19 January 2012

Ms. Phyllis Beaulieu
Licencing Coordinator
Nunavut Water Board
P.O. Box 119
Gjoa Haven
NU, X0B1J0

Re: **Water License Application for the Phase 1 Meliadine All Weather Access Road (AWAR): Agnico-Eagle Mines Limited (AEM)**

Dear Ms. Beaulieu;

Agnico-Eagle Mines Limited (AEM) received from Dr. Kharatyan two sets of comments on its application for a new class B licence for the All Weather Access Road (AWAR). These were from Environment Canada (EC) and Aboriginal Affairs and Northern Development Canada (AANDC). Each letter provides advice to AEM, suggested corrections to the Transportation Spill Plan as well as raising a number of issues where more information was requested. The comments from EC and AANDC are addressed in the order they are presented in their letters.

The substantive parts of EC's and AANDC's letters are reproduced below subsequently followed by AEM's replies in italics.

Environment Canada

Acid Rock Drainage / Metal Leaching (ARD/ML) of Road Construction Material

Page 116 of the environmental assessment indicates AEM plans to conduct visual examinations if quarry materials for sulphur species and additional ARD/ML from each quarry and borrow source before and during construction. To ensure adequate samples sizes are taken for geochemical characterization of borrow and quarry materials, EC recommends the Proponent refer to the most recent version of the *Mine Environmental Neutral Drainage Prediction Manual* (MEND Report 1.20.1; Price 2009), which provides useful guidance on the prediction and mitigation of drainage chemistry from sulphidic geological materials. The Proponent is advised to adhere to the recommended practices for sampling, monitoring and testing during and following the excavations.

AEM is aware of this guidance document and uses it on a regular basis in its work. For this project AEM confirms that it has and will continue to utilize the MEND 2009 guidance on sampling and testing of geological material for borrow and quarry materials used for road construction. This will be done during and following excavations.

Borrow Pit and Quarry Management Plan

Section 6 of the Plan indicates that rock fill will undergo confirmatory testing during road construction to ensure no material used in the road is acid-generating. Specifically, for every 10,000 m^3 of material removed from a borrow pit or rock quarry a sample will be collected for static testing - ARD and metal leaching. As per the MEND Manual (Price 2009), EC recommends the Proponent increase their sample collection from 1 to 3 samples per 10,000 m^3 of material.

The suggested initial sampling based on tonnage when sampling without prior information is recommended in table 8.2 (MEND Report 1.20.1, Price 2009) as 3 samples when the tonnage is less than 10,000 tonnes. AEM concurs with this recommendation and will collect 3 samples/10,000 tonnes.

Road and Bridge Material

EC seeks clarification on what materials are planned for use in deck construction. If wood is being considered for bridge decking, EC does not support the use of creosote or CCA-treated wood for this purpose. In addition, EC advises against the use of grating in bridge design as this provides a pathway for road bed material entry into streams and can negatively impact the aquatic ecosystem.

AEM opted for clear span bridges at three locations along the All Weather Access Road (AWAR). This was principally done to avoid impacts on fish and fish habitat. In this manner Fisheries and Oceans Canada's Operational Statement for Clear Span Bridges will be respected. A standard northern clear span bridge design for remote areas was used. This is a steel structure having steel grating for the deck.

Steel grating is to be used because of safety considerations and load bearing capacity. There always remains a possibility that a vehicle will slip on a snow-ice covered or wet bridge deck leading to an accident. Steel grating provides traction under all weather conditions as neither snow nor ice will accumulate on its surface. To do otherwise would compromise road safety, something AEM does not care to do.

The bridge design for the three bridges to be installed is based on Canadian Highway Code - CSA, S6-06, CL-625. The design stress loads of two 18m long vehicles of GVW (gross vehicle weight) of 62,500 kg are considered travelling simultaneously on a bridge. The loading is factored by 40% dynamic allowance and another 60% safety factor. The ultimate capacity is around 280,000 kg. These requirements cannot easily be met using a wood deck.

The driving surface of the road will be topped with minus 2 inch gravel and that smaller than minus 1 inch could fall through the grating. But this normally occurs on the first few metres of the bridge deck. As all the bridges are clear span with all ancillary infrastructure above the ordinary high water mark, most coarse material falling through the grating will not end up in the river but in the rip rap and on the river bank. The small amount falling into the water should not have a significant adverse impact on the rivers and stream.

The Proponent also mentions that geo-textile material will be optional at the base of the road bed material over thaw susceptible soils. EC recommends best practices be used, such as routine installation of geo-textile material in thaw susceptible soils or other methods recommended by the geotechnical engineer to provide greater structural integrity to the road base.

Construction of the All Weather Access Road (AWAR) will be carried out based on the engineering design and construction recommendations provided in the supporting document to the Road Environmental Assessment by Golder Associates, "Report on All Weather Access Road Meliadine Gold Project Feasibility Level Design", dated 20 January 2011 (Golder 2011)

The required use and placement of geotextile will be assessed by the geotechnical engineer during construction of the road, and will be based on the season during which construction occurs and on the location of thaw susceptible materials as stated in the following excerpt from the supporting document:

> *"It is assumed that the proposed AWAR will be built during winter or in cold temperatures and that geotextile placement may be omitted during the winter construction. However, the road project should have on site a reasonable quantity if the construction carries on in thaw season. A geotextile fabric should be installed in areas with thaw-susceptible sub-grades. The geotextile should be non-woven needle punched with a minimum mass of 200 g/m2."* (Section 4.3, 2nd paragraph p. 10, Golder 2011)

Use of Dust Suppressants

Section 5.1.4.5 of the EA and p.15 of the *Transportation Management Plan* indicated that chemical dust suppressants will be used to control road dust as a last resort and only in accordance with the Government of Nunavut's *Environmental Guideline for Dust Suppression.* If AEM considers use of DL 10, EC recommends the product not be applied within 30 m of either side of all water bodies intersected or adjacent to the Meliadine AWAR. EC does not recommend the use of Bunker C or calcium chloride unless the Proponent can demonstrate the products can be applied and used effectively without mitigation into surface waters adjacent to the road.

AEM will ensure that any dust suppressants used do not impact surface waters adjacent to the road.

Water Quality Monitoring Plan

...On this basis it is not clear why the Char River and Meliadine River crossings were not selected for (water quality) monitoring. As a best practice, EC recommends all crossings be monitored in the first open water season following road construction.

AEM commits to sampling all eleven water crossings including the Char and Meliadine Rivers in the first open water season following road construction. The details are presented in the attached November 6, 2011 Monitoring Plan for the AWAR. This Plan covers water quality, wildlife, road fill testing, permafrost, and hydrology monitoring.

As another point of clarification, p.28 of the EA indicates 10 borrow sources will be used for road construction while the Monitoring Plan indicates 8 will be used. The Monitoring Plan should be revised to reflect the number of borrow sources that will be used in road construction.

The Monitoring Plan identified 5 rock quarries and 8 borrow pits. Since that time a detailed survey of the road, rock quarries and borrow pits was completed resulting in further changes. The number of rock quarries has been reduced to 3 and the number of borrow pits to 7 as outlined in the table below. A total of 400,000 m^3 of material is required to build the Phase1 AWAR.

ROCK QUARRIES			
ID number	Surface (ha)	Volume (m3)	Final estimated floor Elevation
R19	1.80	40,000	11.00
R14 / RQ04	1.35	30,000	40.50
R5 / RQ18	1.75	30,000	85.00
Sub -Total (A) :	**4.90**	**100,000**	
GLACIAL MATERIAL - BORROW PITS			
ID number	Surface (ha)	Volume (m3)	Final estimated floor Elevation
B15	1.60	24,000	26.00
B13	1.40	45,000	46.75
B12	1.40	26,000	69.00
B11A	3.40	50,000	80.50
B10	2.05	55,000	0.00
B6A	2.00	45,000	67.50
B5	1.45	55,000	65.70
Sub-Total (B):	**13.30**	**300,000**	
G-Total (A+B)	**15.10**	**400,000**	

Transportation Spill Contingency Plan

Pages 13 and 24 of the Plan make reference to the 24-hour contact number for EC. In the next revision of the Plan, this number should be removed as it is no longer in service. In addition, the EC contact numbers on p 24...should be removed as they are no longer in service.

Environment Canada's phone numbers have been updated in the spill plan. The updated Plan will be sent to the Nunavut Water Board once all changes have been incorporated. This will follow issuance of the new class B water licence for the AWAR.

The Plan makes reference to contained spilled contaminants and materials used to clean up spills in containers and/or sea cans. Prior to shipment south for final disposal, EC recommends any containers housing contaminants and spent materials used to contain a spill be stored within secondary containment.

Materials recovered from a spill or spent materials will have secondary containment when they are shipped south for final treatment and/or disposal.

EC Codes and Guidelines

Environment Canada recommends that the Proponent refer to the Environmental Code of Practice for Metal Mines (Code) (Environment Canada 2009) for the development of the Phase 1 of the AWAR.

AEM will refer to the "Environmental Code of Practice for Metal Mines, (Environment Canada 2009)" for the development of the Phase 1 AWAR.

In addition, EC would like to inform the Proponent that a revised version of the Guidelines for the Assessment of Alternatives for Mine Waste Disposal was released in September 2011.

AEM is aware of this new guidance document and is applying it ("Guidelines for the Assessment of Alternatives for Mine Waste Disposal, (September 2011)) in finding the best option for tailings disposal and waste rock placement.

Wildlife

The Proponent has acknowledged the prohibition against disturbing or destroying the nests of migratory birds and intends to remove vegetation from borrow / quarry sites and prepare the footprint of the AWAR prior to the migratory bird breeding season...While this approach may help to limit the potential for destruction of nests it may not necessarily completely eliminate the risk. For project activities that are to be conducted during the nesting season, areas should be checked for nests before work begins and all crew members should be trained on how to recognise signs that a bird might be nesting in the

area. If an active nest is found, the area should be avoided until nesting is completed (i.e. the young have left the vicinity of the nest)...

...Birds that nest adjacent to the footprint of the AWAR and borrow /quarry sits may also be subject to disturbance from construction activities conducted during the breeding season....

Should Project Activities be carried out during the nesting period, AEM will first check the area for nests before work begins. An individual experienced in recognising the presence of bird nests will carry out the survey. No work will be done in the area should an active nest be found; only after the birds have fledged will work commence.

Vehicles, equipment and workers will remain within the footprint of the AWAR to reduce the risk of disturbing or destroying nests in the vicinity of the AWAR and the quarries/borrow pits.

Section 5.1 of the Migratory Birds Convention Act prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which a substance may enter such water or such an area.

AEM has a Transportation Spill Management Plan, which details how spills will be addressed. Materials that have been spilled will not be left where they can get into water or be accessible to migratory birds.

Aboriginal Affairs and Northern Development Review Comments

Application

AANDC recommends that all relevant leases, permits, conformity checks and screenings as well as any other authorizations be in place and that proper approvals be received before any work commences on the construction of the Phase 1 AWAR.

AEM will not begin any Phase 1 AWAR work without the relevant authorizations in place.

AANDC accepts AEM's letter dated November 9, 2011 describing the amount of water that will be required under this new licence; however, AANDC recommends that AEM specify all known locations where water will be acquired.

The principle sources of water to be used by AEM for dust suppression will be the Meliadine site and any water ponding against the road. Possible secondary sources will include ponds close to the road and streams/rivers at road crossings. In these instances the water intake will have a screen to prevent the impingement of fish.

Questionnaire

AANDC notes that in Table 1 included in Question 1 of the submitted Questionnaire only 10 water crossings are listed, however, throughout the application 11 water crossings are referenced (3 bridges and 8 culvert crossings). AANDC recommends clarification of all stream crossings and the amendment of this table as needed.

The water crossing missing from the table is the Char River, which is not part of the AWAR. The existing Char River bridge will however be replaced by a new one as part of the AWAR activities. A corrected table follows.

	NAT 83		UTM Zone 15V	
Location	**Lat**	**Long**	**Easting (m)**	**Northing (m)**
Char River	62° 51' 31.8"	93° 51' 27.9"		
M2.1	62° 52' 21.8"	92° 07' 10.4"	544790	6971714
M3.0	62° 52' 26.6"	92° 06' 16.6"	545548	6971874
M3.9	62° 52' 36.2"	92° 05' 32.5"	546167	6972178
M5.0	62° 53' 06.5"	92° 04' 58.5"	546634	6973123
M6.7	62° 53' 50.4"	92° 04' 04.3"	547380	6974493
M8.6	62° 54' 36.1"	92° 03' 25.3"	547909	6975915
M11.5	62° 55' 53.8"	92° 03' 55.7"	547445	6978314
M13.3	62° 56' 34.0"	92° 05' 16.6"	546287	6979542
M22.6	62° 59' 51.2"	92° 11' 08.8"	541245	6985577
M23.6	63° 00' 16.6"	92° 11' 12.2"	541188	6986363

AANDC notes that in Section 7, Subsection 14 of the submitted Questionnaire (Contingency Plans), AEM states that the Fuel Management and Spill Contingency Plans required by Water Licenses 2BB-MEL0914 and 2BEMEP0813 will be updated to include activities associated with Phase 1 of the AWAR. If there is any increase in fuel storage in the Meliadine Advanced Exploration Project area as a result of an approval to the submitted water license application these plans should be revised to reflect this information.

The Transportation Spill Contingency Plan and the spill plan for the two water licences, 2BB-MEL0914 and 2BE-MER0813 will be amalgamated into one upon issuance of the new Class B Water Licence. Further, it will reference any additional fuel storage should it be located on site.

Spill Contingency Plan

The project's Spill Contingency Plan should be revised to include the AANDC Manager of Field Operations as the primary AANDC contact for reporting hazardous material spills. The manager can be reached by telephone at (867) 975-4295 or fax at (867) 975-6445.

All suggested changes were made to the spill plan.

AEM should be reminded that they must follow the Government of Nunavut's Spill Contingency Planning and Reporting Regulations. AEM should be reminded that as per direction from the Government of Nunavut's Chief Environmental Protection Officer, all transportation of a Class 3 flammable substance must be conducted in compliance with Transport Canada's Transportation of Dangerous Goods Regulations...

Transportation of a Class 3 flammable substances will be conducted in compliance with Transport Canada's Transportation of Dangerous Goods Regulations. Vehicles transporting fuel will carry at least 10 square metres of polyethylene material (for lining a trench or depression), a spark-proof shovel & oil absorbent blankets or squares.

AANDC recommends the use of drip pans and/or other secondary containment device when refuelling or transferring fuel operations are to take place.

Secondary containment will be employed when refuelling or transferring fuel under field conditions.

Monitoring Plan

AANDC recommends that the submitted Monitoring Plan include monitoring provision for ambient conditions (pre-construction) as a baseline or reference for subsequent monitoring events.

AEM collected water samples at all water crossings in 2011, including the Meliadine River, Char River and Nippisar Lake.

Also AANDC would recommend including in the monitoring plan:

1) Dust suppression: AANDC notes that the use of water for dust suppression purposes is only mentioned in AEM's November 9, 2011 letter to the NWB. AANDC recommends that the submitted Monitoring Plan be revised to include this water usage.

   Water usage was added to the Monitoring Plan.

2) Sedimentation and siltation for stream crossings: AANDC recommends that the proponent address the issue of sedimentation/siltation at stream crossings (i.e., use of silt curtains, best practices, etc for the prevention/mitigation of this issue).

   All construction activities will be subject to sediment control and best management practices that will include standard erosion and sediment control measures (e.g., erosion mats, silt curtains) that will be used, as needed, during construction.

Culverts will be installed during the winter with any debris from construction removed from the stream channels and the immediate vicinity.

Reclamation and Post-closure Plan

AANDC recommends that the submitted Reclamation and Post-closure Plan be revised to include a Post-closure Monitoring Plan to verify that receiving waterbodies will not be negatively impacted after the completion of closure activities (e.g., erosion and sedimentation loadings)

AEM added post closure water quality monitoring to the Monitoring Plan.

Should you have any questions or concerns, please do not hesitate in getting in touch with me at 819 277 5444 or jwitteman@agnico-eagle.com.

Yours sincerely,

John Witteman

Cc. Karén Kharatyan, Ph.D Technical Advisor
Allison Dunn, Environment Canada, Iqaluit
Ian Parsons, Aboriginal Affairs and Northern Development, Iqaluit