



SteveJan Consultants Inc.
405 – 9 Adams Rd.
Campbell River, BC V9W1R9
Tel/Fax: 250-926-6094
Cell: 250-850-9002

MEMORANDUM

DATE: January 16, 2015

TO: Mr. Bob Holmes
Director
Minerals Development Branch
Yukon Energy, Mines and Resources

FROM: Mr. Steve Januszewski, P. Eng.
Principal
SteveJan Consultants Inc.

RE: Review of Capstone's Phase V/VI Reclamation and Closure Plan Revision 5.1
and Preparation of an Independent Closure Cost Estimate-FINAL REPORT

1. INTRODUCTION

SJCI has undertaken a high level review of the Minto Mine Phase V/VI Reclamation and Closure Plan Revision 5.1 (RCP5.1) and accompanying costing tables, dated August 11, 2014, prepared for Capstone Mining by Access Consulting. The complete document had been preceded by a copy of the text portion, considered to be RCP Revision 5.0 on July 2, 2014. These had been submitted to Mr. Bob Holmes-Director of Mineral Resources Branch of the Yukon Government's Department of Energy Mines and Resources (YG EMR) as a condition of the Quartz Mining Licence (QML-0001). The RCP5.1 report and costing tables were forwarded to SJCI for review and preparation of independent closure cost estimates for the Year 0 and 2 milestones.

The previous update of the RCP, referred to as Revision 4.1 dated February 2014 was reviewed by SJCI and a draft letter report was issued to YG EMR along with an accompanying set of costing tables dated October 30, 2013. The author has not been provided information concerning any comments on the SJCI review of RCP4.1.

The names of 'Minto Exploration Limited' ('MEL'), 'Capstone', 'Minto' and the 'Company' are used interchangeably throughout this report.

This is the Company's most recent closure plan and costing for the Minto mine site and addresses measures required to fully reclaim and close the site after cessation of mining at various stages of Phase V/VI mining which is understood will commence in early-2015. The mine is currently completing activities related to Phase IV of the mining operation. This report focuses on the closure costs provided in the RCP package for the milestones of the end of Phase IV mining (Year 0 of Phase V/VI), and after 2 years of Phase V/VI operations (i.e., Yr. 2). The RCP also addresses the currently proposed End of Mine Life (Yr. 9) milestone although this report does not

deal with a review of those plans or costs. Comments are also provided on major uncertainties with the RCP as submitted.

The SJCI work was authorized by Ms. Joule Houle—Acting Mine Licensing Officer of YG EMR in an e-mail to the author on July 14, 2014.

The latest version of the RCP incorporates confirmation of time frames for short and long-term costs, changes to some of the unit rates used, areas for reclamation, indirect cost provisions, as well as a more consistent use of inflation for short term costs and discounted costs for long term costs, and reducing the number of closure costing spreadsheet worksheets in the package.

Current financial security for the site is at \$41,991,095 as per a March 14, 2014 directive letter from YG EMR. It is based on the February, 2014 Closure Cost Estimate Update for the Minto Mine and plans for the Minto North project, by Capstone and in consideration of the YG independent third party review by SJCI and comments and consultation with the Selkirk First Nation. There have been a number of developments at the site since late 2012 and an updated RCP was required. A review of the updated reclamation and closure plan and setting of an appropriate financial security for the beginning of the Phase V/VI mining phase is required.

The author has reviewed closure plans and closure cost estimates for a number of mines and mine development projects in the Yukon under contracts to YG EMR and Yukon Environment since 2004. He has been involved in reviews of the closure plans for the Minto Mine project since 2007 and was last on the site in early October 2014 and previously in the summers of 2013, 2012 and 2009.

Preparation of this report continues a history of evaluating the progression of site developments, and closure planning at the Minto Mine by SJCI. This has most recently involved a review of the supporting studies currently underway that were included with the RCP as appendices or on the YG EMR website. However, the author finds that the additional detailed costing support information (as required by the QML and WUL) has not been provided in the RCP Revision 5.1. The basis of many of the numbers provided in the Company's costing tables cannot be fully evaluated. This report continues a history of making a number of conservative assumptions and/or to utilize a higher overall contingency allowance in lieu of having sufficient rationale and details for the costing numbers provided in the RCP.

A November 7, 2014 first draft version of this memorandum was shared with Capstone and a follow-up meeting was held between the parties was held on November 17, 2014. On December 8, 2014 Capstone provided written comments on the SJCI memorandum to EMR and these were shared with SJCI on December 8, 2014. This report incorporates the comments from Capstone and is considered the Final Report of SJCI's review of the Phase V/VI RCP Revision 5.1.

2. OVERVIEW AND ASSUMPTIONS

The reclamation security estimates provided in this report apply the following assumptions:

- The cost estimates are based on the RCP as presented in RCP ver5.1. No further modifications to the site or to the closure plan were considered;
- All closure work is to be undertaken by independent third-party contractors which will be hired by the Yukon government or an agent acting on its behalf. For the Year 0

- milestone, the custom unit rates are as agreed to after a 2013 teleconference reviewing RCP4.1;
- All costs are considered in 2014 Canadian dollars. Net present value calculations have been undertaken on future costs after Year 1 for the Post Closure Care, Maintenance and Monitoring costs. An annual discount rate of 2.5% as the real rate of return (which should include inflation versus discounting on the other side) has been accepted, as proposed by Capstone. For the tasks that fall under the Closure Implementation heading Capstone has utilized a 2% cost inflation. Both of these have been accepted for this report;
 - No salvage values are applicable to any of the site's assets, consistent with YG policy;
 - No credit is given for progressive reclamation undertaken at the site, unless it has been demonstrated to meet industry-standard long-term performance criteria. In addition, credits for planned future progressive reclamation are not granted;
 - There are adequate quantities and qualities of earthen materials available in the area of the site;
 - There are no PCBs in the electrical equipment, radioactive sources for process control, lead-based painted surfaces, asbestos insulation or fiber-board present on the site; and
 - Revised 3-dimensional surface areas of disturbances estimated by MEL in RCP5.1 have been accepted.

Major differences in elements included in this report versus those proposed by Minto in RCP Rev. 5.1 include:

- No credit can be granted in advance of reclamation work or research work being undertaken between the current date and the specific milestone being costed. Work can only be credited after it has been completed, and not in advance. This had a number of applications in the Year 0 and 2 costings by Capstone, especially for Year 2 by which time more reclamation is scheduled to have been completed; and
- The need to add provisions for items listed in the Yukon EMR Reclamation and Closure Guidance document (YG EMR 2013) specifically; Interim/Transition Care and Maintenance (IC&M), and Mobilization/Demobilization costs. This report and accompanying Excel spreadsheet includes worksheets for these two topics.

A low permeability (BGM) cover over only the High Grade Waste (HGW) area of the South West Dump (SWD) is proposed by Capstone, with rudimentary covers over other areas for vegetation and erosion control. This has been accepted by SJCI. The concern of neutral metal leaching from these areas (especially portions of the SWD) has been mentioned in a number of supporting documents by various authors as a possibility (including SJCI) but water quality data and modelling results with rudimentary covers in place show acceptable water quality currently and suggest acceptable leachate/seepage water quality in the long term. The Company's evolving Adaptive Management Plan (AMP) is intended to address issues such as worsening water quality from facilities such as the SWD. If further monitoring results and/or modeling studies indicate more source control (such as engineered covers over waste rock dumps) or longer or more extensive effluent treatment are likely requirements to reduce metal loadings downstream, the appropriate conditions can be added to future Water Use Licence amendments.

Both passive and active water treatments are now proposed in the latest RCP; 10 years at Year 0 and 8 years at Year 2. The rationale for the difference is not stated. In addition, the RCP now includes 11 years of passive treatment under all three milestones. These are required due to the uncertainty of if and when loading levels may drop sufficiently for passive treatment alone to meet water quality criteria and eventually when it may be turned off. This report recommends 10

years of active treatment (Yrs. 1-10) and 20 years of passive treatment (Yrs. 6-25) for mine closure at both milestone dates.

3. REVIEW OF UNIT COSTS AND DETAILED COSTING TABLES

This report has utilized the costing tables provided in RCP5.1 as a foundation on which to generate an independent third party closure cost estimate for the Year 0 and Year 2 milestones. The use of the same set of worksheets enables simplified comparisons between the two sets of closure cost estimates.

This report proposes 25 years of most post-closure active and passive treatment programs but with 15 years of post-closure care, maintenance and monitoring. This is based on the likely Water Use Licence amendment having a 15 year term.

The accompanying costing tables for Years 0 and 2 (Appendix 1) show mark-ups made as part of this review with yellow highlighting used to identify the specific items where changes have been made by the author, since the November 7, 2014 draft report.

3.1 Year 0 - Comments on Unit Costs and Detailed Costing Tables

Table 2 Unit Rates

The same unit rates have been used here as were used in the February 2014 SJCI review of the Minto Phase IV RCP Revision 4.1 (SJCI 2014). Equipment rental rates (all-found as well as mob/demob) were determined using the latest Yukon Highways Third Party Equipment Rental Rates book (e-version) produced in April 2013. The rates used were agreed to between the parties in a November 2013 teleconference at which different rates were proposed by SJCI and Capstone going into the meeting.

In their latest comments on the latest draft SJCI review Capstone has queried the use of those rates. However, in the opinion of the author they are reasonable and have been previously agreed to and have therefore been used in this report.

Table 3 General and Administration

This report has estimated that 4 pickup trucks will be required for the active decommissioning/closure phase, versus the previous plan of 2 vehicles.

Costs have been adjusted based on a revised estimate of 15 workers being required to undertake the closure tasks, versus 8 in the RCP.

Table 4 Waste Rock and Overburden Dumps

Previous reports have evaluated the potential for ML/ARD from the dumps that overall there is a low risk of ML/ARD but that neutral pH metals dissolution may be a concern. Modelling and water quality monitoring to date indicate no additional source control beyond rudimentary covers

being required. As a result, previously recommended wider application of a BGM cover over a much larger area of the SWD have been dropped in this review. Continued monitoring of the seepage water quality and updated site wide water quality modelling will be required to confirm water quality remains acceptable and that no further mitigative measures (such as enhanced source control) are required. The currently in-place active treatment system will remain for a period after mine closure as the primary means of post source-control to reduce downstream effects.

Main Waste Dump:
No new comments.

Southwest Dump:
As mentioned above the previously recommended wider application of a BGM cover over the SWD is no longer recommended.

Ice Rich Overburden Deposit:
No new comments.

Reclamation Overburden Deposit:
No new comments.

Low Grade Ore Stockpile Pad:
The quantity of low-grade ore currently in the stockpile is not mentioned in the RCP. There is a concern the stockpile pad may still contain low-grade ore at the time of mine closure. This is the more likely material to be left behind at the time of mine closure (i.e., low-grade waste is less likely to have been put through the mill than the high-grade ore).

High Grade Ore Stockpile Pad:
There is a concern the stockpile pad may still contain high-grade ore at the time of mine closure. The costing assumes most of the material will have been removed to the mill for processing or relocated to an open pit for disposal.

Main Pit Buttress:
No new comments.

Table 5 Open Pits and Haul Roads

Area 118 Pit has been mined out and has been added to the areas for inclusion at this closure milestone. The base of the pit also houses a portal which is used for underground ventilation.

Underground:
No dimensions are provided for the underground features to be sealed at closure, including the portal and ventilation raise.

Table 6 Primary Water Conveyance Structures

Ditches 400 and 450 require modifications to incorporate impervious BGM liners and associated bedding layers.

Appendix C of RCP Rev5.1 discusses closure hydrology. It also states the design of all the water conveyance structures is at a conceptual level to be able to provide a +/- 30% cost estimate for construction of the closure works.

Secondary ditching for the various facilities is covered in the costing tables for those elements (e.g., Table3 for Waste Rock and Overburden Dumps, and Table 6 for DSTSF and MVFE).

Tertiary ditching is to consist mostly of minor swales. No preliminary designs have been provided for these elements, for review.

Table 7 DSTSF and MVFE

No new comments.

Table 8 Water Storage Pond Dam

No new comments.

Table 9 Mill and Ancillary Facilities

No new comments.

Table 10 Mill Water Pond

No new comments.

Table 11 Main Access Road

No new comments.

Table 12 Miscellaneous Site and Facilities

An adjustment has been made to the provision for removal of the new above-ground sewage treatment plant after the latest site inspection with the unit now in operation. It has replaced a more conventional septic sewage system which has now been decommissioned.

It is understood that the permitted capacity of the Land Treatment Farm (LTF) is 3000 m³, versus the previous limit of 700m³ of hydrocarbon contaminated soil. Thus, it is considered that the facility has sufficient capacity for all materials to be required to be placed here during site decommissioning activities. Additionally, it is also unclear where metal contaminated soils (due to ore or concentrate spills) are being relocated to. A minimal provision has been provided for this. No additional provisions have been added at this time although these items should be checked (Note: this comment has been mentioned in previous reviews of the RCP).

Table 13 Reclamation Research and Revegetation

The surface areas for revegetation are as per the new numbers provided in Closure Costing narrative which accompanied RCP5.1.

Table 14 Supporting Studies

Several studies have been dropped from the Closure Specific Studies and Field Trials section.

The Reclamation and Closure Research Program (RCRP) has had another year of work undertaken and as a result the 2014 year of costs have been deleted for the Year 0 milestone.

Table 15 Post Closure Care, Maintenance and Monitoring

Provision has been added for a longer period of passive treatment at the site. It is recommended to commence in Year 6 (with active treatment to be shut off at the end of Year 10) and to extend to Year 25.

Water quality monitoring has been set at 13 years post-closure (plus 2 years during IC&M period) to line up with the anticipated duration of the pending Water Use Licence amendment.

An additional line item has been added in Section 15.5 for the on-going monitoring of the Water Storage Pond Dam (WSPD) as it will be one of the last items to be removed from the site, once all water quality objectives are being met without treatment. It has been assumed that it will be removed in Year 15. Similarly, the line item for WSPD maintenance in Section 15.6 of the table has also been adjusted to 12 years.

Table 16 Interim Care and Maintenance

A table for IC&M costs was not included in RCP 5.1. It has been inserted in this report. It is based on an estimated 2 year period after operations cease before the active mine reclamation and closure program can be commenced for the Minto mine site.

The IC&M elements are based significantly on the elements outlined in Section 6-Temporary Closure of RCP5.1, and especially all the tasks outlined in Table 6-1 of the RCP.

Table 17 Mobilization and Demobilization

A table with Mob & Demob costs was not included in RCP 5.1. A table outlining these items and their costs has been included in this report.

The equipment types and/or numbers are based on an initial estimate by the author.

Mob and demob charges are those specified in the Yukon Highways Third Party Equipment Rental Rates book (e-version) produced in April 2013. Distances for the mob/demob are based on the distance between the site and the city of Whitehorse as it is unlikely a third-party contractor with the quantity and sizes of equipment required will be available from the town of Carmacks or other nearer towns or hamlets.

3.2 Year 2 - Comments on Unit Costs and Detailed Costing Tables

Table 2 Unit Costs-Year 2

The unit rates for Personnel, Revegetation and Contractors' cost rates from Year 0 were adjusted with a 5% increase to consider inflation over the 3 year period, tentatively estimated to be mid-2016 to mid-2019 (These unit rates were last adjusted in November 2013). The Equipment rental rates were not adjusted.

Table 3 General and Administration Costs During Active Closure (3 years), Estimated Closure Costs-Year 2

Adjustments have been made to have 4 pickup trucks at the site during the active closure phase, versus the 2 proposed in the RCP.

An adjustment was made to consider the larger work force required to undertake the closure program. 15 workers are proposed versus 8 specified in the RCP.

An adjustment was made to incorporate a barge to cross the Yukon River for 5 months each year during the active closure, versus the 2 months proposed in the RCP.

Table 4 Waste Rock and Overburden Dumps, Estimated Closure Costs -Year 2

Costs for reclaiming the South West Dump have been adjusted downward from previous SJCI reports to reflect the area requiring a BGM engineered cover to the HGW area alone versus both the HGW and Mid-Grade Waste areas previously.

Reclamation costs have been added to 4 areas in this section which are proposed to be reclaimed by the Year 2 milestone, but which cannot be credited in a closure plan cost estimate in advance of the work being undertaken, and accepted as having long term performance criteria.

An adjustment was made to the total area of the Stockpile Pads in agreement with previous documentation.

Table 5 Open Pit and Haul Roads, Estimated Closure Costs -Year 2

Reclamation costs have been added to the 2 pits areas in this section which are proposed to be reclaimed by the Year 2 milestone, but which cannot be credited in a closure plan cost estimate in advance of the work being undertaken (as above).

The cost estimate for sealing the single ventilation raise has been increased as it is understood to be located at the bottom of Area 118 Pit and is similar to a full size portal, rather than a small vertical opening.

Table 6 Primary Water Conveyance Structures, Estimated Closure Costs -Year 2

Provisions have been added to two of the ditches with proposed BGM liners to have bedding/foundation materials placed as part of the installation of the liners.

Table 7 DSTSF and MVFE, Estimated Closure Costs -Year 2

The RCP considers the DSTSF as having been reclaimed by the Year 2 milestone. This includes application of a cover as well as secondary ditching. However, for the purposes of closure securities, advance credit for future reclamation work cannot be granted and as a result the costs for these tasks have been re-inserted.

Table 8 Water Storage Pond Dam, Estimated Closure Costs -Year 2

No new comments.

Table 9 Mill and Ancillary Facilities, Estimated Closure Costs -Year 2

No new comments.

Table 10 Mill Water Pond, Estimated Closure Costs -Year 2

No new comments.

Table 11 Main Access Road, Estimated Closure Costs -Year 2

No new comments.

Table 12 Miscellaneous Sites and Facilities, Estimated Closure Costs -Year 2

An adjustment was made to the closure cost for removal of the above ground sewage treatment plant, based on a recent site inspection.

Table 13 Reclamation Research and Revegetation, Estimated Closure Costs -Year 2

The RCP considers a number of the facilities to have been reclaimed by the Year2 milestone. This includes revegetation of a number of the existing structures such as the DSTSF and IROD.

However, a credit for such work cannot be granted in advance, and not until long-term sustainability has been demonstrated. Therefore the costs for these items have been re-inserted.

Table 14 Supporting Studies-Year 2

The Reclamation and Closure Research Program had been significantly cut back in the RCP from 5 years in Year 0 closure to 2 years for a Year 2 closure with no rationale. This review considers the same studies to be required for both milestones and therefore the same numbers are presented for Year 2 as for Year 0. The Year 0 costings are relevant to a closure at that milestone, Year 2 costing in this review considers costings for a closure at that time, and is therefore included. The closure plan is considered to be a continually evolving plan.

Provision for work completed in 2014 has been removed as this work has already been completed.

Table 15 Post Closure Care, Maintenance and Monitoring-Year 2

A number of changes have been made to the program included in Capstone's RCP. The timeframes for the various closure phases have been made consistent with the Year 0 milestone as outlined earlier in this report. This includes an IC&M period of 2 years, commencing 2 years from now (as this a closure that would take place at the Year 2 milestone), a 3 year Active Closure Phase, and Post-Closure I & II spanning Years 6-10 and 11-25 respectively.

In addition, the post-closure monitoring and maintenance phase has been limited to Year 15 to line up with the likely duration of the next Water Use Licence amendment. Additional provisions for any required extensions to post-closure requirements can be added to future reviews of the Reclamation and Closure Plans.

Provision has been added for longer passive treatment at the site. It is recommended to commence in Year 6 (with active treatment to be shut off at the end of Year 10) and to extend to Year 25.

Water Quality monitoring has been set at 13 years post-closure (plus 2 years of IC&M) to line up with the anticipated duration of the pending Water Use Licence amendment.

An additional line item has been added in Section 15.5 for the on-going monitoring of the Water Storage Pond Dam (WSPD) as it will be one of the last features to be removed from the site, once all water quality objectives are being consistently met without treatment. It has been assumed that it will be removed in Year 15. Similarly, the line item for WSPD maintenance in Section 15.6 of the table has also been adjusted to a duration of 12 years, starting in Year 3 after the IC&M period.

Table 16 Interim Care and Maintenance-Year 2

This table was not included in RCP 5.1. It has been inserted by the author. It is based on a period after cessation of mining operations and before the mine reclamation and closure program can be commenced. The period has been estimated as being 2 years.

The contents of this table are based significantly on the elements provided in Section 6-Temporary Closure of RCP5.1.

Table 17 Mobilization and Demobilization-Year 2

This table was not included in RCP 5.1. It has been inserted by the author.

4. DISCUSSION OF OUTSTANDING MAJOR UNCERTAINTIES

There are a number of outstanding major uncertainties that may have an effect of the site's closure liability. These include:

- Geo-technical stability of constructed structures
- Water management and effluent/downstream water quality criteria
- Closure configuration of site features

A number of items were recently reviewed as part of an FMEA process that has recently been concluded. The review was coordinated by Capstone, was led by Access and involved representatives of Capstone (including their lead consultants Access and SRK), the Selkirk First Nation (including their consultants Jim Kuipers and Bill Slater), and YG EMR (including their consultants SJCI). A final report on the process has been recently issued by Access and will be utilized in further minesite development and continuing evolution of the RCP during Phase V/VI at the site. The report identified a recurring theme from the sessions that in order to mitigate residual risks at the site an effective AMP and long-term care and maintenance program are required.

Several additional issues are outlined below:

4.1 Geotechnical Stability of Constructed Structures:

There is a significant issue of ground stability and specifically the foundations of a number of structures at the site that may be unstable due to the permafrost zones within them. Movement of several site features has been observed and has required the implementation of significant mitigative measures and now requires on-going monitoring with appropriate Adaptive Management Plans. This includes the DSTSF, the Southwest Dump and the Main Pit south wall. There is also the possibility of further mitigative measures being required to arrest movement of these structures as well as for any new structures that may be built as part of the mining operation.

This stability issue is currently being investigated as Minto and SFN have jointly retained professional consultants to study the issue and issue recommendations. The project consisted of an independent third party geotechnical review. The structures they evaluated include the dry stack tailings storage facility, Main Pit South Wall, Southwest Dump and proposed Main Pit Dam. Results from the study should be utilized in future mine developments, operations and closure planning.

4.2 Water Management:

Downstream water quality requirements are being investigated and will likely be the focus of Water Board Hearings which may be held to amend the current Water Use License for the site. Knowledge of the applicable water quality criteria is a fundamental requirement to enable determination of treatment requirements and to then be able to cost them. Depending on what the WQ requirements will be, active and/or passive treatment systems may be required. Estimates of how long the treatment systems will need to be operated are also required.

The Closure Adaptive Management Plan (Sec 7.17.1 and App. B of RCP5.1) identifies two primary AMP components for development; these are surface water quality and quantity; and water collection and conveyance structures. The water quality section recommends that additional water quality monitoring stations nearer to the site features should be established and used to more quickly identify the source of any problems. Identifying where contaminated waters are coming from will be critical to developing appropriate mitigative strategies. The FMEA process also revealed additional areas that require detailing in the AMP as well as the importance of having an effective AMP in place.

It is imperative that Capstone follow-through on the areas identified in the FMEA requiring attention and develop and implement comprehensive AMP and mitigation strategies.

Constructed wetlands treatment systems (CWTS), enhanced natural wetlands and bioreactors are being considered for long-term passive treatment. Investigations of these technologies have commenced with the completion of initial sampling and reviews of options and field trials have been initiated in 2014 for the CWTS and bioreactor systems. Results of these investigations will be utilized in future refinements of the RCP and may have direct applicability to use in the post-closure phase and may have an impact on future estimates of mine closure liabilities.

4.3 Closure Configuration of Surface Features

Re-grading of features is required from the design stage through to construction to ensure ponds are kept away from potential spill points.

Keeping clean surface run-off waters separated from mine disturbed areas' runoffs as the waters flow across the site is vitally important to reduce the volume of water required for treatment in order to meet downstream water quality criteria. These systems should be installed and fully operational now during operations (to the extent possible realizing on-going site development changes). Having them in place now would demonstrate their effect on managing water around the site and their effect on downstream water quality, as well as providing confidence in the proposed diversions systems for the post-closure phase.

Design criteria for the various hierarchies of water conveyance structures is an area which may require further investigation. Structures must be designed for the long-term. The selected design criteria needs to be consistent with what is being used in other mining jurisdictions to ensure conformance to the goal of implementing best management practices, especially with the concern about more severe weather fluctuations with global climate change and the goal of a walk-away site.

Comments on the RCP from stakeholders and especially from the Selkirk First Nation need to be considered when undertaking reviews and updates of the RCP. Unfortunately no recent reviews

by the SFN are understood to have been submitted to YG, or at least that the author has been made aware of.

5. CONCLUSIONS AND RECOMMENDATIONS

A first order review of Capstone's closure cost estimates for the upcoming Phase V/VI of operation at the Minto Mine has been completed for the Year 0 and 2 milestones and revised interim total closure liability cost estimates have been generated. Due to the uncertainties involved with a number of the closure tasks, the lack of detailed supporting information for the proposed work, a conservative approach has been taken in itemizing all of the closure tasks and in determining appropriate provisions and contingencies.

The Company has undertaken an ambitious program of studies and investigations in support of the various aspects of mine closure planning for the site, and should be commended for it.

In the review of the RCP the author has recommended a small number of significant changes and a larger number of minor changes to the RCP cost estimate for both milestones. The closure cost estimates determined in this report are considered reasonable based on the information available to the author as of the date of this report.

For the Year 0 milestone, a revised total closure cost of \$54.4 M has been determined by the author compared with \$51.4M estimated by the Company. This represents an increase in the total closure cost estimate of approximately 6% over what was estimated by Capstone.

For the Year 2 milestone, the author has estimated a total closure cost estimate of \$44.1M versus \$26.2M by the Company. This represents an increase in the total closure cost estimate of approximately 68% over what was estimated by Capstone.

Major sources of differences include:

- The author's inclusion of closure tasks which the Company is proposing to undertake over the next two years (i.e., between Yrs 0 & 2) and for which a credit was taken in the RCP, but which cannot be granted in advance, consistent with the industry standard in the preparation of mine closure estimates, and especially for the regulator that must always take a more conservative approach;
- Having a provision for 10 years of active treatment for both the Year 0 and Year 2 milestones, versus having a reduced duration of 8 years for the Year 2 milestone as is proposed by Capstone; and
- Having a provision for 20 years of passive treatment for both the Year 0 and Year 2 milestones, versus 11 years proposed by Capstone for both.

On-going closure planning work is continuing by Capstone in areas including:

- Stability assessments of site features;
- Progressive reclamation;
- Passive treatment system trials;
- Incorporation of information gleaned from supporting studies and research and a closure FMEA into a more comprehensive AMP; and
- Establishment of revised discharge water quality criteria in an amended Water Use Licence (which may result in additional water treatment requirements).

All of these make apparent the need for continued careful scrutiny by YG in ongoing site activities and planned future developments as they affect ultimate mine closure. This includes the need for continued regular revisions to the RCP, its supporting documents and associated closure cost estimates by Capstone, with increased comprehensiveness as details of the individual tasks continue to be refined.

Important items for YG consideration gleaned from preparation of this report include:

- Ensuring the Closure AMP is populated by Capstone with appropriate detail as soon as possible and continues to be a living document with on-going updates and refinements and addition of new areas as they are identified;
- Undertaking a review of the appropriate closure design criteria and engineering standards that should be incorporated in the various closure structures that are proposed for the site. This includes considerations such as return period storm events that should be included in the civil structures, and how climate change is considered in closure planning; and
- Ensuring appropriate discount and inflation rates are used in the cost estimates for future closure tasks that can then be used to set appropriate financial security requirements.

REFERENCES

SJCI 2014, *Review of Capstone's Reclamation and Closure Plan Closure Costing Spreadsheet Version 4.1 for the Minto Mine dated February 2014 and Preparation of an Independent Closure Cost Estimate*, memorandum report prepared for YG EMR, by SteveJan Consultants Inc., February 28, 2014.

SRK 2013, *Scoping Level Cover Assessment for Minto Closure Covers*, prepared for Minto Explorations Ltd., by SRK Consulting, August 2013.

YESAA 2014, *YESAA Decision Document 2013-0100*, YESAA File Number 2013-0100, dated June 4, 2014, prepared by YG EMR Mineral Resources.

YG EMR 2013, *Reclamation and Closure Planning for Quartz Mining Projects-Plan requirements and closure costing guidance*, dated February 2013, prepared by YG EMR.

APPENDIX 1

DETAILED COSTING TABLES

Minto Mine RCP 5.1

Year 0 and Year 2

Table 9.1-1

Summary Table of Estimated Closure Costs - Phase V / VI

Year 0

Description of Cost	Proposed Cost Year 0
Closure Implementation	
General & Administration	\$1,032,500
Waste Dumps	\$8,334,982
Pit and Haul Roads	\$340,359
Primary Water Conveyance Structures	\$1,419,596
Tailings & MVFE	\$9,900,259
Water Storage Pond Dam	\$661,347
Mill and Facilities	\$1,333,251
Mill Pond	\$199,084
Access Road	\$283,422
Miscellaneous	\$570,918
Revegetation	\$1,751,933
Supporting Studies	\$368,500
Reclamation and Closure Research Program (Active Closure)	\$1,100,000
Interim Care and Maintenance	\$2,168,384
Sub-total	\$29,464,534
Indirect Costs (%)	18%
Indirect Costs	\$5,303,616
Cost Inflation ¹	\$1,738,407
Total Closure Implementation Costs	\$36,506,557
Post Closure Care, Maintenance, and Monitoring Costs	
Mobilization and Demobilization	\$126,360
Onsite Management	\$596,000
Transport Costs	\$350,000
Water Treatment Costs	
Active Treatment	
Capital Costs	\$0
Capital Replacement Costs	\$780,000
Operating Costs	\$5,200,000
Passive Treatment	
Capital Costs	\$1,000,000
Operation and Maintenance Costs	\$1,000,000
Reclamation & Closure Research Program (Post Closure I-II)	\$300,000
Monitoring & Reporting	\$1,252,000
Post Closure I-II Maintenance	\$265,000
Sub-Total	\$10,869,360
Sub-Total NPV (2.5% DROR)	\$9,119,839
Indirect Costs (%)	18%
Indirect Costs	\$1,641,571
Total (NPV)	\$10,761,410
Total Financial Security (incl. 18% Indirect Costs)	\$47,267,967
Contingency Allowance	15%
Contingency Amount	\$7,090,195
Total Financial Security (with 15% Contingency Allowance)	\$54,358,162

¹ Cost inflation is calculated at a rate 2% per year to the midpoint of active closure

Table 9.1-2

Minto Mine Closure Unit Rates - Phase V / VI

Equipment Rates		
Equipment	Unit Rates	Per Unit
D9H Dozer	\$350	per hr
D6D Dozer	\$225	per hr
Haul Truck D250E	\$250	per hr
Tandem Haul Truck	\$150	per hr
Cat 235 Excavator	\$250	per hr
Cat 235 Excavator w hammer	\$275	per hr
Cat 16H grader	\$300	per hr
988B Loader	\$250	per hr
Tractor Trailer (lowbed)	\$180	per hr
30 ton Crane	\$190	per hr
Hiab Flatdeck truck	\$160	per hr
Cat 950 loader	\$170	per hr
Vibratory Roller	\$180	per hr
Pickup Truck	\$2,500	per mo

Personnel Rates		
Personnel	Unit Rates	Per Unit
Blaster	\$68	per hr
General Labourer	\$52	per hr
Trades Labourer	\$91	per hr
Site Supervisor	\$110	per hr
Design Engineer	\$149	per hr
Environmental Scientist	\$110	per hr
Project Manager	\$10,670	per mo
Camp Labourer	\$4,400	per mo
Site Caretaker	\$6,710	per mo
Environmental Monitor	\$5,500	per mo

Revegetation Rates		
	Unit Rates	Per Unit
Revegetation Seed Mix	\$17.50	per kg
Revegetation Seed Mix - 50kg/ha	\$875	per ha
Fertilizer	\$1.10	per kg
Fertilizer - 250kg/ha	\$275	per ha
Tree Seedlings (1,000 seedlings per ha)	\$2,000	per ha
Seed/Fertilizer Application	\$1,700	per ha
Erosion Barrier	\$3	per sq.m
Revegetation cost per ha. Including application cost	\$2,850.00	per ha

Contractor Unit Rates & Camp Costs		
	Unit Rates	Per Unit
Custom Rate A (Load, haul, place soil cover ROD-MWD)	\$4.63	per cu.m
Custom Rate B (Load, haul, place soil cover ROD-SWD)	\$4.63	per cu.m
Custom Rate C (Load, haul, place soil cover ROD-MWD / LGO)	\$5.00	per cu.m
Custom Rate D (Load, haul, place soil cover ROD-MWD / HGO)	\$5.00	per cu.m
Custom Rate E (Load, haul, place soil cover ROD-CSA)	\$4.38	per cu.m
Custom Rate F (Load, haul, place soil cover ROD-MVFE)	\$4.63	per cu.m
Custom Rate G (Load, haul, place soil cover ROD-DSTF)	\$4.63	per cu.m
Custom Rate H (Load, haul, place fill SWD - MVFE)	\$4.63	per cu.m
Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	\$4.75	per cu.m
Custom Rate J (Push from WSP Dam - U/S WSP Dam)	\$2.35	per cu.m
Load, haul & place mat'l underground	\$10.00	per cu.m
Produce rip-rap	\$15.00	per cu.m
Load, haul and place rip-rap	\$15.00	per cu.m
Deliver and install geosynthetic membrane on prepared foundation	\$20.00	per sq.m
Unit Basis (footing burial)	\$5.00	each
Freight run to Whitehorse	\$1,000.00	per load
Camp Cost	\$80.00	per day per person
Power and Heat	\$5,500.00	per month
Employee Transport Costs	\$3,000.00	per month
Barge Operating Cost	\$10,000.00	per month

Notes:

1) Custom Rates A through J developed specifically for Minto Mine, taking into account such factors as haul distance, grade, machinery req'd, time reqd, etc.

Table 9.1-3

General and Administration Costs During Active Closure (3 years) - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
3.1	Onsite Management						
	Project Management and Engineering - Included in PME Costs in each Closure Component						
	Pickup truck (4 trucks, 5 months per year, 3 years)	Light truck	monthly	60	\$2,500	\$150,000	\$150,000
	Sundry equipment maintenance	Unit Cost Basis	annually	3	\$5,000	\$15,000	\$15,000
	Power and heat (5 months per year, 3 years)	Unit Cost Basis	monthly	15	\$5,500	\$82,500	\$82,500
	General Administrative expenses (5 months per year, 3 years)	Unit Cost Basis	monthly	25	\$2,000	\$50,000	\$50,000
	Camp Costs (3 year period-15men-5mo/yr)	Unit Cost Basis	man-day	6,750	\$80	\$540,000	\$540,000
						Sub-Total	\$837,500
3.2	Transport Costs						
	Employee transport costs (5 months per year, 3 years)	Unit Cost Basis	monthly	15	\$3,000	\$45,000	\$45,000
	Barge operating costs (5 months per year, 3 years)	Unit Cost Basis	monthly	15	\$10,000	\$150,000	\$150,000
						Sub-Total	\$195,000
Total Estimated Cost for Short Term Post Closure Site Management							\$1,032,500

Note:

Table 9.1-4

Waste Rock and Overburden Dumps, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Area (ha) / Length (m)	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
4.1	Main Waste Dump (ha)	41.52						
	Roll crest and recontour		D9H Dozer	hrs	500	\$350	\$175,000	\$175,000
	Additional compaction, as req'd		Vibratory Roller	hrs	100	\$180	\$18,000	\$18,000
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	16.84	Custom Rate A (Load, haul, place soil cover ROD-MWD)	cu.m.	134,720	\$4.63	\$623,754	\$623,754
	Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	24.69	Custom Rate A (Load, haul, place soil cover ROD-MWD)	cu.m.	246,900	\$4.63	\$1,143,147	\$1,143,147
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$137,193	\$137,193
							Sub-Total	\$2,097,094
4.1.1	Main Waste Dump - Ditching							
	Contour secondary ditching (m)	1840	Cat 235 Excavator	hrs	92	\$250.00	\$23,000	\$23,000
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	6,510	\$15.00	\$97,650	\$97,650
			Load, haul and place rip-rap	cu.m.	6,510	\$15.00	\$97,650	\$97,650
	Contour tertiary ditching (m)	490	Cat 235 Excavator	hrs	25	\$250.00	\$6,125	\$6,125
	Sedimentation Pond		Misc.	l.s.	1	\$100,000.00	\$100,000	\$100,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$22,710	\$22,710
							Sub-Total	\$347,135
4.2	Southwest Dump							
4.2.1	SWD Excluding Area of High Grade Waste Area (ha)	73.77						
	Roll crest and recontour		D9H Dozer	hrs	449	\$350	\$157,150	\$157,150
	Additional compaction, as req'd		Vibratory Roller	hrs	96	\$180	\$17,280	\$17,280
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	54.70	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	437,600	\$4.63	\$2,026,088	\$2,026,088
	Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	19.07	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	190,700	\$4.63	\$882,941	\$882,941
	Detailed Engineering (allowance)		Misc.	l.s.	1	\$50,000.00	\$50,000	\$50,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$215,842	\$215,842
4.2.2	Area of High-Grade Waste (ha)	2.78						
	Roll crest and recontour		D9H Dozer	hrs	250	\$350	\$87,500	\$87,500
	Additional compaction, as req'd		Vibratory Roller	hrs	50	\$180	\$9,000	\$9,000
	Placement of bedding layer (e.g., 0.1m OVB) (ha)	2.78	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	2,780	\$4.63	\$12,871	\$12,871
	Installation of geosynthetic membrane (e.g. BGM) (ha)	2.78	Deliver and install geosynthetic membrane on prepared foundation	sq.m.	27,800	\$20	\$556,000	\$556,000
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	1.47	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	11,760	\$4.63	\$54,449	\$54,449
	Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	1.31	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	13,100	\$4.63	\$60,653	\$60,653
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$50,387	\$50,387
							Sub-Total	\$4,180,162
4.2.3	Southwest Dump - Ditching							
	Contour secondary ditching (m)	1980	Cat 235 Excavator	hrs	99	\$250.00	\$24,750	\$24,750
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	6,990	\$15.00	\$104,850	\$104,850
			Load, haul and place rip-rap	cu.m.	6,990	\$15.00	\$104,850	\$104,850
	Contour tertiary ditching (m)	1830	Cat 235 Excavator	hrs	92	\$250.00	\$22,875	\$22,875
	Sedimentation Pond		Misc.	l.s.	1	\$100,000.00	\$100,000	\$100,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$25,013	\$25,013
							Sub-Total	\$382,338
4.3	Ice-Rich Overburden Dump (ha)	2.94						
	Roll crest of berm and recontour		D9H Dozer	hrs	16	\$350	\$5,600	\$5,600
	Excavate material for placement on berm		Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$1,092	\$1,092
							Sub-Total	\$16,692
4.4	Reclamation Overburden Dump (ha)	30.85						
	Blade pad after removal of material during reclamation		D6D Dozer	hrs	90	\$225	\$20,250	\$20,250
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$1,418	\$1,418
							Sub-Total	\$21,668
4.4.1	Reclamation Overburden Dump - Ditching							
	Contour secondary ditching (m)	3480	Cat 235 Excavator	hrs	174	\$250.00	\$43,500	\$43,500
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	12,290	\$15.00	\$184,350	\$184,350
			Load, haul and place rip-rap	cu.m.	12,290	\$15.00	\$184,350	\$184,350
	Contour tertiary ditching (m)	1900	Cat 235 Excavator	hrs	95	\$250.00	\$23,750	\$23,750
	Sedimentation Pond		Misc.	l.s.	1	\$100,000.00	\$100,000	\$100,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$37,517	\$37,517
							Sub-Total	\$573,467
4.5	Low Grade Ore Stockpile and Pad (ha)	3.9						
	Recontour Stockpile and Pad		D9H Dozer	hrs	40	\$350	\$13,825	\$13,825
	Haul and place overburden for revegetation		Custom Rate C (Load, haul, place soil cover ROD-MWD / LGO)	cu.m.	19,500	\$5.00	\$97,500	\$97,500
	Removal of bottom layer of material, move to pit.		Misc.	l.s.	1	\$5,000	\$5,000	\$5,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$8,143	\$8,143
							Sub-Total	\$124,468
4.6	High Grade Ore Stockpile Pad (ha)	5.14						
	Recontour stockpile and pad		D9H Dozer	hrs	54	\$350	\$18,900	\$18,900
	Haul and place overburden for revegetation		Custom Rate D (Load, haul, place soil cover ROD-MWD / HGO)	cu.m.	25,700	\$5.00	\$128,500	\$128,500
	Removal of bottom layer of material, move to pit.		Misc.	l.s.	1	\$7,500	\$7,500	\$7,500
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$10,843	\$10,843
							Sub-Total	\$165,743
4.7	Main Pit Buttress (ha)	13.52						
	Roll crest and recontour		D9H Dozer	hrs	250	\$350	\$87,500	\$87,500
	Additional compaction, as req'd		Vibratory Roller	hrs	30	\$180	\$5,400	\$5,400
	Haul & place overburden for revegetation - (0.5 m thickness) (ha)	13.52	Custom Rate E (Load, haul, place soil cover ROD-CSA)	cu.m.	67,600	\$4.38	\$296,088	\$296,088
	Contour tertiary ditching (m)	800	Cat 235 Excavator	hrs	40	\$250.00	\$10,000	\$10,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$27,229	\$27,229
							Sub-Total	\$426,217
Total Estimated Cost in Reclaiming Overburden and Waste Rock Dumps								\$8,334,982

Note:

Table 9.1-5

Open Pit and Haul Roads, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
5.1	Main Pit						
	Remove pit pumps and pipe column/general cleanup	General Labourer	hrs	80	\$52	\$4,160	\$4,160
		Trades Labourer	hrs	20	\$91	\$1,820	\$1,820
		Support equipment	l.s.	1	\$1,000	\$1,000	\$1,000
	Secure pit access - boulder placement	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Haul Truck D250E	hrs	20	\$250	\$5,000	\$5,000
	Highwall perimeter safety berm/trench (~1km)	Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
	Construct inflow spillway from upgradient of pit	Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
		Haul Truck D250E	hrs	20	\$250	\$5,000	\$5,000
		Produce rip-rap	cu.m	200	\$15	\$3,000	\$3,000
		Load, haul and place rip-rap	cu.m	200	\$15	\$3,000	\$3,000
	Construct exit channel into Mill Pond system	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Produce rip-rap	cu.m	200	\$15	\$3,000	\$3,000
	rip-rap shoulder exiting pit-spillway	Load, haul and place rip-rap	cu.m	200	\$15	\$3,000	\$3,000
		General Labourer	hrs	10	\$52	\$520	\$520
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$4,165	\$4,165
						Sub-Total	\$63,665
5.2	Area 2 Pit						
	Remove pit pumps and pipe column/general cleanup	General Labourer	hrs	60	\$52	\$3,120	\$3,120
		Trades Labourer	hrs	15	\$91	\$1,365	\$1,365
		Support equipment	l.s.	1	\$1,000	\$1,000	\$1,000
	Secure pit access - boulder placement	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Haul Truck D250E	hrs	20	\$250	\$5,000	\$5,000
	Construct exit channel into Mill Pond system	Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
	rip-rap shoulder exiting pit	Load, haul and place rip-rap	cu.m	50	\$15	\$750	\$750
		Produce rip-rap	cu.m	50	\$15	\$750	\$750
	Exit Spillway construction	General Labourer	hrs	40	\$52	\$2,080	\$2,080
		Produce rip-rap	cu.m	250	\$15	\$3,750	\$3,750
		Load, haul and place rip-rap	cu.m	250	\$15	\$3,750	\$3,750
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$2,560	\$2,560
						Sub-Total	\$39,125
5.3	Area 118 Pit						
	Remove pit pumps and pipe column/general cleanup	General Labourer	hrs	45	\$52	\$2,340	\$2,340
		Trades Labourer	hrs	11.25	\$91	\$1,024	\$1,024
		Support equipment	l.s.	1	\$750	\$750	\$750
	Secure pit access - boulder placement	Cat 235 Excavator	hrs	15	\$250	\$3,750	\$3,750
		Haul Truck D250E	hrs	15	\$250	\$3,750	\$3,750
	Construct exit channel into Mill Pond system	Cat 235 Excavator	hrs	30	\$250	\$7,500	\$7,500
		Produce rip-rap	cu.m	30	\$15	\$450	\$450
	rip-rap shoulder exiting pit	Load, haul and place rip-rap	cu.m	37.5	\$15	\$563	\$563
	Exit Spillway construction	General Labourer	hrs	30	\$52	\$1,560	\$1,560
		Produce rip-rap	cu.m	188	\$15	\$2,813	\$2,813
		Load, haul and place rip-rap	cu.m	187.5	\$15	\$2,813	\$2,813
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,912	\$1,912
						Sub-Total	\$29,223
5.4	Haul Roads (15 ha)						
	Remove culverts and haul away	General Labourer	hrs	55	\$52	\$2,860	\$2,860
		Cat 235 Excavator	hrs	28	\$250	\$7,000	\$7,000
		Haul Truck D250E	hrs	28	\$250	\$7,000	\$7,000
	Recontour slopes	D9H Dozer	hrs	208	\$350	\$72,800	\$72,800
	Scarify surfaces	Cat 16H grader	hrs	208	\$300	\$62,400	\$62,400
		General Labourer	hrs	28	\$52	\$1,456	\$1,456
	Stabilize slopes - erosion barriers - material	Unit Cost Basis	sq.m	2,800	\$3	\$8,400	\$8,400
	- enviro-matting	Unit Cost Basis	sq.m	2,800	\$3	\$8,400	\$8,400
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$11,922	\$11,922
						Sub-Total	\$182,238
5.5	Underground						
	Recontour slopes	D9H Dozer	hrs	20	\$350	\$7,000	\$7,000
	Seal off underground portal		l.s.	1	\$10,000	\$10,000	\$10,000
	Seal off ventilation raise		l.s.	1	\$5,000	\$5,000	\$5,000
	Scarify road	Cat 16H grader	hrs	8	\$300	\$2,400	\$2,400
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,708	\$1,708
						Sub-Total	\$26,108
Total Estimated Cost in Reclaiming Open Pit and Haul Roads							\$340,359

Note:

Linear disturbances to be scarified / decompacted and allowed to naturally revegetate

Table 9.1-6

Primary Water Conveyance Structures, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
6.1	Decomission 100 Surface Drainage Channel						
	Remove redundant infrastructure	Misc.	l.s.	1	\$25,000	\$25,000	\$25,000
	Upgrade for final closure	Misc.	l.s.	1	\$50,000	\$50,000	\$50,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$5,250	\$5,250
						Sub-Total	\$80,250
6.2	200 Surface Drainage Channel (1120 m length)						
	Contour ditching (1120 m)	Cat 235 Excavator	hrs	56	\$250.00	\$14,000	\$14,000
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	3,960	\$15.00	\$59,400	\$59,400
		Load, haul and place rip-rap	cu.m.	3,960	\$15.00	\$59,400	\$59,400
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$9,296	\$9,296
						Sub-Total	\$142,096
6.3	300 Surface Drainage Channel (370 m length)						
	Contour ditching (370 m)	Cat 235 Excavator	hrs	19	\$250.00	\$4,625	\$4,625
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	1,310	\$15.00	\$19,650	\$19,650
		Load, haul and place rip-rap	cu.m.	1,310	\$15.00	\$19,650	\$19,650
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$3,075	\$3,075
						Sub-Total	\$47,000
6.4	350 Surface Drainage Channel (510 m length)						
	Contour ditching (510 m)	Cat 235 Excavator	hrs	26	\$250.00	\$6,375	\$6,375
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	1,800	\$15.00	\$27,000	\$27,000
		Load, haul and place rip-rap	cu.m.	1,800	\$15.00	\$27,000	\$27,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$4,226	\$4,226
						Sub-Total	\$64,601
6.5	400 - Surface Drainage Channel Over MVFE (1130 m length)						
	Contour secondary ditching (1380 m)	Cat 235 Excavator	hrs	92	\$250	\$23,000	\$23,000
	Provision for ditching rip-rap (1130 m)	Produce rip-rap	cu.m.	4,410	\$15	\$66,150	\$66,150
		Load, haul and place rip-rap	cu.m.	4,410	\$15	\$66,150	\$66,150
	Provision for bedding/foundation prep	Load, haul and place bedding/foundation material	cu.m.	4,410	\$15	\$66,150	\$66,150
	Impervious Barrier (BGM)	Deliver and install geosynthetic membrane on prepared foundation	sq.m	19,320	\$20	\$386,400	\$386,400
	Ditch 400 Spillway (TBD at closure)	Allowance	l.s.	1	\$250,000	\$250,000	\$250,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$60,050	\$60,050
						Sub-Total	\$917,900
6.6	450 Surface Drainage Channel (330 m length)						
	Contour ditching (330 m)	Cat 235 Excavator	hrs	17	\$250.00	\$4,125	\$4,125
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	1,170	\$15.00	\$17,550	\$17,550
		Load, haul and place rip-rap	cu.m.	1,170	\$15.00	\$17,550	\$17,550
	Impervious Barrier (BGM)	Deliver and install geosynthetic membrane on prepared foundation	sq.m	5,000	\$20	\$100,000	\$100,000
	Provision for bedding/foundation prep	Load, haul and place bedding/foundation material	cu.m.	1,170	\$15	\$17,550	\$17,550
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$10,974	\$10,974
						Sub-Total	\$167,749
Total Estimated Cost in Constructing Primary Drainage Ditches							\$1,419,596

Note:

Table 9.1-7

DSTSF and MVFE, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
7.1	Dry Stacked Tailings Storage Facility (20.54 ha)						
	Roll crest of starter bench and recontour	D9H Dozer	hrs	50	\$350	\$17,500	\$17,500
	Haul and place overburden for revegetation (0.5 m thickness)	Custom Rate G (Load, haul, place soil cover ROD-DSTF)	cu.m	102,700	\$4.63	\$475,501	\$475,501
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$34,510	\$34,510
						Sub-Total	\$527,511
7.2	Dry Stacked Tailings - Ditching						
	Contour secondary ditching (720 m)	Cat 235 Excavator	hrs	70	\$250.00	\$17,500	\$17,500
	Provision for ditching rip-rap	Produce rip-rap	cu.m	2,540	\$15.00	\$38,100	\$38,100
		Load, haul and place rip-rap	cu.m	2,540	\$15.00	\$38,100	\$38,100
	Impervious barrier	Deliver and install geosynthetic membrane on prepared foundation	sq.m	4,320	\$20.00	\$86,400	\$86,400
	Contour tertiary ditching (780 m)	Cat 235 Excavator	hrs	39	\$250.00	\$9,750	\$9,750
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$13,290	\$13,290
						Sub-Total	\$203,140
7.3	South Diversion Ditch (length cut by 50%)						
	Widen south diversion ditch	D9H Dozer	hrs	50	\$350	\$17,500	\$17,500
		Cat 235 Excavator	hrs	20	\$250	\$5,000	\$22,500
		Produce rip-rap	cu.m	1,200	\$15	\$18,000	\$18,000
	Haul and place rip-rap	Load, haul and place rip-rap	cu.m	1,200	\$15	\$18,000	\$18,000
	Construct spillway into Area 2 Pit	Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
		Haul Truck D250E	hrs	20	\$250	\$5,000	\$5,000
		Produce rip-rap	cu.m	200	\$15	\$3,000	\$3,000
		Load, haul and place rip-rap	cu.m	200	\$15	\$3,000	\$21,000
	HDPE liner	Unit rate	sq.m	2,400	\$10	\$24,000	\$24,000
		General Labourer	hrs	80	\$52	\$4,160	\$4,160
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$7,536	\$7,536
						Sub-Total	\$150,696
7.4	Mill Valley Fill (26.60 ha [incl. Stage 2 Ext.])						
	Haul and place for Stage 2 MVFE	Custom Rate H (Load, haul, place fill SWD - MVFE)	cu.m	1,670,000	\$4.63	\$7,732,100	\$7,732,100
	Roll crest and recontour	D9H Dozer	hrs	60	\$350	\$21,000	\$21,000
	Install a stilling basin at toe of MVFE spillway into Ditch 400	Misc.	ls.	1	\$10,000	\$10,000	\$10,000
	Haul and place overburden for revegetation (0.5 m thickness)	Custom Rate F (Load, haul, place soil cover ROD-MVFE)	cu.m	133,000	\$4.63	\$615,790	\$615,790
	Detailed Engineering (allowance)	Misc.	l.s.	1	\$50,000	\$50,000	\$50,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$590,022	\$590,022
						Sub-Total	\$9,018,912
Total Estimated Cost in Reclaiming Tailings Area							\$9,900,259

Note:

Table 9.1-8

Water Storage Pond Dam, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
8.1	Reclaim System						
	Remove salvageable equipment - pipeline/pumps	General Labourer	hrs	48	\$52	\$2,496	\$2,496
		Trades Labourer	hrs	98	\$91	\$8,918	\$8,918
	Remove pipeline	Haul Truck D250E	hrs	100	\$250	\$25,000	\$25,000
		Cat 235 Excavator	hrs	100	\$250	\$25,000	\$25,000
		General Labourer	hrs	200	\$52	\$10,400	\$10,400
	Dismantle Building	Cat 235 Excavator	hrs	16	\$250	\$4,000	\$4,000
		Trades Labourer	hrs	10	\$91	\$910	\$910
		General Labourer	hrs	20	\$52	\$1,040	\$1,040
	Misc. Supplies & Tools	Misc.	l.s.	1	\$1,000	\$1,000	\$1,000
	Recontour alignment	D9H Dozer	hrs	16	\$350	\$5,600	\$5,600
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$5,905	\$5,905
						Sub-Total	\$90,269
8.2	Water Storage Pond Dam						
	Pump down impounded water, over spillway (using reclaim pumps)	General Labourer	hrs	96	\$52	\$4,992	\$4,992
	Misc. Supplies & Tools	Misc.	l.s.	1	\$5,000	\$5,000	\$5,000
	Engineering design for final structure include appropriate flow determination,	Misc.	l.s.	1	\$20,000	\$20,000	\$20,000
	Build coffer dam and install pump-around system	Misc.	l.s.	1	\$10,000	\$10,000	\$10,000
	Stockpile rip-rap from downstream shell	Unit Cost Basis	cu.m	10,000	\$10	\$100,000	\$100,000
	Breach Dam: push material using dozer into new areas	Custom Rate J (Push from WSP Dam - U/S WSP Dam)	cu.m	25,000	\$2.35	\$58,750	\$58,750
	and load, haul & dump and contour material in new area	Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	cu.m	31,000	\$4.75	\$147,250	\$147,250
		Environmental Scientist	hrs	60	\$110.00	\$6,600	\$6,600
	Construct stream channel at original grade - load, haul & place rip-rap (salvage from old WSP Dam stockpile)	Load, Haul and Place rip-rap	cu.m	1,125	\$15.00	\$16,875	\$16,875
	Load, haul, place & contour overburden on slopes of new area u/s of WSP Dam	Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	cu.m	15,000	\$4.75	\$71,250	\$71,250
	Stabilize slopes with erosion barriers	Silt curtains	sq. m	15,000	\$3	\$45,000	\$45,000
		Enviro matting	sq. m	15,000	\$3	\$45,000	\$45,000
	Misc. Supplies & Tools	Misc.	l.s.		\$3,000	\$3,000	\$3,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$37,360	\$37,360
						Sub-Total	\$571,077
Total Estimated Cost in Reclaiming Water Dam							\$661,347

Notes:

Table 9.1-9

Mill & Ancillary Facilities, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
9.1	Mill Building						
	Remove salvageable equipment	General Labourer	hrs	550	\$52	\$28,600	\$28,600
		Trades Labourer	hrs	600	\$91	\$54,600	\$54,600
		30 ton Crane	hrs	40	\$190	\$7,600	\$7,600
	Decontaminate Building-hosing and clean-up	Trades Labourer	hrs	160	\$91	\$14,560	\$14,560
	Dismantle Building	General Labourer	hrs	1000	\$52	\$52,000	\$52,000
		Trades Labourer	hrs	600	\$91	\$54,600	\$54,600
		Cat 235 Excavator w hammer	hrs	120	\$275	\$33,000	\$33,000
		30 ton Crane	hrs	60	\$190	\$11,400	\$11,400
	Concrete Demolition	Blaster	hrs	40	\$68	\$2,720	\$2,720
		Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		D9H Dozer	hrs	30	\$350	\$10,500	\$10,500
	Misc. Supplies & Tools	Misc.	l.s.	1	\$11,000	\$11,000	\$11,000
	Scrap haul to solid waste facility	Cat 235 Excavator	hrs	50	\$250	\$12,500	\$12,500
		Haul Truck D250E	hrs	100	\$250	\$25,000	\$25,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$22,616	\$22,616
						Sub-Total	\$345,696
9.2	Other Mill Area Buildings						
	Remove salvageable equipment	General Labourer	hrs	275	\$52	\$14,300	\$14,300
		Trades Labourer	hrs	275	\$91	\$25,025	\$25,025
		30 ton Crane	hrs	25	\$190	\$4,750	\$4,750
	Salvage and remove powerline and poles		l.s.	1	\$27,500	\$27,500	\$27,500
	Dismantle Buildings	General Labourer	hrs	180	\$52	\$9,360	\$9,360
		Trades Labourer	hrs	90	\$91	\$8,190	\$8,190
		Cat 235 Excavator w hammer	hrs	45	\$275	\$12,375	\$12,375
		30 ton Crane	hrs	35	\$190	\$6,650	\$6,650
	Concrete Demolition	Blaster	hrs	45	\$68	\$3,060	\$3,060
		Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Cat 235 Excavator w hammer	hrs	30	\$275	\$8,250	\$8,250
		D9H Dozer	hrs	22	\$350	\$7,700	\$7,700
	Misc. Supplies & Tools	Misc.	l.s.	1	\$10,000	\$10,000	\$10,000
	Scrap haul to solid waste facility	Cat 235 Excavator	hrs	11	\$250	\$2,750	\$2,750
		Haul Truck D250E	hrs	22	\$250	\$5,500	\$5,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$10,529	\$10,529
						Sub-Total	\$160,939
9.3	Fuel Storage Area						
	Cleanout tanks-remove sludge, pressure wash	General Labourer	hrs	60	\$52	\$3,120	\$3,120
		Removal to Licensed facility	l.s.	1	\$10,000	\$10,000	\$10,000
	Remove bulk fuel storage and piping facilities	General Labourer	hrs	100	\$52	\$5,200	\$5,200
		Trades Labourer	hrs	120	\$91	\$10,920	\$10,920
		30 ton Crane	hrs	30	\$190	\$5,700	\$5,700
		Support Equipment	l.s.	1	\$2,500	\$2,500	\$2,500
		Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
		General Labourer	hrs	40	\$52	\$2,080	\$2,080
		Tractor Trailer (lowbed)	hrs	30	\$180	\$5,400	\$5,400
	Fold and Bury Liner	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		D9H Dozer	hrs	100	\$350	\$35,000	\$35,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$6,644	\$6,644
						Sub-Total	\$101,564
9.4	Mill Reagents						
	Load and return extra reagents/chemicals	General Labourer	hrs	100	\$52	\$5,200	\$5,200
		Support Equipment	l.s.	1	\$2,500	\$2,500	\$2,500
		Disposal Cost-bulk materials	l.s.	1	\$5,000	\$5,000	\$5,000
		Disposal Cost-lab pacs	pallets	2	\$2,000	\$4,000	\$4,000
	Removal of drums, steel, oils, glycol & batteries, as per 09July quote from General Waste Management to MEL	Contractor quote	l.s.	1	\$61,080	\$61,080	\$61,080
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$5,445	\$5,445
						Sub-Total	\$83,225
9.5	Reclaim Entire Mill Site Area including Fuel Storage and Crusher Area (10 ha)						
	Test soils for contamination	Environmental Scientist	hrs	35	\$110	\$3,850	\$3,850
		Analytical Costs	l.s.	1	\$6,000	\$6,000	\$6,000
	Haul any contaminated soils to Land Treatment Facility	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Haul Truck D250E	hrs	20	\$250	\$5,000	\$5,000
	Haul any ore/concentrate contaminated soils to u/g	Load, haul & place mat'l underground	cu.m.	200	\$10	\$2,000	\$2,000
	Re-contour area and slopes to bury footings and establish drainage	D9H Dozer	hrs	200	\$350	\$70,000	\$70,000
	Haul and place overburden cap (0.5m thickness)	Unit Rate	cu.m	50000	\$4.63	\$231,500	\$231,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$22,635	\$22,635
						Sub-Total	\$345,985
9.6	Contractor's Shop and Work Area						
	Remove salvageable equipment	General Labourer	hrs	75	\$52	\$3,900	\$3,900
		Haul Truck D250E	hrs	25	\$250	\$6,250	\$6,250
		Trades Labourer	hrs	60	\$91	\$5,460	\$5,460
	Dismantle buildings	General Labourer	hrs	60	\$52	\$3,120	\$3,120
		30 ton Crane	hrs	13	\$190	\$2,375	\$2,375
		Cat 235 Excavator	hrs	38	\$250	\$9,375	\$9,375
	Haul building pieces off site - equipment	Tractor Trailer (lowbed)	hrs	25	\$180	\$4,500	\$4,500
	Scrap haul to site landfill	Haul Truck D250E	hrs	25	\$250	\$6,250	\$6,250
		Cat 235 Excavator	hrs	25	\$250	\$6,250	\$6,250
	Excavate & haul contaminated materials to site LTF	Misc.	l.s.	1	\$6,250	\$6,250	\$6,250
	Bury footings - haul and place fill, locally sourced	Unit Basis (footing burial)	each	3125	\$5	\$15,625	\$15,625
	Recontour	D9H Dozer	hrs	45	\$350	\$15,750	\$15,750
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$5,957	\$5,957
						Sub-Total	\$91,062
9.7	Laydown Area (7.36 ha)						
	Re-contour area and slopes to establish drainage	D9H Dozer	hrs	60	\$350	\$21,000	\$21,000
	Haul and place overburden cap (0.5m thickness)	Custom Rate G (Load, haul, place soil cover ROD-DSTF)	cu.m	36800	\$4.63	\$170,384	\$170,384
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$13,397	\$13,397
						Sub-Total	\$204,781
Total Estimated Cost in Reclaiming Mill and Ancillary Facilities							\$1,333,251

Table 9.1-10

Mill Water Pond, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
10.1	Reclaim Mill Pond						
	Remove upstream culvert	General Labourer	hrs	10	\$52	\$520	\$520
		Cat 235 Excavator	hrs	10	\$250	\$2,500	\$2,500
	Construct channel	Cat 235 Excavator	hrs	100	\$250	\$25,000	\$25,000
		D9H Dozer	hrs	20	\$350	\$7,000	\$7,000
		Produce rip-rap	cu.m	5,000	\$15	\$75,000	\$75,000
		Load, haul and place rip-rap	cu.m	5,000	\$15	\$75,000	\$75,000
		General Labourer	hrs	20	\$52	\$1,040	\$1,040
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$13,024	\$13,024
Sub-Total							\$199,084
Total Estimated Cost in Reclaiming Mill Pond							\$199,084

Note:

Table 9.1-11

Main Access Road, Estimated Closure Costs - Phase V / VI

Scenario 1 - No Road Deactivation							
Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
11.1	NO ROAD DECOMMISSIONING REQUIRED						
11.1.1	Road Surface						
	Install road barrier at west side of Minto Creek	Misc	l.s.	1	\$2,000	\$2,000	\$2,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$140	\$140
						Sub-Total	\$2,140
Total Estimated Cost for Access Road Closure (Scenario 1)							\$2,140

Scenario 2 - Decommission Access Road From Minto Creek to Mine Site (11 KM)							
Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
11.2	ACCESS ROAD - 11 KM SECTION						
11.2.1	Road Surface						
	Scarify - 11 km	Cat 16H grader	hrs	70	\$300	\$21,000	\$21,000
	Recontour slopes and drainages	D9H Dozer	hrs	25	\$350	\$8,750	\$8,750
	Project Management & Engineering		%		7.00%	\$2,083	\$2,083
						Sub-Total	\$31,833
11.2.2	Culverts						
	Culvert excavation (40 small culverts)	Cat 235 Excavator	hrs	100	\$250	\$25,000	\$25,000
	Culvert removal	General Labourer	hrs	140	\$52	\$7,280	\$7,280
		Haul Truck D250E	hrs	100	\$250	\$25,000	\$32,280
	Minto Creek Culvert Removal & Streambank Restoration	Trades Labourer	hrs	40	\$91	\$3,640	
		General Labourer	hrs	75	\$52	\$3,900	
		Cat 235 Excavator	hrs	40	\$250	\$10,000	\$17,540
	Recontour slopes and drainage	D9H Dozer	hrs	70	\$350	\$24,500	\$24,500
	Stabilize slopes	General Labourer	hrs	200	\$52	\$10,400	
	Erosion barriers	Erosion Barrier	per sq. m	500	\$3	\$1,500	\$11,900
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$7,785	\$7,785
						Sub-Total	\$119,005
Total Estimated Cost for Access Road Closure (Scenario 2)							\$150,838

Scenario 3 - Decommission Entire Access Road (27 KM)							
Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
11.3	ACCESS ROAD - 27 KM SECTION						
11.3.1	Road Surface						
	Scarify - 27 km	Cat 16H grader	hrs	150	\$300	\$45,000	\$45,000
	Recontour slopes and drainage	D9H Dozer	hrs	50	\$350	\$17,500	\$17,500
	Contamination survey - along corridor	Misc.	l.s.	1	\$10,000	\$10,000	\$10,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$5,075	\$5,075
						Sub-Total	\$77,575
11.3.2	Big Creek Bridge						
	Remove bridge decking and span	General Labourer	hrs	50	\$52	\$2,600	\$2,600
		30 ton Crane	hrs	40	\$190	\$7,600	\$7,600
		Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
		Haul Truck D250E	hrs	10	\$250	\$2,500	\$2,500
		Tractor Trailer (lowbed)	hrs	20	\$180	\$3,600	\$3,600
	Cut off piles	General Labourer	hrs	50	\$52	\$2,600	\$2,600
	Re-contour	Cat 235 Excavator	hrs	30	\$250	\$7,500	\$7,500
		D9H Dozer	hrs	30	\$350	\$10,500	\$10,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$3,283	\$3,283
						Sub-Total	\$50,183
11.3.3	Barge Ramps						
	Remove all gravel	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Haul Truck D250E	hrs	10	\$250	\$2,500	\$2,500
	Re-countour areas and scarify	D9H Dozer	hrs	30	\$350	\$10,500	\$10,500
	Shoreline restoration	Misc.	l.s.		\$5,000	\$5,000	\$5,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,610	\$1,610
						Sub-Total	\$24,610
11.3.4	Culverts						
	Culvert excavation (45 small culverts)	Cat 235 Excavator	hrs	115	\$250	\$28,750	\$28,750
	Culvert removal	General Labourer	hrs	150	\$52	\$7,800	\$7,800
		Haul Truck D250E	hrs	115	\$250	\$28,750	\$28,750
	Minto Creek Culvert Removal & Streambank Restoration	Trades Labourer	hrs	40	\$91	\$3,640	\$3,640
		General Labourer	hrs	75	\$52	\$3,900	\$3,900
		Cat 235 Excavator	hrs	40	\$250	\$10,000	\$10,000
	Recontour slopes and drainage	D9H Dozer	hrs	70	\$350	\$24,500	\$24,500
	Stabilize slopes	General Labourer	hrs	200	\$52	\$10,400	\$10,400
	Silt Curtains (20m ² per crossing)	Erosion Barrier	sq. m.	900	\$3	\$2,700	\$2,700
	Enviro matting (15m ² per crossing)	Enviro matting	sq. m.	680	\$3	\$2,040	\$2,040
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$8,574	\$8,574
						Sub-Total	\$131,054
Total Estimated Cost for Access Road Closure (Scenario 3)							\$283,422

Note:

Table 9.1-12

Miscellaneous Sites and Facilities, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
12.1	Airstrip						
	Scarify airstrip and adjacent laydown areas	Cat 16H Grader	hrs	40	\$300	\$12,000	\$12,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$840	\$840
						Sub-Total	\$12,840
12.2	Mine Camp and Related Infrastructure (4.69 ha)						
	Disconnect Services	Trades Labourer	hrs	150	\$91	\$13,650	\$13,650
	Remove salvageable equipment	General Labourer	hrs	1200	\$52	\$62,400	\$62,400
	Dismantle buildings	General Labourer	hrs	2000	\$52	\$104,000	\$104,000
		Cat 235 Excavator	hrs	200	\$250	\$50,000	\$50,000
	Haul scrap to Solid Waste Facility	Haul Truck D250E	hrs	40	\$250	\$10,000	\$10,000
		Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
	Remove above ground sewage treatment system	Misc.	l.s.	1	\$5,000	\$5,000	\$5,000
	Site Clean-Up	General Labourer	hrs	1000	\$52	\$52,000	\$52,000
	Haul and place overburden for revegetation (0.5 m thickness)	Custom Rate F (Load, haul, place soil cover ROD-MVFE)	cu.m.	23450	\$4.63	\$108,574	\$108,574
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$28,744	\$28,744
						Sub-Total	\$439,367
12.3	Explosives Plant Site						
	Remove salvageable equipment	General Labourer	hrs	100	\$52	\$5,200	\$5,200
		Trades Labourer	hrs	50	\$91	\$4,550	\$4,550
	Dismantle buildings	General Labourer	hrs	200	\$52	\$10,400	\$10,400
		Cat 235 Excavator	hrs	30	\$250	\$7,500	\$7,500
	Disconnect Services	Trades Labourer	hrs	20	\$91	\$1,820	\$1,820
	Crane services	30 ton Crane	hrs	5	\$190	\$950	\$950
	Haul scrap to Solid Waste Facility	Haul Truck D250E	hrs	30	\$250	\$7,500	\$7,500
		Cat 235 Excavator	hrs	10	\$250	\$2,500	\$2,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$2,829	\$2,829
						Sub-Total	\$43,249
12.4	Exploration Sites and Trails						
	Natural revegetation	n/a	n/a				
						Sub-Total	\$0
12.5	Land Treatment Facility						
	Prepare and submit closure plan	Misc	l.s.		\$2,000	\$2,000	\$2,000
	Characterize final soil hydrocarbon concentrations	Misc	l.s.		\$4,000	\$4,000	\$4,000
	Recontour	D9H Dozer	hrs	3	\$350	\$1,050	\$1,050
	Haul and place coverburden cover from nearby	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Haul Truck D250E	hrs	20	\$250	\$5,000	\$5,000
		D9H Dozer	hrs	6	\$350	\$2,100	\$2,100
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,341	\$1,341
						Sub-Total	\$20,491
12.6	Solid Waste Facility						
	Prepare detailed closure plan	Misc	l.s.		\$2,000	\$2,000	\$2,000
	Characterize final waste area	Misc	l.s.		\$2,000	\$2,000	\$2,000
	Remove recyclables and special waste materials	Tractor Trailer (lowbed)	hrs	40	\$180	\$7,200	\$7,200
	Recontour	D9H Dozer	hrs	2	\$350	\$700	\$700
	Haul and cover with adjacent fill and place overburden cap	Cat 235 Excavator	hrs	20	\$250	\$5,000	\$5,000
		Haul Truck D250E	hrs	20	\$250	\$5,000	\$5,000
	Compaction of cover	D9H Dozer	hrs	12	\$350	\$4,200	\$4,200
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,827	\$1,827
						Sub-Total	\$27,927
12.7	Site Roads						
	Recontour	Cat 235 Excavator	hrs	37.5	\$250	\$9,375	\$9,375
	Scarify	Cat 16H Grader	hrs	50	\$300	\$15,000	\$15,000
	Erosion Barriers	Erosion Barrier	sq. m.	300	\$3	\$900	\$900
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,769	\$1,769
						Sub-Total	\$27,044
Total Estimated Cost in Reclaiming Miscellaneous Sites and Facilities							\$570,918

Note:

Table 9.1-13

Reclamation Research and Revegetation, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Area (ha)	Units	Quantity	Unit Rates	Cost	Year 0 Total
13.1	Determination of Revegetation Plan for Current Site						
	Issuance of a plan for all site areas for regulatory review and approval		Misc	1		\$20,000	\$20,000
	Sub-Total						\$20,000
13.2	Main and Southwest Dumps	118.07					
	Seed and fertilize w/ labour		ha	118.1	\$2,850	\$336,500	
	Re-seed and fertilize (1/2 of total area)		ha	59.0	\$2,850	\$168,250	
	Re-forest		ha	118.1	\$2,000	\$236,140	\$740,889
	Sub-Total						\$740,889
13.3	Ice-Rich Overburden Dump	2.94					
	Seed and fertilize w/ labour		ha	2.9	\$2,850	\$8,379	
	Re-seed and fertilize (1/2 of total area)		ha	1.5	\$2,850	\$4,190	
	Re-forest		ha	2.9	\$2,000	\$5,880	\$18,449
	Sub-Total						\$18,449
13.4	Reclamation Overburden Dump	30.85					
	Seed and fertilize w/ labour		ha	30.9	\$2,850	\$87,923	
	Re-seed and fertilize (1/2 of total area)		ha	15.4	\$2,850	\$43,961	
	Re-forest		ha	30.9	\$2,000	\$61,700	\$193,584
	Sub-Total						\$193,584
13.5	Ore Stockpiles and Pads	8.72					
	Seed and fertilize w/ labour		ha	8.7	\$2,850	\$24,852	
	Re-seed and fertilize (1/2 of total area)		ha	4.4	\$2,850	\$12,426	
	Re-forest		ha	8.7	\$2,000	\$17,440	\$54,718
	Sub-Total						\$54,718
13.6	Mill Valley Fill	26.60					
	Seed and fertilize w/ labour		ha	26.6	\$2,850	\$75,810	
	Re-seed and fertilize (1/2 of total area)		ha	13.3	\$2,850	\$37,905	
	Re-forest		ha	26.6	\$2,000	\$53,200	\$166,915
	Sub-Total						\$166,915
13.7	Contractor's Shop and Office Area	2.50					
	Seed and fertilize w/ labour		ha	2.5	\$2,850	\$7,125	
	Re-seed and fertilize (1/2 of total area)		ha	1.3	\$2,850	\$3,563	
	Re-forest		ha	2.5	\$2,000	\$5,000	\$15,688
	Sub-Total						\$15,688
13.8	Tailings Surface Area	20.54					
	Seed and fertilize w/ labour		ha	20.5	\$2,850	\$58,539	
	Re-seed and fertilize (1/2 of total area)		ha	10.3	\$2,850	\$29,270	
	Re-forest		ha	20.5	\$2,000	\$41,080	\$128,889
	Sub-Total						\$128,889
13.9	Water Storage Pond Dam	6.00					
	Seed and fertilize w/ labour		ha	6.0	\$2,850	\$17,100	
	Re-seed and fertilize (1/2 of total area)		ha	3.0	\$2,850	\$8,550	
	Re-forest		ha	6.0	\$2,000	\$12,000	\$37,650
	Sub-Total						\$37,650
13.10	Mill Area	4.13					
	Seed and Fertilize w/ labour		ha	4.1	\$2,850	\$11,771	
	Re-seed and fertilize (1/2 of total area)		ha	2.1	\$2,850	\$5,885	
	Re-forest		ha	4.1	\$2,000	\$8,260	\$25,916
	Sub-Total						\$25,916
13.11	Haul Road	15.00					
			ha	15.0	\$2,850	\$42,750	\$42,750
	Sub-Total						\$42,750
13.12	Underground Portal Excavation	9.07					
	Seed and Fertilize w/ labour		ha	9.1	\$2,850	\$25,850	
	Re-seed and fertilize (1/2 of total area)		ha	4.5	\$2,850	\$12,925	
	Re-forest		ha	9.1	\$2,000	\$18,140	\$56,914
	Sub-Total						\$56,914
13.13	Miscellaneous Sites - Camp, Airstrip, Waste Facilities, Explosives Site	14.00					
	Seed and fertilize w/ labour		ha	14.0	\$2,850	\$39,900	
	Re-seed and fertilize (1/2 of total area)		ha	7.0	\$2,850	\$19,950	
	Re-forest		ha	14.0	\$2,000	\$28,000	\$87,850
	Sub-Total						\$87,850
13.14	Main Pit Buttress	13.52					
	Seed and fertilize w/ labour		ha	13.5	\$2,850	\$38,532	
	Re-seed and fertilize (1/2 of total area)		ha	6.8	\$2,850	\$19,266	
	Re-forest		ha	13.5	\$2,000	\$27,040	\$84,838
	Sub-Total						\$84,838
13.15	Laydown Area	7.36					
	Seed and Fertilize w/ labour		ha	7.4	\$2,850	\$20,976	
	Re-seed and fertilize (1/2 of total area)		ha	3.7	\$2,850	\$10,488	
	Re-forest		ha	7.4	\$2,000	\$14,720	\$46,184
	Sub-Total						\$46,184
13.16	Access Road						
	Scenario 1 - No Deactivation						
	No revegetation						
	Sub-Total						\$0
	Scenario 2 - Deactivate from Minto Creek to Mine Site (11 km)	11.00					
	Revegetate and fertilize banks at culvert excavations, including labour		ha	2.0	\$2,850	\$5,700	\$5,700
	Sub-Total						\$5,700
	Scenario 3 - Deactivate Entire Road (27 km)	27.00					
	Hydroseed roadside banks & slopes (~0.25ha per km of road, along 50% of its length)		ha	3.4	\$4,000	\$13,600	\$13,600
	Revegetate and fertilize banks at culvert excavations, including labour		ha	6.0	\$2,850	\$17,100	\$17,100
	Sub-Total						\$30,700
Total Estimated Cost for Reclamation Research and Revegetation							
	Scenario 1 - No Access Road Deactivation						\$1,721,233
	Scenario 2 - Deactivate Access Road from Minto Creek to Mine Site						\$1,726,933
	Scenario 3 - Deactivate Entire Access Road						\$1,751,933

Note:

Table 9.1-14

Supporting Studies - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Year 0 Total
14.1	Kinetic Tailings and Waste Rock Materials Testing						
	Monitoring program and field test to enhance long term water quality prediction related to drystack tailings facility and materials in WRDs						
	preparing composite sample over several months of production	Misc.	l.s.	1	\$5,000	\$5,000	\$5,000
	undertaking field test	Misc.	l.s.	1	\$12,000	\$12,000	\$12,000
	initiate parallel laboratory analysis	Misc.	l.s.	1	\$10,000	\$10,000	\$10,000
	monitoring field apparatus (columns)	Misc.	l.s.	1	\$4,000	\$4,000	\$4,000
	reporting	Misc.	l.s.	1	\$5,000	\$5,000	\$5,000
						Sub-Total	\$36,000
14.2	Other Adaptive Management Plans Required						
	Changes in WTP input water quality or quantity	Misc.	l.s.	1	\$22,500	\$22,500	\$22,500
	Sludge Management Plan - for material from WTP	Misc.	l.s.	1	\$15,000	\$15,000	\$15,000
	Site testing ML ARD	Misc.	l.s.	1	\$45,000	\$45,000	\$45,000
	Groundwater Management Plan	Misc.	l.s.	1	\$15,000	\$15,000	\$15,000
	Long term reclamation of contaminated soils	Misc.	l.s.	1	\$22,500	\$22,500	\$22,500
	Physical Monitoring program - prior to closure	Misc.	l.s.	1	\$60,000	\$60,000	\$60,000
	Modeling of pit lake water qualities prior to flooding	Misc.	l.s.	1	\$22,500	\$22,500	\$22,500
						Sub-Total	\$202,500
14.3	Closure Specific Studies and Field Trials						
	Engineered cover evaluations-on-going	Engineering/Design	l.s.	1	\$0	\$0	\$0
	Site contamination surveys (pre \$35K, post \$20K)		l.s.	1	\$55,000	\$55,000	\$55,000
						Sub-Total	\$55,000
14.4	Reclamation & Closure Research Program (Active Closure)						
	Year 1 (2014) COMPLETED	Misc.	l.s.	1	\$350,000	\$350,000	\$0
	Year 2 (2015)	Misc.	l.s.	1	\$350,000	\$350,000	\$350,000
	Year 3 (2016)	Misc.	l.s.	1	\$350,000	\$350,000	\$350,000
	Year 4 (2017)	Misc.	l.s.	1	\$200,000	\$200,000	\$200,000
	Year 5 (2018)	Misc.	l.s.	1	\$200,000	\$200,000	\$200,000
						Sub-Total	\$1,100,000
14.5	Passive Treatment Design						
	Design of passive treatment systems required for closure	Misc.	l.s.	1	\$75,000	\$75,000	\$75,000
						Sub-Total	\$75,000
Total Estimated Cost for Supporting Studies							\$1,468,500

Note:

Table 9.1-16

Interim Care and Maintenance - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Annual Cost	Full Cost
16.1	Personnel						
	On-site Caretaker						
	Full time (2 people on alternate 7in-7out schedule, \$6,710 each per mo)	Site caretaker	\$/manmonth	24	\$6,710	\$161,040	\$161,040
	Extra Personnel						
	Electrician (estimate 1 mo/yr total)	Trades Labourer	\$/hr	176	\$91	\$16,016	\$16,016
	Mechanic (estimate 1 mo/yr total)	Trades Labourer	\$/hr	176	\$91	\$16,016	\$16,016
	Senior Operator/Supervisor (estimate 2mo/yr total)	Unit Cost Basis	\$/hr	352	\$110	\$38,720	\$38,720
	Camp Costs						
	for above personnel (365+30+30+60)	Unit Cost Basis	mandays	485	\$80	\$38,800	\$38,800
	Employee Transport Costs						
	Barge operating costs (6 mo/yr) at half-rate	Unit Cost Basis	monthly	6	\$5,000	\$30,000	\$30,000
	Air Access (3 mo/yr)	Unit Cost Basis	monthly	3	\$10,000	\$30,000	\$30,000
	Winter Road costs (3 mo/yr)	Unit Cost Basis	monthly	3	\$10,000	\$30,000	\$30,000
						Sub-Total - Personnel	\$360,592
16.2	Equipment						
	Small Excavator (1)	Misc.	annually	1	\$10,000	\$10,000	\$10,000
	Small Dozer (1)	Misc.	annually	1	\$10,000	\$10,000	\$10,000
	Small Loader (1)	Misc.	annually	1	\$10,000	\$10,000	\$10,000
	Pick-Up Truck (1)	Misc.	monthly	12	\$2,500	\$30,000	\$30,000
	Snow Machine & ATV	Misc.	annually	1	\$10,000	\$10,000	\$10,000
						Sub-Total - Equipment	\$70,000
16.3	Tasks						
	SNP/AEMP water sampling	Misc.	monthly	12	\$4,000	\$48,000	\$48,000
	Interim water treatment (active) (360,000m3/yr @ \$1.38/l)	Misc.	annually	1	\$496,800	\$496,800	\$496,800
	Geotechnical Assessments (2/yr)	Misc.	annually	1	\$15,000	\$15,000	\$15,000
	Sediment monitoring	Misc.	annually	1	\$4,000	\$4,000	\$4,000
	Biological monitoring	Misc.	annually	1	\$4,000	\$4,000	\$4,000
	Enhanced Groundwater/Foundation monitoring	Misc.	annually	1	\$15,000	\$15,000	\$15,000
	Monitoring of piezometers and thermistors (3/yr)	Misc.	3/yr	3	\$3,000	\$9,000	\$9,000
	Communications & reporting	Misc.	annually	1	\$10,000	\$10,000	\$10,000
						Sub-Total - Tasks	\$601,800
16.4	Miscellaneous						
	Misc Supplies	Misc.	annually	1	\$50,000	\$50,000	\$50,000
	Annual Fuel	Misc.	\$/litre	1,000	\$1.80	\$1,800	\$1,800
						Sub-Total - Miscellaneous	\$51,800
						Annual Cost for ICM	\$1,084,192
						Number of Years	2
						Total ICM Cost	\$2,168,384

Note:

Table 9.1-17

Mobilization and Demobilization - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Annual Cost	Full Cost
17.1	Mobilize Equipment & Fuel						
	Heavy Equipment						
	Excavators (3)	Equipment	kms	720	\$6	\$4,320	\$4,320
	Haul Trucks (6)	Equipment	kms	1,440	\$6	\$8,640	\$8,640
	Dozer-large (3)	Equipment	kms	720	\$18	\$12,960	\$12,960
	Dozer-medium (2)	Equipment	kms	480	\$6	\$2,880	\$2,880
	Grader-large (1)	Equipment	kms	240	\$10	\$2,400	\$2,400
	Loader-large (2)	Equipment	kms	480	\$8	\$3,840	\$3,840
	Loader-medium (1)	Equipment	kms	240	\$6	\$1,440	\$1,440
	Compactor (1)	Equipment	kms	240	\$6	\$1,440	\$1,440
	Crane (1)	Equipment	kms	240	\$6	\$1,440	\$1,440
	Light-duty Vehicles (4)	Light truck	kms	960	\$2	\$1,920	\$1,920
	Misc. Equipment						
	Sea Containers (supplies, mobile offices) (6)	Equipment	kms	1,440	\$10	\$14,400	\$14,400
	Other						
	Fuel						
	Fuel Freight	Unit Cost Basis	l.s.	1	\$5,000	\$5,000	\$5,000
Sub-Total - Mobilize Equipment & Fuel							\$60,680
17.2	Mobilize Workers & Camp						
	Workers (15men)						
	Travel costs	Unit Cost Basis	ea	15	\$200	\$0	\$0
	Workers wages during mob (3hr trip)	Unit Cost Basis	hrs	45	\$80	\$0	\$0
	Barge operating costs (2 months at commencement of closure work)						
	Mobilization period	Unit Cost Basis	monthly	2	\$10,000	\$0	\$0
	Make existing downsized camp operational for closure phase	Misc.	l.s.	1	\$10,000	\$10,000	\$10,000
Sub-Total - Mobilize Workers & Camp							\$10,000
17.3	Demobilize Equipment						
	Heavy Equipment						
	Excavators (3)	Equipment	kms	720	\$6	\$4,320	\$4,320
	Haul Trucks (6)	Equipment	kms	1,440	\$6	\$8,640	\$8,640
	Dozer-large (3)	Equipment	kms	720	\$18	\$12,960	\$12,960
	Dozer-medium (2)	Equipment	kms	480	\$6	\$2,880	\$2,880
	Grader-large (1)	Equipment	kms	240	\$10	\$2,400	\$2,400
	Loader-large (2)	Equipment	kms	480	\$8	\$3,840	\$3,840
	Loader-medium (1)	Equipment	kms	240	\$6	\$1,440	\$1,440
	Compactor (1)	Equipment	kms	240	\$6	\$1,440	\$1,440
	Crane (1)	Equipment	kms	240	\$6	\$1,440	\$1,440
	Light-duty Vehicles (4)	Light truck	kms	960	\$2	\$1,920	\$1,920
	Misc. Equipment						
	Sea Containers (supplies, mobile offices) (6)	Equipment	kms	1,440	\$10	\$14,400	\$14,400
	Other						
Sub-Total-Demobilize Equipment							\$55,680
17.4	Demobilize Wokers & Camp						
	Workers (15men)						
	Travel costs	Unit Cost Basis	monthly	15	\$200	\$0	\$0
	Workers wages during demob (3hr trip)	Unit Cost Basis	hrs	45	\$80	\$0	\$0
	Barge operating costs (2 months at completion of closure work)						
	Demobilization period	Unit Cost Basis	monthly	2	\$10,000	\$0	\$0
	Demob camp (N/A-decommissioned as part of site closure)						
Sub-Total - Demobilize Workers & Camp							\$0
Total Estimated Cost for Mobilization and Demobilization							\$126,360

Note:

Table 9.1-16 Net Present Value (NPV) Calculations (4 pages) Phase V / VI Financial Security Estimate (Year 0)

Discount Rate		2.50%		Water Treatment Costs											
Year														Total NPV	\$6,801,936
Current		2014													
Closure Year #	Years After Current	Calendar	Active Treatment Capital Costs	NPV	Active Treatment Capital Replacement Costs	NPV	Active Treatment Operating Costs	NPV	Passive Treatment Capital Costs	NPV	Passive Treatment Operation and Maintenance Costs	NPV	Total Annual NPV		
IC&M	1	0	2014										\$0		
	2	1	2015										\$0		
Active Closure	3	2	2016			\$60,000	\$57,109	\$650,000	\$618,679				\$675,788		
	4	3	2017			\$60,000	\$55,716	\$650,000	\$603,590				\$659,306		
	5	4	2018			\$60,000	\$54,357	\$650,000	\$588,868	\$1,000,000	\$905,951	\$0	\$1,549,176		
Post Closure I	6	5	2019			\$60,000	\$53,031	\$650,000	\$574,505			\$50,000	\$44,193	\$671,729	
	7	6	2020			\$60,000	\$51,738	\$650,000	\$560,493			\$50,000	\$43,115	\$655,346	
	8	7	2021			\$60,000	\$50,476	\$650,000	\$546,822			\$50,000	\$42,063	\$639,362	
	9	8	2022			\$60,000	\$49,245	\$650,000	\$533,485			\$50,000	\$41,037	\$623,767	
	10	9	2023			\$60,000	\$48,044	\$650,000	\$520,473			\$50,000	\$40,036	\$608,554	
Post Closure II	11	10	2024			\$60,000	\$46,872					\$50,000	\$39,060	\$85,932	
	12	11	2025			\$60,000	\$45,729					\$50,000	\$38,107	\$83,836	
	13	12	2026			\$60,000	\$44,613					\$50,000	\$37,178	\$81,791	
	14	13	2027			\$60,000	\$43,525					\$50,000	\$36,271	\$79,796	
	15	14	2028			\$60,000	\$42,464					\$50,000	\$35,386	\$77,850	
	16	15	2029									\$50,000	\$34,523	\$34,523	
	17	16	2030									\$50,000	\$33,681	\$33,681	
	18	17	2031									\$50,000	\$32,860	\$32,860	
	19	18	2032									\$50,000	\$32,058	\$32,058	
	20	19	2033									\$50,000	\$31,276	\$31,276	
	21	20	2032									\$50,000	\$30,514	\$30,514	
	22	21	2033									\$50,000	\$29,769	\$29,769	
	23	22	2034									\$50,000	\$29,043	\$29,043	
	24	23	2033									\$50,000	\$28,335	\$28,335	
	25	24	2034									\$50,000	\$27,644	\$27,644	
	26	25	2035												
	27	26	2034												
	28	27	2035												
	29	28	2036												
	30	29	2035												
	31	30	2036												
	32	31	2037												
	33	32	2036												
	34	33	2037												
	35	34	2038												
Totals				\$0	\$0	\$780,000	\$642,918	\$5,200,000	\$4,546,916	\$1,000,000	\$905,951	\$1,000,000	\$706,151	\$6,801,936	
Active Closure (Years 3-5) Totals				\$0	\$0	\$180,000	\$167,182	\$1,950,000	\$1,811,137	\$1,000,000	\$905,951	\$0	\$0	\$2,884,269	
Post Closure I (Years 6-10) Totals				\$0	\$0	\$300,000	\$252,533	\$3,250,000	\$2,735,779	\$0	\$0	\$250,000	\$210,445	\$3,198,757	
Post Closure II (Years 11-25) Totals				\$0	\$0	\$300,000	\$223,203	\$0	\$0	\$0	\$0	\$750,000	\$495,706	\$718,909	

Table 9.1-16 Net Present Value (NPV) Calculations (4 pages) Phase V / VI Financial Security Estimate (Year 0)

Discount Rate		2.50%		Reclamation & Closure Research Plan		Site Access and Maintenance				
Year				Total NPV	\$268,689	Total NPV				\$768,214
Current		2014								
Closure Year #	Years After Current	Calendar	Reclamation & Closure Research Plan	Total Annual NPV	Onsite Management	NPV	Transport Costs	NPV	Total Annual NPV	
IC&M	1	0	2014						\$0	
	2	1	2015						\$0	
	3	2	2016						\$0	
Active Closure	4	3	2017						\$0	
	5	4	2018	\$50,000	\$47,591				\$0	
Post Closure I	6	5	2019	\$50,000	\$46,430	\$96,700	\$85,469	\$35,000	\$30,935	\$116,404
	7	6	2020	\$50,000	\$45,298	\$96,700	\$83,384	\$35,000	\$30,180	\$113,564
	8	7	2021	\$50,000	\$44,193	\$96,700	\$81,350	\$35,000	\$29,444	\$110,795
	9	8	2022	\$50,000	\$43,115	\$96,700	\$79,366	\$35,000	\$28,726	\$108,092
	10	9	2023	\$50,000	\$42,063	\$96,700	\$77,430	\$35,000	\$28,025	\$105,456
Post Closure II	11	10	2024			\$22,500	\$17,577	\$35,000	\$27,342	\$44,919
	12	11	2025			\$22,500	\$17,148	\$35,000	\$26,675	\$43,823
	13	12	2026			\$22,500	\$16,730	\$35,000	\$26,024	\$42,754
	14	13	2027			\$22,500	\$16,322	\$35,000	\$25,390	\$41,712
	15	14	2028			\$22,500	\$15,924	\$35,000	\$24,770	\$40,694
	16	15	2029						\$0	
	17	16	2030						\$0	
	18	17	2031						\$0	
	19	18	2032						\$0	
	20	19	2033						\$0	
	21	20	2032						\$0	
	22	21	2033						\$0	
	23	22	2034						\$0	
	24	23	2033						\$0	
	25	24	2034						\$0	
	26	25	2035						\$0	
	27	26	2034						\$0	
	28	27	2035						\$0	
	29	28	2036						\$0	
	30	29	2035						\$0	
	31	30	2036						\$0	
	32	31	2037						\$0	
	33	32	2036						\$0	
	34	33	2037						\$0	
	35	34	2038						\$0	
Totals				\$300,000	\$268,689	\$596,000	\$490,701	\$350,000	\$277,513	\$768,214
Active Closure (Years 3-5) Totals				\$50,000	\$47,591	\$0	\$0	\$0	\$0	\$0
Post Closure I (Years 6-10) Totals				\$250,000	\$221,098	\$483,500	\$407,000	\$175,000	\$147,311	\$554,311
Post Closure II (Years 11-25) Totals				\$0	\$0	\$112,500	\$83,701	\$175,000	\$130,202	\$213,903

Table 9.1-16 Net Present Value (NPV) Calculations (4 pages) Phase V / VI Financial Security Estimate (Year 0)

Discount Rate		2.50%		Long Term Monitoring & Reporting											
Year															
Current		2014													
Closure Year #	Years After Current	Calendar	Disbursements	NPV	Water Quality Monitoring	NPV	Sediment Monitoring	NPV	Biological Monitoring (Benthos)	NPV	Enhanced Groundwater/Foundation monitoring below DSTF and Waste Rock Dumps	NPV	Geotechnical Inspections	NPV	
IC&M	1	0	2014		\$0		\$0		\$0			\$0		\$0	
	2	1	2015		\$0		\$0		\$0			\$0		\$0	
Active Closure	3	2	2016	\$4,000	\$3,807	\$104,000	\$98,989	\$4,000	\$3,807	\$4,000	\$3,807	\$15,000	\$14,277	\$15,000	\$14,277
	4	3	2017	\$4,000	\$3,714	\$104,000	\$96,574	\$4,000	\$3,714	\$4,000	\$3,714	\$15,000	\$13,929	\$15,000	\$13,929
	5	4	2018	\$4,000	\$3,624	\$104,000	\$94,219	\$4,000	\$3,624	\$4,000	\$3,624	\$15,000	\$13,589	\$15,000	\$13,589
Post Closure I	6	5	2019	\$4,000	\$3,535	\$24,000	\$21,213	\$4,000	\$3,535	\$4,000	\$3,535	\$15,000	\$13,258	\$15,000	\$13,258
	7	6	2020	\$4,000	\$3,449	\$24,000	\$20,695		\$0		\$15,000	\$12,934	\$15,000	\$12,934	
	8	7	2021	\$4,000	\$3,365	\$24,000	\$20,190	\$4,000	\$3,365	\$4,000	\$3,365	\$15,000	\$12,619	\$15,000	\$12,619
	9	8	2022	\$4,000	\$3,283	\$24,000	\$19,698		\$0		\$15,000	\$12,311	\$15,000	\$12,311	
	10	9	2023	\$4,000	\$3,203	\$24,000	\$19,217	\$4,000	\$3,203	\$4,000	\$3,203	\$15,000	\$12,011	\$15,000	\$12,011
Post Closure II	11	10	2024	\$4,000	\$3,125	\$10,500	\$8,203	\$4,000	\$3,125	\$4,000	\$3,125	\$15,000	\$11,718	\$15,000	\$11,718
	12	11	2025	\$4,000	\$3,049	\$10,500	\$8,003		\$0		\$15,000	\$11,432		\$0	
	13	12	2026	\$4,000	\$2,974	\$10,500	\$7,807	\$4,000	\$2,974	\$4,000	\$2,974	\$15,000	\$11,153	\$15,000	\$11,153
	14	13	2027	\$4,000	\$2,902	\$10,500	\$7,617		\$0		\$15,000	\$10,881		\$0	
	15	14	2028	\$4,000	\$2,831	\$10,500	\$7,431	\$4,000	\$2,831	\$4,000	\$2,831	\$15,000	\$10,616	\$15,000	\$10,616
	16	15	2029				\$0								
	17	16	2030				\$0								
	18	17	2031				\$0								
	19	18	2032				\$0								
	20	19	2033				\$0								
	21	20	2032				\$0								
	22	21	2033				\$0								
	23	22	2034				\$0								
	24	23	2033				\$0								
	25	24	2034				\$0								
	26	25	2035				\$0								
	27	26	2034				\$0								
	28	27	2035				\$0								
	29	28	2036				\$0								
	30	29	2035				\$0								
	31	30	2036				\$0								
	32	31	2037				\$0								
	33	32	2036				\$0								
	34	33	2037				\$0								
	35	34	2038				\$0								
Totals				\$52,000	\$42,861	\$484,500	\$429,856	\$36,000	\$30,179	\$36,000	\$30,179	\$195,000	\$160,730	\$165,000	\$138,416
Active Closure (Years 3-5) Totals				\$12,000	\$11,145	\$312,000	\$289,782	\$12,000	\$11,145	\$12,000	\$11,145	\$45,000	\$41,795	\$45,000	\$41,795
Post Closure I (Years 6-10) Totals				\$20,000	\$16,836	\$120,000	\$101,013	\$12,000	\$10,103	\$12,000	\$10,103	\$75,000	\$63,133	\$75,000	\$63,133
Post Closure II (Years 11-25) Totals				\$20,000	\$14,880	\$52,500	\$39,060	\$12,000	\$8,930	\$12,000	\$8,930	\$75,000	\$55,801	\$45,000	\$33,487

Table 9.1-16 Net Present Value (NPV) Calculations (4 pages) Phase V / VI Financial Security Estimate (Year 0)

Discount Rate		2.50%											
Year												Total NPV	\$1,070,122
Current		2014											
Closure Year #	Years After Current	Calendar	Reclamation Inspections	NPV	Monitoring of piezometers, thermistors	NPV	Water Storage Pond Dam-Monit & reporting	NPV	Annual Inspection & report	NPV	Total Annual NPV		
IC&M	1	0	2014		\$0		\$0		\$0		\$0	\$0	
	2	1	2015		\$0		\$0		\$0		\$0	\$0	
Active Closure	3	2	2016	\$7,500	\$7,139	\$9,000	\$8,566	\$7,500	\$7,139	\$3,000	\$2,855	\$164,664	
	4	3	2017	\$7,500	\$6,964	\$9,000	\$8,357	\$7,500	\$6,964	\$3,000	\$2,786	\$160,648	
	5	4	2018	\$7,500	\$6,795	\$9,000	\$8,154	\$7,500	\$6,795	\$3,000	\$2,718	\$156,729	
Post Closure I	6	5	2019	\$7,500	\$6,629	\$6,000	\$5,303	\$7,500	\$6,629	\$3,000	\$2,652	\$79,547	
	7	6	2020	\$7,500	\$6,467	\$6,000	\$5,174	\$7,500	\$6,467	\$3,000	\$2,587	\$70,708	
	8	7	2021	\$7,500	\$6,309	\$6,000	\$5,048	\$7,500	\$6,309	\$3,000	\$2,524	\$75,714	
	9	8	2022	\$7,500	\$6,156	\$6,000	\$4,924	\$7,500	\$6,156	\$3,000	\$2,462	\$67,301	
	10	9	2023	\$7,500	\$6,005	\$6,000	\$4,804	\$7,500	\$6,005	\$3,000	\$2,402	\$72,066	
Post Closure II	11	10	2024	\$7,500	\$5,859	\$3,000	\$2,344	\$7,500	\$5,859	\$3,000	\$2,344	\$57,418	
	12	11	2025		\$0	\$3,000	\$2,286	\$7,500	\$5,716	\$3,000	\$2,286	\$32,772	
	13	12	2026	\$7,500	\$5,577	\$3,000	\$2,231	\$7,500	\$5,577	\$3,000	\$2,231	\$54,651	
	14	13	2027		\$0	\$3,000	\$2,176	\$7,500	\$5,441	\$3,000	\$2,176	\$31,193	
	15	14	2028	\$7,500	\$5,308	\$3,000	\$2,123	\$0	\$0	\$3,000	\$2,123	\$46,710	
	16	15	2029				\$0			\$0	\$0		
	17	16	2030				\$0			\$0	\$0		
	18	17	2031				\$0			\$0	\$0		
	19	18	2032				\$0			\$0	\$0		
	20	19	2033				\$0			\$0	\$0		
	21	20	2032				\$0			\$0	\$0		
	22	21	2033				\$0			\$0	\$0		
	23	22	2034				\$0			\$0	\$0		
	24	23	2033				\$0			\$0	\$0		
	25	24	2034				\$0			\$0	\$0		
	26	25	2035								\$0		
	27	26	2034								\$0		
	28	27	2035								\$0		
	29	28	2036								\$0		
	30	29	2035								\$0		
	31	30	2036								\$0		
	32	31	2037								\$0		
	33	32	2036								\$0		
	34	33	2037								\$0		
	35	34	2038								\$0		
Totals			\$82,500	\$69,208	\$72,000	\$61,491	\$90,000	\$75,057	\$39,000	\$32,146	\$1,070,122		
Active Closure (Years 3-5) Totals			\$22,500	\$20,898	\$27,000	\$25,077	\$22,500	\$20,898	\$9,000	\$8,359	\$482,041		
Post Closure I (Years 6-10) Totals			\$37,500	\$31,567	\$30,000	\$25,253	\$37,500	\$31,567	\$15,000	\$12,627	\$365,336		
Post Closure II (Years 11-25) Totals			\$22,500	\$16,744	\$15,000	\$11,160	\$30,000	\$22,592	\$15,000	\$11,160	\$222,745		

Table 9.1-16 Net Present Value (NPV) Calculations (4 pages) Phase V / VI Financial Security Estimate (Year 0)

Discount Rate		2.50%		Post Closure Maintenance						
Year									Total NPV	\$210,879
Current		2014								
Closure Year #	Years After Current	Calendar	Water Storage Pond Dam- Carry out inspection recommendations	NPV	Misc. maintenance work related to the site after closure	NPV	Ultimate Removal of wells and instrumentation	NPV	Total Annual NPV	
IC&M	1	0	2014						\$0	
	2	1	2015						\$0	
Active Closure	3	2	2016	\$10,000	\$9,518	\$7,500	\$7,139		\$16,657	
	4	3	2017	\$10,000	\$9,286	\$7,500	\$6,964		\$16,250	
	5	4	2018	\$10,000	\$9,060	\$7,500	\$6,795		\$15,854	
Post Closure I	6	5	2019	\$10,000	\$8,839	\$10,000	\$8,839		\$17,677	
	7	6	2020	\$10,000	\$8,623	\$10,000	\$8,623		\$17,246	
	8	7	2021	\$10,000	\$8,413	\$10,000	\$8,413		\$16,825	
	9	8	2022	\$10,000	\$8,207	\$10,000	\$8,207		\$16,415	
	10	9	2023	\$10,000	\$8,007	\$10,000	\$8,007		\$16,015	
Post Closure II	11	10	2024	\$10,000	\$7,812	\$10,000	\$7,812		\$15,624	
	12	11	2025	\$10,000	\$7,621	\$10,000	\$7,621		\$15,243	
	13	12	2026	\$10,000	\$7,436	\$10,000	\$7,436		\$14,871	
	14	13	2027	\$10,000	\$7,254	\$10,000	\$7,254		\$14,508	
	15	14	2028			\$10,000	\$7,077	\$15,000	\$10,616	\$17,693
	16	15	2029						\$0	
	17	16	2030						\$0	
	18	17	2031						\$0	
	19	18	2032						\$0	
	20	19	2033						\$0	
	21	20	2032						\$0	
	22	21	2033						\$0	
	23	22	2034						\$0	
	24	23	2033						\$0	
	25	24	2034						\$0	
	26	25	2035							
	27	26	2034							
	28	27	2035							
	29	28	2036							
	30	29	2035							
31	30	2036								
32	31	2037								
33	32	2036								
34	33	2037								
35	34	2038								
Totals				\$120,000	\$100,076	\$122,500	\$100,187	\$15,000	\$10,616	\$210,879
Active Closure (Years 3-5) Totals				\$30,000	\$27,864	\$22,500	\$20,898	\$0	\$0	\$48,761
Post Closure I (Years 6-10) Totals				\$50,000	\$42,089	\$50,000	\$42,089	\$0	\$0	\$84,178
Post Closure II (Years 11-25) Totals				\$40,000	\$30,123	\$50,000	\$37,200	\$15,000	\$10,616	\$77,940

Table 9.2-1

Summary Table of Estimated Closure Costs - Phase V / VI

Year 2

Description of Cost	Proposed Cost Year 2
Closure Implementation	
General & Administration	\$1,053,375
Waste Dumps	\$9,036,100
Pit and Haul Roads	\$353,660
Primary Water Conveyance Structures	\$1,887,915
Tailings & MVFE	\$1,492,859
Water Storage Pond Dam	\$678,974
Mill and Facilities	\$1,189,962
Mill Pond	\$207,193
Access Road	\$285,221
Miscellaneous	\$590,365
Revegetation	\$1,885,169
Supporting Studies	\$343,500
Reclamation and Closure Research Program (Active Closure)	\$1,100,000
Interim Care and Maintenance	\$2,172,264
Sub-total	\$22,276,557
Indirect Costs (%)	18%
Indirect Costs	\$4,009,780
Cost Inflation ¹	\$1,840,043.60
Total Closure Implementation Costs	\$28,126,381
Post Closure Care, Maintenance, and Monitoring Costs	
Mobilization and Demobilization	\$126,360
Onsite Management	\$603,300
Transport Costs	\$350,000
Water Treatment Costs	
Active Treatment	
Capital Costs	\$0
Capital Replacement Costs	\$780,000
Operating Costs	\$5,200,000
Passive Treatment	
Capital Costs	\$1,000,000
Operation and Maintenance Costs	\$1,000,000
Reclamation & Closure Research Plan (Post Closure I-II)	\$300,000
Monitoring & Reporting	\$1,252,000
Post Closure I-II Maintenance	\$265,000
Sub-Total	\$10,876,660
Sub-Total NPV (2.5% DROR)	\$8,693,810
Indirect Costs (%)	18%
Indirect Costs	\$1,564,886
Total (NPV)	\$10,258,695
Total Financial Security (incl. 18% Indirect Costs)	\$38,385,076
Contingency Allowance	15%
Contingency Amount	\$5,757,761
Total Financial Security (incl. 15% Contingency Allowance)	\$44,142,838

¹ Cost inflation is calculated at a rate 2% per year to the midpoint of active closure

Table 9.2-2

Minto Mine Closure Unit Rates - Phase V / VI

Equipment Rates		
Equipment	Unit Rates	Per Unit
D9H Dozer	\$350	per hr
D6D Dozer	\$250	per hr
Haul Truck D250E	\$250	per hr
Tandem Haul Truck	\$150	per hr
Cat 235 Excavator	\$250	per hr
Cat 235 Excavator w hammer	\$275	per hr
Cat 16H grader	\$300	per hr
988B Loader	\$250	per hr
Tractor Trailer (lowbed)	\$180	per hr
30 ton Crane	\$190	per hr
Hiab Flatdeck truck	\$160	per hr
Cat 950 loader	\$170	per hr
Vibratory Roller	\$180	per hr
Pickup Truck	\$2,500	per mo

Personnel Rates		
Personnel	Unit Rates	Per Unit
Blaster	\$71	per hr
General Labourer	\$55	per hr
Trades Labourer	\$96	per hr
Site Supervisor	\$116	per hr
Design Engineer	\$156	per hr
Environmental Scientist	\$116	per hr
Project Manager	\$11,204	per mo
Camp Labourer	\$4,620	per mo
Site Caretaker	\$7,046	per mo
Environmental Monitor	\$5,775	per mo

Revegetation Rates		
	Unit Rates	Per Unit
Revegetation Seed Mix	\$18.38	per kg
Revegetation Seed Mix - 50kg/ha	\$919	per ha
Fertilizer	\$1.16	per kg
Fertilizer - 250kg/ha	\$289	per ha
Tree Seedlings (1,000 seedlings per ha)	\$2,100	per ha
Seed/Fertilizer Application	\$1,785	per ha
Erosion Barrier	\$3.15	per sq.m
Revegetation cost per ha. Including application cost	\$2,992.50	per ha

Contractor Unit Rates & Camp Costs		
	Unit Rates	Per Unit
Custom Rate A (Load, haul, place soil cover ROD-MWD)	\$4.86	per cu.m
Custom Rate B (Load, haul, place soil cover ROD-SWD)	\$4.86	per cu.m
Custom Rate C (Load, haul, place soil cover ROD-MWD / LGO)	\$5.25	per cu.m
Custom Rate D (Load, haul, place soil cover ROD-MWD / HGO)	\$5.25	per cu.m
Custom Rate E (Load, haul, place soil cover ROD-CSA)	\$4.60	per cu.m
Custom Rate F (Load, haul, place soil cover ROD-MVFE)	\$4.86	per cu.m
Custom Rate G (Load, haul, place soil cover ROD-DSTF)	\$4.86	per cu.m
Custom Rate H (Load, haul, place fill SWD - MVFE)	\$4.86	per cu.m
Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	\$4.99	per cu.m
Custom Rate J (Push from WSP Dam - U/S WSP Dam)	\$2.47	per cu.m
Custom Rate K (Load, haul, place soil cover Ridgetop Area)	\$4.86	per cu.m
Load, haul & place mat'l underground	\$10.50	per cu.m
Produce rip-rap	\$15.75	per cu.m
Load, haul and place rip-rap	\$15.75	per cu.m
Deliver and install geosynthetic membrane on prepared foundation	\$21.00	per sq.m
Unit Basis (footing burial)	\$5.25	each
Freight run to Whitehorse	\$1,050.00	per load
Camp Cost	\$84.00	per day per person
Power and Heat	\$5,775.00	per month
Employee Transport Costs	\$3,150.00	per month
Barge Operating Cost	\$10,500.00	per month

Notes:

1) Custom Rates A through K developed specifically for Minto Mine, taking into account such factors as haul distance, grade, machinery req'd, time reqd, etc.

Table 9.2-3

General and Administration Costs During Active Closure (3 years) - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
3.1	Onsite Management (S 7.1)					
	Project Management and Engineering - Included in PME Costs in each Closure Component					
	Pickup truck (4 trucks, 5 months per year, 3 years)	Pickup Truck	monthly	60	\$2,500	\$150,000
	Sundry equipment maintenance	Unit Cost Basis	annually	3	\$5,000	\$15,000
	Power and heat (5 months per year, 3 years)	Power and Heat	monthly	15	\$5,775	\$86,625
	General Administrative expenses (5 months per year, 3 years)	Unit Cost Basis	monthly	15	\$2,000	\$30,000
	Camp Costs (3 year period-15men-5mo/yr)	Camp Cost	man-day	6,750	\$84	\$567,000
					Sub-Total	\$848,625
3.2	Transport Costs (S 7.1)					
	Employee transport costs (5 months per year, 3 years)	Employee Transport Costs	monthly	15	\$3,150	\$47,250
	Barge operating costs (5 months per year, 3 years)	Barge Operating Cost	monthly	15	\$10,500	\$157,500
					Sub-Total	\$204,750
Total Estimated Cost for General & Administration During Closure						\$1,053,375

Note:

Table 9.2-4

Waste Rock and Overburden Dumps - Phase V / VI

Item No.	Work Item Description	Area (ha) / Length (m)	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
4.1	Main Waste Dump (ha) (S 7.11.1)	53.12					
	Roll crest and recontour		D9H Dozer	hrs	650	\$350	\$227,500
	Additional compaction, as req'd		Vibratory Roller	hrs	130	\$180	\$23,400
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	19.35	Custom Rate A (Load, haul, place soil cover ROD-MWD)	cu.m.	154,800	\$4.86	\$752,560
	Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	33.76	Custom Rate A (Load, haul, place soil cover ROD-MWD)	cu.m.	337,600	\$4.86	\$1,641,242
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$185,129
						Sub-Total	\$2,829,832
4.2	Southwest Dump (S 7.11.2) (76.65ha)						
4.2.1	SWD Excluding Area of High Grade Waste (ha)	73.77					
	Roll crest and recontour		D9H Dozer	hrs	449	\$350	\$157,150
	Additional compaction, as req'd		Vibratory Roller	hrs	96	\$180	\$17,280
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	54.70	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	437,600	\$4.86	\$2,127,392
	Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	19.07	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	190,700	\$4.86	\$927,088
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$226,024
						Sub-Total	\$3,454,934
4.2.2	Area of High Grade Waste (ha)	2.78					
	Roll crest and recontour		D9H Dozer	hrs	250	\$350	\$87,500
	Additional compaction, as req'd		Vibratory Roller	hrs	50	\$180	\$9,000
	Placement of bedding layer (e.g., 0.1m OVB)	2.78	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	2,780	\$4.86	\$13,515
	Installation of geosynthetic membrane (e.g. BGM)	2.78	Deliver and install geosynthetic membrane on prepared foundation	sq.m.	27,800	\$21	\$583,800
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	1.47	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	11,760	\$4.86	\$57,171
	Haul & place overburden for revegetation - Slope area (0.8 m thickness) (ha)	1.31	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	13,100	\$4.86	\$63,686
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$52,569
							Sub-Total
4.3	Ice-Rich Overburden Dump (ha) (S 7.11.3)	2.94					
Roll crest of berm and recontour		D9H Dozer	hrs	16	\$350	\$5,600	
Excavate material for placement on berm		Cat 235 Excavator	hrs	40	\$250	\$10,000	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$1,092	
						Sub-Total	\$16,692
4.4	Reclamation Overburden Dump (ha) (S 7.11.4)	30.85					
Recontour after removal of material during reclamation		D6D Dozer	hrs	93	\$250	\$23,138	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$1,620	
						Sub-Total	\$24,757
4.5	Ridgetop Waste Dump (ha) (S 7.11.6)	29.76					
Roll crest and recontour		D9H Dozer	hrs	89	\$350	\$0	
Additional compaction, as req'd		Vibratory Roller	hrs	60	\$180	\$0	
Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	17.73	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	141,840	\$4.86	\$0	
Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	12.03	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	120,300	\$4.86	\$0	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$0	
						Sub-Total	\$0
4.6	Ridgetop South Backfill Dump (ha) (S 7.8.5)	4.20					
Roll crest and recontour		D9H Dozer	hrs	13	\$350	\$0	
Additional compaction, as req'd		Vibratory Roller	hrs	8	\$180	\$0	
Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	1.37	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	10,960	\$4.86	\$0	
Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	2.83	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	28,300	\$4.86	\$0	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$0	
						Sub-Total	\$0
4.7	Area 118 Pit Backfill Dump (8.45 ha) (S 7.8.3)	8.45					
Roll crest and recontour		D9H Dozer	hrs	-	\$350	\$0	
Additional compaction, as req'd		Vibratory Roller	hrs	-	\$180	\$0	
Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	5.10	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	-	\$4.86	\$0	
Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	3.36	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	-	\$4.86	\$0	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$0	
						Sub-Total	\$0
4.8	Main Pit Dump (ha) (S 7.11.5)	16.62					
Roll crest and recontour		D9H Dozer	hrs	50	\$350	\$17,451	
Additional compaction, as req'd		Vibratory Roller	hrs	33	\$180	\$5,983	
Haul & place overburden for revegetation - Bench area (0.8 m thickness) (ha)	7.02	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	56,160	\$4.86	\$273,022	
Haul & place overburden for revegetation - Slope area (1.0 m thickness) (ha)	9.60	Custom Rate K (Load, haul, place soil cover Ridgetop Area)	cu.m.	96,000	\$4.86	\$466,704	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$53,421	
						Sub-Total	\$816,581
4.9	Waste Rock Dump Ditching - Year 2 (S 7.5.3.6)						
Contour secondary ditching (m)	3895.00	Cat 235 Excavator	hrs	195	\$250.00	\$48,688	
Provision for ditching rip-rap		Produce rip-rap	cu.m.	13,930	\$15.75	\$219,398	
		Load, haul and place rip-rap	cu.m.	13,930	\$15.75	\$219,398	
Provision for ditching filter material under rip-rap		Load, haul and place rip-rap	cu.m.	7,540	\$15.75	\$118,755	
Energy Dissipation Structure		Misc.	l.s.	7	\$10,000.00	\$70,000	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$47,337	
						Sub-Total	\$723,574
4.1	Stockpile Pads (ha) (S 7.12)	9.04					
Recontour stockpile and pad		D9H Dozer	hrs	94	\$350	\$32,900	
Haul and place overburden for revegetation (0.5m)		Custom Rate D (Load, haul, place soil cover ROD-MWD / HGO)	cu.m.	45,200	\$5.25	\$237,300	
Removal of bottom layer of material, move to pit.		Misc.	l.s.	1	\$12,500	\$12,500	
Project Management & Engineering		7% of Total Cost	%		7.00%	\$19,789	
						Sub-Total	\$302,489
Total Estimated Cost in Reclaiming Overburden and Waste Rock Dumps							\$9,036,100

Note:

Ridgetop North and South pits not developed until after Year 2.

Table 9.2-5

Open Pit and Haul Roads, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Area (ha) / Length (m)	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
5.1	Main Pit (S 7.8.1)						
	Remove pit pumps and pipe column/general cleanup		General Labourer	hrs	80	\$55	\$4,368
			Trades Labourer		20	\$96	\$1,911
			Support Equipment	l.s.	1	\$5,000	\$5,000
	Scarify accessible benches within overburden layers		Cat 235 Excavator	hrs	40	\$250	\$10,000
	Secure pit access - boulder placement		Cat 235 Excavator	hrs	20	\$250	\$5,000
			Haul Truck D250E	hrs	20	\$250	\$5,000
	Highwall perimeter safety berm/trench (~1km)		Cat 235 Excavator	hrs	40	\$250	\$10,000
	Construct inflow spillway from upgradient of pit		Cat 235 Excavator	hrs	40	\$250	\$10,000
			Haul Truck D250E	hrs	20	\$250	\$5,000
			Produce rip-rap		200	\$16	\$3,150
			Load, haul and place rip-rap		200	\$16	\$3,150
	Construct exit channel into Mill Pond System		Cat 235 Excavator	hrs	20	\$250	\$5,000
			Produce rip-rap		200	\$16	\$3,150
	Rip-rap shoulder exiting pit-spillway		Load, haul and place rip-rap		200	\$16	\$3,150
			General Labourer	hrs	10	\$55	\$546
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$5,210
							Sub-Total
							\$79,635
5.2	Area 2 Pit (S 7.8.2)						
	Remove pit pumps and pipe column/general cleanup		General Labourer	hrs	60	\$52	\$3,120
			Trades Labourer		15	\$96	\$1,433
			Support Equipment	l.s.	1	\$5,000	\$5,000
	Secure pit access - boulder placement		Cat 235 Excavator	hrs	20	\$250	\$5,000
			Haul Truck D250E	hrs	20	\$250	\$5,000
	Construct exit channel into Mill Pond System		Cat 235 Excavator	hrs	40	\$250	\$10,000
	Rip-rap shoulder exiting pit		Load, haul and place rip-rap		50	\$16	\$788
			Produce rip-rap	cu.m.	50	\$16	\$788
	Exit spillway construction		General Labourer	hrs	40	\$55	\$2,184
			Produce rip-rap	cu.m.	250	\$16	\$3,938
			Load, haul and place rip-rap	cu.m.	250	\$16	\$3,938
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$2,883
							Sub-Total
							\$44,070
5.3	Minto North Pit (S 7.8.6)						
	Remove pit pumps and pipe column/general cleanup		General Labourer	hrs	40	\$55	\$2,184
			Trades Labourer	hrs	10	\$96	\$956
			Support equipment	l.s.	1	\$1,000	\$1,000
	Secure pit access - boulder placement		Cat 235 Excavator	hrs	20	\$250	\$5,000
			Haul Truck D250E	hrs	20	\$250	\$5,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$990
							Sub-Total
							\$15,129
5.4	Ridgetop North Pit (S 7.8.4)						
	Place Isolation cover on tailings surface						
	Haul & place overburden revegetation layer (0.5 m thickness) (ha)	11.64	Custom Rate	cu.m.	58200	\$4.86	\$0
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$0
							Sub-Total
							\$0
5.5	Haul Roads (ha) (S 7.14.2)	15					
	Remove culverts and haul away		General Labourer	hrs	55	\$55	\$3,003
			Cat 235 Excavator	hrs	28	\$250	\$7,000
			Haul Truck D250E	hrs	28	\$250	\$7,000
	Recontour slopes		D9H Dozer	hrs	208	\$350	\$72,800
	Scarify surfaces		Cat 16H grader	hrs	208	\$300	\$62,400
			General Labourer	hrs	28	\$55	\$1,529
	Stabilize slopes - erosion barriers - material		Unit Cost Basis	sq.m	2,800	\$3	\$8,820
	- enviro-matting		Unit Cost Basis	sq.m	2,800	\$3	\$8,820
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$11,996
							Sub-Total
							\$183,368
5.6	Underground (S 7.7)						
	Recontour slopes		D9H Dozer	hrs	20	\$350	\$7,000
	Seal off underground portal (Minto South)			l.s.	1	\$10,000	\$10,000
	Seal off ventilation raise (Area 118 pit bottom)			l.s.	1	\$10,000	\$10,000
	Scarify road		Cat 16H grader	hrs	8	\$300	\$2,400
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$2,058
							Sub-Total
							\$31,458
Total Estimated Cost in Reclaiming Open Pit and Haul Roads							\$353,660

Note:

Linear disturbances to be scarified / decompacted and allowed to naturally revegetate

Table 9.2-6

Primary Water Conveyance Structures, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Area (ha) / Length (m)	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
6.1	Modify Ditch 100 for Closure (S 7.5.3.2)						
	Impervious liner (BGM)		Deliver and install geosynthetic membrane on prepared foundation	sq.m.	980	\$21.00	\$20,580
	partially backfill ditch		Bedding/foundation material-load, haul & place	cu.m.	980	\$15.00	\$14,700
	Impervious blockage for pipes		D9H Dozer	hrs	10	\$350.00	\$3,500
	Project Management & Engineering		Cat 235 Excavator	hrs	5	\$250.00	\$1,250
			7% of Total Cost	%		7.00%	\$2,802
						Sub-Total	\$42,832
6.2	Ditch 200 Surface Drainage Channel (m) (S 7.5.3.3)	207m					
	Excavation of existing haul road		Cat 235 Excavator	hrs	330	\$250.00	\$82,500
	Haul and place excavated material		Haul Truck D250E	hrs	660	\$250.00	\$165,000
	Contour ditching (m)	207	Cat 235 Excavator	hrs	10	\$250.00	\$2,588
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	480	\$15.75	\$7,560
			Load, haul and place rip-rap	cu.m.	480	\$15.75	\$7,560
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$1,240
						Sub-Total	\$266,447
6.3	Ditch 300 Surface Drainage Channel (m) (S 7.5.3.4)	712					
	Contour ditching (370 m)	370	Cat 235 Excavator	hrs	36	\$250.00	\$8,900
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	3,350	\$15.75	\$52,763
			Load, haul and place rip-rap	cu.m.	3,350	\$15.75	\$52,763
	Provision for stilling basins		Misc.	l.s.	2	\$5,000.00	\$10,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$8,010
						Sub-Total	\$132,435
6.4	Ditch 400 - Surface Drainage Channel (m) (S 7.5.3.5)	1282					
	Contour ditching (m)		Cat 235 Excavator	hrs	64	\$250.00	\$16,025
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	7,690	\$15.75	\$121,118
			Load, haul and place rip-rap	cu.m.	7,690	\$15.75	\$121,118
	Impervious liner (BGM) (15.2 m ² per m length)		Deliver and install geosynthetic membrane on prepared foundation	sq.m.	19,486	\$21.00	\$409,214
			Bedding/foundation material-load, haul & place	cu.m.	19,846	\$15.00	\$297,690
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$67,562
						Sub-Total	\$1,032,726
6.5	Area 2 Pit Outflow to Ditch 400 (S 7.5.4.3)						
	Excavate Outflow area		Cat 235 Excavator	hrs	20	\$250.00	\$5,000
	Haul and place excavated material		Haul Truck D250E	hrs	40	\$250.00	\$10,000
	Concrete		Poured concrete	cu.m.	165	\$500.00	\$82,600
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	100	\$15.75	\$1,575
			Load, haul and place rip-rap	cu.m.	100	\$15.75	\$1,575
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$7,053
						Sub-Total	\$107,803
6.6	Ditch 400 Transition Reach/Spillway (S 7.5.4.4)						
	Ditch 400 Spillway (TBD at closure)		Allowance	l.s.	1	\$250,000	\$250,000
	Install a stilling basin at toe of MVFE spillway into Ditch 400		Misc.	l.s.	1	\$10,000	\$10,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$18,200
						Sub-Total	\$278,200
6.7	Ditch 200 Inlet structure (S 7.5.4.2)						
	Contour inlet structure area		Cat 235 Excavator	hrs	19	\$250.00	\$4,625
	Concrete		Poured concrete	cu.m.	42	\$500.00	\$21,050
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$1,797
						Sub-Total	\$27,472
Total Estimated Cost in Constructing Primary Drainage Ditches							\$1,887,915

Note:

Table 9.2-7

DSTSF and MVFE, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Area (ha) / Length (m)	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total	
7.1	Dry Stacked Tailings Storage Facility (ha) (\$ 7.9.1)	20.54						
	Roll crest of starter bench and recontour		D9H Dozer	hrs	50	\$350	\$17,500	
	Haul and place overburden for revegetation (0.5 m thickness)		Custom Rate G (Load, haul, place soil cover ROD-DSTF)	cu.m	102,700	\$4.86	\$499,276	
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$36,174	
						Sub-Total	\$552,950	
7.2	Dry Stacked Tailings - Secondary Ditching (\$ 7.5.3.6)							
	Contour secondary ditching (m)	720	Cat 235 Excavator	hrs	70	\$250.00	\$17,500	
	Provision for ditching rip-rap		Produce rip-rap	cu.m.	2,540	\$15.75	\$40,005	
			Load, haul and place rip-rap	cu.m.	2,540	\$15.75	\$40,005	
	Impervious barrier		Deliver and install geosynthetic membrane on prepared foundation	sq.m	4,320	\$20.00	\$86,400	
	Contour tertiary ditching (m)	780	Cat 235 Excavator	hrs	40	\$250.00	\$10,000	
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$13,574	
						Sub-Total	\$207,484	
7.3	Mill Valley Fill (ha) (\$ 7.10)	26.6						
	Roll crest and recontour		D9H Dozer	hrs	80	\$350	\$27,930	
	Install a stilling basin at toe of MVFE spillway into Ditch 400		Misc.	ls.	1	\$10,000	\$10,000	
	Haul and place overburden for revegetation (0.5 m thickness)		Custom Rate F (Load, haul, place soil cover ROD-MVFE)	cu.m.	133,000	\$4.86	\$646,580	
	Project Management & Engineering		7% of Total Cost			7.00%	\$47,916	
						Sub-Total	\$732,425	
Total Estimated Cost in Reclaiming Tailings Area								\$1,492,859

Note:

Table 9.2-8

Water Storage Pond Dam, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
8.1	Reclaim System (\$ 7.5.5.1)					
	Remove salvageable equipment - pipeline/pumps	General Labourer	hrs	48	\$55	\$2,621
		Trades Labourer	hrs	98	\$96	\$9,364
	Remove pipeline	Haul Truck D250E	hrs	100	\$250	\$25,000
		Cat 235 Excavator	hrs	100	\$250	\$25,000
		General Labourer	hrs	200	\$55	\$10,920
	Dismantle Building	Cat 235 Excavator	hrs	16	\$250	\$4,000
		Trades Labourer	hrs	10	\$96	\$956
		General Labourer	hrs	20	\$55	\$1,092
	Misc. Supplies & Tools	Misc.	l.s.	1	\$1,000	\$1,000
	Recontour alignment	D9H Dozer	hrs	16	\$350	\$5,600
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$5,989
					Sub-Total	\$91,541
8.2	Water Storage Pond Dam (\$ 7.5.5.1)					
	Pump down impounded water, over spillway (using reclaim pumps)	General Labourer	hrs	96	\$55	\$5,242
	Misc. Supplies & Tools	Misc.	l.s.	1	\$5,000	\$5,000
	Engineering design for final structure include appropriate flow determination, channel designs, etc.	Misc.	l.s.	1	\$20,000	\$20,000
	Build coffer dam and install pump-around system Operate system until new structure is ready	Misc.	l.s.	1	\$10,000	\$10,000
	Stockpile rip-rap from downstream shell	Unit Cost Basis	cu.m	10,000	\$10	\$100,000
	Breach Dam: push material using dozer into new areas	Custom Rate J (Push from WSP Dam - U/S WSP Dam)	cu.m	25,000	\$2.47	\$61,688
	and load, haul & dump and contour material in new area	Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	cu.m	31,000	\$4.99	\$154,613
		Environmental Scientist	hrs	60	\$115.50	\$6,930
	Construct stream channel at original grade - load, haul & place rip-rap (salvage from old WSP Dam stockpile)	Load, Haul and Place rip-rap	cu.m	1,125	\$15.75	\$17,719
	Load, haul, place & contour overburden on slopes of new area u/s of WSP Dam	Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	cu.m	15,000	\$4.99	\$74,813
	Stabilize slopes with erosion barriers	Silt curtains	sq. m	15,000	\$3	\$45,000
		Enviro matting	sq. m	15,000	\$3	\$45,000
	Misc. Supplies & Tools	Misc.	l.s.	1	\$3,000	\$3,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$38,430
					Sub-Total	\$587,433
Total Estimated Cost in Reclaiming Water Dam						\$678,974

Notes:

Table 9.2-9

Mill & Ancillary Facilities, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Area (ha) / Length (m)	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
9.1	Mill Building (\$ 7.6.1)						
	Remove salvageable equipment		General Labourer	hrs	550	\$55	\$30,030
			Trades Labourer	hrs	600	\$96	\$57,330
			30 ton Crane	hrs	40	\$190	\$7,600
	Decontaminate Building-hosing and clean-up		Trades Labourer	hrs	160	\$96	\$15,288
	Dismantle Building		General Labourer	hrs	1000	\$55	\$54,600
			Trades Labourer	hrs	600	\$96	\$57,330
			Cat 235 Excavator w hammer	hrs	120	\$275	\$33,000
			30 ton Crane	hrs	60	\$190	\$11,400
	Concrete Demolition		Blaster	hrs	40	\$71	\$2,856
			Cat 235 Excavator	hrs	20	\$250	\$5,000
			D9H Dozer	hrs	30	\$350	\$10,500
	Misc. Supplies & Tools		Misc.	l.s.	1	\$11,000	\$11,000
	Scrap haul to solid waste facility		Cat 235 Excavator	hrs	50	\$250	\$12,500
			Haul Truck D250E	hrs	100	\$250	\$25,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$23,340
						Sub-Total	\$356,774
9.2	Other Mill Area Buildings (\$ 7.6)						
	Remove salvageable equipment		General Labourer	hrs	275	\$55	\$15,015
			Trades Labourer	hrs	275	\$96	\$26,276
			30 ton Crane	hrs	25	\$190	\$4,750
	Salvage and remove powerline and poles			l.s.	1	\$27,500	\$27,500
	Dismantle Buildings		General Labourer	hrs	180	\$55	\$9,828
			Trades Labourer	hrs	90	\$96	\$8,600
			Cat 235 Excavator w hammer	hrs	45	\$275	\$12,375
			30 ton Crane	hrs	35	\$190	\$6,650
	Concrete Demolition		Blaster	hrs	45	\$71	\$3,213
			Cat 235 Excavator	hrs	20	\$250	\$5,000
			Cat 235 Excavator w hammer	hrs	30	\$275	\$8,250
			D9H Dozer	hrs	22	\$350	\$7,700
	Misc. Supplies & Tools		Misc.	l.s.	1	\$10,000	\$10,000
	Scrap haul to solid waste facility		Cat 235 Excavator	hrs	11	\$250	\$2,750
			Haul Truck D250E	hrs	22	\$250	\$5,500
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$10,738
						Sub-Total	\$164,145
9.3	Fuel Storage Area (\$ 7.6.6)						
	Cleanout tanks-remove sludge, pressure wash		General Labourer	hrs	60	\$55	\$3,276
			Removal to Licensed facility	l.s.	1	\$10,000	\$10,000
	Remove bulk fuel storage and piping facilities		General Labourer	hrs	100	\$55	\$5,460
			Trades Labourer	hrs	120	\$96	\$11,466
			30 ton Crane	hrs	30	\$190	\$5,700
			Support Equipment	l.s.	1	\$2,500	\$2,500
			Cat 235 Excavator	hrs	40	\$250	\$10,000
			General Labourer	hrs	40	\$55	\$2,184
			Tractor Trailer (lowbed)	hrs	30	\$180	\$5,400
	Fold and Bury Liner		Cat 235 Excavator	hrs	20	\$250	\$5,000
			D9H Dozer	hrs	100	\$350	\$35,000
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$6,719
						Sub-Total	\$102,705
9.4	Mill Reagents (\$ 7.6.6)						
	Load and return extra reagents/chemicals		General Labourer	hrs	100	\$55	\$5,460
			Support Equipment	l.s.	1	\$2,500	\$2,500
			Disposal Cost-bulk materials	l.s.	1	\$5,000	\$5,000
			Disposal Cost-lab pacs	pallets	2	\$2,000	\$4,000
	Removal of drums, steel, oils, glycol & batteries, as per 09July quote from General Waste Management to MEL		Contractor quote	l.s.	1	\$61,080	\$61,080
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$5,463
						Sub-Total	\$83,503
9.5	Reclaim Entire Mill Site Area including Fuel Storage and Crusher Area (ha) (\$ 7.6)						
	Test soils for contamination		Environmental Scientist	hrs	35	\$116	\$4,043
			Analytical Costs	l.s.	1	\$6,000	\$6,000
	Haul any contaminated soils to Land Treatment Facility		Cat 235 Excavator	hrs	20	\$250	\$5,000
			Haul Truck D250E	hrs	20	\$250	\$5,000
	Haul any ore/concentrate contaminated soils to u/g		Load, haul & place mat'l underground	cu.m.	200	\$10	\$2,000
	Re-contour area and slopes to bury footings and establish drainage		D9H Dozer	hrs	200	\$350	\$70,000
	Haul and place overburden cap (0.5m thickness)	10	Unit Rate	cu.m	50000	\$4.63	\$231,500
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$22,648
						Sub-Total	\$346,190
9.6	Contractor's Shop and Work Area (s 7.6.7)						
	Remove salvageable equipment		General Labourer	hrs	75	\$55	\$4,095
			Haul Truck D250E	hrs	25	\$250	\$6,250
			Trades Labourer	hrs	60	\$96	\$5,733
	Dismantle buildings		General Labourer	hrs	60	\$55	\$3,276
			30 ton Crane	hrs	13	\$190	\$2,375
			Cat 235 Excavator	hrs	38	\$250	\$9,375
	Haul building pieces off site - equipment		Tractor Trailer (lowbed)	hrs	25	\$180	\$4,500
	Scrap haul to site landfill		Haul Truck D250E	hrs	25	\$250	\$6,250
			Cat 235 Excavator	hrs	25	\$250	\$6,250
	Excavate & haul contaminated materials to site LTF		Misc.	l.s.	1	\$6,250	\$6,250
	Bury footings - haul and place fill, locally sourced		Unit Basis (footing burial)	each	3125	\$5.25	\$16,406
	Recontour		D9H Dozer	hrs	45	\$350	\$15,750
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$6,056
						Sub-Total	\$92,566
9.7	Laydown Area (ha) (\$ 7.6.8)						
	Re-contour area and slopes to establish drainage		D9H Dozer	hrs	60	\$350	\$21,000
	Haul and place overburden cap (0.5m thickness)	7.36	Custom Rate G (Load, haul, place soil cover ROD-DSTF)	cu.m	36800	\$4.86	\$178,903
	Project Management & Engineering		7% of Total Cost	%		7.00%	\$13,993
						Sub-Total	\$213,896
Total Estimated Cost in Reclaiming Mill and Ancillary Facilities							\$1,189,962

Table 9.2-10

Mill Water Pond, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Totals
10.1	Reclaim Mill Pond (S 7.6.5)					
	Remove upstream culvert	General Labourer	hrs	10	\$55	\$546
		Cat 235 Excavator	hrs	10	\$250	\$2,500
	Construct channel	Cat 235 Excavator	hrs	100	\$250	\$25,000
		D9H Dozer	hrs	20	\$350	\$7,000
		Produce rip-rap	cu.m	5,000	\$16	\$78,750
		Load, haul and place rip-rap	cu.m	5,000	\$16	\$78,750
		General Labourer	hrs	20	\$55	\$1,092
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$13,555
Sub-Total						\$207,193
Total Estimated Cost in Reclaiming Mill Pond						\$207,193

Note:

Table 9.2-11

Main Access Road, Estimated Closure Costs - Phase V / VI

Scenario 1 - No Road Deactivation						
Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
11.1	NO ROAD DECOMMISSIONING REQUIRED (\$ 7.14.1)					
11.1.1	Road Surface					
	Install road barrier at west side of Minto Creek	Misc	l.s.	1	\$2,000	\$2,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$140
					Sub-Total	\$2,140
Total Estimated Cost for Access Road Closure (Scenario 1)						\$2,140
Scenario 2 - Decommission Access Road From Minto Creek to Mine Site (11 KM)						
Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
11.2	ACCESS ROAD - 11 KM SECTION (\$ 7.14.1)					
11.2.1	Road Surface					
	Scarify - 11 km	Cat 16H grader	hrs	70	\$300	\$21,000
	Recontour slopes and drainages	D9H Dozer	hrs	25	\$350	\$8,750
	Project Management & Engineering		%		7.00%	\$2,083
					Sub-Total	\$31,833
11.2.2	Culverts					
	Culvert excavation (40 small culverts)	Cat 235 Excavator	hrs	100	\$250	\$25,000
	Culvert removal	General Labourer	hrs	140	\$55	\$7,644
		Haul Truck D250E	hrs	100	\$250	\$25,000
	Minto Creek Culvert Removal & Streambank Restoration	Trades Labourer	hrs	40	\$96	\$3,822
		General Labourer	hrs	75	\$55	\$4,095
		Cat 235 Excavator	hrs	40	\$250	\$10,000
	Recontour slopes and drainage	D9H Dozer	hrs	70	\$350	\$24,500
	Stabilize slopes	General Labourer	hrs	200	\$55	\$10,920
	Erosion barriers	Erosion Barrier	per sq. m	500	\$3	\$1,575
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$7,879
					Sub-Total	\$120,435
Total Estimated Cost for Access Road Closure (Scenario 2)						\$152,267
Scenario 3 - Decommission Entire Access Road (27 KM)						
Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
11.3	ACCESS ROAD - 27 KM SECTION (\$ 7.14.1)					
11.3.1	Road Surface					
	Scarify - 27 km	Cat 16H grader	hrs	150	\$300	\$45,000
	Recontour slopes and drainage	D9H Dozer	hrs	50	\$350	\$17,500
	Contamination survey - along corridor	Misc.	l.s.	1	\$10,000	\$10,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$5,075
					Sub-Total	\$77,575
11.3.2	Big Creek Bridge					
	Remove bridge decking and span	General Labourer	hrs	50	\$55	\$2,730
		30 ton Crane	hrs	40	\$190	\$7,600
		Cat 235 Excavator	hrs	40	\$250	\$10,000
		Haul Truck D250E	hrs	10	\$250	\$2,500
		Tractor Trailer (lowbed)	hrs	20	\$180	\$3,600
	Cut off piles	General Labourer	hrs	50	\$55	\$2,730
	Re-contour	Cat 235 Excavator	hrs	30	\$250	\$7,500
		D9H Dozer	hrs	30	\$350	\$10,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$3,301
					Sub-Total	\$50,461
11.3.3	Barge Ramps					
	Remove all gravel	Cat 235 Excavator	hrs	20	\$250	\$5,000
		Haul Truck D250E	hrs	10	\$250	\$2,500
	Re-countour areas and scarify	D9H Dozer	hrs	30	\$350	\$10,500
	Shoreline restoration	Misc.	l.s.	1	\$5,000	\$5,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,610
					Sub-Total	\$24,610
11.3.4	Culverts					
	Culvert excavation (45 small culverts)	Cat 235 Excavator	hrs	115	\$250	\$28,750
	Culvert removal	General Labourer	hrs	150	\$55	\$8,190
		Haul Truck D250E	hrs	115	\$250	\$28,750
	Minto Creek Culvert Removal & Streambank Restoration	Trades Labourer	hrs	40	\$96	\$3,822
		General Labourer	hrs	75	\$55	\$4,095
		Cat 235 Excavator	hrs	40	\$250	\$10,000
	Recontour slopes and drainage	D9H Dozer	hrs	70	\$350	\$24,500
	Stabilize slopes	General Labourer	hrs	200	\$55	\$10,920
	Silt Curtains (20m ² per crossing)	Erosion Barrier	sq. m.	900	\$3	\$2,835
	Enviro matting (15m ² per crossing)	Enviro matting	sq. m.	680	\$3	\$2,040
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$8,673
					Sub-Total	\$132,575
Total Estimated Cost for Access Road Closure (Scenario 3)						\$285,221

Note:

Table 9.2-12

Miscellaneous Sites and Facilities, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Totals
12.1	Airstrip (S 7.14.3)					
	Scarify airstrip and adjacent laydown areas	Cat 16H Grader	hrs	40	\$300	\$12,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$840
					Sub-Total	\$12,840
12.2	Mine Camp and Related Infrastructure (Expanded) (4.69 ha) (S 7.13.1)					
	Disconnect Services	Trades Labourer	hrs	150	\$96	\$14,333
	Remove salvageable equipment	General Labourer	hrs	1200	\$55	\$65,520
	Dismantle buildings	General Labourer	hrs	2000	\$55	\$109,200
		Cat 235 Excavator	hrs	200	\$250	\$50,000
	Haul scrap to Solid Waste Facility	Haul Truck D250E	hrs	40	\$250	\$10,000
		Cat 235 Excavator	hrs	20	\$250	\$5,000
	Remove above ground sewage system	Misc	l.s.	1	\$5,000	\$5,000
	Site Clean-Up	General Labourer	hrs	1000	\$55	\$54,600
	Haul and place overburden for revegetation (0.5 m thickness)	Custom Rate F (Load, haul, place soil cover ROD-MVFE)	cu.m.	23450	\$4.86	\$114,002
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$29,936
					Sub-Total	\$457,591
12.3	Explosives Plant Site (S 7.13.5)					
	Remove salvageable equipment	General Labourer	hrs	100	\$55	\$5,460
		Trades Labourer	hrs	50	\$96	\$4,778
	Dismantle buildings	General Labourer	hrs	200	\$55	\$10,920
		Cat 235 Excavator	hrs	30	\$250	\$7,500
	Disconnect Services	Trades Labourer	hrs	20	\$96	\$1,911
	Crane services	30 ton Crane	hrs	5	\$190	\$950
	Haul scrap to Solid Waste Facility	Haul Truck D250E	hrs	30	\$250	\$7,500
		Cat 235 Excavator	hrs	10	\$250	\$2,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$2,906
					Sub-Total	\$44,425
12.4	Land Treatment Facility (S 7.13.3)					
	Prepare and submit closure plan	Misc	l.s.	1	\$2,000	\$2,000
	Characterize final soil hydrocarbon concentrations	Misc	l.s.	1	\$4,000	\$4,000
	Recontour	D9H Dozer	hrs	3	\$350	\$1,050
	Haul and place coverburden cover from nearby	Cat 235 Excavator	hrs	20	\$250	\$5,000
		Haul Truck D250E	hrs	20	\$250	\$5,000
		D9H Dozer	hrs	6	\$350	\$2,100
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,341
					Sub-Total	\$20,491
12.5	Solid Waste Facility (S 7.13.4)					
	Prepare detailed closure plan	Misc	l.s.	1	\$2,000	\$2,000
	Characterize final waste area	Misc	l.s.	1	\$2,000	\$2,000
	Remove recyclables and special waste materials	Tractor Trailer (lowbed)	hrs	40	\$180	\$7,200
	Recontour	D9H Dozer	hrs	2	\$350	\$700
	Haul and cover with adjacent fill and place overburden cap	Cat 235 Excavator	hrs	20	\$250	\$5,000
		Haul Truck D250E	hrs	20	\$250	\$5,000
	Compaction of cover	D9H Dozer	hrs	12	\$350	\$4,200
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,827
					Sub-Total	\$27,927
12.6	Site Roads (S 7.14)					
	Recontour	Cat 235 Excavator	hrs	37.5	\$250	\$9,375
	Scarify	Cat 16H Grader	hrs	50	\$300	\$15,000
	Erosion Barriers	Erosion Barrier	sq. m.	300	\$3	\$945
	Project Management & Engineering	7% of Total Cost	%		7.00%	\$1,772
					Sub-Total	\$27,092
Total Estimated Cost in Reclaiming Miscellaneous Sites and Facilities						\$590,365

Note:

Table 9.2-13

Reclamation Research and Revegetation, Estimated Closure Costs - Phase V / VI

Item No.	Work Item Description	Area (ha)	Units	Quantity	Unit Rates	Year 2 Totals
13.1	Determination of Revegetation Plan for Current Site					
	Issuance of a plan for all site areas for regulatory review and approval		Misc	1	\$20,000	\$20,000
						Sub-Total
						\$20,000
13.2	Main and Southwest Dumps	129.67				
	Seed and fertilize w/ labour		ha	129.7	\$2,993	\$388,037
	Re-seed and fertilize (1/2 of total area)		ha	64.8	\$2,993	\$194,019
	Re-forest		ha	129.7	\$2,100	\$272,307
						Sub-Total
						\$854,363
13.3	Area 118 Pit Backfill Dump	8.45				
	Seed and fertilize w/ labour		ha	8.5	\$2,993	\$25,287
	Re-seed and fertilize (1/2 of total area)		ha	4.2	\$2,993	\$12,643
	Re-forest		ha	8.5	\$2,100	\$17,745
						Sub-Total
						\$55,675
13.4	Ridgetop South Pit Backfill	4.20				
	Seed and fertilize w/ labour		ha	4.2	\$2,993	\$0
	Re-seed and fertilize (1/2 of total area)		ha	2.1	\$2,993	\$0
	Re-forest		ha	4.2	\$2,100	\$0
						Sub-Total
						\$0
13.5	Ridgetop Waste Dump	29.76				
	Seed and fertilize w/ labour		ha	29.8	\$2,993	\$0
	Re-seed and fertilize (1/2 of total area)		ha	14.9	\$2,993	\$0
	Re-forest		ha	29.8	\$2,100	\$0
						Sub-Total
						\$0
13.6	Main Pit Dump	16.62				
	Seed and fertilize w/ labour		ha	16.6	\$2,993	\$49,735
	Re-seed and fertilize (1/2 of total area)		ha	8.3	\$2,993	\$24,868
	Re-forest		ha	16.6	\$2,100	\$34,902
						Sub-Total
						\$8,085
13.7	Ice-Rich Overburden Dump	2.94				
	Seed and fertilize w/ labour		ha	2.9	\$2,993	\$8,798
	Re-seed and fertilize (1/2 of total area)		ha	1.5	\$2,993	\$4,399
	Re-forest		ha	2.9	\$2,100	\$6,174
						Sub-Total
						\$19,371
13.8	Reclamation Overburden Dump	30.41				
	Seed and fertilize w/ labour		ha	30.4	\$2,993	\$91,002
	Re-seed and fertilize (1/2 of total area)		ha	15.2	\$2,993	\$45,501
	Re-forest		ha	30.4	\$2,100	\$63,861
						Sub-Total
						\$200,364
13.9	Ore Stockpiles and Pads	8.60				
	Seed and fertilize w/ labour		ha	8.6	\$2,993	\$25,736
	Re-seed and fertilize (1/2 of total area)		ha	4.3	\$2,993	\$12,868
	Re-forest		ha	8.6	\$2,100	\$18,060
						Sub-Total
						\$56,663
13.10	DSTF	20.54				
	Seed and fertilize w/ labour		ha	20.5	\$2,993	\$61,466
	Re-seed and fertilize (1/2 of total area)		ha	10.3	\$2,993	\$30,733
	Re-forest		ha	20.5	\$2,100	\$43,134
						Sub-Total
						\$135,333
13.11	Mill Valley Fill Extension	26.60				
	Seed and fertilize w/ labour		ha	26.6	\$2,993	\$79,601
	Re-seed and fertilize (1/2 of total area)		ha	13.3	\$2,993	\$39,800
	Re-forest		ha	26.6	\$2,100	\$55,860
						Sub-Total
						\$175,261
13.12	Contractor's Shop and Office Area	2.50				
	Seed and fertilize w/ labour		ha	2.5	\$2,993	\$7,481
	Re-seed and fertilize (1/2 of total area)		ha	1.3	\$2,993	\$3,741
	Re-forest		ha	2.5	\$2,100	\$5,250
						Sub-Total
						\$16,472
13.13	Tailings Surface Area (Main Pit & Ridgetop North Pit)	26.46				
	Seed and fertilize w/ labour		ha	26.5	\$2,993	\$0
	Re-seed and fertilize (1/2 of total area)		ha	13.2	\$2,993	\$0
	Re-forest		ha	26.5	\$2,100	\$0
						Sub-Total
						\$0
13.14	Water Storage Pond Dam	6.00				
	Seed and fertilize w/ labour		ha	6.0	\$2,993	\$17,955
	Re-seed and fertilize (1/2 of total area)		ha	3.0	\$2,993	\$8,978
	Re-forest		ha	6.0	\$2,100	\$12,600
						Sub-Total
						\$39,533
13.15	Mill Area	4.13				
	Seed and Fertilize w/ labour		ha	4.1	\$2,993	\$12,359
	Re-seed and fertilize (1/2 of total area)		ha	2.1	\$2,993	\$6,180
	Re-forest		ha	4.1	\$2,100	\$8,673
						Sub-Total
						\$27,212
13.16	Haul Road	15.00				
			ha	15.0	\$2,993	\$44,888
						Sub-Total
						\$44,888
13.17	Underground Portal Excavation	9.07				
	Seed and Fertilize w/ labour		ha	9.1	\$2,993	\$27,142
	Re-seed and fertilize (1/2 of total area)		ha	4.5	\$2,993	\$13,571
	Re-forest		ha	9.1	\$2,100	\$19,047
						Sub-Total
						\$59,760
13.18	Miscellaneous Sites - Camp, Airstrip, Waste Facilities, Explosives Site	14.00				
	Seed and fertilize w/ labour		ha	14.0	\$2,993	\$41,895
	Re-seed and fertilize (1/2 of total area)		ha	7.0	\$2,993	\$20,948
	Re-forest		ha	14.0	\$2,100	\$29,400
						Sub-Total
						\$92,243
13.19	Laydown Area	7.36				
	Seed and Fertilize w/ labour		ha	7.4	\$2,993	\$22,025
	Re-seed and fertilize (1/2 of total area)		ha	3.7	\$2,993	\$11,012
	Re-forest		ha	7.4	\$2,100	\$15,456
						Sub-Total
						\$48,493
13.20	Access Road					
	Scenario 1 - No Deactivation					
	No revegetation					
						Sub-Total
						\$0
	Scenario 2 - Deactivate from Minto Creek to Mine Site (11 km)					
	Revegetate and fertilize banks at culvert excavations, including labour	2.00	ha	2.0	\$2,993	\$5,985
						Sub-Total
						\$5,985
	Scenario 3 - Deactivate Entire Road (27 km)					
	Hydroseed roadside banks & slopes (~0.25ha per km of road, along 50% of its length)	3.38	ha	3.4	\$4,000	\$13,500
	Revegetate and fertilize banks at culvert excavations, including labour	6.00	ha	6.0	\$2,993	\$17,955
						Sub-Total
						\$31,455
Total Estimated Cost for Reclamation Research and Revegetation						
Scenario 1 - No Access Road Deactivation						\$1,853,714
Scenario 2 - Deactivate Access Road from Minto Creek to Mine Site						\$1,859,699
Scenario 3 - Deactivate Entire Access Road						\$1,885,169

Note:

Table 9.2-14

Supporting Studies - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Year 2 Total
14.1	Kinetic Tailings and Waste Rock Materials Testing					
	Monitoring program and field test to enhance long term water quality prediction related to drystack tailings facility and materials in WRDs					
	preparing composite sample over several months of production	Misc.	l.s.	1	\$5,000	\$5,000
	undertaking field test	Misc.	l.s.	1	\$12,000	\$12,000
	initiate parallel laboratory analysis	Misc.	l.s.	1	\$10,000	\$10,000
	monitoring field apparatus (columns)	Misc.	l.s.	1	\$4,000	\$4,000
	reporting	Misc.	l.s.	1	\$5,000	\$5,000
					Sub-Total	\$36,000
14.2	Other Adaptive Management Plans Required					
	Changes in WTP input water quality or quantity	Misc.	l.s.	1	\$22,500	\$22,500
	Sludge Management Plan - for material from WTP	Misc.	l.s.	1	\$15,000	\$15,000
	Site testing ML ARD	Misc.	l.s.	1	\$45,000	\$45,000
	Groundwater Management Plan	Misc.	l.s.	1	\$15,000	\$15,000
	Long term reclamation of contaminated soils	Misc.	l.s.	1	\$22,500	\$22,500
	Physical Monitoring program - prior to closure	Misc.	l.s.	1	\$60,000	\$60,000
	Modeling of pit lake water qualities prior to flooding	Misc.	l.s.	1	\$22,500	\$22,500
					Sub-Total	\$202,500
14.3	Contamination Survey					
	Site contamination surveys (pre \$35K, post \$20K)		l.s.	1	\$55,000	\$55,000
					Sub-Total	\$55,000
14.4	Reclamation & Closure Research Plan					
	Year 1 (2014) COMPLETED	Misc.	l.s.	1	\$350,000	\$0
	Year 2 (2015)	Misc.	l.s.	1	\$350,000	\$350,000
	Year 3 (2016)	Misc.	l.s.	1	\$350,000	\$350,000
	Year 4 (2017)	Misc.	l.s.	1	\$200,000	\$200,000
	Year 5 (2018)	Misc.	l.s.	1	\$200,000	\$200,000
					Sub-Total	\$1,100,000
14.5	Passive Treatment Design					
	Design of passive treatment systems required for closure	Misc.	l.s.	1	\$50,000	\$50,000
					Sub-Total	\$50,000
Total Estimated Cost for Supporting Studies						\$1,443,500

Note:

Table 9.2-16
Interim Care and Maintenance - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Annual Cost	Full Cost
16.1	Personnel						
	On-site Caretaker						
	Full time (2 people on alternate 7in-7out schedule, \$6,710 each per month)	Site caretaker	\$/manmont	24	\$6,710	\$161,040	\$161,040
	Extra Personnel						
	Electrician (estimate 1 mo/yr total)	Trades Labourer	\$/hr	176	\$91	\$16,016	\$16,016
	Mechanic (estimate 1 mo/yr total)	Trades Labourer	\$/hr	176	\$91	\$16,016	\$16,016
	Senior Operator/Supervisor (estimate 2mo/yr total)	Unit Cost Basis	\$/hr	352	\$110	\$38,720	\$38,720
	Camp Costs						
	for above personnel (365+30+30+60)	Unit Cost Basis	mandays	485	\$84	\$40,740	\$40,740
	Employee Transport Costs						
	Barge operating costs (6 mo/yr) at half-rate	Unit Cost Basis	monthly	6	\$5,000	\$30,000	\$30,000
	Air Access (3 mo/yr)	Unit Cost Basis	monthly	3	\$10,000	\$30,000	\$30,000
	Winter Road costs (3 mo/yr)	Unit Cost Basis	monthly	3	\$10,000	\$30,000	\$30,000
						Sub-Total - Personnel	\$362,532
16.2	Equipment						
	Small Excavator (1)	Misc.	annually	1	\$10,000	\$10,000	\$10,000
	Small Dozer (1)	Misc.	annually	1	\$10,000	\$10,000	\$10,000
	Small Loader (1)	Misc.	annually	1	\$10,000	\$10,000	\$10,000
	Pick-Up Truck (1)	Misc.	monthly	12	\$2,500	\$30,000	\$30,000
	Snow Machine & ATV	Misc.	annually	1	\$10,000	\$10,000	\$10,000
						Sub-Total - Equipment	\$70,000
16.3	Tasks						
	SNP/AEMP water sampling	Misc.	monthly	12	\$4,000	\$48,000	\$48,000
	Interim water treatment (active) (360,000m ³ /yr @ \$1.38/l)	Misc.	annually	1	\$496,800	\$496,800	\$496,800
	Geotechnical Assessments (2/yr)	Misc.	annually	1	\$15,000	\$15,000	\$15,000
	Sediment monitoring	Misc.	annually	1	\$4,000	\$4,000	\$4,000
	Biological monitoring	Misc.	annually	1	\$4,000	\$4,000	\$4,000
	Enhanced Groundwater/Foundation monitoring	Misc.	annually	1	\$15,000	\$15,000	\$15,000
	Monitoring of piezometers and thermistors (3/yr)	Misc.	3/yr	3	\$3,000	\$9,000	\$9,000
	Communications & reporting	Misc.	annually	1	\$10,000	\$10,000	\$10,000
						Sub-Total - Tasks	\$601,800
16.4	Miscellaneous						
	Misc Supplies	Misc.	annually	1	\$50,000	\$50,000	\$50,000
	Annual Fuel	Misc.	\$/litre	1,000	\$1.80	\$1,800	\$1,800
						Sub-Total - Miscellaneous	\$51,800
						Annual Cost for ICM	\$1,086,132
						Number of Years	2
						Total ICM Cost	\$2,172,264

Note:

Table 9.2-17
Mobilization and Demobilization - Phase V / VI

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Annual Cost	Full Cost	
17.1	Mobilize Equipment & Fuel							
	Heavy Equipment							
	Excavators (3)	Equipment	kms	720	\$6	\$4,320	\$4,320	
	Haul Trucks (6)	Equipment	kms	1,440	\$6	\$8,640	\$8,640	
	Dozer-large (3)	Equipment	kms	720	\$18	\$12,960	\$12,960	
	Dozer-medium (2)	Equipment	kms	480	\$6	\$2,880	\$2,880	
	Grader-large (1)	Equipment	kms	240	\$10	\$2,400	\$2,400	
	Loader-large (2)	Equipment	kms	480	\$8	\$3,840	\$3,840	
	Loader-medium (1)	Equipment	kms	240	\$6	\$1,440	\$1,440	
	Compactor (1)	Equipment	kms	240	\$6	\$1,440	\$1,440	
	Crane (1)	Equipment	kms	240	\$6	\$1,440	\$1,440	
	Light-duty Vehicles (4)	Light truck	kms	960	\$2	\$1,920	\$1,920	
	Misc. Equipment							
	Sea Containers (supplies, mobile offices) (6)	Equipment	kms	1,440	\$10	\$14,400	\$14,400	
	Other							
	Fuel							
	Fuel Freight	Unit Cost Basis	l.s.	1	\$5,000	\$5,000	\$5,000	
	Sub-Total - Mobilize Equipment & Fuel							\$60,680
17.2	Mobilize Workers & Camp							
	Workers (15men)							
	Travel costs	Unit Cost Basis	ea	15	\$200	\$0	\$0	
	Workers wages during mob (3hr trip)	Unit Cost Basis	hrs	45	\$80	\$0	\$0	
	Barge operating costs (2 months at commencement of closure work)							
	Mobilization period	Unit Cost Basis	monthly	2	\$10,000	\$0	\$0	
	Make existing downsized camp operational for closure phase	Misc.	l.s.	1	\$10,000	\$10,000	\$10,000	
	Sub-Total - Mobilize Workers & Camp							\$10,000
17.3	Demobilize Equipment							
	Heavy Equipment							
	Excavators (3)	Equipment	kms	720	\$6	\$4,320	\$4,320	
	Haul Trucks (6)	Equipment	kms	1,440	\$6	\$8,640	\$8,640	
	Dozer-large (3)	Equipment	kms	720	\$18	\$12,960	\$12,960	
	Dozer-medium (2)	Equipment	kms	480	\$6	\$2,880	\$2,880	
	Grader-large (1)	Equipment	kms	240	\$10	\$2,400	\$2,400	
	Loader-large (2)	Equipment	kms	480	\$8	\$3,840	\$3,840	
	Loader-medium (1)	Equipment	kms	240	\$6	\$1,440	\$1,440	
	Compactor (1)	Equipment	kms	240	\$6	\$1,440	\$1,440	
	Crane (1)	Equipment	kms	240	\$6	\$1,440	\$1,440	
	Light-duty Vehicles (4)	Light truck	kms	960	\$2	\$1,920	\$1,920	
	Misc. Equipment							
	Sea Containers (supplies, mobile offices) (6)	Equipment	kms	1,440	\$10	\$14,400	\$14,400	
	Other							
	Sub-Total-Demobilize Equipment							\$55,680
17.4	Demobilize Wokers & Camp							
	Workers (15men)							
	Travel costs	Unit Cost Basis	monthly	15	\$200	\$0	\$0	
	Workers wages during demob (3hr trip)	Unit Cost Basis	hrs	45	\$80	\$0	\$0	
	Barge operating costs (2 months at completion of closure work)							
	Demobilization period	Unit Cost Basis	monthly	2	\$10,000	\$0	\$0	
	Demob camp (N/A-decommissioned as part of site closure)							
	Sub-Total - Demobilize Workers & Camp							\$0
Total Estimated Cost for Mobilization and Demobilization							\$126,360	

Note:

Table 9.2-17 Net Present Value (NPV) Calculations Phase V / VI Financial Security Estimate (Year 2)

Discount Rate		2.50%		Water Treatment Costs										Reclamation & Closure Research Plan		
Year													Total NPV	\$6,487,440	Total NPV	\$243,419
Current = 2014																
Closure Year #	Years After Current	Calendar	Active Treatment Capital Costs	NPV	Active Treatment Capital Replacement Costs	NPV	Active Treatment Operating Costs	NPV	Passive Treatment Capital Costs	NPV	Passive Treatment Operation and Maintenance Costs	NPV	Total Annual NPV	Reclamation & Closure Research Plan	Total Annual NPV	
IC&M	1	2	2016			\$0							\$0			
	2	3	2017			\$0							\$0			
Active Closure	3	4	2018			\$60,000	\$54,357	\$650,000	\$588,868				\$643,225			
	4	5	2019			\$60,000	\$53,031	\$650,000	\$574,505				\$627,537			
	5	6	2020			\$60,000	\$51,738	\$650,000	\$560,493	\$1,000,000	\$862,297		\$1,474,528	\$50,000	\$43,115	
Post Closure I	6	7	2021			\$60,000	\$50,476	\$650,000	\$546,822			\$50,000	\$42,063	\$639,362	\$50,000	\$42,063
	7	8	2022			\$60,000	\$49,245	\$650,000	\$533,485			\$50,000	\$41,037	\$623,767	\$50,000	\$41,037
	8	9	2023			\$60,000	\$48,044	\$650,000	\$520,473			\$50,000	\$40,036	\$608,554	\$50,000	\$40,036
	9	10	2024			\$60,000	\$46,872	\$650,000	\$507,779			\$50,000	\$39,060	\$593,711	\$50,000	\$39,060
	10	11	2025			\$60,000	\$45,729	\$650,000	\$495,394			\$50,000	\$38,107	\$579,230	\$50,000	\$38,107
	11	12	2026			\$60,000	\$44,613					\$50,000	\$37,178	\$81,791		
	12	13	2027			\$60,000	\$43,525					\$50,000	\$36,271	\$79,796		
	13	14	2028			\$60,000	\$42,464					\$50,000	\$35,386	\$77,850		
	14	15	2029			\$60,000	\$41,428					\$50,000	\$34,523	\$75,951		
	15	16	2030			\$60,000	\$40,417					\$50,000	\$33,681	\$74,099		
Post Closure II	16	17	2031									\$50,000	\$32,860	\$32,860		
	17	16	2032									\$50,000	\$33,681	\$33,681		
	18	17	2033									\$50,000	\$32,860	\$32,860		
	19	18	2034									\$50,000	\$32,058	\$32,058		
	20	19	2035									\$50,000	\$31,276	\$31,276		
	21	20	2036									\$50,000	\$30,514	\$30,514		
	22	21	2037									\$50,000	\$29,769	\$29,769		
	23	22	2038									\$50,000	\$29,043	\$29,043		
	24	23	2039									\$50,000	\$28,335	\$28,335		
	25	24	2040									\$50,000	\$27,644	\$27,644		
	26	25	2041											\$0		
	27	26	2042											\$0		
28	27	2043											\$0			
29	28	2044											\$0			
30	29	2045											\$0			
31	30	2046											\$0			
32	31	2047											\$0			
33	32	2048											\$0			
34	33	2049											\$0			
35	34	2050											\$0			
36	35	2051											\$0			
37	36	2052											\$0			
Totals			\$0	\$0	\$780,000	\$611,939	\$5,200,000	\$4,327,820	\$1,000,000	\$862,297	\$1,000,000	\$685,384	\$6,487,440	\$300,000	\$243,419	
Active Closure (Years 3-5) Totals			\$0	\$0	\$180,000	\$159,126	\$1,950,000	\$1,723,866	\$1,000,000	\$862,297	\$0	\$0	\$2,745,289	\$50,000	\$43,115	
Post Closure I (Years 6-10) Totals			\$0	\$0	\$300,000	\$240,365	\$3,250,000	\$2,603,954	\$0	\$0	\$250,000	\$200,304	\$3,044,623	\$250,000	\$200,304	
Post Closure II (Years 11-25) Totals			\$0	\$0	\$300,000	\$212,448	\$0	\$0	\$0	\$0	\$750,000	\$485,080	\$697,527	\$0	\$0	

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Table 9.2-17 Net Present Value (NPV) Calculations Phase V / VI Financial Security Estimate (Year 2)

Discount Rate		2.50%		Site Access and Maintenance				
Year			Total NPV				\$737,046	
Current = 2014								
Closure Year #	Years After Current	Calendar	Onsite Management	NPV	Transport Costs	NPV	Total Annual NPV	
IC&M	1	2016						
	2	2017						
Active Closure	3	2018					\$0	
	4	2019					\$0	
	5	2020					\$0	
Post Closure I	6	2021	\$98,160	\$82,579	\$35,000	\$29,444	\$112,023	
	7	2022	\$98,160	\$80,564	\$35,000	\$28,726	\$109,291	
	8	2023	\$98,160	\$78,599	\$35,000	\$28,025	\$106,625	
	9	2024	\$98,160	\$76,682	\$35,000	\$27,342	\$104,024	
	10	2025	\$98,160	\$74,812	\$35,000	\$26,675	\$101,487	
Post Closure II	11	2026	\$22,500	\$16,730	\$35,000	\$26,024	\$42,754	
	12	2027	\$22,500	\$16,322	\$35,000	\$25,390	\$41,712	
	13	2028	\$22,500	\$15,924	\$35,000	\$24,770	\$40,694	
	14	2029	\$22,500	\$15,535	\$35,000	\$24,166	\$39,702	
	15	2030	\$22,500	\$15,157	\$35,000	\$23,577	\$38,733	
	16	2031					\$0	
	17	2032					\$0	
	18	2033					\$0	
	19	2034					\$0	
	20	2035					\$0	
	21	2036					\$0	
	22	2037					\$0	
	23	2038					\$0	
	24	2039					\$0	
	25	2040					\$0	
	26	2041					\$0	
	27	2042					\$0	
	28	2043					\$0	
	29	2044					\$0	
	30	2045					\$0	
	31	2046					\$0	
	32	2047					\$0	
33	2048					\$0		
34	2049					\$0		
35	2050					\$0		
36	2051					\$0		
37	2052					\$0		
Totals			\$603,300	\$472,905	\$350,000	\$264,141	\$737,046	
Active Closure (Years 3-5) Totals			\$0	\$0	\$0	\$0	\$0	
Post Closure I (Years 6-10) Totals			\$490,800	\$393,237	\$175,000	\$140,213	\$533,450	
Post Closure II (Years 11-25) Totals			\$112,500	\$79,668	\$175,000	\$123,928	\$203,596	

Table 9.2-17 Net Present Value (NPV) Calculations Phase V / VI Financial Security Estimate (Year 2)

Discount Rate			2.50%	Long Term Monitoring & Reporting												
Year																
Current = 2014																
Closure Year #	Years After Current	Calendar	Disbursements	NPV	Water Quality Monitoring	NPV	Sediment Monitoring	NPV	Biological Monitoring (Benthos)	NPV	Enhanced Groundwater/Foundation monitoring below DSTF and Waste Rock Dumps	NPV	Geotechnical Inspections	NPV	Reclamation Inspections	
IC&M	1	2	2016													
	2	3	2017													
Active Closure	3	4	2018	\$4,000	\$3,624	\$104,000	\$94,219	\$4,000	\$3,624	\$4,000	\$3,624	\$15,000	\$13,589	\$15,000	\$13,589	\$7,500
	4	5	2019	\$4,000	\$3,535	\$104,000	\$91,921	\$4,000	\$3,535	\$4,000	\$3,535	\$15,000	\$13,258	\$15,000	\$13,258	\$7,500
	5	6	2020	\$4,000	\$3,449	\$104,000	\$89,679	\$4,000	\$3,449	\$4,000	\$3,449	\$15,000	\$12,934	\$15,000	\$12,934	\$7,500
Post Closure I	6	7	2021	\$4,000	\$3,365	\$24,000	\$20,190	\$4,000	\$3,365	\$4,000	\$3,365	\$15,000	\$12,619	\$15,000	\$12,619	\$7,500
	7	8	2022	\$4,000	\$3,283	\$24,000	\$19,698					\$15,000	\$12,311	\$15,000	\$12,311	\$7,500
	8	9	2023	\$4,000	\$3,203	\$24,000	\$19,217	\$4,000	\$3,203	\$4,000	\$3,203	\$15,000	\$12,011	\$15,000	\$12,011	\$7,500
	9	10	2024	\$4,000	\$3,125	\$24,000	\$18,749					\$15,000	\$11,718	\$15,000	\$11,718	\$7,500
	10	11	2025	\$4,000	\$3,049	\$24,000	\$18,291	\$4,000	\$3,049	\$4,000	\$3,049	\$15,000	\$11,432	\$15,000	\$11,432	\$7,500
	11	12	2026	\$4,000	\$2,974	\$10,500	\$7,807	\$4,000	\$2,974	\$4,000	\$2,974	\$15,000	\$11,153	\$15,000	\$11,153	\$7,500
	12	13	2027	\$4,000	\$2,902	\$10,500	\$7,617					\$15,000	\$10,881			
	13	14	2028	\$4,000	\$2,831	\$10,500	\$7,431	\$4,000	\$2,831	\$4,000	\$2,831	\$15,000	\$10,616	\$15,000	\$10,616	\$7,500
	14	15	2029	\$4,000	\$2,762	\$10,500	\$7,250					\$15,000	\$10,357			
	15	16	2030	\$4,000	\$2,694	\$10,500	\$7,073	\$4,000	\$2,694	\$4,000	\$2,694	\$15,000	\$10,104	\$15,000	\$10,104	\$7,500
Post Closure II	16	17	2031													
	17	16	2032													
	18	17	2033													
	19	18	2034													
	20	19	2035													
	21	20	2036													
	22	21	2037													
	23	22	2038													
	24	23	2039													
	25	24	2040													
	26	25	2041													
	27	26	2042													
	28	27	2043													
29	28	2044														
30	29	2045														
31	30	2046														
32	31	2047														
33	32	2048														
34	33	2049														
35	34	2050														
36	35	2051														
37	36	2052														
Totals				\$52,000	\$40,796	\$484,500	\$409,143	\$36,000	\$28,725	\$36,000	\$28,725	\$195,000	\$152,985	\$165,000	\$131,746	\$82,500
Active Closure (Years 3-5) Totals				\$12,000	\$10,608	\$312,000	\$275,819	\$12,000	\$10,608	\$12,000	\$10,608	\$45,000	\$39,782	\$45,000	\$39,782	\$22,500
Post Closure I (Years 6-10) Totals				\$20,000	\$16,024	\$120,000	\$96,146	\$12,000	\$9,617	\$12,000	\$9,617	\$75,000	\$60,091	\$75,000	\$60,091	\$37,500
Post Closure II (Years 11-25) Totals				\$20,000	\$14,163	\$52,500	\$37,178	\$12,000	\$8,500	\$12,000	\$8,500	\$75,000	\$53,112	\$45,000	\$31,874	\$22,500

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Table 9.2-17 Net Present Value (NPV) Calculations Phase V / VI Financial Security Estimate (Year 2)

Discount Rate		2.50%									
Year			Total NPV								\$1,018,557
Current = 2014											
Closure Year #	Years After Current	Calendar	NPV	Monitoring of piezometers, thermistors	NPV	Water Storage Pond Dam-Monitoring & Reporting	NPV	Annual Inspection & report	NPV	Total Annual NPV	
IC&M	1	2	2016								
	2	3	2017								
Active Closure	3	4	2018	\$6,795	\$9,000	\$8,154	\$7,500	\$6,795	\$3,000	\$2,718	\$156,729
	4	5	2019	\$6,629	\$9,000	\$7,955	\$7,500	\$6,629	\$3,000	\$2,652	\$152,907
	5	6	2020	\$6,467	\$9,000	\$7,761	\$7,500	\$6,467	\$3,000	\$2,587	\$149,177
Post Closure I	6	7	2021	\$6,309	\$6,000	\$5,048	\$7,500	\$6,309	\$3,000	\$2,524	\$75,714
	7	8	2022	\$6,156	\$6,000	\$4,924	\$7,500	\$6,156	\$3,000	\$2,462	\$67,301
	8	9	2023	\$6,005	\$6,000	\$4,804	\$7,500	\$6,005	\$3,000	\$2,402	\$72,066
	9	10	2024	\$5,859	\$6,000	\$4,687	\$7,500	\$5,859	\$3,000	\$2,344	\$64,058
	10	11	2025	\$5,716	\$6,000	\$4,573	\$7,500	\$5,716	\$3,000	\$2,286	\$68,593
Post Closure II	11	12	2026	\$5,577	\$3,000	\$2,231	\$7,500	\$5,577	\$3,000	\$2,231	\$54,651
	12	13	2027		\$3,000	\$2,176	\$7,500	\$5,441	\$3,000	\$2,176	\$31,193
	13	14	2028	\$5,308	\$3,000	\$2,123	\$7,500	\$5,308	\$3,000	\$2,123	\$52,018
	14	15	2029		\$3,000	\$2,071	\$7,500	\$5,178	\$3,000	\$2,071	\$29,690
	15	16	2030	\$5,052	\$3,000	\$2,021	\$0	\$0	\$3,000	\$2,021	\$44,459
	16	17	2031								\$0
	17	16	2032								\$0
	18	17	2033								\$0
	19	18	2034								\$0
	20	19	2035								\$0
	21	20	2036								\$0
	22	21	2037								\$0
	23	22	2038								\$0
	24	23	2039								\$0
	25	24	2040								\$0
	26	25	2041								\$0
	27	26	2042								\$0
	28	27	2043								\$0
	29	28	2044								\$0
	30	29	2045								\$0
	31	30	2046								\$0
	32	31	2047								\$0
33	32	2048								\$0	
34	33	2049								\$0	
35	34	2050								\$0	
36	35	2051								\$0	
37	36	2052								\$0	
Totals			\$65,873	\$72,000	\$58,528	\$90,000	\$71,440	\$39,000	\$30,597	\$1,018,557	
Active Closure (Years 3-5) Totals			\$19,891	\$27,000	\$23,869	\$22,500	\$19,891	\$9,000	\$7,956	\$458,814	
Post Closure I (Years 6-10) Totals			\$30,046	\$30,000	\$24,037	\$37,500	\$30,046	\$15,000	\$12,018	\$347,732	
Post Closure II (Years 11-25) Totals			\$15,937	\$15,000	\$10,622	\$30,000	\$21,504	\$15,000	\$10,622	\$212,012	

Table 9.2-17 Net Present Value (NPV) Calculations Phase V / VI Financial Security Estimate (Year 2)

Discount Rate		2.50%		Post Closure Maintenance						
Year			Total NPV						\$296,472	
Current = 2014										
Closure Year #	Years After Current	Calendar	Water Storage Pond Dam-Carry out inspection recommendations /maintenance	NPV	Misc. maintenance work related to the site after closure	NPV	Ultimate Removal of wells and instrumentation	NPV	Total Annual NPV	
IC&M	1	2	2016							
	2	3	2017							
Active Closure	3	4	2018	\$10,000	\$9,060	\$10,000	\$9,060		\$28,990	
	4	5	2019	\$10,000	\$8,839	\$10,000	\$8,839		\$28,283	
	5	6	2020	\$10,000	\$8,623	\$10,000	\$8,623		\$27,593	
Post Closure I	6	7	2021	\$10,000	\$8,413	\$10,000	\$8,413		\$24,397	
	7	8	2022	\$10,000	\$8,207	\$10,000	\$8,207		\$23,802	
	8	9	2023	\$10,000	\$8,007	\$10,000	\$8,007		\$23,221	
	9	10	2024	\$10,000	\$7,812	\$10,000	\$7,812		\$22,655	
	10	11	2025	\$10,000	\$7,621	\$10,000	\$7,621		\$22,102	
	Post Closure II	11	12	2026	\$10,000	\$7,436	\$10,000	\$7,436		\$19,332
		12	13	2027	\$10,000	\$7,254	\$10,000	\$7,254		\$18,861
		13	14	2028	\$10,000	\$7,077	\$10,000	\$7,077		\$18,401
		14	15	2029	\$10,000	\$6,905	\$10,000	\$6,905		\$17,952
		15	16	2030	\$0	\$0	\$10,000	\$6,736	\$15,000	\$10,104
16		17	2031							
17		16	2032							
18	17	2033								
19	18	2034								
20	19	2035								
21	20	2036								
22	21	2037								
23	22	2038								
24	23	2039								
25	24	2040								
26	25	2041								
27	26	2042								
28	27	2043								
29	28	2044								
30	29	2045								
31	30	2046								
32	31	2047								
33	32	2048								
34	33	2049								
35	34	2050								
36	35	2051								
37	36	2052								
Totals			\$120,000	\$95,254	\$130,000	\$101,990	\$15,000	\$10,104	\$296,472	
Active Closure (Years 3-5) Totals			\$30,000	\$26,521	\$30,000	\$26,521	\$0	\$0	\$84,867	
Post Closure I (Years 6-10) Totals			\$50,000	\$40,061	\$50,000	\$40,061	\$0	\$0	\$116,176	
Post Closure II (Years 11-25) Totals			\$40,000	\$28,672	\$50,000	\$35,408	\$15,000	\$10,104	\$95,429	

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