



October 2nd, 2015

Sophia Granchinho  
Senior Technical Advisor - Nunavut Impact Review Board  
29 Mitik St P.O. Box 1360  
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**Re: NIRB File No. 11EN010 – Opportunity to address comments received regarding Agnico Eagle Mines Ltd.'s Request with the NWB and KIA for the "Amaruq Exploration Access Road" Project Proposal**

Dear Ms. Granchinho,

As requested, the following responses are intended to address the recommendations and comments outlined in NIRB letter dated September 22<sup>nd</sup>, 2015, which provided AEM the opportunity to address comments received regarding the "Amaruq Exploration Access Road" project proposal.

AEM appreciates that NIRB has provided AEM the opportunity to respond to comments from interveners. It is AEM's position that: the exploration access road project has been previously screened and that this is a modification to the original screening, is within the original project scope for the Amaruq exploration activities, and that AEM maintains that the proposed exploration access road is not a significant impact nor a significant modification.

In this response package, AEM acknowledges the concerns of the interveners and believes that we have addressed their concerns in the proposed design of the road and it's routing (e.g. clear spanning all of the fisheries streams and by building the route away from the esker to the greatest extent possible) or by making commitments during follow-up consultation with stakeholders (e.g. a commitment to avoid valued archaeological sites). It is important to acknowledge that AEM will continue to work with local stakeholders prior to the construction, during construction and during the operation of the Amaruq exploration access road to ensure the concerns that were raised during consultation and in these comments have been adequately addressed.

Hard copies and CDs with electronic copies will be sent to your office by courier. Should you have any questions or require further information, please contact Stephane Robert, or Ryan Vanengen.

Regards,

**Agnico Eagle Mines Limited – Meadowbank Division**

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## General Comments

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- 1.1 Components of project proposal were not previously screened and may be considered a significant modification to the project and change to the original scope of the project.

### AEM's Response:

It is AEM's position that the project has been previously screening. Access to the Amaruq project was previously screened NIRB File No: 11EN010 - winter road and Exploration activity for IVR (now called Amaruq). The current application represents a modification to the "access" for the project from winter road to exploration access road and therefore falls within project scope for the Amaruq project and water licence application. It is AEM's position that the project is within the original Project scope for Amaruq.

AEM maintains that the proposed exploration access road is not a significant modification to the current exploration project. The exploration access road route, operations and design was selected to:

- minimize impact on the terrain and terrestrial environment,
- be constructed with clear span bridges to reduce the impact on streams and the fisheries (i.e. no loss of fish habitat or restricted passage),
- not be located in post calving or calving grounds of caribou,
- be low profile to allow caribou and wildlife to cross,
- be constructed of natural esker material or Vault Pit material that is not potentially acid generating (NPAG),
- will construct the road to avoid and manage construction during sensitive migratory wildlife periods,
- will have a low volume of traffic, and
- will replace the current traffic along the approved winter road or by helicopters currently active between Meadowbank and Amaruq Exploration site.

AEM believes this proposed road will improve access to the site and will allow for advanced exploration to continue safely and economically at Amaruq. Current exploration activities access the Amaruq Site via winter road and by helicopter, which present higher health, safety and environment risks. A change to year round operational access will reduce the potential for health, safety and environmental risk (i.e. less helicopter haulage of fuel and no reliance on a winter road).

AEM has undertaken various field surveys and additional baseline studies to inform mitigation measures ensure the design of the road, construction planning and operational plans are in place for the access road and that potential impacts are minimized. Environmental data and local concerns have been successfully integrated into the design and management of the road. As per the commitments made in the baseline reports and submission in March, in 2015 AEM completed additional:

- terrain vegetation, fisheries, and wildlife studies,
- archaeological surveys,
- site visits and workshops with local stakeholders,
- participated in community sessions



*As an example, during recent community sessions and a site tour of the archaeological sites, AEM committed to not disturbing grave sites near Amaruq. As a result, AEM has redesigning the alignment of the road to avoid identified archaeological sites at km 18 and have committed to building and maintaining snowmobile ramps. For additional information on the 2014/2015 monitoring baseline data and Traditional Knowledge (TK) refer to the attached figures in Appendix A. AEM is committed to and maintains up to date TK map of the site following each consultation session the last consultation session taking place on September 8, 2015. AEM proposes to undertake additional consultation with the HTO elders in November 2015.*

*AEM is confident the information provided in the original application and as part of the current responses of clarification reiterates that it is AEM's position that the project is a simple modification, within the scope of the current water license (NWB 2BE- MEA1318) that has been screening by NIRB previously. Any potential impacts have been assessed and appropriate monitoring and mitigation measure have been provided in the existing management plans and any additional measures can be taken into account by NIRB through recommended terms and conditions of a revised screening report and subsequent amended permits and licences.*

*It is important to acknowledge that AEM will continue to work with local stakeholders (regulatory bodies interveners, HTO, elders, etc.) prior to the construction, during construction and during the operation of the Amaruq exploration access road to ensure the concerns that are raised have been adequately addressed. Furthermore, AEM is committed to submission of an updated Road Management Plan which will include final pre-construction drawings and recommendations made by interveners prior to the issuance of the license. Examples of these drawings are provided in this response package and found in Appendix C.*

- 1.2 Further clarification required on the distribution of accommodations for personnel during the construction of the road, as the number of person days would increase from approximately 18,000 to 73,000. Further information required on whether the addition would exceed previously proposed camp sizes for either the Amaruq or Meadowbank sites.

#### **AEM's Response:**

*During construction and advancement of the Amaruq road, all employees will be lodged at Meadowbank. As per the application, the person day increase from 18,000 to 73,000 reflects changes in original plans to construct the road by having one team advance from Vault in a northern direction, another team start a few months later from Amaruq progressing south, and a specialized culvert and bridge construction team to follow.*

*Since the March 2015 application, the construction approach has changed slightly due to regulatory delays and logistical risks of this approach. As a result, AEM would like to clarify the most recent construction approach. Rather than having two teams advancing from the north and south simultaneously, only one construction team will advance from Vault Pit north toward the Amaruq exploration camp. During construction, all personnel will stay at the Meadowbank Mine site and will be transported to the advancing work site on the Amaruq access road. This does not change the total*



*person days projected in the original application, the number of training hours, nor the socioeconomic assessment in the March application. Once the road reaches Amaruq (estimated at the beginning of 2018, with upgrades made throughout 2018), some personnel will stay at Amaruq to complete the surface layer of the road on the north portion of the access road, but the majority of the employees will continue to be lodged at the Meadowbank mine.*

*Lodging of the road construction crew at Meadowbank will not exceed the existing capacity of the Meadowbank camp.*

- 1.3 Further information required on specific topics covered or feedback received during public consultation sessions conducted by AEM on the proposed Amaruq access road.

**AEM's Response:**

*The below table has been adapted from the main application document Table 6.1-1 and summarizes the consultation sessions to date. Supporting meeting minutes and presentations are provided in Appendix B.*

**Table 1: Summary of Consultation to date**

Date	Description	Attendees
August 27, 2014	Meeting with Hunters and Trappers Organization representatives to present upcoming work on the proposed exploration access road at the Meadowbank Mine Site – reviewed the routing and requested input prior to finalizing construction plans	Hunters and Trappers Organization (HTO) and Agnico Eagle*
August 27, 2014	Pre-construction access road reconnaissance and fly over proposed route and stopped at Amaruq Exploration site with federal representatives	Environment Canada and Agnico Eagle
November 5, 2014	During the Meliadine Aquatic Effects Monitoring Program workshop, Agnico Eagle introduced the access road to local, territorial and federal representatives	Environment Canada, Aboriginal Affairs and Northern Development Canada (AANDC), HTO, and Agnico Eagle
December 2014	Traditional Knowledge workshop with Elders held in Baker Lake	Baker Lake Elders and Agnico Eagle**
January 2015	Meadowbank NWB Type A public meetings as part of the pre-hearing conference; Agnico Eagle presented preliminary exploration results at the Amaruq Exploration site and the available information on the proposed exploration access road	Public presentations open to the Kivalliq; KIA, AANDC, Baker Lake Hamlet, Chesterfield Inlet, Agnico Eagle



Date	Description	Attendees
April 6- 16, 2015	Meetings hosted with federal and territorial regulators to discuss regulatory projects for Agnico Eagle including Amaruq exploration access road	AANDC, NIRB, NWB hosted by Agnico Eagle either by webex or in Iqaluit during the Nunavut Mining Symposium
April 7, 2015	Meetings with the HTO entirely in Inuktitut in Baker Lake to review plans for the 2015 field program	HTO and Agnico Eagle*
May 1 2015	Meeting with DFO in Yellowknife to discuss the access road application and exploration site culvert installations	Agnico Eagle and DFO*
July 6 2015	Informal site visit to Meadowbank and Amaruq Exploration Site. Flew the entire Amaruq Exploration Access Road with 4 HTO members, good conversations with no feedback from HTO	Agnico Eagle and HTO
July 9 2015	Presentation made to KIA and AANDC representatives during site visit	Agnico Eagle, AANDC water resource, KIA inspectors and consultant
September 8, 2015	Hosted a TK/ IQ workshop, archaeological site visit and Amaruq site visit with elders and archaeological consultant. Agnico Eagle intends to invite CLARC members, a KIA representative, HTO representatives.	CLARC, KIA rep, HTO*
September 9 and 10, 2015	Community sessions in Baker Lake hosted by NIRB.	Agnico Eagle, community members, elders, mayor, hto and NIRB representatives
November, 2015 (planned)	Follow-up with HTO and CLARC in Baker Lake and review of the TK/IQ maps updated on September 8, 2015	Hosted by Agnico Eagle

\*meeting minutes and presentations appended

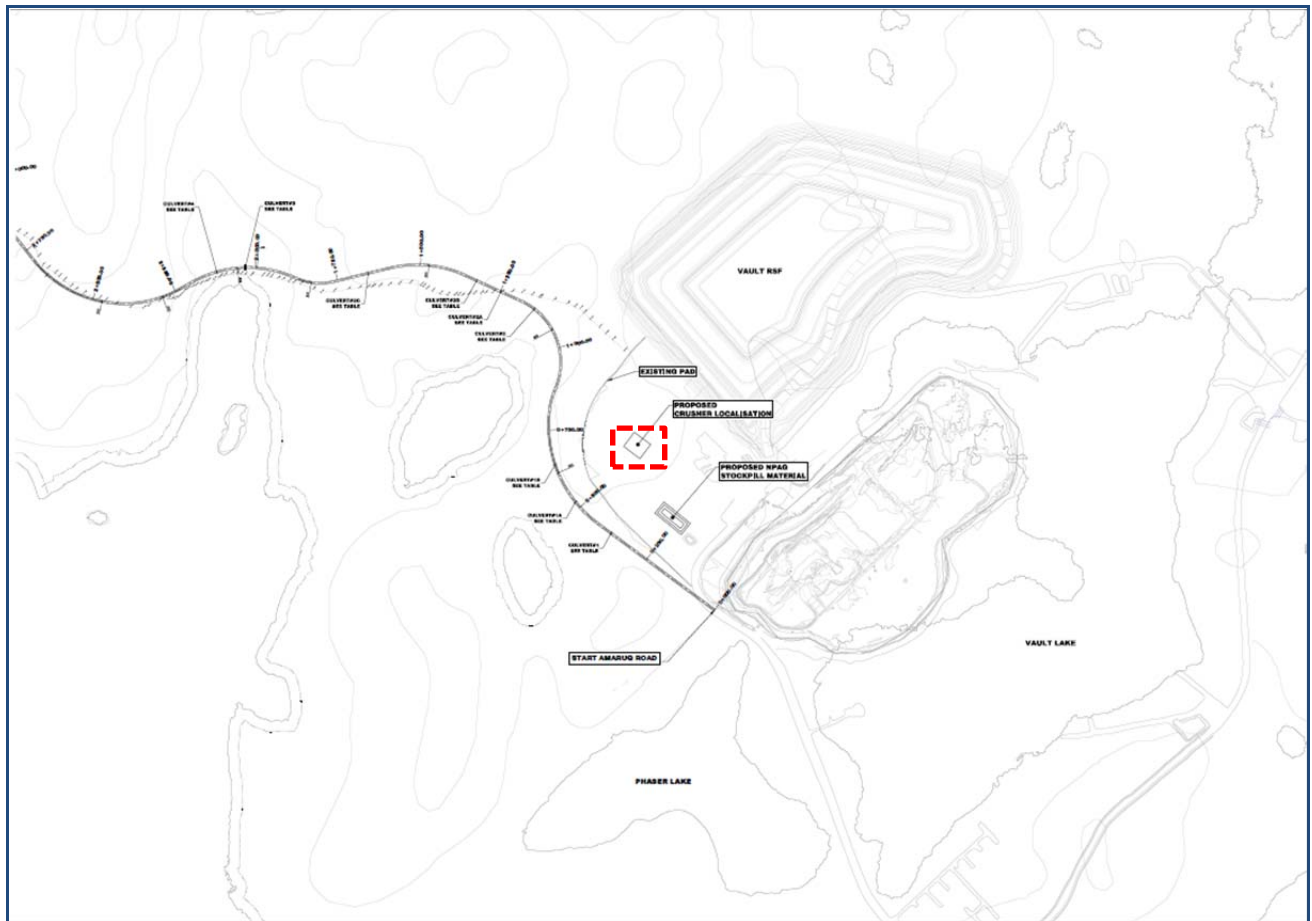
\*\*summary report found on the NWB website: FTP directory

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- 1.4 Further clarification required on the placement and operation of the crusher to be used for the construction of the road. Information should include dust and water quality monitoring stations associated with the crusher.

**AEM's Response:**

*As stated in the application and illustrated in the below figure, the Vault crusher will be staged southwest of the Vault Waste Rock Storage Facility (See Appendix C for a higher resolution drawing). The marginal stock pile and crusher facility is approved for Vault Pit operations (i.e. for haul road and pit road maintenance) and is within the original footprint of the approved Vault waste rock facility for Meadowbank. NWB Type A water license stations ST-23 and ST-24 will continue to monitor the Vault Waste Rock Storage Facility drainage which is directed toward Vault Pit; water in Vault Pit is pumped to the Vault Attenuation Pond as needed.*



- 1.5 No benefits have been observed from the mining industry to Inuit and specifically to Baker Lake Inuit. Information required on how the community of Baker Lake would receive the benefits from this proposal, specifically benefits from employment, training opportunities and skills.

**AEM's Response:**

*The Meadowbank Mine has created significant benefits in the form of employment, training programs and business opportunities to the Inuit of the Kivalliq Region since it commenced operations early in 2010 with a large proportion of these benefits going to residents of Baker Lake. The following summarizes these benefits:*





#### **Direct Employment for Inuit Beneficiaries**

- 241 Inuit Beneficiaries are currently working for AEM at the Meadowbank Mine; all coming from the Kivalliq Region communities; 167 are residents of Baker Lake (approximately 69% of the total Nunavummiut working at Meadowbank). An additional 30 to 50 Inuit Beneficiaries are employed by contractors working at Meadowbank;
- The Meadowbank mine has brought well over \$100 Million in wage income to the Kivalliq region since startup in 2010;
- This employment generates annual wage income of over \$20 Million per year for Inuit families in the Kivalliq Region.
- Many of these Inuit Beneficiaries have been employed since 2009 and can expect to remain employed into 2018.
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#### **Business Opportunities for Local Inuit Firms**

- The Meadowbank Mine spends approximately \$100 million per year with NTI registered companies. In 2014 this was almost 30% of its total expenditure for all goods and services purchased for the mine;
- Since the Project started construction the Meadowbank Mine has spent \$733 Million with NTI registered companies; \$1.1 Billion with Nunavut based companies out of a total expenditure of \$2.7 Billion on all goods and services purchased;
- 27.5% of all expenditures to-date for Goods and Services at Meadowbank has gone to NTI registered Inuit Firms (combined Construction & Operational Phases) - \$433 Million to Baker Lake based businesses.

#### **Skills Training & Long Term Job Experience for Inuit Beneficiaries**

- The Meadowbank Mine has created an extensive well equipped training program on-site. The Mine currently employs 70 Inuit Beneficiaries as heavy equipment operators, most trained on site;
- This program provides Inuit Beneficiaries with approximately 13,000 person hours of skills training every calendar year. Since mine startup it is estimated that Inuit Beneficiaries have received over 55,000 person hours of skills training;
- AEM is a key partner with the KIA in the Kivalliq Mine Training Society which is delivering many training programs to the Kivalliq Region in areas directly tied to employment in the minerals industry
- Last year AEM spent over \$4 Million on training and employee development programs in the Kivalliq Region.

*The Meadowbank Mine contributes significant payments in the form of taxes to both the Government of Canada and to the Government of Nunavut to allow them to provide services to the residents and communities of the Kivalliq Region, monies that otherwise would not be available to both levels of Government:*

#### **Direct Economic Payments to Government**

- Employee paid income taxes paid to the Government of Canada average around \$30 Million per year, \$125 Million since the mine started production



- *Employer paid payroll tax paid to the Government of Nunavut average around \$3 Million per year, \$15 million since the mine started production*
- *Equivalent Municipal land tax paid to GN averages around \$1 Million per year, \$4.5 Million since the mine started production*

*Under the Nunavut Land Claim Agreement, the Meadowbank Mine which is located on Inuit Owned Lands is required to negotiate and implement an Inuit Impact Benefit Agreement with the Kivalliq Inuit Association and a Water Compensation Agreement with the Kivalliq Inuit Association. In addition AEM pays mineral royalties on the gold produced at the Meadowbank Mine. These royalties go to Nunavut Tunngavik Inc. These two organizations represent the Inuit of Nunavut. The amounts paid by AEM to these two organizations are confidential under the terms of the agreements signed with KIA and NTI. However the amounts are substantial. These benefits will be extended as part of the Amaruq exploration access road through construction and operation of the road.*

## **Fuel and Chemical Storage**

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- 2.1 Flaggering of proposed borrow areas and fuel tanks at two of the eskers is suggested to ensure safety of the employees and any recreational users in the immediate vicinity. Recreational users of the area between Baker Lake and Back River area for traditional activities should be made aware of the proposed road and associated borrow areas to enhance safety of all users.

### **AEM's Response:**

*AEM agrees with these suggestions and will mark the suggested areas to ensure the safety of the recreational users and employees. Updates to the Road Management Plan will be made to include this recommendation. AEM will continue to advise the community of Baker Lake of the proposed road route and associated borrow areas through community presentations to reduce safety concerns.*

- 2.2 Spill kits should be located at each fuel storage location and along any refuelling stations on the road.

### **AEM's Response:**

*AEM agrees with these suggestions and has already committed to ensuring spill kits are located at fuel storage and refueling stations as stated in the Emergency Response and Spill Contingency Plan.*

- 2.3 Further information required on the type of explosives to be used to provide rock for the crusher. Ammonium nitrate/fuel oil (ANFO) explosives are of concern to aquatic and terrestrial environments.

### **AEM's Response:**

*The first 17 km of the Amaruq road (to Esker 1) will be constructed from NPAG, non-metals leaching rock obtained from Vault pit. AEM operates its' Meadowbank pits using blasting of ammonium-nitrate (AN) based emulsion explosives. The same emulsion handling and blasting practices will be employed for the*





construction of Amaruq exploration access road. More specifically, AN based emulsion typically contain the following main components:

- Ammonium, sodium and/or calcium nitrate;
- Fuel and/or mineral oil;

Monitoring of explosives handling and blasting at Meadowbank is followed in accordance with a NWB Type A approved Ammonia Management Plan.

Currently, AEM intends to obtain rock material from eskers without the use of blasting to construct the remainder of the road. If blasting is deemed necessary for esker borrowing, AEM will continue to apply standard practices for ammonia management and will use the same ANFO explosives for esker borrowing and associated blasting.

## **Waste Management**

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- 3.1 No mention in the application that sewage or grey water facilities would be created along the access road. Waste management plan should be prepared or updated if it is determined that portable toilets would be used during construction of the road.

### **AEM's Response:**

*The reviewer was correct in identifying that there was no mention of sewage or grey water facilities in the application. AEM appreciates this input and would like to clarify our intentions. AEM does not intend to deposit any sewage, grey water or waste along the access road during construction and operation. AEM is considering using a portable toilet during the construction but the contents of it will be disposed of in an approved sewage treatment facility (i.e. a sucker truck will remove the portable toilet sewage and dispose of it at the Meadowbank Mine sewage treatment plant or the Amaruq biodisk, once the exploration access road is connected).*

- 3.2 Information on shipment and disposal of wastes including hazardous wastes is required.

### **AEM's Response:**

*AEM refers the reviewer to Section 3.1 in the main application document, specifically Tables 3.1-2 and 3.1-3, and Section 4 of the Emergency Response Plan. Based on previous experience and given that maintenance of construction equipment will be centered at the Meadowbank mine maintenance facilities, very little waste is expected to be produced in addition to what has been previously approved at authorized facilities. All waste generated will be backhauled to approved/licensed waste disposal facilities.*

## **Wildlife**

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- 4.1 Proposal located in area between Qamanirjuaq Caribou Protection Area and the Beverly Caribou Protection Area and in an area where caribou and muskox are known to migrate. Recommend proponent refers to the Caribou Protection Measures from relevant agencies.

**AEM's Response:**

*AEM appreciates the comment and will refer to the Caribou Protection Measures from relevant agencies.*

- 4.2 The proposed access road intercepts spring migration pre-calving routes onto calving grounds, fall migration pre and post-breeding routes off of calving grounds, the rut, and winter range; and disturbances from the project activities such as noise may potentially impact sensitive life history stages for caribou. It is recommended that construction be required to take place outside the critical time periods so as to avoid risks to migrating and rutting caribou.

**AEM's Response:**

*AEM has been successful in operating the 105 km road from Baker Lake to Meadowbank since 2008 and the Meliadine advanced exploration road since 2012 with very few caribou near misses or fatalities. AEM will apply the same measures to protect caribou on the Amaruq exploration access road. Fundamental to this success is employee engagement and an understanding/ respect that caribou have the right of way. As a result, AEM has taken measures to ensure the protection of caribou and ensure that all employees participate in an environmental awareness program to familiarize them with an ecologically responsible code of ethics regarding wildlife (in particular caribou) and wildlife habitat. Furthermore, hunting and harassment of any wildlife species will be prohibited and feeding of wildlife will be prohibited during operation and construction of the access road.*

*During the design of the access road, AEM has taken measures to mitigate effects on wildlife habitat include:*

- *choosing an efficient route for the road while avoiding high-value esker habitat to all extents possible,*
- *minimizing the construction footprints, and*
- *completion of the majority of the construction work in the winter season.*

*Various mitigation measures to reduce sensory disturbances will be implemented, include:*

- *ensuring vehicles are properly muffled,*
- *limiting personnel access into adjacent habitat; and*
- *enforcing a 50 km/h speed limit.*

*Caribou collaring data to date suggest that caribou are more spread out in smaller groups during the fall and that the spring migration is more concentrated. Irrespective of this information, as stated in the wildlife section of the Amaruq Road Management Plan (Section 11) AEM will continue to respect all wildlife and will monitor, mitigate, and if necessary will halt operations along the exploration access road during construction and operations. This applies at all times and additional monitoring during critical periods will be employed to avoid risks to migrating caribou.*



- 4.3 Request implementation of mitigation measures to help reduce or eliminate some effects of the project on migratory birds, nests of migratory birds and Species at Risk.

**AEM's Response:**

*AEM will implement mitigative measures to reduce and eliminate effects on migratory birds, nesting of migratory birds and species at risk. Furthermore we are designing the road and activities by maintaining a 30m buffer from water bodies. This is one of the reasons for focusing our construction in the winter and requesting permits by September 2015 (which would allow for construction to be completed primarily in the winter of 2015/16 and 2017/18). Due to the regulatory delay, we have since adjusted our construction schedule, yet continue to be committed to the protection of migratory birds, nesting and species at risk as stated in our main application document.*

- 4.4 It is recommended that the Proponent provide mitigation measures to ensure that domestic food and wastes, as well as petroleum-based chemicals are inaccessible to wildlife.

**AEM's Response:**

*AEM agrees, and will ensure that domestic food and wastes, and petroleum-based chemicals are inaccessible to wildlife.*

- 4.5 Eskers are preferred denning habitat for grizzly bears, wolves, wolverine and foxes. It is recommended that AEM complete pre-construction surveys of the project area to identify all active dens. If evidence of denning or other wildlife habitat features are found, AEM should consider an alternative location for the borrow sources or provide and enforce minimum setback distances between borrow pits and dens. As an example, a minimum setback of 300 metres should be considered during critical breeding periods.

**AEM's Response:**

*AEM refers the reviewer to Appendix A, which is a summary of 2014 and 2015 field data and the baseline terrestrial report found on the NWB website.*

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*AEM has completed pre-construction surveys of the project to identify all active dens. During the 2014 and 2015 field season, numerous wolves were observed near Esker 3 borrow source and a few wolf dens were located within the proposed footprint of the borrow pit. It is important to note that within this landscape, there are approximately 32 eskers (1 that is over 15km in length); AEM has selected 7 of these eskers as borrow pits for the construction of the road. The selected borrow sites were proximal to the road and have few interactions with denning sites or archaeological sites. Based on the information collected to date, only 1 esker planned for borrowing has wolf denning activity.*

*As a result, following discussions with the HTO and after field data collection, AEM has adjusted the borrow area of esker 3 to avoid these denning sites (and archaeological sites) and will commit to*



*avoiding the active wolf den areas during denning season (May 1<sup>st</sup> to October 1<sup>st</sup>). AEM will also conduct additional pre-construction surveys of the eskers to ensure wildlife protection. Between Oct 2<sup>nd</sup> and April 30<sup>th</sup> (wolf territorial migration with Caribou, and late winter den establishment), AEM will operate in the esker borrow areas and during this period of time there will be minimal restrictions for operations. We will hire local wildlife monitors to conduct road surveys, including surveys of the eskers and potential denning sites during construction and during operations. There are no active Grizzly Bear dens, Wolverine dens or Fox dens found in the eskers and no such dens are expected to occur within the access road and borrow area footprint.*

*The wildlife management plan (found in Section 11 of the Road Management Plan of the application package) will be updated prior to construction and will incorporate the wildlife related recommendations and commitments into the plan.*

- 4.6 The Wildlife Management Plan should be updated to include details and commitments related to the currently proposed project activities, as well as updated monitoring procedures as outlined by comments received from the GN.

**AEM's Response:**

*The wildlife management plan (found in Section 11 of the Road Management Plan of the application package) will be updated as part of the NWB review process. AEM will update the plan prior to the construction of the Amaruq Access Road and will incorporate the recommendations and commitments into the plan received from all interveners.*

- 4.7 The Road Management Plan, Section 11.1 Wildlife Monitoring Program should be updated to include two observers instead of one; protocols to minimize the risk of vehicle-related wildlife mortalities due to poor visibility; further investigation of collar data for caribou if there appears to be interaction with the road; and additional monitoring method in addition to road surveys.

**AEM's Response:**

*AEM appreciates the input and will update the wildlife management section (found in Section 11 of the Road Management Plan of the application package) to include:*

- two observers for construction and operational surveys,*
- will continue to work with the GN DOE on caribou collaring data interpretation to ensure the protection of the caribou using real-time caribou collaring data, and*
- will work with the GN and other experts to develop new and innovative ways to monitor wildlife in addition to road surveys (i.e. setting up transects of motion sensing cameras along the road near identified caribou trails)*

*AEM will update the Road Management Plan prior to the construction of the Amaruq Access Road and will incorporate the wildlife related recommendations and commitments above into the plan.*



- 4.8 Potential interaction of muskox with project activities with potential displacement from calving areas could have negative effects on muskox breeding.

**AEM's Response:**

*AEM appreciates the comment from the GN and will consider concerns for muskox in the updated wildlife management section.*

- 4.9 Potential disturbance of raptors and nesting raptors by project activities. Avoidance of raptors nesting during critical periods is required with a minimum distance of at least 1.5 kilometres during fledging nesting stage recommended.

**AEM's Response:**

*AEM appreciates this feedback and is working with the Arctic Raptor Group to ensure the protection of raptors and nesting raptors. AEM refers the GN to Appendix A – summary of raptor nests and activity in 2014 and 2015. The wildlife management plan (found in Section 11 of the Road Management Plan of the application package) will be updated prior to the construction of the Amaruq Access Road and will incorporate the recommendations and commitments from all interveners related to wildlife.*

## **Surface Water, Fish and Fish Habitat**

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- 5.1 The proposal has the potential for deposit of deleterious substance in water frequented by fish; mitigation measures required.

**AEM's Response:**

*AEM refers DFO to Section 3.3 and 3.4 of the main application document which describes the design and construction approach; AEM has designed clear span bridges or arched culverts at all valued fisheries streams or rivers. As a result the design is not expected to cause serious harm to fish or fish habitat. As stated in the application, with respect to construction timing, to the greatest extent possible, construction of the exploration access road will be carried out during winter months, thus reducing the likelihood of impacting water frequented by fish. Furthermore, best practices to control erosion will be followed during the construction and operation of the road, thus minimizing the potential for road-related affects to water quality. Water quality monitoring will be conducted at these CREMP stations during both construction and operation of the road to verify the situation (refer to AEM response to IR# 5.6).*

*Furthermore, the majority of the small watercourse pipe culverts, bridge abutments, and arch culvert earth work will be undertaken in the winter. The majority of the proposed arched culvert crossings have Arctic grayling and small-bodied feeder fish; therefore, "in-water" construction in these watercourses will occur during the winter under frozen conditions and during the open water season, generally after July 15. Bridge work will be completed under frozen conditions and only between July 15 to August 15 during the open-water season (i.e., between the spring spawning and fall spawning open water period*



*according to the Fisheries and Ocean Canada [DFO] timing for in-water work for spring and fall spawning watercourses in Nunavut, which can be found at the DFO link <http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/nu-eng.html>).*

*AEM has proposed standard best practices that are presented in Section 4.2.2 of the main application document and in the Road Management Plan that will mitigate the potential harm to fish or fish habitat related to construction or operations contaminants that could entering into waterbodies.*

- 5.2 Potential impacts to surface waters from drilling activities. Appropriate sediment/erosion control measures should be in place to ensure no materials including drilling additives or drilling muds enter the water, and no surface erosion occur.

**AEM's Response:**

*The application for the Amaruq Exploration Access Road does not change the mitigation and drilling practices previously approving for exploration drilling activities and camp use under NWB Type B 2BE-MEA1318.*

*If this comment is related to concerns associated with drilling and blasting in borrow pits, AEM refers DFO to response 2.3 related to AN management. Best practices for sediment erosion and handling of emulsion during operation in the borrow areas will be updated in the Road Management Plan prior to construction.*

- 5.3 Further information required on the quantification of fish habitat affected by each crossing including detailed water crossing designs to determine the potential impacts of the proposed project on fish and fish habitat, and the potential formation of barriers to fish passage.

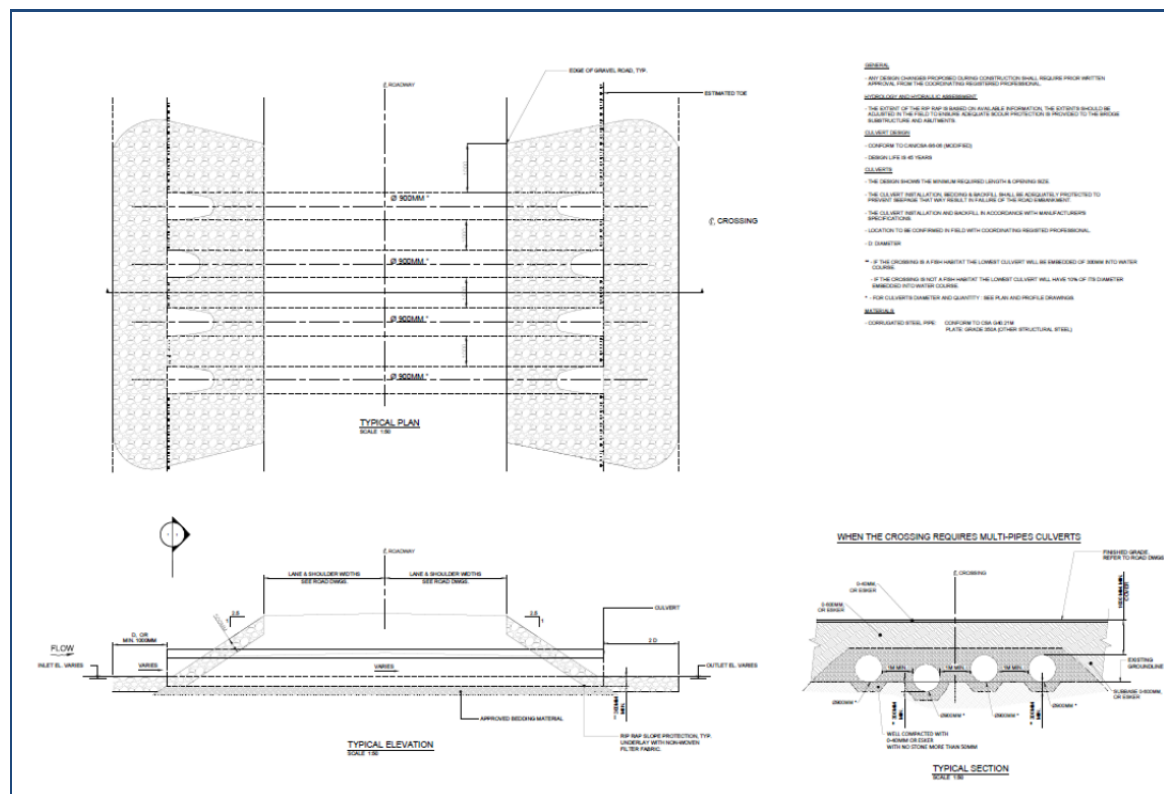
**AEM's Response:**

AEM refers DFO to AEM's response to IR # 5.1 and the 2014 Amaruq Exploration Access Road Aquatic Baseline Report on the NWB website.

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Based on the recommendations in this report, AEM has designed the road without any anticipated or predicted impacts to fish or fish habitat by clear spanning all valued fisheries streams or rivers with arch culverts or bridges. Furthermore, AEM will imbed culverts where small bodied fish were found so that passage is not impeded. As a result, AEM does not anticipate barriers to fish passage or loss to fish habitat that require quantification of fish habitat. As per recent discussions with DFO on September 29, 2015, AEM will be submitting a request to DFO to review this proposal with supporting final construction designs and documents to demonstrate "breakages in linkages using a pathway of effects analysis" under the new fisheries protection policy. The below figures are examples of clear span bridge pre-construction designs for embedded culverts and clear span bridges (also refer to Appendix C for higher resolution drawings).







- 5.4 Consultation with qualified environmental consultant recommended to ensure all appropriate measures are incorporated into the final engineering designs for all water crossings to avoid and mitigate serious harm to fish.

**AEM's Response:**

*AEM has hired highly qualified environmental consultants (senior biologists with over 30 years of experience throughout Canada) that completed fisheries assessments in 2014 and 2015 at all crossings along the entire exploration road route. Please refer to the Amaruq Exploration Access Road Aquatic Baseline report. All findings and assumptions in 2014 field program were confirmed during the 2015 field season. As a result, AEM has integrated the recommendations of Portt and Associates 2014 into the road design to avoid and mitigate serious harm to fish. Furthermore, biologists worked with the engineering and bridge construction team to "field fit" and select suitable locations for the bridge and culvert crossings to ensure the protection of fish passage and avoid serious harm to fish or fish habitat.*

- 5.5 Potential impacts to navigation from the proposal; construction should not occur on a scheduled waterway prior to a Navigation Project Program approval being issued under the Navigation Projection Act.

**AEM's Response:**

*While there are many lakes near the Amaruq Exploration Access road, only 10 stream or river crossings are considered defined and require clear span crossings<sup>1</sup>, however, none of them appear to be scheduled under the Navigation and Protection Act (found on <http://laws-lois.justice.gc.ca/eng/acts/n-22/FullText.html#h-27>). Furthermore, during our traditional knowledge workshop in December 2014 and follow-up sessions with elders and the HTO (July and September 2015), these areas were not identified as part of an existing navigation network. Rather, this area is a known thoroughway for winter passage by snowmobile travelling north. Community consultations have identified no nearby existing cabins that have been recently used and none of the nearby waterways have been known to be used by local stakeholders for travel by small watercraft. Therefore based on the information available to AEM, none of the streams or lakes near the proposed access road form part of a natural travel way and are not navigable. Thus in our understanding of the framework for assessing whether waterbodies or waterways are navigable as established by Transport Canada, these crossings would be considered as a non-navigable.*

- 5.6 Further discussion required on the continued suitability of Pipedream and Innugugayualik lakes as spatial references for the Meadowbank Project, specifically when watercourses and streams that feed these two lakes provide a direct link to the access road. Discussion to include standard operation of the access road and the potential for construction activities, spills and accidents to impact water quality in the reference lakes.

**AEM's Response:**

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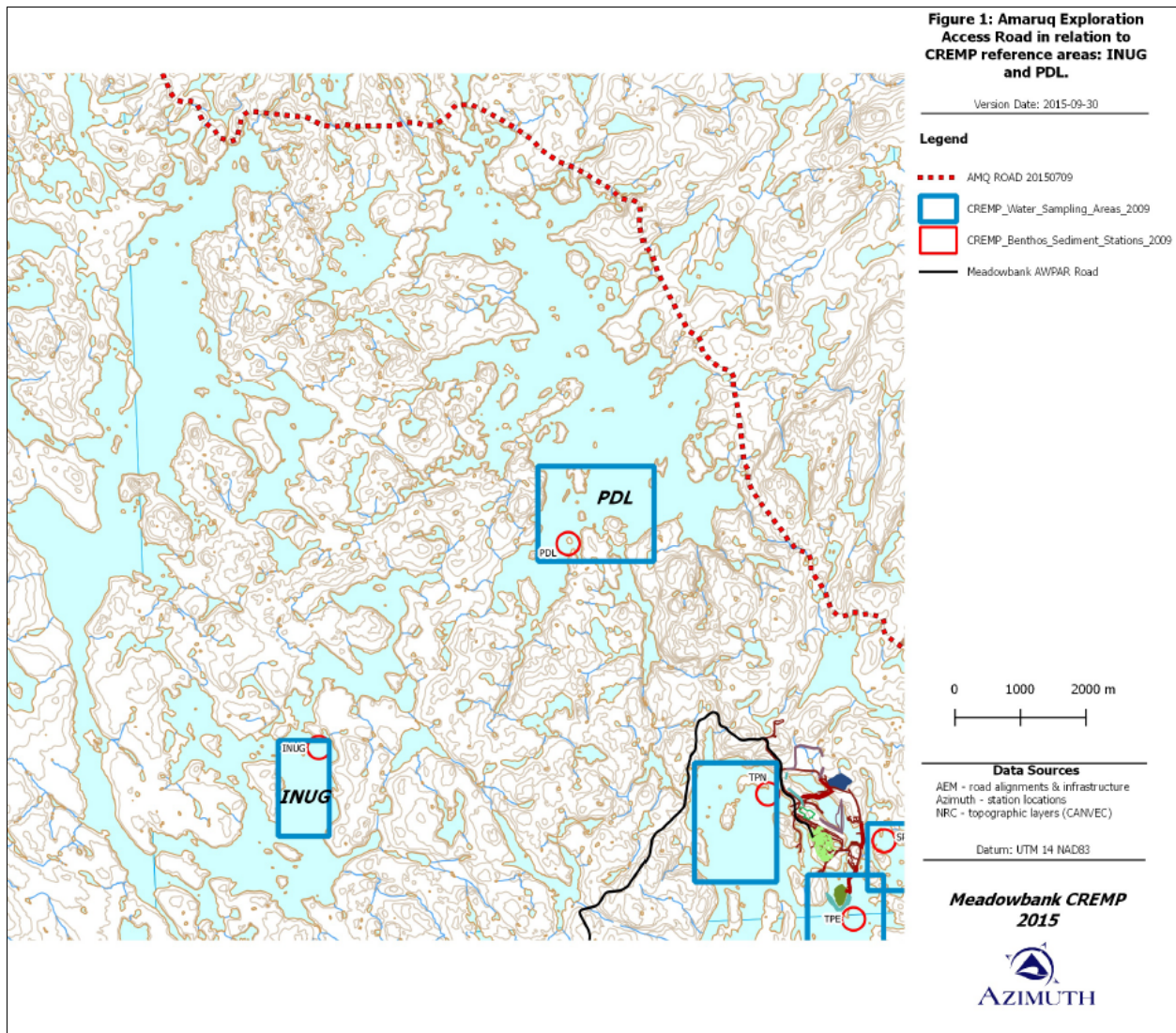
<sup>1</sup> Following 2015 field data collection, the amount of streams or river crossings was reduced from 11 to 10.



*The Core Receiving Environment Monitoring Program (CREMP) study design is in the “before-after-control-impact” (BACI) family, which relies on measuring the proportional changes between reference (control) and target (impact) areas in relation to a potential disturbance (before vs after the onset of mining). Innugayualik Lake (INUG) has been the core reference area since formal monitoring began in 2006 and is used as the main “control” comparator for all Meadowbank “impact” sampling areas in the statistical analyses, due to the paired “before” baseline data collected in 2006 and 2007 prior to mine development. Pipedream Lake (PDL) was added in 2009; while it is not used in the statistical analyses due to the absence of paired data during the “before” period, the results are used qualitatively to provide context to the interpretation of the BACI statistical results. Thus, from a CREMP perspective, INUG has a higher importance to the program than PDL. It is also important to note that the spatial scale of inference for the CREMP is at the basin scale for larger lakes, which applies to both reference lakes (i.e., the CREMP uses the specific basins, rather than the whole lakes). Thus, we use “lake” to refer to the lake in general and “sampling area” to refer to the specific basin used in the CREMP.*

*The below figure shows the proposed Amaruq Exploration Access Road alignment in relation to the INUG and PDL lakes and sampling area and the existing Meadowbank Project. The continental divide is situated between the existing Meadowbank Mine (around which the lakes drain through Tehek Lake then SE and eventually to Hudson Bay) and INUG and PDL lakes (which both drain to the north, eventually to the Arctic Ocean). The road is situated along the eastern and northern side of PDL lake. While it is possible that road dust could be blown into the lake under certain conditions, the prevailing winds are from the NW (i.e., blowing dust away from the lake). During prevailing wind conditions it is possible that road dust could be deposited in the small upstream lakes situated along the eastern side of the lakes and transported into PDL lake. However, these inputs would likely be minor and the PDL sampling area is approximately 2 km from the road at the nearest point. The CREMP program has already demonstrated that it can be used to detect small changes in water quality. Thus, while road-related changes to water quality at the PDL sampling area appear unlikely, monitoring results will be reviewed each year to verify that no abnormal changes have occurred. For the INUG sampling area, exposure to the road is limited to the extreme end of INUG lake where less than 1 km of the road is situated on the western side of a very small basin. Any road-related sediment inputs into this basin would likely either settle or be exported out of the lake to the north. Consequently, it is inconceivable that road-related inputs could affect the INUG sampling area situated approximately 10 km away to the south via the main axis of the lake. However, similar to the PDL sampling area, temporal trends will be followed closely as a precautionary measure.*

*In summary, the Amaruq Exploration Access Road is not expected to jeopardize the CREMP reference sampling areas PDL or INUG but year-over-year trends will be monitored to determine any changes during or post-construction. Furthermore, best practices will be followed during the construction and operation of the road, thus minimizing the potential for road-related affects to water quality and are outlined in the Road Management Plan and Emergency Response and Spill Contingency Plan. Water quality monitoring will be conducted at these CREMP stations during both construction and operation of the road to verify the situation.*



- 5.7 Further information required to ensure the road activities would not be compromising the validity of reference data from Pipedream Lake.

**AEM's Response:**

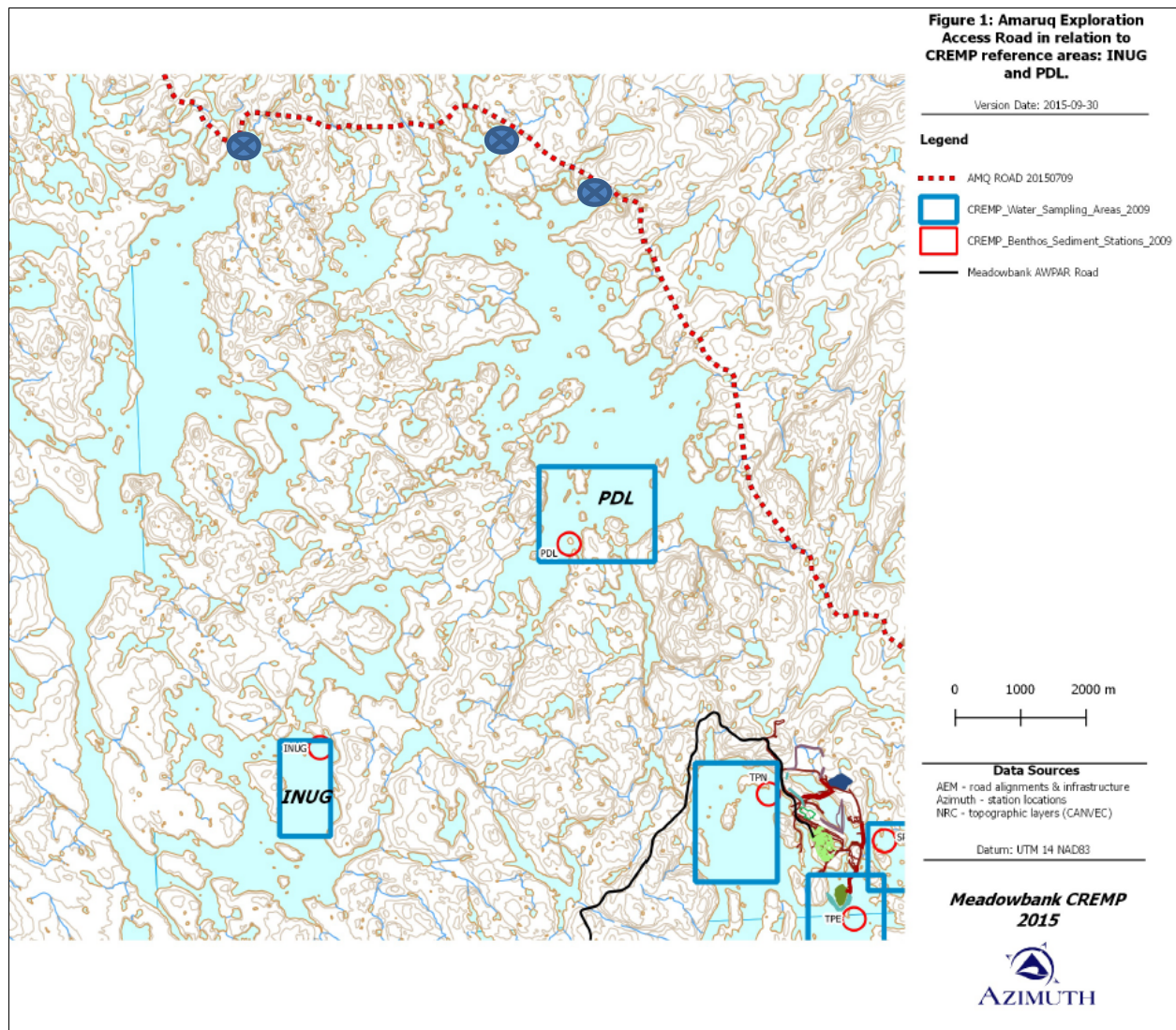
*AEM refers the KIA to IR response 5.6*

- 5.8 Clarification is required on the use of freshwater for the proposal; freshwater withdrawal has not been addressed in the discussion of potential impacts, mitigation and monitoring associated with the proposed access road and further information is required. It is important that freshwater only be used for dust suppression and only at the permitted rate of withdrawal allowed.



### AEM's Response:

AEM refers the reviewer to Section 3.6 of the Main Application Document where this was also discussed. AEM plans to take water from Pipe Dream Lake and Innugugayualik Lake at locations proximal to the road. The below figure illustrates proposed locations for water withdrawal. AEM has selected these lakes because of their large volume and large watershed, thus do not expect to be impacted by periodic, small volume, withdrawals of freshwater. As stated in the Main Application document, this freshwater will only be used for dust suppression and will not exceed the withdrawal limits; these updated water withdrawal locations will be provided to the interveners as part of the with final construction drawings prior to the construction of the access road.



5.9 Measures should be taken to prevent contamination of the tributary watersheds from spills and other potential contaminants.



**AEM's Response:**

*AEM agrees and refers the reviewer to the Emergency Response and Spill Response Plan submitted in this application.*

- 5.10 Decommissioning of the road following completion of activities in the area to ensure no additional traffic activities that may be detrimental to the Thelon Heritage River and the Back River.

**AEM's Response:**

*AEM will work with stakeholders to ensure no additional traffic activities may be detrimental to the rivers to the north of the exploration access road.*

**Dust**

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- 6.1 Production of dust along the proposed access road. Current road to Meadowbank produces dust that potentially damages caribou caches and caribou habitat. Recommend that a term and condition be issued to suppress dust on the new road and that AEM presents an updated work plan for dust control to address the community concerns raised.

**AEM's Response:**

*AEM plans to maintain a similar suite of monitoring programs to assess effects of dustfall along the Amaruq Exploration Access Road. Further, as discussed in IR 5.8, AEM is committed to watering the road surface in the summer to suppress dust in the event that results of monitoring programs indicate adverse effects.*

*AEM has been conducting annual monitoring studies for dust along the Meadowbank AWAR since 2012, as well as breeding bird surveys (2007 – 2011), and a wildlife risk assessment (2014). Results to date have indicated that current rates of dustfall are not expected to be causing excess impact (i.e. above FEIS predictions) to valued ecosystem components through changes to habitat or consumption of contaminants.*

*Firstly, it has been found that more than 50% of dust settles out within 100 m of the road (as predicted in the FEIS), and average dustfall at that distance is equal to Alberta Environment's guideline for recreational areas. Until 2011 AEM conducted annual monitoring studies of breeding birds along the AWAR, and found no significant adverse effects of the road on this sensitive VEC.*

*Further, to assist in determining potential for health-related concerns, AEM assessed risk to wildlife from consumption of vegetation at 100 m on the downwind (most impacted) side of the AWAR in 2014. Risks at this location were found to be no higher than for the reference station, located outside of the influence of mine and road activity.*



## **Heritage Sites and Traditional Activities**

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- 7.1 Proposed route follows traditional travel route over an esker and contains important habitat for wolves. Recommend route be modified and AEM hire Elders, based on the Baker Lake HTO's advice, to consult on the modified route.

### **AEM's Response:**

*AEM refers the reviewer to IR 4.8 and Appendix A, which is a summary of 2014 and 2015 field data and traditional knowledge. AEM agrees with the comments made by HTO and during the road routing exercise decided on a route that had minimal interference with wolf activity (only 1 esker, which AEM has since adjusted to avoid archaeological sites and denning areas), was selected far enough away from the esker to avoid significantly impacting the esker, such that denning and wildlife habitat would be less impacted. Nevertheless, AEM acknowledges there are impacts predicted to the terrain adjacent to this traditional travel route and that there is a small loss of wildlife habitat as a result of the footprint of the road and the sourcing of gravel from the esker.*

*In follow-up to consultation from elders and the HTO, AEM conducted additional wildlife and in particular predator surveys during the 2014 and 2015 field season. During these surveys biologists and local assistants observed a few wolf dens or signs of denning within the proposed footprint of the borrow pit called Esker 3. As a result, AEM has adjusted the excavation and borrow pit plans at borrow source Esker # 3 and have reduced the size of the borrow area to avoid the denning sites. AEM will monitor these sites and have committed to avoiding the active wolf den areas during denning season (May 1<sup>st</sup> to October 1<sup>st</sup>). Between Oct 2<sup>nd</sup> and April 30<sup>th</sup> (wolf territorial migration with Caribou, and late winter den establishment), AEM will operate in the esker borrow areas and during this period of time, there will be minimal restrictions for operations as wolves are not denning.*

*AEM understands the concerns of the HTO and will continue to consult with elders and the HTO to ensure their concerns are addressed. AEM will continue to hire locals to assist in wildlife monitoring during the construction and operation of the road.*

- 7.2 Proposed road and quarries overlap with several archaeological sites including grave sites and tent rings. Recommend a 500 metre buffer be required around any grave sites identified at the Amaruq site, and that no activity be allowed to occur within the buffer zone. Other archaeological sites should be avoided, but if not possible, then AEM hire Elders, based on the HTO's advice, as consultants.

### **AEM's Response:**

*One grave site has been identified on the Amaruq exploration property, approximately 2 km south of the exploration camp. AEM visited this site with elders and HTO members on September 8<sup>th</sup> and AEM has committed to ensuring avoidance of this site during exploration activities, and will implement a buffer of minimally 100 meters around the grave location during future activities. If in the future this buffer*



*becomes unfeasible, AEM would work with the community of Baker Lake and with the Department of Culture and Heritage to develop appropriate mitigation measures.*

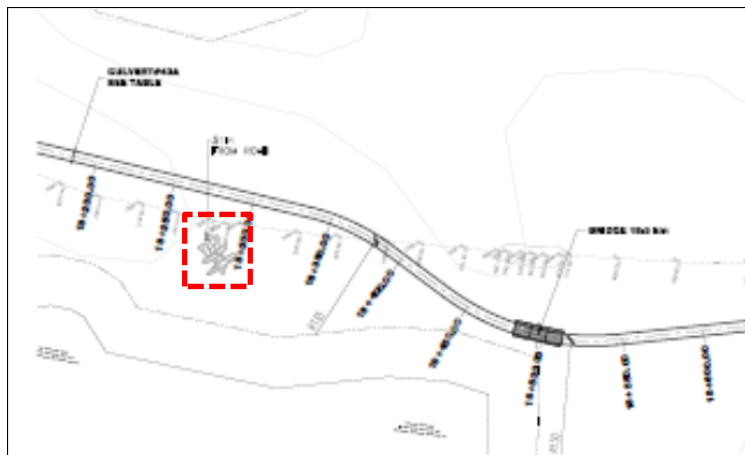
*AEM has implemented changes in the Amaruq Exploration Access Road project design to avoid most of the identified archaeological sites. For example, proposed Borrow Source Esker #3 has been reduced in size in order to ensure avoidance of three archaeological sites that contain a total of over 15 archaeological features that have interpretive value. This site was visited with elders and the HTO on September 8<sup>th</sup>, 2015.*

*However, at proposed borrow Source Esker #2, three archaeological sites are present that will be difficult to avoid. These three sites are small in size; two sites each consisting of just one stone feature, the third consists of a stone feature and a lithic artifact scatter (see appendix B photos which provided examples of these features). AEM will work with the Department of Culture and Heritage and with Baker Lake elders and HTO, and will hire suitable representatives from Baker Lake to determine appropriate and respectful mitigation measures at these sites.*

7.3 Recommend AEM prepare a plan outlining how archaeological sites would be avoided.

**AEM's Response:**

*Project redesign will be implemented whenever possible to avoid impacting archaeological sites. As noted previously, altering the routing and esker borrowing location during the design phase is the top tier or first step in the planning to avoid archaeological sites (see the below figure as an example at km 18+300, that was visited with elders and HTO on September 8<sup>th</sup>; AEM has since realigned the road to the south to avoid this site. Note the red box identifying the archaeological feature, the light gray line, which is the original routing and the double lined dark grey lines that is the new routing).*



*AEM and their archaeological consultant will also develop and implement an archaeological site management plan to track the status of studies and the status of archaeological sites relative to the access road and borrow sources. Sites will be tracked through GIS, maps and tables to ensure no inadvertent impact to any recorded sites, and/or implementation of acceptable mitigation measures. Any changes to the footprint will also be reviewed relative to archaeological sites and relative to the*



*potential for unrecorded archaeological sites to be present, and supplemental archaeological field studies will be conducted as needed to ensure archaeological sites are identified.*

- 7.4 Further information regarding additional archaeological and biophysical surveys of the proposed exploration access road footprint, including eskers and waterways, as well as final engineering construction designs should be provided prior to commencement of the project.

**AEM's Response:**

*AEM refers the reviewer to Appendix A, which presents a summary of the 2014 and 2015 field surveys and the baseline reports in the application which includes road footprints, including eskers and waterways. AEM will submit updated construction design plans to the NWB prior to the commencement of the access road construction.*

- 7.5 Additional studies should be conducted to document Inuit Qaujimajatuqangit of the Amaruq area including holding a workshop in Baker Lake.

**AEM's Response:**

*To date, AEM has made a significant effort to integrate Inuit Qaujimajatuqangit (IQ) into the baseline data collection and assessment of the Amaruq Exploration access road. This began by integrating the original Meadowbank IQ into the 2014 field work, conducting a TK/IQ workshop with respected elders in Baker Lake in December 2014 as a follow-up on the 2014 field data (the summary report can be found on the NWB website*

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*reviewing field data collected with stakeholders in the spring, hiring local assistants for summer field work, ensuring that the scientists and biologists conducting field work have integrated TK into their field work programs, integrated this into their reporting and then hosted another TK session and site visit with elders and the HTO. AEM refers the reviewer to AEM's response to IR 1.3 which summarizes these meetings, workshops and sessions that have contributed to the acquisition of IQ for the road. Overall, AEM has done a respectable job of integrating and documenting IQ for this project, and intends to host another meeting with elders and the HTO in November 2015. Beyond that, AEM will continue to work with local stakeholders (regulatory bodies interveners, HTO, elders, etc.) prior to the construction, during construction and during the operation of the Amaruq exploration access road, to ensure concerns are adequately addressed.*

- 7.6 Proposed route for Amaruq crosses over several skidoo trails used by Baker Lake hunters. Recommend that snow machine crossings have appropriate ramps that are properly maintained, crossings along the Meadowbank road be fixed, and an updated work plan be provided for the maintenance of the Meadowbank and Amaruq road prior to construction of the Amaruq road.



**AEM's Response:**

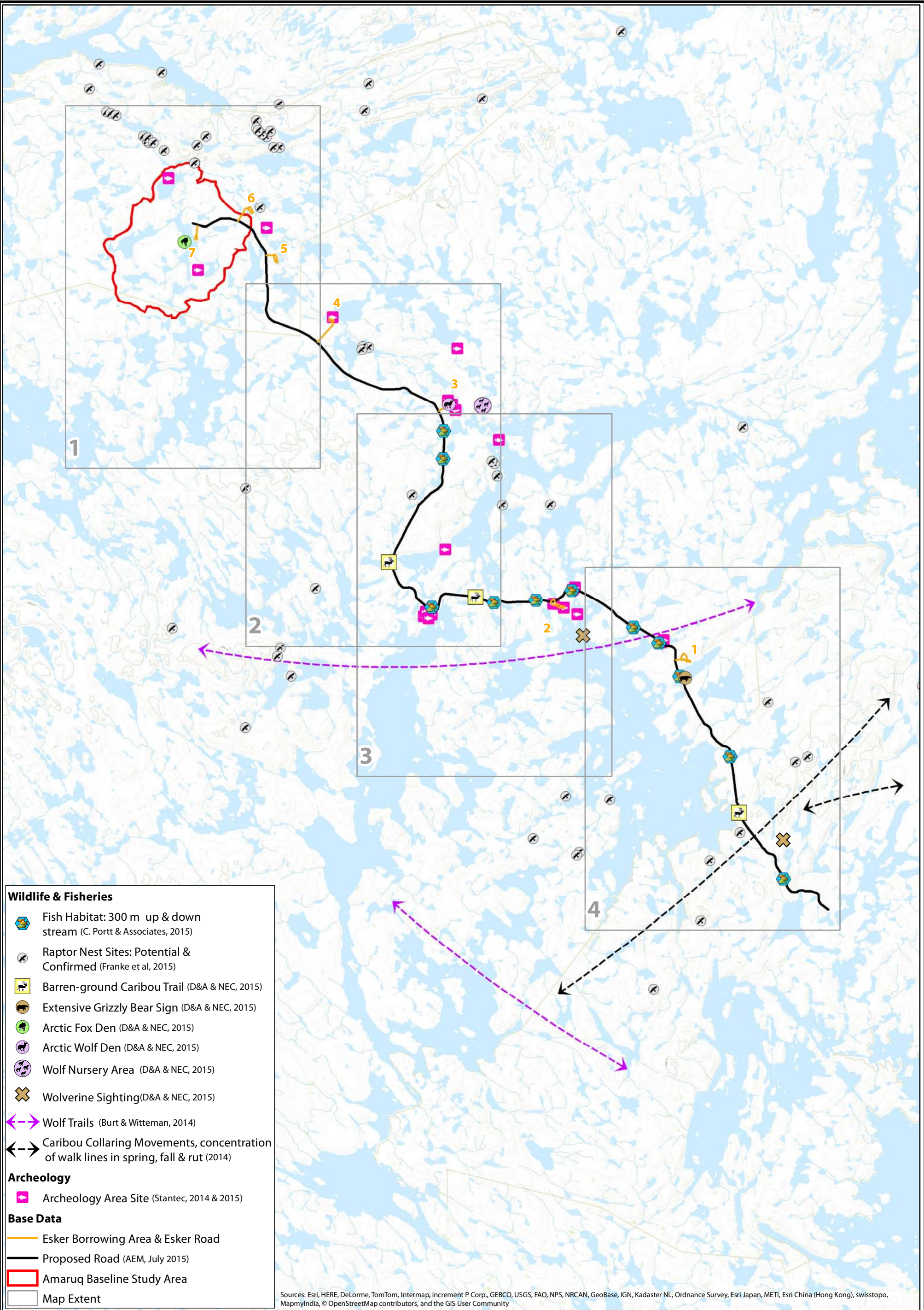
*Prior to the construction of the Amaruq Exploration Access Road, AEM will update the Road Management Plan and will incorporate the recommendations and commitments related to snowmobile ramps into the plan. AEM will consult with the HTO and other stakeholders to ensure the location, ramp slope and maintenance of the snowmobile ramps are suitable and provide safe access to traditional trail routes.*



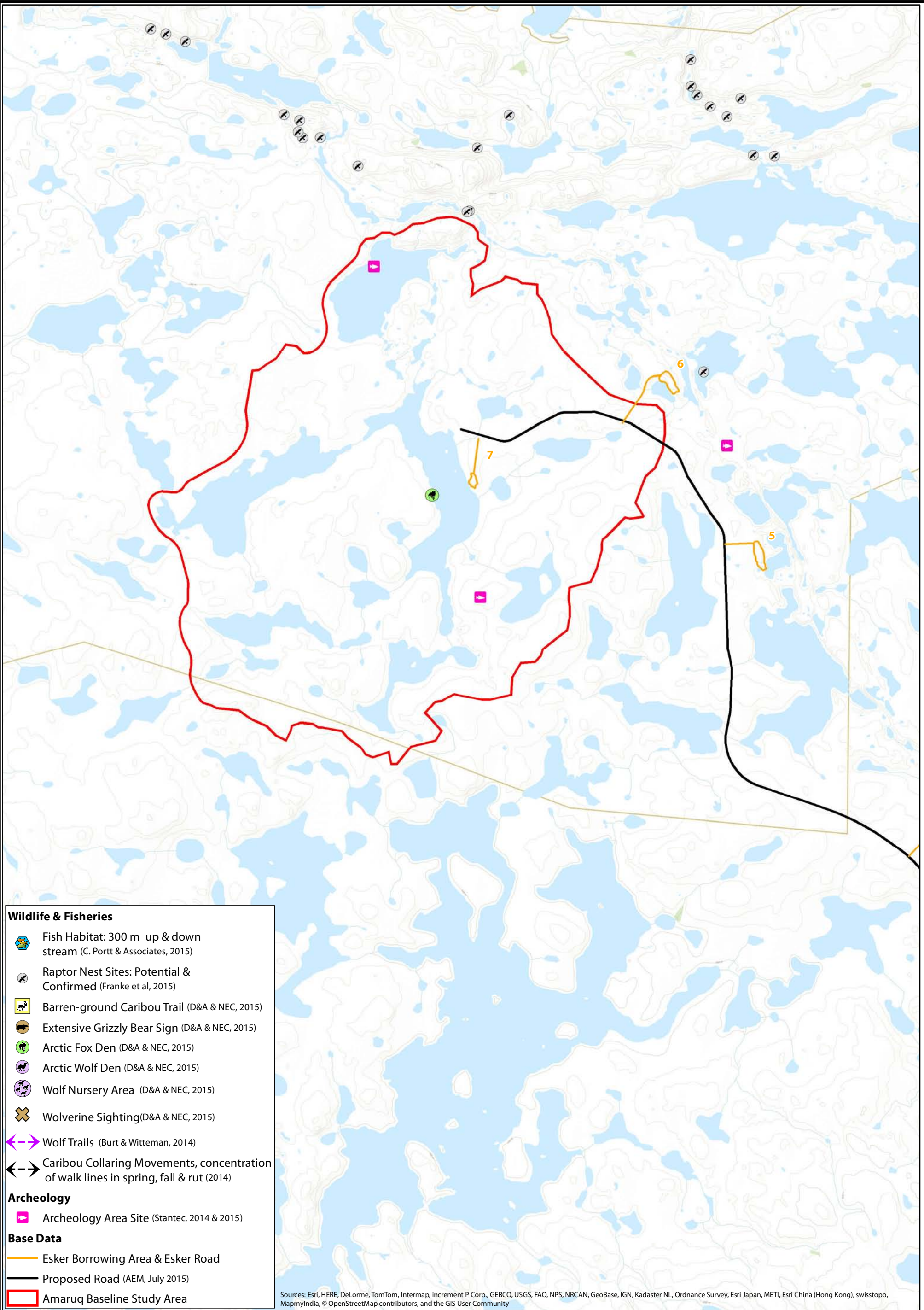
## **APPENDIX A – Updated Maps and Figures**

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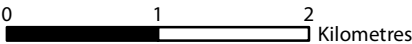


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**AGNICO EAGLE**

# Summary of Amaruq Environmental Baseline 2014/2015 Studies



PROJECT: Amaruq Baseline Studies  
CLIENT: Agnico Eagle Mines Limited

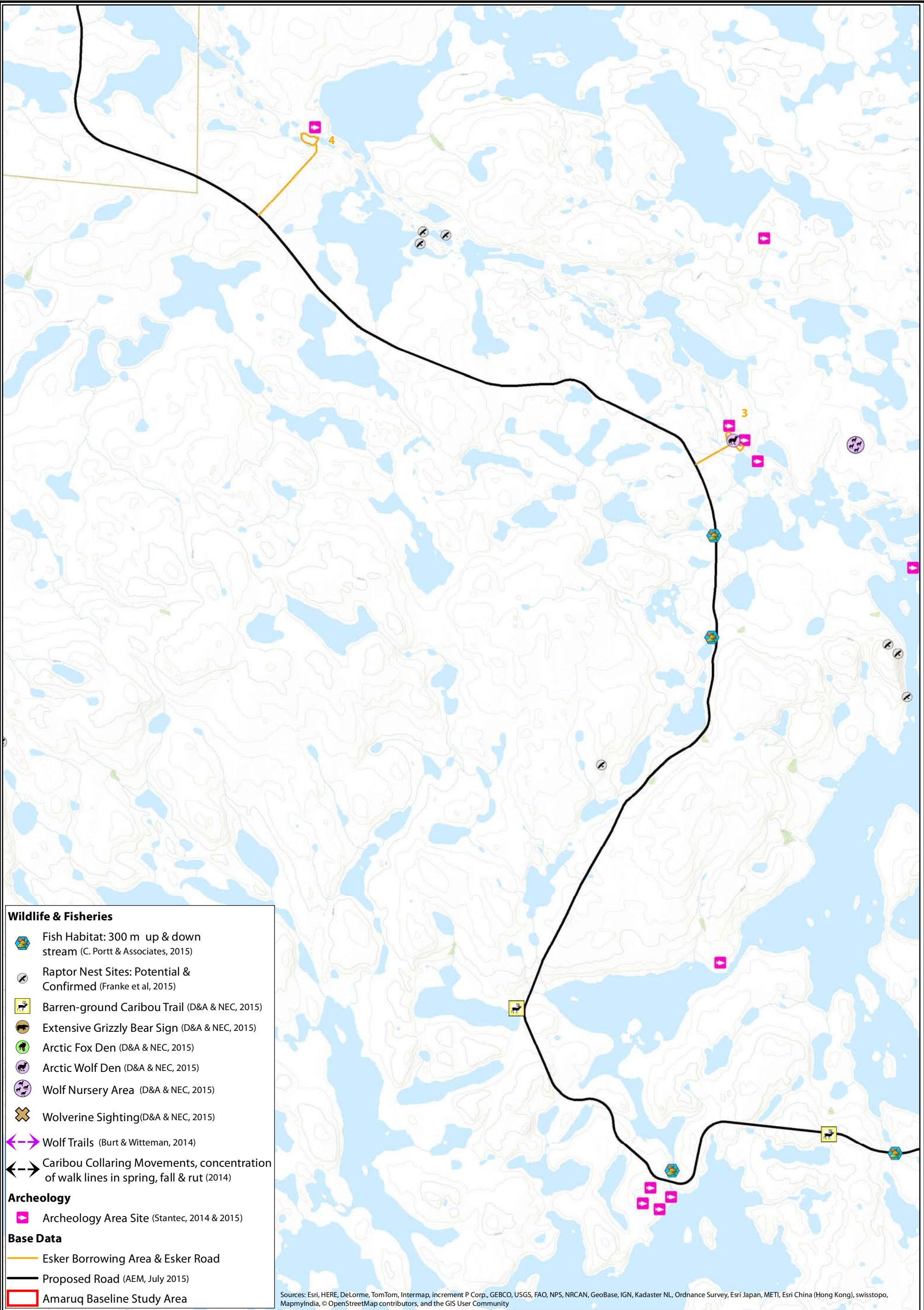


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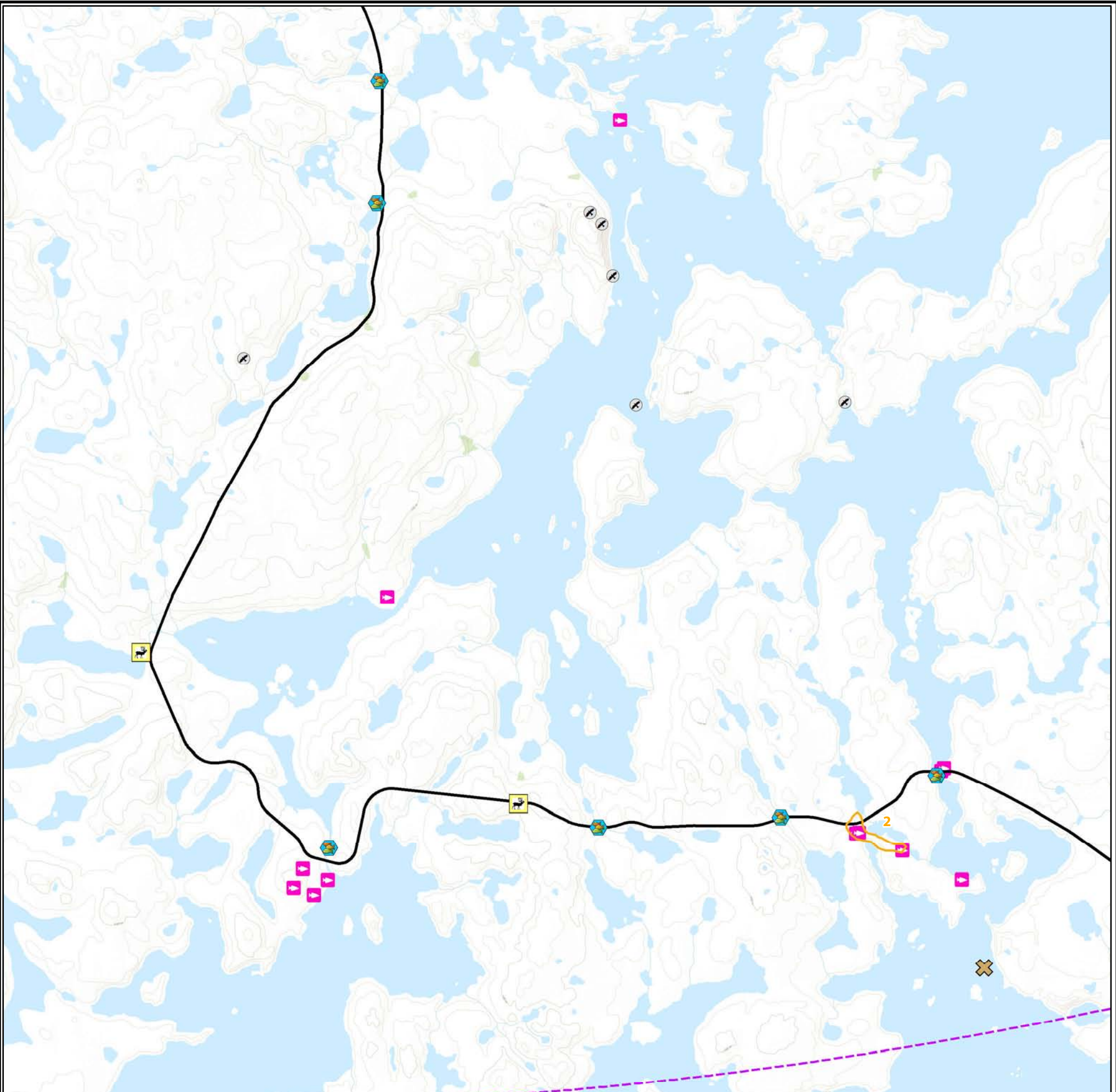
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**Wildlife & Fisheries**

-  Fish Habitat: 300 m up & down stream (C. Portt & Associates, 2015)
-  Raptor Nest Sites: Potential & Confirmed (Franke et al, 2015)
-  Barren-ground Caribou Trail (D&A & NEC, 2015)
-  Extensive Grizzly Bear Sign (D&A & NEC, 2015)
-  Arctic Fox Den (D&A & NEC, 2015)
-  Arctic Wolf Den (D&A & NEC, 2015)
-  Wolf Nursery Area (D&A & NEC, 2015)
-  Wolverine Sighting(D&A & NEC, 2015)
-  Wolf Trails (Burt & Witteman, 2014)
-  Caribou Collaring Movements, concentration of walk lines in spring, fall & rut (2014)

**Archeology**

-  Archeology Area Site (Stantec, 2014 & 2015)

**Base Data**

-  Esker Borrowing Area & Esker Road
-  Proposed Road (AEM, July 2015)
-  Amaruq Baseline Study Area

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

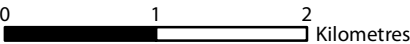


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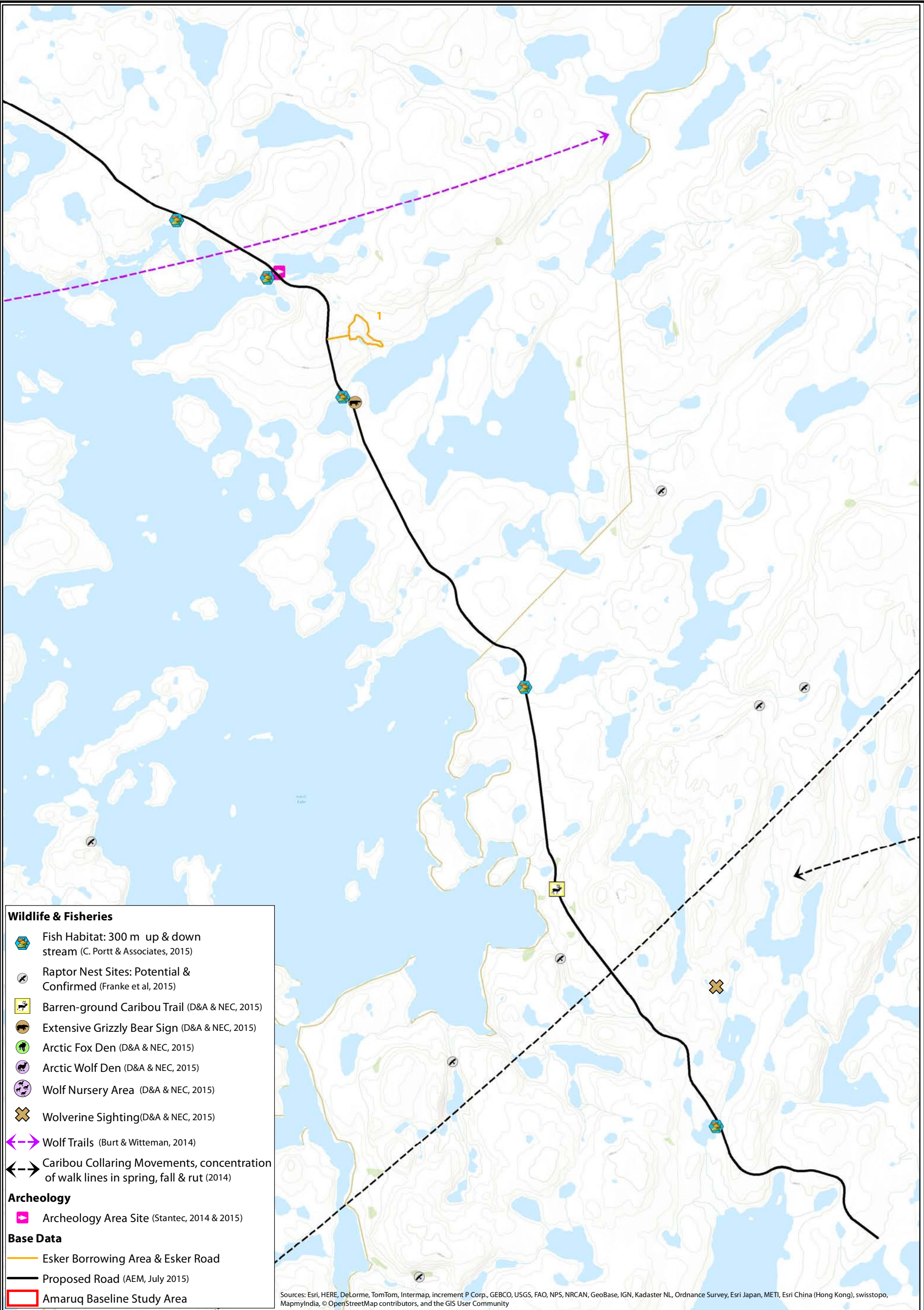
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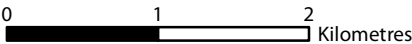
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