Aboriginal Affairs and Northern Development Canada
Affaires autochtones et Développement du Nord Canada

*Your file - Votre référence*
2BE-MEA1318

November 7, 2016

*Our file - Notre reference*
IQLAUIT-# 1111958

Karen Kharatyan
Manager of Licensing
Nunavut Water Board
GJOA HAVEN, NU X0E 1J0

**Re: Indigenous and Northern Affairs Canada Review of Agnico Eagle Mines Ltd.'s Application to Amend Water Licence #2BE-MEA1318, Amendment #4**

Dear Mr. Kharatyan:

Thank you for your email of October 6, 2016, concerning the above mentioned application. A memorandum is provided for the Board's consideration. Comments and recommendations have been provided pursuant to Aboriginal Affairs and Northern Development Canada's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

Please do not hesitate to contact me by telephone at 867-975-4282 or email at ian.parsons@aandc-aadnc.gc.ca for further information.

Sincerely,

Ian Parsons
Regional Coordinator
Water Resources Division
Resource Management Directorate
Aboriginal Affairs and Northern Development Canada
IQALUIT, NU X0A 0H0

Encl.

c.c.: Scott Burgess, Manager of Water Resources, AANDC Nunavut
Erik Allain, Manager of Field Operations, AANDC Nunavut

Canada

# Memorandum

**Re: Water Licence Amendment Application, #2BE-MEA1318**

Licensee: Agnico Eagle Mines Ltd.
Project: Meadowbank Exploration
Region: Kivalliq

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Comments:

A. Background

On October 6, 2016, the Nunavut Water Board (the "NWB") provided notification of an application to amend Agnico Eagle Mines Ltd.'s (the "Licensee") Type 'B' Water Licence #2BE-MEA1318 to include a portal and ramp, a quarry, a storm water pond, waste rock pad, the collection of a bulk sample, and additional laydown areas and infrastructure to support these activities. This is amendment # 4 to the licence with all previous amendments being required to facilitate the advancement of the project. The property is located 50 km northeast of the Meadowbank Mine and 125 km north of the Hamlet of Baker Lake. This new continued exploration program is anticipated to continue until 2020.

INAC contracted ARCADIS to undertake a site assessment and a closure cost estimate of AEM's Amaruq and Meadowbank Exploration sites currently licenced under 2BE-MEA1318. The closure cost estimate tables associated with the estimate are contained in comment 1 below. The full ARCADIS closure cost estimate report has been attached at the end of this letter.

Interested parties were asked to review this application and provide comments by November 6, 2016.

B. Results of review

On behalf of Indigenous and Northern Affairs Canada ("INAC"), the following comments and recommendations are provided:

**1. Reclamation and Closure Cost Estimate**

**Source: ARCADIS Closure Cost Estimate (on behalf of INAC)**
**AEM Reclamation and Closure Plan**

**Comment:** The three (3) tables below outline the total reclamation closure costs associated with water licence 2BE-MEA1318. Table 1 is an overall comparison of closure costs between INAC and AEM. Table 2 is a breakdown of closure costs associated with the Amaruq exploration site/camp and Table 3 is a breakdown of closure costs associated with the Meadowbank exploration site/camp.

Note: AEM estimate is from March 2016 and Arcadis estimate is from October 2016

**Table 1. Summary of Comparison of Quantum of Security Costs for Exploration Sites (2BE-MEA1318)**

| Site | | Total Reclamation Cost ($) | Land Cost ($) | Water Cost ($) | IOL Cost ($) |
|---|---|---|---|---|---|
| Amaruq Exploration | AEM | $1,824,583 | NA | NA | $1,824,583 |
| | Arcadis | $3,392,589 | $1,796,368 | $1,596,221 | $3,392,589 |
| Meadowbank Exploration | AEM | $84,636 | NA | NA | $84,636 |
| | Arcadis | $490,391 | $256,814 | $233,576 | $490,391 |
| Aggregate Cost | AEM | $1,909,219 | NA | NA | $1,909,219 |
| | Arcadis | $3,882,980 | $2,053,182 | $1,829,797 | $3,882,980 |

Note NA means a distribution was not provided.

**Table 2. Summary of Reclamation Costs for Amaruq Exploration Site (2BE-MEA1318)**

| Direct/Capital Costs | Component Name | AEM RECLAIM Cost ($) | Arcadis RECLAIM Cost ($) |
|---|---|---|---|
| Quarry and Borrow Pits | Amaruq Quarry | $36,150 | $40,152 |
| Portal/Ramp Closure | Amaruq Ramp | $387,090 | $519,181 |
| Waste Rock Piles | Amaruq Operations Pad | $399,000 | $449,000 |
| Chemical and Contaminated Soils | Amaruq Project | $0 | $606,032 |
| Building, Equipment and Infrastructure | Amaruq Project | $472,180 | $620,245 |
| Water Management | A-P5 & Quarry sump | $51,690 | $60,290 |
| Interim Care and Maintenance | | $0 | $109,431 |
| | **SUBTOTAL: Capital Cost** | **$1,346,100** | **$2,404,330** |
| **Indirect Costs** | **Component Name** | **AEM RECLAIM Cost ($)** | **Arcadis RECLAIM Cost ($)** |

| | | | |
|---|---|---|---|
| Mobilization/Demobilization | Amaruq Project | $37,728 | $118,873 |
| Post-Closure Monitoring and Maintenance | | $0 | $100,000 |
| Post Closure KIA inspections – Total of 2 inspections | Amaruq Project | $10,000 | $0 |
| Engineering | | $67,305 | $120,217 |
| Project Management | | $67,305 | $120,217 |
| Health and Safety Plans/Monitoring & QA/QC | | $13,461 | $24,043 |
| Bonding/Insurance | | $13,461 | $24,043 |
| Contingency | | $269,222 | $480,866 |
| Market Price Factor Adjustment | | $0 | $0 |
| **SUBTOTAL: Indirect Cost** | | **$478,483** | **$988,259** |
| **TOTAL COSTS** | | **$1,824,583** | **$3,392,589** |

**TABLE 3: Summary of Reclamation Costs for Meadowbank Exploration Site (2BE-MEA1318)**

| **Direct/Capital Costs** | **Component Name** | **AEM RECLAIM Cost ($)** | **Arcadis RECLAIM Cost ($)** |
|---|---|---|---|
| Building, Equipment and Infrastructure | Meadowbank Exploration Project | $47,958 | $146,643 |
| Chemicals and Contaminated Soil Management | | $0 | $86,260 |
| Interim Care and Maintenance | | $0 | $109,431 |
| | **SUBTOTAL: Capital Cost** | **$47,958** | **$342,334** |
| | | | |
| **Indirect Costs** | **Component Name** | **AEM RECLAIM Cost ($)** | **Arcadis RECLAIM Cost ($)** |
| Mobilization/Demobilization | Meadowbank Exploration Project | $21,332 | $38,510 |
| Post-Closure Monitoring and Maintenance | | $0 | $0 |
| Engineering | | $2,398 | $17,117 |
| Project Management | | $2,398 | $17,117 |
| Health and Safety Plans/Monitoring & QA/QC | | $480 | $3,423 |
| Bonding/Insurance | | $480 | $3,423 |
| Contingency | | $9,592 | $68,467 |
| Market Price Factor Adjustment | | $0 | $0 |

| | | | | |
|---|---|---|---|---|
| | | **SUBTOTAL: Indirect Cost** | **$36,678** | **$148,057** |
| | | **TOTAL COSTS** | **$84,636** | **$490,391** |

**Recommendation:** INAC is aware that there is an approximate difference of $2.0 Million between the two closure costs estimates and hopes that an agreement can be reached on Quantum of security under water licence 2BE-MEA1318.

**2.** **Bulk Sample/Waste Rock Storage Pads**

**Source:** Main Application Document – Part 2 – Section 10.2

**Comment:** Under Section 10.2 – Waste Pads Engineered configuration. The applicant states: *"In 2018 when the bulk sample is stored on the pad, leachate having trace metals above licence criteria may prove to be an issue. Water flowing from the pad will be intercepted and sampled to ensure water quality criteria are not being exceeded. If any licence criteria for trace metals is exceeded, the water will be pumped to A-P5".*

**Recommendation:** INAC would like further clarification here on whether the run-off from these waste pads will be collected in a sump or collection pond prior to testing/sampling. The concern here is that if there is no collection system in place then possible contamination/contaminants will enter the environment.

ARCADIS Design & Consultancy for natural and built assets

VIA EMAIL: David.Abernethy@aandc-aadnc.gc.ca

Mr. David Abernethy
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ENVIRONMENT

Subject:
Reclamation Cost Estimate for the Amaruq and Meadowbank Exploration Project and All-weather Access Road, Kivalliq Region of Nunavut

Date:
October 31, 2016

Contact:
Charles Gravelle, M.Sc.E., P.Eng.

Phone:
905 882 5984

Email:
charles.gravelle@arcadis.com

Our ref:
702569-000

Dear Mr. Abernethy:

Further to the request of Mr. David Abernethy of Indigenous and Northern Affairs Canada (INAC), Arcadis Canada Inc. (Arcadis) was asked to review the quantum of security established by Agnico Eagle Mines Limited (AEM) as part of their fourth water licence application amendment (2BE-MEA1318) for the Amaruq and Meadowbank Exploration Projects and the reclamation costs associated with the all-weather road to be constructed between the existing Meadowbank mine operations and the Amaruq Exploration site (permitted under the existing water licence 8BC-AEA1525). The results of our evaluation are presented herein. The costing has been split into three sections to deal with each parcel of land individually and in the context of the Inuit Owned Lands (IOL) on which the existing mine operations are located. For clarity, the all-weather road comprises a 62.5 m road with a 38.5 km section through Crown land as well as four borrow pits while the balance of the road is on IOL lands.

The reclamation cost estimates are based on the information provided to the Nunavut Water Board (NWB) by AEM and include:

1. Conceptual Closure and Reclamation Plan & RECLAIM Estimate Version 6 (March 2016) – [relates to the Amaruq and Meadowbank Exploration Projects]
2. Amaruq Exploration Access Road, Road Management Plan Version 1 (March 2015)

3. Amaruq Exploration Access Road Conceptual Closure Plan Version 1 (February 2015)

Furthermore, information collected during the site reconnaissance work which took place on August 10, 2016 was also used in the preparation of the RECLAIM cost estimates.

In summary, the total cost of the reclamation works as prepared by Agnico Eagle and Arcadis are tabulated below:

**TABLE 1a: Summary of Quantum of Security Costs for Exploration Sites (2BE-MEA1318)**

| Site | | Total Reclamation Cost ($) | Land Cost ($) | Water Cost ($) | IOL Cost ($) |
|---|---|---|---|---|---|
| Amaruq Exploration | AEM | $1,824,583 | NA | NA | $1,824,583 |
| | Arcadis | $3,392,589 | $1,796,368 | $1,596,221 | $3,392,589 |
| Meadowbank Exploration | AEM | $84,636 | NA | NA | $84,636 |
| | Arcadis | $490,391 | $256,814 | $233,576 | $490,391 |
| Aggregate Cost | AEM | $1,909,219 | NA | NA | $1,909,219 |
| | Arcadis | $3,882,980 | $2,053,182 | $1,829,797 | $3,882,980 |

Note NA means a distribution was not provided.

**TABLE 1b: Summary of Quantum of Security Costs for Access Road (8BC-AEA1525)**

| Site | | Total Reclamation Cost ($) | Land Cost ($) | Water Cost ($) |
|---|---|---|---|---|
| All-Weather Access Road | AEM | $1,693,010 | NA | NA |
| | Arcadis | $2,197,947 | $1,021,790 | $1,176,157 |
| IOL Lands Only | AEM | $507,903 | NA | NA |
| | Arcadis | $835,220 | $388,280 | $446,940 |
| Crown Lands Only | AEM | $1,185,107 | NA | NA |
| | Arcadis | $1,362,727 | $633,510 | $729,217 |

Note NA means a distribution was not provided.

## 1.0 AMARUQ EXPLORATION MINE

On the basis of the 2016 Conceptual Closure and Reclamation Plan, as presented by AEM in the No.4 amendment to the water licence application 2BE-MEA1318, the reclamation works at the Amaruq site will comprise the following:

1. Closure of the underground mine workings including the sealing of the portal and two vent raises;
2. Closure of the rock quarry and esker borrow pits;
3. Grading of the waste rock piles;
4. Decommissioning of the water management system;
5. Decommissioning of the mine and camp infrastructure;
6. Scarifying site access roads, airstrip and laydown/camp area; and
7. Mobilization/Demobilization of equipment as required to complete the reclamation works.

The reclamation work is to be undertaken in accordance with the conditions of the water licence and follows INAC guidelines as outlined in the INAC November 2013 document entitled *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*. It is understood from the conceptual reclamation document prepared by AEM the following waste management practices will be implemented on site:

1. All camp waste will be incinerated on site and residue transferred off-site for disposal;
2. All chemicals will be transferred off-site for resale or disposal as required;
3. Any surplus fuels would be transferred off-site and sold to the community of Baker Lake; and
4. Any potentially acid generating (PAG) rock will be managed on-site within the portal entrance.

A side by side comparison of the AEM and Arcadis RECLAIM Estimates is provided in Table 2.

**TABLE 2 Summary of Reclamation Costs for Amaruq Exploration Site (2BE-MEA1318)**

| Capital Costs | Component Name | AEM RECLAIM Cost ($) | Arcadis RECLAIM Cost ($) |
|---|---|---|---|
| Quarry and Borrow Pits | Amaruq Quarry | $36,150 | $40,152 |
| Portal/Ramp Closure | Amaruq Ramp | $387,090 | $519,181 |
| Waste Rock Piles | Amaruq Operations Pad | $399,000 | $449,000 |
| Chemical and Contaminated Soils | Amaruq Project | $0 | $606,032 |
| Building, Equipment and Infrastructure | Amaruq Project | $472,180 | $620,245 |
| Water Management | A-P5 & Quarry sump | $51,690 | $60,290 |
| Interim Care and Maintenance | | $0 | $109,431 |
| **SUBTOTAL: Capital Cost** | | **$1,346,100** | **$2,404,330** |

| Indirect Costs | Component Name | AEM RECLAIM Cost ($) | Arcadis RECLAIM Cost ($) |
|---|---|---|---|
| Mobilization/Demobilization | Amaruq Project | $37,728 | $118,873 |
| Post-Closure Monitoring and Maintenance | | $0 | $100,000 |
| Post Closure KIA inspections – Total of 2 inspections | Amaruq Project | $10,000 | $0 |
| Engineering | | $67,305 | $120,217 |
| Project Management | | $67,305 | $120,217 |
| Health and Safety Plans/Monitoring & QA/QC | | $13,461 | $24,043 |
| Bonding/Insurance | | $13,461 | $24,043 |
| Contingency | | $269,222 | $480,866 |
| Market Price Factor Adjustment | | $0 | $0 |
| **SUBTOTAL: Indirect Cost** | | **$478,483** | **$988,259** |
| **TOTAL COSTS** | | **$1,824,583** | **$3,392,589** |

Details of the Arcadis RECLAIM costs for the Amaruq Exploration site are provided in Attachment A. An explanation of why costs are different between the AEM and Arcadis estimates, by cost component, are discussed below. The primary difference relates to the assumption by AEM that no hydrocarbon or other soil impacts will be present on site.

**Quarry and Borrow Pits**

In general, the cost derived by Arcadis for this activity is in line with that derived by AEM. The difference relates to a minor change in volume for material quantities used to close off the quarry and borrow pit access roads (AEM 10 $m^3$ versus Arcadis 20 $m^3$) and using the RECLAIM unit rate of $17.05/$m^3$ versus $15.00/$m^3$ for the construction of the berm around the perimeter of the rock quarry. The $17.05/$m^3$ is reflective of the unit rate provided for this type of work in the RECLAIM version 7 model.

**Portal/Ramp Closure**

For this part of the closure program AEM and Arcadis are in agreement with respect to the closure of the portal. The cost difference is related to the capping of the two vent raises. The AEM estimate is too low for the nature of the work to be done at the Amaruq site. Arcadis has used the unit rate provided by AEM for the RECLAIM estimate done for the Meliadine Mine in 2015/16. This change in unit rate is $645/$m^3$ for a 21 $m^3$ cap versus a lump sum cost of $79,590.60 as provided by AEM for their Meliadine program.

**Waste Rock Piles**

The AEM and Arcadis costs are in line save for an additional $50,000 added to the Arcadis cost estimate to cover testing of the waste rock to confirm whether or not potentially acid generating rock is present within the piles.

**Chemicals and Contaminated Soils**

No cost was carried by AEM for this potential reclamation work. Given that there will be chemical and fuels used on site there is the potential for residual materials to be left on site should the site be abandoned. For the purposes of this RECLAIM estimate Arcadis has assumed that one 10,000 L, one 50,000L and a 100,000L tank of fuel will remain and an assortment of chemicals may remain as outlined in Attachment A. Furthermore the AEM estimate did not include the management of any contaminated soil due to fuel spills. On the basis of past experience (eg. Meliadine and Meadowbank mines) it is unlikely that no petroleum hydrocarbon contamination will be present at the end of operations on site and as such a volume of soil should be assumed. For the purposes of this estimate a volume of 2,000 $m^3$ has been assumed.

In addition to the potential for chemical and contaminated soil impacts it is recommended that an allowance for a hazardous material survey, a Phase 1 Environmental Site Assessment (ESA) and Phase 2 ESA be included in this reclamation cost to cover the costs that would be incurred by INAC should they inherit an abandoned site and need to assess the site conditions prior to implementing a reclamation program.

**Building, Equipment and Infrastructure**

The table below outlines differences in costs for the decommissioning and removal of buildings, equipment and infrastructure at the Amaruq site.

| Item | Activity | Notes | AEM Unit Rate | Arcadis Unit Rate | Reason for difference |
|---|---|---|---|---|---|
| 1 | Accommodation Complex | Tents removed from site and transferred to Baker Lake | $27.50 | $41.00 | Unit rate used was too low to cover the cost of equipment and manpower required for the work should outside workers be required to complete the work. The higher rate provides monies to cover any decontamination work that may be required. |
| 2 | 20 Trailers | Relocate to Baker Lake | $2,500.00 | $4,000.00 | Unit rate was increased to cover decontamination of trailers and |

| Item | Activity | Notes | AEM Unit Rate | Arcadis Unit Rate | Reason for difference |
|---|---|---|---|---|---|
| | | | | | demobilization to Baker Lake as the rates provided are too low to complete demobilization work. |
| 3 | Wood framed structures | wooden tent frames, corridors and dock | $27.50 | $41.00 | See item 1 above. |
| 4 | Drills | Assume they will be removed from site at end of season | $0.00 | $0.00 | |
| 5 | Water and Wastewater Treatment Facilities | Decommission portable systems | $2,500.00 | $4,000.00 | See item 2 above. |
| 6 | AN Storage Facility | 5 above and 2 below ground containers | $2,500.00 | $4,000.00 | See item 2 above |
| 7 | Warehouse, Shops and Other | Dismantle sprung bldg and relocate to Baker Lake | $15,000.00 | $15,000.00 | |
| 8 | Incinerator Building | two mobile units | $1,500.00 | $1,500.00 | |
| 9 | Fuel tanks on -site | 38 tanks to relocate | $2,500.00 | $4,000.00 | See item 2 above |
| 10 | Fuel drums | 40 drums | $10.00 | $10.00 | |
| 11 | Freshwater intake | | $3,000.00 | $3,000.00 | |
| 12 | Seacans | 50 units on site | $1,250.00 | $2,500.00 | See item 2 above |

The rates used by AEM for the decontamination of mobile equipment and the reclamation of local access roads, camp pad and borrow pits were also used by Arcadis for this RECLAIM estimate.

**Water Management**

The only difference between the AEM and Arcadis estimates relates to the decommissioning of the fresh water supply system that was not included in the AEM estimate. The cost included for the decommissioning of the water supply system is $8,600.

**Interim Care and Maintenance**

For the purposes of this exercise it has been assumed by Arcadis that up to 18 months of inspection and monitoring work would be required between the time of hypothetical abandonment and the start of reclamation works.

**Mobilization/Demobilization**

The difference in the cost for this work relates to AEM using the low end of the RECLAIM unit rate for kilometer charges ($3.40/km) and Arcadis using the high end ($10.25/km). The higher rate was used by Arcadis to reflect the fact that INAC does not have their own equipment in Baker Lake and there would be increased costs associated with retaining this equipment should INAC inherit the site.

**Post-Closure Monitoring and Maintenance**

No cost was assigned for this work by AEM. For the purposes of this assignment we have assigned a cost for two inspections which will include a geotechnical review of the mine openings and surface water monitoring in the area of the former mine operations to confirm no issues have arisen as a result of the mine or reclamation work.

**Post Closure KIA inspections – Total of 2 inspections**

The Arcadis estimate has covered this cost under Post-Closure Monitoring and Maintenance.

**Engineering**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 5%.

**Project Management**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 5%.

**Health and Safety Plans/Monitoring & QA/QC**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 1%.

**Bonding/Insurance**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 1%.

**Contingency**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 20%.

**Market Price Factor Adjustment**

Given the short duration of the program no market price factor has been applied to this quantum of security estimate

**Summary of Costs for the Amaruq Exploration Site by Liability Distribution**

A breakdown of the RECLAIM cost by liability distribution (ie Land or Water), as well as by Inuit Owned Lands, is provided in Table 3. The Land and Water distribution is as set out for the respective reclamation works with more details provided in Attachment A. For the purposes of the Amaruq site the entire site workings are within existing Inuit Owned Lands and as such 100% of the costs for the reclamation work at the Amaruq project are assigned to this site. The costs related to the all-weather access road are included later in this evaluation.

**TABLE 3: Summary of Costs Distribution by Land/Water and IOL for Amaruq Exploration Site**

| Capital Costs | Total Cost ($) | Land Cost ($) | Water Cost ($) | IOL Cost ($) |
|---|---|---|---|---|
| Quarry and Borrow Pits | $40,152 | $40,152 | | $40,152 |
| Portal/Ramp Closure | $519,181 | $159,181 | | $519,181 |
| Waste Rock Piles | $449,000 | $224,500 | | $449,000 |
| Chemical and Contaminated Soils | $606,032 | $300,516 | | $601,032 |
| Building, Equipment and Infrastructure | $576,245 | $546,238 | $74,006 | $576,245 |
| Water Management | $60,290 | $0 | $60,290 | $60,290 |
| Interim Care and Maintenance | $109,431 | $0 | $109,431 | $109,431 |
| Mobilization/Demobilization | $118,873 | $62,943 | $55,930 | $118,873 |
| Post-Closure Monitoring and Maintenance | $100,000 | $55,487 | $44,513 | $100,000 |
| Post Closure KIA inspections – Total of 2 inspections | $0 | $0 | $0 | $0 |
| Engineering | $120,217 | $63,654 | $56,562 | $120,217 |

| Capital Costs | Total Cost ($) | Land Cost ($) | Water Cost ($) | IOL Cost ($) |
|---|---|---|---|---|
| Project Management | $120,217 | $63,654 | $56,562 | $120,217 |
| Health and Safety Plans/Monitoring & QA/QC | $24,043 | $12,731 | $11,312 | $24,043 |
| Bonding/Insurance | $24,043 | $12,731 | $11,312 | $24,043 |
| Contingency | $480,866 | $254,617 | $226,249 | $480,866 |
| Market Price Factor Adjustment | $0 | $0 | $0 | $0 |
| **TOTAL AMOUNT** | **$3,392,589** | **1,796,368** | **1,596,221** | **$3,392,589** |

## 2.0 MEADOWBANK EXPLORATION MINE

On the basis of the 2016 Conceptual Closure and Reclamation Plan, as presented by AEM in the No.4 amendment to the water licence application 2BE-MEA1318, the reclamation works at the Meadowbank site will comprise the following:

1. Relocation of environtanks from site;
2. Dismantling and relocation of driller shack;
3. Dismantling and relocation of coverall for drillers;
4. Dismantling and relocation of garage; and
5. Mobilization/Demobilization of Seacans.

All equipment, materials and supplies at the Meadowbank Exploration site will be relocated to the AEM port facility in Baker Lake. A side by side comparison of the AEM and Arcadis RECLAIM Estimates is provided in Table 4.

**TABLE 4: Summary of Reclamation Costs for Meadowbank Exploration Site (2BE-MEA1318)**

| Capital Costs | Component Name | AEM RECLAIM Cost ($) | Arcadis RECLAIM Cost ($) |
|---|---|---|---|
| Building, Equipment and Infrastructure | Meadowbank Exploration Project | $47,958 | $146,643 |
| Chemicals and Contaminated Soil Management | | $0 | $86,260 |
| Interim Care and Maintenance | | $0 | $109,431 |
| | **SUBTOTAL: Capital Cost** | **$47,958** | **$342,334** |
| | | | |

| Indirect Costs | Component Name | AEM RECLAIM Cost ($) | Arcadis RECLAIM Cost ($) |
|---|---|---|---|
| Mobilization/Demobilization | Meadowbank Exploration Project | $21,332 | $38,510 |
| Post-Closure Monitoring and Maintenance | | $0 | $0 |
| Engineering | | $2,398 | $17,117 |
| Project Management | | $2,398 | $17,117 |
| Health and Safety Plans/Monitoring & QA/QC | | $480 | $3,423 |
| Bonding/Insurance | | $480 | $3,423 |
| Contingency | | $9,592 | $68,467 |
| Market Price Factor Adjustment | | $0 | $0 |
| | **SUBTOTAL: Indirect Cost** | **$36,678** | **$148,057** |
| | **TOTAL COSTS** | **$84,636** | **$490,391** |

Details of the Arcadis costs for the Meadowbank Exploration site are provided in Attachment B. An explanation of why costs are different between the AEM and Arcadis costs, by cost component, are discussed below. The primary difference between the two estimates relates to the use of different rates for the mobilization and demobilization of equipment to complete the site works.

**Building, Equipment and Infrastructure**

In general, there is agreement between the AEM and Arcadis RECLAIM costs for this activity. Minor variances with Arcadis using higher RECLAIM rates in some instances ($41 versus $27.50) however on a whole the costs are materially the same. The higher rate relates to the work required to disassemble the wooden structures and framing. In addition, the rate for the management of the Seacans has been made consistent with the costs for the Amaruq site.

**Interim Care and Maintenance**

For the purposes of this exercise it has been assumed by Arcadis that up to 18 months of inspection and monitoring work would be required between the time of hypothetical abandonment and the start of reclamation works.

**Chemicals and Contaminated Soils**

No allowance has been included in the AEM reclamation estimates for the management of residual chemicals or related soil contamination (related to petroleum hydrocarbon storage on site). On the basis of

past experience (eg. Meliadine and Meadowbank mines) it is unlikely that no petroleum hydrocarbon contamination will be present at the end of operations on site and as such a volume of soil should be assumed. For the purposes of this estimate a volume of 200 $m^3$ has been assumed. It has been assumed that any residual materials would be transferred either to the Amaruq or Meadowbank sites for treatment.

**Mobilization and Demobilization**

The difference in the cost for this activity is related to the use of the low end unit rate by AEM versus the high end rate used by Arcadis for the movement of equipment to and from the site to complete the demobilization from this site. The logic used here is consistent with that used for the Amaruq estimate.

**Post-Closure Monitoring and Maintenance**

No cost was assigned for this work by AEM. We concur with this assessment as this was only a camp site and there is not legacy infrastructure to be monitored.

**Engineering**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 5%.

**Project Management**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 5%.

**Health and Safety Plans/Monitoring & QA/QC**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 1%.

**Bonding/Insurance**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 1%.

**Contingency**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 20%.

**Market Price Factor Adjustment**

Given the short duration of the program no market price factor has been applied to this quantum of security estimate.

**Summary of Costs for the Meadowbank Exploration Site by Liability Distribution**

A breakdown of the RECLAIM cost by liability distribution (ie Land or Water), as well as by Inuit Owned Lands, is provided in Table 5. The Land and Water distribution is as set out for the respective reclamation works with more details provided in Attachment B. For the purposes of the Meadowbank site the entire site workings are within existing Inuit Owned Lands and as such 100% of the costs for the reclamation work at the Meadowbank Exploration project are assigned to this site. The costs related to the all-weather access road are included later in this evaluation.

**TABLE 5: Summary of Costs Distribution by Land/Water and IOL for Meadowbank Exploration Site**

| Capital Costs | Total Cost ($) | Land Cost ($) | Water Cost ($) | IOL Cost ($) |
|---|---|---|---|---|
| Building, Equipment and Infrastructure | $146,643 | $136,148 | $10,495 | $146,643 |
| Chemical and Contaminated Soil Management | $86,260 | $43,130 | $43,130 | $86,260 |
| Interim Care and Maintenance | $109,431 | $0 | $109,431 | $109,431 |
| Mobilization/Demobilization | $38,510 | $20,167 | $18,343 | $38,510 |
| Post-Closure Monitoring and Maintenance | $0 | $0 | $0 | $0 |
| Engineering | $17,117 | $8,964 | $8,153 | $17,117 |
| Project Management | $17,117 | $8,964 | $8,153 | $17,117 |
| Health and Safety Plans/Monitoring & QA/QC | $3,423 | $1,793 | $1,631 | $3,423 |
| Bonding/Insurance | $3,423 | $1,793 | $1,631 | $3,423 |
| Contingency | $68,467 | $35,856 | $32,611 | $68,467 |
| Market Price Factor Adjustment | $0 | $0 | $0 | $0 |
| **TOTAL AMOUNT** | **$490,391** | **$256,814** | **$233,576** | **$490,391** |

## 3.0 ALL-WEATHER ROAD

On the basis of the 2015 Road Management Plan, the Amaruq Exploration Access Road Conceptual Closure and Reclamation Plan (February 2015), and subsequent discussions between Arcadis, AEM and INAC staff during the 2016 site visit it is understood that the reclamation of the 62.5 km 6.5 m wide all-weather road between the Amaruq and Meadowbank mine site will comprise the following:

1. Removal of eleven bridges (update from site discussions);
2. Scarifying all 62.5 km of road surface;
3. Spur roads and close seven borrow pit;
4. Removal of 153 culverts; and
5. Grading as required to facilitate the movement of surface water.

An AEM prepared reclamation cost estimate was included in the water licence (8BC-AEA1525) application documentation and was reviewed by Arcadis as part of the current exercise. A summary of the RECLAIM Cost Estimate for this portion of the site, as prepared by Arcadis, is provided in Table 6.

**TABLE 6: Summary of Reclamation Costs for Access Road (8BC-AEA1525)**

| Capital Costs | Component Name | AEM RECLAIM Cost ($) | Arcadis RECLAIM Cost ($) |
|---|---|---|---|
| Scarifying Road and Removal of Infrastructure (bridges and culverts) | All Weather Access Road Reclamation | $1,155,500 | $1,448,700 |
| Interim Care and Maintenance | | $0 | $109,431 |
| | **SUBTOTAL: Capital Cost** | **$1,155,500** | **$1,558,331** |
| **Indirect Costs** | | | |
| Mobilization/Demobilization | | $42,750 | $16,214 |
| Post-Closure Monitoring and Maintenance | 5 years of monitoring | $125,000 | $125,000 |
| Engineering | | $57,775 | $77,907 |
| Project Management | | $57,775 | $77,907 |
| Health and Safety Plans/Monitoring & QA/QC | | $11,555 | $15,581 |
| Bonding/Insurance | | $11,555 | $15,581 |
| Contingency | | $231,100 | $311,626 |
| Market Price Factor Adjustment | | $0 | $0 |
| | **SUBTOTAL: Indirect Cost** | **$537,510** | **$639,816** |
| | **TOTAL COSTS** | **$1,693,010** | **$2,197,947** |

**Road Infrastructure and Borrow Area Closure**

In general, there is agreement between the AEM and Arcadis RECLAIM costs for this activity. The main difference between the two cost estimates relates to the decommissioning of the eleven bridges along the route. For the purposes of the Arcadis estimate we have assumed the unit rate used by AEM in the development of the Meliadine mine RECLAIM estimate for the decommissioning of bridges along the all-weather access road for that mine site.

**Interim Care and Maintenance**

For the purposes of this exercise it has been assumed by Arcadis that up to 18 months of inspection and monitoring work would be required between the time of hypothetical abandonment and the start of reclamation works.

**Mobilization and Demobilization**

The main difference between the AEM and Arcadis estimates for this activity relate to the mobilization of equipment to remove the bridges. The cost to mobilize a crane for the bridge work has been incorporated into the unit rate for the bridge decommissioning where as it has been assumed that AEM have considered this cost in the mobilization cost activity.

**Post-Closure Monitoring and Maintenance**

The AEM estimate includes for post-closure monitoring and maintenance has been used for both the AEM and Arcadis estimates.

**Engineering**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 5%.

**Project Management**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 5%.

**Health and Safety Plans/Monitoring & QA/QC**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 1%.

**Bonding/Insurance**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 1%.

**Contingency**

No difference in the assigned percentage between the AEM and Arcadis estimates. The percentage used has been set at 20%.

**Market Price Factor Adjustment**

Given the short duration of the program no market price factor has been applied to this quantum of security estimate.

**Summary of Costs for the Access Road by Liability Distribution**

A breakdown of the RECLAIM cost by liability distribution (ie Land or Water), as well as by Inuit Owned Lands, is provided in Table 7. The Land and Water distribution is as set out for the respective reclamation works with more details provided in Attachment C. The majority of the access road is located on Crown Land (38.5 of the 62.5 km of road) outside of Inuit Owned Lands (IOL). On the basis of the mapping provided in the Road Management Plan it has been estimated that approximately 38% of the road alignment is on IOL land and as such 38% of the cost would be distributed to the IOL.

**TABLE 7 Summary of Costs Distribution for Access Road (8BC-AEA1525)**

| Capital Costs | Total Cost ($) | Land Cost ($) | Water Cost ($) | IOL Cost ($) | Crown Cost ($) |
|---|---|---|---|---|---|
| Scarifying Road and Removal of Infrastructure | $1,558,131 | $724,350 | $833,781 | $592,090 | $966,041 |
| Interim Care and Maintenance | $109,431 | $0 | $109,431 | $41,584 | $67,847 |

| Indirect Costs | Total Cost ($) | Land Cost ($) | Water Cost ($) | IOL Cost ($) | Crown Cost ($) |
|---|---|---|---|---|---|
| Mobilization/Demobilization | $16,214 | $7,538 | $8,676 | $6,161 | $10,053 |
| Post-Closure Monitoring and Maintenance | $125,000 | $58,110 | $65,890 | $47,500 | $77,500 |
| Engineering | $77,907 | $36,218 | $41,689 | $29,605 | $48,302 |
| Project Management | $77,907 | $36,218 | $41,689 | $29,605 | $48,302 |
| Health and Safety Plans/Monitoring & QA/QC | $15,581 | $7,244 | $8,338 | $5,921 | $9,660 |
| Bonding/Insurance | $15,581 | $7,244 | $8,338 | $5,921 | $9,660 |
| Contingency | $311,626 | $144,870 | $166,756 | $118,418 | $193,208 |
| Market Price Factor Adjustment | $0 | $0 | $0 | $0 | $0 |
| **TOTAL AMOUNT** | **$2,197,947** | **$1,021,790** | **$1,176,157** | **$876,805** | **$1,321,142** |

We trust the information provided herein meets your current needs. Should you require additional information please do not hesitate to contact the writer.

Sincerely,

Arcadis Canada Inc.

REGISTERED PROFESSIONAL ENGINEER
C.F. GRAVELLE
LICENSEE
NWT/NU

Charles F. Gravelle, M.Sc.E., P.Eng.
Principal

Copies:
cc: File

# ATTACHMENT A

## RECLAIM Estimate for Amaruq Exploration Mine

## SUMMARY OF COSTS

| CAPITAL COSTS | COMPONENT NAME | COST | LAND LIABILITY | WATER LIABILITY |
|---|---|---|---|---|
| ROCK AND ESKER QUARRIES | | $40,152 | $40,152 | $0 |
| UNDERGROUND MINE | | $519,181 | $159,181 | $360,000 |
| TAILINGS FACILITY | | $0 | $0 | $0 |
| ROCK PILE | | $449,000 | $224,500 | $224,500 |
| BUILDINGS AND EQUIPMENT | | $620,245 | $546,238 | $74,006 |
| CHEMICALS AND CONTAMINATED SOIL MANAGEMENT | | $606,032 | $303,016 | $303,016 |
| SURFACE AND GROUNDWATER MANAGEMENT | | $60,290 | - | $60,290 |
| INTERIM CARE AND MAINTENANCE | | $109,431 | - | $109,431 |
| | **SUBTOTAL: Capital Costs** | **$2,404,330** | **$1,273,087** | **$1,131,243** |
| | **PERCENT OF SUBTOTAL** | | **53%** | **47%** |

| INDIRECT COSTS | | COST | LAND LIABILITY | WATER LIABILITY |
|---|---|---|---|---|
| MOBILIZATION/DEMOBILIZATION | | $118,873 | $62,943 | $55,930 |
| POST-CLOSURE MONITORING AND MAINTENANCE | | $100,000 | $52,950 | $47,050 |
| ENGINEERING | 5% | $120,217 | $63,654 | $56,562 |
| PROJECT MANAGEMENT | 5% | $120,217 | $63,654 | $56,562 |
| HEALTH AND SAFETY PLANS/MONITORING & QA/QC | 1% | $24,043 | $12,731 | $11,312 |
| BONDING/INSURANCE | 1% | $24,043 | $12,731 | $11,312 |
| CONTINGENCY | 20% | $480,866 | $254,617 | $226,249 |
| MARKET PRICE FACTOR ADJUSTMENT | 0% | $0 | $0 | $0 |
| | **SUBTOTAL: Indirect Costs** | **$988,259** | **$523,281** | **$464,978** |

| | | | |
|---|---|---|---|
| **TOTAL COSTS** | **$3,392,589** | **$1,796,368** | **$1,596,221** |

1 **Rock and Esker Quarries:** **Amaruq Exploration Mine**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| CONTROL ACCESS | | | | | | | | | |
| | | m | | #N/A | $0.00 | $0 | | $0 | $0 |
| Signs | Do not enter signs in local dialect and english | each | 10 | SH | $37.08 | $371 | 100% | $371 | $0 |
| Berm at crest | only required at the rock quarry | m3 | 1800 | RB1H | $17.05 | $30,690 | 100% | $30,690 | $0 |
| Barrier to Access Road | Material to barricade access road | m3 | 20 | RB1H | $17.05 | $341 | 100% | $341 | $0 |
| Stabilization of quarry walls | Scaling of rock quarry walls | hr | 50 | load-s | $175.00 | $8,750 | 100% | $8,750 | $0 |
| | | | | | **Total** | $40,152 | | $40,152 | $0 |
| | | | | | **% of Total** | | | 100% | 0% |

1 **Underground Mine Name: Amaruq Portal/Ramp** **UG Mine # *1***

| ACTIVITY/MATERIAL | Notes | Unit | Qty | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| CONTROL ACCESS | | | | | | | | | |
| Backfill portal | Fill box cut with waste rock and cover with NPAG waste rock | m3 | 12,000 | POR | $30.00 | $360,000 | | $0 | $360,000 |
| Cap raises/stopes | Capping of two vent raises | each | 2 | MBK | $79,590.60 | $159,181 | 100% | $159,181 | $0 |
| REMOVE HAZARDOUS MATERIALS | | | | | | | | | |
| INSTALL BULKHEADS | | | | | | | | | |
| FLOOD MINE | | | | | | | | | |
| INSTALL GROUNDWATER COLLECTION SYSTEM | | | | | | | | | |
| SPECIALIZED ITEMS | | | | | | | | | |
| | | | | | **Total** | $519,181 | | $159,181 | $360,000 |
| | | | | | **% of Total** | | | 31% | 69% |

1 **Rock Pile Name:** **Operations Pad - Waste Rock Piles**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| STABILIZE SLOPES | | | | | | | | | |
| Contouring of Waste Rock | Grading within Operations Pad | m3 | 266000 | DR | $1.50 | $399,000 | 50% | $199,500 | $199,500 |
| COVER ROCK PILE | | | | | | | | | |
| VERY LOW PERMEABILITY COVER (in addition to above) | | | | | | | | | |
| CONSTRUCT DIVERSION DITCHES | | | | | | | | | |
| CONSTRUCT SEEPAGE COLLECTION POND | | | | | | | | | |
| INSTALL GROUNDWATER COLLECTION SYSTEM | | | | | | | | | |
| RELOCATE DUMPS | | | | | | | | | |
| SPECIALIZED ITEMS | | | | | | | | | |
| Waste Rock Testing | | each | 1 | #N/A | $50,000.00 | $50,000 | 50% | $25,000 | $25,000 |
| TREAT ROCK PILE SEEPAGE - see "Water Management" | | | | | | | | | |
| | | | | | **Total** | $449,000 | | $224,500 | $224,500 |
| | | | | | **% of Total** | | | 50% | 50% |

1 **Chemicals/Soil Area Name:** **Amaruq Exploration Mine**

**Note:** The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| Hazardous materials audit | | LS | 1 | #N/A | $25,000.00 | $25,000 | 50% | $12,500 | $12,500 |
| BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS | | | | | | | | | |
| Decontaminate buildings | includes glycol system | mandays | 20 | AEM | $1,000.00 | $20,000 | 50% | $10,000 | $10,000 |
| Decontaminate power plant | | mandays | 5 | AEM | $1,000.00 | $5,000 | 50% | $2,500 | $2,500 |
| HAZARDOUS MATERIALS REMOVAL | | | | | | | | | |
| Waste oils | | litre | 30000 | ORL | $0.43 | $12,900 | 50% | $6,450 | $6,450 |
| Waste fuel | | litre | 160000 | ORL | $0.43 | $68,800 | 50% | $34,400 | $34,400 |
| Waste batteries | | kg | 5 | AEM | $75.00 | $375 | 50% | $188 | $188 |
| Assay & environmental lab reagents | | kg | 20000 | PCRH | $2.50 | $50,000 | 50% | $25,000 | $25,000 |
| Assay & environmental lab reagents | | pallet | 1 | AEM | $2,606.83 | $2,607 | 50% | $1,303 | $1,303 |
| Glycol | | litre | 2000 | PCRH | $2.50 | $5,000 | 50% | $2,500 | $2,500 |
| Machine shop paints , solvents, etc. | | litre | 1500 | PCRH | $2.50 | $3,750 | 50% | $1,875 | $1,875 |
| HAZARDOUS MATERIALS | | | | | | | | | |
| Transportation to disposal facility | | allow | 1 | #N/A | $10,000.00 | $10,000 | 50% | $5,000 | $5,000 |
| Disposal fees | | kg | 25000 | #N/A | $1.00 | $25,000 | 50% | $12,500 | $12,500 |
| Supervision of abatement work | | allow | 1 | #N/A | $40,000.00 | $40,000 | 50% | $20,000 | $20,000 |
| CONTAMINATED SOILS | | | | | | | | | |
| Contam. soil investigation - Phase 1 | | each | 1 | #N/A | $25,000.00 | $25,000 | 50% | $12,500 | $12,500 |
| Contam. soil investigation - Phase 2 | | each | 1 | #N/A | $200,000.00 | $200,000 | 50% | $100,000 | $100,000 |
| CONTAMINATED SOIL REMOVAL | | | | | | | | | |
| Excavate and transport to onsite facility | On site biotreatment | m3 | 2000 | SC4L | $9.30 | $18,600 | 50% | $9,300 | $9,300 |
| Manage hydrocarbon remediation at facility | | m3 | 2000 | CSRL | $47.00 | $94,000 | 50% | $47,000 | $47,000 |
| CONTAMINATED SOIL VERY LOW PERMEABILITY COVER | | | | | | | | | |
| OTHER | | | | | | | | | |
| | | | | #N/A | $0.00 | $0 | | $0 | $0 |
| | | | | | **Total** | $606,032 | | $303,016 | $303,016 |
| | | | | | **% of Total** | | | 50% | 50% |

1 **Building / Equip Name: Amaruq Exploration Mine** **Bldg / Equip #: 1**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| MOVE MOBILE EQUIPMENT TO BAKER LAKE | | | | | | | | | |
| Transfer mobile equipment | assumes 20 pieces to be moved | each | 20 | AEM | $2,500.00 | $50,000 | 50% | $25,000 | $25,000 |
| | | | | | | | | | |
| | Tents removed from site and transferred to Baker Lake | m2 | 632 | BRW | $41.00 | $25,912 | 100% | $25,912 | $0 |
| 20 Trailers | Relocate to Bake Lake | each | 20 | AEM | $2,500.00 | $50,000 | 100% | $50,000 | $0 |
| Wood framed structures | wooden tent frames, corridors and dock | m2 | 120 | BRW | $41.00 | $4,920 | 100% | $4,920 | $0 |
| Drills | Assume they will be removed from site at end of season | m2 | | #N/A | $0.00 | $0 | | $0 | $0 |
| Water and Wastewater Treatment Facilities | Decommission portable systems | each | 5 | | $4,000.00 | $20,000 | 100% | $20,000 | $0 |
| AN Storage Facility | 5 above and 2 below ground containers | m2 | 7 | | $4,000.00 | $28,000 | 100% | $28,000 | $0 |
| Warehouse, Shops and Other | Dismantle sprung bldg and relocate to B | each | 4 | | $15,000.00 | $60,000 | 100% | $60,000 | $0 |
| Incinerator Building | two mobile units | each | 2 | AEM | $1,500.00 | $3,000 | 100% | $3,000 | $0 |
| Fuel tanks on -site | 38 tanks to relocate | each | 38 | | $4,000.00 | $152,000 | 100% | $152,000 | $0 |
| Fuel drums | | each | 40 | AEM | $10.00 | $400 | 100% | $400 | $0 |
| Freshwater intake | | each | 1 | AEM | $3,000.00 | $3,000 | 100% | $3,000 | $0 |
| Seacans | 50 units on site | each | 50 | #N/A | $2,500.00 | $125,000 | 100% | $125,000 | $0 |
| LANDFILL FOR DEMOLITION WASTE (no landfill on site waste to go to Meadowbank) | | | | | | | | | |
| GRADE AND CONTOUR PADS (see below) | | | | | | | | | |
| PUNCTURE LINED SUMPS (no lined sumps on site) | | | | | | | | | |
| RECLAIM ROADS (Site Access Roads Only) | | | | | | | | | |
| Remove culverts | remove site culvert and rip rap sides of road | each | 1 | AEM | $3,000.00 | $3,000 | 50% | $1,500 | $1,500 |
| Scarify on-site roads | | ha | 6 | SCFYH | $6,030.00 | $36,180 | 50% | $18,090 | $18,090 |
| Scarify airstriip | | ha | 0.75 | SCFYH | $6,030.00 | $4,523 | 50% | $2,261 | $2,261 |
| Scarify laydown and camp areas | | ha | 7 | SCFYH | $6,030.00 | $42,210 | 50% | $21,105 | $21,105 |
| Close and reclaim esker borrow pit #7 | | ha | 1.4 | #N/A | $1,500.00 | $2,100 | 50% | $1,050 | $1,050 |
| SPECIALIZED ITEMS | | | | | | | | | |
| Dispose of misc. debris and laydown area refuse | | | 1 | #N/A | $10,000.00 | $10,000 | 50% | $5,000 | $5,000 |
| | | | | | **Total** | $620,245 | | $546,238 | $74,006 |
| | | | | | **% of Total** | | | 88% | 12% |

1 **Water Management Amaruq Exploration Mine**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| BREACH DYKE EMBANKMENT | | | | | | |
| | Excavate breaches in dykes | m3 | 5 | AEM | $40.00 | $200 |
| STABILIZE SEDIMENT PONDS/WATER MANAGEMENT PONDS | | | | | | |
| REDIRECT RUNOFF/CONSTRUCT DIVERSION DITCHES | | | | | | |
| BREACH DITCHES | | | | | | |
| Backfill/recontour | | m3 | 50 | RB3H | $17.80 | $890 |
| DECOMMISSION FRESH WATER SUPPLY | | | | | | |
| Remove System | | LS | 1 | #N/A | $5,000.00 | $5,000 |
| Remove pipeline | | m | 150 | psrh | $24.00 | $3,600 |
| WATER CONTROL IN RECLAMATION QUARRY | | | | | | |
| Install pumping system | A-P5 and quarry sump - each 250 m | LS | 500 | AEM | $50.00 | $25,000 |
| Remove pumping system | A-P5 and quarry sump - each 250 m | LS | 500 | AEM | $50.00 | $25,000 |
| REMOVE PIPELINES | | | | | | |
| GROUNDWATER COLLECTION SYSTEM | | | | | | |
| CONSTRUCT CONTAMINATED WATER STORAGE POND (not required) | | | | | | |
| ON-SITE WATER MANAGEMENT | | | | | | |
| Pump contents of A-P5 down the ramp | | m3 | 4000 | POC | $0.12 | $480 |
| Pump contents of quarry sump down the ramp | | m3 | 1000 | POC | $0.12 | $120 |
| CONSTRUCT PASSIVE TREATMENT SYSTEM (e.g. Constructed Wetland) - not required | | | | | | |
| CONSTRUCT WATER TREATMENT PLANT - not required) | | | | | | |
| | | | | | **Total** | $60,290 |

1 **Interim Care and Maintenance**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| INTERIM CARE & MAINTENANCE | | | | | | |
| on-site caretaker | | manhours | 16 | smanl | 125 | $2,000 |
| extra personnel | | manmonths | | #N/A | 0 | $0 |
| -electrician | | manmonths | | #N/A | 0 | $0 |
| -mechanic | | manmonths | | #N/A | 0 | $0 |
| annual fuel | | litre | 50 | fcdh | 1.39 | $70 |
| misc. supplies | | allow | | #N/A | 0 | $0 |
| pick-up truck | | km | 150 | mherl | 3.4 | $510 |
| small dozer | | allow | | #N/A | 0 | $0 |
| small excavator | | allow | | #N/A | 0 | $0 |
| snow machine | | allow | | #N/A | 0 | $0 |
| communications | | allow | | #N/A | 0 | $0 |
| Environmental sampling & reporting | | each | 1 | #N/A | 2500 | $2,500 |
| geotechnical assessment | | each | 1 | #N/A | 1000 | $1,000 |
| other | | each | | #N/A | 0 | $0 |
| | | | Monthly | Interim C&M Cost | | $6,080 |
| Number of months of ICM | | months | 18 | | **Total** | $109,431 |

## 1 Post-Closure Monitoring & Maintenance:

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| MONITORING & INSPECTIONS | | | | | | |
| Surface Water Sampling | | each | 1 | WSH | $10,000.00 | $10,000 |
| Groundwater Sampling | | each | 1 | WSH | $10,000.00 | $10,000 |
| Survey inspection | | each | 1 | AEM | $30,000.00 | $30,000 |
| Other | | | | #N/A | $0.00 | $0 |
| COVER MAINTENANCE | | | | | | |
| Repair erosion - infill gullies | | allow | | #N/A | $0.00 | $0 |
| Repair erosion - upgrade diversion ditches | | allow | | #N/A | $0.00 | $0 |
| Remove problem vegetation | | allow | | #N/A | $0.00 | $0 |
| Repair animal damage | | allow | | #N/A | $0.00 | $0 |
| Repair/upgrade access controls | | allow | | #N/A | $0.00 | $0 |
| Other | | | | #N/A | $0.00 | $0 |
| SPILLWAY MAINTENANCE | | | | | | |
| Repair erosion | | m3 | | #N/A | $0.00 | $0 |
| Clear spillway | | each | | #N/A | $0.00 | $0 |
| CWTS MAINTENANCE | | | | | | |
| Maintain flow, restore vegetation | | allow | | #N/A | $0.00 | $0 |
| POST-CLOSURE WATER TREATMENT | | | | | | |
| Subtotal, Annual post-closure costs | | | | | | $50,000 |
| Discount rate for calculation of net present value of post-closure cost, % | | | | 0.00% | | |
| Number of years of post-closure activity | Assumes two inspections | | | 2 years | | |
| **Present Value of payment stream** | | | | | | $100,000 |

*Regulatory costs - annual reporting, management plans, progress reports etc

## 1 Mobilization/Demobilization:

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| MOBILIZE HEAVY EQUIPMENT | | | | | | |
| Fuel tanker trucks (2) | | km | 300 | MHERH | 10.25 | $3,075 |
| Flatbed trucks (2) | | km | 300 | MHERH | 10.25 | $3,075 |
| Transport truck or equivalent (1) | | km | 150 | MHERH | 10.25 | $1,538 |
| Crane (1) | | km | 150 | MHERH | 10.25 | $1,538 |
| Loader (1) | | km | 150 | MHERH | 10.25 | $1,538 |
| Light duty vehicles (3) | | km | 450 | MHERL | 3.4 | $1,530 |
| MOBILIZE MISC. EQUIPMENT | | | | | | |
| Pump shipping | | each | 1 | AEM | 2500 | $2,500 |
| Minor tools and equipment | | allow | 1 | AEM | 2000 | $2,000 |
| MOBILIZE CAMP | | | | | | |
| Accommodations and food for crew | 6 workers for 3 weeks | allow | 126 | ACCMH | 175 | $22,050 |
| MOBILIZE WORKERS | | | | | | |
| Reclamation activities - travel time | Travel for 6 workers from BL to site | manhours | 24 | AEM | 31 | $744 |
| WORKER ACCOMODATIONS | | | | | | |
| Reclamation activities | | manmonths | 6 | accm | 5250 | $31,500 |
| MOBILIZE FUEL | | | | | | |
| Fuel freight - reclamation activities | | litre | 25000 | FCDH | 1.39 | $34,750 |
| WINTER ROAD | | | | | | |
| DEMOBILIZE HEAVY EQUIPMENT | | | | | | |
| Fuel tanker trucks (2) | | km | 300 | MHERH | 10.25 | $3,075 |
| Flatbed trucks (2) | | km | 300 | MHERH | 10.25 | $3,075 |
| Transport truck or equivalent (1) | | km | 150 | MHERH | 10.25 | $1,538 |
| Crane (1) | | km | 150 | MHERH | 10.25 | $1,538 |
| Loader (1) | | km | 150 | MHERH | 10.25 | $1,538 |
| Light duty vehicles (3) | | km | 450 | MHERL | 3.4 | $1,530 |
| Other | | km | | #N/A | 0 | $0 |
| DEMOBILIZE CAMP (part of site decommissioning) | | | | | | |
| DEMOBILIZE WORKERS | | | | | | |
| crew travel time | | manhours | 24 | AEM | 31 | $744 |
| WINTER ROAD (not required) | | | | | | |
| | | | | | **Total** | **$118,873** |

# ATTACHMENT B

## RECLAIM Estimate for Meadowbank Exploration Mine

## SUMMARY OF COSTS

| CAPITAL COSTS | COMPONENT NAME | COST | LAND LIABILITY | WATER LIABILITY |
|---|---|---|---|---|
| ROCK AND ESKER QUARRIES | | $0 | $0 | $0 |
| UNDERGROUND MINE | | $0 | $0 | $0 |
| TAILINGS FACILITY | | $0 | $0 | $0 |
| ROCK PILE | | $0 | $0 | $0 |
| BUILDINGS AND EQUIPMENT | Meadowbank Exploration Camp | $146,643 | $136,148 | $10,495 |
| CHEMICALS AND CONTAMINATED SOIL MANA | Meadowbank Exploration Camp | $86,260 | $43,130 | $43,130 |
| SURFACE AND GROUNDWATER MANAGEMEN | | $0 | - | $0 |
| INTERIM CARE AND MAINTENANCE | **Exploration Camp** | $109,431 | - | $109,431 |
| | **SUBTOTAL: Capital Costs** | **$342,334** | **$179,278** | **$163,056** |
| | **PERCENT OF SUBTOTAL** | | **52%** | **48%** |

| INDIRECT COSTS | | COST | LAND LIABILITY | WATER LIABILITY |
|---|---|---|---|---|
| MOBILIZATION/DEMOBILIZATION | | $38,510 | $20,167 | $18,343 |
| POST-CLOSURE MONITORING AND MAINTEN/ | | $0 | $0 | $0 |
| ENGINEERING | 5% | $17,117 | $8,964 | $8,153 |
| PROJECT MANAGEMENT | 5% | $17,117 | $8,964 | $8,153 |
| HEALTH AND SAFETY PLANS/MONITORING & | 1% | $3,423 | $1,793 | $1,631 |
| BONDING/INSURANCE | 1% | $3,423 | $1,793 | $1,631 |
| CONTINGENCY | 20% | $68,467 | $35,856 | $32,611 |
| MARKET PRICE FACTOR ADJUSTMENT | 0% | $0 | $0 | $0 |
| | **SUBTOTAL: Indirect Costs** | **$148,057** | **$77,536** | **$70,520** |

| **TOTAL COSTS** | **$490,391** | **$256,814** | **$233,576** |
|---|---|---|---|

1 **Building / Equip Name:** **Meadowbank Exploration Camp** **Bldg / Equip #:** **1**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| MOVE MOBILE EQUIPMENT TO BAKER LAKE | | | | | | | | | |
| REMOVE BUILDINGS - see note below | | | | | | | | | |
| Wood framed structures | wooden tent frames, corridors and dock | m2 | 28 | BRW | $41.00 | $1,148 | 100% | $1,148 | $0 |
| Storage Facilities for Drillers | Assume they will be removed from site at end of season | m2 | 195 | BRW | $41.00 | $7,995 | | $0 | $7,995 |
| Fuel tanks on -site | | each | 3 | AEM | $2,500.00 | $7,500 | 100% | $7,500 | $0 |
| Seacans | 50 units on site | each | 50 | BRW | $2,500.00 | $125,000 | 100% | $125,000 | $0 |
| | | | | #N/A | $0.00 | $0 | | $0 | $0 |
| LANDFILL FOR DEMOLITION WASTE (no landfill on site waste to go to Meadowbank | | | | | | | | | |
| GRADE AND CONTOUR PADS (see below) | | | | | | | | | |
| PUNCTURE LINED SUMPS (no lined sumps on site) | | | | | | | | | |
| RECLAIM ROADS (No Site Access Roads) | | | | | | | | | |
| SPECIALIZED ITEMS | | | | | | | | | |
| Dispose of misc. debris and laydown area refuse | | | 1 | #N/A | $5,000.00 | $5,000 | 50% | $2,500 | $2,500 |
| | | | | | **Total** | $146,643 | | $136,148 | $10,495 |
| | | | | | **% of Total** | | | 93% | 7% |

1 **Chemicals/Soil Area Name:** **Meadowbank Exploration Camp**

**Note:** The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| HAZARDOUS MATERIALS AUDIT | | | | | | | | | |
| BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS | | | | | | | | | |
| HAZARDOUS MATERIALS REMOVAL | | | | | | | | | |
| HAZARDOUS MATERIALS | | | | | | | | | |
| CONTAMINATED SOILS | | | | | | | | | |
| Contam. soil investigation - Phase 1 | | each | | #N/A | $25,000.00 | $0 | 50% | $0 | $0 |
| Contam. soil investigation - Phase 2 | | each | 1 | #N/A | $75,000.00 | $75,000 | 50% | $37,500 | $37,500 |
| CONTAMINATED SOIL REMOVAL | | | | | | | | | |
| Excavate and transport to onsite facility | On site biotreatment | m3 | 200 | SC4L | $9.30 | $1,860 | 50% | $930 | $930 |
| Manage hydrocarbon remediation at facility | | m3 | 200 | CSRL | $47.00 | $9,400 | 50% | $4,700 | $4,700 |
| CONTAMINATED SOIL VERY LOW PERMEABILITY COVER | | | | | | | | | |
| OTHER | | | | | | | | | |
| | | | | #N/A | $0.00 | $0 | | $0 | $0 |
| | | | | | **Total** | $86,260 | | $43,130 | $43,130 |
| | | | | | **% of Total** | | | 50% | 50% |

1 **Interim Care and Maintenance** **Meadowbank Exploration Camp**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| INTERIM CARE & MAINTENANCE | | | | | | |
| on-site caretaker | | manhours | 16 | smanl | 125 | $2,000 |
| extra personnel | | manmonths | | #N/A | 0 | $0 |
| -electrician | | manmonths | | #N/A | 0 | $0 |
| -mechanic | | manmonths | | #N/A | 0 | $0 |
| annual fuel | | litre | 50 | fcdh | 1.39 | $70 |
| misc. supplies | | allow | | #N/A | 0 | $0 |
| pick-up truck | | km | 150 | mherl | 3.4 | $510 |
| small dozer | | allow | | #N/A | 0 | $0 |
| small excavator | | allow | | #N/A | 0 | $0 |
| snow machine | | allow | | #N/A | 0 | $0 |
| communications | | allow | | #N/A | 0 | $0 |
| SNP/AEMP water sampling & reporting | | each | 1 | #N/A | 2500 | $2,500 |
| geotechnical assessment | | each | 1 | #N/A | 1000 | $1,000 |
| 5% | | each | | #N/A | 0 | $0 |
| other | | each | | #N/A | 0 | $0 |
| | | | | Monthly Interim C&M Cost | | $6,080 |
| Number of years of ICM | | months | 18 | | **Total** | $109,431 |

## 1 Mobilization/Demobilization:

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| MOBILIZE HEAVY EQUIPMENT | | | | | | |
| Fuel tanker trucks | | km | 100 | MHERH | 10.25 | $1,025 |
| Flatbed trucks | | km | 100 | MHERH | 10.25 | $1,025 |
| Crane | | km | 100 | MHERH | 10.25 | $1,025 |
| Loader | | km | 100 | MHERH | 10.25 | $1,025 |
| Light duty vehicles (2) | 2 trucks | km | 200 | MHERL | 3.4 | $680 |
| MOBILIZE MISC. EQUIPMENT | | | | | | |
| Minor tools and equipment | | allow | 1 | AEM | 2300 | $2,300 |
| MOBILIZE CAMP | | | | | | |
| DAILY MOBILIZE WORKERS | | | | | | |
| Reclamation activities - travel time | Travel for 6 workers from BL to site (40 days x2 hrs per day) | manhours | 480 | AEM | 31 | $14,880 |
| WORKER ACCOMODATIONS (Travel to and from Baker Lake daily) | | | | | | |
| MOBILIZE FUEL | | | | | | |
| Fuel freight - reclamation activities | assumes a barrel of fuel a day for 40 days | litre | 8200 | FCDH | 1.39 | $11,398 |
| WINTER ROAD | | | | | | |
| DEMOBILIZE HEAVY EQUIPMENT | | | | | | |
| Fuel tanker trucks | | km | 100 | MHERH | 10.25 | $1,025 |
| Flatbed trucks | | km | 100 | MHERH | 10.25 | $1,025 |
| Crane | | each | 100 | MHERH | 10.25 | $1,025 |
| Loader | | km | 100 | MHERH | 10.25 | $1,025 |
| Light duty vehicles | 2 trucks | km | 200 | MHERL | 3.4 | $680 |
| Other | | km | | #N/A | 0 | $0 |
| DEMOBILIZE CAMP (part of site decommissioning) | | | | | | |
| DEMOBILIZE WORKERS (vehicle costs covered above) | | | | | | |
| crew travel time | | manhours | 12 | AEM | 31 | $372 |
| WINTER ROAD (not required) | | | | | | |
| | | | | | **Total** | **$38,510** |

# ATTACHMENT C

## RECLAIM Estimate for All-Weather Road

## SUMMARY OF COSTS

| CAPITAL COSTS | COMPONENT NAME | COST | LAND LIABILITY | WATER LIABILITY |
|---|---|---|---|---|
| ROCK AND ESKER QUARRIES | | $0 | $0 | $0 |
| UNDERGROUND MINE | | $0 | $0 | $0 |
| TAILINGS FACILITY | | $0 | $0 | $0 |
| ROCK PILE | | $0 | $0 | $0 |
| BUILDINGS AND EQUIPMENT | ather Access Road | $1,448,700 | $724,350 | $724,350 |
| CHEMICALS AND CONTAMINATED SOIL MANAGEMEI | | $0 | $0 | $0 |
| SURFACE AND GROUNDWATER MANAGEMENT | | $0 | - | $0 |
| INTERIM CARE AND MAINTENANCE | | $109,431 | - | $109,431 |
| | **SUBTOTAL: Capital Costs** | **$1,558,131** | **$724,350** | **$833,781** |
| | **PERCENT OF SUBTOTAL** | | **46%** | **54%** |

| INDIRECT COSTS | | COST | LAND LIABILITY | WATER LIABILITY |
|---|---|---|---|---|
| MOBILIZATION/DEMOBILIZATION | | $16,214 | $7,538 | $8,676 |
| POST-CLOSURE MONITORING AND MAINTENANCE | | $125,000 | $58,110 | $66,890 |
| ENGINEERING | 5% | $77,907 | $36,218 | $41,689 |
| PROJECT MANAGEMENT | 5% | $77,907 | $36,218 | $41,689 |
| HEALTH AND SAFETY PLANS/MONITORING & QA/QC | 1% | $15,581 | $7,244 | $8,338 |
| BONDING/INSURANCE | 1% | $15,581 | $7,244 | $8,338 |
| CONTINGENCY | 20% | $311,626 | $144,870 | $166,756 |
| MARKET PRICE FACTOR ADJUSTMENT | 0% | $0 | $0 | $0 |
| | **SUBTOTAL: Indirect Costs** | **$639,816** | **$297,440** | **$342,376** |

| | | | |
|---|---|---|---|
| **TOTAL COSTS** | **$2,197,947** | **$1,021,790** | **$1,176,157** |

1 **Building / Equip Name:** **Amaruq All Weather Access Road** **Bldg / Equip #:** ***1***

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost | % Land | Land Cost | Water Cost |
|---|---|---|---|---|---|---|---|---|---|
| MOVE MOBILE EQUIPMENT TO BAKER LAKE | | | | | | | | | |
| REMOVE BUILDINGS | | | | | | | | | |
| LANDFILL FOR DEMOLITION WASTE (no landfill on site waste to go to Meadowbank | | | | | | | | | |
| GRADE AND CONTOUR PADS (see below) | | | | | | | | | |
| PUNCTURE LINED SUMPS (no lined sumps on site) | | | | | | | | | |
| RECLAIM ROADS (Site Access Roads Only) | | | | | | | | | |
| Remove culverts | | each | 153 | AEM | $4,000.00 | $612,000 | 50% | $306,000 | $306,000 |
| Remove bridges | | each | 11 | AEM | $50,000.00 | $550,000 | 50% | $275,000 | $275,000 |
| Scarify on-site roads | | ha | 41 | SCFYL | $4,300.00 | $176,300 | 50% | $88,150 | $88,150 |
| Scarify airstriip | | ha | | SCFYH | $6,030.00 | $0 | 50% | $0 | $0 |
| Scarify laydown and camp areas | | ha | | SCFYH | $6,030.00 | $0 | 50% | $0 | $0 |
| Close and reclaim 6 esker borrow pits | Pit #7 is included in Amaruq Exploration Cost | ha | 73.6 | AEM | $1,500.00 | $110,400 | 50% | $55,200 | $55,200 |
| Other | | | | #N/A | $0.00 | $0 | | $0 | $0 |
| SPECIALIZED ITEMS | | | | | | | | | |
| | | | | | **Total** | $1,448,700 | | $724,350 | $724,350 |
| | | | | | **% of Total** | | | 50% | 50% |

1 **Interim Care and Maintenance**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| INTERIM CARE & MAINTENANCE | | | | | | |
| on-site caretaker | | manhours | 16 | smanl | 125 | $2,000 |
| extra personnel | | manmonths | | #N/A | 0 | $0 |
| -electrician | | manmonths | | #N/A | 0 | $0 |
| -mechanic | | manmonths | | #N/A | 0 | $0 |
| annual fuel | | litre | 50 | fcdh | 1.39 | $70 |
| misc. supplies | | allow | | #N/A | 0 | $0 |
| pick-up truck | | km | 150 | mherl | 3.4 | $510 |
| small dozer | | allow | | #N/A | 0 | $0 |
| small excavator | | allow | | #N/A | 0 | $0 |
| snow machine | | allow | | #N/A | 0 | $0 |
| communications | | allow | | #N/A | 0 | $0 |
| SNP/AEMP water sampling & reporting | | each | 1 | #N/A | 2500 | $2,500 |
| geotechnical assessment | | each | 1 | #N/A | 1000 | $1,000 |
| 5% | | each | | #N/A | | $0 |
| other | | each | | #N/A | 0 | $0 |
| | | | Monthly | Interim C&M Cost | | $6,080 |
| Number of years of ICM | | months | 18 | | **Total** | $109,431 |

1 **Mobilization/Demobilization:**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| MOBILIZE HEAVY EQUIPMENT | | | | | | |
| Light duty vehicles | | km | 150 | MHERL | 3.4 | $510 |
| MOBILIZE MISC. EQUIPMENT | | | | | | |
| MOBILIZE CAMP | | | | | | |
| Reclamation activities | Workers will come in light duty vehicles | allow | | #N/A | 0 | $0 |
| Accommodations and food for crew | 2 workers for 4 weeks | allow | 56 | ACCMH | 175 | $9,800 |
| DAILY MOBILIZE WORKERS | | | | | | |
| Reclamation activities - travel time | Travel for 2 workers from BL to site (average 3 hrs per day for 28 days) | manhours | 168 | AEM | 31 | $5,208 |
| WORKER ACCOMODATIONS (travel to and from Baker Lake) | | | | | | |
| MOBILIZE FUEL | | | | | | |
| WINTER ROAD | | | | | | |
| DEMOBILIZE HEAVY EQUIPMENT | | | | | | |
| Light duty vehicles | | km | 150 | MHERL | 3.4 | $510 |
| DEMOBILIZE CAMP (part of site decommissioning) | | | | | | |
| DEMOBILIZE WORKERS | | | | | | |
| crew travel time | | manhours | 6 | AEM | 31 | $186 |
| WINTER ROAD (not required) | | | | | | |
| | | | | | **Total** | **$16,214** |

1 **Post-Closure Monitoring & Maintenance:**

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|---|---|---|---|---|
| MONITORING & INSPECTIONS | | | | | | |
| Annual geotechnical inspection | | each | | WSH | $10,000.00 | $0 |
| Surface Water Sampling | | each | | WSH | $10,000.00 | $0 |
| Groundwater Sampling | | each | | WSH | $10,000.00 | $0 |
| Receiving/downstream water sampling | | each | | WSH | $10,000.00 | $0 |
| Monitoring Program | | each | 1 | AEM | $25,000.00 | $25,000 |
| Survey inspection | | each | | #N/A | $0.00 | $0 |
| Regulatory costs* | | each | | #N/A | $0.00 | $0 |
| Site water monitoring (AEMP and SNP) | | each | | #N/A | $0.00 | $0 |
| - Active closure and flooding | | each | | #N/A | $0.00 | $0 |
| - Post pit flooding | | each | | #N/A | $0.00 | $0 |
| Air Quality Monitoring Program (AQMP) | | each | | #N/A | $0.00 | $0 |
| Wildlife Effects Monitoring Program (WEMP) | | each | | #N/A | $0.00 | $0 |
| Vegetation Monitoring | | each | | #N/A | $0.00 | $0 |
| Other | | | | #N/A | $0.00 | $0 |
| COVER MAINTENANCE | | | | | | |
| Repair erosion - infill gullies | | allow | | #N/A | $0.00 | $0 |
| Repair erosion - upgrade diversion ditches | | allow | | #N/A | $0.00 | $0 |
| Remove problem vegetation | | allow | | #N/A | $0.00 | $0 |
| Repair animal damage | | allow | | #N/A | $0.00 | $0 |
| Repair/upgrade access controls | | allow | | #N/A | $0.00 | $0 |
| Other | | | | #N/A | $0.00 | $0 |
| SPILLWAY MAINTENANCE | | | | | | |
| Repair erosion | | m3 | | #N/A | $0.00 | $0 |
| Clear spillway | | each | | #N/A | $0.00 | $0 |
| CWTS MAINTENANCE | | | | | | |
| Maintain flow, restore vegetation | | allow | | #N/A | $0.00 | $0 |
| POST-CLOSURE WATER TREATMENT | | | | | | |

| | | | |
|---|---|---|---|
| Subtotal, Annual post-closure costs | | | $25,000 |
| Discount rate for calculation of net present value of post-closure cost, % | 0.00% | | |
| Number of years of post-closure activity | 5 | years | |
| **Present Value of payment stream** | | | $125,000 |

*Regulatory costs - annual reporting, management plans, progress reports etc