



APPENDIX 8-E

Addendums for Environmental Protection and Monitoring Plans



8-E.8: Archaeology Management Plan

**ARCHAEOLOGICAL MANAGEMENT
PLAN
Agnico Eagle Mines: Meadowbank
Division – Whale Tail Pit and Haul
Road**

Agnico Eagle Mines Ltd.

Final Report



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1.0 Introduction

Agnico Eagle Mine Ltd. (Agnico Eagle) is proposing to develop Whale Tail Pit, a satellite deposit on the Amaruq property, in continuation of mine operations at the Meadowbank Mine. The Amaruq Exploration property is a 408 square kilometre site located on Inuit Owned Land approximately 150 kilometres north of the hamlet of Baker Lake and approximately 50 kilometres northwest of the Meadowbank Mine in the Kivalliq region of Nunavut (Figure 1). As an amendment to the existing operations at the Meadowbank mine, it is subject to an environmental review established by Article 12, Part 5 of the *Nunavut Land Claims Agreement* (NLCA).

The Whale Tail Pit and Haul Road (the Project) will include developing the Whale Tail Pit and associated infrastructure, including the Haul Road (and associated borrow sources) which will extend from the Meadowbank Mine Vault Pit to the Whale Tail Pit.

2.0 Nature and Protection of Heritage Resources

Heritage resources are identified by the Nunavut Archaeological and Palaeontological Sites Regulations (Nunavut Government 2001) and consist of archaeological artifacts more than 50 years old and fossils including natural casts, preserved tracks, coprolites, and plant remains as well as shells, exoskeletons of invertebrates, and vertebrate remains.

Heritage resources are non-renewable and are susceptible to alteration, damage, and destruction by construction and development activities. In Nunavut, the Department of Culture and Heritage of the Government of Nunavut (GN) is responsible for the protection of heritage resources. Although Agnico Eagle's archaeologist can formulate recommendations as the nature of studies and mitigative measures to be implemented at identified heritage resources sites, the Department of Culture and Heritage will make the determination regarding these matters.

Prehistoric archaeological sites are composed of artifacts, features, and residues of native origin. They predate the arrival of Europeans and are typically characterized by modified bone and stone, and stone structures such as tent rings, hunting blinds and caches. Historic sites are characterized by structures, features, and objects of European influence. These sites date back to contact with the Europeans but also include remains of more recent activity (i.e., more than 50 years old). Historic sites less than 50 years old are generally associated with contemporary land use and document continued use and occupation of an area to the present time. Palaeontological sites contain fossils of plants or animals or fossilized evidence of their existence.

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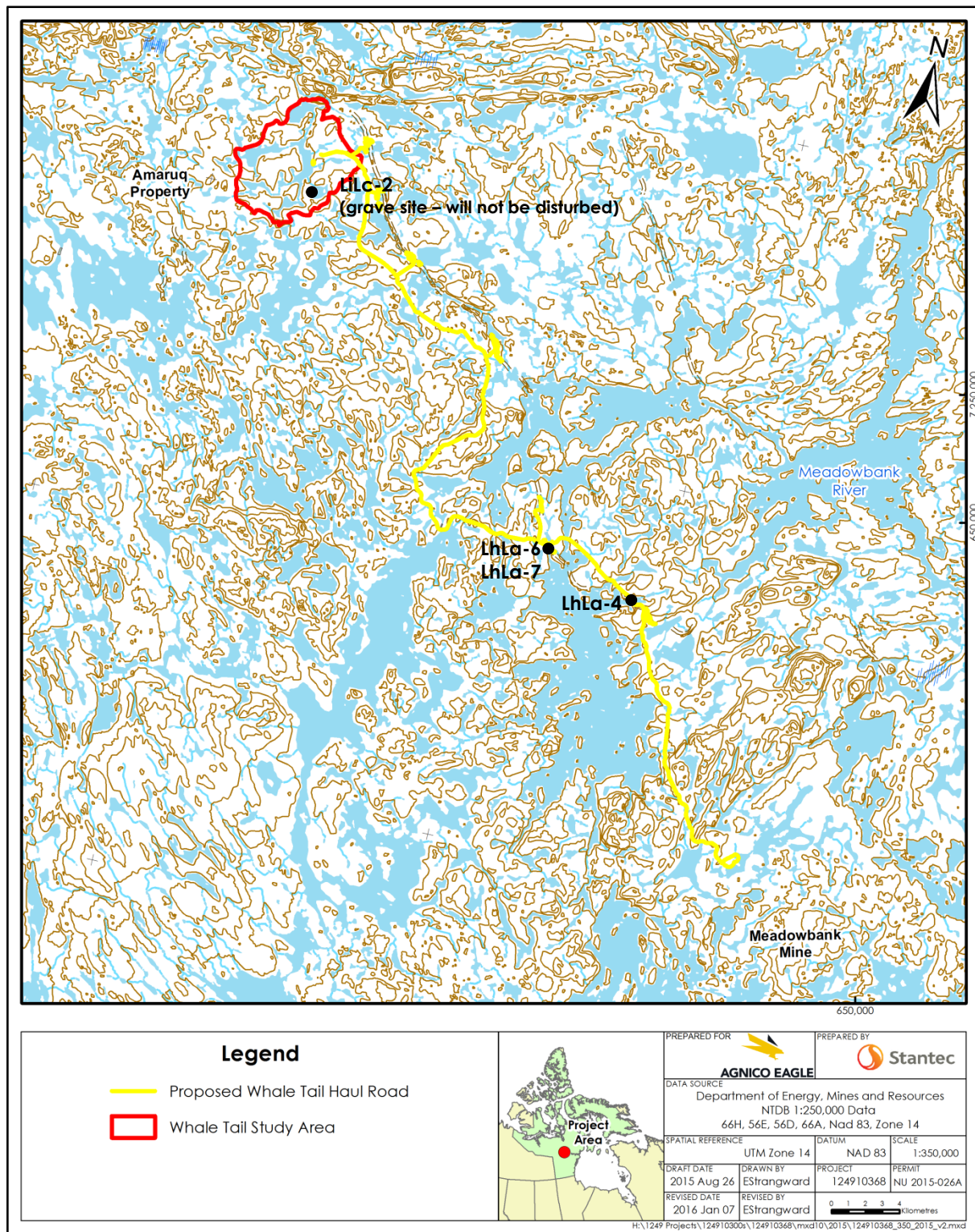


Figure 1 Whale Tail Study Area (2015) and Planned Haul Road/Borrow Sources

3.0 Previous Archaeological Studies and Study Coverage

Previous studies conducted relative to the Project include three studies:

- In 2013, archaeological studies were conducted relative to the IVR (now Amaruq) 2013 exploration area. No archaeological sites were identified (Tischer 2013).
- In 2014, archaeological studies were conducted relative to exploration activities on the Amaruq property and areas south of Amaruq and along a proposed winter road between Meadowbank and the Amaruq property. Eight new sites were identified, and one was revisited (Tischer 2015).
- In 2015, archaeological studies were conducted relative to the Amaruq/Whale Tail Study Area (within which the Whale Tail Pit will be located), and relative to the all season access road/haul road and associated borrow sources between Meadowbank and Whale Tail (Tischer 2016). Fifteen new sites were identified, and three known archaeological sites were revisited.

Studies conducted in 2015 were intended to represent full footprint-specific archaeological assessment of target areas with moderate to high potential to contain archaeological sites within the Whale Tail Study area and road/borrow sources. However, the project footprint has been revised somewhat from that assessed in 2015, including changes to the Haul Road footprint and some of the borrow source locations/shapes. Areas not previously assessed that have moderate to high potential to contain archaeological sites will be subject to supplemental impact assessment field studies in 2016 to ensure that any archaeological sites in conflict with the footprint are identified. Some supplemental study within the Whale Tail study area is also planned to ensure that even areas with more moderate archaeological potential have been assessed.

4.0 Avoidance and Mitigation of Known Archaeological Sites

Maps illustrating the Whale Tail Study area and the Haul Road route and borrow source locations relative to archaeological assessment areas and recorded archaeological sites are provided in the final AIA/Baseline report (Tischer 2016, Appendix A). Agnico Eagle has the shape files for the polygons that delineate each site's boundaries and will use this information to ensure ongoing avoidance of recorded archaeological sites.

Table 1 provides a summary of each archaeological site, including a reference to the relevant map sheet (Appendix A), alignment sheet, site description, proposed mitigation measures if the site cannot be avoided (subject to approval by GN), relationship of each site to the Project, and planned 2016 mitigation measures (subject to approval by GN).

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Table 1 Summary of Archaeological Sites and Planned Mitigation/Avoidance Measures

Site	Map No. (App. A)	Align. Sheet No. *	Site Type Class	Description	Geographical Setting	Perceived Interpretive Value	Proposed Mitigation Measures (if avoidance is not feasible)	Relationship to Project **	2016 Proposed Mitigation Measures ***
Marker									
LhLa-5	17	226/227	Indigenous historic?	Two rocks appear to be markers at a crossing of the Meadowbank River	Narrows of the Meadowbank River	Low	No further investigation.	Within Haul Road ROW (KM 23.8)	None
Caches									
LhLa-8	17	227	Prehistoric	Large cache appears to be very old	Esker near Meadowbank River	Moderate	Disassemble cache to inspect contents.	Adjacent to Esker #2A	Site staking for avoidance
LhLa-9	17	NA	Indigenous historic?	Relatively recent cache, caribou antler observed in the cache	Esker near Meadowbank River	Low	No further investigation.	Over 500 m south of Esker #2A	None
LhLb-6	14	233 (off the sheet)	Indigenous historic? Prehistoric?	Three caches on a bedrock outcrop appear to be relatively old	Bedrock hill overlooking the Meadowbank River	Moderate	Disassemble caches to inspect contents.	Over 200 m southeast of Haul Road ROW (approx. KM 32.5)	None
Blinds									
LhLa-7	17	237/ Esker #2	Indigenous historic? Prehistoric?	Low hunting blind faces north	Esker near Meadowbank River	Moderate	Excavation of 1 m x 2 m unit within the blind; inspect under cobbles; detailed feature mapping.	Within Esker #2A	Mitigation as per Proposed Mitigation Measures Column
LhLb-5	14	233 (off the sheet)	Indigenous historic? Prehistoric?	Blind or shelter appears to consist of a wall of cobbles and an area cleared of stone	Bedrock hill overlooking a narrows of the Meadowbank River	Moderate	Excavation of 1 m x 2 m unit within the blind; inspect under cobbles; detailed feature mapping.	Approx. 100 m southwest of Haul Road ROW (approx. KM 32.5)	Site staking for avoidance (given proximity to bridge)

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Table 1 Summary of Archaeological Sites and Planned Mitigation/Avoidance Measures - continued

Site	Map No. (App. A)	Align. Sheet No. *	Site Type Class	Description	Geographical Setting	Perceived Interpretive Value	Proposed Mitigation Measures (if avoidance is not feasible)	Relationship to Project **	2016 Proposed Mitigation Measures ***
Blinds (continued)									
LiLb-3	9	Esker #4	Indigenous historic? Prehistoric?	A low hunting blind facing south on an esker	Esker complex near the Meadowbank River	Moderate	Excavation of 1 m x 2 m unit within the blind; inspect under cobbles; detailed feature mapping.	Adjacent to Esker #4C	Site staking for avoidance
Campsites									
LhLa-4	19	223	Indigenous historic	Multiple features, including two tent rings, two hearths, as well as wooden artifacts	Bedrock hill overlooking the Meadowbank River to the west	High	Excavation of 1 m x 2 m unit within each of the tent rings and 1 m x 1 m unit over each hearth; inspect under all feature cobbles; detailed mapping of features; detailed mapping and collection of artifacts.	Within Haul Road ROW (KM 18.3)	Mitigation as per Proposed Mitigation Measures Column
LhLa-6	17	227	Prehistoric	A tent ring is present that appears to be of antiquity, and a scatter of lithic artifacts were observed 15 m to the south of the ring	Esker near Meadowbank River	High	Excavation of 1 m x 2 m unit within the tent ring and a 1 m x 2 m unit over the lithic scatter; inspect under feature cobbles; detailed mapping of feature; detailed mapping and collection of artifacts.	Within Esker #2A	Mitigation as per Proposed Mitigation Measures Column
LhLa-10	18	NA	Indigenous historic? Prehistoric?	Multiple stone features were observed, including tent rings	Beach/low esker along the Meadowbank River	High	Detailed mapping of site and all features; excavation of features where subsurface artifacts may be present.	Approximately 1.5 km southwest of Haul Road ROW (KM 21)	None

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Table 1 Summary of Archaeological Sites and Planned Mitigation/Avoidance Measures - continued

Site	Map No. (App. A)	Align. Sheet No. *	Site Type Class	Description	Geographical Setting	Perceived Interpretive Value	Proposed Mitigation Measures (if avoidance is not feasible)	Relationship to Project **	2016 Proposed Mitigation Measures ***
Campsites (continued)									
LhLb-2 (revisit)	14	233	Indigenous historic? Prehistoric?	Multiple stone features (caches, uprights, blinds)	Bedrock landform overlooking the Meadowbank River	High	Detailed mapping of all features; disassemble caches for inspection; excavation of features where subsurface artifacts may be present.	Over 200 m southeast of Haul Road ROW (approx. KM 32.5)	None
LhLb-3 (revisit)	14	233 (off the sheet)	Prehistoric	Lithic scatter as well as a possible tent ring; scatter extends at least 10 m to the south of the tent ring	Level landform overlooking the Meadowbank River	High	Excavation of 1 m x 2 m unit within the tent ring and a 1 m x 2 m unit over the lithic scatter; inspect under feature cobbles; detailed mapping of feature; detailed mapping and collection of artifacts.	Approx. 100 m southeast of Haul Road ROW (approx. KM 32.5)	Site staking for avoidance (given proximity to bridge)
LhLb-7	11	Esker #3	Indigenous historic? Prehistoric?	Multiple stone features, including tent rings (N=8), hearths (N=3) and a cache	Esker near the Meadowbank River	High	Excavation of 1 m x 2 m unit within each of the tent rings and 1 m x 1 m unit over each hearth; inspect under all feature cobbles; detailed mapping of features; detailed mapping/collection of artifacts.	Immediately adjacent to Esker #3	Site staking for avoidance
LhLb-8	11	Esker #3	Indigenous historic? Prehistoric?	Two large tent rings	Esker near the Meadowbank River	High	Excavation of 1 m x 2 m unit within each of the tent rings; inspect under all feature cobbles; detailed mapping of features.	Immediately adjacent to Esker #3	Site staking for avoidance

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Table 1 Summary of Archaeological Sites and Planned Mitigation/Avoidance Measures - continued

Site	Map No. (App. A)	Align. Sheet No. *	Site Type Class	Description	Geographical Setting	Perceived Interpretive Value	Proposed Mitigation Measures (if avoidance is not feasible)	Relationship to Project **	2016 Proposed Mitigation Measures ***
Campsites (continued)									
LhLb-9	11	Esker #3	Indigenous historic	Two large, sparse tent rings	Esker near the Meadowbank River	Moderate	Excavation of 1 m x 2 m unit within each of the tent rings; inspect under all feature cobbles; detailed mapping of features.	Immediately adjacent to Esker #3	Site staking for avoidance
LiLb-1 (revisit)	6	NA	Indigenous historic? Contemporary?	One hearth and one cairn or collapsed inukshuk	Esker near the Meadowbank River	Moderate	Excavation of 1 m x 1 m unit over the hearth; inspect under all feature cobbles; detailed mapping of features.	Over 500 m to the east of the Haul Road ROW (KM 61)	None
LiLc-1	2	NA	Indigenous historic	One well defined, square tent ring, one possible hearth, and wood pieces	Esker extending into Nemo Lake	High	Excavation of 1 m x 2 m unit within the tent ring and 1 m x 1 m over the hearth; inspect under all feature cobbles; detailed mapping of features.	Within the Whale Tail Study Area, but outside of proposed area of impact.	None
Campsite/Grave									
LiLc-2	3	NA	Indigenous historic	Grave consists of a pile of cobbles over human remains; tent rings (N=3?) and a historic scatter are present, including wood and metal artifacts	Bedrock hill overlooking terrain and lakes	High	Avoidance; Agnico Eagle will respect a 100 m buffer around this site. If in the future avoidance is not possible, community consultation will be undertaken to determine appropriate mitigation measures.	Within the Whale Tail Study Area, but outside of proposed area of impact.	None

* Alignment sheets as provided to Nunavut Water Board

** Blue shading denotes a site that will be impacted

*** Red shading denotes a site that requires mitigation (including site staking for sites in close proximity to the footprint) in 2016

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The mitigation measures proposed for each of the identified sites include:

Avoidance – Ongoing avoidance of archaeological sites is always the preferred mitigation measure. Agnico Eagle has made design and planning changes in order to avoid archaeological sites wherever possible. Agnico Eagle has shape files of all archaeological sites identified to date, and will use this information in ongoing project planning and design.

A grave site of highest concern was identified within the Amaruq Property (site LiLc-2; Figure 1), but is not within any planned disturbance areas. In the response prepared to NIRB (October 2015), Agnico Eagle committed to ensuring a minimal buffer of 100 metres around this site. All conditions outlined relative to archaeological sites, including this grave site, will be adhered to as per the NIRB Screening Decision Report (NIRB 2015).

Temporary Fencing – Some of the sites that Agnico Eagle is avoiding are located relatively close to the project footprint (haul road, borrow sources). Agnico Eagle will work with Stantec's archaeological team to put temporary fencing in place at these locations to ensure that sites are not inadvertently impacted during construction and borrow activities. The best methods for implementing site staking will be determined between Agnico Eagle and Stantec's archaeological team prior to fencing.

Detailed site mitigation – For sites at which avoidance is not feasible, more detailed site investigation is proposed. Detailed site investigation includes:

- Shovel testing at the site to identify additional features or activity areas that were not identified during the inventory/assessment phase of the study.
- Detailed mapping of all site features and artifacts observed on the ground surface, as well as collection of those surficial artifacts that are within proximity of the impact zone.
- Excavation of units over all features proposed for impact. Excavation includes setting up grids and excavating 1 m x 1 m units over small features such as hearths, 1 m x 2 m units over larger features such as blinds, and excavation of test 1 m x 2 m units over tent rings, with possible expansion of those 1 m x 2 m units into larger blocks if artifacts or additional features are identified during excavation.

Mitigation measures as outlined above are subject to approval of these recommendations by the GN Department of Culture and Heritage. Stantec's archaeological team will continue ongoing communication with GN to ensure that all proposed mitigation activities are approved prior to initiating any activities.

5.0 Community Involvement

Agnico Eagle is committed to continued community involvement in the archaeological program. The nature of community involvement in 2016 and beyond will be determined on an ongoing basis, but will likely include:

- Meetings with elders to provide information on newly identified archaeological sites and the status of the archaeological investigations.
- Community consultation at all archaeological sites that cannot be avoided. This consultation would include visits to each site by Baker Lake elders to determine if any additional traditional information can be added to the site interpretation. In addition, it may be possible to include community members (including youth) in detailed site mitigation activities such as excavation.

6.0 Discovery Protocol

While every effort has been made to identify and mitigate impacts to archaeological sites in advance of construction, complete investigation of the entire footprint relative to archaeological resources was not feasible given the size of the footprint; as such, it is possible that archaeological sites are present within the footprint that were not identified. To date, areas determined to be of low and low to moderate archaeological potential have not been targeted for assessment through pedestrian traverse, but archaeological sites are occasionally found to be present in unexpected areas. Sites could be identified or exposed during ongoing planning and design and during the construction phase of activity. Any chance discoveries of archaeological features or artifacts, historic objects, or palaeontological resources (fossils) must be reported.

As a general practice, if archaeological, historic, or palaeontological resources are encountered during exploration, pre-construction, construction or post-construction activities, field workers should:

- Stop work in the immediate area
- Notify the construction manager or on-site environment personnel as appropriate
- Photograph the site or item of concern
- Contact the archaeological consultant for advice (Stantec contact information is provided below), or the Department of Culture and Heritage, Government of Nunavut (contact information provided below).

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