MEADOWBANK GOLD PROJECT

2008 Annual Report

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SECTION 1 • INTRODUCTION

The Meadowbank Gold Project (the Project) operated by Agnico-Eagle Mines Limited - Meadowbank Division (AEM) is located approximately 70 km north of the Hamlet of Baker Lake, Nunavut. The project components include marshalling facilities in Baker Lake, the 110 km All Weather Private Access Road (AWPAR) between Baker Lake and Meadowbank and the Meadowbank mine site. These various components and activities associated with the Project require a number of different authorizations from regulatory agencies including the Nunavut Impact Review Board (NIRB), the Nunavut Water Board (NWB), the Department of Fisheries and Oceans Canada (DFO), Indian and Northern Affairs Canada (INAC) and the Kivalliq Inuit Association (KIA).

In 2008, AEM focused on securing remaining authorizations and commencing pre-development and construction activities. Construction began in late July 2008 following the issuance of the NWB Type A Water License and the DFO authorization for the harmful alteration, disruption or destruction of fish habitat (HADD) required for the mine site.

This report is written to address all of the 2008 reporting requirements of the Project under the following authorizations:

- NIRB Project Certificate No.004;
- NWB Type A Water License 2AM-MEA0815;
- DFO HADD Authorization NU-08-0013 Western Channel Temporary Crossing;
- DFO HADD Authorization NU-03-190 AWPAR;
- DFO HADD Authorization NU-03-191 Mine Site;
- INAC Land Leases 66A/8-71-2 (AWPAR) and 66A/8-72-2 (AWPAR Quarries); and
- KIA Right of Way KVRW06F04.

Table 1.1 outlines each requirement by authorization and report section.

Table 1.1: List of Reporting Requirements

Authorization Reference	Reporting Requirement	Report Section
NIRB Project Certificate No.004 Condition 4	Take prompt and appropriate action to remedy any noncompliance with environmental laws and regulations and/or regulatory instruments, and shall report any non compliance as required by law immediately and report the same to NIRB annually.	10.3
NIRB Project Certificate No.004 Condition 19	Report to NIRB's Monitoring Officer for the annual reporting of freezeback effectiveness.	4.3.2
NIRB Project Certificate No.004 Condition 32e	Require all mine personnel using the road to monitor and report unauthorized non-mine use of the road, and collect and report this data to NIRB one (1) year after the road is opened and annually thereafter;	10.4.1
NIRB Project Certificate No.004 Condition 32f	Report any information received, including accidents or other safety incidents on the road, including the locked gates, to the GN, KIA, and the Hamlet immediately, and to NIRB annually.	10.4.2
NIRB Project Certificate No.004 Condition 36	Inuit observation and encounter reports for on-board vessels transporting goods and fuel through Chesterfield Inlet	10.5
NIRB Project Certificate No.004 Condition 40	Report to KIA and NIRB's Monitoring Officer annually on the Traditional Knowledge gathered including any operational changes that resulted from concerns shared at the workshop.	10.7
NIRB Project Certificate No.004 Commitment 49	Results of the fish out program	7.2
NIRB Project Certificate No.004 Condition 51	Engage the HTOs in the development, implementation and reporting of creel surveys within waterbodies affected by the Project to the GN, DFO and local HTO	7.3.3
NIRB Project Certificate No.004 Condition 54	Harvest study results	7.3.2
NIRB Project Certificate No.004 Condition 55	Annual Wildlife Summary Monitoring Report	7.3
NIRB Project Certificate No.004 Condition 56	Information on caribou migration corridors shall be reported to the GN, KIA and NIRB's Monitoring Officer annually.	7.3.4
NIRB Project Certificate No.004 Condition 57	Participate in a caribou collaring program as directed by the GN-DOE.	7.3.5
NIRB Project Certificate No.004	Report annually noise monitoring data	7.5
NIRB Project Certificate No.004 Condition 71	In consultation with EC, install and fund an atmospheric monitoring station to focus on particulates of concern generated at the mine site. The results of air-quality monitoring are to be reported annually to NIRB.	7.4

Authorization Reference	Reporting Requirement	Report Section
NIRB Project Certificate No.004 Condition 72	Conduct annual stack testing to demonstrate that the on-site incinerators are operating in compliance with these standards. The results of stack testing shall be contained in an annual monitoring report submitted to GN, EC and NIRB's Monitoring Officer.	5.2.1
NIRB Project Certificate No.004 Condition 74	Provide annual report of the quantity and type of waste generated at the mine site distinguishing landfilled, recycled and incinerated streams.	5.2
NIRB Project Certificate No.004 Commitment 77	Install and operate two particulate samplers at the project site and report annually monitoring results conforming to detailed reporting protocol.	7.4
NIRB Project Certificate No.004 Condition 80	File annually with NIRB's Monitoring Officer an updated report on progressive reclamation and the amount of security posted, as required by KivIA, INAC, and/or the NWB.	8.2.1
NIRB Project Certificate No.004 Condition 82	Monitor the ingress/egress of ship cargo at Baker Lake and report any accidents or spills immediately to the regulatory agencies as required by law and to NIRB's Monitoring Officer annually.	6.2
NIRB Project Certificate No.004 Commitment 85	AEMP monitoring - monitor blasting peak particle velocity and overpressure in receiving environment; must use specific charge weight/delay/set back to meet DFO requirements.	7.1.12
NWB 2AM-MEA0815 Schedule B-1	Construction Details for dikes and dams.	2.1.1
NWB 2AM-MEA0815 Schedule B-2	Results of lake level monitoring conducted under the protocol developed as per Part D Item 11.	3.1
NWB 2AM-MEA0815 Schedule B-3	Summary of reporting results for the Water Balance Water Quality model and any calibrations as required in Part E Items 6 and 7.	3.2
NWB 2AM-MEA0815 Schedule B-4	The bathymetric survey(s) conducted prior to each year of shipping at the Baker Lake Marshalling Facility.	3.3
NWB 2AM-MEA0815 Schedule B-5	Geochemical monitoring results.	4.1
NWB 2AM-MEA0815 Schedule B-6	Volumes of waste rock used in construction and placed in the Rock Storage Facilities.	4.2
NWB 2AM-MEA0815 Schedule B-7	An update on the remaining capacity of the Tailings Storage Facility.	4.3.1
NWB 2AM-MEA0815 Schedule B-8	Summary of quantities and analysis of seepage and runoff monitoring from the landfills.	5.1
NWB 2AM-MEA0815 Schedule B-9	A summary report of solid waste disposal activities including monthly and annual quantities in cubic metres of waste generated and location of disposal.	5.2
NWB 2AM-MEA0815 Schedule B-10	Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water.	5.2.1

Authorization Reference	Reporting Requirement	Report Section
NWB 2AM-MEA0815 Schedule B-11	A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken.	6.1
NWB 2AM-MEA0815 Schedule B-12	A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities.	10.1
NWB 2AM-MEA0815 Schedule B-13	The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I.	7
NWB 2AM-MEA0815 Schedule B-14	The results of monitoring under the AEMP.	7.1.11
NWB 2AM-MEA0815 Schedule B-15	Results of monitoring pursuant to the Fault Testing and Monitoring Plan (August 2007).	4.3.3
NWB 2AM-MEA0815 Schedule B-16	A summary of any progressive closure and reclamation work undertaken including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling.	8.1.1
NWB 2AM-MEA0815 Schedule B-17	A summary of on-going field trials to determine effective capping thickness for the Tailings Storage Facility and Waste Rock Storage Facilities for the purpose of long term environmental protection.	8.3
NWB 2AM-MEA0815 Schedule B-18	An updated estimate of the current restoration liability based on project development monitoring, results of restoration research and any changes or modifications to the Appurtenant Undertaking.	8.2.1
NWB 2AM-MEA0815 Schedule B-19	A summary of any studies requested by the Board that relate to Waste disposal, Water use or Reclamation, and a brief description of any future studies planned.	9.1
NWB 2AM-MEA0815 Schedule B-20	Where applicable, revisions as Addendums, with an indication of where changes have been made, for Plans, Reports, and Manuals.	9.2
NWB 2AM-MEA0815 Schedule B-21	An executive summary in English, Inuktitut and French of all plans, reports, or studies conducted under this Licence.	9.3
NWB 2AM-MEA0815 Schedule B-22	A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector.	10.2
NWB 2AM-MEA0815 Schedule B-23	A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions.	10.6
NWB 2AM-MEA0815 Schedule B-24	Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.	3.5 / 5.3
NWB 2AM-MEA0815 Part E Item 8	The Licensee shall, on an annual basis during Operations, compare the predicted water quantity and quality within the pits, to the measured water quantity and quality.	3.4

Authorization Reference	Reporting Requirement	Report Section
NWB 2AM-MEA0815 Part I Item 14	The Licensee shall submit to the Board as part of the Annual Report required under Part B Item 5, all reports and performance evaluations prepared by the Independent Geotechnical Expert Review Panel.	2.1.2
NWB 2AM-MEA0815 Part I Item 16	The Licensee shall submit the results and interpretation of the Seepage Monitoring program.	7.1.9
NWB 2AM-MEA0815 Part G	East Dike Construction Modification.	10.1
DFO HADD NU-08-0013 Western Channel Condition 6	Submit written report and photographic record summarizing monitoring results - physical monitoring of Western Channel Crossing.	7.1.8
DFO HADD NU-03-0190 AWPAR Condition 5.2.4	Creel survey results.	7.3.3
DFO HADD NU-03-0190 AWPAR Condition 5.3 / 6	Submit written report summarizing 2008 monitoring results and photographic record of works and undertakings.	7.1.7
DFO HADD NU-03-0191 Mine Site Condition 6.1	Submit Written Report and Photographic Record summarizing monitoring program results.	7.1.11
INAC Land Lease 66A/8-71-2 Condition 19	The lessee shall submit to the Minister every two years after the commencement date of this lease, a report describing any variations from the Abandonment and Restoration Plan and updated cost estimates.	8.2.2
INAC Land Lease 66A/8-71-2 Condition 33	The lessee shall file annually a report for the preceding year, outlining ongoing restoration completed in conformity with the approved Abandonment and Restoration Plan, as well as any variations from the said Plan.	8.1.2
INAC Land Lease 66A/8-72-2 Condition 8	The lessee shall file a report, annually ... i. Quantity of material removed and location of removal, for the immediately preceding calendar year ii. Such other data as are reasonably required by the Minister from time to time.	2.2
INAC Land Lease 66A/8-72-2 Condition 25	The lessee shall file, annually, a report for the preceding year, outlining the ongoing borrow area operations completed in conformity with the approved Borrow Management Plan, as well as any variations from the Plan.	2.2
INAC Land Lease 66A/8-72-2 Condition 33	The lessee shall file annually a report for the preceding year, outlining ongoing restoration completed in conformity with C&R Plan, as well as any variations from the said Plan.	8.1.3
INAC Land Lease 66A/8-72-2 Condition 37	The lessee shall submit to the Minister every 2 years after the commencement date of this lease, a report describing cumulative variations from the C&R Plan with updated cost estimates.	8.2.2
KIA ROW KVRW06F04 Condition 14	Submit to KIA every two years on each anniversary of the commencement date, a report describing any variations from the Abandonment and Restoration Plan and updated cost estimates.	8.2.2
KIA ROW KVRW06F04 Condition 26	File annually a progress report for the preceding year, outlining any ongoing restoration completed, in conformity with the Abandonment and Restoration plan.	8.1.2
KIA ROW KVRW06F04 Schedule E - Condition 8	The lessee shall file annually a report for the preceding year, outlining the ongoing borrow area operations completed in conformity with the approved Borrow Management Plan, as well as any variations from the Plan.	2.2

SECTION 2 • CONSTRUCTION / EARTHWORKS

The following section discusses reporting requirements related to site construction and earthworks activities associated with dikes, dams and quarries.

2.1 DIKES AND DAMS

2.1.1 Performance Evaluation

As required by water license 2AM-MEA0815, Schedule B, Item 1:

> ***a. An overview of methods and frequency used to monitor deformations, seepage and geothermal responses;***
> ***b. A comparison of measured versus predicted performance;***
> ***c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk;***
> ***d. As-built drawings of all mitigative works undertaken;***
> ***e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, water balance and water quality;***
> ***f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data;***
> ***g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams; and***
> ***h. The monthly and annual quantities of seepage from dikes and dams in cubic metres.***

Construction commenced on the East Dike on July 30, 2008 and Western Channel Dike on September 24, 2008; construction on both dikes continued throughout the first quarter of 2009. No performance evaluation was completed for the structures in 2008 since they were still under construction.

2.1.2 Independent Geotechnical Expert Review Panel Reporting

As required by water license 2AM-MEA0815 Part I, Item 14: ***The Licensee shall submit to the Board as part of the Annual Report required under Part B Item 5, all reports and performance evaluations prepared by the Independent Geotechnical Expert Review Panel.***

Two reports were prepared by the Independent Geotechnical Review Board in 2008 and are included as Appendix A1.

2.1.3 East Dike Construction Evaluation

Construction of the East Dike began on July 30, 2008. On Saturday August 9th, one of the water quality monitoring stations exceeded the Total Suspended Solids (TSS) 'action threshold' as defined in Section 5 of the Water Quality Monitoring and Management Plan for Dike Construction and Dewatering at the Meadowbank Mine. Monitoring continued

throughout the day on August 10th. Starting the morning of August 11th, once it was determined the elevated TSS concentrations were not anomalous, AEM suspended construction of the Meadowbank East Dewatering Dike. Construction resumed on the 12th with a modified construction sequence, and on August 11th construction was again suspended for the morning. It was decided the best course of action was to resume construction of the dike and continue to place rockfill until the north shore was reached, thus closing off the opening between the impoundment and lake side of the East dike. It was believed this would be the most effective way to prevent further TSS from entering the lake from dike construction.

At the onset of the TSS issue, AEM contacted chemical suppliers of coagulants and flocculants and utilized its in house laboratory in Abitibi, Quebec to assess whether enhancement of the settling of the fine clay particulate both within our construction zone and within the plumes was possible. Given the sensitivity of using synthetic polymeric flocculants, AEM discontinued this line of research and re-focused its efforts on finding natural means of reducing turbidity. With assistance from our consultants, a natural water treatment agent known as ChitoVan Chitosan Lactate was identified. Working with a Vancouver group called KI Environmental Solutions Inc., laboratory and field studies were conducted to test how Chitosan would work at the East Dike at Meadowbank.

Regulators were notified of the East Dike/TSS events in a series of emails, starting on August 13, 2008. These emails included updates on water quality monitoring (turbidity measurements specifically), East dike construction status and actions taken by AEM to address the situation. A copy of these emails is provided in Appendix A2. In addition, Chitosan Lactate product information and status of the Chitosan laboratory and field testing was provided to regulators via email (these emails are also provided in Appendix A2). The final consultants report on the Chitosan field trials (including the application of the product and follow up monitoring) in Second Portage Lake is attached in Appendix A2.

Dike water quality monitoring, in accordance with the *Water Quality Monitoring and Management Plan for Dike Construction and Dewatering at the Meadowbank Mine,* was completed throughout the open water season for the East Dike and Western Channel Dike. A full summary of this monitoring, including sampling design and methodology and data results, are provided in the *Aquatic Effects Monitoring Program – Targeted Study: Dike Construction Monitoring 2008, Meadowbank Gold Project* report attached in Appendix A2.

An investigation of the cause of the TSS issue at the East dike was completed in the fall of 2008. A summary of the findings is provided in the *Control of Suspended Solids At Second and Third Portage Lakes – Construction of East, South Camp and Bay-Goose Dikes – Meadowbank Gold Project, Nunavut* report, also attached in Appendix A2.

A presentation to regulators on the general conclusions of the TSS investigation at the East dike is scheduled for the first week in April 2009. Proposed mitigation actions and

construction methods for the Bay-Goose and South Camp dikes scheduled to begin construction in the 2009 season will be discussed.

2.2 QUARRIES

The annual reporting requirements listed in the following sections apply only to quarries located along the All Weather Private Access Road (AWPAR).

As required by INAC Land Lease 66A/8 72-2, Condition 8: ***The lessee shall file a report, annually, with the Minister in the manner and format stipulated by the Minister. The report shall include:***

i. Quantity of material removed and location of removal, for the immediately preceding calendar year; and

ii. Such other data as are reasonably required by the Minister from time to time.

And

As required by INAC Land Lease 66A/8 72-2, Condition 25: ***The lessee shall file, annually, a report for the preceding year, outlining the ongoing borrow area operations completed in conformity with the approved Borrow Management Plan, as well as any variations from the Plan.***

And

As required by KIA Right of Way Authorization KVRW06F04, Schedule E, Condition 8: ***The lessee shall file annually a report for the preceding year, outlining the ongoing borrow area operations completed in conformity with the approved Borrow Management Plan, as well as any variations from the Plan.***

Construction of the AWPAR was completed March 21, 2008; there was no additional material removed from quarries along the AWPAR after this date. The final surveys of the road and quarries were finalized in early May 2008. Reports on the borrow area operation including final amount of material removed and royalty reconciliation were submitted to INAC, KIA and the Government of Nunavut (GN) in June 2008. Table 2.1 presents the final material amounts; quarry locations are highlighted on Figure 1.

SECTION 3 • WATER MANAGEMENT ACTIVITIES

The following section addresses reporting requirements related to water management activities.

3.1 LAKE LEVEL MONITORING

As required by Water License 2AM-MEA0815 Schedule B, Item 2: ***Results of lake level monitoring conducted under the protocol developed as per Part D Item 11 (Water Quality Monitoring and Management Plan for Dike Construction and Dewatering).***

Dewatering of the northwest arm of Second Portage Lake began in March 2009; consequently, there are no monitoring results to report for 2008.

3.2 WATER BALANCE WATER QUALITY MODEL REPORTING SUMMARY

As required by Water License 2AM-MEA0815 Schedule B, Item 3: ***Summary of reporting results for the Water Balance Water Quality model and any calibrations as required in Part E Items 6 and 7.***

The Meadowbank Project is in the construction phase until the end of 2009, with mill operations projected to begin in early 2010. There will not be any water balance reporting results available until the first bi-annual report is due in mid to late 2010, depending on the actual start of operations.

3.3 BATHYMETRIC SURVEYS

As required by Water License 2AM-MEA0815 Schedule B, Item 4: ***The bathymetric survey(s) conducted prior to each year of shipping at the Baker Lake Marshalling Facility.***

No bathymetric surveys were completed at the Baker Lake Marshalling Facility in 2008.

3.4 PREDICTED VS. MEASURED WATER QUALITY

As required by Water License 2AM-MEA0815 Part E, Item 8: ***The Licensee shall, on an annual basis during Operations, compare the predicted water quantity and quality within the pits, to the measured water quantity and quality. Should the difference between the predicted and measured values be 20% or greater, then the cause(s) of the difference(s) shall be identified and the implications of the difference shall be assessed and reported to the Board.***

The Meadowbank Project was in the construction phase throughout 2008; as such, no data is available yet.

3.5 ADDITIONAL INFORMATION

As required by Water License 2AM-MEA0815 Schedule B, Item 24: ***Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.***

The Board did not request any additional details on water use in 2008.

SECTION 4 • WASTE ROCK MANAGEMENT ACTIVITIES

4.1 GEOCHEMICAL MONITORING

In accordance with Water License 2AM-MEA0815 Schedule B, Item B-5:

Geochemical monitoring results including:

a. Operational acid/base accounting and paste pH test work used for waste rock designation (PAG and NPAG rock);

The Meadowbank Project was in the early stages of construction in 2008; as such there was no ABA collected in 2008.

b. As-built volumes of waste rock used in construction and sent to the Waste Rock Storage Facilities with estimated balance of acid generation to acid neutralization capacity in a given sample as well as metal toxicity;

The amount of waste rock used in construction and sent to the Waste Rock Storage facilities is presented in Table 4.1.

c. All monitoring data with respect to geochemical analyses on site and related to roads, quarries, and the All Weather Access Road;

A Geochemical Characterization study of the AWPAR quarries was completed in 2008; this report is available in Appendix B1. Routine water quality sampling results along the AWPAR during open water season are presented in Section 7.1.7.

d. Leaching observations and tests on pit slope and dike exposure;

The Meadowbank Project was in the early stages of construction in 2008; as such there was no leaching data collected in 2008.

e. Any geochemical outcomes or observations that could imply or lead to environmental impact;

The Geochemical Characterization Study in Appendix B1 summarizes the findings and observations with respect to acid generating and metal leaching potential of quarry material.

f. Geochemical data associated with tailings solids, tailings supernatant, cyanide leach residue, and bleed from the cyanide destruction process including an interpretation of the data;

The mill is not scheduled to commence operations until early 2010; as such there was no geochemical data associated with tailings in 2008.

g. Results related to the road quarries and the All Weather Private Access Road.

The Geochemical Characterization study completed for the AWPAR quarries in 2008 is available in Appendix B1.

4.2 WASTE ROCK VOLUME

In accordance with Water License 2AM-MEA0815 Schedule B, Item B-6: ***Volumes of waste rock used in construction and placed in the Rock Storage Facilities.***

The volume of waste rock from the North Portage and South Portage starter pits used for construction purposes and placed in the waste rock pile in 2008 is presented in Table 4.1.

4.3 TAILINGS STORAGE FACILITY

4.3.1 Tailings Storage Facility Capacity

As required by Water License 2AM-MEA0815 Schedule B-7: ***An update on the remaining capacity of the Tailings Storage Facility.***

Construction of the Tailings Storage Facility (TSF) is scheduled to begin in 2009. There was no activity associated with the TSF in 2008.

4.3.2 Tailings Freezeback

As required by NIRB Project Certificate No.004, Condition 19: ***Provide for a minimum of two (2) metres cover of tailings at closure, and shall install thermistor cables, temperature loggers, and core sampling technology as required to monitor tailing freezeback efficiency. Report to NIRB's Monitoring Officer for the annual reporting of freezeback effectiveness.***

Construction of the TSF is scheduled to begin in 2009. There was no activity associated with the TSF in 2008.

4.3.3 Fault Testing and Monitoring

As required by Water License 2AM-MEA0815 Schedule B, Item 15: ***Results of monitoring pursuant to the Fault Testing and Monitoring Plan (August 2007).***

The Fault Testing and Monitoring Plan outlines the testing and monitoring procedures that will be conducted to determine the permeability of faults that extend through the TSF. There are no results to report in 2008 as construction of the TSF has not yet commenced.

SECTION 5 • WASTE MANAGEMENT ACTIVITIES

5.1 Landfill Monitoring

As required by Water license 2AM-MEA0815 Schedule B, Item 8: ***Summary of quantities and analysis of seepage and runoff monitoring from the landfills.***

Meadowbank Landfill #1 was operational as of November 2008. Due to winter conditions no seepage occurred in 2008.

5.2 Solid Waste Disposal Activity

As required by Water License 2AM-MEA0815 Schedule B, Item 9: ***A summary report of solid waste disposal activities including monthly and annual quantities in cubic metres of waste generated and location of disposal.***

And

NIRB Project Certificate No.004 Condition 74: ***Provide annual report of the quantity and type of waste generated at the mine site distinguishing landfilled, recycled and incinerated streams.***

Since the conception of the Meadowbank Project, waste has been segregated and stored onsite in seacans. AEM acquired permission from the Hamlet of Baker Lake on March 19, 2008 to backhaul waste to the municipal landfill. Backhauling commenced in May and continued through October, until Landfill #1 at the Meadowbank mine became operational early in November 2008. A summary of the amount of waste backhauled and/or disposed of in the Landfill in 2008 per month is included as Table 5.1. Scrap wood was recycled by backhauling it to Baker Lake for use by the community. Hazardous material is stored in seacans at site in preparation for shipping to a licensed waste disposal facility in the South with the annual sealift.

5.2.1 Incinerator

As per Water License 2AM-MEA0815 Schedule B, Item 10: ***Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water.***

And

NIRB Project Certificate No.004 Condition 72: ***On-site incinerators shall comply with Canadian Council of Ministers of Environment and Canada-Wide Standards for dioxins and furan emissions, and Canada-wide Standards for mercury emissions, and AEM shall conduct annual stack testing to demonstrate that the on-site incinerators are operating in compliance with these standards. The results of stack testing shall be contained in an annual monitoring report submitted to GN, EC and NIRB's Monitoring Officer.***

The construction of the permanent incinerator began in October and continued throughout the first quarter of 2009. No ash or stack testing was completed for the permanent incinerator in 2008 since it was still under construction.

5.3 ADDITIONAL INFORMATION

As required by Water License 2AM-MEA0815 Schedule B, Item 24: ***Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.***

The Board did not request any additional details on waste disposal in 2008.

SECTION 6 • SPILL MANAGEMENT

6.1 2008 INCIDENT SUMMARY – MINESITE AND AWPAR

As per Water License 2AM-MEA0815 Schedule B, Item 11 ***A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken.***

A summary of unauthorized discharges from June through December 2008 is presented in Table 6.1. Data from July through December was also included in monthly monitoring reports submitted to the NWB.

6.2 2008 INCIDENT SUMMARY – SHIP CARGO

As required by NIRB Project Certificate No.004 Condition 82: ***Monitor the ingress/egress of ship cargo at Baker Lake and report any accidents or spills immediately to the regulatory agencies as required by law and to NIRB's Monitoring Officer annually.***

There were two spills reported internally at the Baker Lake Marshalling Facility on April 10, 2008. Approximately 20 L of diesel fuel was spilled and a second incident of rust stained snow was noted. The contaminated snow was collected and removed. There were no spill reports from Northern Transportation NTCL with respect to transit of the barges enroute to Baker Lake.

SECTION 7 • MONITORING

This section includes monitoring requirements from all aspects of the Meadowbank Project.

7.1 AQUATIC MONITORING PROGRAM

As required by Water License 2AM-MEA0815 Schedule B-13: ***The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I.***

And

As required by Water License 2AM-MEA0815 Schedule B, Item 14: ***The results of monitoring under the Aquatics Effect Management Plan (AEMP).***

And

As required by DFO HADD Authorizations NU-03-0191 Condition 6.1 (Mine); NU-03-0190 Condition 6 (AWPAR); NU-03-0190 Condition 6 (Western Channel Temporary Crossing): ***Submit written report summarizing 2008 monitoring results and photographic record of works and undertakings.***

Certificates of Analysis for all aquatic monitoring programs conducted by AEM are included in Appendix C1.

7.1.1 Construction Activities

Construction monitoring for the project includes all of the water quality monitoring for the dewatering dikes, and all surface runoff during the construction of any facility where water may flow directly or indirectly into a waterbody.

In 2008, water quality monitoring was conducted in the open water season during the construction of the East dike and Western Channel dike. The results of the 2008 dike construction monitoring program are available in the report entitled ''*Aquatic Effects Monitoring Program – Targeted Study: Dike Construction Monitoring 2008, Meadowbank Gold Project*" prepared for AEM by Azimuth Consulting Group Inc., attached as Appendix A2. A summary of the TSS evaluation for the East dike construction was previously presented in Section 2.1.3.

A number of facilities for the Meadowbank Gold project were under construction in 2008. Surface runoff samples were collected from stagnant pools of water near the construction areas, in addition to water samples along the shores of Second Portage and Third Portage Lakes. See Figure 2 for a general site layout for the Meadowbank gold project and Figure 3 for the locations of water quality monitoring stations in 2008.

Results for pooled water samples are presented in Table 7.1, with corresponding field measurement results in Table 7.2. All of this data was previously reported to the NWB in the monthly monitoring reports. Two samples (out of a total of 33) exceeded the TSS maximum concentration of 100 mg/L stipulated in the NWB water license (for surface water runoff during the construction of any facility). However, both of these samples were collected at locations of pooled water (AS-D2 and MP-1), it is unlikely that any water flowed into a nearby water body. The average TSS concentrations were all well below the TSS license criteria of 50 mg/L. Further discussion of this data is provided in Section 3.2 of the report entitled "2008 Geochemical Characterization Study: AWPAR and Airstrip Quarries", attached as Appendix B1.

Results for water quality monitoring samples collected from nearby water bodies (Third Portage Lake (from the bay adjacent to the mine site) and Second Portage Lake (adjacent to the air strip)) are presented in Table 7.3, with corresponding field measurement results in Table 7.4. Water samples were collected from shore from depths of less than 1 m. Similar to the pooled water samples, all of this data was previously reported to the NWB in the monthly monitoring reports. There were a number of exceedences of total metals (Aluminum, Copper, Nickel and Selenium) above the CCME guidelines for the protection of freshwater aquatic life from the samples collected in Third Portage Lake, and one marginal exceedence of Copper in Second Portage Lake. With the exception of one anomalous Aluminum sample (240 mg/L at MTPL-1C), all exceedences were well within one order of magnitude of the CCME guidelines; with the conservative nature of the CCME guidelines, it is unlikely these metals concentrations are significant. In addition, as TSS concentrations at all sampling locations were low (all at or below 14 mg/L), metals concentrations in the lakes do not appear to be related to construction activities from the mine site.

7.1.2 Dewatering Activities

Dewatering of the northwest arm of Second Portage Lake began in March 2009. Consequently, there is no monitoring data to report for 2008.

7.1.3 Water Collection System

A water collection system comprised of ditches, sumps, attenuation ponds, stormwater management ponds and open pits has or will (during the operations phase) be developed to control surface water for the Meadowbank project. As of the end of 2008, the only applicable sampling locations from the water collection system was from the stormwater management pond, often referred to as Tear Drop Lake.

Ten water quality samples were collected from the stormwater management pond throughout the open water season of 2008; these samples were labelled as ATT, ATT-1, ATT-2, and ST-27. Please note that ATT-2 and ST-27 are from the same location within the pond and that it is unknown if sample ATT is from sampling station ATT-1 or ATT-2. Figure 3

illustrates the location of sampling locations ATT-1 and ATT-2 in the pond. The results of the water quality monitoring are presented in Table 7.5; field measurements data is presented in Table 7.6. All of this data was previously reported to the NWB in the monthly monitoring reports.

No water from the stormwater management pond was discharged to the receiving environment or transferred to the northwest arm of Second Portage Lake; therefore there are no applicable license effluent quality limits for this dataset. This data is being presented in the 2008 annual report for informational purposes only.

7.1.4 Tailings Storage Facility, Reclaim Pond and Waste Rock Storage Facilities

During the operations phase of the project, water quality monitoring will be conducted from the tailings storage facility, tailings reclaim pond and waste rock storage facilities. These facilities are not yet in operation; consequently, no monitoring data is available for 2008.

7.1.5 Mine Site

Locations for water quality monitoring at the mine site include the Sewage Treatment Plant (STP), landfill, landfarm, and any runoff water collected in the secondary containment area of the bulk fuel storage tank that is discharged to land. The general site layout is presented in Figure 2.

Water quality monitoring data from the STP is presented in Table 7.7. This data was collected in the later half of the 2008 year, once the STP came into operation. All of this data was previously reported to the NWB in the monthly monitoring reports. There are no applicable license effluent quality limits for this dataset; this data is being presented in the 2008 annual report for informational purposes only.

The Meadowbank Landfill #1 was operational as of November 2008. Due to winter conditions no seepage occurred in 2008.

The Meadowbank landfarm is not yet constructed; consequently, there is no monitoring data to report for 2008.

The construction of the secondary containment fuel storage tank at Meadowbank was finished in November 2008. Due to winter conditions no runoff water was collected in 2008. Consequently, there is no monitoring data to report for 2008.

7.1.6 Baker Lake Marshalling Facilities

The design of the Baker Lake marshalling facility includes one storage pond to collect site precipitation runoff. As of the end of 2008, construction of the marshalling facility was not yet completed, and no storage pond has been built. Surface runoff from bulk fuel storage tanks,

explosives storage area, ammonium nitrate storage area and other constructed facilities was not collected in 2008.

7.1.7 All Weather Private Access Road (AWPAR) and Quarries

The construction of the AWPAR between the Hamlet of Baker Lake and the Meadowbank mine was completed on March 21, 2008. Monitoring along the AWPAR throughout the 2008 season included water quality sampling, erosion and flow inspections, structural crossing inspections and fisheries studies.

Water quality monitoring along the AWPAR, including pools of standing water in contact with the road, bridge crossings and quarries, was conducted throughout the open water season of 2008. In total, 129 water quality samples were collected during 6 sampling events: June 22-24, July 14-15, August 4, August 18, September 9 and October 6, 2008. Results of the water quality monitoring program are presented in Table 7.8; field measurement data is presented in Table 7.9. All of this data was previously reported to the NWB in the monthly monitoring reports. Figure 1 illustrates the locations of all sampling stations.

The water quality data indicates that pH was below the Canadian Council of Ministers of the Environment (CCME) water quality guideline for the protection of aquatic life in 20 of the 145 samples collected. These results are similar to the findings from the 2007 monitoring program along the AWPAR (see All Weather Private Access Road Annual Report, 2007), where it was concluded that pH levels appear to be naturally low in many of the streams.

Measured concentrations of ten metals (Aluminum, Silver, Arsenic, Chromium, Cadmium, Copper, Selenium, Lead, Nickel and Zinc) exceeded the CCME water quality guidelines in 130 of the 145 samples collected. The majority of these elevated metals concentrations were from pools of standing water along the road or in the quarries, thus are unlikely to flow into nearby streams and impact fish habitat. Concentrations of metals at the bridge crossings marginally exceeded CCME guidelines at both upstream and downstream sampling stations; this is similar to results from last year's monitoring (All Weather Private Access Road Annual Report, 2007). Overall, the results suggest low risks to aquatic life.

Further discussion of the quarry water quality data is provided in Section 2.2 of the report entitled "2008 Geochemical Characterization Study: AWPAR and Airstrip Quarries", attached as Appendix B1. That study concluded the water sampling program conducted in June 2008 did not provide evidence of any significant acid generation or metal leaching issues associated with the 22 road quarries.

Visual inspections to monitor erosion and sediment transport at the channel crossings and to identify sediment or other debris accumulation impeding the free flow of water through the crossings were conducted at the time of each water sampling event. No issues were identified during these inspections. A geotechnical structural inspection of the AWPAR,

including all culverts, bridges and quarries, was conducted by Golder Associates Ltd. in October 2008. The findings are presented in the report entitled "*2008 Geotechnical Inspection, Meadowbank Gold Project, Nunavut*", attached in Appendix C2.

The results of the 2008 AWPAR fisheries monitoring are available in the report entitled '*All-Weather Private Access Road (AWPAR) Fisheries Monitoring Report - 2008, Meadowbank Gold Project'* prepared for AEM by Azimuth Consulting Group Inc., attached as Appendix C3.

Construction of the fisheries habitat compensation feature at bridge crossing R02 was completed in early 2009; consequently, there is no monitoring data to report for 2008.

7.1.8 Western Channel Temporary Crossing

The Western Channel Temporary Crossing was, as the name implies, a temporary culverted road crossing over the narrow Western Channel. It was constructed in the spring of 2008 to allow truck access to the South Portage Starter Pit. Later in the season, on September 24, 2008, construction of the Western Channel dewatering dike began, and this temporary crossing was converted into a coffer dam.

At the time of construction of the temporary crossing, all monitoring activities followed the approved '*Construction Monitoring Plan for Western Channel Crossing*' prepared by Azimuth Consulting Group Inc., dated May 14, 2008. Results for the water quality monitoring are presented in Table 7.10, with corresponding field measurement results in Table 7.11. All of this data was previously reported to the NWB in the monthly monitoring reports. The locations for the upstream and downstream monitoring stations (WC-US and WC-DS) are illustrated in Figure 3.

Similar to the results for the construction monitoring water quality stations in the nearby lakes (see Section 7.1.1), there were a few marginal exceedences of total metal concentrations (Aluminum, Copper, Selenium) above the CCME guidelines for the protection of freshwater aquatic life. However, TSS concentrations were all low (at or below 10 mg/L), suggesting these metals concentrations were likely not related to construction activities.

7.1.9 Seepage

As required by Water License 2AM-MEA0815 Part I, Item 16: ***The results and interpretation of the Seepage Monitoring program in accordance with Part I, Item 15***

The Seepage Monitoring program includes the following locations:

- **Lake water Seepage Through Dewatering Dikes;**
- **Seepage (of any kind) Through Central Dike;**
- **Seepage and Runoff from the Landfill(s);**

- **Subsurface Seepage and Surface Runoff from Waste Rock Piles;**
- **Seepage at Pit Wall and Pit Wall Freeze/Thaw; and**
- **Permafrost Aggradation.**

Meadowbank Landfill #1 was operational as of November 2008. Due to winter conditions no seepage occurred in 2008. All of the other areas were either under construction in 2008, or not yet constructed; consequently there is no seepage monitoring data to report.

7.1.10 Groundwater

The results of the 2008 groundwater monitoring program are available in the report entitled "2008 Groundwater Quality Monitoring Program, Meadowbank Mine" prepared for AEM by Golder Associates Ltd., attached as Appendix C4.

7.1.11 Receiving Environment

The results of the 2008 AEMP receiving environment monitoring program are available in the report entitled ''*Aquatic Effects Management Program – Receiving Environment Monitoring 2008, Meadowbank Golder Project'* prepared for AEM by Azimuth Consulting Group Inc., attached as Appendix C5. A targeted monitoring study of the unnamed lake adjacent to the explosives plant at the Meadowbank mine is included as an appendix to this report.

No habitat compensation features were constructed in 2008; the East dike (and East dike face habitat compensation feature) will be completed in 2009. Consequently, there is no monitoring data to report for 2008.

7.1.12 Blasting Activities

As required by NIRB Project Certificate No.004, Commitment 85: ***AEMP monitoring - monitor blasting peak particle velocity and overpressure in receiving environment; must use specific charge weight/delay/set back to meet DFO requirements.***

The detonation of explosives in or near water produces compressive shock waves that can cause significant impacts to the swim bladders of fish, rupture other internal organs and/or damage or kill fish eggs and larvae. In addition, the effects of the shock waves can be intensified in the presence of ice. Consequently, guidelines have been developed by DFO to protect fish and fish habitat from works or undertakings that involve explosives in or near fisheries waters. These guidelines are presented in the DFO report entitled "Use of Explosives In or Near Canadian Fisheries Water" (Wright and Hopky, 1998), and include the following:

- No explosive is to be detonated in or near fish habitat that produces and instantaneous pressure change (i.e. overpressure) greater than 100 kPa in the swim bladder of a fish; and

- No explosive is to be detonated that produces a peak particle velocity greater than 13 mm/s in a spawning bed during the period of egg incubation (for lakes near the Meadowbank mine, the fisheries window is from August 15 to June 30).

Peak particle velocity (PPV) and overpressure monitoring data was recorded from October to December 2008 for blasting activities at the North Portage starter pit. The location of the blast monitoring station is shown in Figure 4; results of the monitoring are presented in Table 7.12.

PPV concentrations exceeded the DFO criteria of 13 mm/s for 6 of the 26 blasts. The first 4 blasts were used to refine the blasting procedures (i.e. size and pattern of the charges and method of detonation for specific rock types) for the area. Following this initial testing period, PPV concentrations met the DFO criteria in all but 2 of the blasts. In each case a refinement to the blasting procedures was made immediately to ensure compliance with the DFO criteria. Overpressure measurements were all well below the DFO criteria of 100 kPa.

7.1.13 QAQC Sampling

The objective of quality assurance and quality control (QA/QC) is to assure that the chemical data collected are representative of the material being sampled, are of known quality, are properly documented, and are scientifically defensible. Data quality was assured throughout the collection and analysis of samples using specified standardized procedures, by the employment of a CAEAL accredited laboratory (Maxxam Analytical in Montreal, QC), and by staffing the program with experienced technicians.

Duplicate field water quality samples were collected at the mine site and along the AWPAR throughout the 2008 open water season to assess sampling variability and sample homogeneity. Duplicate samples were sent to the analytical laboratory as blind samples. For the mine site, 2 duplicate water quality samples were collected on each of July 13, August 3 and August 19, and one duplicate sample on September 8. Along the AWPAR, two duplicate water quality samples were collected on June 22 and July 14, and three samples on August 4, August 18 and September 9. This represents approximately 10% of the samples collected for both the mine (7 duplicate samples out of a total of 72 samples) and the AWPAR (13 samples out of a total of 145), which is consistent with the QAQC program stipulated in the Water Quality and Flow Monitoring Plan for the project.

Analytical precision is a measurement of the variability associated with duplicate analyses of the same sample in the laboratory. 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)*100; where: A = analytical result; B = duplicate result.

RPD values may be either positive or negative, and ideally should provide a mix of the two, clustered around zero. Consistently positive or negative values may indicate a bias. Large variations in RPD values are often observed between duplicate samples when the concentrations of analytes are very low and approaching the detection limit. Consequently, a RPD of 50% for concentrations that exceed 10x the method detection limit (MDL) is considered acceptable.

Results for the QAQC samples for the mine site are presented in Table 7.13, and for the AWPAR in Table 7.14. For the mine site, one parameter (chromium) for the ST-27 duplicate sample collected on August 19 exceeded the data quality objective (RPD>50% for concentrations >10x MDL). Several other values exceeded the 50% RPD value, but were not 10x the MDL; consequently those samples are considered acceptable. For the AWPAR dataset, there were a total of 8 parameters that exceeded the data quality objective. There was no obvious trend with the QAQC data; the elevated RPD parameters were various metals or conventionals, from 6 different samples, and collected on different dates. As these RPD exceedences represent a very small fraction of the QAQC data collected, the data indicates there was good corroboration between the field duplicates and that data quality is sufficient to meet the objectives of this monitoring program.

QAQC data for the AEMP monitoring program, groundwater monitoring program and the dike construction monitoring program are discussed within each of those separate reports, included as appendices to this report.

7.1.14 Water Usage

The volume of freshwater pumped from Third Portage Lake for use at the Meadowbank mine, per month from June to December 2008, is presented in Table 7.15. All months complied with the applicable water use limits for the Type B water license 8BC-TEH0809 (for June 2008) and Type A water license 2AM-MEA0815 (from July to December 2008).

7.2 FISH-OUT PROGRAM SUMMARY

As required by NIRB Project Certificate No.004 Commitment 49: ***develop, implement and report on the fish-out programs for the dewatering of Second Portage Lake, Third Portage Lake and Vault Lake.***

A summary of the 2008 Fish-Out Program for the northwest arm of Second Portage Lake is available in the report entitled *'Meadowbank Gold Project: 2008 Fish-Out of the Northwest*

Arm of Second Portage Lake' prepared for AEM by Azimuth Consulting Group Inc., attached as Appendix C6.

7.3 WILDLIFE MONITORING

7.3.1 Annual Monitoring

As Required by NIRB Project Certificate No.004, Condition 55: ***Provide the Annual Wildlife Summary Monitoring Report.***

The results of the 2008 wildlife monitoring are available in the report entitled *"Meadowbank Gold Mine Project 2008 Wildlife Monitoring Summary Report"* prepared for AEM by Gebauer & Associates Environmental Consultants, attached as Appendix C7.

7.3.2 Harvest Study Results

As required by NIRB Project Certificate No.004 Condition 54: ***Details of a comprehensive hunter harvest survey to determine the effect on ungulate populations resulting from increased human access caused by the all-weather private access road.***

The results of the harvest study are available in Section 4.10.1 of the report entitled *"Meadowbank Gold Mine Project 2008 Wildlife Monitoring Summary Report"* prepared for AEM by Gebauer & Associates Environmental Consultants, attached as Appendix C7.

7.3.3 Creel Survey Results

As required by DFO Authorization NU-03-0190 (AWPAR) Condition 5.2.4: ***Engage the local Hunter Trapper Organization(s) in the development, implementation and reporting of annual creel surveys within the water bodies affected by the Plan.***

And

NIRB Project Certificate No.004 Condition 51: ***engage the HTOs in the development, implementation and reporting of creel surveys within waterbodies affected by the Project to the GN, DFO and local HTO.***

The results of the creel survey are available in Section 4.10.2 in the report entitled *"Meadowbank Gold Mine Project 2008 Wildlife Monitoring Summary Report"* prepared for AEM by Gebauer & Associates Environmental Consultants, attached as Appendix C7.

7.3.4 Caribou Migration Corridor Information Summary

As required by NIRB Project Certificate No.004 Condition 56: ***Maps of caribou migration corridors shall be developed in consultation with Elders and local HTOs, including Chesterfield Inlet and placed in site offices and upgraded as new information on corridors becomes available. Information on caribou migration corridors shall be reported to the GN, KIA and NIRB's Monitoring Officer annually.***

Updated maps of caribou migration routes and home ranges were posted at the Meadowbank site in December 2008; these maps are provided in Appendix C8.

7.3.5 Caribou Collaring Study

As required by NIRB Project Certificate No.004 Condition 57*: participate in a caribou collaring program as directed by the GN-DOE*.

The status of the caribou collaring program and results for 2008 are available in Sections 3.11 and 4.11 respectively in the report entitled *"Meadowbank Gold Mine Project 2008 Wildlife Monitoring Summary Report"* prepared for AEM by Gebauer & Associates Environmental Consultants, attached as Appendix C7.

7.4 AIR QUALITY MONITORING

As required by NIRB Project Certificate No.004 Condition 71: *In consultation with EC, install and fund an atmospheric monitoring station to focus on particulates of concern generated at the mine site. The results of air-quality monitoring are to be reported annually to NIRB.*

And

NIRB Project Certificate No.004 Commitment 77: *Install and operate two particulate samplers at the project site and report annually monitoring results conforming to detailed reporting protocol.*

AEM has commissioned our consultant to complete a review for the optimal placement of the two particulate samplers at the project site. Installation of the samplers is scheduled for the 2009 field season, following approval from regulators on the sampler locations. Consequently, there is no air quality data to report for 2008.

7.5 NOISE MONITORING

As requested by NIRB: *Report noise monitoring data annually*.

The results of the noise monitoring are available in the report entitled *"2008 Noise Monitoring Report for the Meadowbank Gold Project"* prepared for AEM by Golder Associates Ltd., attached as Appendix C9.

SECTION 8 • CLOSURE

8.1 PROGRESSIVE RECLAMATION

8.1.1 Mine Site

As required by Water License 2AM-MEA0815 Schedule B, Item 16: *A summary of any progressive closure and reclamation work undertaken including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling.*

Due to the early construction phase of the Project, no restoration work was completed in 2008.

8.1.2 AWPAR

As required by INAC Land Lease 66A/8-71-2, Condition 33: ***The lessee shall file annually a report for the preceding year, outlining ongoing restoration completed in conformity with the approved Abandonment and Restoration Plan, as well as any variations from the said Plan.***

And

As required by KIA Right of Way KVRW06F04, Condition 26: ***File annually a progress report for the preceding year, outlining any ongoing restoration completed, in conformity with the Abandonment and Restoration plan***.

Due to the early construction phase of the Project, no restoration work was completed in 2008.

8.1.3 Quarries

As required by INAC Land Lease 66A/8-72-2, Condition 33: ***The lessee shall file annually a report for the preceding year, outlining ongoing restoration completed in conformity with C&R Plan, as well as any variations from the said Plan.***

Due to the early construction phase of the Project, no restoration work was completed in 2008.

8.2 RECLAMATION COSTS

8.2.1 Project Estimate

As required by Water License 2AM-MEA0815 Schedule B, Item 18: ***An updated estimate of the current restoration liability based on project development monitoring, results of restoration research and any changes or modifications to the Appurtenant Undertaking.***

And

As required by NIRB Project Certificate No.004, Condition 80: ***File annually with NIRB's Monitoring Officer an updated report on progressive reclamation and the amount of security posted, as required by KivIA, INAC, and/or the NWB.***

Due to the early construction phase of the Project, no restoration work was completed in 2008. Estimates of current restoration liability and the amount of security posted for the project are the same as was approved by the NWB in July 2008 (at the time of license issuance).

8.2.2 AWPAR and Quarries

As required by INAC Land Lease 66A/8-71-2, Condition 19: ***The lessee shall submit to the Minister every two years after the commencement date of this lease (January 2007), a report describing any variations from the Abandonment and Restoration Plan and updated cost estimates.***

And

As required by INAC Land Lease 66A/8-72-2, Condition 37: ***The lessee shall submit to the Minister every 2 years after the commencement date of this lease (January 2007), a report describing cumulative variations from the C&R Plan with updated cost estimates.***

And

As required by KIA Right of Way KVRW06F04, Condition 14: ***Submit to KIA every two years on each anniversary of the commencement date (February 2007), a report describing any variations from the Abandonment and Restoration Plan and updated cost estimates.***

No progressive reclamation has been completed on the AWPAR or associated quarries. Closure activities are consistent with the AEM Closure and Reclamation Plan, September 2008, and original cost estimate.

8.3 CAPPING THICKNESS

As required by Water License 2AM-MEA0815 Schedule B, Item 17: ***A summary of on-going field trials to determine effective capping thickness for the Tailings Storage Facility and Waste Rock Storage Facilities for the purpose of long term environmental protection.***

The Tailings Storage Facility and Waste Rock Storage Facilities are scheduled to begin construction in 2009; consequently, no field trials have commenced.

SECTION 9 • PLANS / REPORTS / STUDIES

9.1 SUMMARY OF STUDIES

As required by Water License 2AM-MEA0815 Schedule B, Item 19: *A summary of any studies requested by the Board that relate to Waste disposal, Water use or Reclamation, and a brief description of any future studies planned.*

No studies were requested by the Board in 2008.

9.2 SUMMARY OF REVISIONS

As required by Water License 2AM-MEA0815 Schedule B, Item 20: ***Where applicable, revisions will be completed as Addendums, with an indication of where changes have been made, for Plans, Reports, and Manuals.***

Appendix D1 includes a description of revisions for the following plans and manuals submitted to the Board in 2008:

- Spill Contingency Plan
- Water Quality and Flow Monitoring Plan
- Ground Water Monitoring Plan
- Operational ARD/ML Sampling Plan
- Water Quality Monitoring and Management Plan for Dike Construction and Dewatering
- Sewage Treatment Plant Operations and Maintenance Manual
- Incineration Management Plan
- Landfill Design and Management Plan
- Landfarm Design and Management Plan
- Closure and Reclamation Plan
- Emergency Response Plan

9.3 EXECUTIVE SUMMARY TRANSLATIONS

As required by Water License 2AM-MEA0815 Schedule B, Item 21: ***An executive summary in English, Inuktitut and French of all plans, reports, or studies conducted under this Licence.***

Appendix D2 includes an executive summary in English, Inuktitut and French for the following documents:

- Spill Contingency Plan
- Water Quality and Flow Monitoring Plan
- Ground Water Monitoring Plan
- Operational ARD/ML Sampling Plan
- Water Quality Monitoring and Management Plan for Dike Construction and Dewatering
- Sewage Treatment Plant Operations and Maintenance Manual
- Incineration Management Plan
- Landfill Design and Management Plan
- Landfarm Design and Management Plan
- Closure and Reclamation Plan
- Emergency Response Plan
- 2008 Ground Water Monitoring Report
- 2008 Geotechnical Inspection Report
- 2008 All Weather Private Access Road Monitoring Report
- 2008 AEMP Monitoring Report
- 2008 Fish-Out Program Summary Report
- Tailings Storage Facility Thermal Modelling Report
- Waste Rock and Water Management Plan

SECTION 10 • MODIFICATIONS / GENERAL / OTHER

10.1 MODIFICATIONS

As required by Water License 2AM-MEA0815 Schedule B, Item 12: ***A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities.***

On August 1, 2008, AEM submitted to the NWB modified construction specifications and drawings for the East Dike. The adjustments to the original dike concept were made in order to maximize construction materials, increase control over the duration of construction and to improve constructability.

Golder Associates Ltd. will be compiling the final as-built report for the East Dike pending completion of construction in 2009. This comprehensive report will include all documents related to the construction and modifications of the East Dike; this report will be submitted to the Board under separate cover as soon as it becomes available.

No other modifications to water or waste related structures or facilities were made in 2008.

10.2 INSPECTIONS AND COMPLIANCE REPORTS

As required by Water License 2AM-MEA0815 Schedule B, Item 22: ***A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector.***

No action was taken; AEM did not receive a formal inspection or compliance report from the INAC Inspector in 2008.

10.3 NON-COMPLIANCE ISSUES

As required by NIRB Project Certificate Condition 4: ***Take prompt and appropriate action to remedy any noncompliance with environmental laws and regulations and/or regulatory instruments, and shall report any non compliance as required by law immediately and report the same to NIRB annually.***

There were no non-compliance issues for the Meadowbank Gold Project in 2008.

10.4 AWPAR USAGE REPORTS

10.4.1 Unauthorized Use

As required by NIRB Project Certificate Condition 32e: ***Require all mine personnel using the road to monitor and report unauthorized non-mine use of the road, and collect and report this data to NIRB one (1) year after the road is opened and annually thereafter.***

Access to the AWPAR is an ongoing issue and is being addressed by NIRB's reconsideration of Condition 32 in accordance with Section 12.8.2 of the Nunavut Land Claims Agreement.

Reports of unauthorized use of the AWPAR by Hondas (All Terrain Vehicles) are included in Appendix E1.

10.4.2 Safety Incidents

As required by NIRB Project Certificate Condition 32f: ***Report any information received, including accidents or other safety incidents on the road, including the locked gates, to the GN, KIA, and the Hamlet immediately, and to NIRB annually*****.**

The AWPAR for the Meadowbank project officially opened on March 21, 2008. There were no accidents or other safety incidents on the AWPAR during 2008; however three accidents were reported in the first quarter of 2009, as described below. Wildlife encounters along the AWPAR are discussed in Section 4.9.1 of the 2008 Wildlife Monitoring Report, attached as Appendix C7.

1. January 7, 2009, 8:30am. A tractor trailer transporting a D8 dozer was entering the road switchback from the south at AWPAR KM 38. The back wheels of the trailer locked as the operator applied the trailer brake and the rear wheels of the trailer slid of the road. The D-8 shifted and fell off the trailer. The incident was a reportable occurrence.

   The initial investigation report was completed on January 8, 2008 and a follow-up investigation was completed by the Superintendent Health and Safety and the Employee Co-chair of the Joint Health and Safety Committee on January 27, 2009. Factors contributing to the incident included road conditions and the operator's unfamiliarity with the conditions of the switchback. It was recommended that loads of crush be stockpiled nearby the area so it can be applied to the hill more frequently if required.

2. February 7, 2009, 5:30 pm. A tractor trailer transporting a D8 dozer was heading south towards Baker Lake across Bridge 3, followed by a second vehicle. Visibility was poor due to blowing snow. The supervisor in the second vehicle informed the tractor trailer operator via radio to adjust to the right because the cutting edge of the dozer blade was impacting the side of the bridge. Subsequent inspections determined the damage to the bridge was structural and required a Structural Engineer to coordinate repairs. The road was closed to heavy equipment traffic until the repairs were complete. Factors contributing to the incident included decreased visibility due to weather conditions and the dozer was transported with the blade at an angle when common practice is transport with the blade in straight position.

3. February 11, 2009. A Triple 7 rock haul truck was travelling south near KM 90 at approximately 40 km/hr approaching a small hill. Visibility was poor and road

conditions were slippery. The right tire started to move towards the right side of the road and the operator accelerated the truck forward on the right. The truck drove onto the tundra approximately 5ft from the road upright and stuck. Factors contributing to the incident included speed, operator error and road conditions.

10.5 ON-BOARD VESSEL ENCOUNTER REPORTS

As required by NIRB Project Certificate Condition 36: ***Inuit observation and encounter reports for on-board vessels transporting goods and fuel through Chesterfield Inlet.***

In 2008, three elders from Chesterfield Inlet acted as Wildlife Monitors on the AEM chartered tugs and barges travelling past Chesterfield Inlet to Baker Lake. The Wildlife Monitors provided verbal reports to AEM's Community Liaison Officer in Baker Lake who then prepared a written trip report; this report is attached as Appendix E2.

10.6 PUBLIC CONSULTATION

As required by Water License 2AM-MEA0815 Schedule B, Item 23: ***A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions.***

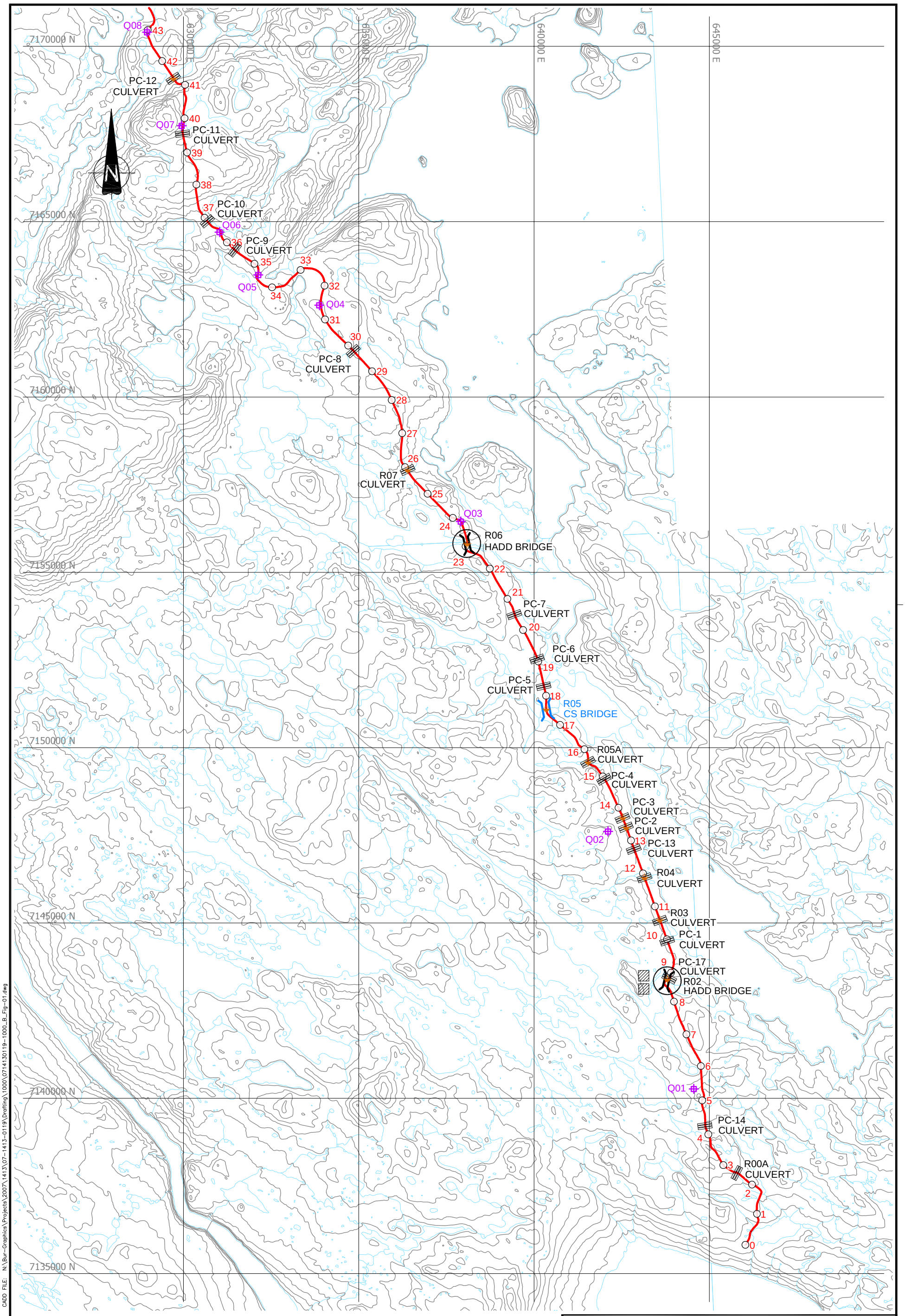
A log of 2008 public consultation activities and planned 2009 engagements is included as Appendix E3.

10.7 TRADITIONAL KNOWLEDGE

As required by NIRB Project Certificate No.004, Condition 40: ***Gather Traditional Knowledge from the local HTOs and conduct a minimum of a one-day workshop with residents of Chesterfield Inlet to more fully gather Traditional Knowledge about the marine mammals, cabins, hunting, and other local activities in the Inlet. Report to the KIA and NIRB's Monitoring Officer annually on the Traditional Knowledge gathered including any operational changes that resulted from concerns shared at the workshop.***

There is no information to report as a workshop was not held in 2008. AEM has met with community leaders and elders and is working towards organizing a workshop in 2009.

Figures



LEGEND

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

REFERENCES

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

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK DIVISION

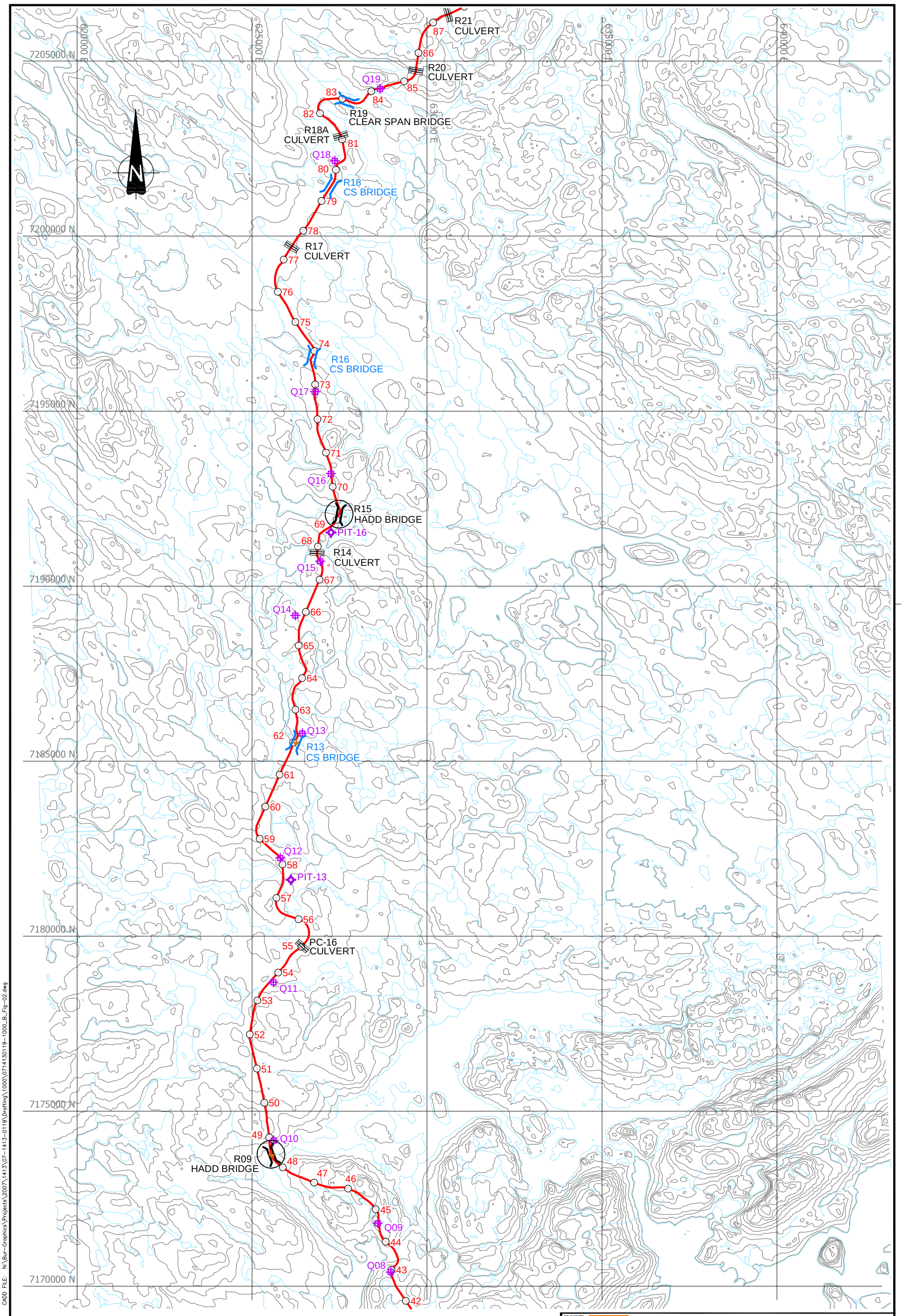
TITLE

ALL-WEATHER PRIVATE ACCESS ROAD

AZIMUTH

PROJECT No.			FILE No. 0714130119-1000_B_Fig-01
DESIGN			SCALE AS SHOWN REV. -
CADD	EA/GG	16MAR08	FIGURE 1a
CHECK			
REVIEW			

REVISION DATE: 08/12/16 10:22AM By: ggorczynski CADD FILE: N:\Bur-Graphics\Projects\2007\1413\07-1413-0119\Drafting\1000\0714130119-1000_B_Fig-01.dwg



LEGEND

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

REFERENCES

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

PROJECT

AEM **AGNICO-EAGLE MINES LIMITED**
MEADOWBANK DIVISION

TITLE

ALL-WEATHER PRIVATE ACCESS ROAD

AZIMUTH

PROJECT No.			FILE No. 0714130119-1000_B_Fig-02
DESIGN			SCALE AS SHOWN REV. -
CADD	EA/GG	16MAR08	FIGURE 1b
CHECK			
REVIEW			

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7220000 N
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7200000 N
N
101
R25
CULVERT
102
103
104
100
Q22
99
R26
CULVERT
R24
CULVERT
98
PIT-22
97
96
95
R23
CULVERT
94
Q21
93
92
91
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Q20
89
88
R21
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86
R20
CULVERT
Q19
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84
83
R19
CLEAR SPAN BRIDGE
82
R18A
CULVERT
81
Q18
80
R18
CS BRIDGE
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R17
CULVERT
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76
75
74
R16
CS BRIDGE

LEGEND

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

REFERENCES

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

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK DIVISION

TITLE

ALL-WEATHER PRIVATE ACCESS ROAD

AZIMUTH

PROJECT No.			FILE No. 0714130119-1000_B_Fig-03
DESIGN			SCALE AS SHOWN REV. -
CADD	EA/GG	16MAR08	FIGURE 1c
CHECK			
REVIEW			

REVISION DATE: 08/12/16 10:21AM By: ggorczynski CADD FILE: N:\Bur-Graphics\Projects\2007\1413\07-1413-0119\Drafting\1000\0714130119-1000_B_Fig-03.dwg

DRAWING NO.

FORMAT ARCHD–PORTRAIT

EMULSION PLAN

636000 E
637000 E
638000 E
639000 E
7217000 N
7216000 N
7215000 N
7214000 N
7213000 N
7212000 N

WASTE DUMP
NORTH PORTAGE
QUARRY
AIRSTRIP
TERMINAL PAD
SERVICE BUILDING
MEADOWBANK COMPLEX
MILL
POWER HOUSE
TEAR DROP LAKE
CONTRACTOR AREA
CRUSHER AREA
FUEL TANK
EAST DIKE
SOUTH PORTAGE
THIRD PORTAGE LAKE

TITLE	# DWG
REFERENCE DRAWINGS	

REV	DESCRIPTION	DATE	BY
	REVISIONS		

AGNICO-EAGLE

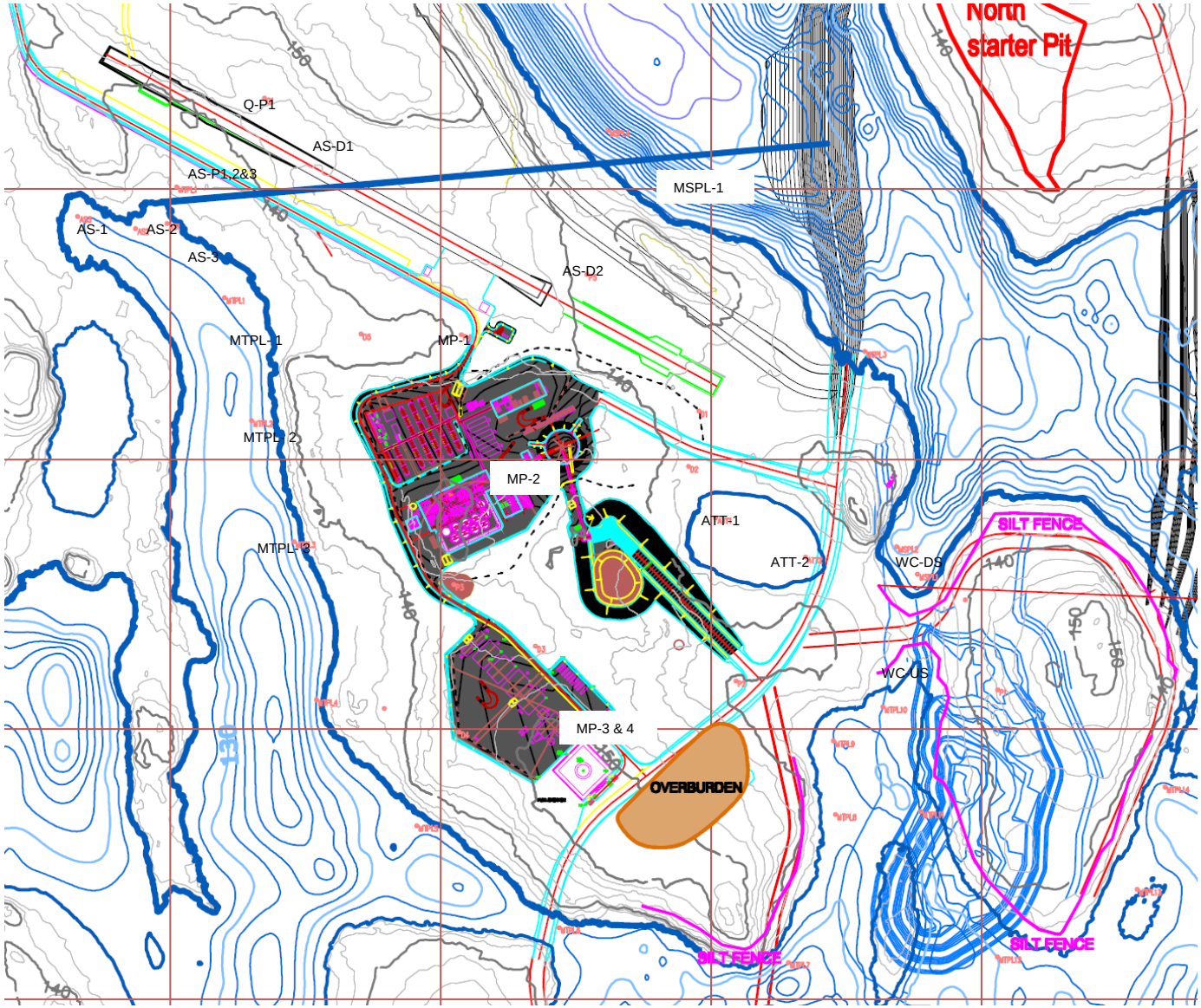
DRAWN BY	F.BLANCHETTE
DATE	23/02/2009
CHECKED BY	
APPROVED BY	
PROJECT NO.	
DATE	

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
MEADOWBANK ACTUAL SITE

SCALE	FILE
1:7500	.DWG

DRAWING NO.	REVISION	SHEET
		1 / 1

Figure 3: Mine Sampling Stations



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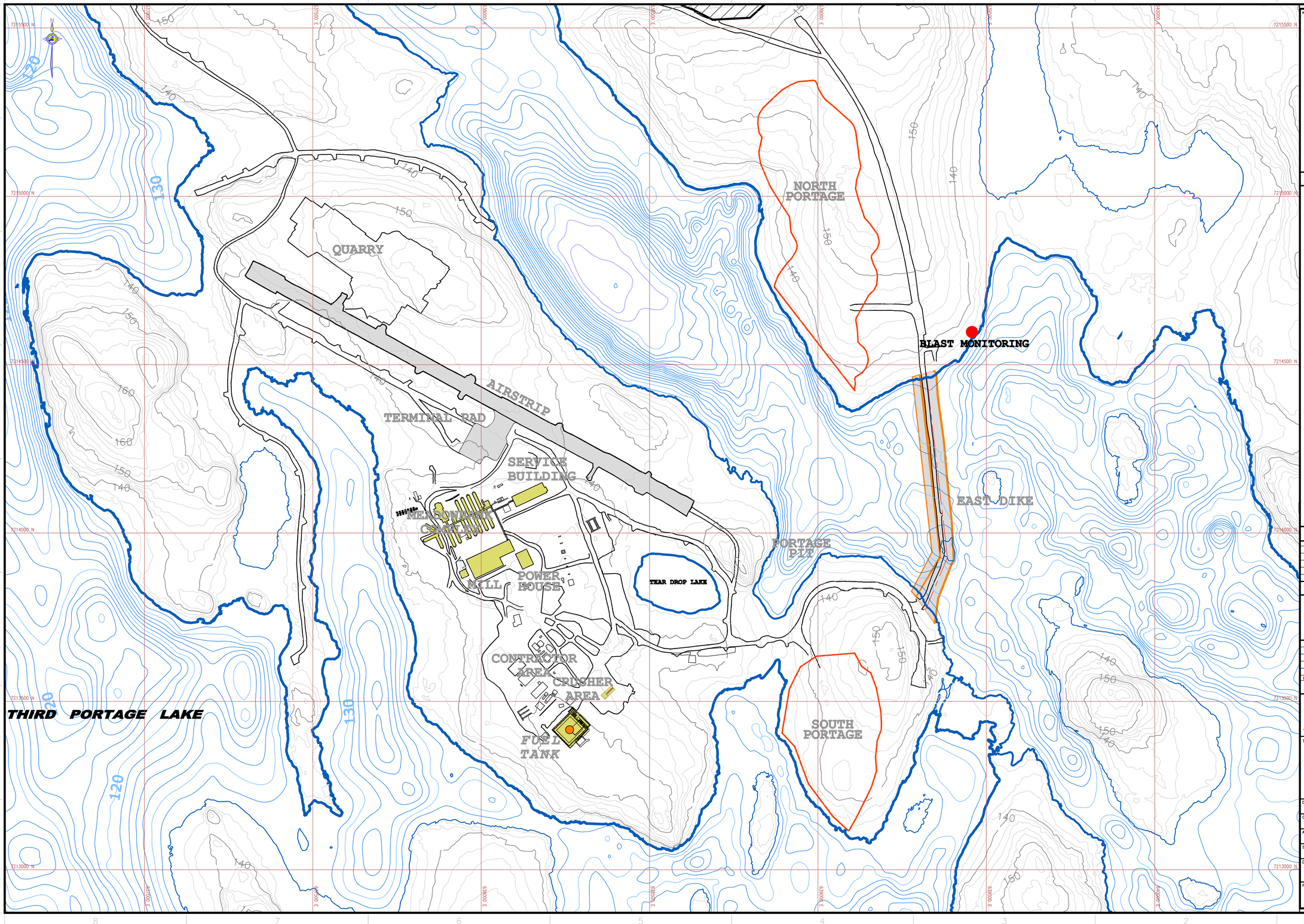
FORMAT ARCHD–LANDSCAPE



KEY PLAN

GENERAL NOTES

TITLE	# DWG

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	BY	APP.	CLIENT

REVISIONS

AGNICO-EAGLE
MEADOWBANK DIVISION

TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
SURFACE
BLAST MONITORING POSITION

DRAWN BY	F.BLANCHETTE	DATE 18/03/2009
CHECKED BY		
APPROVED BY		
SCALE 1:5000	DATE 23/03/2009	
DRAWING NO.		
PROJECT NO.	REVISION	SHEET 1 / 1

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FILE NO. .DWG

Tables

Table 2.1: Quantity of Materials Removed from Quarries

Quarry #	Northing	Easting	Bench Elevation	BCM Volume Excavated (m^3)	Crest Surface Area (m^2)	Toe Surface Area (m^2)	Survey Date	Calculated Blast BCM Volume to Design Bench	Total Number of Blasts	Date of Final Blast
Quarry 1	7,140,228.66	644,645.75	**95**					74,305	8	10-Feb-07
	7,140,166.48	644,721.83	**101**					18,955	3	3-Apr-07
Quarry 2	7,147,610.80	642,096.55	**86**	94,047	16,743	12,112	22-Oct-07	97,172	9	28-Apr-07
Quarry 3	7,156,419.47	638,008.79	**90**	126,791	20,507	13,127	21-Oct-07	135,310	10	31-May-07
Quarry 4	7,162,510.08	633,883.08	**119**	25,315	6,437	4,935	03-Jun-07	30,243	3	25-May-07
Quarry 5	7,163,510.93	632,078.67	**126**	20,602	5,243	4,061	14-Jun-07	18,681	3	6-Jun-07
Quarry 6	7,164,738.13	630,982.76	**140**	21,788	6,577	4,722	18-Jun-07	23,834	4	8-Jun-07
Quarry 7	7,167,764.07	629,904.60	**165**	20,298	4,046	3,045	09-Jul-07	19,678	4	16-Jun-07
Quarry 8	7,170,414.96	628,910.25	**120**	22,765	5,368	3,503	19-Jul-07	25,780	3	21-Jun-07
Quarry 9	7,171,845.46	628,552.92	**120**	57,917	9,487	7,176	07-Aug-07	67,696	5	8-Jul-07
Quarry 10	7,174,191.53	625,577.84	**97**	31,663	7,235	5,201	26-Jul-07	37,220	7	21-Jul-07
Quarry 11	7,178,687.15	625,321.04	**114**	63,671	13,744	11,341	06-Oct-07	68,493	9	29-Aug-07
Quarry 12	7,182,276.85	625,892.73	**127**	48,347	11,987	10,158	25-Aug-07	40,544	10	15-Aug-07
Quarry 13	7,185,837.65	626,377.89	**132**	36,106	10,778	8,979	26-Aug-07	27,366	9	24-Aug-07
Quarry 14	7,189,168.18	626,233.14	**136**	16,295	3,375	2,427	14-Sep-07	16,114	4	29-Aug-07
Quarry 15	7,190,718.39	626,898.81	**125**	30,201	6,940	5,958	13-Sep-07	27,923	6	6-Sep-07
Quarry 16	7,193,129.29	627,211.78	**121**	88,715	13,634	10,958	03-May-08	93,673	13	9-Oct-07
Quarry 17	7,195,600.09	626,884.07	**124**	48,539	12,363	10,958	17-Oct-07	56,156	7	11-Oct-07
Quarry 18	7,202,153.66	627,369.67	**129**	46,094	8,419	7,099	07-Nov-07	48,190	9	31-Oct-07
Quarry 19	7,204,241.96	628,686.12	**133**	34,480	6,230	5,286	01-Dec-07	33,574	8	25-Nov-07
Quarry 20	7,208,022.56	631,253.66	**191**	53,388	11,660	9,874	20-Dec-07	67,600	15	14-Dec-07
Quarry 21	7,211,752.36	630,821.17	**167**	55,360	9,096	7,732	05-Feb-08	56,304	12	29-Jan-08
Quarry 22	7,216,193.38	633,894.17	**147**	65,049	10,440	8,634	04-May-08	68,597	19	18-Apr-08

Table 4.1: Waste Rock Volumes

2008	North Portage Starter Pit (tonnes)	South Portage Starter Pit (tonnes)	Total (tonnes)
August		44,058	
September		6,601	
October	149,250	56,552	
November	306,737		
December	212,780		
Total	**668,767**	**107,211**	**775,978**

Total Waste Rock Transferred to Waste Dump	**151,459**
Total Waste Rock Used for Construction Purposes (road, dikes, airstrip, concrete)	**624,519**

Table 5.1: Volume of Waste Transferred to Landfill

Month	Waste Backhauled to Baker Lake (m^3)	Waste Transferred to AEM Landfill (m^3)
May	120	
June	960	
July	495	
August	870	
September	840	
October	0	
November	60	550
December		550
Total	**3345**	**1110**

Table 6.1: Reported Spills

AEM Internal #	Date of Spill	Date of Spill Report Completion	Hazardous Material (Fuel, Oil, etc.)	Quantity	Location
06-2008-01	3-Jun-08	3-Jun-08	Fuel	1-5 gallons	Airstrip Quarry
06-2008-02	3-Jun-08	5-Jun-08	Fuel	Unknown	Close to Boart Longyear
06-2008-03	4-Jun-08	4-Jun-08	Fuel	20 L	Boart Longyear Shop
06-2008-04	6-Jun-08	6-Jun-08	Diesel Fuel	200 ml	Incinerators
06-2008-05	9-Jun-08	10-Jun-08	Engine oil	7 L	From STP to Nahanni shop
06-2008-06	11-Jun-08	14-Jun-08	Fuel	4-6 L	New construction office
06-2008-07	13-Jun-08	14-Jun-08	Oil	20 L	Between Emulsion plant-Nitrate seacan
06-2008-08	20-Jun-08	21-Jun-08	Coolant	Unknown	Generators
06-2008-09	21-Jun-08	26-Jun-08	Motor oil	1 L	Construction power plant
06-2008-10	29-Jun-08	29-Jun-08	Oil	~2-5 L	Starter Pit area
06-2008-11	30-Jun-08	30-Jun-08	Oil	4-5 L	Toromont
07-2008-03	9-Jul-08	13-Jul-09	Antifreeze	75 L	Camp Generator
07-2008-04	10-Jul-08	13-Jul-09	Diesel	> 100 L	Observed leak along AWPAR
07-2008-05	13-Jul-08	13-Jul-09	Diesel	> 100 L	At refueling station and along AWPAR

Table 6.1: Reported Spills

AEM Internal #	Date of Spill	Date of Spill Report Completion	Hazardous Material (Fuel, Oil, etc.)	Quantity	Location
07-2008-08	29-Jul-08	29-Jul-09	Oil	20 L	Barge at Meadowbank
07-2008-09	30-Jul-08	30-Jul-09	Hydraulic Oil	15 L	During Dike Construction
08-2008-01	4-Aug-08	5-Aug-08	Marine engine oil	1 L	Second Portage Lake, Staging area
08-2008-02	August 5-7 08	12-Aug-08	Hydraulic Oil	~2 L	East dike
08-2008-03	August 5-7, 2008	12-Aug-08	Hydraulic Oil	~5 L	South abutment east dike
08-2008-04	6-Aug-08	6-Aug-08	Fuel	1/2 L	Tank Farm
08-2008-05	8-Aug-08	8-Aug-08	Antifreeze	5-8 L	Laydown 1
08-2008-06	8-Aug-08	9-Aug-08	Waste Oil	10 L	Gas tank
08-2008-07	9-Aug-08	9-Aug-08	Hydraulic Oil	10-15 L	Crusher
08-2008-08	11-Aug-08	11-Aug-08	Hydraulic Oil	2 Pints	Dike
08-2008-09	25-Aug-08	25-Aug-08	Hydraulic Oil	2 Pints	Dike
09-2008-01	2-Sep-08	2-Sep-08	Engine Oil	30-40 L	Coverall across from Toromont
09-2008-02	2-Sep-08	3-Sep-08	Hydraulic Oil	~ 5 gallons	Portage Pit

Table 6.1: Reported Spills

AEM Internal #	Date of Spill	Date of Spill Report Completion	Hazardous Material (Fuel, Oil, etc.)	Quantity	Location
09-2008-03	3-Sep-08	3-Sep-08	Hydraulic Oil	1 gallon	Scalper
09-2008-04	4-Sep-08	5-Sep-08	Diesel	>100 L (Maybe 150L)	Goose Island
09-2008-05	7-Sep-08	8-Sep-08	Diesel	20 L	Main generator access road
09-2008-06	8-Sep-08	8-Sep-08	Fuel	~10 L	At fuel tank (generator)
09-2008-07	10-Sep-08	10-Sep-08	Diesel	~25 L	BL tank farm
09-2008-08	11-Sep-08	12-Sep-08	Diesel	~4-6 L	Main generators
09-2008-09	13-Sep-08	14-Sep-08	Fuel	~10 L	Blue Cover All
09-2008-10	28-Sep-08	28-Sep-08	Hydraulic Oil	~10 L	East dike
09-2008-11	19-Sep-08	20-Sep-08	Diesel	1 L	Refueling Station
09-2008-12	28-Sep-08	29-Sep-08	Lubricants	<2 gallons	Old Nuna camp

Table 6.1: Reported Spills

AEM Internal #	Date of Spill	Date of Spill Report Completion	Hazardous Material (Fuel, Oil, etc.)	Quantity	Location
09-2008-13	8-Sep-08	9-Sep-08	Waste Water from Tear Drop Lake	~ 450 L	Tear drop pond
10-2008-01	1-Oct-08	3-Oct-08	Oil	~ 40 L	Behind white coverall
10-2008-02	4-Oct-08	6-Oct-08	Hydraulic oil	~ 1 L	Portage Road North
10-2008-03	10-Oct-08	10-Oct-08	Hydraulic Oil	~ 1-3 Gal	Agnico Crusher
10-2008-03	11-Oct-08	12-Oct-08	Hydraulic Oil	~1 Gal	Starter Pit
10-2008-04	13-Oct-08	13-Oct-08	Hydraulic Oil	200 L	4th Ave Baker Lake
10-2008-05	14-Oct-08	14-Oct-08	Diesel	2 Gal	Camp
10-2008-06	16-Oct-08	16-Oct-08	Hydraulic oil	5 Gal	East Dike
10-2008-07	16-Oct-08	16-Oct-08	Hydraulic oil	~ 5 - 10 L	East Dike
10-2008-08	24-Oct-08	24-Oct-08	Transmission Oil	10 L	East Dike
10-2008-09	24-Oct-08	24-Oct-08	Hydraulic oil	20 L	Quarry 1
11-2008-01	1-Nov-08		Fuel	10 L	Main fuel station
11-2008-02	7-Nov-08		Hydraulic oil	0.5 L	On the East Dike
11-2008-03	9-Nov-08		Hydraulic oil	1 L	In front of Dorm #1

Table 6.1: Reported Spills

AEM Internal #	Date of Spill	Date of Spill Report Completion	Hazardous Material (Fuel, Oil, etc.)	Quantity	Location
11-2008-04	9-Nov-08		Fuel	15 L	Baker Lake Tank Farm
11-2008-05	14-Nov-08		Diesel	20 L	End of wing 5
11-2008-06	17-Nov-08		Oil	150 L	Front of white cover all
11-2008-07	23-Nov-08		Oil	12 L	Crusher Yard
11-2008-08	24-Nov-08		Hydraulic oil	100 L	Terminal at the airstrip
11-2008-09	24-Nov-08		Sewage from portable washroom	1500 L	Near STP along road
11-2008-10	28-Nov-08		Hydraulic oil	15 L	Laydown 2
11-2008-11	28-Nov-08		Fuel	105 L	Baker Lake Tank Farm - inside of the gas boy
12-2008-01	3-Dec-08		Fuel	2 L	East Dike
12-2008-02	7-Dec-08		Hydraulic oil	1 ½ L	East Dike
12-2008-03	13-Dec-08		Gasoline	90 L	Laydown 5

Table 6.1: Reported Spills

AEM Internal #	Date of Spill	Date of Spill Report Completion	Hazardous Material (Fuel, Oil, etc.)	Quantity	Location
12-2008-04	4-Dec-08		Ethylene glycol (anti-freeze)	6 L	Toromont pad
12-2008-05	5-Dec-08		Fuel	15 L	East Dike

Footnotes:

* Added to reporting as of November 2008 on suggestion of Environment Canada

Table 6.1: Reported Spills

AEM Internal #	Clean-up Action Taken	Reported to GN DOE	Cause of Spill*
06-2008-01	Contractor informed of situation. Contaminated soil taken to hazardous materials storage area		
06-2008-02	Matting put down. Spill reported internally and soil taken to hazardous materials storage area		
06-2008-03	Area cleaned up. Soil collected in drum and taken to Q-22.		
06-2008-04	Shoveled contaminated soil into drum		
06-2008-05			
06-2008-06	Contaminated soil collected indrum and taken to the hazardous materials storage area		
06-2008-07	Contamination removed, arctic fuel advised to tie stock properly		
06-2008-08	Shoveled contaminated soil into drum and taken to harzardous materials storage area		
06-2008-09	Part that was malfunctioning has been repaired		
06-2008-10	Contaminants removed with shovel and transported to hazardous materials storage area		
06-2008-11	Contaminated soil placed in drum and taken to hazardous materials storage area		
07-2008-03	Contained, lines drained and area cleaned up	Yes	
07-2008-04	None as all material volatilized following transportation	Yes	
07-2008-05	None as all material volatilized following transportation	Yes	

Table 6.1: Reported Spills

AEM Internal #	Clean-up Action Taken	Reported to GN DOE	Cause of Spill*
07-2008-08	Contained with booms and recovered with absorbent pads	Yes	
07-2008-09	Dozer used to collect soil in drum,which was taken to Q-22	Yes	
08-2008-01	Equipment stopped, oil contained and absorbed with pads, engine removed from boat for servicing		
08-2008-02	Spill contained, payloader used to gather contaminated soil, placed in drums and taken to disposal site		
08-2008-03	Spill contained by geotextile, contaminated soil taken to disposal area, agreed to use seacan for procedure in future		
08-2008-04	Contaminated soil placed in drum and taken to hazardous materials storage area		
08-2008-05	Removed contaminated soil and repair hose		
08-2008-06	Absorbent put on top of spill and contaminated soil collected		
08-2008-07	Absorbent pad laid down, and when the machine is removed the rest will be cleaned		
08-2008-08	Changed Hydraulic hose		
08-2008-09	Contaminated soil placed in drum and taken to hazardous materials storage area		
09-2008-01	Spill contained, loader used to remove surface contaminants, placed into truck, taken to Q22		
09-2008-02	Repaired leak, changed hose, absorbant placed on area, area excavated and removed		

Table 6.1: Reported Spills

AEM Internal #	Clean-up Action Taken	Reported to GN DOE	Cause of Spill*
09-2008-03	Contaminated soil collected in drum and taken to Q-22.		
09-2008-04	6-45 gallon drums were filled with contaminated soil with shovels, secondary containment placed under fixed genset to avoid further spills	Yes	
09-2008-05	No fill past 85% in tanks, contaminated soil hauled to Q22		
09-2008-06	Used a 966 with a bucket and put contaminated soil to Q22		
09-2008-07	Truck pulled for maintenance		
09-2008-08	Monitor fuel levels, only will fill to 85%, contaminated soil was placed into barrels		
09-2008-09	Leak stopped, sponged up the fuel, picked up the contaminated soil		
09-2008-10	Absorbant material installed on surface, contaminated rocks collected and placed in drum, sent to site referred by the mine		
09-2008-11	Shovel and pick used to clean up spill. Contaminated soil placed in drum and taken to hazardous materials storage area. Drums taken to Refueling station to be used for contaminated soil and snow.		
09-2008-12	Containment collected and placed in 2 - 205 litre drums and transported to Q 6	Yes	

Table 6.1: Reported Spills

AEM Internal #	Clean-up Action Taken	Reported to GN DOE	Cause of Spill*
09-2008-13	It was impossible to recover the water. We stop the spill into impoundment side, future tailings area of SPL. Till was placed to seal the road to keep the water from passing through.	Yes	
10-2008-01	Contaminant contained with absorbant pads, rest excavated into 10 wheeler and sent to Q22, excavated area filled with rock		
10-2008-02	Placed absorbant pad under leak and cleaned up contaminated soil		
10-2008-03	Not satisfied with the repair, brought to the Toromont pad. Picked up oil on the ground and into the bobcat bucket.		
10-2008-03	Put contaminated soil into 45 gallon drum		
10-2008-04	Picked up contaminated soil with a bulldozer and a loader	Yes	
10-2008-05	Soil recovered and placed in drum		
10-2008-06	Recovered soil and absorbent pads		
10-2008-07	Soil collected along dike		
10-2008-08	Contaminated soil cleaned up		
10-2008-09	Spill was cleaned up		
11-2008-01	Used pads to collect fuel and placed the pads in a drum. Changed nozzle.		Auto valve stuck on dispenser nozzle
11-2008-02	Picked-up the few rocks that had been contaminated with oil and also cleaned and replaced the pan on the Timberjack.		Jamming by rock caused a crooked part and a leak
11-2008-03	Scooped up hydraulic fluid with snow shovel.		Hydraulic hose burst

Table 6.1: Reported Spills

AEM Internal #	Clean-up Action Taken	Reported to GN DOE	Cause of Spill*
11-2008-04	Removed all material visibly contaminated with a hand shovel.		Leak from fuel tanker
11-2008-05	Loader operator was called and the contaminated snow was scraped and shoveled into the loader bucket.		Blown gasket on fuel pump causing a spray/mist on ground
11-2008-06	Removed contaminated soil and put it in a sealed drum.	Yes (Nov 19 08)	Engine cracked
11-2008-07	Removed oil and contaminated snow. Put it in barrel at the hazardous materials storage area.		Hoses bursting
11-2008-08	Contained spill and used absorbent. Collected snow and absorbent.	Yes (Nov 24 08)	Mechanical failure
11-2008-09	Soil and snow removed / cleaned and disposed of in stormwater management pond.	Yes (Nov 24 08)	Mechanical failure and human error
11-2008-10	Removed contaminated snow and rock.		Falling of the trailer; cutting the hoses.
11-2008-11	Repaired the sealed gasket on the loading pump. The fuel stayed inside the fuel station. The fuel was recovered.	No (No fuel released, it was contained in the fuel station)	Seal gasket on the loading truck pump burst
12-2008-01	Excavated contaminated soil with mechanical shovel. Placed soil in 45 gal drum & sent drum to hazardous materials storage area	No	Pump malfunction
12-2008-02	Absorbent sheets used during repair. Absorbent sheets were collected taken to the hazardous materials storage area	No	Fitting burst
12-2008-03	Spilled gasoline was picked up and stored at the hazardous materials storage area	No	During the unloading of a seacan, a barrel fell off the pallet

Table 6.1: Reported Spills

AEM Internal #	Clean-up Action Taken	Reported to GN DOE	Cause of Spill*
12-2008-04	The spill was shoveled into a 45 gal drum and stored at the hazardous materials storage area	Yes	Unknown; possibly mechanical failure
12-2008-05	The operator immediately responded by plugging up the puncture, placing absorbent pads near the source and recovering approximately 1700 L of fuel into drum (9 x 205 L drums). Approximately 40 L of contaminated snow and gravel were placed in a drum and stored at the hazardous materials storage area	Yes	The loader operator hit the fuel tank with the loader forks

Footnotes:

* Added to reporting as of November 2008 on suggestion of Environment Canada

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		AS-D1		
Sampling Date	**UNITS**	21-Jun-08	13-Jul-08	3-Aug-08
METALS				
Mercury	mg/L	<0.0001	<0.0001	<0.0001
Calcium	mg/L	23	35	36
Magnesium	mg/L	6	7	16
Total Hardness	mg/L	79	120	150
METALS ICP-MS				
Aluminum	ug/L	5300	1900	5000
Antimony	ug/L	<1.0	<1.0	<1.0
Silver	ug/L	0.12	<0.10	<0.10
Arsenic	ug/L	2.5	2.4	7.1
Barium	ug/L	120	58	85
Cadmium	ug/L	<0.20	<0.20	<0.20
Chromium	ug/L	19	5.3	15
Cobalt	ug/L	5.9	1.9	4.8
Copper	ug/L	18	9.9	15
Manganese	ug/L	360	260	690
Molybdenum	ug/L	<0.50	1.2	1.3
Nickel	ug/L	18	8.0	14
Sodium	ug/L	1400	3700	7800
Zinc	ug/L	32	11	21
Selenium	ug/L	1.8	6.5	<1.0
Lead	ug/L	19	4.9	8.2
Thallium	ug/L	<2.0	<2.0	<2.0
CONVENTIONALS				
Conductivity	mmhos/cm	0.15	0.29	0.33
Fluoride	mg/L	0.3	0.4	0.6
Nitrogen ammonia	mg/L	0.41	0.09	0.34
pH	pH	7.5	8.0	7.9
Nitrate and Nitrite	mg/L	1.1	1.7	1.9
Sulfates	mg/L	5.8	16	26
Total suspended solids	mg/L	28	25	20
OIL & GREASE				
Mineral Oil and Grease	mg/L	-	<3	<3

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		AS-D2			ASP-1	ASP-2
Sampling Date	**UNITS**	21-Jun-08	3-Aug-08	19-Aug-08	3-Aug-08	21-Jun-08
METALS						
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	10	28	35	25	24
Magnesium	mg/L	3	6	7	5	3
Total Hardness	mg/L	38	94	120	83	74
METALS ICP-MS						
Aluminum	ug/L	3200	200	270	960	3300
Antimony	ug/L	<1.0	<1.0	<1.0	<1.0	2.5
Silver	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	1.9	2.1	<1.0	1.3	2.9
Barium	ug/L	55	34	34	31	57
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	10	<0.50	<0.50	2.7	11
Cobalt	ug/L	2.9	0.83	0.54	<0.50	1.7
Copper	ug/L	6.5	2.3	3.9	5.1	3.2
Manganese	ug/L	110	140	77	23	80
Molybdenum	ug/L	<0.50	0.92	0.86	1.1	0.91
Nickel	ug/L	8.9	2.8	<1.0	2.0	7.7
Sodium	ug/L	820	4300	4400	2600	1700
Zinc	ug/L	17	<1.0	4.2	<1.0	9.5
Selenium	ug/L	2.9	<1.0	<1.0	<1.0	2.3
Lead	ug/L	9.4	0.45	0.31	0.68	3.1
Thallium	ug/L	<2.0	<2.0	-	<2.0	<2.0
CONVENTIONALS						
Conductivity	mmhos/cm	0.067	0.22	0.30	0.19	0.16
Fluoride	mg/L	<0.1	0.1	0.2	0.2	0.1
Nitrogen ammonia	mg/L	0.35	0.51	0.35	0.06	0.04
pH	pH	7.5	7.3	7.4	8.0	7.6
Nitrate and Nitrite	mg/L	0.44	1.0	2.3	0.08	2.2
Sulfates	mg/L	2.0	2.2	4.3	8.6	5.7
Total suspended solids	mg/L	210	6	5	6	12
OIL & GREASE						
Mineral Oil and Grease	mg/L	-	<3	<3	<3	<3

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		ASP-3			ASP4
Sampling Date	**UNITS**	13-Jul-08	3-Aug-08	19-Aug-08	21-Jun-08
METALS					
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	22	36	32	31
Magnesium	mg/L	4	9	6	7
Total Hardness	mg/L	70	130	100	100
METALS ICP-MS					
Aluminum	ug/L	1100	640	2300	6000
Antimony	ug/L	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	<0.10	<0.10	<0.10	0.21
Arsenic	ug/L	1.3	1.1	1.7	5.7
Barium	ug/L	28	54	55	91
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	<0.50	2.7	9.7	16
Cobalt	ug/L	0.58	1.0	1.8	4.1
Copper	ug/L	5.4	5.8	9.3	17
Manganese	ug/L	34	46	80	220
Molybdenum	ug/L	1.1	1.5	<0.50	2.6
Nickel	ug/L	2.9	2.0	27	<1.0
Sodium	ug/L	3000	8100	2400	4000
Zinc	ug/L	8.0	<1.0	8.9	25
Selenium	ug/L	7.8	<1.0	<1.0	<1.0
Lead	ug/L	1.1	0.82	2.8	24
Thallium	ug/L	<2.0	<2.0	-	<2.0
CONVENTIONALS					
Conductivity	mmhos/cm	0.19	0.33	0.23	0.22
Fluoride	mg/L	0.2	0.2	0.2	0.4
Nitrogen ammonia	mg/L	0.05	0.49	0.06	0.14
pH	pH	8.1	7.7	7.9	7.9
Nitrate and Nitrite	mg/L	1.5	12	0.75	2.0
Sulfates	mg/L	9.4	11	8.2	5.2
Total suspended solids	mg/L	9	<2	11	12
OIL & GREASE					
Mineral Oil and Grease	mg/L	<3	<3	<3	<3

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		MP-1			
Sampling Date	**UNITS**	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08
METALS					
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	50	77	46	46
Magnesium	mg/L	11	18	9	8
Total Hardness	mg/L	170	270	150	150
METALS ICP-MS					
Aluminum	ug/L	3100	650	1400	510
Antimony	ug/L	<1.0	<1.0	<1.0	2.2
Silver	ug/L	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	6.6	1.7	3.7	1.7
Barium	ug/L	100	120	80	67
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	10	<0.50	8.2	1.8
Cobalt	ug/L	4.2	4.3	3.1	1.4
Copper	ug/L	12	6.3	16	6.9
Manganese	ug/L	980	290	660	540
Molybdenum	ug/L	1.8	4.0	3.5	2.7
Nickel	ug/L	11	5.4	6.9	2.7
Sodium	ug/L	12000	12000	11000	13000
Zinc	ug/L	14	2.7	8.6	1.5
Selenium	ug/L	<1.0	2.2	1.3	<1.0
Lead	ug/L	11	1.0	4.0	1.4
Thallium	ug/L	<2.0	<2.0	<2.0	-
CONVENTIONALS					
Conductivity	mmhos/cm	0.53	0.98	0.53	0.47
Fluoride	mg/L	0.1	0.2	0.2	0.2
Nitrogen ammonia	mg/L	8.4	21	8.5	3.9
pH	pH	7.1	7.2	7.4	7.4
Nitrate and Nitrite	mg/L	21	79	25	14
Sulfates	mg/L	37	32	24	22
Total suspended solids	mg/L	120	10	21	19
OIL & GREASE					
Mineral Oil and Grease	mg/L	<3	<3	<3	<3

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		MP-2			
Sampling Date	**UNITS**	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08
METALS					
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	84	61	44	39
Magnesium	mg/L	16	14	10	10
Total Hardness	mg/L	270	210	150	140
METALS ICP-MS					
Aluminum	ug/L	2600	790	1700	1600
Antimony	ug/L	1.2	<1.0	<1.0	<1.0
Silver	ug/L	0.19	<0.10	<0.10	<0.10
Arsenic	ug/L	5.2	9.3	3.3	2.5
Barium	ug/L	140	76	54	60
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	15	13	6.4	6.5
Cobalt	ug/L	5.8	3.0	2.0	1.7
Copper	ug/L	23	11	9.3	10
Manganese	ug/L	740	240	140	120
Molybdenum	ug/L	20	17	5.8	4.5
Nickel	ug/L	8.9	4.6	5.8	4.1
Sodium	ug/L	26000	18000	13000	10000
Zinc	ug/L	10	8.9	<1.0	7.8
Selenium	ug/L	<1.0	3.2	<1.0	<1.0
Lead	ug/L	10	7.7	3.4	2.0
Thallium	ug/L	<2.0	<2.0	<2.0	-
CONVENTIONALS					
Conductivity	mmhos/cm	1.0	0.76	0.45	0.43
Fluoride	mg/L	0.7	0.7	0.5	0.5
Nitrogen ammonia	mg/L	14	5.6	0.85	1.2
pH	pH	7.5	7.7	8.0	7.8
Nitrate and Nitrite	mg/L	66	42	16	15
Sulfates	mg/L	120	94	55	52
Total suspended solids	mg/L	-	15	29	33
OIL & GREASE					
Mineral Oil and Grease	mg/L	<3	<3	<3	<3

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		MP-3		
Sampling Date	**UNITS**	21-Jun-08	3-Aug-08	19-Aug-08
METALS				
Mercury	mg/L	<0.0001	<0.0001	<0.0001
Calcium	mg/L	39	89	50
Magnesium	mg/L	10	20	13
Total Hardness	mg/L	140	300	180
METALS ICP-MS				
Aluminum	ug/L	1000	1500	1300
Antimony	ug/L	<1.0	<1.0	<1.0
Silver	ug/L	<0.10	<0.10	0.21
Arsenic	ug/L	1.5	3.6	1.6
Barium	ug/L	51	160	99
Cadmium	ug/L	<0.20	<0.20	<0.20
Chromium	ug/L	<0.50	3.7	0.85
Cobalt	ug/L	2.1	5.5	2.4
Copper	ug/L	7.5	17	7.6
Manganese	ug/L	290	1500	620
Molybdenum	ug/L	4.6	3.1	2.1
Nickel	ug/L	3.1	5.3	3.1
Sodium	ug/L	7600	19000	11000
Zinc	ug/L	6.6	1.8	7.9
Selenium	ug/L	1.6	<1.0	<1.0
Lead	ug/L	5.5	2.5	2.8
Thallium	ug/L	<2.0	<2.0	-
CONVENTIONALS				
Conductivity	mmhos/cm	0.39	1.1	0.66
Fluoride	mg/L	0.4	0.2	0.2
Nitrogen ammonia	mg/L	2.4	34	9.6
pH	pH	7.3	7.2	7.3
Nitrate and Nitrite	mg/L	14	86	31
Sulfates	mg/L	23	28	37
Total suspended solids	mg/L	-	25	24
OIL & GREASE				
Mineral Oil and Grease	mg/L	<3	<3	<3

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		MP-4				MP5	MP-6
Sampling Date	**UNITS**	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08	21-Jun-08	21-Jun-08
METALS							
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	25	46	55	49	160	22
Magnesium	mg/L	6	17	26	21	26	6
Total Hardness	mg/L	89	190	240	210	500	80
METALS ICP-MS							
Aluminum	ug/L	1600	1100	430	780	800	2400
Antimony	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	1.2	1.2	1.3	<1.0	2.2	1.5
Barium	ug/L	48	60	49	54	300	48
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	<0.50	<0.50	2.3	<0.50	2.7	4.5
Cobalt	ug/L	1.3	2.9	1.1	0.98	1.7	1.9
Copper	ug/L	0.94	8.5	6.4	7.1	1.1	1.2
Manganese	ug/L	130	330	330	300	2300	130
Molybdenum	ug/L	2.2	4.0	3.9	3.8	7.5	1.3
Nickel	ug/L	<1.0	3.9	2.4	<1.0	5.1	6.6
Sodium	ug/L	4100	12000	16000	15000	20000	3500
Zinc	ug/L	6.2	6.3	<1.0	4.9	2.5	6.3
Selenium	ug/L	2.2	2.9	<1.0	<1.0	<1.0	2.3
Lead	ug/L	2.5	1.7	0.68	1.3	1.8	3.2
Thallium	ug/L	<2.0	<2.0	<2.0	-	<2.0	<2.0
CONVENTIONALS							
Conductivity	mmhos/cm	0.24	0.54	0.58	0.57	2.3	.20
Fluoride	mg/L	0.2	0.7	0.6	0.7	0.5	0.2
Nitrogen ammonia	mg/L	1.0	2.2	0.45	0.57	89	0.57
pH	pH	7.5	7.9	7.9	8.0	7.3	7.3
Nitrate and Nitrite	mg/L	6.9	16	8.9	7.7	260	5.0
Sulfates	mg/L	14	54	69	76	18	14
Total suspended solids	mg/L	10	24	7	15	14	18
OIL & GREASE							
Mineral Oil and Grease	mg/L	-	<3	<3	<3	<3	<3

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.1: Water Quality Data for Pools of Water around the Minesite

		QP-1			
Sampling Date	**UNITS**	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08
METALS					
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	27	31	41	43
Magnesium	mg/L	7	8	10	11
Total Hardness	mg/L	99	110	140	150
METALS ICP-MS					
Aluminum	ug/L	2600	1500	830	960
Antimony	ug/L	<1.0	1.1	<1.0	<1.0
Silver	ug/L	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	6.5	5.6	2.5	2.4
Barium	ug/L	92	76	69	92
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	10	7.7	3.8	3.8
Cobalt	ug/L	4.0	2.4	1.6	1.6
Copper	ug/L	12	9.0	6.3	10
Manganese	ug/L	310	230	190	170
Molybdenum	ug/L	0.96	2.7	4.2	4.4
Nickel	ug/L	11	6.2	3.4	2.0
Sodium	ug/L	3800	4500	6700	9800
Zinc	ug/L	13	9.9	<1.0	6.8
Selenium	ug/L	<1.0	4.8	<1.0	<1.0
Lead	ug/L	8.4	3.7	1.4	2.1
Thallium	ug/L	<2.0	<2.0	<2.0	-
CONVENTIONALS					
Conductivity	mmhos/cm	0.27	0.35	0.39	0.44
Fluoride	mg/L	0.4	0.5	0.5	0.4
Nitrogen ammonia	mg/L	2.9	4.1	3.4	1.4
pH	pH	7.7	7.9	7.9	7.8
Nitrate and Nitrite	mg/L	11	13	17	19
Sulfates	mg/L	7.4	9.6	9.5	13
Total suspended solids	mg/L	32	14	8	30
OIL & GREASE					
Mineral Oil and Grease	mg/L	<3	<3	<3	-

Footnotes:

Highlighted TSS concentrations exceed the NWB water license maximum grab sample limit of 100 mg/L

Table 7.2: Minesite Water Quality Field Measurements - Pools of Water around the Minesite

Sample ID	ASD-1								
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08
Time	-	-	8:05	14:10	11:52	-	-	-	-
Temperature (°C)	3.3	9.83	12.12	18.35	11.61	14.05	12.52	12.73	5.9
pH	7.63	7.96	8.00	8.18	7.23	7.88	6.89	7.67	7.64
DO (%)	-	-	-	91.6	52.2	61.8	24	83	68.2
DO (mg/L)	-	-	-	8.61	-	-	-	-	-
Specific Conductivity (uS/cm)	84	158	240	2.65	308	310	535	350	148
Turbidity (NTU)	1733	320	862	187.9	0	85.00	107.8	-	-

Sample ID	ASD-2						
Date	21-Jun-08	5-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08
Time	-	7:55	12:07	-	-	-	-
Temperature (°C)	9.04	12.61	15.16	12.49	13.22	11.82	5
pH	8.06	7.78	7.21	7.19	6.96	7.4	7.44
DO (%)	-	-	45.6	15.5	35.1	59.9	55
DO (mg/L)	-	-	-	-	-	-	-
Specific Conductivity (uS/cm)	70	251	226	248	282	400	259
Turbidity (NTU)	860	342	12.5	10.59	7.38	14.31	107.5

Sample ID	ASP-1								ASP-2	
Date	3-Jun-08	5-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	3-Jun-08	21-Jun-08
Time	-	16:30	15:10	11:18	-	-	-	-	-	-
Temperature (°C)	4.86	15.63	18.7	14.75	14.62	18.75	13.58	6.23	2.86	12.6
pH	7.57	8.79	8.64	7.33	8.05	7.82	7.61	7.41	7.48	8.06
DO (%)	-	-	98.9	74.3	67.0	92.6	93.7	66.1	-	-
DO (mg/L)	-	-	-	-	-	-	-	-	-	-
Specific Conductivity (uS/cm)	86	149	157	187	181	192	237	196	79	100.63
Turbidity (NTU)	155.5	150.8	56.5	6.7	34.10	13.51	91.8	-	13.2	190.1

Sample ID	ASP-3							
Date	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08
Time	16:35	13:50	15:05	11:16	-	-	-	-
Temperature (°C)	14.35	17.07	16.85	11.69	12.09	8.95	7.7	4.03
pH	8.51	8.28	8.3	6.53	7.71	6.97	7.39	6.78
DO (%)	-	115.4	100.1	66.1	63.0	54.7	54.2	46.6
DO (mg/L)	-	10.47	-	-	-	-	-	-
Specific Conductivity (uS/cm)	173	169	180	345	312	324	414	351
Turbidity (NTU)	94.4	29	23.8	29.9	20.00	71.1	68.5	77.2

Sample ID	MP-1									
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08
Time	-	-	16:05	14:27	16:08	15:02	-	-	-	-
Temperature (°C)	2.05	5.32	10.82	15.65	14.34	6.85	9.54	10.39	11.15	3.62
pH	7.2	7.22	7.34	7.32	7.23	7.3	7.27	6.9	7.4	7.29
DO (%)	-	-	-	60.2	71.5	46.2	44.7	66.1	84.4	47.3
DO (mg/L)	-	-	-	5.93	-	-	-	-	-	-
Specific Conductivity (uS/cm)	397	557	453	927	395	577	511	402	263	455
Turbidity (NTU)	115.5	445	332	26.4	112.7	97.3	75.10	88	18.1	72.6

Sample ID	MP2									
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08
Time	-	-	14:20	10:36	17:50	14:10	-	-	-	-
Temperature (°C)	4.86	10.97	14.65	16.1	17.34	11.85	14.65	13.98	12	5.08
pH	7.69	7.81	7.85	7.76	8.76	8.07	8.52	6.69	8.44	7.63
DO (%)	-	-	-	80.7	83.3	56.1	70.3	73.8	113.4	64.7
DO (mg/L)	-	-	-	7.8	-	-	-	-	-	-
Specific Conductivity (uS/cm)	325	2044	682	725	663	477	425	488	435	270
Turbidity (NTU)	222	300	268	70.2	47.5	140.1	112.20	84.1	60.6	109.5

Sample ID	MP3					
Date	3-Jun-08	21-Jun-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08
Time	-	-	17:30	14:55	-	-
Temperature (°C)	6.6	11.47	18.52	15.75	10.21	8.33
pH	7.58	8	7.95	7.3	7.10	7.37
DO (%)	-	-	94	48.3	38.7	94.6
DO (mg/L)	-	-	-	-	-	-
Specific Conductivity (uS/cm)	214	389	454	1085	1156	1058
Turbidity (NTU)	155.3	126.1	86.1	79.7	83.30	51.4

Sample ID	MP-4									MP-5	
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	21-Jun-08	5-Jul-08
Time	-	-	14:45	15:50	13:40	-	-	-	-	-	16:11
Temperature (°C)	3.28	11.4	14.60	16.95	18.56	18.12	13.86	13.09	4.21	13.6	18.76
pH	7.67	7.67	7.92	7.36	8.2	7.55	7.18	7.36	7.22	7.5	7.62
DO (%)	-	-	-	123.9	97.2	89.7	75.7	76.1	66.1	-	-
DO (mg/L)	-	-	-	11.27	-	-	-	-	-	-	-
Specific Conductivity (uS/cm)	217	242	567	506	563	577	590	902	470	2328	1316
Turbidity (NTU)	460	126.1	250	79	19.4	17.60	16.55	54.9	99.9	64.6	614

Sample ID	QP-1									
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08
Time	-	-	16:25	10:20	15:20	11:05	-	-	-	-
Temperature (°C)	3.62	11.21	13.35	16.23	16.35	13.94	14.64	15.77	10.89	6.08
pH	7.81	7.94	8.18	7.53	7.82	6.42	7.35	7.76	7.68	4.53
DO (%)	-	-	-	83.2	76.2	64.1	61.2	80.7	80.3	65.7
DO (mg/L)	-	-	-	8.08	-	-	-	-	-	-
Specific Conductivity (uS/cm)	107	272	294	328	345	380	377	380	433	404
Turbidity (NTU)	1242	645	615	80.5	84.1	78.8	63.90	30.9	26.6	107.5

Table 7.3: Water Quality Data for Water Bodies Adjacent to the Minesite

			AS-2				
Sampling Date	**UNITS**	**CCME***	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08	8-Sep-08
METALS							
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	3	4	5	17	22
Magnesium	mg/L	NG	<1	1	1	4	6
Total Hardness	mg/L	NG	8	15	17	57	78
METALS ICP-MS							
Aluminum	ug/L	100	28	32	11	110	36
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	4.1	4.6	4.6	21	25
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	<0.50	1.0	<0.50	3.6	2.5
Manganese	ug/L	NG	4.0	2.3	1.7	5.6	11
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	0.74
Nickel	ug/L	25	<1.0	<1.0	<1.0	<1.0	1.3
Sodium	ug/L	NG	620	750	870	2600	4500
Zinc	ug/L	30	<1.0	6.5	<1.0	<1.0	5.4
Selenium	ug/L	1	2.1	6.7	<1.0	<1.0	<1.0
Lead	ug/L	1	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-	-
CONVENTIONALS							
Conductivity	mmhos/cm	NG	0.035	0.043	0.044	0.18	0.20
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.04	0.05	0.03	0.14	0.85
pH	pH	6.5 - 9	7.7	7.2	7.9	7.7	7.7
Nitrate and Nitrite	mg/L	NG	0.16	0.31	0.61	6.5	8.7
Sulfates	mg/L	NG	1.9	1.8	1.9	8.2	6.9
Total suspended solids	mg/L	NG	<2	<2	<2	<2	<2
OIL & GREASE							
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.3: Water Quality Data for Water Bodies Adjacent to the Minesite

			MSPL-2	
Sampling Date	**UNITS**	**CCME***	3-Aug-08	19-Aug-08
METALS				
Mercury	mg/L	0.000026	<0.0001	<0.0001
Calcium	mg/L	NG	1	2
Magnesium	mg/L	NG	<1	<1
Total Hardness	mg/L	NG	4	4
METALS ICP-MS				
Aluminum	ug/L	100	37	45
Antimony	ug/L	NG	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0
Barium	ug/L	NG	2.7	2.8
Cadmium	ug/L	0.017	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50
Copper	ug/L	2	0.57	2.1
Manganese	ug/L	NG	2.2	2.0
Molybdenum	ug/L	73	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0
Sodium	ug/L	NG	370	360
Zinc	ug/L	30	<1.0	3.5
Selenium	ug/L	1	<1.0	<1.0
Lead	ug/L	1	0.25	<0.10
Thallium	ug/L	0.8	<2.0	-
CONVENTIONALS				
Conductivity	mmhos/cm	NG	0.014	0.017
Fluoride	mg/L	NG	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.03	0.05
pH	pH	6.5 - 9	7.2	7.5
Nitrate and Nitrite	mg/L	NG	0.02	0.06
Sulfates	mg/L	NG	1.0	1.7
Total suspended solids	mg/L	NG	<2	<2
OIL & GREASE				
Mineral Oil and Grease	mg/L	NG	<3	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.3: Water Quality Data for Water Bodies Adjacent to the Minesite

			MTPL-1			
Sampling Date	**UNITS**	**CCME***	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08
METALS						
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	19	3	2	4
Magnesium	mg/L	NG	3	<1	<1	<1
Total Hardness	mg/L	NG	59	8	4	9
METALS ICP-MS						
Aluminum	ug/L	100	12	8.1	31	32
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	16	4.0	2.5	4.7
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	<0.50	1.1	<0.50	1.1
Manganese	ug/L	NG	1.2	3.0	4.2	8.9
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	2.6	<1.0	<1.0	<1.0
Sodium	ug/L	NG	4700	800	460	1800
Zinc	ug/L	30	2.6	4.0	<1.0	4.4
Selenium	ug/L	1	3.3	6.2	<1.0	<1.0
Lead	ug/L	1	<0.10	0.33	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-
CONVENTIONALS						
Conductivity	mmhos/cm	NG	0.17	0.028	0.016	0.044
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.29	0.05	0.04	0.05
pH	pH	6.5 - 9	7.7	7.5	7.9	7.6
Nitrate and Nitrite	mg/L	NG	4.2	0.70	0.05	0.29
Sulfates	mg/L	NG	10	1.6	1.0	2.1
Total suspended solids	mg/L	NG	<2	3	<2	14
OIL & GREASE						
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.3: Water Quality Data for Water Bodies Adjacent to the Minesite

Sampling Date	UNITS	CCME*	MTPL-1B 21-Jun-08	MTPL-1C 21-Jun-08
METALS				
Mercury	mg/L	0.000026	<0.0001	<0.0001
Calcium	mg/L	NG	15	18
Magnesium	mg/L	NG	2	3
Total Hardness	mg/L	NG	47	58
METALS ICP-MS				
Aluminum	ug/L	100	110	240
Antimony	ug/L	NG	<1.0	<1.0
Silver	ug/L	0.1	0.10	<0.10
Arsenic	ug/L	5	1.5	<1.0
Barium	ug/L	NG	43	22
Cadmium	ug/L	0.017	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50
Cobalt	ug/L	NG	11	<0.50
Copper	ug/L	2	1.6	11
Manganese	ug/L	NG	2400	5.2
Molybdenum	ug/L	73	0.87	<0.50
Nickel	ug/L	25	37	<1.0
Sodium	ug/L	NG	23000	3100
Zinc	ug/L	30	19	13
Selenium	ug/L	1	3.1	1.6
Lead	ug/L	1	0.16	0.62
Thallium	ug/L	0.8	<2.0	<2.0
CONVENTIONALS				
Conductivity	mmhos/cm	NG	0.25	0.17
Fluoride	mg/L	NG	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	1.0	1.3
pH	pH	6.5 - 9	6.9	7.3
Nitrate and Nitrite	mg/L	NG	0.03	4.8
Sulfates	mg/L	NG	11	9.4
Total suspended solids	mg/L	NG	6	-
OIL & GREASE				
Mineral Oil and Grease	mg/L	NG	<3	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.3: Water Quality Data for Water Bodies Adjacent to the Minesite

			MTPL-3				
Sampling Date	**UNITS**	**CCME***	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08	8-Sep-08
METALS							
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	3	2	1	4	2
Magnesium	mg/L	NG	<1	<1	<1	<1	<1
Total Hardness	mg/L	NG	7	4	3	11	6
METALS ICP-MS							
Aluminum	ug/L	100	<1.0	13	12	15	27
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	4.5	2.7	2.6	5.9	2.8
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	0.78	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	1.2	<0.50	<0.50
Copper	ug/L	2	<0.50	1.8	6.9	0.88	2.2
Manganese	ug/L	NG	7.0	2.0	1.8	4.9	2.7
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	1.0	<1.0	<1.0	<1.0
Sodium	ug/L	NG	610	400	410	820	660
Zinc	ug/L	30	<1.0	4.6	<1.0	3.8	<1.0
Selenium	ug/L	1	3.1	5.6	<1.0	<1.0	<1.0
Lead	ug/L	1	<0.10	<0.10	0.35	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-	-
CONVENTIONALS							
Conductivity	mmhos/cm	NG	0.027	0.016	0.016	0.043	0.023
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.07	0.05	0.04	0.09	0.05
pH	pH	6.5 - 9	7.6	6.4	7.6	7.5	7.8
Nitrate and Nitrite	mg/L	NG	0.05	0.03	0.09	0.19	0.28
Sulfates	mg/L	NG	1.7	1.2	1.1	1.9	1.6
Total suspended solids	mg/L	NG	<2	<2	<2	<2	<2
OIL & GREASE							
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.4: Minesite Water Quality Field Measurements - Water Bodies Adjacent to the Minesite

Sample ID	AS-2											
Date	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	23-Aug-08	30-Aug-08	08-Sep-08	07-Oct-08
Time	-	16:42	13:41	14:48	11:25	-	-	-	-	-	14:55	10:50 AM
Temperature (°C)	7.67	9.54	16.77	16.38	13.93	13.30	14.49	11.46	7.19	6.22	5.69	2.10
pH	8.09	8.64	7.59	6.27	7.15	13.30	7.71	7.38	6.86	7.4	7.68	7.92
DO (%)	-	-	101.4	90.5	68.7	63.8	89	84.5	73.4	73.5	73.5	71.6
DO (mg/L)	-	-	9.66	-	-	-	-	-	-	-	-	7.31
Specific Conductivity (uS/cm)	36	25	71	21	158	240	102	311	381	166	239	77
Turbidity (NTU)	1	2.29	0.56	0.19	1.62	0.30	4.02	12.36	0.86	21.1	3.10	0.74

Sample ID	MSPL-2			
Date	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08
Time	-	-	-	-
Temperature (°C)	15.44	15.39	11.06	7.72
pH	7.42	7.47	8.32	7.63
DO (%)	66.4	85.8	76.5	73
DO (mg/L)	-	-	-	-
Specific Conductivity (uS/cm)	15	19	24	106
Turbidity (NTU)	2.45	8	41.7	14.34

Sample ID	MTPL-1									
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	07-Oct-08
Time	-	-	16:56	15:05	15:55	-	-	-	-	10:30 AM
Temperature (°C)	1.86	9.7	10.3	15.3	16.18	15.43	14.78	11.51	8.11	2.18
pH	7.46	7.45	7.98	7.57	6.65	8.03	7.55	7.32	7.2	7.52
DO (%)	-	-	-	84.6	86.4	67.4	91.4	89.4	77.6	78.7
DO (mg/L)	-	-	-	8.45	-	-	-	-	-	10.30
Specific Conductivity (uS/cm)	26	167	20	34	15	15	17	20	76	17
Turbidity (NTU)	1.88	0.38	1.42	0.18	15.2	0.37	0.26	0.04	3.88	0.29

Sample ID	MTPL-3											
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	8-Sep-08	7-Oct-08
Time	-	-	11:15	15:30	14:30	14:42	-	-	-	-	15:20	10:15 AM
Temperature (°C)	1.54	4.64	6.94	13.88	15.81	15.74	15.30	14.5	11.82	7.83	6.73	2.15
pH	7.93	8.45	7.76	7.5	5.76	7.33	8.45	5.43	7.79	7.61	7.17	8.39
DO (%)	-	-	-	127.1	86.1	72.1	71.5	82.2	84.4	78.2	79.3	82.0
DO (mg/L)	-	-	-	11.68	-	-	-	-	-	-	-	10.76
Specific Conductivity (uS/cm)	46	48	19	15	15	20	17	15	30	75	24	47
Turbidity (NTU)	13.4	3.6	4.01	0.21	9.5	3.15	0.47	0.02	1.32	4.02	1.48	0.34

Table 7.5: Water Quality Data for Stormwater Management Pond

		ATT	ATT-1			
Sampling Date	**UNITS**	8-Sep-08	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08
METALS						
Mercury	mg/L	-	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	36	8	77	16	23
Magnesium	mg/L	8	1	19	3	4
Total Hardness	mg/L	120	27	270	53	72
METALS ICP-MS						
Aluminum	ug/L	6000	190	970	290	99
Antimony	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	4.9	<1.0	2.6	<1.0	<1.0
Barium	ug/L	140	9.5	150	24	38
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	13	<0.50	<0.50	2.7	<0.50
Cobalt	ug/L	6.5	<0.50	4.4	3.1	0.51
Copper	ug/L	20	<0.50	11	14	2.2
Manganese	ug/L	1000	10	590	620	540
Molybdenum	ug/L	<0.50	<0.50	3.1	0.57	0.50
Nickel	ug/L	17	<1.0	4.2	12	1.2
Sodium	ug/L	6000	1100	13000	46000	9500
Zinc	ug/L	33	<1.0	6.3	28	7.5
Selenium	ug/L	<1.0	2.3	2.7	<1.0	<1.0
Lead	ug/L	12	<0.10	1.9	1.3	0.17
Thallium	ug/L	-	<2.0	<2.0	<2.0	-
CONVENTIONALS						
Conductivity	mmhos/cm	0.24	0.066	1.0	0.43	0.23
Fluoride	mg/L	0.1	<0.1	0.3	<0.1	<0.1
Nitrogen ammonia	mg/L	0.09	0.11	28	6.2	0.06
pH	pH	7.0	7.4	7.6	6.7	7.3
Nitrate and Nitrite	mg/L	<0.02	0.11	79	<0.02	0.54
Sulfates	mg/L	5.0	6.9	33	16	10
Total suspended solids	mg/L	250	<2	<2	59	13
OIL & GREASE						
Mineral Oil and Grease	mg/L	<3	<3	<3	<3	<3

Table 7.5: Water Quality Data for Stormwater Management Pond

		ATT-2 / ST-27				
Sampling Date	**UNITS**	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08	8-Sep-08
METALS						
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	8	86	18	18	20
Magnesium	mg/L	1	19	3	3	3
Total Hardness	mg/L	27	290	57	57	63
METALS ICP-MS						
Aluminum	ug/L	240	700	36	70	66
Antimony	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	<1.0	4.7	<1.0	<1.0	<1.0
Barium	ug/L	11	180	15	19	16
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	<0.50	1.9	1.2	6.7	<0.50
Cobalt	ug/L	<0.50	5.5	<0.50	<0.50	<0.50
Copper	ug/L	<0.50	20	4.7	5.0	1.8
Manganese	ug/L	17	970	6.0	15	12
Molybdenum	ug/L	<0.50	3.8	<0.50	<0.50	<0.50
Nickel	ug/L	80	4.9	<1.0	<1.0	6.4
Sodium	ug/L	850	14000	3800	4200	5200
Zinc	ug/L	<1.0	5.1	<1.0	4.8	<1.0
Selenium	ug/L	3.0	2.9	<1.0	<1.0	<1.0
Lead	ug/L	<0.10	2.7	0.29	0.20	<0.10
Thallium	ug/L	<2.0	<2.0	<2.0	-	-
CONVENTIONALS						
Conductivity	mmhos/cm	0.062	1.3	0.16	0.18	0.16
Fluoride	mg/L	<0.1	0.3	0.1	0.1	<0.1
Nitrogen ammonia	mg/L	0.06	36	0.17	0.10	0.08
pH	pH	7.7	7.3	7.5	7.3	8.1
Nitrate and Nitrite	mg/L	0.04	99	3.6	3.4	2.4
Sulfates	mg/L	3.2	25	7.4	9.5	8.0
Total suspended solids	mg/L	3	12	<2	4	<2
OIL & GREASE						
Mineral Oil and Grease	mg/L	<3	<3	<3	<3	<3

Table 7.6: Minesite Water Quality Field Measurements - Stormwater Management Pond

Sample ID	ATT-1										
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	8-Sep-08	7-Oct-08
Time	-	-	9:15	11:42	17:00	-	-	-	-	16:17	8:45 AM
Temperature (°C)	6	8.98	11.79	16.86	18.14	15.31	16.52	14.53	6.32	7.11	2.41
pH	7.63	8.12	7.84	7.6	7.82	6.79	6.51	9.75	7.48	7.51	8.11
DO (%)	-	-	-	69.9	92.6	18.6	62.6	255.8	82.5	80.8	73.3
DO (mg/L)	-	-	-	6.73	-	-	-	-	-	-	9.76
Specific Conductivity (uS/cm)	26	68.8	685	9.76	124	504	263	336	174	241	154
Turbidity (NTU)	27.6	6.6	250	117.8	0	73.80	18	-	40.6	-	66.41

Sample ID	ATT-2										
Date	3-Jun-08	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	08-Sep-08	07-Oct-08
Time	-	-	14:53	11:03	17:12	-	-	-	-	16:30	9:00 AM
Temperature (°C)	7.44	9.83	14.06	14.88	17.32	15.58	14.92	11.25	6.92	5.61	1.44
pH	7.73	8.03	7.95	7.43	7.48	7.69	7.48	8.62	7.66	7.93	7.80
DO (%)	-	-	-	85	69.5	64.2	83.6	94	70.8	81.7	68.5
DO (mg/L)	-	-	-	8.14	-	-	-	-	-	-	9.50
Specific Conductivity (uS/cm)	29	63	804	1176	1143	150	158	177	163	166	159
Turbidity (NTU)	21.4	8.5	225	38.2	88.5	0.71	0.86	1.2	40.53	3.08	5.63

Table 7.7: Sewage Treatment Plant Water Quality Monitoring

		STP-IN											
Parameter	**Units**	13-Aug-08	20-Aug-08	3-Sep-08	10-Sep-08	24-Sep-08	1-Oct-08	8-Oct-08	15-Oct-08	21-Oct-08	29-Oct-08	5-Nov-08	12-Nov-08
Conductivity	umhos/cm	-	-	-	-	-	-	1510	-	1717	1372	1485	841
BOD5	mg/L	232	327	-	290	154	270	425	-	323	733	610	356
COD	mg/L	649	335	-	859	577	1223	977	-	739	2402	2639	1123
Total Oil & Grease	mg/L	48	<2	-	34	20	76	-	-	-	-	-	-
Hydrocarbon (C10-C50)	-	-	15.1	-	-	-	-	17	-	10.5	0.6	1.2	-
TSS	mg/L	182	164	-	304	130	764	475	-	753	1056	1523	106
NO3 nitrate	mg N/L	0.04	-	-	0.13	-	-	-	-	-	-	-	-
NO2 nitrite	mg N/L	0.08	-	-	0.04	-	-	-	-	-	-	-	-
Nitrate-Nitrite	mg N/L	-	0.09	-	-	0.08	-	-	-	-	-	-	-
pH	pH units	8.06	8.11	-	7.92	7.92	7.78	7.57	-	7.79	7.38	7.68	7.87
P tot	mg P/L	14.9	15.1	-	13.3	16.9	20.4	17	-	10.9	11.5	13	18.2
Fecal Coliform	UFC/100mL	>1,000	290,000	640,000	800,000	>200,000	4,900,000	2,300,000	690,000	-	2,600,000	-	-
Total Coliform	UFC/100mL	>10000	TNC*	2,000,000	2,500,000	TNC*	10,000,000	TNC*	2,800,000	-	6,400,000	-	-
Atypical Colony	UFC/100mL	-	-	>20,000,000	>20,000,000	>2,000,000	37,000,000	>20,000,000	3,400,000	-	800,000	-	-
BHAA	UFC/mL	TNC*	TNC*	>500	>500	>50,000	>50,000	>5,000,000	>100,000	-	1,470,000	-	-

Footnotes:

TNC = Fecal Coliform too numerous
to be identified or counted

Table 7.7: Sewage Treatment Plant Water Quality Monitoring

		STP-OUT															
Parameter	**Units**	13-Aug-08	20-Aug-08	3-Sep-08	10-Sep-08	24-Sep-08	1-Oct-08	8-Oct-08	15-Oct-08	21-Oct-08	29-Oct-08	5-Nov-08	12-Nov-08	19-Nov-08	1-Dec-08	8-Dec-08	15-Dec-08
Conductivity	umhos/cm	-	-	-	-	-	-	773	688	1103	872	833	459	784	-	-	-
BOD5	mg/L	4	14	-	15	2	12	36	6	12	32	32	35	33	9	6	5
COD	mg/L	119	89	-	121	83	133	166	135	97	158	189	172	192	89	65	53
Total Oil & Grease	mg/L	<2	<2	-	<2	<2	<2	-	-	-	-	-	-	-	-	-	-
Hydrocarbon (C10-C50)	-	-	-	-	-	-	-	<0.1	6.2	<0.1	<0.1	<0.1	-	-	-	-	-
TSS	mg/L	13	24	-	47	34	40	52	12.8	20	38	51	54	60	31	22	-
NO3 nitrate	mg N/L	42.6	-	-	39.2	-	-	-	-	-	-	-	-	-	-	-	-
NO2 nitrite	mg N/L	12.8	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate-Nitrite	mg N/L	-	49.5	-	-	15.7	-	-	-	-	-	6.56	-	-	263	52.6	46.8
pH	pH units	6.64	6.23	-	4.96	6.03	6.01	6.14	5.63	6.99	7.2	14.3	6.09	6.13	4.22	4.17	4.41
P tot	mg P/L	15.9	12	-	10.1	<0.01	22.1	22.1	7.75	10	9.9	-	15.5	17.1	15.1	3.4	15.9
Fecal Coliform	UFC/100mL	0	2	60	100	10,000	20	80	2,200	-	400	70	-	-	1	12	4
Total Coliform	UFC/100mL	0	3,000	400	200	50,000	300	900	10,000	-	-	70	-	-	200	400	900
Atypical Colony	UFC/100mL	310	13,000	21,800	1,800	40,000	14,100	8,200	>200,0000	-	-	2,300	-	-	0	200	3,400
BHAA	UFC/mL	-	TNC*	>500	2,270	7,600	>50,000	490,000	83,000	-	213,000	292,000	-	-	6,000	1,000,000	9,000

Footnotes:

TNC = Fecal Coliform too numerous
to be identified or counted

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

Sampling Date	UNITS	CCME*	KM1 22-Jun-08	KM 2.4 14-Jul-08	KM 4.3 14-Jul-08	KM4.6 22-Jun-08	KM 8.4 18-Aug-08	KM 8.4 9-Sep-08	KM 8.4 6-Oct-08	KM 9.2 14-Jul-08	KM9.4 22-Jun-08	KM 13.5 15-Jul-08	KM 16.7 22-Jun-08	KM 18.3 14-Jul-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	3	7	21	15	3	3	2	11	14	8	14	34
Magnesium	mg/L	NG	<1	2	5	4	1	1	1	2	3	<1	2	1
Total Hardness	mg/L	NG	6	24	73	54	13	13	10	35	45	21	44	91
METALS ICP-MS														
Aluminum	ug/L	100	470	420	280	170	460	140	280	630	330	43	57	<1.0
Antimony	ug/L	NG	2.0	<1.0	<1.0	<1.0	1.1	2.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	0.22	<0.10	<0.10	1.4	<0.10	0.39	<0.10	0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	2.3	2.1	1.4	<1.0	<1.0	<1.0	2.4	<1.0	1.0	<1.0
Barium	ug/L	NG	10	49	95	46	8.5	6.6	6.1	50	49	20	30	15
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	<0.50	2.2	1.3	1.4	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	2.9	9.5	1.3	<0.50	0.53	<0.50	1.6	1.9	<0.50	1.3	<0.50
Copper	ug/L	2	<0.50	1.2	3.6	<0.50	4.3	1.9	3.1	1.1	0.94	<0.50	<0.50	3.5
Manganese	ug/L	NG	27	120	1300	300	27	45	16	330	700	35	190	41
Molybdenum	ug/L	73	<0.50	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	2.6	2.8	<1.0	2.9	1.7	4.1	1.4	<1.0	<1.0	<1.0	<1.0
Sodium	ug/L	NG	630	9600	67000	6400	870	840	750	2000	9200	16000	3900	6700
Zinc	ug/L	30	8.6	17	3.2	3.8	5.8	<1.0	4.5	23	12	2.3	2.4	1.2
Selenium	ug/L	1	<1.0	<1.0	<1.0	1.6	5.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0
Lead	ug/L	1	<0.10	0.81	1.3	<0.10	0.40	<0.10	0.44	0.24	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.019	0.11	0.55	0.17	0.028	0.031	0.026	0.069	0.15	0.18	0.12	0.23
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.03	0.09	0.15	0.05	0.10	0.11	0.04	0.05	0.05	0.04	0.05	0.08
pH	pH	6.5 - 9	6.3	6.6	6.7	6.8	7.0	7.0	7.1	7.1	6.8	6.6	7.1	7.9
Nitrate and Nitrite	mg/L	NG	0.07	0.03	<0.02	<0.02	0.35	<0.02	0.06	<0.02	0.03	1.1	0.02	<0.02
Sulfates	mg/L	NG	0.6	2.6	16	1.9	3.3	3.5	2.9	1.9	1.3	6.1	0.8	0.1
Total suspended solids	mg/L	NG	<2	34	1300	8	<2	5	<2	70	12	5	6	3
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

Sampling Date	UNITS	CCME*	KM 18.4	KM19.1	KM 19.3		KM 19.9	KM 27.3			KM 27.7	KM29.9	KM 30.6	KM 32.2
			22-Jun-08	4-Aug-08	18-Aug-08	6-Oct-08	14-Jul-08	18-Aug-08	9-Sep-08	6-Oct-08	22-Jun-08	4-Aug-08	22-Jun-08	14-Jul-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	4	4	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	14	20	<1	<1	11	6	3	3	7	41	6	13
Magnesium	mg/L	NG	<1	<1	<1	<1	1	5	20	20	<1	10	1	3
Total Hardness	mg/L	NG	35	50	<1	<1	32	35			19	140	20	43
METALS ICP-MS														
Aluminum	ug/L	100	40	45	290	160	81	530	450	600	48	260	130	150
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	0.72	<0.10	<0.10	<0.10	0.35	<0.10	<0.10	0.20	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	27	<1.0	3.4
Barium	ug/L	NG	12	12	4.4	2.7	9.0	40	23	22	7.6	62	7.9	63
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.22	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	2.2	2.8	<0.50	2.4	5.7	1.9	<0.50	2.8	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	0.71	0.52	<0.50	0.50	<0.50	23	<0.50	5.1
Copper	ug/L	2	<0.50	2.2	1.1	1.1	6.1	3.2	3.6	3.9	<0.50	12	<0.50	6.6
Manganese	ug/L	NG	19	26	4.4	3.2	30	25	17	21	12	3500	7.1	520
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0	1.0	2.7	1.1	4.7	3.8	<1.0	<1.0	20	1.5	<1.0
Sodium	ug/L	NG	4300	4000	630	550	750	3300	2500	2300	790	28000	1800	1500
Zinc	ug/L	30	<1.0	<1.0	4.1	<1.0	4.4	6.8	1.8	5.0	<1.0	16	1.9	4.2
Selenium	ug/L	1	<1.0	<1.0	3.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0
Lead	ug/L	1	<0.10	<0.10	0.54	<0.10	<0.10	0.41	0.27	0.55	<0.10	0.92	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.11	0.15	0.011	0.010	0.074	0.10	0.068	0.065	0.046	0.40	0.053	.10
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	.10	0.08	0.06	<0.02	0.09	0.17	0.14	0.06	0.04	0.10	0.04	0.08
pH	pH	6.5 - 9	7.1	7.8	6.1	6.3	7.4	6.5	6.4	6.0	7.3	6.7	6.6	7.3
Nitrate and Nitrite	mg/L	NG	0.41	0.21	0.12	0.06	<0.02	6.6	1.9	2.8	0.11	<0.02	0.02	<0.02
Sulfates	mg/L	NG	2.1	3.5	0.7	0.7	2.7	7.5	8.1	6.6	1.4	2.5	2.6	0.4
Total suspended solids	mg/L	NG	<2	3	<2	<2	9	4	3	<2	5	39	<2	19
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

Sampling Date	UNITS	CCME*	KM35 22-Jun-08	KM 38.5 22-Jun-08	KM 40.2 18-Aug-08	KM 40.2 9-Sep-08	KM 42.7 22-Jun-08	KM45 22-Jun-08	KM 51.3 22-Jun-08	KM 54.6 22-Jun-08	KM 59.5 22-Jun-08	KM 62.8 14-Jul-08	KM 64.3 22-Jun-08	KM67 24-Jun-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	7	3	16	7	37	18	20	6	5	6	3	16
Magnesium	mg/L	NG	2	1	4	2	5	2	3	<1	2	<1	<1	4
Total Hardness	mg/L	NG	24	13	55	28	110	53	60	16	20	15	7	57
METALS ICP-MS														
Aluminum	ug/L	100	440	250	360	410	330	61	190	93	220	220	310	170
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10
Silver	ug/L	0.1	0.22	0.18	<0.10	<0.10	<0.10	<0.10	<0.10	0.15	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	2.5	4.2	2.0	2.4	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	2.3
Barium	ug/L	NG	30	13	41	26	26	12	14	6.1	12	14	8.0	31
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	0.66	9.5	11	4.1	0.83	<0.50	1.7	<0.50	<0.50	0.94	<0.50	2.2
Copper	ug/L	2	<0.50	5.3	12	10	3.8	3.9	4.0	3.6	7.3	4.6	5.1	10
Manganese	ug/L	NG	34	550	1800	570	100	3.3	62	11	64	67	43	520
Molybdenum	ug/L	73	<0.50	0.63	0.51	<0.50	0.74	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	7.9	9.5	7.1	6.5	1.6	1.2	<1.0	8.4	2.4	3.4	7.3
Sodium	ug/L	NG	1100	780	1800	1400	5900	1300	16000	1400	1000	790	580	2600
Zinc	ug/L	30	<1.0	8.5	15	11	7.1	<1.0	14	2.9	6.4	2.0	6.1	7.2
Selenium	ug/L	1	1.5	4.4	<1.0	<1.0	<1.0	2.7	3.2	<1.0	2.0	<1.0	3.7	<1.0
Lead	ug/L	1	<0.10	0.81	1.4	0.61	0.96	0.14	0.31	0.15	0.68	0.72	0.92	0.59
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.052	0.036	0.11	0.059	0.27	.030	0.25	.050	0.046	0.044	0.023	0.14
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.08
Nitrogen ammonia	mg/L	NG	0.08	0.07	0.05	0.09	0.17	0.52	0.18	0.04	.10	0.11	0.06	0.04
pH	pH	6.5 - 9	6.5	6.3	6.6	6.9	7.3	7.1	6.8	7.3	6.8	7.3	6.9	7.0
Nitrate and Nitrite	mg/L	NG	0.09	0.23	<0.02	<0.02	0.49	2.1	6.0	0.04	0.11	0.18	.10	<0.02
Sulfates	mg/L	NG	1.4	1.5	2.5	1.2	4.3	2.7	13	3.3	3.0	1.7	2.0	3.9
Total suspended solids	mg/L	NG	4	7	21	<2	4	<2	<2	<2	3	5	<2	13
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

Sampling Date	UNITS	CCME*	KM68.4	KM 69	KM69 DS	KM69 US	KM 69.9			KM 71.0		KM 73		KM73.6
			4-Aug-08	14-Jul-08	24-Jun-08	24-Jun-08	18-Aug-08	9-Sep-08	6-Oct-08	18-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	24-Jun-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	-	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	36	14	<1	<1	24	17	15	14	9	13	4	6
Magnesium	mg/L	NG	16	7	<1	<1	7	5	5	4	2	8	2	2
Total Hardness	mg/L	NG	160	64	<1	<1	89	60	57	51	33	63	19	24
METALS ICP-MS														
Aluminum	ug/L	100	1000	1900	31	23	240	230	290	170	130	300	230	440
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.31	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	9.9	4.8	4.7	1.7	1.3	<1.0	<1.0	<1.0
Barium	ug/L	NG	64	62	3.3	3.2	58	29	36	28	21	40	18	24
Cadmium	ug/L	0.017	0.60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	2.4	3.1	<0.50	<0.50	<0.50	<0.50	0.76	<0.50	0.60	<0.50	2.0	<0.50
Cobalt	ug/L	NG	29	4.0	<0.50	<0.50	10	5.8	9.4	1.7	2.5	2.1	<0.50	1.6
Copper	ug/L	2	7.7	7.8	<0.50	1.1	6.2	7.3	6.5	5.6	4.8	4.1	4.8	3.4
Manganese	ug/L	NG	3000	380	1.3	0.97	3800	1500	2000	120	170	600	18	150
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	2.6	0.91	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	23	8.8	<1.0	<1.0	9.6	6.2	7.7	5.1	4.4	4.5	1.8	3.0
Sodium	ug/L	NG	18000	9000	650	680	4700	3800	2600	1800	1100	12000	2300	2900
Zinc	ug/L	30	75	17	<1.0	<1.0	5.0	7.6	2.8	4.9	7.0	7.5	<1.0	3.5
Selenium	ug/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	1.1	<1.0
Lead	ug/L	1	0.70	3.3	<0.10	<0.10	0.74	<0.10	0.54	<0.10	<0.10	0.34	<0.10	0.62
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	-	<2.0	<2.0	<2.0
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.57	0.28	0.015	0.015	0.21	0.14	0.15	0.10	0.071	0.32	0.062	0.11
Fluoride	mg/L	NG	0.2	0.2	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.09
Nitrogen ammonia	mg/L	NG	4.5	2.4	-	-	0.08	0.46	0.22	0.05	0.06	4.5	0.09	1.7
pH	pH	6.5 - 9	4.7	7.2	7.4	7.3	7.2	7.1	6.8	6.7	6.8	6.7	7.0	7.2
Nitrate and Nitrite	mg/L	NG	21	5.7	-	-	0.02	0.03	0.05	0.04	<0.02	16	1.1	4.7
Sulfates	mg/L	NG	150	73	-	-	2.4	0.4	2.1	2.1	0.9	7.1	8.3	23
Total suspended solids	mg/L	NG	6	13	<2	<2	37	7	23	6	<2	6	6	3
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	-	<3	<3	<3	-	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

Sampling Date	UNITS	CCME*	KM75.2 DS 24-Jun-08	KM75.2 US 24-Jun-08	KM 76.1 18-Aug-08	KM 76.1 6-Oct-08	KM77.3 24-Jun-08	KM 78.4 14-Jul-08	KM83.5 24-Jun-08	KM84.3 DS 24-Jun-08	KM84.3 US 24-Jun-08	KM87 9-Sep-08	KM88 24-Jun-08
METALS													
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001
Calcium	mg/L	NG	<1	<1	31	23	8	3	2	<1	<1	2	4
Magnesium	mg/L	NG	<1	<1	8	5	4	3	2	<1	<1	2	3
Total Hardness	mg/L	NG	<1	<1	110	80	38	18	13	<1	<1	12	23
METALS ICP-MS													
Aluminum	ug/L	100	42	39	220	300	1200	230	140	44	42	2600	330
Antimony	ug/L	NG	5.7	2.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	0.17	<0.10	<0.10	<0.10	<0.10	<0.10	0.18	<0.10
Arsenic	ug/L	5	<1.0	<1.0	12	7.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0
Barium	ug/L	NG	4.2	4.5	47	26	54	20	14	3.7	3.2	29	44
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	7.8	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	20	8.4	3.6	<0.50	<0.50	<0.50	<0.50	1.8	2.2
Copper	ug/L	2	<0.50	<0.50	3.6	5.4	8.1	3.0	1.1	<0.50	<0.50	6.1	2.9
Manganese	ug/L	NG	1.8	2.6	3100	1500	360	13	23	2.3	2.0	61	260
Molybdenum	ug/L	73	<0.50	<0.50	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0	13	7.2	8.8	3.8	2.5	<1.0	<1.0	7.0	4.1
Sodium	ug/L	NG	500	510	15000	8700	3600	1500	1100	390	380	1200	1100
Zinc	ug/L	30	<1.0	1.4	1.8	3.2	6.4	5.9	1.6	<1.0	<1.0	13	15
Selenium	ug/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	ug/L	1	<0.10	<0.10	0.44	0.58	0.77	<0.10	<0.10	<0.10	<0.10	2.9	0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0
CONVENTIONALS													
Conductivity	mmhos/cm	NG	0.013	0.013	0.30	0.24	0.16	0.047	0.045	0.012	0.011	0.027	0.12
Fluoride	mg/L	NG	<0.08	<0.08	<0.1	<0.1	<0.08	<0.1	<0.08	<0.08	<0.08	0.1	<0.08
Nitrogen ammonia	mg/L	NG	0.03	<0.02	0.05	0.16	3.1	0.05	0.05	0.03	<0.1	0.24	3.9
pH	pH	6.5 - 9	7.4	7.2	7.0	7.0	6.7	7.2	5.8	6.3	6.4	6.6	5.1
Nitrate and Nitrite	mg/L	NG	<0.02	<0.02	0.03	0.15	12	0.03	1.4	0.04	<0.02	0.49	13
Sulfates	mg/L	NG	0.7	0.8	11	4.9	7.5	1.6	8.8	0.6	0.5	1.9	0.8
Total suspended solids	mg/L	NG	<2	<2	21	27	3	4	2	<2	<2	9	<2
OIL & GREASE													
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	-	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			KM92.5	KM94.1	KM97		KM101.4	Q1	Q2	Q3	Q4			
Sampling Date	**UNITS**	**CCME***	24-Jun-08	4-Aug-08	24-Jun-08	18-Aug-08	24-Jun-08	22-Jun-08	22-Jun-08	22-Jun-08	22-Jun-08	14-Jul-08	4-Aug-08	18-Aug-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	3	4	1	11	37	5	9	6	5	10	16	19
Magnesium	mg/L	NG	2	2	<1	2	6	2	2	1	1	2	3	4
Total Hardness	mg/L	NG	18	16	3	35	120	22	30	20	16	32	54	65
METALS ICP-MS														
Aluminum	ug/L	100	470	180	180	360	270	3300	1700	130	1100	1500	360	620
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	0.60	0.16	<0.10	0.11	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	1.9	1.5	1.3
Barium	ug/L	NG	15	7.1	4.7	43	120	36	26	2.4	19	31	29	38
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	<0.50	<0.50	<0.50	2.1	<0.50
Cobalt	ug/L	NG	0.79	<0.50	<0.50	1.2	2.3	1.2	1.3	<0.50	0.92	1.1	<0.50	<0.50
Copper	ug/L	2	9.4	3.4	<0.50	1.5	2.3	1.3	<0.50	<0.50	<0.50	10	8.2	6.7
Manganese	ug/L	NG	150	31	34	120	1300	43	51	13	34	51	27	23
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	1.7	0.94	<0.50	0.59	1.6	2.1
Nickel	ug/L	25	<1.0	<1.0	<1.0	2.3	2.7	<1.0	<1.0	<1.0	<1.0	2.9	1.4	1.2
Sodium	ug/L	NG	1900	770	440	1100	1800	26000	24000	12000	1200	2200	4300	6200
Zinc	ug/L	30	9.7	1.0	<1.0	4.0	12	5.2	1.4	<1.0	<1.0	6.7	7.7	5.4
Selenium	ug/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	ug/L	1	2.6	<0.10	<0.10	<0.10	0.67	1.9	2.3	<0.10	1.4	2.0	0.30	1.3
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.072	0.040	.020	0.073	1.2	0.17	.20	0.13	0.044	0.092	0.15	0.18
Fluoride	mg/L	NG	.10	<0.1	<0.08	<0.1	<0.08	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1
Nitrogen ammonia	mg/L	NG	0.57	0.17	0.13	0.07	38	0.29	0.84	1.5	0.35	0.35	0.22	0.09
pH	pH	6.5 - 9	6.0	7.9	6.0	7.3	6.4	8.0	7.7	6.9	6.8	6.8	6.6	7.6
Nitrate and Nitrite	mg/L	NG	5.8	1.4	1.3	0.05	140	1.1	1.9	3.9	1.6	2.5	4.8	5.8
Sulfates	mg/L	NG	3.7	2.7	1.2	2.1	5.9	11	6.9	4.2	1.4	3.7	4.9	6.0
Total suspended solids	mg/L	NG	4	<2	<2	14	28	8	43	7	27	4	8	11
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	-	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

				Q5	Q6	Q7			Q8			Q9	Q10	
Sampling Date	**UNITS**	**CCME***	9-Sep-08	22-Jun-08	22-Jun-08	22-Jun-08	14-Jul-08	9-Sep-08	22-Jun-08	14-Jul-08	4-Aug-08	22-Jun-08	22-Jun-08	14-Jul-08
METALS														
Mercury	mg/L	0.000026	-	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	21	<1	14	2	3	24	13	28	42	5	4	7
Magnesium	mg/L	NG	4	<1	4	<1	<1	6	3	5	9	<1	2	2
Total Hardness	mg/L	NG	69	<1	50	4	7	86	44	93	140	13	18	25
METALS ICP-MS														
Aluminum	ug/L	100	440	580	950	980	1000	460	170	160	34	370	570	380
Antimony	ug/L	NG	1.4	<1.0	2.6	<1.0	<1.0	1.3	<1.0	2.6	3.8	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	1.1	<1.0	1.4	2.8	<1.0	1.5	4.8	3.8	5.9	<1.0	7.4	4.6
Barium	ug/L	NG	38	11	47	15	21	19	12	25	43	13	11	10
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	1.3	<0.50	7.5	2.8	<0.50	<0.50	<0.50	<0.50	5.7	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	1.4	1.4	18	49	0.68	0.71	.80	0.81	0.86	1.5	1.3
Copper	ug/L	2	7.1	<0.50	23	16	44	5.5	3.7	3.4	6.2	6.9	4.1	7.0
Manganese	ug/L	NG	17	14	74	130	280	41	23	18	6.3	28	30	40
Molybdenum	ug/L	73	1.7	<0.50	1.0	<0.50	<0.50	0.68	1.4	2.9	5.3	0.88	2.6	<0.50
Nickel	ug/L	25	2.4	<1.0	2.6	29	70	2.8	4.1	<1.0	<1.0	1.6	1.5	<1.0
Sodium	ug/L	NG	6200	250	4300	530	560	3100	5000	11000	21000	520	19000	3700
Zinc	ug/L	30	5.1	<1.0	4.6	17	21	4.1	14	<1.0	<1.0	14	1.8	3.9
Selenium	ug/L	1	<1.0	1.8	2.2	3.4	<1.0	<1.0	3.2	1.2	2.0	3.6	1.5	<1.0
Lead	ug/L	1	0.79	<0.10	2.6	2.1	0.72	1.2	0.87	0.18	<0.10	1.2	1.4	2.4
Thallium	ug/L	0.8	-	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.20	0.008	0.14	0.036	0.082	0.21	0.16	0.32	0.44	.030	0.18	0.082
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.05	0.13	0.49	0.38	0.65	0.07	2.5	3.2	1.2	0.33	1.8	0.09
pH	pH	6.5 - 9	7.7	6.8	6.9	4.8	4.2	7.6	7.2	7.8	7.5	7.0	7.3	7.6
Nitrate and Nitrite	mg/L	NG	5.9	0.27	5.4	0.58	0.68	0.23	7.3	14	22	0.36	4.0	1.2
Sulfates	mg/L	NG	6.9	0.6	3.5	11	34	31	12	20	36	0.9	8.7	3.3
Total suspended solids	mg/L	NG	7	24	48	63	<2	<2	7	4	2	26	5	8
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			Q11			Q12		Q13				Q14		
Sampling Date	**UNITS**	**CCME***	22-Jun-08	14-Jul-08	18-Aug-08	22-Jun-08	14-Jul-08	22-Jun-08	14-Jul-08	4-Aug-08	9-Sep-08	22-Jun-08	14-Jul-08	18-Aug-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	12	16	13	3	17	6	28	47	45	3	2	40
Magnesium	mg/L	NG	2	3	5	<1	6	<1	3	6	6	2	1	8
Total Hardness	mg/L	NG	40	52	53	8	67	15	83	140	130	14	11	130
METALS ICP-MS														
Aluminum	ug/L	100	340	100	4400	980	11000	840	350	52	200	2300	1500	300
Antimony	ug/L	NG	2.0	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	1.8
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	13	12	1.8	3.1	20	<1.0	1.9	3.5	2.5	<1.0	1.1	6.1
Barium	ug/L	NG	25	35	54	26	170	17	89	150	130	34	27	120
Cadmium	ug/L	0.017	<0.20	<0.20	0.55	<0.20	0.39	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	<0.50	32	<0.50	<0.50	1.5	<0.50	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	2.7	2.9	200	2.0	18	1.0	1.8	2.6	1.8	2.9	1.8	4.1
Copper	ug/L	2	9.7	7.1	160	17	110	8.7	11	11	27	31	21	13
Manganese	ug/L	NG	44	49	870	83	280	48	29	34	91	150	100	110
Molybdenum	ug/L	73	17	18	<0.50	1.0	3.7	0.94	14	28	18	4.0	4.2	20
Nickel	ug/L	25	2.3	<1.0	290	2.8	22	2.1	<1.0	<1.0	<1.0	4.4	<1.0	1.7
Sodium	ug/L	NG	12000	14000	2400	1400	13000	980	7700	13000	9500	4200	5500	26000
Zinc	ug/L	30	4.8	<1.0	71	6.7	43	4.7	1.8	<1.0	4.7	14	7.0	3.4
Selenium	ug/L	1	2.8	1.4	<1.0	<1.0	<1.0	3.5	<1.0	2.4	<1.0	<1.0	<1.0	<1.0
Lead	ug/L	1	4.2	1.8	2.2	9.1	83	2.9	2.9	1.6	2.7	5.8	3.4	5.2
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.25	0.31	0.26	.040	0.24	0.055	0.37	0.54	0.44	0.071	.080	0.60
Fluoride	mg/L	NG	<0.1	<0.1	0.2	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.2
Nitrogen ammonia	mg/L	NG	6.7	7.1	1.5	0.73	2.2	1.2	9.7	10	4.5	1.6	1.8	12
pH	pH	6.5 - 9	7.7	8.0	4.0	6.8	7.6	7.0	7.9	7.9	7.7	6.8	6.5	7.8
Nitrate and Nitrite	mg/L	NG	11	12	1.3	1.5	5.8	2.4	20	37	23	5.3	4.9	42
Sulfates	mg/L	NG	10	17	110	1.8	29	1.1	10	20	19	3.1	3.8	39
Total suspended solids	mg/L	NG	8	9	5	25	120	6	5	2	<2	30	10	3
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			Q15					Q16	Q 17	Q20	R02 DS			
Sampling Date	UNITS	CCME*	24-Jun-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08	24-Jun-08	18-Aug-08	24-Jun-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	10	20	30	53	27	63	32	4	4	4	4	4
Magnesium	mg/L	NG	3	5	8	7	7	15	9	3	<1	<1	<1	<1
Total Hardness	mg/L	NG	34	71	110	160	97	220	120	22	10	10	10	10
METALS ICP-MS														
Aluminum	ug/L	100	450	280	150	200	52	220	95	820	31	14	12	<1.0
Antimony	ug/L	NG	2.2	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	2.0	3.2	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	70	96	140	160	150	69	150	34	13	10	9.8	9.6
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.75	0.69	<0.50
Cobalt	ug/L	NG	1.5	2.2	3.0	2.5	2.8	2.3	2.2	2.1	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	11	9.7	12	15	10	3.0	10	1.9	2.1	<0.50	<0.50	<0.50
Manganese	ug/L	NG	59	39	62	56	45	370	33	200	15	3.9	3.6	1.4
Molybdenum	ug/L	73	<0.50	25	34	26	27	6.6	30	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	2.5	4.9	7.6	1.7	11	6.1	6.0	3.0	<1.0	<1.0	<1.0	<1.0
Sodium	ug/L	NG	10000	22000	38000	14000	35000	40000	42000	1600	2000	1600	1800	1600
Zinc	ug/L	30	14	7.1	6.9	4.3	30	2.4	6.6	8.1	2.9	<1.0	<1.0	1.2
Selenium	ug/L	1	<1.0	<1.0	1.5	2.2	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	ug/L	1	8.7	3.5	1.8	3.1	1.2	0.50	1.8	24	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.23	0.42	0.55	0.55	0.54	0.92	0.61	0.13	0.044	0.038	0.038	0.040
Fluoride	mg/L	NG	0.17	0.3	0.3	0.1	0.3	0.58	0.3	0.12	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	6.9	8.4	7.9	7.2	8.3	10	9.6	5.3	0.05	0.03	0.03	0.04
pH	pH	6.5 - 9	7.2	7.9	7.6	7.9	7.2	7.1	7.8	5.9	7.0	7.8	7.9	7.0
Nitrate and Nitrite	mg/L	NG	18	22	33	34	28	43	35	13	0.04	0.02	0.05	0.04
Sulfates	mg/L	NG	6.9	23	39	25	48	240	41	0.8	1.8	1.0	1.1	1.1
Total suspended solids	mg/L	NG	8	6	5	5	<2	3	4	26	8	<2	<2	<2
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			R02 US				R04 DS	R04 US	R05A DS		R05A US	
Sampling Date	**UNITS**	**CCME***	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08	14-Jul-08	14-Jul-08	22-Jun-08	15-Jul-08	22-Jun-08	15-Jul-08
METALS												
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	NG	4	4	4	4	4	4	5	12	5	11
Magnesium	mg/L	NG	<1	<1	<1	<1	<1	<1	<1	1	<1	1
Total Hardness	mg/L	NG	9	10	10	9	10	9	13	36	13	32
METALS ICP-MS												
Aluminum	ug/L	100	<1.0	11	<1.0	12	<1.0	<1.0	21	18	21	14
Antimony	ug/L	NG	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	10	10	10	8.9	6.1	6.5	6.6	15	17	13
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.97	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	0.79	0.57	<0.50	<0.50	0.97	4.3	<0.50	<0.50	<0.50	<0.50
Manganese	ug/L	NG	2.7	4.9	3.5	1.5	5.4	4.7	12	40	5.8	12
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sodium	ug/L	NG	1700	1600	1900	1700	1200	1200	1300	3300	1200	2900
Zinc	ug/L	30	<1.0	<1.0	11	<1.0	<1.0	1.5	<1.0	21	<1.0	1.2
Selenium	ug/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0
Lead	ug/L	1	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
CONVENTIONALS												
Conductivity	mmhos/cm	NG	0.038	0.039	0.037	0.039	0.035	0.035	0.042	0.11	.040	.10
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.05	0.02	0.04	0.10	0.05	0.06	0.04	0.06	0.04	0.05
pH	pH	6.5 - 9	7.1	7.9	7.9	7.0	7.1	7.0	6.3	7.2	7.0	6.6
Nitrate and Nitrite	mg/L	NG	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03
Sulfates	mg/L	NG	1.9	1.1	1.2	1.2	1.6	1.7	1.7	3.9	1.6	4.0
Total suspended solids	mg/L	NG	2	<2	<2	<2	3	<2	<2	<2	<2	13
OIL & GREASE												
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			R05-DS			R05-US			R06 DS			
Sampling Date	**UNITS**	**CCME***	4-Aug-08	18-Aug-08	9-Sep-08	4-Aug-08	18-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08
METALS												
Mercury	mg/L	0.000026	<0.0001	<0.0001	-	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	4	6	4	4	7	4	3	3	7	3
Magnesium	mg/L	NG	<1	1	<1	<1	1	<1	<1	<1	<1	<1
Total Hardness	mg/L	NG	11	20	11	10	23	10	8	8	17	8
METALS ICP-MS												
Aluminum	ug/L	100	12	21	18	9.9	39	24	<1.0	<1.0	21	13
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	1.3
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	5.7	8.1	6.1	6.2	12	5.6	3.4	5.9	24	2.8
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	3.9	<0.50	1.3	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	0.74	<0.50	0.73	1.3	<0.50	30	1.2	1.1	0.93	0.51
Manganese	ug/L	NG	7.3	9.5	2.9	27	43	4.7	2.1	1.2	2.9	0.71
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0
Sodium	ug/L	NG	1400	1800	1200	1200	2500	1300	1600	1500	2100	1800
Zinc	ug/L	30	<1.0	33	1.7	<1.0	<1.0	18	<1.0	<1.0	17	3.1
Selenium	ug/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0
Lead	ug/L	1	0.12	<0.10	<0.10	<0.10	<0.10	1.3	0.17	<0.10	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	-	<2.0	<2.0	-	<2.0	<2.0	<2.0	-
CONVENTIONALS												
Conductivity	mmhos/cm	NG	0.038	0.049	0.039	0.040	0.044	0.039	0.037	0.036	0.057	0.040
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.03	0.04	0.06	0.03	0.05	0.05	0.08	0.02	0.05	0.05
pH	pH	6.5 - 9	7.4	7.5	6.9	7.1	6.7	6.9	7.7	6.6	7.8	7.9
Nitrate and Nitrite	mg/L	NG	<0.02	0.02	<0.02	<0.02	0.04	<0.02	0.04	0.05	0.09	<0.02
Sulfates	mg/L	NG	1.5	1.9	1.7	1.2	1.8	1.7	1.6	1.5	2.2	1.7
Total suspended solids	mg/L	NG	<2	<2	<2	3	<2	<2	<2	<2	2	<2
OIL & GREASE												
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			R06 US				R09 DS				
Sampling Date	**UNITS**	**CCME***	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08	22-Jun-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08
METALS											
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	3	3	4	3	5	5	7	7	8
Magnesium	mg/L	NG	<1	<1	<1	<1	1	1	2	2	2
Total Hardness	mg/L	NG	8	8	10	7	17	18	24	27	28
METALS ICP-MS											
Aluminum	ug/L	100	<1.0	<1.0	3.6	18	<1.0	<1.0	1.2	11	13
Antimony	ug/L	NG	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	1.4
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	4.8	3.9	2.7	2.5	3.2	3.5	3.7	4.0	3.9
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	0.97	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	1.4	1.2	<0.50	0.70	0.87	1.6	<0.50	<0.50	3.6
Manganese	ug/L	NG	3.8	1.7	2.6	0.46	3.0	3.5	4.2	7.5	4.1
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	1.6	<1.0	<1.0
Sodium	ug/L	NG	1700	1500	1900	1700	1100	1200	1400	1900	1700
Zinc	ug/L	30	3.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5
Selenium	ug/L	1	<1.0	<1.0	<1.0	<1.0	3.1	<1.0	2.5	<1.0	<1.0
Lead	ug/L	1	1.6	<0.10	<0.10	<0.10	0.15	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	-
CONVENTIONALS											
Conductivity	mmhos/cm	NG	0.038	0.035	0.038	0.037	0.044	0.047	0.061	0.066	0.072
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.07	<0.02	0.04	0.03	0.05	0.05	0.05	0.04	0.05
pH	pH	6.5 - 9	8.0	6.7	7.7	7.5	7.6	7.8	6.6	6.9	7.0
Nitrate and Nitrite	mg/L	NG	0.16	0.02	0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.02
Sulfates	mg/L	NG	2.1	1.5	1.6	1.5	2.5	2.5	3.2	3.6	4.7
Total suspended solids	mg/L	NG	<2	3	<2	<2	<2	<2	<2	3	<2
OIL & GREASE											
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	-	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			R09 US					R13	R13 DS			
Sampling Date	**UNITS**	**CCME***	22-Jun-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08	14-Jul-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08
METALS												
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	5	5	6	7	8	6	6	9	7	6
Magnesium	mg/L	NG	1	1	2	2	2	1	2	2	2	2
Total Hardness	mg/L	NG	18	17	23	28	27	22	22	30	25	22
METALS ICP-MS												
Aluminum	ug/L	100	24	<1.0	2.1	<1.0	11	9.5	26	7.0	16	22
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	3.1	3.0	3.7	3.4	4.0	6.3	6.9	8.3	6.3	5.1
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	5.2	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	7.3	2.7	2.3	<0.50	1.3	0.83	0.63	1.2	12	0.83
Manganese	ug/L	NG	3.8	3.3	5.9	8.3	3.0	6.4	6.5	13	8.2	2.5
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	1.7	<1.0	<1.0	<1.0	2.5	1.0	<1.0	1.5	1.2	1.1
Sodium	ug/L	NG	1100	1100	1400	1900	1700	820	870	810	840	920
Zinc	ug/L	30	5.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.9	9.8	2.5
Selenium	ug/L	1	3.5	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	1.4	<1.0	<1.0
Lead	ug/L	1	0.40	<0.10	<0.10	<0.10	<0.10	<0.10	0.20	<0.10	0.51	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	-
CONVENTIONALS												
Conductivity	mmhos/cm	NG	0.043	0.046	0.058	0.064	0.072	0.048	.050	0.066	0.055	0.053
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.05	0.05	0.04	0.05	0.07	0.05	0.06	0.05	0.04	0.05
pH	pH	6.5 - 9	7.5	6.3	7.1	7.6	6.8	7.0	7.8	6.7	7.7	7.3
Nitrate and Nitrite	mg/L	NG	<0.02	<0.02	0.05	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
Sulfates	mg/L	NG	2.5	2.5	3.0	3.5	4.9	0.7	0.6	1.0	1.5	1.5
Total suspended solids	mg/L	NG	<2	<2	4	2	<2	<2	<2	<2	<2	<2
OIL & GREASE												
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	-	<3	<3	<3	3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			R13-US			R15DS				R15US			
Sampling Date	**UNITS**	**CCME***	4-Aug-08	18-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08
METALS													
Mercury	mg/L	0.000026	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	9	8	7	<1	1	1	1	<1	1	1	1
Magnesium	mg/L	NG	2	2	2	<1	<1	<1	<1	<1	<1	<1	<1
Total Hardness	mg/L	NG	30	27	23	<1	3	3	3	<1	3	3	3
METALS ICP-MS													
Aluminum	ug/L	100	7.3	110	11	35	13	27	43	15	19	25	56
Antimony	ug/L	NG	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	0.36	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	8.3	10	5.6	3.2	3.2	3.0	3.0	2.6	3.3	3.1	2.9
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	1.3	<0.50	<0.50	<0.50	1.3	4.6	3.6	<0.50	<0.50	5.6	6.0
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	0.88	2.7	1.2	2.3	1.1	1.4	0.86	<0.50	0.95	3.3	0.83
Manganese	ug/L	NG	10	22	2.3	1.8	0.95	1.5	0.56	0.84	1.1	1.4	0.62
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	1.4	2.9	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0
Sodium	ug/L	NG	790	970	890	680	800	1100	940	730	890	1000	990
Zinc	ug/L	30	<1.0	5.3	<1.0	<1.0	<1.0	2.4	3.5	<1.0	1.5	3.8	1.5
Selenium	ug/L	1	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	ug/L	1	<0.10	0.16	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.17	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	-	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	-
CONVENTIONALS													
Conductivity	mmhos/cm	NG	0.066	0.055	0.054	0.014	0.017	0.017	0.017	0.014	0.017	0.018	0.017
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.07	0.03	0.05	0.04	0.04	0.03	0.04	0.04	0.04	0.05	0.05
pH	pH	6.5 - 9	7.6	6.8	7.0	7.9	7.0	7.7	7.1	7.9	7.1	6.8	6.8
Nitrate and Nitrite	mg/L	NG	<0.02	<0.02	<0.02	<0.02	0.05	0.03	<0.02	0.03	0.06	0.04	<0.02
Sulfates	mg/L	NG	1.0	1.6	1.5	0.8	1.0	1.2	1.2	0.9	1.0	1.9	1.2
Total suspended solids	mg/L	NG	<2	4	<2	<2	<2	<2	<2	<2	<2	3	<2
OIL & GREASE													
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

			R16 DS		R16 US		R19 DS				R19 US			
Sampling Date	**UNITS**	**CCME***	14-Jul-08	18-Aug-08	14-Jul-08	18-Aug-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	18-Aug-08	9-Sep-08
METALS														
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	<1	1	1	2	<1	<1	1	<1	<1	<1	1	1
Magnesium	mg/L	NG	<1	1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
Total Hardness	mg/L	NG	<1	8	3	8	<1	<1	3	<1	<1	<1	3	3
METALS ICP-MS														
Aluminum	ug/L	100	22	84	34	72	21	20	61	72	20	16	<1.0	76
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	8.2	5.0	4.1	4.3	3.1	3.0	3.7	3.9	3.2	3.3	3.4	3.9
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	0.79	<0.50	<0.50	<0.50	0.65	1.1	15	7.0	<0.50	1.2	1.4	9.9
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	0.60	2.6	0.62	1.7	0.90	0.69	1.6	<0.50	0.56	<0.50	<0.50	3.9
Manganese	ug/L	NG	4.2	3.6	8.8	3.9	8.5	9.4	15	16	7.8	23	4.7	4.9
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	1.2
Sodium	ug/L	NG	730	1200	730	1200	520	530	710	580	590	530	690	620
Zinc	ug/L	30	<1.0	6.3	<1.0	3.4	<1.0	<1.0	2.6	<1.0	<1.0	<1.0	2.0	5.0
Selenium	ug/L	1	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.7	<1.0
Lead	ug/L	1	<0.10	<0.10	<0.10	0.17	<0.10	<0.10	0.25	<0.10	<0.10	<0.10	<0.10	0.20
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	-
CONVENTIONALS														
Conductivity	mmhos/cm	NG	0.016	0.022	0.017	0.022	0.013	0.014	0.014	0.013	0.013	0.014	0.014	0.013
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.05	0.04	0.05	0.05	0.04	0.10	0.04	0.05	0.04	0.24	0.05	0.05
pH	pH	6.5 - 9	6.8	6.9	7.6	7.1	7.0	7.4	7.1	6.8	7.1	7.8	7.2	6.8
Nitrate and Nitrite	mg/L	NG	<0.02	0.04	<0.02	0.03	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sulfates	mg/L	NG	0.8	1.4	1.4	1.1	0.6	0.5	1.6	0.6	0.5	0.5	0.5	0.7
Total suspended solids	mg/L	NG	<2	3	8	<2	<2	<2	3	7	<2	<2	3	4
OIL & GREASE														
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

Table 7.8: Water Quality Monitoring Results for the AWPAR and Quarries

Sampling Date	UNITS	CCME*	R24 DS 15-Jul-08	R24 US 15-Jul-08
METALS				
Mercury	mg/L	0.000026	<0.0001	<0.0001
Calcium	mg/L	NG	3	2
Magnesium	mg/L	NG	<1	<1
Total Hardness	mg/L	NG	6	4
METALS ICP-MS				
Aluminum	ug/L	100	43	46
Antimony	ug/L	NG	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0
Barium	ug/L	NG	4.3	2.5
Cadmium	ug/L	0.017	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50
Cobalt	ug/L	NG	1.6	1.6
Copper	ug/L	2	1.6	2.2
Manganese	ug/L	NG	20	12
Molybdenum	ug/L	73	<0.50	<0.50
Nickel	ug/L	25	9.1	8.7
Sodium	ug/L	NG	390	350
Zinc	ug/L	30	84	<1.0
Selenium	ug/L	1	<1.0	<1.0
Lead	ug/L	1	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0
CONVENTIONALS				
Conductivity	mmhos/cm	NG	0.026	0.021
Fluoride	mg/L	NG	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.04	0.04
pH	pH	6.5 - 9	6.7	6.8
Nitrate and Nitrite	mg/L	NG	0.29	0.10
Sulfates	mg/L	NG	3.6	3.8
Total suspended solids	mg/L	NG	<2	<2
OIL & GREASE				
Mineral Oil and Grease	mg/L	NG	<3	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.9: AWPAR Water Quality Field Measurements

Sample ID	KM 1	KM 2.4	KM 4.3	KM 4.6	KM 6.5	KM 8.4		KM 8.9 US	KM 8.9 DS	KM 9.2		KM 9.4
Date	22-Jun-08	14-Jul-08	14-Jul-08	22-Jun-08	11-Aug-08	9-Sep-08	6-Oct-08	11-Aug-08	11-Aug-08	14-Jul-08	22-Jul-08	22-Jun-08
Time	11:50	11:00	11:10	12:20	-	9:45	10:30	-	-	11:40	13:20	12:40
Temperature (°C)	9.58	17.06	16.15	11.62	16.19	2.93	1.00	14.41	14.38	16.16	17.44	10.2
pH	6.75	8.41	6.37	7.41	6.75	8.22	7.58	7.23	6.67	6.86	6.39	7.15
DO (%)	-	79.2	21.7	-	12.4	89.6	72.1	92.1	90.4	57.1	8	-
DO (mg/L)	-	7.61	2.07	-	-	11.67	-	-	-	5.74	-	-
Specific Conductivity (uS/cm)	21	83	568	165	452	39	25	36	37	66	556	447
Turbidity (NTU)	11.2	9.04	152.6	5.12	28.8	6.89	18.13	0.01	0.01	3.99	31.9	15.5

Sample ID	KM 13.5		KM 16.5	KM 16.7	KM 18.3	KM 18.4	KM 18.9	KM19.1	KM 19.3	KM 19.9	KM 24.6 US	KM 24.6 DS
Date	15-Jul-08	22-Jul-08	11-Aug-08	22-Jun-08	14-Jul-08	22-Jun-08	31-Aug-08	8/4/2008	6-Oct-08	14-Jul-08	11-Aug-08	11-Aug-08
Time	18:00	14:05	-	13:35	12:20	14:00	-	-	10:55	12:55	-	-
Temperature (°C)	12.64	16.72	15.1	11.36	16.71	10.36	7.75	12.20	0.91	15.77	15.02	14.77
pH	7.17	6.84	6.61	7.2	7.65	7.75	7.01	6.90	7.46	7.5	7.09	6.94
DO (%)	69	82.4	43.1	-	108.9	-	45.5	72.6	71.3	85.8	86.1	76.5
DO (mg/L)	7.28	-	-	-	9.97	-	-	-	-	7.79	-	-
Specific Conductivity (uS/cm)	164	609	364	118	212	111	155	-	10	73	34	35
Turbidity (NTU)	1.75	82.7	51.1	5.74	1.28	2.42	3.75	2.67	9.00	2.36	0.62	0.58

Sample ID	KM 26.1	KM 27.3		KM 27.7	KM29.9	KM 30.6		KM 30.9	Km 32.2		KM 35	KM 35.2
Date	22-Jul-08	9-Sep-08	6-Oct-08	22-Jun-08	4-Aug-08	22-Jun-08	31-Aug-08	11-Aug-08	14-Jul-08	22-Jul-08	22-Jun-08	22-Jul-08
Time	14:30	10:50	11:15	14:30	-	14:55	-	-	13:25	14:45	15:30	14:55
Temperature (°C)	10.05	3.78	2.91	11.95	12.97	11.15	8.77	15.43	17.04	20.3	11.13	19.19
pH	7.05	6.57	7.29	8.06	6.79	7.32	7.08	6.73	7.68	6.34	7.55	6.8
DO (%)	60.03	64.4	67.0	-	35.4	-	22.1	44.5	82.8	70.3	-	68
DO (mg/L)	-	8.41	-	-	-	-	-	-	7.48	-	-	-
Specific Conductivity (uS/cm)	72	69	61	50	393	54	195	172	92	30	52	100
Turbidity (NTU)	6.07	22.4	25.00	1.93	69.50	1.7	19.40	14.51	9.34	9.16	15.9	4.4

Sample ID	Km 35.8	KM 35.9	Km 36.9	KM 38.5	KM 38.6	KM38.9	KM 40.2	KM 41.1	KM 42.7		KM 45	KM 47.4
Date	31-Aug-08	11-Aug-08	31-Aug-08	22-Jun-08	11-Aug-08	22-Jul-08	9-Sep-08	11-Aug-08	22-Jun-08	22-Jul-08	22-Jun-08	22-Jul-08
Time	-	-	-	16:00	-	15:10	12:00	-	14:50	15:35	17:20	15:47
Temperature (°C)	9.99	17.58	10.41	11.15	14.47	19.59	4.2	17.3	14.05	7.67	2.97	5.5
pH	7.48	6.91	6.79	6.16	6.83	6.1	6.83	6.57	7.29	7	7.38	7.11
DO (%)	71.5	85.1	26.9	-	44.1	11.4	35.3	49.5	-	69.5	-	18.4
DO (mg/L)	-	-	-	-	-	-	4.58	-	-	-	-	-
Specific Conductivity (uS/cm)	68	201	141	37	94	196	79	160	265	88	127	274
Turbidity (NTU)	1.79	10.68	26.50	6.8	14.64	92.5	20.9	9.69	35	6.22	5.45	21.2

Table 7.9: AWPAR Water Quality Field Measurements

Sample ID	KM 50.9	KM 50.9	KM 51.3	KM 54.6	KM 59.1	KM 59.5	KM 62.8	KM 63.5	KM 63.8	KM 64.3	KM 67
Date	11-Aug-08	11-Aug-08	22-Jun-08	22-Jun-08	22-Jul-08	22-Jun-08	14-Jul-08	11-Aug-08	22-Jul-08	22-Jun-08	24-Jun-08
Time	-	-	18:15	18:45	16:13	19:15	16:00	-	16:33	19:50	-
Temperature (°C)	16.44	16.44	12.28	5.06	18.02	7.72	13.97	16.1	18.81	10.05	8.87
pH	7.5	7.34	7.08	7.69	6.25	7.29	7.15	7.24	7.28	7.02	7
DO (%)	82.1	89.1	-	-	92.2	-	79.8	83.3	85.6	-	-
DO (mg/L)	-	-	-	-	-	-	8	-	-	-	-
Specific Conductivity (uS/cm)	64	64	243	54	119	49	48	69	191	23	157
Turbidity (NTU)	0.38	1.1	5.3	19.7	95.7	15.8	12.21	178	95.7	5.94	71.3

Sample ID	KM 67.1		KM 68	KM 68.4	KM 69 DS	KM 69 US	KM 69	KM 69.9		KM 70.8	KM 71	KM 72.4
Date	11-Aug-08	31-Aug-08	22-Jul-08	4-Aug-08	24-Jun-08	24-Jun-08	14-Jul-08	9-Sep-08	6-Oct-08	11-Aug-08	9-Sep-08	11-Aug-08
Time	-	-	17:00	-	-	-	16:55	13:40	12:00	-	13:50	-
Temperature (°C)	18.34	10.79	21.1	14.16	4.76	5.39	18.84	6.47	5.55	15.3	6.6	19.51
pH	7.16	6.94	6.77	5.32	7.4	7.3	7.02	7.32	7.08	6.75	7.11	6.56
DO (%)	129.3	42.6	100	96.3	-	-	88.7	57.6	34.0	27.1	80	152.5
DO (mg/L)	-	-	-	-	-	-	8.19	7.04	-	-	9.3	-
Specific Conductivity (uS/cm)	94	70	85	576	17	17	253	162	141	150	88	123
Turbidity (NTU)	7.8	1.27	3.15	15.15	1.32	.68	49.4	18.01	28.10	41.1	5.58	11.23

Sample ID	KM 73			KM 73.6	KM 75.2 DS	KM 75.2 US	KM 75.7	KM 76.1	KM 77.3	KM 78.4	KM 78.7
Date	14-Jul-08	22-Jul-08	4-Aug-08	24-Jun-08	24-Jun-08	24-Jun-08	11-Aug-08	6-Oct-08	24-Jun-08	14-Jul-08	11-Aug-08
Time	17:20	17:35	-	-	-	-	-	12:45	-	17:35	-
Temperature (°C)	18.12	18.85	14.15	10.8	7.39	7.77	19.78	2.73	12.61	17.05	17.26
pH	6.98	7.17	6.12	7.2	7.4	7.2	5.22	7.29	6.7	7.43	6.48
DO (%)	78.6	75.5	99.4	-	-	-	217.4	55.4	-	90	83.3
DO (mg/L)	7.43	-	-	-	-	-	-	-	-	8.2	-
Specific Conductivity (uS/cm)	295	1123	67	119	14	14	103.4	210	183	48	843
Turbidity (NTU)	14.24	140.2	8.70	22.4	2.68	1.3	5.93	12.71	34.3	2.24	86.5

Sample ID	KM 80.2		KM 80.5	KM 83.5	KM 84.3 DS	KM 84.3 US	KM 85.5	KM 87	KM 87.7	KM 88	KM 89.5	
Date	11-Aug-08	31-Aug-08	22-Jul-08	24-Jun-08	24-Jun-08	24-Jun-08	22-Jul-08	9-Sep-08	11-Aug-08	24-Jun-08	22-Jul-08	22-Jul-08
Time	-	-	17:50	-	-	-	18:10	10:10	-	-	18:28	18:45
Temperature (°C)	8.26	8.52	19.07	14.25	7.07	7.12	13.37	2.51	19.93	11.86	17.08	15.67
pH	6.33	6.39	6.45	5.8	6.3	6.4	5.99	6.6	6.44	5.1	5.69	6.54
DO (%)	64.1	59.4	115.3	-	-	-	48.4	27.8	115.8	-	32.2	78.8
DO (mg/L)	-	-	-	-	-	-	-	3.72	-	-	-	-
Specific Conductivity (uS/cm)	19	74	374	44	13	12	35	111	82	115	74	28
Turbidity (NTU)	10.21	27.7	38.9	7.22	1.28	0.93	14.75	60	9.7	8.35	7.15	-

Table 7.9: AWPAR Water Quality Field Measurements

Sample ID	KM94.1	KM 92.5	KM 97	KM 99	KM 101.4	KM 101.8	KM 109.9	Q1		Q2	
Date	4-Aug-08	24-Jun-08	24-Jun-08	31-Aug-08	24-Jun-08	11-Aug-08	11-Aug-08	22-Jun-08	22-Jul-08	22-Jun-08	22-Jul-08
Time	-	-	-	-	-	-	-	12:00	13:10	13:00	13:40
Temperature (°C)	12.32	9.71	8.83	6.23	18.48	9.7	20.58	4.05	9.7	1.49	9.29
pH	6.35	6.0	6.0	6.5	6.4	6.52	6.72	8.93	6.73	8.73	7.42
DO (%)	91.2	-	-	75.8	-	89.3	68.3	-	26	-	50
DO (mg/L)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductivity (uS/cm)	41	71	23	28	-	60	97	180	756	193	385
Turbidity (NTU)	7.65	60	9.27	36.4	-	24.5	73.4	148.4	52.5	200	16.38

Sample ID	Q3			Q4							Q5	
Date	22-Jun-08	6-Jul-08	22-Jul-08	22-Jun-08	6-Jul-08	14-Jul-08	22-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	22-Jun-08	6-Jul-08
Time	14:15	14:00	14:18	14:45	13:40	13:40	14:40	-	-	14:10	15:15	13:30
Temperature (°C)	3.98	11.17	18.11	3.45	10.27	15.7	16.25	13.54	7.84	5.84	6.17	11.52
pH	8.14	7.3	7.96	8.2	6.28	7.77	7.61	7.52	7.36	7.34	8.38	5.64
DO (%)	-	-	76.1	-	-	76.8	84.8	92.7	78.0	74.5	-	-
DO (mg/L)	-	-	-	-	-	7.55	-	-	-	9.29	-	-
Specific Conductivity (uS/cm)	130	237	640	46	66	86	115	154	193	200	9	13
Turbidity (NTU)	23.8	48.5	9.12	220	425	114.7	81.5	33.40	54.60	39.3	3.02	258

Sample ID	Q6	Q7					
Date	22-Jun-08	22-Jun-08	6-Jul-08	14-Jul-08	22-Jul-08	31-Aug-08	9-Sep-08
Time	15:45	16:20	13:15	13:40	15:15	-	13:20
Temperature (°C)	6.55	7.89	9.33	16.76	18.99	10.52	5.62
pH	8.96	5.01	6	6.3	4.12	4.26	7.53
DO (%)	-	-	-	127.7	84	80.2	74.1
DO (mg/L)	-	-	-	11.19	-	-	3.88
Specific Conductivity (uS/cm)	149	37	55	67	96	157	206
Turbidity (NTU)	158.2	235	97	22.2	32.6	10.90	9.27

Sample ID	Q8							Q9	Q10	
Date	22-Jun-08	6-Jul-08	14-Jul-08	22-Jul-08	4-Aug-08	11-Aug-08	31-Aug-08	22-Jun-08	22-Jun-08	14-Jul-08
Time	16:40	13:04	13:50	15:27	-	-	-	17:05	18:05	14:30
Temperature (°C)	7.52	10.91	18.05	18.17	12.98	18.37	11.75	7.5	5.97	17.87
pH	6.85	7.93	7.04	8.22	7.72	7.87	6.55	7.83	7.73	7.59
DO (%)	-	-	86.5	86	86.3	89	80.9	-	-	89.5
DO (mg/L)	-	-	7.94	-	-	-	-	-	-	8.46
Specific Conductivity (uS/cm)	146	237	299	344	383	460	474	41	176	77
Turbidity (NTU)	41.5	11.4	17.18	16.32	1.29	4.01	75.30	85.3	37	79.8

Table 7.9: AWPAR Water Quality Field Measurements

Sample ID	Q11			Q12					
Date	22-Jun-08	6-Jul-08	14-Jul-08	22-Jun-08	6-Jul-08	14-Jul-08	22-Jul-08	11-Aug-08	31-Aug-08
Time	18:30	12:00	2:45:00 PM	19:05	11:52	15:00	16:05	-	-
Temperature (°C)	8.2	7.57	16.86	0.6	8.17	5.65	15.82	10.14	8.75
pH	8.21	7.71	7.87	7.95	7.67	7.8	7.66	8.16	7.23
DO (%)	-	-	81.7	-	-	87	79.7	79.5	79.1
DO (mg/L)	-	-	8.01	-	-	10.23	-	-	-
Specific Conductivity (uS/cm)	245	253	291	42	71	225	353	473	322
Turbidity (NTU)	33.4	20	4.86	117.6	260	976	185.3	8.27	107.70

Sample ID	Q13							
Date	22-Jun-08	6-Jul-08	14-Jul-08	22-Jul-08	4-Aug-08	11-Aug-08	31-Aug-08	9-Sep-08
Time	19:30	11:17	15:50	16:20	-	-	-	12:15
Temperature (°C)	10	9.47	16.69	18.17	13.93	17.23	10.08	4.17
pH	7.58	7.61	7,8	8	7.73	8	7.33	7.45
DO (%)	-	-	81.6	82.5	98.5	88.2	78.5	74.1
DO (mg/L)	-	-	7.89	-	-	-	-	9.6
Specific Conductivity (uS/cm)	56	206	312	420	540	517	421	438
Turbidity (NTU)	104.05	232	20.7	27.7	2.62	0.76	49.10	9.43

Sample ID	Q14						Q14-P
Date	22-Jun-08	6-Jul-08	14-Jul-08	22-Jul-08	11-Aug-08	31-Aug-08	22-Jul-08
Time	20:00	11:10	16:10	16:40	-	-	16:46
Temperature (°C)	7.11	9.04	15.22	17.41	14.85	8.71	15.57
pH	7.3	7.93	7.43	7.86	9.46	8	6.37
DO (%)	-	-	74	90.8	85.1	84.4	51.1
DO (mg/L)	-	-	-	-	-	-	-
Specific Conductivity (uS/cm)	73	58	77	111	131	123	37
Turbidity (NTU)	370	495	140	91.8	64.4	55.9	3.53

Sample ID	Q15								Q16		Q20	
Date	24-Jun-08	6-Jul-08	14-Jul-08	22-Jul-08	4-Aug-08	11-Aug-08	31-Aug-08	9-Sep-08	24-Jun-08	6-Jul-08	24-Jun-08	22-Jul-08
Time	-	11:00	16:25	16:53	-	-	-	11:50	-	10:31	-	18:23
Temperature (°C)	11.09	9.28	17.41	8.35	10.64	18.26	10.77	4.31	10.61	9.7	4.20	17.05
pH	7.2	7.88	7.66	8.03	7.62	7.67	7.36	6.72	7.1	7.67	5.9	5.78
DO (%)	-	-	97	87.3	44.1	90.5	80.4	57.2	-	-	-	20.8
DO (mg/L)	-	-	9	-	-	-	-	7.31	-	-	-	-
Specific Conductivity (uS/cm)	181	348	393	498	561	542	533	554	988	1016	149	873
Turbidity (NTU)	85.4	41.8	38.5	8.28	7.18	1.48	10.56	9.69	3.5	5.3	292	4.8

Table 7.9: AWPAR Water Quality Field Measurements

Sample ID	RO2 US				R02-DS			RO2 DS A	RO4 US	RO4 DS
Date	14-Jul-08	8/4/2008	31-Aug-08	9-Sep-08	4-Aug-08	31-Aug-08	9-Sep-08	14-Jul-08	14-Jul-08	14-Jul-08
Time	11:25	-	-	15:10	-	-	15:15	11:20	11:55	12:00
Temperature (°C)	14.98	13.25	10.07	7.03	12.30	10.05	6.98	14.73	16.62	16.75
pH	7.15	6.20	7.89	7.01	5.96	6.94	7.16	7.03	7.28	7.16
DO (%)	88.7	102.5	85.7	77.5	98.8	82.6	76.7	90.9	124	89
DO (mg/L)	8.87	-	-	9.39	-	-	9.28	9.12	11.4	8.67
Specific Conductivity (uS/cm)	36	40	38	39	40	39	39	36	38	34
Turbidity (NTU)	0.23	0.00	0.53	0.36	0.23	0.49	0.47	0.09	0.59	0.43

Sample ID	R05-DS			R05-US			RO5A DS		RO5A US	
Date	4-Aug-08	31-Aug-08	9-Sep-08	4-Aug-08	31-Aug-08	9-Sep-08	22-Jun-08	15-Jul-08	22-Jun-08	15-Jul-08
Time	-	-	14:55	-	-	14:50	13:15	17:35	13:25	17:40
Temperature (°C)	14.27	9.34	5.15	14.28	9.73	5.82	5.22	16.49	4.63	16.66
pH	6.44	6.26	7.6	6.72	6.78	7.35	8.12	6.76	8.06	6.83
DO (%)	103.8	78.8	84.6	98.7	78.3	78.8	-	57.7	-	74.7
DO (mg/L)	-	-	10.32	-	-	9.82	-	5.57	-	7.24
Specific Conductivity (uS/cm)	39	45	51	39	44	40	44	116	41	97
Turbidity (NTU)	0.24	2.06	0.48	0.78	0.56	0.47	1.2	1.47	1.6	0.85

Sample ID	RO6 US				RO6 DS			
Date	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08
Time	12:30	-	-	14:35	12:40	-	-	14:30
Temperature (°C)	12.95	12.95	10.39	6.8	8.68	12.84	9.99	6.64
pH	8.29	7.00	6.75	7.61	7.73	7.12	6.96	7.7
DO (%)	84.1	90.7	83.1	75	60.1	90.6	76.4	89.9
DO (mg/L)	8.77	-	-	9.14	6.8	-	-	10.62
Specific Conductivity (uS/cm)	22	37	36	37	54	38	37	38
Turbidity (NTU)	0.75	0.00	0.13	0.28	0.24	0.17	0.16	0.4

Sample ID	RO9 DS					RO9 US				
Date	22-Jun-08	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	22-Jun-08	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08
Time	17:30	14:20	-	-	13:00	17:40	14:15	-	-	12:55
Temperature (°C)	5.81	16.25	13.77	8.58	6.03	5.72	17.19	14.07	8.57	5.99
pH	7.93	7.68	7.73	6.86	7.07	7.67	7.87	7.55	6.66	7.05
DO (%)	-	84	92.8	79.0	76.2	-	103.5	96.1	82.3	74.8
DO (mg/L)	-	8.04	-	-	9.42	-	9.34	-	-	9.3
Specific Conductivity (uS/cm)	45	19	63	67	72	44	44	59	68	72
Turbidity (NTU)	3.2	0.02	0.00	1.64	1.53	4.5	0.26	0.11	1.56	0.47

Table 7.9: AWPAR Water Quality Field Measurements

Sample ID	R13 DS				R13 US				R14 DS	R14 US
Date	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	22-Jul-08	22-Jul-08
Time	15:45	-	-	12:25	15:35	-	-	12:30	17:05	17:10
Temperature (°C)	17.16	14.41	9.32	3.54	17.11	14.08	9.32	4.44	17.39	18.04
pH	7.51	7.46	6.89	7.59	7.54	7.30	7.09	7.09	6.26	6.21
DO (%)	82	96.8	80.6	86.5	103.9	92.0	83.4	62.2	76.3	80.2
DO (mg/L)	7.91	-	-	11.1	9.16	-	-	7.93	-	-
Specific Conductivity (uS/cm)	55	68	46	59	47	67	47	65	16	15
Turbidity (NTU)	2.64	0.84	1.16	1.52	0.29	0.87	0.67	5.33	0.65	0.33

Sample ID	R15 US				R15 DS				R16 US		R16 DS	
Date	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	14-Jul-08	22-Jul-08	14-Jul-08	22-Jul-08
Time	16:35	-	-	11:30	16:40	-	-	11:35	17:05	17:27	17:10	17:22
Temperature (°C)	15.25	13.55	8.59	4.46	15.37	13.69	8.64	4.51	18.44	18.76	18.37	18.59
pH	7.6	7.59	6.56	7.38	7.25	7.06	6.61	6.24	7.25	6.59	6.86	6.75
DO (%)	89.5	92.2	81	72.6	95.5	91.2	80.4	72.6	112.4	83.2	83.5	78.7
DO (mg/L)	8.66	-	-	9.32	8.95	-	-	9.33	9.31	-	7.76	-
Specific Conductivity (uS/cm)	17	20	19	19	15	18	19	19	20	18	17	18
Turbidity (NTU)	0.2	0.37	2.88	1.68	0.21	0.17	2.6	1.62	3.27	0.58	0.59	0.53

Sample ID	R19 US				R19 DS				R24 US		R24 DS	
Date	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	14-Jul-08	4-Aug-08	31-Aug-08	9-Sep-08	15-Jul-08	22-Jul-08	15-Jul-08	22-Jul-08
Time	17:40	-	-	10:33	17:45	-	-	10:30	15:25	18:05	15:30	18:00
Temperature (°C)	17.17	14.85	8.88	3.31	17.14	14.96	8.65	3.39	15.44	18.6	13.5	18.52
pH	6.46	5.96	5.84	5.5	6.36	6.18	5.6	6.73	8.08	6.12	7.52	6.75
DO (%)	83.6	94.2	78.5	74.2	83.1	96.0	75	70.3	81.4	89	79.4	84.3
DO (mg/L)	8.44	-	-	9.72	8	-	-	9.3	8.1	-	8.07	-
Specific Conductivity (uS/cm)	13	16	14	14	12	15	14	15	21	-	28	14
Turbidity (NTU)	0.35	0.45	4.46	2.18	0.49	0.44	7.45	2.35	0.31	0.88	0.6	1.08

Sample ID	R25
Date	5-Jul-08
Time	14:04
Temperature (°C)	7.99
pH	7.89
DO (%)	32.0
DO (mg/L)	-
Specific Conductivity (uS/cm)	14
Turbidity (NTU)	0.15

Table 7.10: Water Quality Data for Western Channel Temporary Crossing

			WC-DS				
Sampling Date	**UNITS**	**CCME***	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08	8-Sep-08
METALS							
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	-
Calcium	mg/L	NG	2	1	1	1	2
Magnesium	mg/L	NG	<1	<1	<1	<1	<1
Total Hardness	mg/L	NG	4	3	3	3	5
METALS ICP-MS							
Aluminum	ug/L	100	72	6.9	12	14	120
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	3.4	2.2	2.1	2.5	4.7
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	<0.50	1.4	3.8	5.8	5.0
Manganese	ug/L	NG	3.6	1.3	0.73	1.8	7.1
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0	<1.0	<1.0	5.9
Sodium	ug/L	NG	480	360	390	<30	510
Zinc	ug/L	30	<1.0	1.4	<1.0	4.5	2.8
Selenium	ug/L	1	3.4	7.3	<1.0	<1.0	<1.0
Lead	ug/L	1	<0.10	<0.10	0.16	0.27	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-	-
CONVENTIONALS							
Conductivity	mmhos/cm	NG	0.017	0.013	0.013	0.015	0.019
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	0.02	0.04	0.03	0.05	0.05
pH	pH	6.5 - 9	7.4	7.9	7.3	7.6	7.9
Nitrate and Nitrite	mg/L	NG	0.02	<0.02	<0.02	0.08	0.07
Sulfates	mg/L	NG	1.5	1.1	1.0	1.6	1.4
Total suspended solids	mg/L	NG	4	10	<2	<2	3
OIL & GREASE							
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	-	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.10: Water Quality Data for Western Channel Temporary Crossing

			WC-US				
Sampling Date	**UNITS**	**CCME***	21-Jun-08	13-Jul-08	3-Aug-08	19-Aug-08	8-Sep-08
METALS							
Mercury	mg/L	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001
Calcium	mg/L	NG	2	1	1	1	2
Magnesium	mg/L	NG	<1	<1	<1	<1	<1
Total Hardness	mg/L	NG	4	3	3	3	5
METALS ICP-MS							
Aluminum	ug/L	100	28	45	7.5	16	88
Antimony	ug/L	NG	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	ug/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L	NG	3.2	2.8	2.3	2.7	3.5
Cadmium	ug/L	0.017	<0.20	<0.20	<0.20	<0.20	<0.20
Chromium	ug/L	1	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	ug/L	NG	<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	2	<0.50	2.6	0.82	1.0	1.1
Manganese	ug/L	NG	3.4	2.3	0.75	1.5	6.6
Molybdenum	ug/L	73	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	ug/L	25	<1.0	<1.0	<1.0	<1.0	<1.0
Sodium	ug/L	NG	460	370	410	340	490
Zinc	ug/L	30	<1.0	7.9	<1.0	<1.0	3.1
Selenium	ug/L	1	2.3	8.7	<1.0	<1.0	<1.0
Lead	ug/L	1	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	0.8	<2.0	<2.0	<2.0	-	-
CONVENTIONALS							
Conductivity	mmhos/cm	NG	0.017	0.013	0.014	0.015	0.018
Fluoride	mg/L	NG	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrogen ammonia	mg/L	NG	<0.02	0.06	0.03	0.03	0.05
pH	pH	6.5 - 9	7.6	7.9	7.5	7.7	8.0
Nitrate and Nitrite	mg/L	NG	<0.02	0.06	<0.02	<0.02	0.05
Sulfates	mg/L	NG	1.6	1.3	1.8	1.6	1.3
Total suspended solids	mg/L	NG	<2	<2	<2	<2	<2
OIL & GREASE							
Mineral Oil and Grease	mg/L	NG	<3	<3	<3	<3	<3

Footnotes:

* Canadian Council of Ministers of the Environment, Canadian Water Quality Guidelines for the Protection of Aquatic Life, update 7.1, December 2007

NG - No guideline

Highlighted values indicate an exceedence of the CCME guideline

Table 7.11: Minesite Water Quality Field Measurements - Western Channel Temporary Crossing

Sample ID	WCUS									
Date	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	08-Sep-08
Time	-	15:13	11:22	16:45	14:23	-	-	-	-	13:45
Temperature (°C)	4.34	7.77	9.49	14.09	14.55	14.90	13.81	12.19	7.63	7.24
pH	8.26	8.38	7.36	6.33	7.21	7.59	7.2	7.88	7.73	6.83
DO (%)	-	-	88.1	83.4	68.5	67.5	79.1	87.5	73.6	72.9
DO (mg/L)	-	-	9.99	-	-	-	-	-	-	-
Specific Conductivity (uS/cm)	17	22	15	12	14	13	14	17	27	19
Turbidity (NTU)	1.44	0.66	0.4	0	0.62	0.23	0.42	0.04	3.35	23.10

Sample ID	WCDS									
Date	21-Jun-08	5-Jul-08	13-Jul-08	21-Jul-08	31-Jul-08	3-Aug-08	10-Aug-08	23-Aug-08	30-Aug-08	08-Sep-08
Time	-	15:17	11:30	16:40	14:20	-	-	-	-	14:25
Temperature (°C)	4.76	7.04	9.01	14.07	14.6	14.87	14.49	12.08	7.92	7.13
pH	8.27	8.27	7.33	5.29	7.51	7.41	6.89	6.89	7.31	6.82
DO (%)	-	-	86.6	83.3	69.7	68.8	91.5	87.3	76.6	71.6
DO (mg/L)	-	-	9.91	-	-	-	-	-	-	-
Specific Conductivity (uS/cm)	18.3	15	13	13	13	13	13	19	23	19
Turbidity (NTU)	7.15	1.15	0.08	0	0.69	0.16	0.01	47.2	8.18	27.30

Table 7.12: Blast Monitoring at the North Portage Starter Pit

Date	Location	Distance to Monitor (m)	Distance to Nearest Shore (m)	Tonnage blast (T)	Explosive (KG/delay)	PPV (mm/s)	SD (m/(kg^0.5))	Average K (center Blast)	OverPressure (pa.(L))	(sec)	PPV at Nearest Shore (mm/s)
7-Oct-08	5145001	366.162	299	20000	740.27	26.7	13.4579279	1709.528621	143	1.036	36.9
9-Oct-08	5145002	386.55	335	38000	159	12.1	30.66	2891.99	120	1.162	15.2
11-Oct-08	5145003	415	352	33000	330	11.4	22.03	1704.04	390	0.969	14.9
16-Oct-08	5145004	420.67	339	33360	186	10.7	30.85	2583.00	92.8	1.115	15.1
19-Oct-08	5145008	418	397	27365	443	8.19	22.02	1153.00	51.3	1.609	10.5
21-Oct-08	5145009	465.74	415	31395	230	6.9	30.71	1654.00	34.5	1.302	8.3
23-Oct-08	5145010	413.68	396	26471	164	5.52	33.87	1548.00	85	1.275	6.4
25-Oct-08	5145011	479.91	443	16800	253	4.09	30.15	952.00	126	1.33	4.6
31-Oct-08	5145005	458.67	355	40000	357.77	8.98	23.47	1399.67	126	1.33	12.8
4-Nov-08	5145006	464.96	380	55000	564	9.84	19.58	1097.43	75.5	1.506	13.0
8-Nov-08	5145007	490.07	331	55000	393	8.99	24.72	1522.86	47.5	1.366	16.8
14-Nov-08	5140012	515.18	485	28000	564	6.84	20.97	890.67	30.8	1.814	7.1
16-Nov-08	5140013	538.3	512	23250	293	6.62	31.45	1648.17	47.8	1.489	7.2
18-Nov-08	5140014	521.45	510	58000	421.1	10.3	25.41	1823.35	69.5	1.579	10.7
21-Nov-08	5140015	520.16	508.46	70000	363.9	6.89	27.27	1722.08	23.5	1.675	9.0
28-Nov-08	5140016	457.32	438.54	73700	320	9.34	25.42	1654.02	27	1.45	9.9
1-Dec-08	5140017	452.26	420	33000	210	6.71	31.19	1648.86	19.3	1.883	7.5
8-Dec-08	5140018	399.74	381	29000	405	14	19.86	1671.12	105	1.453	15.1
12-Dec-08	5140019	408.2	319	63360	390	8.42	20.67	1071.17	194	1.199	12.5
14-Dec-08	5140022	315.1	411	17200	232	9.54	20.69	1215.28	154	1.782	6.2
16-Dec-08	5140024/26	454.2	436	25500	200.4	4.81	32.08	1236.58	331	1.23	5.1
17-Dec-08	5140019/2	379.2	361	14850	267.3	7.78	23.19	1190.06	32.5	1.279	8.4
19-Dec-08	5140030	393.4	360	29800	205	6.54	27.48	1311.93	45.3	1.216	7.5
20-Dec-08	5135001	437.6	441	49400		8.89	33.96	2503.45	91.8	1.319	0.0
21-Dec-08	5140028	461.1	440	19350		5.38	36.15	1673.87	35.3	1.676	0.0

Footnotes:

Highlighted concentrations exceed the DFO criteria for Use of Explosives in or near Canadian Fisheries Waters (Wright and Hopky, 1998)

Table 7.13: Water Quality QAQC Data for Minesite

Sampling Date	UNITS	QP-1 13-Jul-08	DUP-1 13-Jul-08	RPD (%)	MP-2 13-Jul-08	DUP-2 13-Jul-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	31	32	-3.17	61	62	-1.63
Magnesium	mg/L	8	8	0	14	14	0
Total Hardness	mg/L	110	110	0	210	210	0
METALS ICP-MS							
Aluminum	ug/L	1500	1600	-6.45	790	820	-3.73
Antimony	ug/L	1.1	<1.0	75	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	5.6	5.6	0	9.3	9.0	3.28
Barium	ug/L	76	78	-2.60	76	76	0
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	7.7	7.8	-1.29	13	13	0
Cobalt	ug/L	2.4	2.3	4.26	3.0	3.2	-6.45
Copper	ug/L	9.0	10	-10.53	11	18	-48.28
Manganese	ug/L	230	230	0	240	260	-8.00
Molybdenum	ug/L	2.7	2.8	-3.64	17	17	0
Nickel	ug/L	6.2	6.2	0	4.6	4.1	11.49
Sodium	ug/L	4500	4600	-2.20	18000	19000	-5.41
Zinc	ug/L	9.9	9.2	7.33	8.9	13	-37.44
Selenium	ug/L	4.8	4.4	8.70	3.2	3.1	3.17
Lead	ug/L	3.7	3.9	-5.26	7.7	8.5	-9.88
Thallium	ug/L	<2.0	<2.0	0.00	<2.0	<2.0	0
CONVENTIONALS							
Conductivity	mmhos/cm	0.35	0.35	0.00	0.76	0.76	0
Fluoride	mg/L	0.5	0.5	0.00	0.7	0.7	0
Nitrogen ammonia	mg/L	4.1	4.0	2.47	5.6	5.5	1.80
pH	pH	7.9	7.8	1.27	7.7	7.8	-1.29
Nitrate and Nitrite	mg/L	13	14	-7.41	42	39	7.41
Sulfates	mg/L	9.6	9.7	-1.04	94	100	-6.19
Total suspended solids	mg/L	14	8	54.55	15	13	14.29
OIL & GREASE							
Mineral Oil and Grease	mg/L	<3	<3	0	<3	<3	0

Footnotes:
RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.13: Water Quality QAQC Data for Minesite

Sampling Date	UNITS	QP-1 3-Aug-08	DUP-1 3-Aug-08	RPD (%)	ST-27 3-Aug-08	DUP-2 3-Aug-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	41	42	-2.41	18	18	0
Magnesium	mg/L	10	10	0	3	3	0
Total Hardness	mg/L	140	150	-6.90	57	57	0
METALS ICP-MS							
Aluminum	ug/L	830	860	-3.55	36	34	5.71
Antimony	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	2.5	2.4	4.08	<1.0	<1.0	0
Barium	ug/L	69	68	1.46	15	15	0
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	3.8	3.2	17.14	1.2	<0.50	131.03
Cobalt	ug/L	1.6	1.6	0	<0.50	<0.50	0
Copper	ug/L	6.3	8.3	-27.40	4.7	2.2	72.46
Manganese	ug/L	190	190	0	6.0	5.4	10.53
Molybdenum	ug/L	4.2	4.1	2.41	<0.50	<0.50	0
Nickel	ug/L	3.4	3.3	2.99	<1.0	<1.0	0
Sodium	ug/L	6700	7000	-4.38	3800	3800	0
Zinc	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Selenium	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Lead	ug/L	1.4	1.3	7.41	0.29	0.10	97.44
Thallium	ug/L	<2.0	<2.0	0	<2.0	<2.0	0
CONVENTIONALS							
Conductivity	mmhos/cm	0.39	0.40	-2.53	0.16	0.16	0
Fluoride	mg/L	0.5	0.5	0	0.1	0.1	0
Nitrogen ammonia	mg/L	3.4	3.4	0	0.17	0.17	0
pH	pH	7.9	8.0	-1.26	7.5	7.6	-1.32
Nitrate and Nitrite	mg/L	17	16	6.06	3.6	3.5	2.82
Sulfates	mg/L	9.5	9.2	3.21	7.4	7.2	2.74
Total suspended solids	mg/L	8	6	28.57	<2	<2	0
OIL & GREASE							
Mineral Oil and Grease	mg/L	<3	<3	0	<3	<3	0

Footnotes:
RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.13: Water Quality QAQC Data for Minesite

Sampling Date	UNITS	QP-1 19-Aug-08	DUP-1 19-Aug-08	RPD (%)	ST-27 19-Aug-08	DUP-2 19-Aug-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	43	41	4.76	18	18	0
Magnesium	mg/L	11	11	0	3	3	0
Total Hardness	mg/L	150	150	0	57	57	0
METALS ICP-MS							
Aluminum	ug/L	960	820	15.73	70	59	17.05
Antimony	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	2.4	2.0	18.18	<1.0	<1.0	0
Barium	ug/L	92	87	5.59	19	18	5.41
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0.00
Chromium	ug/L	3.8	4.6	-19.05	6.7	1.3	135.00
Cobalt	ug/L	1.6	1.5	6.45	<0.50	<0.50	0
Copper	ug/L	10	8.1	20.99	5.0	1.9	89.86
Manganese	ug/L	170	170	0	15	14	6.90
Molybdenum	ug/L	4.4	4.2	4.65	<0.50	<0.50	0
Nickel	ug/L	2.0	1.7	16.22	<1.0	<1.0	0
Sodium	ug/L	9800	9700	1.03	4200	4200	0
Zinc	ug/L	6.8	6.0	12.50	4.8	1.2	120.00
Selenium	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Lead	ug/L	2.1	1.9	10.00	0.20	0.10	66.67
Thallium	ug/L	-	-	-	-	-	-
CONVENTIONALS							
Conductivity	mmhos/cm	0.44	0.44	0	0.18	0.18	0
Fluoride	mg/L	0.4	0.4	0	0.1	<0.1	66.67
Nitrogen ammonia	mg/L	1.4	1.4	0	0.10	0.14	-33.33
pH	pH	7.8	7.8	0	7.3	7.8	-6.62
Nitrate and Nitrite	mg/L	19	19	0	3.4	3.4	0
Sulfates	mg/L	13	12	8	9.5	9.2	3.21
Total suspended solids	mg/L	30	44	-37.84	4	3	28.57
OIL & GREASE							
Mineral Oil and Grease	mg/L	-	<3	0	<3	-	0

Footnotes:
RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.13: Water Quality QAQC Data for Minesite

Sampling Date	UNITS	ST-27 8-Sep-08	DUP-1 8-Sep-08	RPD (%)
METALS				
Mercury	mg/L	-	-	-
Calcium	mg/L	20	20	0
Magnesium	mg/L	3	3	0
Total Hardness	mg/L	63	62	1.6
METALS ICP-MS				
Aluminum	ug/L	66	92	-32.91
Antimony	ug/L	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0
Arsenic	ug/L	<1.0	<1.0	0
Barium	ug/L	16	20	-22.22
Cadmium	ug/L	<0.20	<0.20	0
Chromium	ug/L	<0.50	<0.50	0
Cobalt	ug/L	<0.50	<0.50	0
Copper	ug/L	1.8	2.1	-15.38
Manganese	ug/L	12	17	-34.48
Molybdenum	ug/L	<0.50	<0.50	0
Nickel	ug/L	6.4	1.2	136.84
Sodium	ug/L	5200	5100	1.94
Zinc	ug/L	<1.0	3.3	-147.37
Selenium	ug/L	<1.0	<1.0	0
Lead	ug/L	<0.10	<0.10	0
Thallium	ug/L	-	-	-
CONVENTIONALS				
Conductivity	mmhos/cm	0.16	0.16	0
Fluoride	mg/L	<0.1	<0.1	0
Nitrogen ammonia	mg/L	0.08	0.08	0
pH	pH	8.1	8.0	1.24
Nitrate and Nitrite	mg/L	2.4	2.5	-4.08
Sulfates	mg/L	8.0	8.2	-2.47
Total suspended solids	mg/L	<2	<2	0
OIL & GREASE				
Mineral Oil and Grease	mg/L	<3	<3	0

Footnotes:
RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.14: Water Quality QAQC Data for AWPAR

Sampling Date	UNITS	KM 16.7 22-Jun-08	DUP-1 22-Jun-08	RPD (%)	Q-5 22-Jun-08	DUP-2 22-Jun-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	14	14	0	<1	<1	0
Magnesium	mg/L	2	2	0	<1	<1	0
Total Hardness	mg/L	44	44	0	<1	<1	0
METALS ICP-MS							
Aluminum	ug/L	57	59	-3.45	580	<1.0	199.66
Antimony	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Silver	ug/L	.10	<0.10	66.67	<0.10	<0.10	0
Arsenic	ug/L	1.0	<1.0	66.67	<1.0	<1.0	0
Barium	ug/L	30	30	0	11	<2.0	166.67
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	<0.50	<0.50	0	<0.50	<0.50	0
Cobalt	ug/L	1.3	1.3	0	1.4	1.3	7.41
Copper	ug/L	<0.50	<0.50	0	<0.50	<0.50	0
Manganese	ug/L	190	190	0	14	14	0
Molybdenum	ug/L	<0.50	<0.50	0	<0.50	<0.50	0
Nickel	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Sodium	ug/L	3900	3700	5.26	250	280	-11.32
Zinc	ug/L	2.4	<1.0	131.03	<1.0	<1.0	0
Selenium	ug/L	1.2	<1.0	82.35	1.8	1.1	48.28
Lead	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Thallium	ug/L	<2.0	<2.0	0	<2.0	<2.0	0
CONVENTIONALS							
Conductivity	mmhos/cm	0.12	0.12	0	0.008	0.008	0
Fluoride	mg/L	<0.1	<0.1	0	<0.1	<0.1	0
Nitrogen ammonia	mg/L	0.05	0.05	0	0.13	0.14	-7.41
pH	pH	7.1	6.8	4.32	6.8	7.1	-4.32
Nitrate and Nitrite	mg/L	0.02	0.04	-66.67	0.27	0.26	3.77
Sulfates	mg/L	0.8	0.8	0	0.6	0.6	0
Total suspended solids	mg/L	6	5	18.18	24	23	4.26
OIL & GREASE							
Mineral Oil and Grease	mg/L	<3	<3	0	<3	<3	0

Footnotes:

RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.14: Water Quality QAQC Data for AWPAR

Sampling Date	UNITS	Q-15 14-Jul-08	DUP-1 14-Jul-08	RPD (%)	KM 69 14-Jul-08	DUP-2 14-Jul-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	20	20	0	14	14	0
Magnesium	mg/L	5	4	22.22	7	7	0
Total Hardness	mg/L	71	68	4.32	64	63	1.57
METALS ICP-MS							
Aluminum	ug/L	280	230	19.61	1900	1500	23.53
Antimony	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Barium	ug/L	96	91	5.35	62	56	10.17
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	<0.50	<0.50	0	3.1	<0.50	170.15
Cobalt	ug/L	2.2	2.1	4.65	4.0	3.6	10.53
Copper	ug/L	9.7	9.5	2.08	7.8	6.7	15.17
Manganese	ug/L	39	39	0	380	330	14.08
Molybdenum	ug/L	25	24	4.08	<0.50	<0.50	0
Nickel	ug/L	4.9	4.6	6.32	8.8	7.9	10.78
Sodium	ug/L	22000	22000	0	9000	8100	10.53
Zinc	ug/L	7.1	7.4	-4.14	17	18	-5.71
Selenium	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Lead	ug/L	3.5	3.5	0	3.3	2.4	31.58
Thallium	ug/L	<2.0	<2.0	0	<2.0	<2.0	0
CONVENTIONALS							
Conductivity	mmhos/cm	0.42	0.42	0	0.28	0.28	0
Fluoride	mg/L	0.3	0.3	0	0.2	0.2	0
Nitrogen ammonia	mg/L	8.4	8.7	-3.51	2.4	2.2	8.70
pH	pH	7.9	7.8	1.27	7.2	6.8	5.71
Nitrate and Nitrite	mg/L	22	25	-12.77	5.7	5.8	-1.74
Sulfates	mg/L	23	25	-8.33	73	72	1.38
Total suspended solids	mg/L	6	6	0	13	12	8.00
OIL & GREASE							
Mineral Oil and Grease	mg/L	<3	<3	0	<3	<3	0

Footnotes:

RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.14: Water Quality QAQC Data for AWPAR

Sampling Date	UNITS	Q4 4-Aug-08	DUP-1 4-Aug-08	RPD (%)	Q13 4-Aug-08	DUP-2 4-Aug-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	16	16	0	47	45	4.35
Magnesium	mg/L	3	3	0	6	6	0
Total Hardness	mg/L	54	53	1.87	140	140	0
METALS ICP-MS							
Aluminum	ug/L	360	330	8.70	52	49	5.94
Antimony	ug/L	<1.0	<1.0	0	1.9	2.0	-5.13
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	1.5	1.4	6.90	3.5	3.3	5.88
Barium	ug/L	29	29	0	150	160	-6.45
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	2.1	1.8	15.38	1.5	1.3	14.29
Cobalt	ug/L	<0.50	<0.50	0	2.6	2.5	3.92
Copper	ug/L	8.2	6.8	18.67	11	9.5	14.63
Manganese	ug/L	27	25	7.69	34	34	0
Molybdenum	ug/L	1.6	1.5	6.45	28	28	0
Nickel	ug/L	1.4	1.0	33.33	<1.0	1.3	-88.89
Sodium	ug/L	4300	4200	2.35	13000	13000	0
Zinc	ug/L	7.7	7.4	3.97	<1.0	1.3	-88.89
Selenium	ug/L	<1.0	2.0	-66.67	2.4	<1.0	131.03
Lead	ug/L	0.30	0.37	-20.90	1.6	1.6	0
Thallium	ug/L	<2.0	<2.0	0	<2.0	<2.0	0
CONVENTIONALS							
Conductivity	mmhos/cm	0.15	0.15	0	0.54	0.54	0
Fluoride	mg/L	0.1	0.1	0	0.1	0.2	-66.67
Nitrogen ammonia	mg/L	0.22	0.26	-16.67	10	11	-9.52
pH	pH	6.6	7.7	-15.38	7.9	7.3	7.89
Nitrate and Nitrite	mg/L	4.8	5.1	-6.06	37	36	2.74
Sulfates	mg/L	4.9	4.9	0	20	23	-13.95
Total suspended solids	mg/L	8	6	28.57	2	4	-66.67
OIL & GREASE							
Mineral Oil and Grease	mg/L	<3	<3	0	<3	<3	0

Footnotes:

RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.14: Water Quality QAQC Data for AWPAR

Sampling Date	UNITS	R19 US 4-Aug-08	DUP-3 4-Aug-08	RPD (%)	R16 US 18-Aug-08	DUP-1 18-Aug-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	<1	<1	0	2	2	0
Magnesium	mg/L	<1	<1	0	1	1	0
Total Hardness	mg/L	<1	<1	0	8	9	-11.76
METALS ICP-MS							
Aluminum	ug/L	16	20	-22.22	72	73	-1.38
Antimony	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Barium	ug/L	3.3	2.7	20	4.3	5.2	-18.95
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	1.2	<0.50	131.03	<0.50	5.0	-180.95
Cobalt	ug/L	<0.50	<0.50	0	<0.50	<0.50	0
Copper	ug/L	<0.50	0.79	0	1.7	1.4	19.35
Manganese	ug/L	23	9.5	83.08	3.9	3.2	19.72
Molybdenum	ug/L	<0.50	<0.50	0	<0.50	<0.50	0
Nickel	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Sodium	ug/L	530	530	0	1200	1200	0
Zinc	ug/L	<1.0	<1.0	0	3.4	3.6	-5.71
Selenium	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Lead	ug/L	<0.10	<0.10	0	0.17	<0.10	109.09
Thallium	ug/L	<2.0	<2.0	0	<2.0	<2.0	0
CONVENTIONALS							
Conductivity	mmhos/cm	0.014	0.014	0	0.022	0.022	0
Fluoride	mg/L	<0.1	<0.1	0	<0.1	<0.1	0
Nitrogen ammonia	mg/L	0.24	0.04	142.86	0.05	0.05	0
pH	pH	7.8	7.1	9.40	7.1	6.2	13.53
Nitrate and Nitrite	mg/L	<0.02	<0.02	0	0.03	0.05	-50
Sulfates	mg/L	0.5	0.5	0	1.1	1.3	-16.67
Total suspended solids	mg/L	<2	2	-66.67	<2	4	-120
OIL & GREASE							
Mineral Oil and Grease	mg/L	<3	<3	0	<3	<3	0

Footnotes:

RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.14: Water Quality QAQC Data for AWPAR

Sampling Date	UNITS	R13 DS 18-Aug-08	DUP-2 18-Aug-08	RPD (%)	Q4 18-Aug-08	DUP-3 18-Aug-08	RPD (%)
METALS							
Mercury	mg/L	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Calcium	mg/L	7	7	0	19	19	0
Magnesium	mg/L	2	2	0	4	4	0
Total Hardness	mg/L	25	26	-3.92	65	60	8.00
METALS ICP-MS							
Aluminum	ug/L	16	68	-123.81	620	580	6.67
Antimony	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	<1.0	<1.0	0	1.3	1.3	0
Barium	ug/L	6.3	8.4	-28.57	38	34	11.11
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	<0.50	<0.50	0	<0.50	<0.50	0
Cobalt	ug/L	<0.50	<0.50	0	<0.50	<0.50	0
Copper	ug/L	12	5.8	69.66	6.7	6.1	9.38
Manganese	ug/L	8.2	5.9	32.62	23	26	-12.24
Molybdenum	ug/L	<0.50	<0.50	0	2.1	1.9	10
Nickel	ug/L	1.2	3.1	-88.37	1.2	1.4	-15.38
Sodium	ug/L	840	920	-9.09	6200	6200	0
Zinc	ug/L	9.8	5.9	49.68	5.4	3.4	45.45
Selenium	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Lead	ug/L	0.51	0.22	79.45	1.3	0.88	38.53
Thallium	ug/L	<2.0	<2.0	0	<2.0	<2.0	0
CONVENTIONALS							
Conductivity	mmhos/cm	0.055	0.052	5.61	0.18	0.18	0
Fluoride	mg/L	<0.1	<0.1	0	0.1	0.1	0
Nitrogen ammonia	mg/L	0.04	0.03	28.57	0.09	0.08	11.76
pH	pH	7.7	7.0	9.52	7.6	7.7	-1.31
Nitrate and Nitrite	mg/L	<0.02	<0.02	0	5.8	5.4	7.14
Sulfates	mg/L	1.5	1.6	-6.45	6.0	6.1	-1.65
Total suspended solids	mg/L	<2	10	-163.64	11	6	58.82
OIL & GREASE							
Mineral Oil and Grease	mg/L	3	<3	66.67	<3	<3	0

Footnotes:

RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.14: Water Quality QAQC Data for AWPAR

Sampling Date	UNITS	R19 DS 9-Sep-08	DUP-1 9-Sep-08	RPD (%)	Q7 9-Sep-08	DUP-2 9-Sep-08	RPD (%)
METALS							
Mercury	mg/L	-	-	-	-	-	-
Calcium	mg/L	<1	<1	0	24	24	0
Magnesium	mg/L	<1	<1	0	6	6	0
Total Hardness	mg/L	<1	<1	0	86	85	1.17
METALS ICP-MS							
Aluminum	ug/L	72	68	5.71	460	390	16.47
Antimony	ug/L	<1.0	<1.0	0	1.3	<1.0	88.89
Silver	ug/L	<0.10	<0.10	0	<0.10	<0.10	0
Arsenic	ug/L	<1.0	<1.0	0	1.5	1.4	6.90
Barium	ug/L	3.9	3.9	0	19	17	11.11
Cadmium	ug/L	<0.20	<0.20	0	<0.20	<0.20	0
Chromium	ug/L	7.0	5.4	25.81	<0.50	1.3	-135.48
Cobalt	ug/L	<0.50	<0.50	0	0.68	0.58	15.87
Copper	ug/L	<0.50	0.68	-92.47	5.5	4.5	20.00
Manganese	ug/L	16	8.8	58.06	41	35	15.79
Molybdenum	ug/L	<0.50	<0.50	0	0.68	0.81	-17.45
Nickel	ug/L	1.1	<1.0	75	2.8	3.1	-10.17
Sodium	ug/L	580	550	5.31	3100	3100	0
Zinc	ug/L	<1.0	<1.0	0	4.1	4.0	2.47
Selenium	ug/L	<1.0	<1.0	0	<1.0	<1.0	0
Lead	ug/L	<0.10	<0.10	0	1.2	0.59	68.16
Thallium	ug/L	-	-	-	-	-	-
CONVENTIONALS							
Conductivity	mmhos/cm	0.013	0.013	0	0.21	0.21	0
Fluoride	mg/L	<0.1	<0.1	0	<0.1	<0.1	0
Nitrogen ammonia	mg/L	0.05	0.07	-33.33	0.07	0.04	54.55
pH	pH	6.8	6.8	0	7.6	7.5	1.32
Nitrate and Nitrite	mg/L	<0.02	<0.02	0	0.23	0.21	9.09
Sulfates	mg/L	0.6	0.7	-15.38	31	30	3.28
Total suspended solids	mg/L	7	3	80	<2	<2	0
OIL & GREASE							
Mineral Oil and Grease	mg/L	<3	<3	0	<3	<3	0

Footnotes:

RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.14: Water Quality QAQC Data for AWPAR

Sampling Date	UNITS	KM 71.0 9-Sep-08	DUP-3 9-Sep-08	RPD (%)
METALS				
Mercury	mg/L	-	-	-
Calcium	mg/L	9	9	0
Magnesium	mg/L	2	2	0
Total Hardness	mg/L	33	33	0
METALS ICP-MS				
Aluminum	ug/L	130	150	-14.29
Antimony	ug/L	<1.0	<1.0	0
Silver	ug/L	<0.10	<0.10	0
Arsenic	ug/L	1.3	1.4	-7.41
Barium	ug/L	21	21	0
Cadmium	ug/L	<0.20	<0.20	0
Chromium	ug/L	0.60	<0.50	82.35
Cobalt	ug/L	2.5	2.8	-11.32
Copper	ug/L	4.8	7.9	-48.82
Manganese	ug/L	170	180	-5.71
Molybdenum	ug/L	<0.50	<0.50	0
Nickel	ug/L	4.4	4.5	-2.25
Sodium	ug/L	1100	1100	0
Zinc	ug/L	7.0	8.4	-18.18
Selenium	ug/L	1.8	<1.0	113.04
Lead	ug/L	<0.10	1.4	-186.21
Thallium	ug/L	-	-	-
CONVENTIONALS				
Conductivity	mmhos/cm	0.071	0.071	0
Fluoride	mg/L	<0.1	<0.1	0
Nitrogen ammonia	mg/L	0.06	0.06	0
pH	pH	6.8	7.1	-4.32
Nitrate and Nitrite	mg/L	<0.02	<0.02	0
Sulfates	mg/L	0.9	0.8	11.76
Total suspended solids	mg/L	<2	<2	0
OIL & GREASE				
Mineral Oil and Grease	mg/L	<3	<3	0

Footnotes:

RPD = Relative Percent Difference

When necessary, RPD values were calculated at half method detection limit

Highlighted values indicate exceedences of the RPD data quality objectives

Table 7.15: Water Usage

Month	Type of Use	Water Usage (m^3)	Comments
June	Pump Truck	174.00	Issuance of type B water license 8BC-TEH0809 with an allowable water use limit of 1,860 m^3/month
	Domestic	987.03	Includes domestic water usage under 2BE-MEA0813, not metered separately
	June Total	**1,161.03**	
July	Pump Truck	186.00	Issuance of type A water license 2AM-MEA0815 with an allowable water use limit of 58,333 m^3/ month
	Domestic	1,355.10	Includes domestic water usage under 2BE-MEA0813, not metered separately
	July Total	**1,541.10**	
August	Batch Plant	237.40	Includes exploration water usage under 2BE-MEA0813 until August 14. 2BE-MEA0813 domestic water usage metered separately as of August 15, 2008
	Water Treatment Plant	1,557.08	
	August Total	**1,794.48**	
September	Batch Plant	552.00	
	Water Treatment Plant	1,610.22	
	September Total	**2,162.22**	
October	Batch Plant	600.00	
	Water Treatment Plant	1,563.16	
	October Total	**2,163.16**	
November	Batch Plant	228.00	
	Water Treatment Plant	1,508.66	
	November Total	**1,736.66**	
December	Batch Plant	58.00	
	Water Treatment Plant	1,542.11	
	December Total	**1,600.11**	

2008 Total Water Usage (June-December) 12,158.75