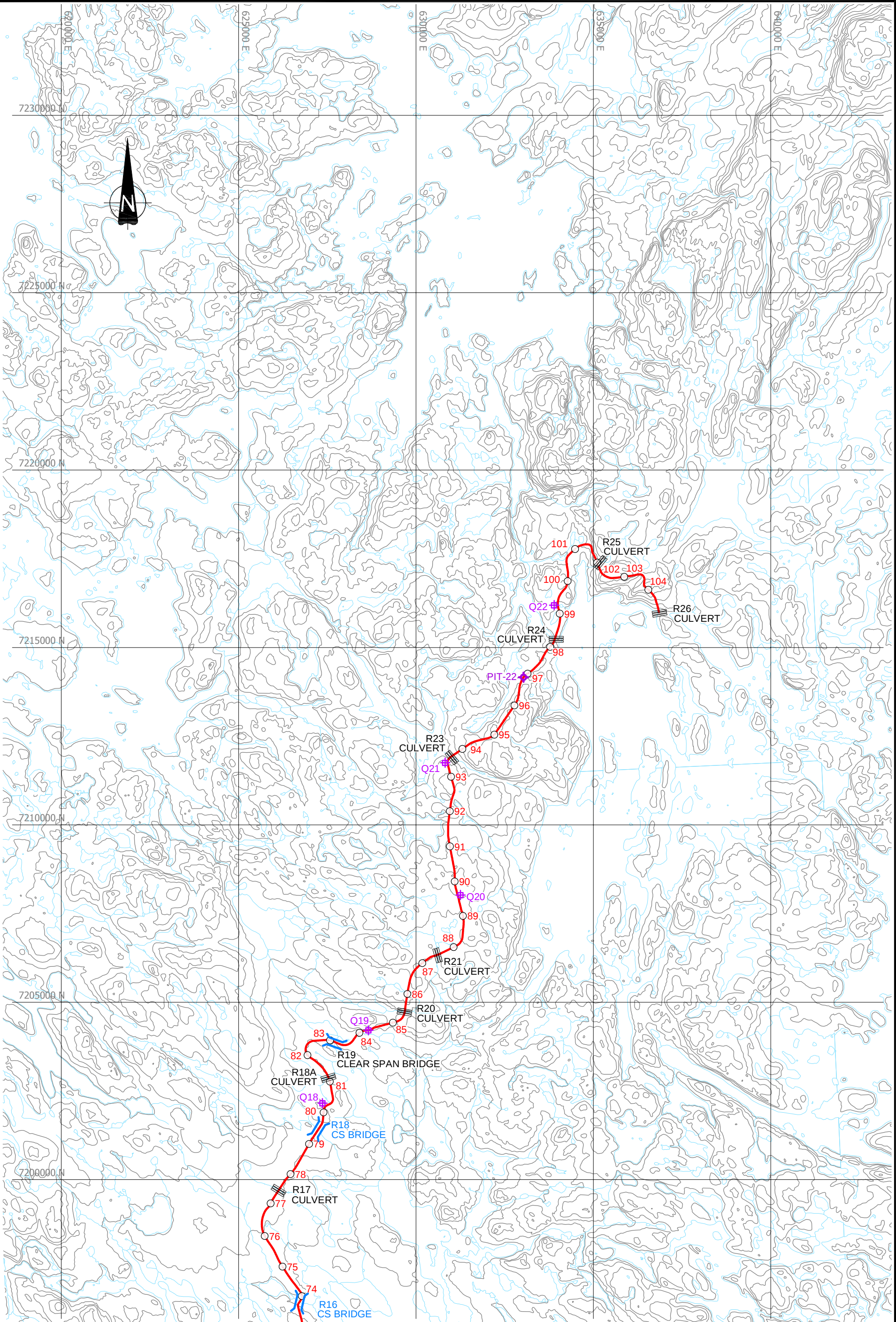
- CULVERT
- HADD BRIDGE
- CLEAR-SPAN BRIDGE
- HOOP NETS INSTALLED
- LARVAL DRIFT TRAP
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PROJECT		AGNICO-EAGLE MINES LIMITED MEADOWBANK DIVISION	
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LEGEND

- CULVERT
- HADD BRIDGE
- CLEAR-SPAN BRIDGE
- HOOP NETS INSTALLED
- LARVAL DRIFT TRAP
- EXISTING QUARRY
- KILOMETER MARKER

REFERENCES

- ROAD ALIGNMENT, BRIDGE, CULVERT AND QUARRY LOCATIONS FROM NUNA M&T SERVICES Ltd.
- BASE DRAWING FROM GOLDER ASSOCIATES Ltd.

PROJECT

AGNICO-EAGLE MINES LIMITED
MEADOWBANK DIVISION

TITLE

ALL-WEATHER PRIVATE ACCESS ROAD
MONITORING LOCATIONS

PROJECT No.			FILE No. 0714130119-1000_B_Fig-03	
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FIGURE 1c

SECTION 2 • AWAR TURBIDITY AND EROSION MONITORING

2.1 JUNE WATER QUALITY MONITORING

Pre-freshet erosional inspections at all culvert crossings and bridge crossings were conducted along the AWAR to evaluate the integrity of the bridges as well as to evaluate the potential depositional sources due to winter activity and complete inspections for potential erosion. See Appendix A photos. On June 15th, 2011 the first erosional inspection was completed along the AWAR. At this time the majority of the crossings had flowing water, but large amounts of snow build up were visible along the banks and shorelines, near the culverts, and under the bridges (see Appendix A photos). Due to the large amounts of snow build up, it is assumed that open water season only started in the last 3 – 5 days. During the initial erosion inspection on June 15, 2011 – no erosional or potential concerns were documented.

On June 26th, all crossings were inspected for turbidity and erosion. The monitoring focused on R02, R06, R09, and R15 crossings and evaluating water quality downstream compared to upstream (reference) water quality. After visual inspections and monitoring was completed, the crossings did not indicate any water quality issues that have a potential to impact nearby receiving environments. Table 2.1 summarizes the erosion observations for the months of June. Table 2.2 summarizes the monitoring data collected on June 26th, 2011.

2.2 JULY WATER QUALITY MONITORING

Weekly erosional inspections continued through the month of July. During this timeframe, water levels continued to drop and no erosional or other potential concerns were documented at any of the crossings. On July 9th, 2011, water samples were taken at HADD crossings R02, R06, R09, and R15 as well as Quarries Q1, Q4, and Q7. The results for this analysis are presented and discussed in section 3 and 4.

In addition to weekly erosion inspections, daily observations were made at all HADD crossings (R02, R06, R09, R15 crossings) for visual turbidity in July. July field water quality monitoring at HADD crossings included comparing turbidity (NTUs), temperature, conductivity and dissolved oxygen of downstream areas to upstream (reference) areas. Monitoring measurements taken at the crossings did not indicate any water quality issues that have a potential to impact nearby receiving environments. Furthermore, quarries 2, 4, 6, 7, 16 and 20 were inspected for standing pools during the June and July water quality monitoring. Pools were observed at Quarry 4, Quarry 7, and Quarry 16. The pools in the quarries were ephemeral and either dried up later in the summer or escaped to the nearby tundra without discharge into an aquatic environment.

Table 2.1 summarizes the erosion observations for the month of June. Table 2.2 summarizes the monitoring data collected on July 9th, 2011.

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Table 2.1: 2011 AWR Erosion Inspections Summary

Date	Flow	Erosional Concern	Visual Turbidity Observed	Where	Additional Comments	Field Crew
15-Jun-11	Yes	No	Yes	KM 105	High lake water level - Localized	RV, TT, PR
15-Jun-11	Yes	No	Yes	KM 83	-	RV, TT, PR
15-Jun-11	Yes	No	Yes	KM 63 R13	Turbidity readings taken US 3.09NTU DS 10.19NTU	RV, TT, PR
15-Jun-11	Yes	No	Yes	KM 1	-	RV, TT, PR
26-Jun-11	Yes	No	Yes	KM 23 R06	Turbidity readings of 2.36NTU US of R06 Bridge	TT, IC
26-Jun-11	Yes	No	Yes	KM 63 R13	Small turbidity pool DS of bridge	TT, IC
26-Jun-11	Yes	No	Yes	KM 102	Small turbidity pool near end of culvert. Appears to be natural run off	TT, IC
03-Jul-11	Yes	No	No	Km 68	High flow of water coming out of culvert No erosional concerns at rest of crossings	IC, PA
10-Jul-11	Yes/No	No	No	Km 0 - MBK	Water levels have decreased. Very little flow at most culverts No erosional concerns at rest of crossings	PA, RG
16-Jul-11	Yes/No	No	No	Km 0 - MBK	Water levels continue to decrease. No erosional concerns at all crossings	TT, RG

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Table 2.2: AWPAR Water Monitoring Data Summary 2011

Date	Location ID	Temperature (°C)	Conductivity us/cm	Turbidity/NTU	Field Crew
26-Jun-11	R02 US	3.64	26	0.39	TT, IC
26-Jun-11	R02 DS	3.18	26	0.31	TT, IC
26-Jun-11	R06 US	2.93	16	2.36	TT, IC
26-Jun-11	R06 DS	2.80	20	0.9	TT, IC
26-Jun-11	R09 US	4.91	32	0.05	TT, IC
26-Jun-11	R09 DS	4.81	35	0.02	TT, IC
26-Jun-11	R15 US	6.24	8	1.27	TT, IC
26-Jun-11	R15 DS	6.25	9	0.71	TT, IC
26-Jun-11	Q4	2.03	17	11.07	TT, IC
09-Jul-11	R02 US	12.57	32	0.5	RV, LB
09-Jul-11	R02 DS	10.06	31	0.81	RV, LB
09-Jul-11	R06 US	11.44	31	0.54	RV, LB
09-Jul-11	R06 DS	10.56	30	1.25	RV, LB
09-Jul-11	R09 US	16.98	48	0.7	RV, LB
09-Jul-11	R09 DS	17.01	25	0.32	RV, LB
09-Jul-11	R15 US	14.14	12	0.68	RV, LB
09-Jul-11	R15 DS	14.47	12	0.73	RV, LB
09-Jul-11	Q1	15.47	174	20.4	RV, LB
09-Jul-11	Q4	12.28	50	14.38	RV, LB
09-Jul-11	Q7	14.50	45	35	RV, LB

SECTION 3 • AWAR WATER QUALITY MONITORING

Water quality sampling was completed together with the water quality monitoring along the AWAR. In total, 11 water quality samples were collected by qualified technicians and submitted to ALS Laboratories Winnipeg, Man. (a CALA certified laboratory). Sampling locations are illustrated in Figure 1 and included: upstream (US: reference) and immediately downstream (DS) at HADD crossings. All water quality results for the watercourses are presented in Table 3.1.

3.1 HADD CROSSING SURFACE WATER QUALITY RESULTS

Water samples were collected US and DS on July 9, 2011 at R02, R06, R09, and R15. Samples were analyzed for general parameters (pH, Conductivity, Hardness, Alkalinity, Total Suspended Solids, Total Dissolved Solids and Turbidity), anions, nutrients, and total metals. Furthermore, oil and grease and Benzene, Toluene, Ethylbenzene and Xylene were sampled at R06 and R15 (as a reference) to ensure mitigation and containment was protecting the surface water from potentially contaminated soil due to a 2010 truck turn-over. Results are presented in Table 3.1.

The 2011 analytical water chemistry results indicated that no parameters exceeded the Canadian Council of Ministers of the Environment (CCME, 2007) Guidelines for the protection of aquatic life at HADD crossings. The water quality results for BTEX and oil and grease were below detection and showed levels below reference area R15. This provided evidence of successful containment and capture of hydrocarbons in the sump and recirculation system at the site of the 2010 fuel-truck roll-over near R06.

3.2 HADD CROSSING DISCUSSION

The results from the July 9th sampling event indicate that no parameters exceeded the CCME, 2007 guidelines. This report uses the CCME (2007) guidelines as a benchmark for evaluating the potential environment effects of road use and historical construction.

The 2007 and 2008 AWAR water quality monitoring results at HADD crossings (AEM, 2008 & 2009a) demonstrated few exceedances of CCME (2007) for total metals (AEM, 2010). In 2007, CCME (2007) for Al and pH guideline values were slightly exceeded at R09 US and DS. In 2008, CCME (2007) for Cr, Cu and Se guideline values were exceeded at R02US & R02 DS, R09 US & DS, and R15 US & DS. The 2009 and 2010 data suggests slight improvement from historical water quality data with mine operations road activity causing no significant effects on the receiving environment at HADD crossings. The previous years' trend of continued improvement is supported by the 2011 data as indicated by the fact that there were no exceedances of the CCME (2007) guidelines.

Table 3.1 AWAR Water Chemistry Results

RESULTS OF ANALYSIS

Sample ID		R02 US	R02 DS	R06 US	R06 DS	R09 US	R09 DS	R15 US	R15 DS	DUP 1
Date Sampled		09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11
Time Sampled	CCME 2007	11:50	12:00	13:30	13:45	15:00	15:15	16:00	16:30	00:00
ALS Sample ID	Guidelines	L1033625-1	L1033625-2	L1033625-3	L1033625-4	L1033625-7	L1033625-8	L1033625-9	L1033625-10	L1033625-11
Matrix		Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests										
Conductivity	NG	39.2	41.4	38.8	37.1	57.1	56.7	11.9	11.9	11.9
Hardness (as CaCO3)	NG	13.0	13.8	12.8	12.3	24.6	24.2	4.67	4.72	4.70
pH	6.5 - 9.0	7.38	7.42	7.31	7.27	7.50	7.52	6.98	6.97	7.01
Total Suspended Solids	NG	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	NG	26.0	24.0	26.0	24.0	36.0	34.0	10.0	14.0	12.0
Turbidity	NG	0.29	0.25	0.38	0.34	0.31	0.36	0.60	0.56	0.59
Anions and Nutrients										
Alkalinity, Total (as CaCO3)	NG	12.2	35.6	10.4	10.2	19.9	20.0	5.4	5.4	5.4
Ammonia as N	See fact sheet	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bicarbonate (HCO3)	NG	14.9	43.4	12.7	12.4	24.2	24.4	6.6	6.6	6.6
Carbonate (CO3)	NG	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
Chloride	NG	3.20	3.18	3.55	3.48	1.97	1.96	0.92	0.91	0.90
Fluoride	NG	0.030	0.025	0.021	0.021	<0.020	<0.020	0.047	0.046	0.047
Hydroxide (OH)	NG	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Nitrate and Nitrite as N	290000	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070
Nitrate-N	NG	<0.0050	<0.0050	0.0113	0.0058	0.0061	0.0067	0.0067	0.0056	0.0058
Nitrite-N	NG	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	NG	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phosphorus (P)-Total Reactive	NG	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	0.004	0.0035	0.0040	0.0043	0.0062	0.0045	0.0046	0.0046	0.0054	0.0044
Sulfate	NG	1.43	1.19	1.78	1.69	3.73	3.73	0.95	0.89	0.91
Organic / Inorganic Carbon										
Dissolved Organic Carbon	NG	2.9	3.1	3.1	3.1	3.5	3.4	2.8	2.7	2.7
Total Organic Carbon	NG	3.2	3.1	3.3	3.1	3.6	3.5	2.7	2.7	2.7
Total Metals										
Aluminum (Al)-Total	0.1 @ pH>6.5	0.0120	0.0129	0.0182	0.0220	0.0156	0.0232	0.0359	0.0381	0.0378
Antimony (Sb)-Total	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Arsenic (As)-Total	0.005	<0.00020	<0.00020	<0.00020	<0.00020	0.00022	0.00025	<0.00020	<0.00020	<0.00020
Barium (Ba)-Total	NG	0.0105	0.0110	0.00328	0.00317	0.00353	0.00359	0.00272	0.00273	0.00268
Beryllium (Be)-Total	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Boron (B)-Total	NG	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	0.00017	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	NG	3.98	4.27	3.55	3.35	6.85	6.68	0.93	0.95	0.93
Cesium (Cs)-Total	NG	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Table 3.1 AWAR Water Chemistry Results

RESULTS OF ANALYSIS

Sample ID		R02 US	R02 DS	R06 US	R06 DS	R09 US	R09 DS	R15 US	R15 DS	DUP 1
Date Sampled		09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11	09-JUL-11
Time Sampled		11:50	12:00	13:30	13:45	15:00	15:15	16:00	16:30	00:00
ALS Sample ID	CCME 2007 Guidelines ¹	L1033625-1	L1033625-2	L1033625-3	L1033625-4	L1033625-7	L1033625-8	L1033625-9	L1033625-10	L1033625-11
Matrix		Water	Water	Water	Water	Water	Water	Water	Water	Water
Cobalt (Co)-Total	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Copper (Cu)-Total	0.002 @ hrdns <120mg/L	0.00070	0.00079	0.00146	0.00129	0.00178	0.00175	0.00118	0.00129	0.00119
Iron (Fe)-Total	0.3	0.040	0.035	0.040	0.037	0.057	0.069	0.050	0.050	0.055
Lead (Pb)-Total	0.001 @ hrdns <60 mg/L	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	0.000259	<0.000090
Lithium (Li)-Total	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Magnesium (Mg)-Total	NG	0.743	0.766	0.956	0.962	1.83	1.83	0.569	0.571	0.581
Manganese (Mn)-Total	NG	0.00218	0.00170	0.00203	0.00270	0.00410	0.00387	0.00126	0.00128	0.00135
Mercury (Hg)-Total	NG	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.073	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Nickel (Ni)-Total	0.025 @ hrdns <60mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Phosphorus (P)-Total	NG	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Potassium (K)-Total	NG	0.437	0.454	0.459	0.452	0.366	0.367	0.463	0.466	0.464
Rubidium (Rb)-Total	NG	0.00046	0.00046	0.00044	0.00039	0.00042	0.00042	0.00071	0.00069	0.00071
Selenium (Se)-Total	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silicon (Si)-Total	NG	0.207	0.197	0.300	0.287	0.379	0.389	0.260	0.273	0.277
Silver (Ag)-Total	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Sodium (Na)-Total	NG	1.75	1.81	1.90	1.82	1.49	1.45	0.782	0.789	0.770
Strontium (Sr)-Total	NG	0.0179	0.0188	0.0138	0.0132	0.0350	0.0334	0.00642	0.00620	0.00643
Tellurium (Te)-Total	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	0.0008	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Thorium (Th)-Total	NG	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	NG	<0.00020	<0.00020	0.00023	0.00021	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Total	NG	0.00037	0.00027	0.00037	0.00052	0.00072	0.00040	0.00090	0.00085	0.00088
Tungsten (W)-Total	NG	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Uranium (U)-Total	NG	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Vanadium (V)-Total	NG	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Zinc (Zn)-Total	0.03	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zirconium (Zr)-Total	NG	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Aggregate Organics										
Oil & Grease-(IR)		-	-	<1.0	<1.0	-	-	2.6	1.3	-
Volatile Organic Compounds										
Benzene		-	-	<0.00050	<0.00050	-	-	<0.00050	<0.00050	-
Ethylbenzene		-	-	<0.00050	<0.00050	-	-	<0.00050	<0.00050	-
Toluene		-	-	<0.00050	<0.00050	-	-	<0.00050	<0.00050	-
o-Xylene		-	-	<0.00050	<0.00050	-	-	<0.00050	<0.00050	-
m+p-Xylenes		-	-	<0.0010	<0.0010	-	-	<0.0010	<0.0010	-
Xylenes		-	-	<0.0015	<0.0015	-	-	<0.0015	<0.0015	-
Surrogate: Toluene-d8 (SURRE)		-	-	116	121	-	-	121	115	-

Notes:

NG = no guideline

Exceeding CCME, 2007

¹ Canadian Water Quality Guidelines for the Protection of Aquatic Life, CCME, Update 7.0, September 2007.² Cadmium guideline calculated using measured hardness concentration per sample.³ Chromium guideline is for Cr VI, which yields the most conservative guideline.

SECTION 4 • QUARRIES

4.1 OBSERVED DRAINAGE AND WATER POOLING

Quarries were inspected on the water quality monitoring dates of June 26th and July 9th. During the initial inspection on June 26th, the majority of quarries were snow filled. Quarry 4 and Quarry 16 were the only quarries with standing water present at this time. The standing water in these two quarries were isolated and did not appear to pose a risk to the natural environment. Water samples were collected on July 9th from quarries where standing water was present (Quarry 4 and Quarry 7). The objective of the water sampling was to re-sample quarries identified in the Geochemical Characterization Study (AEM, 2009b) as having exceeded CCME (2007) and MMER parameters or sample quarries that demonstrated concerns as a follow-up from the 2008, 2009, and 2010 sampling.

Table 4.1 summarizes the 2010 June and July observations and provided the basis for sampling at specific quarry locations.

4.2 SURFACE WATER QUALITY RESULTS

Surface water samples were collected at Quarries 4 and 7, on July 9th, 2011 (see Figure 1 for quarry locations). Samples were analyzed for general parameters (pH, Conductivity, Hardness, Alkalinity, Total Suspended Solids, Total Dissolved Solids and Turbidity), anions, nutrients, and total metals. Results are presented in Table 4.2.

During the sampling event of July 9th, quarries 4 and 7 samples exceeded CCME (2007) guidelines for total aluminum. Quarry 7 exceeded CCME (2007) guidelines for Copper, Iron, and Nickel as well as pH. See Table 4.2 for the quarry surface water quality results.

4.3 DISCUSSION

In 2011, qualified technicians collected water samples at quarries 4 and 7 where standing pools of water were present and provided the opportunity to collect representative water samples. These samples were a follow-up of the 2008, 2009, and 2010 analytical results that were used to assist in evaluating the results of the 2008 geochemical characterization and water sample results (AEM 2009b). In 2011, Quarry 4 exceeded for total aluminum and Quarry 7 exceeded pH and a few additional metals (Total Aluminum, Copper, Iron, and Nickel). The CCME (2007) values are conservative measures for the protection of broad aquatic effects, thus exceedences do not always signify ecological effects rather a comparison to reference site conditions provides valuable insight into the natural conditions of the site. Similar to 2008, 2009, and 2010 technicians noted that the standing pools in Quarry 7 were small, shallow and less than half the size of the quarry and slightly reduced pH may be a result of sampling recently melted snow (see Appendix A photos). The quarries were revisited in September and the standing pool at Quarry 7 had evaporated. In both cases, these quarries are isolated, have small standing pools that are isolated and do not present a risk to the receiving environment.

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Table 4.1: Quarry Observations Summary 2011

Date	Location ID	Is there Water in the Quarry	Is Drainage Contained within the Quarry	Does Water Pool in the Quarry	Is Pool Greater than 50%	General Notes
26-Jun-11	Q4	Yes	Yes	Yes	Yes	Water Monitoring Completed
26-Jun-11	Q7	No	-	-	-	Snow Filled
26-Jun-11	Q8	No	-	-	-	Mostly Snow Filled - Small pool of standing water near entrance
26-Jun-11	Q16	No	-	-	-	Mostly Snow Filled - Small pool of standing water near entrance
26-Jun-11	Q17	No	-	-	-	Snow Filled
09-Jul-11	Q1	Yes	-	-	-	Water Monitoring Completed
09-Jul-11	Q2	No	-	-	-	No Standing or Pooling Water Present
09-Jul-11	Q4	Yes	Yes	Yes	Yes	Water Monitoring Completed
09-Jul-11	Q7	Yes	-	-	-	Water Monitoring Completed
09-Jul-11	Q16	No	-	-	-	No Standing or Pooling Water Present
09-Jul-11	Q20	No	-	-	-	No Standing or Pooling Water Present

Table 4.2 Quarry Water Chemistry Results

Sample ID		Q4	Q7
Date Sampled		09-JUL-11	09-JUL-11
Time Sampled		14:00	14:30
ALS Sample ID	CCME 2007	L1033625-5	L1033625-6
Matrix	Guidelines	Water	Water
Physical Tests			
Conductivity	NG	58.8	54.6
Hardness (as CaCO3)	NG	25.6	5.11
pH	6.5 - 9.0	7.69	4.24
Total Suspended Solids	NG	2.4	<2.0
Total Dissolved Solids	NG	32.0	30.0
Turbidity	NG	4.96	1.87
Anions and Nutrients			
Alkalinity, Total (as CaCO3)	NG	22.2	<1.0
Ammonia as N	See fact sheet	<0.050	<0.050
Bicarbonate (HCO3)	NG	27.1	<2.0
Carbonate (CO3)	NG	<0.60	<0.60
Chloride	NG	0.60	0.20
Fluoride	NG	0.034	0.025
Hydroxide (OH)	NG	<0.40	<0.40
Nitrate and Nitrite as N	290000	0.597	0.187
Nitrate-N	NG	0.593	0.187
Nitrite-N	NG	0.0038	<0.0010
Total Kjeldahl Nitrogen	NG	<0.20	<0.20
Phosphorus (P)-Total Reactive	NG	0.0024	0.0015
Phosphorus (P)-Total	0.004	0.011	<0.0020
Sulfate	NG	2.60	13.0
Organic / Inorganic Carbon			
Dissolved Organic Carbon	NG	<1.0	<1.0
Total Organic Carbon	NG	<1.0	<1.0
Total Metals			
Aluminum (Al)-Total	0.1 @ pH>6.5	0.005 @ pH<6.5	0.210
Antimony (Sb)-Total	NG		<0.00020
Arsenic (As)-Total	0.005		0.00039
Barium (Ba)-Total	NG		0.00945
Beryllium (Be)-Total	NG		<0.00020
Bismuth (Bi)-Total	NG		<0.00020

Table 4.2 Quarry Water Chemistry Results

Sample ID			Q4	Q7
Date Sampled			09-JUL-11	09-JUL-11
Time Sampled			14:00	14:30
ALS Sample ID	CCME 2007	¹	L1033625-5	L1033625-6
Matrix	Guidelines		Water	Water
Boron (B)-Total	NG		<0.010	<0.010
Cadmium (Cd)-Total	0.00017	²	<0.000010	0.000084
Calcium (Ca)-Total	NG		8.10	1.35
Cesium (Cs)-Total	NG		<0.00010	<0.00010
Chromium (Cr)-Total	0.001	³	<0.0010	0.0010
Cobalt (Co)-Total	NG		<0.00020	0.0281
Copper (Cu)-Total	0.002 @ hrdns <120mg/L		0.00199	0.0416
Iron (Fe)-Total	0.3		0.26	0.54
Lead (Pb)-Total	0.001 @ hrdns <60 mg/L		0.000330	0.000664
Lithium (Li)-Total	NG		<0.0020	<0.0020
Magnesium (Mg)-Total	NG		1.30	0.422
Manganese (Mn)-Total	NG		0.0139	0.115
Mercury (Hg)-Total	NG		<0.000050	<0.000050
Molybdenum (Mo)-Total	0.073		0.00029	<0.00020
Nickel (Ni)-Total	0.025 @ hrdns <60mg/L		<0.0020	0.0459
Phosphorus (P)-Total	NG		<0.20	<0.20
Potassium (K)-Total	NG		0.855	0.230
Rubidium (Rb)-Total	NG		0.00053	0.00055
Selenium (Se)-Total	0.001		<0.0010	<0.0010
Silicon (Si)-Total	NG		0.764	0.896
Silver (Ag)-Total	0.0001		<0.00010	<0.00010
Sodium (Na)-Total	NG		1.33	0.248
Strontium (Sr)-Total	NG		0.0439	0.00955
Tellurium (Te)-Total	NG		<0.00020	<0.00020
Thallium (Tl)-Total	0.0008		<0.00010	<0.00010
Thorium (Th)-Total	NG		<0.00010	0.00012
Tin (Sn)-Total	NG		<0.00020	<0.00020
Titanium (Ti)-Total	NG		0.00593	0.00359
Tungsten (W)-Total	NG		<0.0010	<0.0010
Uranium (U)-Total	NG		0.00035	0.00255
Vanadium (V)-Total	NG		0.00052	<0.00020
Zinc (Zn)-Total	0.03		<0.0050	0.0123
Zirconium (Zr)-Total	NG		<0.00040	<0.00040

Notes:

NG = no guideline

Exceeding CCME, 2007

¹ Canadian Water Quality Guidelines for the Protection of Aquatic Life, CCME, Update 7.0, September 2007.

² Cadmium guideline calculated using measured hardness concentration per sample.

³ Chromium guideline is for Cr VI, which yields the most conservative guideline.

SECTION 5 • QUALITY ASSURANCE AND QUALITY CONTROL

5.1 OBJECTIVES

The objective of quality assurance and quality control (QA/QC) for water quality monitoring is to ensure that the chemical and field data collected are representative of the material sampled. Data quality is assured throughout the collection and analysis of samples using standard procedures, certified laboratories and by staffing with trained technicians (AEM, 2008).

Field QA/QC duplicate results were assessed using the relative percent difference (RPD) between measurements: The equation used to calculate a RPD is:

$$RPD = [(A-B)/((A+B)/2)] \times 100$$

For the purposes of QA/QC screening a RPD of 50% for concentrations that exceed 10x the Method Detection Limits (MDL) is considered unacceptable. RPD values may be either positive or negative and ideally should provide a mix of the two, with values clustered around zero. Biases may be evident if there are consistently positive or negative values. Large variations in RPD values will often occur when duplicate sample concentrations are low and near the analytical detection limit.

As outlined in AEM (2008), a target of 10% field duplicates or at least one sample per event are submitted for QA/QC analysis to assess the variability and sample homogeneity.

5.2 RESULTS AND DISCUSSION

All laboratory analysis was completed by ALS Laboratories: Winnipeg, Man which is an accredited laboratory by the Canadian Association for Laboratories Accreditation (CALA) Inc. The results met laboratory QA/QC internal data quality objectives for precision and completeness. The certificate of analyses from ALS is presented in Appendix C.

During the July water quality sampling, one duplicate sample was taken, meeting the requirement per event as outlined in the QA/QC objectives. On July 9th, a duplicate sample was collected at R15 DS during the sampling event. The field QA/QC results are summarized in Table 5.2. The results of this evaluation indicate a high consistency between the original field sample and the field duplicate sample. In 2011 none of the samples exceeded the RPD of 50%.

Table 5.2 Water Quality Quality Assurance and Quality Control Results

RESULTS OF ANALYSIS

Sample ID		R15 DS	DUP 1	RPD
Date Sampled		09-JUL-11	09-JUL-11	
Time Sampled		16:30	00:00	
ALS Sample ID		L1033625-10	L1033625-11	
Matrix		Water	Water	
Physical Tests	Limits			
Conductivity	0.40	11.9	11.9	-
Hardness (as CaCO ₃)	0.30	4.72	4.70	0.42
pH	0.10	6.97	7.01	-0.57
Total Suspended Solids	2.0	<2.0	<2.0	-
Total Dissolved Solids	5.0	14.0	12.0	15.38
Turbidity	0.10	0.56	0.59	-5.22
Anions and Nutrients				
Alkalinity, Total (as CaCO ₃)	1.0	5.4	5.4	-
Ammonia as N	0.050	<0.050	<0.050	-
Bicarbonate (HCO ₃)	2.0	6.6	6.6	-
Carbonate (CO ₃)	0.60	<0.60	<0.60	-
Chloride	0.20	0.91	0.90	1.10
Fluoride	0.020	0.046	0.047	-2.15
Hydroxide (OH)	0.40	<0.40	<0.40	-
Nitrate and Nitrite as N	0.070	<0.070	<0.070	-
Nitrate-N	0.0050	0.0056	0.0058	-3.51
Nitrite-N	0.0010	<0.0010	<0.0010	-
Total Kjeldahl Nitrogen	0.20	<0.20	<0.20	-
Phosphorus (P)-Total Reactive	0.010	<0.0010	<0.0010	-
Phosphorus (P)-Total	0.010	0.0054	0.0044	20.41
Sulfate	0.50	0.89	0.91	-2.22
Organic / Inorganic Carbon				
Dissolved Organic Carbon	1.0	2.7	2.7	-
Total Organic Carbon	1.0	2.7	2.7	-

Table 5.2 Water Quality Quality Assurance and Quality Control Results

RESULTS OF ANALYSIS

Sample ID		R15 DS	DUP 1	RPD
Date Sampled		09-JUL-11	09-JUL-11	
Time Sampled		16:30	00:00	
ALS Sample ID		L1033625-10	L1033625-11	
Matrix		Water	Water	
Total Metals				
Aluminum (Al)-Total	0.0050	0.0381	0.0378	0.79
Antimony (Sb)-Total	0.00020	<0.00020	<0.00020	-
Arsenic (As)-Total	0.00020	<0.00020	<0.00020	-
Barium (Ba)-Total	0.00020	0.00273	0.00268	1.85
Beryllium (Be)-Total	0.00020	<0.00020	<0.00020	-
Bismuth (Bi)-Total	0.00020	<0.00020	<0.00020	-
Boron (B)-Total	0.010	<0.010	<0.010	-
Cadmium (Cd)-Total	0.000010	<0.000010	<0.000010	-
Calcium (Ca)-Total	0.10	0.95	0.93	2.13
Cesium (Cs)-Total	0.00010	<0.00010	<0.00010	-
Chromium (Cr)-Total	0.0010	<0.0010	<0.0010	-
Cobalt (Co)-Total	0.00020	<0.00020	<0.00020	-
Copper (Cu)-Total	0.00020	0.00129	0.00119	8.06
Iron (Fe)-Total	0.10	0.050	0.055	-9.52
Lead (Pb)-Total	0.000090	0.000259	<0.000090	-
Lithium (Li)-Total	0.0020	<0.0020	<0.0020	-
Magnesium (Mg)-Total	0.010	0.571	0.581	-1.74
Manganese (Mn)-Total	0.00030	0.00128	0.00135	-5.32
Mercury (Hg)-Total	0.000050	<0.000050	<0.000050	-
Molybdenum (Mo)-Total	0.00020	<0.00020	<0.00020	-
Nickel (Ni)-Total	0.0020	<0.0020	<0.0020	-
Phosphorus (P)-Total	0.20	<0.20	<0.20	-
Potassium (K)-Total	0.020	0.466	0.464	0.43
Rubidium (Rb)-Total	0.00020	0.00069	0.00071	-2.86
Selenium (Se)-Total	0.0010	<0.0010	<0.0010	-
Silicon (Si)-Total	0.050	0.273	0.277	-1.45
Silver (Ag)-Total	0.00010	<0.00010	<0.00010	-
Sodium (Na)-Total	0.030	0.789	0.770	2.44
Strontium (Sr)-Total	0.00010	0.00620	0.00643	-3.64
Tellurium (Te)-Total	0.00020	<0.00020	<0.00020	-
Thallium (Tl)-Total	0.00010	<0.00010	<0.00010	-
Thorium (Th)-Total	0.00010	<0.00010	<0.00010	-
Tin (Sn)-Total	0.00020	<0.00020	<0.00020	-
Titanium (Ti)-Total	0.00020	0.00085	0.00088	-3.47
Tungsten (W)-Total	0.0010	<0.0010	<0.0010	-
Uranium (U)-Total	0.00010	<0.00010	<0.00010	-
Vanadium (V)-Total	0.00020	<0.00020	<0.00020	-
Zinc (Zn)-Total	0.0050	<0.0050	<0.0050	-
Zirconium (Zr)-Total	0.00040	<0.00040	<0.00040	-

Exceeded 50% RPD

SECTION 6 • CONCLUSIONS AND RECOMMENDATIONS

As in the past, the 2011 AWAR water quality management consisted of routine and event inspections at all of the crossings pre-freshet and post-freshet for potential or current erosional issues at all stream crossings. Water quality monitoring focused on all major crossings, and surface water sample collection at HADD crossings, representative watercourses and quarries as a follow-up from AEM (2009b) during the months of June and July.

HADD crossings R02, R06, R09 and R15 water quality results suggested an improvement from post AWAR construction activities as mine operations road activity did not cause any observable effects on the receiving environment based on the field observations and water quality data collected in 2011. AWAR surface water quality results did not exceed CCME (2002) water quality guidelines. Overall, the results show road operations and activities in 2011 do not present a risk to aquatic biota.

The 2010 water quality management report recommended that unless there are significant changes during reclamation, quarry surface water sampling did not need to be completed on an annual basis as follow-up water sampling has not provided evidence of geochemical issues in the quarries. In 2011, surface water samples were collected in quarries where standing water were present. Similar to 2010, only Quarry 7 had pooling; this small pool was contained within the quarry and evaporated by September. The majority of the quarries identified in AEM (2009b) did not contain pooling due to snow melt or precipitation during the summer period. The results in 2011, confirm no risk to the aquatic environment.

It is recommended that water quality management along the AWAR continue in 2012 following the recommendations of 2010 with priority placed on visual identification and turbidity monitoring, as well as evaluating erosional concerns at all crossings and quarries from pre-freshet to post freshet (June – July). Unless turbidity issues are visually observed, surface water quality sampling is not deemed necessary at non-HADD crossings or contact pools.

Water quality monitoring should continue to be focused at HADD crossings and a single water chemistry sample is to be collected as early into the open water season as possible, when erosional issues are most likely to occur. If deemed necessary, follow-up sampling or monitoring could take place in other open water months. Unless there are significant changes during reclamation, it is recommended that quarry surface water sampling not be completed in 2012 as follow-up water sampling has not provided evidence of geochemical issues in the quarries.

SECTION 7 • REFERENCES

AEM (2008). Quality Assurance/ Quality Control Plan: Meadowbank Division, December 2008. Prepared by Agnico-Eagle Mines Limited- Meadowbank Division.

AEM (2008). Agnico-Eagle Mines- Meadowbank Mines: 2007 All Weather Private Access Road Annual report. Prepared by Azimuth Consulting Group.

AEM (2009a). Meadowbank Gold Project. 2008 Annual Report. Prepared by Agnico-Eagle Mines Limited- Meadowbank Division. March 2009.

AEM (2009b). Geochemical Characterization Study: All Weather Private Access Road and Airstrip Quarries. March 2009.

AEM (2010). Agnico-Eagle Mines- Meadowbank Gold Mine Annual Report Appendix C1: All Weather Private Access Road: 2009 Water Quality Management Report.

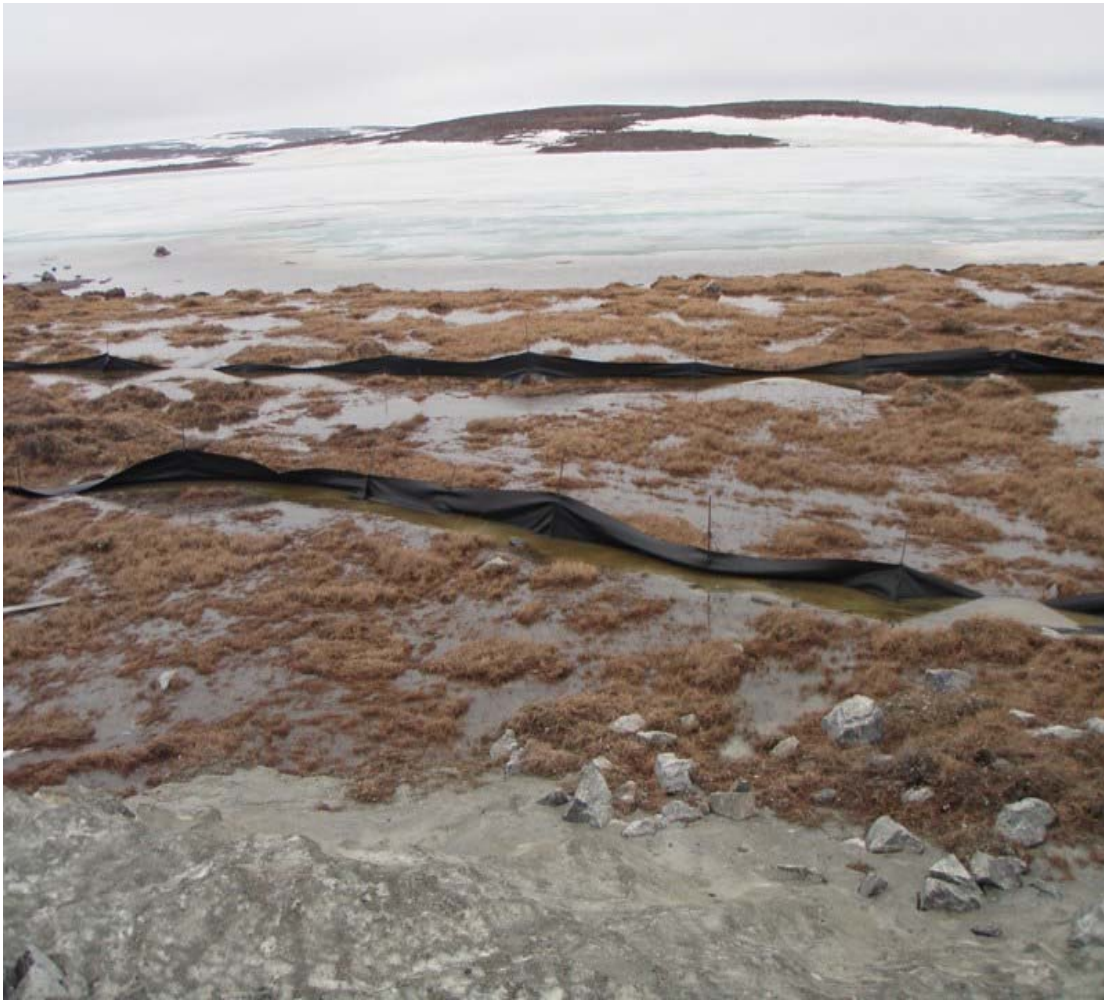
AEM (2011), Agnico-Eagle Mines – All Weather Private Access Road: 2010 Water Quality Management Report.

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

FEBRUARY 2012

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**



High Lake Water Levels, KM 105 – June 15, 2011

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KM 80. Snow backing up culvert, blocking flow – June 15, 2011

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R15 Bridge (KM 70) Snow covering bridge abutments – June 15, 2011

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R09 (KM 49) US of Bridge – June 15, 2011

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R09 (KM 49) DS of Bridge – June 15, 2011

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R06 (KM 23) US of Bridge – June 15, 2011

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Culvert at KM 22 collecting run off – June 15, 2011

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R06 (KM 23) DS of Bridge – June 15, 2011. No Turbidity Observed

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Standing Pool of Water draining to culvert at KM 20 – June 15, 2011

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MANAGEMENT REPORT**



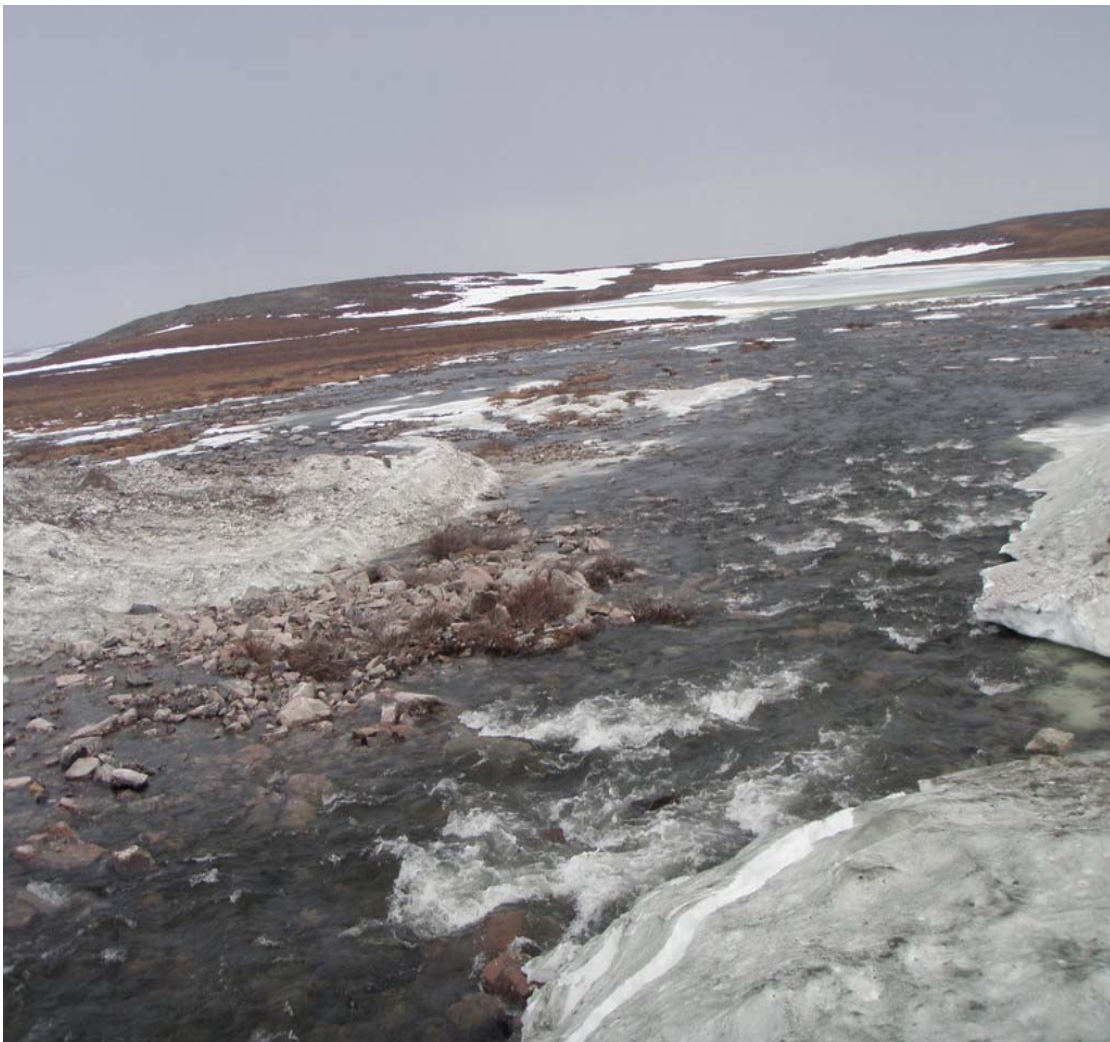
Large pool of water and heavy flow at R05 (KM 18) – June 15, 2011

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R02 US of Bridge – Upstream flow at R02 – June 15, 2011

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R02 DS of Bridge – June 15, 2011

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R02 Compensation Berms – June 15, 2011

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R02 DS of Bridge – June 17, 2011

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R09 US of Bridge – June 17, 2011

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R02 Culverts – June 26, 2011

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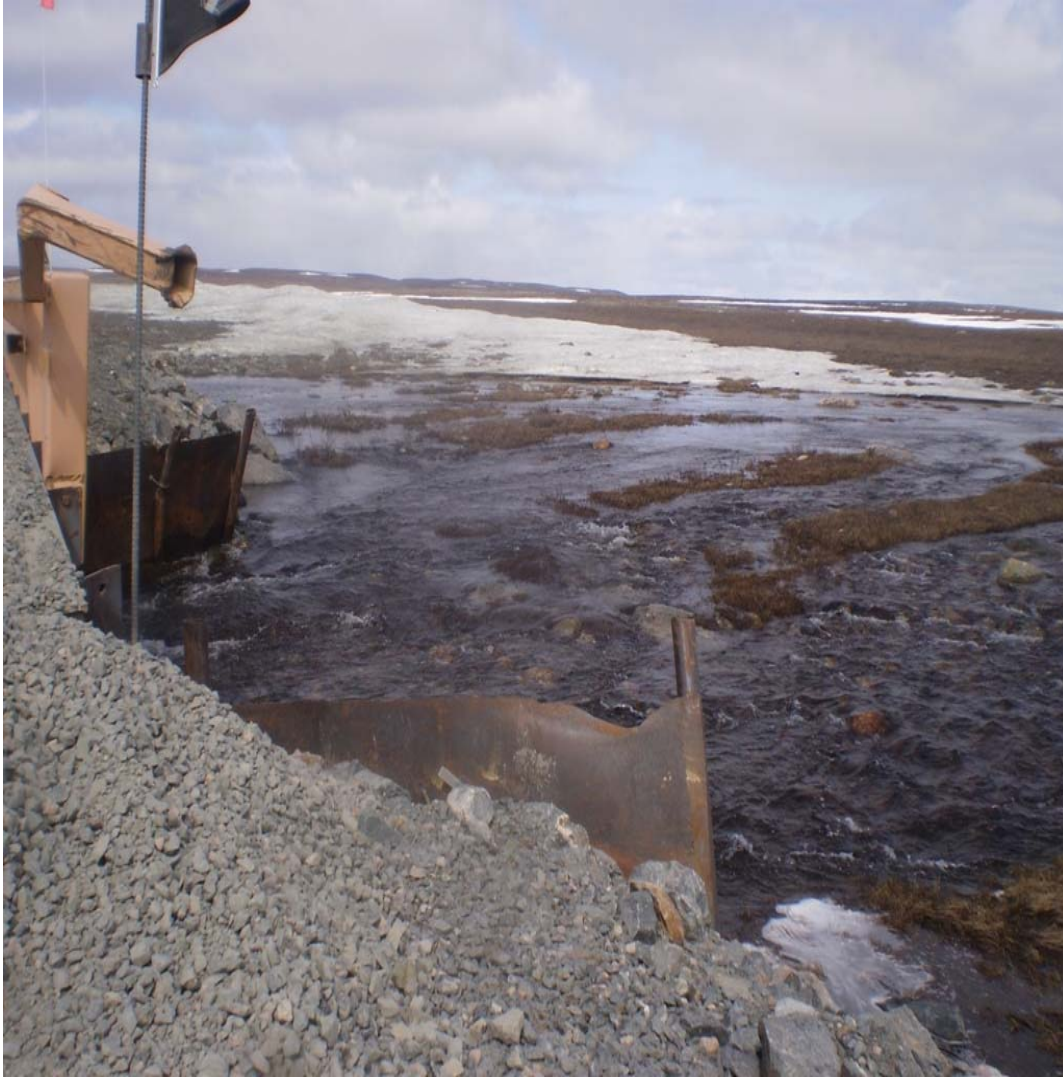
R02 DS Culverts – June 26, 2011

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AWAR AND QUARRIES WATER QUALITY
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R09 (KM 49) US of Bridge – June 26, 2011

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**



High water levels after snow melt at R19 (KM 83) – June 26, 2011

**AEM: MEADOWBANK DIVISION
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Large pool of standing water near R15 (KM 70) – June 26, 2011

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MANAGEMENT REPORT**



R05 US of Bridge – July 16, 2011

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Nearly dry culvert at KM 68 – July 16, 2011

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**



Water levels continue to recede – Culvert at KM 26 – July 16, 2011

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**



R09 (KM 49) DS of bridge – July 16, 2011

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**



R02 US of bridge – July 17, 2011

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**



Example of small isolated pools in Quarry 2; not sampled – July 9, 2011

**AEM: MEADOWBANK DIVISION
AWAR AND QUARRIES WATER QUALITY
MANAGEMENT REPORT**



Small isolated pool at Quarry 7 – July 9, 2011

APPENDIX B

WATER QUALITY MONITORING FIELD SHEETS

FEBRUARY 2012

Water Monitoring Form

Agnico Eagle Mines: Meade

Environment

Field Personnel: Tom T. Isabelle Date: June 26/11 (dd/mm/yy)

Task: Water Monitoring Along RWPDA

Scope of Work: Water Quality Monitoring Program

Comments:

H & S and gear:

- ☐ Health and Safety Officer informed (specific plan in place):
- ☐ Gear requirements: Nitrile gloves, water quality meter, pre-labelled bottles, field book, camera, radio
- ☐ Special Requirements:

Weather:		Cloudy	Snow	Rain	Sunny	Ambient Temperature:		6	°C		
Sample ID	Date	Time	Temperature (°C)	pH	DO (%)	DO (mg/L)	Specific Conductivity	ORP	Turbidity	Other:	
R02 US	06/26/11	8:30	3.64	6.63	-	-	0.26	-	0.39		
R02 DS	"		3.18	6.03	-	-	0.26	-	0.31		
R06 US	"	9:41	2.93	6.89	-	-	0.16	-	2.36	visible	
R06 DS	"		2.80	6.62	-	-	0.20	-	0.90	+ Turbidity	
R09 US	"	10:37	4.91		-	-	0.32	-	0.58		
R09 DS	"		4.81		-	-	0.35	-	0.52		
R15 US	"	11:26	6.24		-	-	0.08	-	1.27		
R15 DS	"		6.25		-	-	0.09	-	0.71		
ry 4	"	10:07	2.03	6.54	-	-	0.17	-	11.07		
ry 7	"	10:26	-	-	-	-	-	-	-	Snow Filled	
ry 8	"	10:30	-	-	-	-	-	-	-	Snow Filled, small pool of water near	
ry 16	"	11:47	-	-	-	-	-	-	-	Small pool of standing water near e	
										No visible Turbidity. mostly snow filled	
ry 17	"	11:52	-	-	-	-	-	-	-	Snow Filled	

Parameters for Analysis:

11 samples collected

Laboratory contacted? Yes ☐ No ☒

Field Personnel Signature: [Signature] Date: 06/26/11 (dd/mm/yy)

Page: 1 of 1

APPENDIX C

ALS WINNIPEG LABORATORY CERTIFICATE OF ANALYSIS

FEBRUARY 2012



Agnico-Eagle Mining Ltd
ATTN: RYAN VANENGEN
Meadowbank Division
PO Box 540
Baker Lake NU X0X 0A0

Date Received: 20-JUL-11
Report Date: 10-AUG-11 12:59 (MT)
Version: FINAL

Client Phone: 867-793-4160

Certificate of Analysis

Lab Work Order #: L1033625
Project P.O. #: NOT SUBMITTED
Job Reference: AWR
C of C Numbers:
Legal Site Desc:

Paul Nicolas
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-1 R02 US							
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 11:50							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		25-JUL-11	R2224335
Chloride	3.20		0.20	mg/L		21-JUL-11	R2223123
Dissolved Organic Carbon	2.9		1.0	mg/L		27-JUL-11	R2225697
Fluoride	0.030		0.020	mg/L		21-JUL-11	R2223123
Hardness (as CaCO3)	13.0		0.30	mg/L		22-JUL-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	25-JUL-11	25-JUL-11	R2224360
Nitrate-N	<0.0050		0.0050	mg/L		21-JUL-11	R2223123
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUL-11	
Nitrite-N	<0.0010		0.0010	mg/L		21-JUL-11	R2223123
Phosphorus (P)-Total	0.0035		0.0020	mg/L		28-JUL-11	R2226325
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-JUL-11	R2222656
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-JUL-11	R2224306
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		21-JUL-11	R2222647
Sulfate	1.43		0.50	mg/L		21-JUL-11	R2223123
Total Dissolved Solids	26.0		5.0	mg/L		21-JUL-11	R2222727
Iron (Fe)-Total	0.040		0.010	mg/L		25-JUL-11	R2224061
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	21-JUL-11	25-JUL-11	R2223998
Total Organic Carbon	3.2		1.0	mg/L		27-JUL-11	R2225697
Total Suspended Solids	<2.0		2.0	mg/L		21-JUL-11	R2222727
Turbidity	0.29		0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0120		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total	0.0105		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	3.98		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.00070		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	<0.000090		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	0.743		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.00218		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.437		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00046		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.207		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	1.75		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.0179		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-1 R02 US Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 11:50 Matrix: WATER Total Metals by ICP-MS Thallium (Tl)-Total Thorium (Th)-Total Tin (Sn)-Total Titanium (Ti)-Total Tungsten (W)-Total Uranium (U)-Total Vanadium (V)-Total Zinc (Zn)-Total Zirconium (Zr)-Total pH, Conductivity and Total Alkalinity Alkalinity Alkalinity, Total (as CaCO3) Bicarbonate (HCO3) Carbonate (CO3) Hydroxide (OH) Conductivity Conductivity pH pH	<0.00010 <0.00010 <0.00020 0.00037 <0.0010 <0.00010 <0.00020 <0.0050 <0.00040 12.2 14.9 <0.60 <0.40 39.2 7.38		0.00010 0.00010 0.00020 0.00020 0.0010 0.00010 0.00020 0.0050 0.00040 1.0 2.0 0.60 0.40 0.40 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L umhos/cm pH units	21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11	21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 26-JUL-11 26-JUL-11 26-JUL-11 26-JUL-11 21-JUL-11 21-JUL-11	R2222714 R2222714 R2222714 R2222714 R2222714 R2222714 R2222714 R2222714 R2222714 R2225015 R2225015 R2225015 R2225015 R2222676 R2222676
L1033625-2 R02 DS Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 12:00 Matrix: WATER Miscellaneous Parameters Ammonia as N Chloride Dissolved Organic Carbon Fluoride Hardness (as CaCO3) Mercury (Hg)-Total Nitrate-N Nitrate and Nitrite as N Nitrite-N Phosphorus (P)-Total Phosphorus (P)-Total Phosphorus (P)-Total Reactive Phosphorus (P)-Total Reactive Sulfate Total Dissolved Solids Iron (Fe)-Total Total Kjeldahl Nitrogen Total Organic Carbon Total Suspended Solids Turbidity Total Metals by ICP-MS Aluminum (Al)-Total Antimony (Sb)-Total Arsenic (As)-Total Barium (Ba)-Total Beryllium (Be)-Total	<0.050 3.18 3.1 0.025 13.8 <0.000050 <0.0050 <0.070 <0.0010 <0.010 0.0040 <0.010 <0.0010 1.19 24.0 0.035 <0.20 3.1 <2.0 0.25 0.0129 <0.00020 <0.00020 0.0110 <0.00020		0.050 0.20 1.0 0.020 0.30 0.000050 0.0050 0.070 0.0010 0.010 0.0020 0.010 0.0010 0.50 5.0 0.010 0.20 1.0 2.0 0.10 0.0050 0.00020 0.00020 0.00020 0.00020	mg/L mg/L mg/L mg/L mg/L mg/L	25-JUL-11 21-JUL-11 26-JUL-11 21-JUL-11 22-JUL-11 25-JUL-11 21-JUL-11 20-JUL-11 21-JUL-11 22-JUL-11 28-JUL-11 21-JUL-11 25-JUL-11 21-JUL-11 21-JUL-11 25-JUL-11 26-JUL-11 21-JUL-11 20-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11	25-JUL-11 21-JUL-11 26-JUL-11 21-JUL-11 22-JUL-11 25-JUL-11 21-JUL-11 20-JUL-11 21-JUL-11 22-JUL-11 28-JUL-11 21-JUL-11 25-JUL-11 21-JUL-11 21-JUL-11 25-JUL-11 26-JUL-11 21-JUL-11 20-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11 21-JUL-11	R2224335 R2223123 R2224968 R2223123 R2223123 R2224360 R2223123 R2223123 R2223123 R2222656 R2226325 R2222647 R2224306 R2223123 R2222727 R2224061 R2223998 R2224968 R2222727 R2222450 R2222714 R2222714 R2222714 R2222714 R2222714

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-2 R02 DS Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 12:00 Matrix: WATER							
Total Metals by ICP-MS							
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	4.27		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.00079		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	<0.000090		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	0.766		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.00170		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.454		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00046		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.197		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	1.81		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.0188		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total	0.00027		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Tungsten (W)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	35.6		1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)	43.4		2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)	<0.60		0.60	mg/L		26-JUL-11	R2225015
Hydroxide (OH)	<0.40		0.40	mg/L		26-JUL-11	R2225015
Conductivity							
Conductivity	41.4		0.40	umhos/cm		21-JUL-11	R2222676
pH							
pH	7.42		0.10	pH units		21-JUL-11	R2222676
L1033625-3 R06 US Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 13:30 Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		25-JUL-11	R2224335
Chloride	3.55		0.20	mg/L		21-JUL-11	R2223123
Dissolved Organic Carbon	3.1		1.0	mg/L		26-JUL-11	R2224968
Fluoride	0.021		0.020	mg/L		21-JUL-11	R2223123

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-3 R06 US							
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 13:30							
Matrix: WATER							
Hardness (as CaCO3)	12.8		0.30	mg/L		22-JUL-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	25-JUL-11	25-JUL-11	R2224360
Nitrate-N	0.0113		0.0050	mg/L		21-JUL-11	R2223123
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUL-11	
Nitrite-N	<0.0010		0.0010	mg/L		21-JUL-11	R2223123
Oil & Grease-(IR)	<1.0		1.0	mg/L		25-JUL-11	R2224156
Phosphorus (P)-Total	0.0043		0.0020	mg/L		28-JUL-11	R2226325
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-JUL-11	R2222656
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		21-JUL-11	R2222647
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-JUL-11	R2224306
Sulfate	1.78		0.50	mg/L		21-JUL-11	R2223123
Total Dissolved Solids	26.0		5.0	mg/L		21-JUL-11	R2222727
Iron (Fe)-Total	0.040		0.010	mg/L		25-JUL-11	R2224061
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	21-JUL-11	25-JUL-11	R2223998
Total Organic Carbon	3.3		1.0	mg/L		26-JUL-11	R2224968
Total Suspended Solids	<2.0		2.0	mg/L		21-JUL-11	R2222727
Turbidity	0.38		0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0182		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total	0.00328		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	3.55		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.00146		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	<0.000090		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	0.956		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.00203		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.459		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00044		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.300		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	1.90		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.0138		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total	0.00023		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total	0.00037		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-3	R06 US							
Sampled By:	RYAN VAN ENGEN on 09-JUL-11 @ 13:30							
Matrix:	WATER							
Total Metals by ICP-MS								
Tungsten (W)-Total		<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total		<0.0050		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total		<0.00040		0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
BTX by GCMS								
Benzene		<0.00050		0.00050	mg/L		28-JUL-11	R2226757
Toluene		<0.00050		0.00050	mg/L		28-JUL-11	R2226757
Ethylbenzene		<0.00050		0.00050	mg/L		28-JUL-11	R2226757
o-Xylene		<0.00050		0.00050	mg/L		28-JUL-11	R2226757
m+p-Xylenes		<0.0010		0.0010	mg/L		28-JUL-11	R2226757
Xylenes		<0.0015		0.0015	mg/L		28-JUL-11	R2226757
Surrogate: Toluene-d8 (SURR)		116		50-150	%		28-JUL-11	R2226757
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		10.4		1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)		12.7		2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)		<0.60		0.60	mg/L		26-JUL-11	R2225015
Hydroxide (OH)		<0.40		0.40	mg/L		26-JUL-11	R2225015
Conductivity								
Conductivity		38.8		0.40	umhos/cm		21-JUL-11	R2222676
pH								
pH		7.31		0.10	pH units		21-JUL-11	R2222676
L1033625-4	R06 DS							
Sampled By:	RYAN VAN ENGEN on 09-JUL-11 @ 13:45							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		25-JUL-11	R2224335
Chloride		3.48		0.20	mg/L		21-JUL-11	R2223123
Dissolved Organic Carbon		3.1		1.0	mg/L		26-JUL-11	R2224968
Fluoride		0.021		0.020	mg/L		21-JUL-11	R2223123
Hardness (as CaCO3)		12.3		0.30	mg/L		22-JUL-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	25-JUL-11	25-JUL-11	R2224360
Nitrate-N		0.0058		0.0050	mg/L		21-JUL-11	R2223123
Nitrate and Nitrite as N		<0.070		0.070	mg/L		20-JUL-11	
Nitrite-N		<0.0010		0.0010	mg/L		21-JUL-11	R2223123
Oil & Grease-(IR)		<1.0		1.0	mg/L		25-JUL-11	R2224156
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-JUL-11	R2222656
Phosphorus (P)-Total		0.0062		0.0020	mg/L		28-JUL-11	R2226325
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-JUL-11	R2224306
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		21-JUL-11	R2222647
Sulfate		1.69		0.50	mg/L		21-JUL-11	R2223123
Total Dissolved Solids		24.0		5.0	mg/L		21-JUL-11	R2222727
Iron (Fe)-Total		0.037		0.010	mg/L		25-JUL-11	R2224061
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	21-JUL-11	25-JUL-11	R2223998
Total Organic Carbon		3.1		1.0	mg/L		26-JUL-11	R2224968
Total Suspended Solids		<2.0		2.0	mg/L		21-JUL-11	R2222727
Turbidity		0.34		0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS								

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-4 R06 DS							
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 13:45							
Matrix: WATER							
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0220		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total	0.00317		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	3.35		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.00129		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	<0.000090		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	0.962		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.00270		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.452		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00039		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.287		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	1.82		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.0132		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total	0.00021		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total	0.00052		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Tungsten (W)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
BTX by GCMS							
Benzene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
Toluene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
Ethylbenzene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
o-Xylene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
m+p-Xylenes	<0.0010		0.0010	mg/L		29-JUL-11	R2226757
Xylenes	<0.0015		0.0015	mg/L		29-JUL-11	R2226757
Surrogate: Toluene-d8 (SURR)	121		50-150	%		29-JUL-11	R2226757
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	10.2		1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)	12.4		2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)	<0.60		0.60	mg/L		26-JUL-11	R2225015

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

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* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-6 Q7							
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 14:30							
Matrix: WATER							
Turbidity	1.87		0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS							
Aluminum (Al)-Total	1.09		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total	0.00067		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total	0.00837		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	0.000084		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	1.35		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	0.0281		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.0416		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	0.54		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	0.000664		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	0.422		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.115		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	0.0459		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.230		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.896		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	0.248		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.00955		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total	0.00012		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total	0.00359		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Tungsten (W)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total	0.00255		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total	0.0123		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	<1.0		1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)	<2.0		2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)	<0.60		0.60	mg/L		26-JUL-11	R2225015
Hydroxide (OH)	<0.40		0.40	mg/L		26-JUL-11	R2225015
Conductivity							
Conductivity	54.6		0.40	umhos/cm		21-JUL-11	R2222676
pH							
pH	4.24		0.10	pH units		21-JUL-11	R2222676

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-7 R09 US							
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 15:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia as N	<0.050		0.050	mg/L		25-JUL-11	R2224335
Chloride	1.97		0.20	mg/L		21-JUL-11	R2223123
Dissolved Organic Carbon	3.5		1.0	mg/L		26-JUL-11	R2224968
Fluoride	<0.020		0.020	mg/L		21-JUL-11	R2223123
Hardness (as CaCO3)	24.6		0.30	mg/L		22-JUL-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	25-JUL-11	25-JUL-11	R2224360
Nitrate-N	0.0061		0.0050	mg/L		21-JUL-11	R2223123
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUL-11	
Nitrite-N	<0.0010		0.0010	mg/L		21-JUL-11	R2223123
Phosphorus (P)-Total	0.0045		0.0020	mg/L		28-JUL-11	R2226325
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-JUL-11	R2222656
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		21-JUL-11	R2222647
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-JUL-11	R2224306
Sulfate	3.73		0.50	mg/L		21-JUL-11	R2223123
Total Dissolved Solids	36.0		5.0	mg/L		21-JUL-11	R2222727
Iron (Fe)-Total	0.057		0.010	mg/L		25-JUL-11	R2224061
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	21-JUL-11	28-JUL-11	R2225865
Total Organic Carbon	3.6		1.0	mg/L		26-JUL-11	R2224968
Total Suspended Solids	<2.0		2.0	mg/L		21-JUL-11	R2222727
Turbidity	0.31		0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0156		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total	0.00022		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total	0.00353		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	6.85		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.00178		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	<0.000090		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	1.83		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.00410		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.366		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00042		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.379		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	1.49		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.0350		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-7	R09 US							
Sampled By:	RYAN VAN ENGEN on 09-JUL-11 @ 15:00							
Matrix:	WATER							
Total Metals by ICP-MS								
Thallium (Tl)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total		0.00072		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Tungsten (W)-Total		<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total		<0.0050		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total		<0.00040		0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		19.9		1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)		24.2		2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)		<0.60		0.60	mg/L		26-JUL-11	R2225015
Hydroxide (OH)		<0.40		0.40	mg/L		26-JUL-11	R2225015
Conductivity								
Conductivity		57.1		0.40	umhos/cm		21-JUL-11	R2222676
pH								
pH		7.50		0.10	pH units		21-JUL-11	R2222676
L1033625-8	R09 DS							
Sampled By:	RYAN VAN ENGEN on 09-JUL-11 @ 15:15							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		25-JUL-11	R2224335
Chloride		1.96		0.20	mg/L		21-JUL-11	R2223123
Dissolved Organic Carbon		3.4		1.0	mg/L		27-JUL-11	R2225697
Fluoride		<0.020		0.020	mg/L		21-JUL-11	R2223123
Hardness (as CaCO3)		24.2		0.30	mg/L		22-JUL-11	
Mercury (Hg)-Total		<0.000050		0.000050	mg/L	25-JUL-11	25-JUL-11	R2224360
Nitrate-N		0.0067		0.0050	mg/L		21-JUL-11	R2223123
Nitrate and Nitrite as N		<0.070		0.070	mg/L		20-JUL-11	
Nitrite-N		<0.0010		0.0010	mg/L		21-JUL-11	R2223123
Phosphorus (P)-Total		<0.010		0.010	mg/L		22-JUL-11	R2222656
Phosphorus (P)-Total		0.0046		0.0020	mg/L		28-JUL-11	R2226325
Phosphorus (P)-Total Reactive		<0.0010		0.0010	mg/L		25-JUL-11	R2224306
Phosphorus (P)-Total Reactive		<0.010		0.010	mg/L		21-JUL-11	R2222647
Sulfate		3.73		0.50	mg/L		21-JUL-11	R2223123
Total Dissolved Solids		34.0		5.0	mg/L		21-JUL-11	R2222727
Iron (Fe)-Total		0.069		0.010	mg/L		25-JUL-11	R2224061
Total Kjeldahl Nitrogen		<0.20		0.20	mg/L	21-JUL-11	28-JUL-11	R2225865
Total Organic Carbon		3.5		1.0	mg/L		27-JUL-11	R2225697
Total Suspended Solids		<2.0		2.0	mg/L		21-JUL-11	R2222727
Turbidity		0.36		0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS								
Aluminum (Al)-Total		0.0232		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total		0.00025		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total		0.00359		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-8 R09 DS								
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 15:15								
Matrix: WATER								
Total Metals by ICP-MS								
Bismuth (Bi)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total		<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total		<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total		6.68		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total		<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total		0.00175		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total		<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total		<0.000090		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total		<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total		1.83		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total		0.00387		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total		<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total		<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total		0.367		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total		0.00042		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total		<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total		0.389		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total		1.45		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total		0.0334		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Thallium (Tl)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total		0.00040		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Tungsten (W)-Total		<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total		<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total		<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total		<0.0050		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total		<0.00040		0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)		20.0		1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)		24.4		2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)		<0.60		0.60	mg/L		26-JUL-11	R2225015
Hydroxide (OH)		<0.40		0.40	mg/L		26-JUL-11	R2225015
Conductivity								
Conductivity		56.7		0.40	umhos/cm		21-JUL-11	R2222676
pH								
pH		7.52		0.10	pH units		21-JUL-11	R2222676
L1033625-9 R15 US								
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 16:00								
Matrix: WATER								
Miscellaneous Parameters								
Ammonia as N		<0.050		0.050	mg/L		25-JUL-11	R2224335
Chloride		0.92		0.20	mg/L		21-JUL-11	R2223123
Dissolved Organic Carbon		2.8		1.0	mg/L		26-JUL-11	R2224968
Fluoride		0.047		0.020	mg/L		21-JUL-11	R2223123

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-9 R15 US							
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 16:00							
Matrix: WATER							
Hardness (as CaCO3)	4.67		0.30	mg/L		22-JUL-11	
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	25-JUL-11	25-JUL-11	R2224360
Nitrate-N	0.0067		0.0050	mg/L		21-JUL-11	R2223123
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUL-11	
Nitrite-N	<0.0010		0.0010	mg/L		21-JUL-11	R2223123
Oil & Grease-(IR)	2.6		1.0	mg/L		26-JUL-11	R2224743
Phosphorus (P)-Total	<0.010		0.010	mg/L		22-JUL-11	R2222656
Phosphorus (P)-Total	0.0046		0.0020	mg/L		28-JUL-11	R2226325
Phosphorus (P)-Total Reactive	<0.010		0.010	mg/L		21-JUL-11	R2222647
Phosphorus (P)-Total Reactive	<0.0010		0.0010	mg/L		25-JUL-11	R2224306
Sulfate	0.95		0.50	mg/L		21-JUL-11	R2223123
Total Dissolved Solids	10.0		5.0	mg/L		21-JUL-11	R2222727
Iron (Fe)-Total	0.050		0.010	mg/L		25-JUL-11	R2224061
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	21-JUL-11	28-JUL-11	R2225865
Total Organic Carbon	2.7		1.0	mg/L		26-JUL-11	R2224968
Total Suspended Solids	<2.0		2.0	mg/L		21-JUL-11	R2222727
Turbidity	0.60		0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0359		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total	0.00272		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	0.93		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.00118		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	<0.000090		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	0.569		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.00126		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.463		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00071		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.260		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	0.782		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.00642		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total	0.00090		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-9	R15 US							
Sampled By:	RYAN VAN ENGEN on 09-JUL-11 @ 16:00							
Matrix:	WATER							
Total Metals by ICP-MS								
Tungsten (W)-Total	<0.0010			0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total	<0.00010			0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total	<0.00020			0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total	<0.0050			0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total	<0.00040			0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
BTX by GCMS								
Benzene	<0.00050			0.00050	mg/L		29-JUL-11	R2226757
Toluene	<0.00050			0.00050	mg/L		29-JUL-11	R2226757
Ethylbenzene	<0.00050			0.00050	mg/L		29-JUL-11	R2226757
o-Xylene	<0.00050			0.00050	mg/L		29-JUL-11	R2226757
m+p-Xylenes	<0.0010			0.0010	mg/L		29-JUL-11	R2226757
Xylenes	<0.0015			0.0015	mg/L		29-JUL-11	R2226757
Surrogate: Toluene-d8 (SURR)	121			50-150	%		29-JUL-11	R2226757
pH, Conductivity and Total Alkalinity								
Alkalinity								
Alkalinity, Total (as CaCO3)	5.4			1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)	6.6			2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)	<0.60			0.60	mg/L		26-JUL-11	R2225015
Hydroxide (OH)	<0.40			0.40	mg/L		26-JUL-11	R2225015
Conductivity								
Conductivity	11.9			0.40	umhos/cm		26-JUL-11	R2225951
pH								
pH	6.98			0.10	pH units		21-JUL-11	R2222676
L1033625-10	R15 DS							
Sampled By:	RYAN VAN ENGEN on 09-JUL-11 @ 16:30							
Matrix:	WATER							
Miscellaneous Parameters								
Ammonia as N	<0.050			0.050	mg/L		25-JUL-11	R2224335
Chloride	0.91			0.20	mg/L		21-JUL-11	R2223123
Dissolved Organic Carbon	2.7			1.0	mg/L		26-JUL-11	R2224968
Fluoride	0.046			0.020	mg/L		21-JUL-11	R2223123
Hardness (as CaCO3)	4.72			0.30	mg/L		22-JUL-11	
Mercury (Hg)-Total	<0.000050			0.000050	mg/L	25-JUL-11	25-JUL-11	R2224360
Nitrate-N	0.0056			0.0050	mg/L		21-JUL-11	R2223123
Nitrate and Nitrite as N	<0.070			0.070	mg/L		20-JUL-11	
Nitrite-N	<0.0010			0.0010	mg/L		21-JUL-11	R2223123
Oil & Grease-(IR)	1.3			1.0	mg/L		26-JUL-11	R2224743
Phosphorus (P)-Total	<0.010			0.010	mg/L		22-JUL-11	R2222656
Phosphorus (P)-Total	0.0054			0.0020	mg/L		28-JUL-11	R2226325
Phosphorus (P)-Total Reactive	<0.0010			0.0010	mg/L		25-JUL-11	R2224306
Phosphorus (P)-Total Reactive	<0.010			0.010	mg/L		21-JUL-11	R2222647
Sulfate	0.89			0.50	mg/L		21-JUL-11	R2223123
Total Dissolved Solids	14.0			5.0	mg/L		21-JUL-11	R2222727
Iron (Fe)-Total	0.050			0.010	mg/L		25-JUL-11	R2224061
Total Kjeldahl Nitrogen	<0.20			0.20	mg/L	21-JUL-11	28-JUL-11	R2225865
Total Organic Carbon	2.7			1.0	mg/L		26-JUL-11	R2224968
Total Suspended Solids	<2.0			2.0	mg/L		21-JUL-11	R2222727
Turbidity	0.56			0.10	NTU		20-JUL-11	R2222450
Total Metals by ICP-MS								

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1033625-10 R15 DS							
Sampled By: RYAN VAN ENGEN on 09-JUL-11 @ 16:30							
Matrix: WATER							
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0381		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Antimony (Sb)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Arsenic (As)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Barium (Ba)-Total	0.00273		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Beryllium (Be)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Boron (B)-Total	<0.010		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-JUL-11	21-JUL-11	R2222714
Calcium (Ca)-Total	0.95		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Cesium (Cs)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Copper (Cu)-Total	0.00129		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Iron (Fe)-Total	<0.10		0.10	mg/L	21-JUL-11	21-JUL-11	R2222714
Lead (Pb)-Total	0.000259		0.000090	mg/L	21-JUL-11	21-JUL-11	R2222714
Lithium (Li)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Magnesium (Mg)-Total	0.571		0.010	mg/L	21-JUL-11	21-JUL-11	R2222714
Manganese (Mn)-Total	0.00128		0.00030	mg/L	21-JUL-11	21-JUL-11	R2222714
Molybdenum (Mo)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	21-JUL-11	21-JUL-11	R2222714
Phosphorus (P)-Total	<0.20		0.20	mg/L	21-JUL-11	21-JUL-11	R2222714
Potassium (K)-Total	0.466		0.020	mg/L	21-JUL-11	21-JUL-11	R2222714
Rubidium (Rb)-Total	0.00069		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Selenium (Se)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Silicon (Si)-Total	0.273		0.050	mg/L	21-JUL-11	21-JUL-11	R2222714
Silver (Ag)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Sodium (Na)-Total	0.789		0.030	mg/L	21-JUL-11	21-JUL-11	R2222714
Strontium (Sr)-Total	0.00620		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Thallium (Tl)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Thorium (Th)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Tin (Sn)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Titanium (Ti)-Total	0.00085		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Tungsten (W)-Total	<0.0010		0.0010	mg/L	21-JUL-11	21-JUL-11	R2222714
Uranium (U)-Total	<0.00010		0.00010	mg/L	21-JUL-11	21-JUL-11	R2222714
Vanadium (V)-Total	<0.00020		0.00020	mg/L	21-JUL-11	21-JUL-11	R2222714
Zinc (Zn)-Total	<0.0050		0.0050	mg/L	21-JUL-11	21-JUL-11	R2222714
Zirconium (Zr)-Total	<0.00040		0.00040	mg/L	21-JUL-11	21-JUL-11	R2222714
BTX by GCMS							
Benzene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
Toluene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
Ethylbenzene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
o-Xylene	<0.00050		0.00050	mg/L		29-JUL-11	R2226757
m+p-Xylenes	<0.0010		0.0010	mg/L		29-JUL-11	R2226757
Xylenes	<0.0015		0.0015	mg/L		29-JUL-11	R2226757
Surrogate: Toluene-d8 (SURR)	115		50-150	%		29-JUL-11	R2226757
pH, Conductivity and Total Alkalinity							
Alkalinity							
Alkalinity, Total (as CaCO3)	5.4		1.0	mg/L		26-JUL-11	R2225015
Bicarbonate (HCO3)	6.6		2.0	mg/L		26-JUL-11	R2225015
Carbonate (CO3)	<0.60		0.60	mg/L		26-JUL-11	R2225015

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

AWR

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BTX-MS-PT-WP	Water	BTX by GCMS	EPA SW846 8260B REV 2 SEPT 1994
Samples are extracted by purging the sample with helium and trapping the extractives onto an adsorbent. Analysis is performed using a gas chromatograph equipped with a mass selective detector.			
C-DIS-ORG-WP	Water	Dissolved Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TOT-ORG-WP	Water	Total Organic Carbon	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CL-L-IC-WP	Water	Chloride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F-L-IC-WP	Water	Fluoride	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
FE-T-L-ICP-ED	Water	Total Fe in Water by ICPOES (Low Level)	APHA 3120 B-ICP-OES
HG-T-CVAF-WP	Water	Mercury Total	EPA245.7 V2.0
Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.			
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL
Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometry.			
N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	Quickchem method 10-107-06-2-E Lachat
Samples are digested with a sulphuric acid solution, cooled, diluted with water, and analyzed for ammonia. Total Kjeldahl nitrogen is the sum of free-ammonia and organic nitrogen compounds which are converted to ammonium sulphate through this digestion process. Analysis is performed by Flow Injection Analysis (FIA). The pH of the digested sample is raised to a known, basic pH by neutralization with a concentrated buffer solution. This neutralization converts the ammonium cation to ammonia. The ammonia produced is heated with salicylate and hypochlorite to produce blue colour which is proportional to the ammonia concentration.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N	EPA 300.1 IC
NO3-L-IC-WP	Water	Nitrate as N	EPA 300.1 IC
OGG-IR-ED	Water	Oil & Grease-(IR)	APHA 5520 C-Liq-Liq Extraction Infrared
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
P-TR-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
P-TR-L-COL-WP	Water	Phosphorus, Total Reactive in Water	APHA 4500 P PHOSPHORUS-L
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Reactive Phosphorus is determined colourimetrically.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SO4-IC-WP	Water	Sulfate	EPA 300.1 IC
This analysis is carried out using procedures adapted from EPA Method 300.1 "Determination of Inorganic Anions in Drinking Water by Ion Chromatography".			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540C
The residue remaining in a prepared casserole after passing the sample through a 1.2 um Whatman GF/C glass microfibre filter and drying at 180 degrees C. Samples may be dried at 105 degrees C if the client specifically requests this drying temperature.			
SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 LR
The residue retained by a prepared 1.5 um Whatman 934-AH glass microfibre filter dried at 105 degrees C. A method detection limit of 2 mg/L can be achieved when 500 mL of sample is used.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

[illegible]



Report to:			Report Format / Distribution			Service Requested:																
Company: Agnico-Eagle Mines Ltd.			☒ Standard ☐ Other			☒ Regular Service (Default)																
Contact: Ryan VanEngen			☒ PDF ☒ Excel ☐ Fax			☐ Rush Service (2-3 Days)																
Address: Meadowbank Division PO Box 540 Baker Lake Nun.			Email 1: rvanengen@agnico-eagle.com			☐ Priority Service (1 Day or ASAP)																
			Email 2: jeff.pratt@agnico-eagle.com			☐ Emergency Service (<1 Day / Wkend) - Contact ALS																
Phone: 867 793 4610x6759 Fax:						Analysis Request																
Invoice To: ☒ Same as Report			Indicate Bottles: Filtered / Preserved (F/P) -->					P	P						P	F						
Company: Agnico-Eagle Mining Ltd.			Client / Project Information:			Cl, F, NO2, NO3, SO4 TOC/DOC Metals & Hg (total) Dissolved Metals P-Total & Ortho pH, EC, Alkalinity Turbidity TSS, TDS TKN, NH3 Chloro-a Hazardous? Highly Contaminated? Number of Containers																
Contact: Accounts Payable-Meadowbank Division			Job #: AWR																			
Address: email electronic invoice to rvanengen@agnico-eagle.com			PO/AFE:																			
Sample			Legal Site Description:																			
Phone: Fax:			Quote #: Q21514																			
Lab Work Order # (lab use only)			ALS Chrisine Herrod			Sampler (Initials):																
Sample #	Sample Identification (This description will appear on the report)		Date dd-mmm-yy	Time hh:mm	Sample Type (Select from drop-down list)																	
11	DUP 1		09-Jul-11	-	Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
					Water	X	X	X		X	X	X	X	X	X	X						
Guidelines / Regulations			Special Instructions / Hazardous Details																			
			Please use "low range anion" analysis; 250 plastic nutrients is unpreserved for TOC																			
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the adjacent worksheet.																						
Relinquished By:	Ryan VanEngen	Date & Time:	7/10/2011	Received By:		Date & Time:		Sample Condition (lab use only)														
Relinquished By:		Date & Time:		Received By:		Date & Time:		Temperature	Samples Received in Good Condition? Y / N (if no provided details)													