Mackenzie Valley Land and Water Board

Guidelines for Closure and Reclamation Cost Estimates for Mines

Introduction

Within the Mackenzie Valley, companies that wish to construct and operate a mine must apply for a land use permit and a Type A water licence from the Mackenzie Valley Land and Water Board[1] (MVLWB). Once issued, these licenses and permits require mining companies to, among other things, post security that will cover the anticipated costs of closure and reclamation (the "closure cost estimate") if the company becomes insolvent and abandons the site.

The purpose of these Guidelines is to describe the MVLWB's expectations for the preparation of closure cost estimates submitted to the Board and the Board's process for determining how much security is required. The Guidelines apply to new and existing mining, milling, and advanced mineral exploration projects that require a Type A water licence[2]. The Board's objective is to enhance transparency, process efficiency, and consistency between projects.

The Board's authority to require proponents to post and maintain security are granted under the *Mackenzie Valley Resource Management Act* and the *Waters Act*. The Waters Regulations, the Northwest Territories Waters Regulations, and the Mackenzie Valley Land Use Regulations authorize the Board to fix the amount of security in an amount not exceeding the aggregate of the costs of abandonment of the undertaking, restoration of the site and any ongoing measures that may remain to be taken after the abandonment of the undertaking. The Board's authority extends to federal and non-federal lands[3].

When deciding how much security is required, the Board adheres to Aboriginal Affairs and Northern Development Canada's (AANDC) *Mine Site Reclamation Policy for the Northwest Territories*, 2002 (the AANDC Reclamation Policy) in its entirety.

The main parts of this document are:

Part 1: Board Process for Setting Security

[1] The MVLWB is comprised of regional panels for each of the Mackenzie Valley's aboriginal land claim areas and ad-hoc panels for the land claim areas without finalized modern claims agreements. The regional panels are the Wek'èezhìi Land and Water Board, the Sahtu Land and Water Board, and the Gwich'in land and Water Board.

[2] Mining projects that require a Type A licence also require a land use permit; however, it is the requirement for a Type A water licence that determines whether these Guidelines apply. These Guidelines do not necessarily apply to mineral exploration projects that trigger the requirement for a land use permit and/or Type B water licence only.

[3] See MVRMA subsections 60(1.1), 71, 72.11 and *Waters Act* subsection 35(1).

Part 2: Requirements for Closure Cost Estimates

There is also an Appendix ("Board Expectations for RECLAIM Submissions") followed by a glossary of terms and definitions.

The Board is continually improving its practices related to setting security and reviewing closure cost estimates. This document may be updated periodically to reflect improvements made in the Board's practices or changes in policy. Proponents or other parties involved in setting security may contact Board staff to discuss any issues that may not be covered in this document.

Part 1: Board Process for Setting Security

The Board's process for setting security varies depending on whether it occurs during a licensing proceeding or later during the term of a licence. This section presents an overview of each of these processes. The Board's expectations for the closure cost estimate submitted by the proponent, as described in Part 2 of this document, are the same for both processes.

Process for Setting Security During Licensing

The Board first sets a project's security during the licensing and permitting process, which is a formal proceeding involving a public hearing[4] and is conducted in accordance with the MVLWB's Rules of Procedure (January 14, 2004). An example of a typical licensing proceeding and how setting security fits into it is depicted in Figure 1.

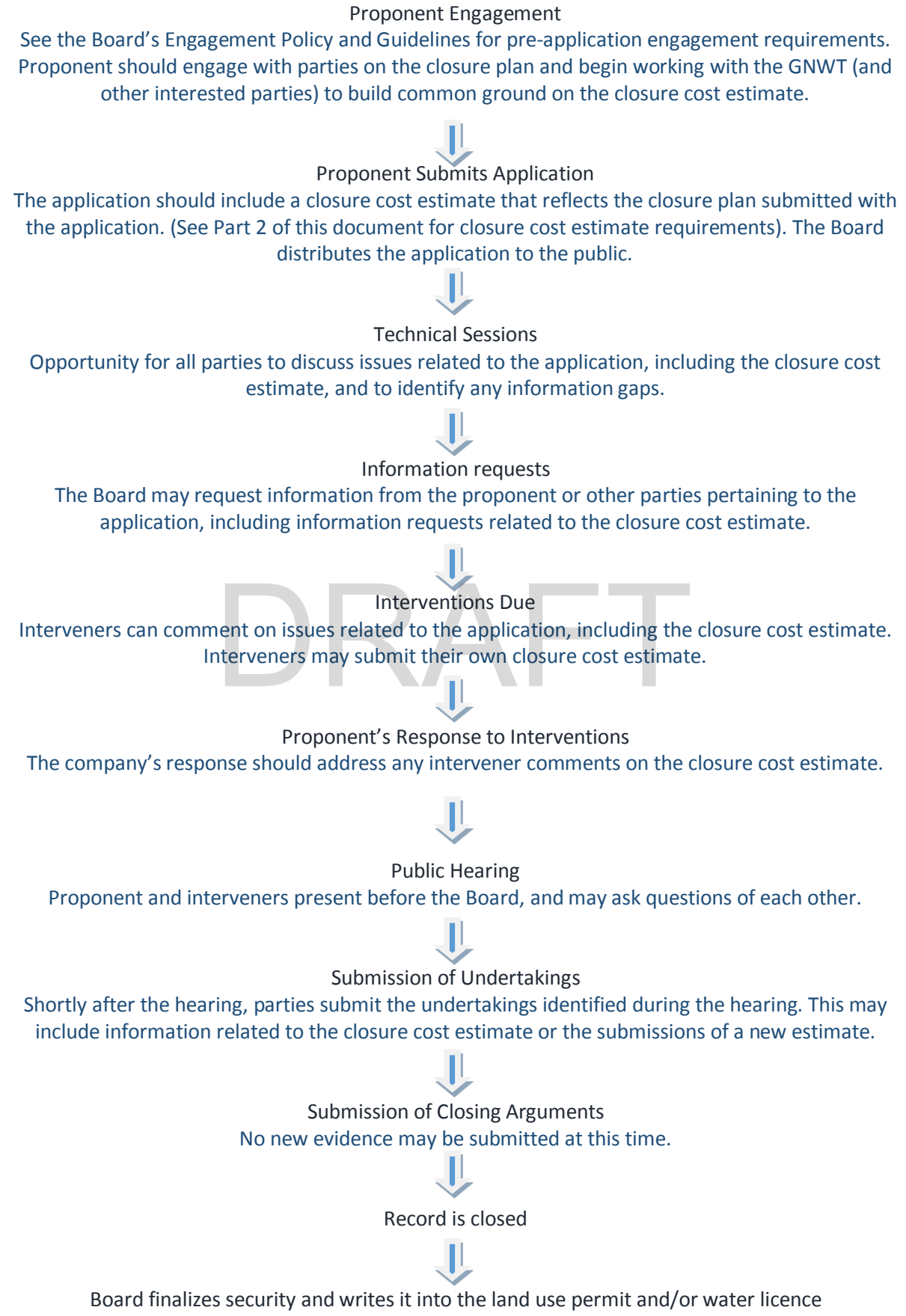
The Role of the GNWT

As the authority (on non-federal lands) responsible for approving Type A water licences lands, setting the form of security, holding security, and ultimately for paying for the closure and reclamation of abandoned mine sites, the GNWT plays a central role in estimating closure costs. The GNWT is responsible for keeping the RECLAIM model current by periodically releasing updates that account for inflation and improvements to the unit costs, and reflect best practices in closure cost estimation. The GNWT also provides expert advice and closure cost estimate submissions during the Board's processes for setting security.

The Board will review the closure cost estimate periodically during the term of the licence (as discussed below) and during the proceeding for a licence renewal. The security review process during licence renewal is the same as the process for initial licensing (as depicted in Figure 1). Proponents may be required to submit a new closure cost estimate with the renewal application, depending on a number of factors. For example, the Board will likely require a new closure cost estimate if the renewal application includes a revised closure and reclamation plan (closure plan), if a new version of RECLAIM was recently released by the GNWT, or to reflect the status of progressive reclamation. Proponents should contact Board staff prior to submitting the renewal application to discuss the need for an updated closure cost estimate.

[4] A public hearing is mandatory for issuing Type A water licences. Although a hearing is not required for a land use permit, it is Board practice to integrate the land use permitting and water licensing processes together for Type A mining licences and hold a public hearing addressing both authorizations. Regardless of whether the Board holds a public hearing, the Board's review and decision-making process is inclusive, fair, and transparent, with opportunity for public input.

Figure 1. Example Licensing Process as it Relates to Security



Process for Updating Security During the Term of the Licence

During the term of a water licence, the Board will ensure that the amount of security continues to reflect the estimated closure costs. The Board may therefore periodically reduce or increase security during the term of a licence to reflect changes to the closure plan, completion of progressive reclamation, improvements in Board practices for setting security, inflation, licence amendments, updates to the RECLAIM model, or other factors.

Like the process for setting security during licensing, the security review process during the term of the licence allows for public input and is inclusive, fair, and transparent. However, the process during the term of the licence does not follow the formal structure described in Figure 1, since a public hearing is typically not involved[5]. Typically, the Board will conduct a public review process for a security adjustment, make a final determination on the closure cost estimate, and issue reasons for decision explaining the basis for the adjustment.

The timing of security re-evaluations is directly linked to the closure planning process. Within approximately 12 months of water licence issuance, proponents must submit their first Interim Closure and Reclamation Plan (ICRP), and approximately every three to five years during operations. Proponents also submit an annual ICRP Progress Report, as described in the Board's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2013)*. Proponents may request security adjustments (e.g., within their annual ICRP Progress Report, as discussed below). The GNWT or any other party can also request a security review by writing to the Board and providing a detailed description of the proposed change, a rationale for the change, and supporting documentation. The Board may also conduct a security review on its own initiative[6].

The Board relies primarily on the information reported in the ICRP Progress Reports to determine when a security update will occur. The Progress Reports include, among other things, "a list of any factors that would influence an increasse or decrease in the total reclamation liability next time an updated estimate is required"[7]. Within the Progress Report, proponents can also propose changes to the approved ICRP, (e.g., changes to selected closure activities, monitoring programs, etc.). If approved, these ICRP revisions may trigger a security re-evaluation. Proponents also report on any progressive reclamation completed during the year. Completion of significant progressive reclamation can trigger a re-evaluation of security.

Ultimately, the Board determines the timing of security updates on a case-by-case basis, in consideration of the information in the Progress Reports, and other relevant factors such as:

- Licence conditions. Some licences have conditions that address the timing of security updates;
- The amount of time that has passed since the previous security evaluation. Re-evaluations that are too frequent may place an unnecessary burden on the resources of the Board, the company, and reviewers, while infrequent re-evaluations can result in security that is out of date;

[5] The Board has the option to hold a public hearing, even if it is not required by the legislation (Sections 24 and 72.15 of the MVRMA).
[6] Type A water licences for mining projects typically include a condition that allows the Board to adjust security at the Board's initiative.
[7] *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories,* Page 25.

- Whether there is likely to be a significant change (increase or decrease) in the closure cost estimate;
- Whether there has been an update to the RECLAIM model since the Board last set security for the project; and
- Whether there is an upcoming licence renewal.

Setting security

Once the Board has determined the final closure cost estimate, the Board will set the security deposit(s) under the water licence and land use permit. The Board will use its discretion to determine how to allocate security between these authorizations.

If a security re-evaluation results in a change to the closure cost estimate, the Board will decide whether the change is large enough to warrant adjusting the security deposit required under the water licence. This decision may rely on a variety of factors (including those described above), such as: administrative burden, margin of error, expected date of future security re-evaluations, inflation, updates to the RECLAIM model, precision of dollar amounts in relevant RECLAIM line items, and whether the reduction is due to the completion of progressive reclamation versus a change to the closure plan.

The Board may choose to reduce security in a land use permit or water licence by an amount held under another regulatory authorization for the same project, to prevent duplication. For example, if the GNWT holds security under a land lease, a proponent may request that security in the land use permit be reduced accordingly. To grant such a request, the Board requires agreement from the GNWT (or other authority, depending on the authorization), and documentation that the amount held under the land lease (or other authorization) is specific to closure and reclamation and is for costs required to implement aspects of the approved closure plan. The GNWT (or other authority) should identify each of the costs in the Board's RECLAIM estimate that is associated with security held under the land lease (or other authorization). The Board cannot reduce security for costs outside the Board's jurisdiction (for example, costs to operate a watchdog organization required under an environmental agreement).

Part 2: Requirements for Closure Cost Estimates

This section of the Guidelines describes the Board's expectations for closure cost estimates submitted by proponents or other parties. The expectations are the same whether the submission is made during a licensing proceeding or during the term of a licence.

The closure cost estimate for a particular mine is directly linked to the company's closure plan. Closure plans are a requirement of all water licences for mining projects, and must comply with the *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2013).* The amount of security reflects the cost required to implement the closure plan, including direct and indirect costs that would be incurred from the time the site is abandoned, through the active and passive closure stages, until the Government is satisfied that closure has been

completed (i.e., standards and criteria have been met) and therefore accepts the return of the property.

The Board strongly encourages proponents that are preparing a closure cost estimate to collaborate closely with the GNWT (for projects on non-federal lands) or AANDC (for projects on federal lands). This collaboration should occur prior to and during the Board's security review process, with the goal of building consensus and enabling the licensee and the appropriate authority (GNWT or AANDC) to provide a thorough rationale to explain any differences in their cost estimates. In some cases, other parties (e.g., an aboriginal landowner) may wish to review the closure cost estimate, and proponents should also work with these parties. The Board will review the evidence submitted by the proponent, the GNWT (or other landowner), and any other parties, and will make the final decision on the amount of security following its public review process.

Proponents (or other parties submitting an estimate) should also submit a memo that describes the basis for the estimate and all underlying assumptions. Within the memo, the proponent (or other party) should identify any known disagreements amongst parties and a rationale for their position on each issue. When the cost estimate is an update submitted during the term of the licence, the memo should also include an explanation for each proposed change.

The central guiding principle for estimating closure costs is provided in the AANDC Reclamation Policy:

> *"The total financial security for final reclamation required at any time during the life of the mine should be equal to the total outstanding reclamation liability for land and water combined."*

This and all other principles in the AANDC Reclamation Policy that are related to security must be embodied in closure cost estimates submitted to the Board. To help proponents and other parties achieve this, the Board's expectations for closure cost estimates are outlined below. More detailed information for estimating closure costs is in Appendix 1.

1. **RECLAIM** Closure cost estimates must be in the RECLAIM model unless permission is received in advance from the Board[8]. Requests to use a different model should be accompanied by a description of how the proposed model works, how the model incorporates key features of RECLAIM (e.g., use of third party contracting costs for remote northern locations) and a rationale for use of the model.

   In order to develop a defensible closure cost estimate in RECLAIM, users should have sufficient expertise in mine closure and related fields, and in the costing of large engineering projects. RECLAIM users should follow the instructions within the model. Additional guidance to help users understand the Board's expectations regarding RECLAIM submissions is in Appendix 1 of this document. The appendix expands on topics such as unit costs, mobilization, monitoring, determining the appropriate contingency percentage and more. For technical questions on the use of RECLAIM, contact the GNWT.

[8] Mine Site Reclamation Policy for the Northwest Territories, AANDC 2002, page 6; and *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories,* Page 27.

When submitting a RECLAIM estimate, users must submit the EXCEL version of the estimate, which the Board will post to the public registry.

2. **Third Party Contractor Costs** – Closure cost estimates should be based on the cost of having the "necessary reclamation work done by a third party contractor if the operator defaults."[9] In other words, costs cannot be based on a mining company's operating costs (for example, to move construction materials around the site), which will inherently be lower than the cost of a third party contractor. Appendix 1 includes more information on unit costs in RECLAIM.

3. **Progressive Reclamation** – Closure cost estimates cannot be reduced by the costs of progressive reclamation work that is not yet completed. The Board will only reduce security for progressive reclamation work after the work has been completed and it is demonstrated that it meets the approved closure standard.

4. **Phased Security Payments** -The Board may require a licensee to post the full amount of security prior to the commencement of construction, or include a series of phased payments in the licence[10]. A company can propose a phased payment approach that allows security to increase as mine development progresses and liability increases. The timing and amount of each installment must ensure that security is never less than the estimated cost of closure at any time. Proponents that propose to phase security should submit one RECLAIM estimate for each installment.

5. **Additional Costs -** There are a number of costs that are not currently in the RECLAIM model but should be added to all closure cost estimates as line items in RECLAIM. These costs are for:

    a. Engagement - The Board's Engagement Policy and Guidelines require all holders of water licences and land use permits to engage with affected parties. Therefore, engagement costs during the closure planning, active closure, and post-closure phases should be included in the estimate;

    b. Regulatory compliance costs, including transfer or renewal of authorizations, preparing required submissions, reporting, etc.;

    c. Finalizing the closure plan, including completion of any outstanding reclamation research that would be required to finalize the closure plan; and,

    d. An initial site assessment.

6. **Uncertainty** – Closure cost estimates are based on a number of factors and assumptions with varying levels of uncertainty and inaccuracy. In particular, uncertainty is high during the licensing proceeding for a new mine, when the closure plan may be conceptual and not yet approved by the Board. Following licensing and approval of the first interim closure and reclamation plan, the level of uncertainty may be reduced. During the life of the mine, reclamation research, operational experience, data from environmental monitoring programs, and engagement with affected parties may further reduce uncertainty; however substantial uncertainty will likely remain right

[9] Mine Site Reclamation Policy for the Northwest Territories, 2002, page 6

[10] The practice of including phased installments in the licence is consistent with the Mine Site Reclamation Policy for the Northwest Territories (AANDC, 2002), which states that "The amount of financial security on deposit will normally increase proportionately as mining proceeds. Generally, this implies that as the mine site grows, water usage increases and the cost to restore a site expands. Accordingly, reclamation costs are usually estimated to rise over the life of the mine." (page 10)

up until closure. For the most part, the contingency percentage addresses this uncertainty, and this percentage may decrease as the project progresses (as discussed further in Appendix 1).

In some circumstances, however, additional costs may be required to address an unusually high level of uncertainty, for example prior to approval of the first ICRP or when a component of the approved closure plan is based on an unproven technology. To address this type of uncertainty, the closure cost estimate may be increased by adding the cost of an alternate closure activity. For example, in the face of unusually high uncertainty during the initial licensing phase, the Board could include the cost of a more expensive option than what is stated in the proponent's conceptual closure plan, such as a synthetic liner rather than a natural liner. During initial licensing, these alternate closure activities may not be included in the proponent's (unapproved) conceptual closure plan. However, the interim closure and reclamation plan submitted following licence issuance should identify any alternate activities included in the Board's final closure cost estimate. See Appendix 1 for more information on estimating contingency costs.

7. **Inflation** - In general, the GNWT's regular updates to the RECLAIM model ensure that inflation is reflected in the closure cost estimates; however the Board may, at its discretion, also adjust security to account for inflation between RECLAIM updates.

8. **Net Present Value** - The Board may consider the use of the net present value (NPV) approach when estimating closure costs in certain circumstances, such as when post-closure costs extend into the distant future (for example, more than a 100 years). The RECLAIM model is equipped with the calculations necessary for using the NPV approach. The GNWT may have specific requirements for the form of security based on net present value calculations (e.g., cash). Net present value calculations are very sensitive to the rate and period of return and the Board currently does not have guidelines for determining these factors. Proponents proposing to apply the NPV calculations should discuss with the GNWT and provide a robust rationale for the discount rate and for the start date and length of the return period when providing their recommendations to the Board.

Conclusion

These Guidelines focus on the Board's processes and practices for setting security under water licences and land use permits. The Board recognizes that there are a number of issues related to security that have not been addressed in this Guidelines. For example, the relinquishment of security and the establishment of closure criteria are important issues that are not discussed here. Although some of these issues are discussed in the *Guidelines for the Closure and Reclamation of Advanced mineral Exploration and Mine Sites in the Northwest Territories*, they may not be discussed in great detail. The Board aims to work with the GNWT and other organizations on these and other related issues. The Board welcomes input on these Guidelines and other security-related issues at any time; suggestions can be sent to Board staff.

APPENDIX 1
BOARD EXPECTATIONS for RECLAIM SUBMISSIONS

The RECLAIM model is the Board's preferred closure cost estimation model. The model, which is in Microsoft EXCEL, is a simple one: almost all costs are estimated by multiplying a unit cost (e.g., $1.00 per liter of fuel) by an assumed quantity (e.g., 100,000 liters of fuel) to calculate the cost for a particular activity (e.g., $100,000 for purchase of fuel).

Each mine component, including waste rock piles, open pits, tailings facility, etc., has its own sheet within the model to estimate the direct closure and reclamation costs for that component. Each cost (or "line item") is divided into land-related and water-related costs using an estimated ratio. The direct costs are subtotalled and a number of indirect costs, namely monitoring, mobilization, project management, engineering, health and safety, and contingency costs are added. Many of the indirect costs are added as percentages of the subtotal of direct costs, while others are added as line items. The total closure and reclamation cost is the sum of the direct and indirect costs, and is divided into land-related and water-related costs.

To assist users with the model, additional information is provided below. This information does not address the technical or engineering aspects of using RECLAIM - users should have sufficient expertise in mine closure and related fields and in the costing of large engineering projects. The information provided below primarily addresses Board practices and principles regarding what should be included in the estimate. Technical questions related to RECLAIM should be directed to the GNWT.

Direct Costs for Closure and Reclamation of Mine components

Closure costs for open pits, underground mines, tailings, rock piles, chemicals, buildings and equipment, water management and treatment, and other post-closure costs are in the RECLAIM sheets of the same names. Inputs to the model should correspond with the activities identified in the closure plan. The subtotal of all direct costs is used to calculate a number of indirect costs (see below).

Indirect Costs: Monitoring

Monitoring costs in RECLAIM are estimated in the "Monitoring" sheet, and should reflect the monitoring identified in the closure plan. Common monitoring programs in closure estimates are the Surveillance Network Program, Aquatic Effects Monitoring Program (AEMP), groundwater, performance monitoring, geotechnical/stability, vegetation, and seepage programs. This includes the costs to conduct, analyze and report on the monitoring programs. Other monitoring programs may be included to reflect the approved closure objectives for a particular project. Early in the closure planning process, post-closure monitoring programs may be loosely defined with little detail. Later in the process, the level of detail should be higher, and as a result, the RECLAIM costs for monitoring may increase or decrease.

Indirect Costs: Mobilization/Demobilization

All costs are estimated based on the assumption that a site has been abandoned after the owner becomes insolvent. For the above indirect costs the assumption is made that the equipment and infrastructure has deteriorated to an advanced state of disrepair and has no material value (as has been the case for many abandoned sites in the north). It is assumed that a contractor would have to mobilize all equipment and infrastructure to the site in order to carry out the reclamation work.

Mobilization of personnel, equipment, and fuel (including the costs of the fuel and of transporting the fuel) is assumed to be necessary for every site. Depending upon the assumed scope of the reclamation work, additional mobilization effort could be required, such as reagents for water treatment, power plant for electricity, or camp facilities for workers. In the case of remote sites, mobilization of workers at the beginning/end of each work rotation is included. Costs for mobilization and demobilization are in the "Mobilization" sheet of RECLAIM.

Indirect Costs: Interim Care and Maintenance[11]

Based on experience at abandoned sites in the NWT, it is assumed that a period of time (for example 3 years) is required to transfer ownership of the site, retain a water licence for closure, mobilize equipment to the site, and conduct procurement activities to retain reclamation contractors. The anticipated costs incurred during this period of interim care and maintenance (ICM) are estimated in the "ICM" sheet of RECLAIM and include costs for personnel, camp, equipment and supplies, monitoring, and any other activities that would be required during ICM.

Indirect Costs: Project Management

Project management in RECLAIM is estimated as a percentage of the direct costs. It covers general project coordination, accounting and project control, engineering for QA/QC, change orders and as-built reports. Project management is normally assumed to be 5% of direct project costs. It is unlikely to be less than this; however, it could be higher on complicated reclamation projects.

Indirect Costs: Engineering

Engineering costs are also estimated as a percentage of direct costs and include preparation of issued for construction (IFC) drawings and specifications for the reclamation work. Engineering is normally assumed to be 5% of direct project costs, based on the assumption that there is an approved closure plan and a site condition which is substantially as expected at the time of mine closure. Any significant departures from the expected mine development will necessitate a site assessment and preparation of a new closure plan (to be submitted for approval) before IFC's can be prepared. In such a case the 5% provision would be inadequate.

Indirect Costs: Contingency[12]

RECLAIM estimates include an allowance for contingency costs to cover both the uncertainty in the costing estimate (i.e., unit costs and RECLAIM inputs) and the possibility that some aspects of the closure activities may be more difficult to perform (i.e., work efficiencies, additional man-hours, fleet limitations/shortfalls, etc.). The determination of the contingency percentage is a subjective and project-specific task that relies heavily on the judgement of the estimator. Table 1 provides some guidance.

[11] The ICM tab is new to RECLAIM 7.0. Previous versions of RECLAIM included these costs in other existing sheets (e.g., the "Mobilization" sheet).

[12] The Mine Site Reclamation Policy for the Northwest Territories (AANDC 2002) states that "The estimates should also include contingency factors appropriate to the particular work to be undertaken." (page 6)

Estimate Type	Description	Contingency
Detailed or Project Control	Based on detailed engineering "take-off's" and written quotes	5%
Definitive or construction drawing phase	Engineering mostly complete, some written quotes	10%
Preliminary or budget level	Little detailed engineering and costs are based on verbal quotes	15%
Feasibility or advanced conceptual	Engineering may be 10% completed and costs are based on typical unit costs	20%
Pre-feasibility, conceptual or trade-off study	Very basic engineering only and costs based upon typical unit costs	25%

Table 1. Guidelines for Estimating Contingency Percentage

Most mine closure plans and associated closure cost estimates are at the "feasibility or advanced conceptual" level until the final year of mine operation, at the earliest. This is due to lack of detailed engineering and uncertainty in the quantities of work. Generally, the effort to complete the reclamation work and the performance of the closed site is understood at a general level only, until IFC's are prepared.

The contingency percentage in RECLAIM does not cover worst case scenarios; the Board typically does not include any allowance in the closure cost estimate for worst case scenarios. Also, the contingency percentage, as determined using Table 1 above, does not include substantive changes to the closure activities described in the closure plan. In most cases, the Board does not include such costs; however, in situations where the uncertainty is unusually high, the Board may include the cost of a reasonable alternate closure activity. For more information, see the discussion above regarding uncertainty in Part 2 of the Guidelines.

In general, the Board also does not include costs to cover the possibility that a project configuration may change. A change to project configuration would, at a minimum, involve submission of a revised closure plan for approval, or possibly an application to amend the licence. In either case, the Board would re-assess security following those events.

Indirect Costs: Health and Safety and Bonding/Insurance.

These indirect costs are also estimated as percentages of direct costs. The inclusion of costs for workers health and safety as well as insurance for work related injury are common in government contracting processes and as such are subject to reclamation of industrial mine sites. The percentages used in the RECLAIM model are dependent on the direct cost subtotal. These percentages are not fixed and are intended to reflect the scale of the project and the potential risk to workers. Sites that poses a higher risk to health and safety would increase the associated percentages due to potential risks (i.e., toxic fumes, toxic chemicals/tailings, unstable workings, etc.).

Unit Costs

The unit costs in RECLAIM are independent third party costs that have been obtained from a review of northern reclamation projects conducted by third party contractors. Unit costs are undocumented to protect pricing/bidding. Unless specifically noted, all unit costs are inclusive of equipment, labour, maintenance, fuel, consumables, field supervisor costs, and contractor profit.

RECLAIM includes an "Estimator" worksheet. This estimator can be used to check the cost of critical or significant reclamation activities from first principles, versus the costs in the unit cost table. The estimator is based upon the costing methodology as presented in the Caterpillar Performance Handbook (http://www.cashmanequipment.com/blog/tag/caterpillar-performance-handbook-42/). Ideal productivity and adjustment factors are included. It is still necessary to separately obtain the hourly cost of operation for select equipment in order to develop unit costs with this method.

Proponents wishing to develop a unit cost that is not in RECLAIM should provide:

a. An explanation of why the unit cost in RECLAIM does not apply, and

b. A re-estimate of the unit cost, with all supporting calculations and documentation.

When both of these requirements are met, the Board will consider whether the alternative unit cost is appropriate.

Glossary of Terms and Definitions

(Definitions are copied verbatim from the Board's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2013)*, except where changes are necessary to reflect Devolution.)

TERM	DEFINITION
AANDC	Aboriginal Affairs and Northern Development Canada
advanced mineral exploration	any appurtenant undertaking in which the proponent requires a type A or type B water licence in order to carry out the proposed activities
MVRMA	*Mackenzie Valley Resource Management Act*
closure criteria	standards that measure the success of selected closure activities in meeting closure objectives. Closure criteria may have a temporal component (e.g., a standard may need to be met for a pre-defined number of years). Closure criteria can be site-specific or adopted from territorial/federal or other standards and can be narrative statements or numerical values.
CRP	closure and reclamation plan
engagement	the communication and outreach activities a proponent is required, by the Boards, to undertake with affected communities and Aboriginal organizations/governments prior to and during the operation of a project, including closure and reclamation phases
GNWT	Government of the Northwest Territories
land use permit	a land use permit required for an activity set out in sections 4 and 5 of the Mackenzie Valley Land Use Regulations, for an activity set out in the Territorial Land Use Regulations, or for a land use permit (type C) required by Tłı̨chǫ law for use in Tłı̨chǫ lands for which a type A or type B land use permit is not required
MVLWB	Mackenzie Valley Land and Water Board
MVRMA	*Mackenzie Valley Resource Management Act*
progressive reclamation	selected closure activities that can be taken at advanced mineral exploration and mine sites before permanent closure. Progressive reclamation takes advantage of cost and operating efficiencies by using the resources available from an operation to reduce the overall reclamation costs incurred. It enhances environmental protection and shortens the timeframe for achieving the closure objectives.
proponent	applicant for, or a holder of, a water licence and/or land use permit
reclamation	the process of returning a disturbed site to its natural state or which prepares it for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety
reclamation research	literature reviews, laboratory or pilot-scale tests, engineering studies, and other methods of resolving uncertainties. Proponents conduct reclamation research to answer questions pertaining to environmental risks; the design of reclamation research plans aims to provide data and information which will reduce uncertainties for closure options, selected closure activities, and/or closure criteria.
security deposit	funds held by the government or land owner that can be used in the case of abandonment of an undertaking to reclaim the site or carry

TERM	DEFINITION
	out any ongoing measures that may remain to be taken after the abandonment of the undertaking
tailings	material rejected from a mill after the recoverable valuable minerals have been extracted
type A water licence	a water licence required as per Column IV of Schedules D to H of the Waters Regulations (non-federal lands)
type B water licence	a water licence required as per Column III of Schedules D to H of the Waters Regulations (non-federal lands)
waste rock	all unprocessed rock materials that a mining operation produces