

2018 ANNUAL REPORT





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Glossary

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|----------------------|--|---------------------|--|
| Agreement | Giant Mine Remediation Project Environmental Agreement | MVEIRB | Mackenzie Valley Environmental Impact Review Board |
| CIRNAC | Crown-Indigenous Relations and Northern Affairs Canada | MVLWB | Mackenzie Valley Land and Water Board |
| Co-Proponents | Federal Government, represented by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and the Government of the Northwest Territories, represented by the Department of Environment and Natural Resources (ENR) | NSMA | North Slave Métis Alliance |
| ENR | Environment and Natural Resources, GNWT | NWT | Northwest Territories |
| GMOB | Giant Mine Oversight Board | Parties | Yellowknives Dene First Nation, North Slave Métis Alliance, Alternatives North, City of Yellowknife, Government of the Northwest Territories, Government of Canada |
| GNWT | Government of the Northwest Territories | Project | Giant Mine Remediation Project |
| HHERA | Human Health and Ecological Risk Assessment | Project Team | Government of the Northwest Territories, Crown-Indigenous Relations and Northern Affairs Canada, Public Works and Government Services Canada, and other federal government departments |
| INAC | Indigenous and Northern Affairs Canada (Government of Canada) | QRA | Quantitative Risk Assessment |
| IPRP | Independent Peer Review Panel | YKDFN | Yellowknives Dene First Nation |
| MCM | Main Construction Manager | YkHEMP | Yellowknife Health Effects Monitoring Program |

Message from the Chair

The Giant Mine Oversight Board (GMOB) was established as a condition of the 2015 *Giant Mine Remediation Project Environmental Agreement*. This is our third annual report, published as part of our oversight role.

We continued to build relationships with the six parties to the environmental agreement and with the public throughout 2018. GMOB is now firmly established as an independent organization with clear oversight, research, and public communications mandates. In 2019, we will continue to fulfill our responsibilities, with particular emphasis on the Giant Mine Remediation Project (the Project) water licensing, socio-economic challenges and opportunities, and our research mandate.

In this report we:

- Evaluate the progress made in 2018 to meet the objectives, challenges and opportunities of the Project.
- State our observations, recommendations, and suggestions on how the Project can benefit local residents.
- Direct our recommendations to three groups: senior government decision makers, the remediation team, and parties to the environmental agreement.
- Update you on responses to the concerns we heard from the public during 2017.
- Summarize the progress we've made on research to identifying a permanent solution for the arsenic trioxide dust stored underground at the Giant Mine site.

GMOB views the Project as one that offers significant and important opportunities to local residents. While the Project's main priority is to remove the risks to the environment and people due to contamination at the mine site, we believe that this massive project should

also have broad and lasting socio-economic benefits that improve community well-being.

An inclusive approach to remediation can also directly contribute to reconciliation with local Indigenous peoples. The federal government has a stated focus and commitment to reconciliation; however, we feel that the theme of reconciliation is not yet firmly embedded in the Project. We note that preliminary discussions are underway between the Yellowknife Crown-Indigenous Relations and Northern Affairs Canada office and the Yellowknives Dene First Nation. In our opinion, more work is needed to integrate reconciliation into all aspects of the Project.

The public expects the federal and territorial governments to meet the highest regulatory standards. We are concerned it is not doing that when it argues that it does not need an interim water licence for ongoing water discharges to Baker Creek, nor a quarry permit for planned surface remediation. GMOB is troubled that these government positions are different than what it would expect of private enterprise.

I thank the GMOB directors and staff, the Project Team, and the parties to the environmental agreement for their continued hard work and commitment. In particular, I acknowledge the Project Team's efforts to decrease the environmental risks associated with the Giant Mine.

Please continue to share your ideas and views about the Project. Come to our public meetings, visit our website, or stop by our office.

Dr. Kathy Racher,
Chair, Giant Mine Oversight Board

Introduction

The 2015 *Giant Mine Remediation Project Environmental Agreement* (Agreement) established the Giant Mine Oversight Board (GMOB). GMOB is an independent body governed by a six-member Board of Directors. Each Party to the Agreement appoints a board member. The Parties are:

- Government of Canada, represented by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)
- Government of the Northwest Territories (GNWT), represented by Environment and Natural Resources (ENR)
- Yellowknives Dene First Nation (YKDFN)
- North Slave Métis Alliance (NSMA)
- Alternatives North
- City of Yellowknife

Once appointed, our directors work together to protect the interests of the public.

CIRNAC and GNWT are the co-proponents, working together as the Giant Mine Remediation Project Team (Project Team).

This third annual report is part of GMOB's oversight work as outlined in the Agreement. Previous reports included a description of the context within which GMOB operates, as set out in the Agreement. This context is briefly summarized here.

GMOB'S MANDATE IS TO:

- Monitor and report on the Giant Mine Remediation Project (the Project).
- Review, report, and/or make recommendations on Project Team programs, research, annual reports, etc.
- Communicate with the public and Parties to the Agreement.
- Research and administer funding for designated research with the goal of finding a permanent solution to the arsenic trioxide stored underground at the site.
- Report on its activities in public meetings and reports, including annual reports.

GMOB'S VISION IS:

that the remediation of the Giant Mine site, including the sub-surface, be carried out in a manner that is environmentally sound, socially responsible, and culturally appropriate.

GMOB'S MISSION IS TO:

independently monitor, promote, advise, and broadly advocate for the responsible management of the remediation of the Giant Mine site, and manage a research program to seek a permanent solution to the arsenic trioxide stored underground at the mine.

A more detailed description of our vision, mission, and mandate as well as the Board's Operating Principles can be found on our website at www.gmob.ca/about/#mandate

What We Heard

GMOB heard a wide variety of issues and concerns during meetings with the Parties to the Agreement and the public over the past few years. It's important to document and communicate these observations since they reflect public understanding and concerns about the remediation Project.

Appendix 1 summarizes the issues raised in 2017 and the status of efforts to resolve those issues. In 2018 GMOB heard many of the same concerns as in the previous year, as well as new concerns. Here is a summary of what we heard in 2018.

1. Remediation Planning

- Lack of a formal traditional knowledge strategy for the Project.
- Will the Archaeological Impact Assessment look at impacts of work on Baker Creek?
- Concern about underground disposal of contaminated materials and underground water levels.
- Lack of progress on long-term funding to monitor site after remediation.

2. Communications

- Lack of communication by the Project Team about the main construction manager's plan for hiring northern and Indigenous workers.
- Lack of translation of education materials into Indigenous languages.
- Lack of information about emergency plans at the Giant Mine site and arsenic contamination offsite.

3. Socio-Economic Planning

- Lack of local information in the Project's most recent Labour Resource Study.
- Failure of the Socio-economic Study to identify barriers to training, not just training itself, as employment obstacle for work on Project.

4. Community

- Training, safety, job security, and other concerns about the working environment at mine site.
- Impacts of remediation on light pollution, on the sailing club dock, and the Yellowknife Historical Society's museum.
- Arsenic hot spots in Ndilq.

5. Parties to the Environmental Agreement

- Negotiation of contribution agreements for the Parties.
- Capacity of the Parties to participate in reviews and hearings for the mine's water licence.

Observations and Recommendations

During 2018 the Project Team had two primary goals: undertake site maintenance and remediation activities and prepare for the water licensing process, expected to begin in early 2019. GMOB looked at the Project Team's success in reaching those goals. We also considered whether the Project Team, the Parties, and the public are ready for what will be the main focus of 2019 – the water licensing process and the implementation of socio-economic plans and programs that can help residents capture the potential opportunities from the Project.

Our observations and recommendations are informed by our:

- Meetings and discussions with the Project Team and Parties to the Agreement.
- Review of materials provided by the Project Team.
- Analysis of materials presented at committee and public meetings.
- Understanding of concerns raised by the public.

All of our observations and recommendations are influenced by the need for a more integrated, or holistic, approach to the Project. The Project is complex and massive. It has many moving pieces, evolving considerations, and different (sometimes conflicting) objectives. One of the biggest challenges is to bring together the different perspectives and goals of the various groups and individuals involved in, or affected by, the Project.

Different groups and individuals look at the Project through their own lenses. For example, the engineering team may view the Project primarily through an engineering lens, but it should also be concerned about socio-economic or cultural aspects. Similarly, financial analysts look at the Project through a financial lens but may need to be concerned about engineering details to be effective.

GMOB tries to look at the Project through all these lenses. We are concerned that all the pieces of this puzzle, all the parts of the Project, all the various views, perspectives and goals, are not being understood or appreciated by all those involved, including the Project Team. We continue

to raise this issue with the Project Team, the Parties and the public, hoping that better integration can be achieved. Figure 1 shows the different lenses of the Project that we seek to bring together.

Another overall concern for GMOB has to do with reconciliation, which is at the foundation of the federal government's stated relationship with the Indigenous people of Canada.

GMOB is concerned that the Project co-proponents have not fully embraced and integrated the concept of reconciliation within Project operations and planning. This is highlighted by the lack of results from repeated requests for an apology and compensation for harm done to local Indigenous peoples through past Giant Mine operations. It is also shown by the relative ineffectiveness of the overall socio-economic strategy accompanying the Project. We understand that preliminary discussions are underway, and that some work to analyse past actions at the mine has begun. GMOB encourages the parties to move more quickly to resolve grievances of affected Indigenous peoples.

As in GMOB's 2017 annual report, GMOB's 2018 recommendations fall under the following three key themes:

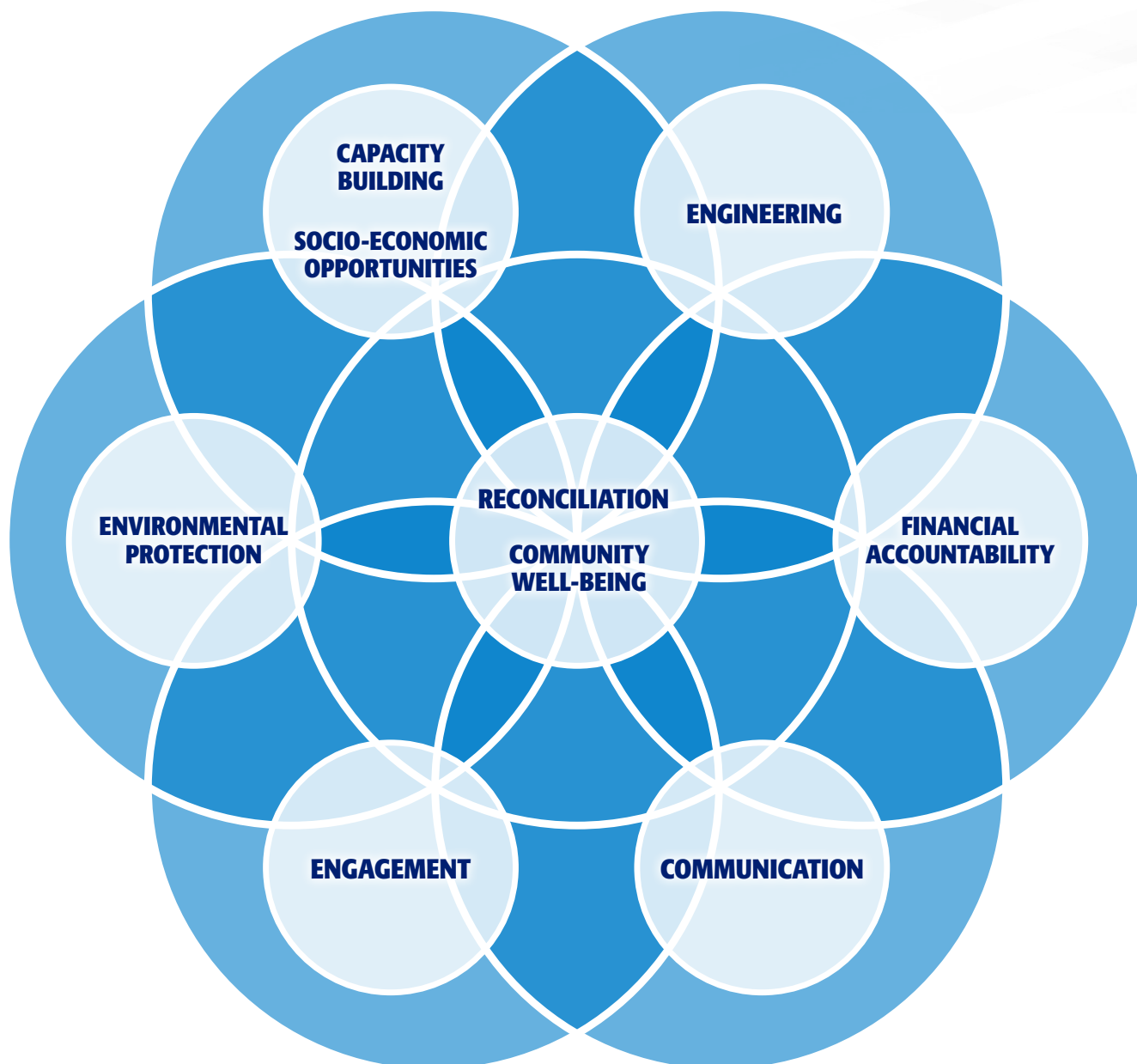
- Project impacts on community opportunities and wellness.
- Project management and planning.
- Environment and health.

In past annual reports GMOB has largely directed its recommendations to the Project Team. However, in some cases, we recognize that the Project Team may not have the authority to act on some recommendations. To avoid misunderstandings, this year we direct each recommendation to a specific group.

- Recommendations to senior government decision makers relate mostly to policy and strategic matters.
- Recommendations to the Project Team relate mostly to on-site remediation management and operations.
- Recommendations to the Parties are relevant to each Party's mandate.

A Broad and Integrated Approach

FIGURE 1



Update on 2017 Recommendations

In our 2017 Annual Report, we made 12 recommendations. Appendix 2 of this report lists the 2017 GMOB recommendations and the Project Team responses to those recommendations. We have tracked the progress on those issues and many of our 2018 recommendations describe what follow up actions we believe are still needed.

Recommendation 2017-9 asked the Mackenzie Valley Land and Water Board to: “review the current absence of a valid water licence at the Giant Mine site to determine if the Project Team should obtain a short-term, focused water licence as an interim measure, until a broader remediation water licence is issued.”

GMOB made this recommendation based on our observation that the Project Team has done care, maintenance and some remediation work at the Giant Mine site since 2005 without a water licence - something that normally is required of the private sector. In 2018, CIRNAC and the Mackenzie Valley Land and Water Board did indeed review the need for an interim water licence. Both CIRNAC and the Board decided that under the

Mackenzie Valley Resource Management Act, CIRNAC could not be forced to get a temporary licence. CIRNAC declined to apply for such a licence and the Board decided it did not have the authority to do anything more. GMOB is disappointed in the reactions of both agencies.

The co-proponents are also of the view that the Project does not require a quarrying permit at the Giant Mine site. Both stands are contrary to what CIRNAC would require of private companies. We are disappointed that CIRNAC is not holding itself to the standards it would expect of others. Currently, we have no further recommendations on this issue.

Project Progress

While our report focusses on recommendations to improve the Project, we also recognize that the Project Team has made important progress in specific areas of its work. These include:

- Project Team members, the Parties, and GMOB have solid professional working relationships with each other.
- While the vision of what is possible differs, everyone involved in the Project is committed to site remediation that protects the environment and enhances the socio-economic and cultural well-being of residents.
- The Project Team moved forward on plans to remediate the surface and stabilize the underground areas of the mine site. Overall, the Project Team is effective in reducing the environmental risks associated with the Giant Mine. The Project Team is doing ongoing care and maintenance, preliminary remediation work, and it developed a draft integrated remediation plan.
- The Yellowknife CIRNAC office and YKDFN had preliminary discussions about an apology and compensation for harm done by the Giant Mine.
- The Project Team is setting up committees made up of various interested agencies to coordinate the Project's socio-economic and capacity-building opportunities.
- The Yellowknife CIRNAC office and the YKDFN leadership appear to have resolved the issue of arsenic trioxide contamination in Ndilo.
- CIRNAC and the GNWT provided money and support for YKDFN's traditional knowledge study and an archaeological study at the Giant Mine site.
- CIRNAC provided additional money to some of the Parties and is discussing this possibility with others. The money will pay for additional people and expertise.
- CIRNAC and the GNWT are discussing responsibility for remediating offsite contamination.
- The Project Team has tried hard to involve the Parties in its work and decisions. The effectiveness of those efforts are discussed below.

THEME 1

Project Impacts on Community Opportunities and Wellness

What We Examined

Article 2.2 of the Environmental Agreement states that the remediation of the Giant Mine site should proceed in a manner that “protects the economy, way of life and well-being of the aboriginal peoples of Canada in the vicinity of Yellowknife, and of other residents of Yellowknife, the Northwest Territories and Canada”.

In its cover letter to the 2016-17 annual report of the Giant Mine Remediation Project, Indian and Northern Affairs Canada stated: “We are committed to following the mandate given to us by the Government of Canada to use public investment to spur economic growth, job creation, and to improve economic opportunity for Northerners and Indigenous People”.

GMOB assessed whether the Project Team met these commitments, by balancing job creation and wellness with its remediation and environmental work.

Why It’s Important

Economic well-being, environmental health, and social well-being are closely linked. A healthy economy supports healthy communities. The Project has the potential to inject hundreds of millions of dollars into the local economy over the coming decades. It could build local skills and other community assets in the process. One of GMOB’s greatest concerns is the slow progress of the Project Team and others to prepare local communities and businesses for the socio-economic benefits that will be increasingly available as the Project proceeds.

What We Found

Based on the Project Team’s annual reports, it appears that local companies have had some success in getting contracts. However, not enough local residents have been hired for available jobs. None of the parties has provided the training and career development needed to help locals residents prepare for job opportunities. This seriously affects the local economy and community wellness, and efforts for reconciliation with Indigenous people.

The Project relies on two tools to help increase Indigenous involvement in both employment and contracting – the federal Aboriginal Opportunities Considerations and the federal Procurement Strategy for Aboriginal Businesses. The Project Team has been unable to tell GMOB if the considerations tool has helped improve Indigenous hiring and contracting. GMOB does not know if the federal procurement strategy has been used or if it has been effective.

The Project collects information on employment and contracting, but GMOB is unaware of any regular analyses of the barriers to helping local residents benefit from the Project. Without that analysis, it is not possible to overcome barriers to jobs and contracts.

This lack of information and analysis is due to a number of factors.

- A lack of money, people and expertise, especially among Indigenous organizations.
- Limited communication by the Project Team, government agencies, and the City of Yellowknife about economic opportunities.
- The focus of the Project Team on remediation activities rather than on support for capacity building and preparing northern businesses and people to capture upcoming opportunities.

The result is that little of the Project potential is being realized. There is little sign that the federal and territorial government agencies responsible for social and economic well-being in the NWT are prepared to take the necessary action, other than to set up several advisory committees. We don’t know how effective these bodies will be at improving northern economic opportunities.

The Project Team spent \$36,290,301 in 2017-18. This is a large investment of tax dollars. However, the Project’s annual report noted that employees and contractors on the Project were only 20% Northern and 4% Indigenous. This continues the downward trend of previous years.

GMOB is disappointed and concerned this trend will continue during the implementation phase unless the Project team significantly changes its approach. We want to see a comprehensive and logical socio-economic and human well-being strategy. It should include valid and measurable performance targets.

Much more can be done to involve communities and to achieve success on the issues of community well-being and reconciliation. Commitment at the senior levels of both the federal and territorial governments is needed.

GMOB has the following recommendations about community opportunities and wellness related to the Project. Some of the recommendations echo those made in our previous annual reports but they have yet to be acted on to our satisfaction.

Highlight Socio-economic and Community Development Opportunities

RECOMMENDATION 2018-1:

Directed to: Minister and Deputy Minister, CIRNAC

We recommend that the Yellowknife CIRNAC office make it a priority to produce a socio-economic strategy and act on it.

- The strategy should identify barriers to local business and job opportunities and ways the Project will improve community well-being, increase trained workers, and other community assets.
- CIRNAC should work with federal, territorial, municipal, and Indigenous agencies to develop and act on this strategy.

Discussion

The Project socio-economic activities offer the greatest opportunities for long-term improvements to overall community well-being in the region. There is the potential for training, education, jobs, income and business development. A successful socio-economic strategy should focus on all of these possibilities, because they support each other.

All levels of government should make local economic opportunities and benefits associated with the Giant Mine Remediation Project their priority. The Project has the potential to inject hundreds of millions of dollars into the local economy but, based on what we have seen to date, this is not happening.

Parsons Inc. (hired in 2018 by the Project as the Main Construction Manager) provided some socio-economic information. That information does not tell us the level of benefits to local businesses and individuals. More details are needed to show which Project expenditures are being 'leveraged' to build community capacity and secondary opportunities.

In our last two annual reports GMOB recommended that the Project Team take a broad approach to social and economic development, by including factors of community well-being, such as education, housing, and income. These and other factors make up the social determinants of health.

In its 2016 Establishment Report, GMOB recommended a framework to "assist the Project Team to analyze and optimize local education, training, procurement, and jobs skills development opportunities".

In its 2017 annual report, GMOB noted "a socio-economic impact assessment¹ framework would enable governments to identify issues and boost activities that improve the long-term public health and outlook for community well-being into the next generation(s)".

GMOB has still not yet seen such a framework although we still see the need for it. The importance of a broad approach is supported by the conclusions of the NWT Labour Market Forecast and Needs Assessment (2016). This document accepts that "socio-economic factors including unsuitable housing, substance abuse, food insecurity, and young single-parent families have emerged as vulnerabilities that inhibit Northern education attainment."

It is important that the Project recognize and resolve the barriers that may prevent Northerners from taking advantage of training opportunities, including family obligations and the inability to take time off work to attend training sessions.

Creating meaningful economic opportunities and helping residents to capture those opportunities, makes a comprehensive plan a priority. The plan should incorporate the principles of reconciliation into the Project to correct systemic social and economic inequalities within the Indigenous communities. GMOB is of the view that CIRNAC's Yellowknife office is best placed to take on this task due to its understanding of local needs and dynamics and given its nearness to the Project.

Give each Party the Needed Resources

RECOMMENDATION 2018-2:

Directed to: Minister and Deputy Minister CIRNAC; Minister and Deputy Minister, ENR

We recommend that the federal and territorial government give each Party enough resources so they can fully participate in all aspects of the Project, including:

- Critical review of technical reports linked to water licensing.
- Informed participation in water licensing workshops and hearings.
- Adequate consultation with their constituents.

Discussion

The capacity issue, or need for more resources, continues to be one of the most difficult challenges for the Parties. The Parties have several responsibilities. They must:

- Review the many documents distributed by the Project Team.
- Attend regular meetings.
- Update the people they represent.
- Compile and pass on community feedback.
- Help the Project Team to interact with the community.

The YKDFN, NSMA, Alternatives North, and the City of Yellowknife have at least one person in their organization to fulfill these responsibilities, but often this person has other duties unrelated to the Project. The Parties say they do not have adequate knowledge, staff, and time to participate effectively in the technical and socio-economic aspects of the Project. The high demands faced by the Parties will only increase as the water licensing process for the Project proceeds in 2019. As numerous court decisions have shown, Indigenous organizations must have the capacity to fully engage in regulatory processes for their outcomes to be considered valid.

GMOB understands it is not easy to solve capacity issues. More money would be helpful, though not the entire solution. We are challenged in the NWT to get and keep the necessary technical resources. Skilled people are often unavailable. GMOB holds the view that more can and should be done to increase the Parties' capacity to fully participate. The co-proponents must work more closely with the Parties to fully understand their needs and challenges, and to collectively develop solutions. We need to better coordinate consultations with the public to avoid consultation fatigue and overload. This might reduce workloads and improve effectiveness. This is discussed further in the following recommendation.

Value Communication and Engagement

RECOMMENDATION 2018-3:

Directed to: Minister and Deputy Minister, CIRNAC; all Parties; GMOB

We recommend again that the Project Team give its duty to communicate and engage with the public an equal importance to other parts of the Project by:

- Funding communication and engagement activities adequately.
- Evaluating their effectiveness.
- Responding to gaps.

The Parties and GMOB should assist the Project Team by:

- Asking their audiences how to best ensure the Project Team understands their interests.
- Asking their audiences how to best help them understand the Project Team's challenges and opportunities.

Discussion

GMOB recommended in 2016 that: "communication and engagement be treated with an importance equal to other aspects of the Project and that they be resourced accordingly". In its 2017 report, GMOB again recommended that, "the Project Team communication and engagement responsibilities be given equal importance as other parts of the Project and that they be resourced accordingly." Similarly, the Parties and GMOB should ask the people they represent how to best represent their interests, and increase awareness of the challenges and opportunities provided by the Project.

The Project Team held many meetings with various groups for different purposes. There is also evidence that the Project Team followed community direction when making some decisions about closure options for the site. This shows that the Project Team has listened. The Project Team has also used plain language in some documents and presentations.

Still, some of the Parties continue to be frustrated with communications, leaving doubt as to whether a positive, effective, and ongoing relationship has been established. Such relationships require

more than frequent meetings; they require mutual understanding, a shared vision, and support.

The Project Team should also focus more effort to communicate effectively with the public. The general public has difficulty getting information, providing input, or asking about opportunities, except through quarterly newsletters and yearly public meetings. The Project Team still does not have an accessible "storefront" office and its website remains limited. GMOB continues to encourage the Project Team to use communication tools that engage the community in effective and meaningful ways. For example, the Project has a heading in its annual report identifying key stakeholder concerns but there the Project does not appear to systematically collect, quantify and qualify this information. As presented, it is difficult to know the weight that individual stakeholder concerns are given. If necessary, CIRNAC should give the Project Team additional resources to improve communications and relationships.

Increase City Involvement

RECOMMENDATION 2018-4:

Directed to: Mayor and Council, City of Yellowknife

We recommend that the City of Yellowknife do more to make sure its citizens are informed, involved, and realize the possible social and economic benefits from the remediation Project. The Project could impact City residents in several ways, including:

- Availability of clean construction fill.
- Possible change in city boundary.
- Possible change in city tax base.
- Public boat launch closure.
- Blasting noise and dust.

Discussion

The Giant Mine Remediation Project will influence the environment in and around the City of Yellowknife. It can also be a major socio-economic opportunity for the community. GMOB believes that the City of Yellowknife is best placed to let city residents know about the Project opportunities and challenges. City Hall should provide current and ongoing information about the Project and find sound ways to receive feedback from its residents.

The City could significantly strengthen its role through its website, through more public forums, and by taking on a leadership role to promote socio-economic and capacity-building opportunities. We know the City lacks resources to devote to the Project and that it is discussing with the Project Team how to get more resources. GMOB is concerned that a lack of resources may affect the City's ability to anticipate the Project effects on the City, including the availability of clean gravel and construction fill for City projects.

The City is dealing with other development issues in addition to the Project. This both complicates the situation and creates synergistic opportunities. Surface work on the mine site opens up the possibility for development and the City to be involved in planning that safeguards residents' concerns. Surface remediation will impact City boundaries and may affect the land in the City that can be taxed.

Other potential impacts of the Project on residents include the proposed closure of the public boat launch, possible noise and dust from blasting, and possible traffic issues. The new location of the City water source will be in part influenced by the remediation activities including the Baker Creek discharge point and discharge water standards. The City should be more actively involved in discussions to plan for the future and to ensure residents' views are reflected in Project plans. The City has no time to waste if residents are to be prepared to take advantage of Project benefits.

Respond to Reconciliation and Legacy Issues

RECOMMENDATION 2018-5:

Directed to: Minister, CIRNAC

We recommend the federal government immediately respond to the YKDFN requests for an apology and compensation for the historic operations at the Giant Mine.

Discussion

Public concern about the legacy of Giant Mine remains a key issue and is particularly acute for the Yellowknives Dene First Nation. GMOB understands that the Yellowknife CIRNAC office has been delegated the lead agency to resolve YKDFN concerns. Progress remains slow, however, and potential opportunities for reconciliation, at least in part through socio-economic capacity-building opportunities continue to slip by.

THEME 2

Project Management and Planning

What We Examined

The theme of project management and planning includes engineering and financial management of the Project. GMOB reviewed the Project Team's materials about its long-term remediation plans. We looked for a single, comprehensive high-level Project plan. That single plan would clearly lay out the multi-year timeline and critical path or order of activities and how they are all integrated. We also looked for proof that the Project Team is making satisfactory progress on the environmental assessment Measures 5 and 6.

Measure 5 required completion of a Quantitative Risk Assessment before the Project receives regulatory approvals. Measure 6 required a report on long-term funding options for the Project within three years of the environmental assessment.

Why It's Important

GMOB's mandate is to evaluate the effectiveness of the Giant Mine remediation. To do this we must understand the remediation plan, its various parts, and schedules, and how these parts fit together. GMOB and other parties need a detailed plan to know if the Project Team's commitment to begin remediation in 2020 is possible. We want guarantees that the final closure plan appropriately considers all research results, including the risk assessment and long-term funding options. The Project Team should integrate the study results into its management and monitoring plans.

The Measure 5 and 6 studies must be done soon to avoid unnecessary delays in the regulatory process.

What We Found

In early 2018, the Project Team provided GMOB with a preliminary schedule for remediation. It included major construction or remediation targets and linked them to the regulatory and contracting process. The schedule lacks information about the integration of key studies into the plans for remediation, post-closure monitoring and maintenance plans, budgets, and performance measures. GMOB continues to also need a clearer understanding of the role of Parsons Inc. as the main construction manager.

GMOB notes that the Quantitative Risk Assessment, as required by Measure 5, appears behind schedule. The Project Team distributed a draft report on long-term funding, as required by Measure 6, for the Project within the required timeframe. However, the draft report needs a clear statement of responsibility and discussion about options for the long-term management of the site. Funding is only a part of the larger discussion.

More Information Needed on Plans, Schedules, How Activities are Connected, and How Performance is Measured

RECOMMENDATION 2018-6:

Directed to: Project Team

We recommend that the Project Team provide a five-year project plan that:

- Shows how activities are linked, scheduled, ordered, and integrated.
- Highlights major milestones.
- Includes the budget.
- Includes targets to measure performance.
- Includes a flowchart that shows how and when Project decisions are made.

The Project Team's annual report should detail:

- Achievements, and compare them to plans.
- Reasons if achievements did not meet goals
- The budget and the money actually spent.

Discussion

GMOB has consistently asked the Project Team for a high-level Project plan that clearly lays out the multi-year timeline and critical path for all Project elements and major activities. This plan is needed to give GMOB and the Parties confidence that the Project is on schedule and on budget.

We have seen other government-led projects fail to meet timelines and increase greatly in cost. The Project Team developed a number of shorter-term project schedules, but we still need a broad Project schedule for the next 20 years.

GMOB knows there will be fewer details available for the longer term, but we expect the same degree of planning as would happen if this were a private sector mining operation. The Project Team should lay out key steps leading to closure of the remediation work. The upcoming water licensing process may help address our concerns in part, but the need remains for a long-term, detailed and integrated work plan and budget.

GMOB and other parties also need a detailed plan to assess whether the Project Team's commitment to begin remediation in 2021 is feasible. GMOB wants to know that the final closure plan appropriately considers the results from all the relevant studies. These studies need to be integrated into management and monitoring plans. For example, GMOB continues to ask how the results of the recent Human Health Ecological Risk Assessment (HHERA) will be integrated into the final closure plan, as required by the environmental assessment.

GMOB is unable to properly evaluate the critical path for the Project without an overall Project plan and until a defined water licence is in place. The lack of targets to measure performance also makes it difficult to know if the Project Team is meeting its goals, or where improvements should be made.

Continued next page >

GMOB understands that the recently hired Main Construction Manager, Parsons Inc., will have a significant role in project planning and management. We look forward to explanations about the roles and responsibilities of Parsons Inc., and the targets expected of this manager.

We still need the assurance asked for in previous years that the project management capacity will be enough for the remediation program to flow smoothly. We also want assurances that communication between the Project Team and Parsons will facilitate the remediation efforts. Given past examples where this type of management relationship has been inefficient and perhaps ineffective, and in the absence of clear evidence to the contrary GMOB remains unconvinced that this Project will be any different.

Explain Main Construction Manager Responsibilities and Impact on Relationships

RECOMMENDATION 2018-7:

Directed to: Project Team

We recommend that the Project Team describe in detail the responsibilities of the Main Construction Manager, Parsons Inc., and how they will share duties. The Team should also describe how the construction manager will work with the Parties, GMOB, the Project Team, and the public.

Discussion

In late 2017, the Project Team contracted Parsons Inc. to be the Main Construction Manager on the Project. Parsons will take over a substantial part of the management of the Project and will work closely with the Project Team. The co-proponents – the federal and territorial governments – will keep final authority over the Project.

GMOB needs a complete list of Parsons' responsibilities, as well as details about how responsibilities will be transferred and delegated to understand this new Project management model. This is especially important given the possible roles Parsons could play in the Giant Mine Working Group sessions, in community consultations, in developing and implementing socio-economic plans, and in dealing with GMOB.

Meet Environmental Assessment Conditions

RECOMMENDATION 2018-8:

Directed to: Project Team

We recommend that the Project Team immediately:

- Complete a quantitative risk assessment for the remediation plan.
- Complete its report on long-term funding and management options for the Giant Mine site.

These actions were among the conditions set out in the Project environmental assessment.

Discussion

Measure 5 of the environmental assessment report requires the Project Team to conduct a Quantitative Risk Assessment. The findings of the assessment were to be used to improve the remediation plan, where appropriate. Ideally this work would be completed before the regulatory process. We understand that the delay is partly due to the lack of resources for some of the Parties to participate in the assessment before 2018.

Despite the late start, the Project Team made progress on the assessment last year and GMOB appreciates their efforts to constantly improve their workshop formats and presentation materials to better capture community concerns. Still more work is needed to make sure the community concerns are fully reflected in the final remediation strategy. This work will be discussed during the upcoming water licensing workshops and hearings since the environmental assessment report said that the risk assessment must be completed before regulatory approvals.

Less progress has been made on Measure 6 which requires to report on options for long-term funding of the Project (i.e., after remediation). The Project Team started late, and GMOB views its report as a failure to meet the intent or spirit of the measure. The report initially concluded that the status quo (i.e., reliance on Treasury Board funding allocations as needed) remained the best funding option. That conclusion is under review. Most troubling is the absence of a clear statement of who will be responsible over the long term. There was also no discussion about options for the long-term management of the site.

THEME 3

Environment and Health

What We Examined

Article 2.2 of the Environmental Agreement states that:

“The Parties intend that this Agreement will achieve or support the following objectives:

- a. *the remediation of the Giant Mine site in a manner that protects:*
 - i. *the land, air, water, aquatic life and other wildlife in the area of or potentially affected by the Project;*
 - ii. *the economy, way of life and well-being of the aboriginal peoples of Canada in the vicinity of Yellowknife, and of other residents of Yellowknife, the Northwest Territories and Canada;*
- b. *the remediation of the Giant Mine site in a manner that eliminates or substantially mitigates the environmental risks posed by the site”*

Article 2.2 is central to GMOB’s mandate and forms the core of the Project objectives.

Why It’s Important

Removing the environmental and human health risks posed by contamination at the Giant Mine site is the chief objective of the Project, in combination with social well-being. Environmental health, economic health, human health, and social well-being are closely linked and so it’s important to make sure they all are safeguarded. This objective is central to GMOB’s mandate along with its research program.

The Measure 5 and 6 studies must be done soon to avoid unnecessary delays in the regulatory process.

What We Found

The Project Team achieved solid progress on many technical parts of the Project including surface remediation and stabilizing the underground workings. It has reduced or removed significant environmental and health risks. However, the socio-economic and human well-being work has lagged in comparison. This is particularly serious given that the total budget for the Project is likely to exceed \$1 Billion over several decades. This could be the same impact on the NWT economy as a full-scale mine.

Integrate and Improve Environmental Monitoring

RECOMMENDATION 2018-9:

Directed to: Project Team

We again recommend that the Project Team develop an in-depth and integrated way to regularly review, evaluate, and improve its various environmental actions. We recommend that the team explain its environmental programs and make it easy for the public to find the program results.

Discussion

The Project Team continues to conduct a broad range of environmental monitoring programs on and around the remediation site. The Project Team's annual report lists these programs and uses them to evaluate the current environmental conditions and to support its remediation plans. GMOB routinely reviews these environmental reports and comments or makes suggestions as appropriate.

While the quality of individual reports is good, we have not seen yet a comprehensive and integrated Environmental Management System. An Environmental Management System is defined by the US Environmental Protection Agency² as

"a framework that helps an organization achieve its environmental goals through consistent review, evaluation, and improvement of its environmental performance. The assumption is that this consistent review and evaluation will identify opportunities for improving and implementing the environmental performance of the organization."

Without such a system, the Project Team and the construction manager will be unable to meet the goal of continuous review and improvement of their performance, let alone be able to track progress. During the upcoming water licensing process, GMOB will continue to advocate for the necessary environmental programs during the remediation and post-remediation phases of the Project. Once the licensing process is underway, environmental monitoring results will be publicly available on the MVLWB website.

Improve Public Understanding of Arsenic Risks

RECOMMENDATION 2018-10:

Directed to: Project Team; Minister, Health and Social Services, GNWT

We continue to recommend that the Project Team develop a communication and education plan to improve the public's understanding of arsenic risks and safety.

Discussion

The Giant Mine Human Health and Ecological Risk Assessment (HHERA) and the Yellowknife Health Effects Monitoring Program (YkHEMP) are the main human health-related studies completed or underway by the Project Team. A third health-related study will assess the level and potential effects of stress on regional residents due to the Giant Mine. It was in the early planning stages in 2018.

The final HHERA report was submitted in January 2018. It concluded that all residents in the Yellowknife region, including those who eat a high proportion of country food, have a low to very-low lifetime risk of cancer due to arsenic exposure. While still low, residents in Ndilo and Latham Island were estimated to have a 10 times higher risk than people living in other parts of Yellowknife or Dettah. This is due to higher arsenic concentrations in soil.

The YkHEMP involves YKDFN and NSMA community members and randomly-selected Yellowknife residents. By taking toenail clipping and urine samples from people, the study will create a picture of the local exposure to arsenic and other metals from the Giant Mine site.

The HHERA and YkHEMP scientific studies should give people information on exposures from various activities and sources, including imported food, and ideas of how to minimize exposure. The more local residents who participate in these studies the more valuable the results and their usefulness for monitoring future arsenic exposure. Health authorities should put more effort into informing residents about arsenic exposure from all sources,

putting exposure to Giant Mine-related arsenic in perspective and context.

A 2018 soil sampling program in Ndilo indicated lower arsenic concentrations in soil than previous sampling programs. The more recent sampling was done because of long-standing concern about "hot-spots" in Ndilo. This, and the higher estimated cancer risk for Ndilo in the HHERA report, leads GMOB to encourage further discussion about the recent soil results and cancer risk in Ndilo.

Scientists and the public have different perceptions about safety. Scientists tend to view risk from the perspective of what they can measure. Non-scientists may view risk from a broader perspective. More work by the Project Team and the GNWT (particularly Health and Social Services) is needed to bridge the gap in understandings. GMOB believes that the Project Team can and should better explain the methods and findings of health studies.

While important, the monitoring and studies on the impacts of arsenic on human health alone are not enough. The practical challenge of communicating complex technical and scientific issues in plain language cannot be overstated.

GMOB acknowledges the complexity of a broader model of health determinants and attempting to isolate the potential impacts of Giant Mine arsenic on human health. The Project Team must understand that the well-being of people depends on more than the measured exposure to contaminants.

Resolve Offsite Contamination Concerns

RECOMMENDATION 2018-11:

Directed to: Minister and Deputy Minister, CIRNAC; GNWT Minister and Deputy Minister, ENR; Mayor, City of Yellowknife

We again recommend that the federal, territorial and municipal governments work together to ease the environmental and health concerns about arsenic levels on land outside the Giant Mine remediation site.

Discussion

In its 2016 and 2017 annual reports, GMOB raised the issue of arsenic in soils, vegetation, and lakes outside the Giant Mine lease boundary. Offsite contamination can lead to on-site contamination. For example, the, e.g., via Baker Creek watershed drainage into the mine site or through re-suspension of arsenic trioxide dust by offsite construction. Offsite contamination tends to dominate any public discussion of the Giant Mine Remediation Project. Offsite issues must be resolved.

GMOB notes that some progress has been made on this issue. Research and sampling studies have given a better understanding of the nature and extent of offsite contamination. Signs have been posted in some areas. CIRNAC and the GNWT are working together to address other offsite concerns.

The GNWT contracted a private environmental consultant, CanNorth, to do a human health risk assessment for a broad area west and north of the mine lease. This is where prevailing winds would carry arsenic trioxide dust. CIRNAC conducted the soil sampling program in 2018 to investigate arsenic “hot spots” in Ndilq. Findings now indicate that there is no cause for concern in those study areas.

Despite the positive progress, there is no agreement on which agency is responsible for offsite contamination. A comprehensive strategy for managing the contamination has yet to be developed.

GMOB Research Program

GMOB's research efforts focus on finding a way to permanently remove the risks posed by the 237,000 tonnes of arsenic trioxide stored underground at the Giant Mine site.

GMOB met regularly in person and via teleconference with TERRE-NET³ to set up a formal, collaborative research program. TERRE-NET is based at the University of Waterloo. It brings together leading experts from Canadian universities to find sustainable ways to deal with hazardous mine wastes. The experts work in various scientific and social science fields.

GMOB hosted a research workshop March 19-20, 2018 in Yellowknife with TERRE-NET researchers to talk about our research mandate and introduce TERRE-NET's expertise. We have since had monthly progress meetings.

GMOB attended TERRE-NET's Annual General Meeting in Ottawa, June 26-27, 2018) along with guests from YKDFN and NSMA. We presented an overview of the Giant Mine Remediation Project, GMOB's role, activities, and research mandate.

GMOB signed contracts with the University of Waterloo for TERRE-NET to undertake a formal document review and to attend the GMOB Research Workshop in Edmonton October 2-4, 2018. TERRE-NET presented the results of the technical document review and we explored an initial focus of the joint research program.

GMOB is currently negotiating an MOU with the University of Waterloo to establish a formal research relationship with TERRE-NET.

GMOB has also made arrangement for samples of the Giant Mine's arsenic trioxide dust to be made available to TERRE-NET for their research efforts. GMOB and the Project Team are working with a company called SGS-Lakefield, where samples of the dust are currently safely stored, to develop protocols for access.

GMOB is keeping the door open to independent proposals and possible linkages with other expert groups. We will continue to update and engage the public as the research program is developed.

GMOB Priorities and Next Steps in 2019

In addition to monitoring the progress of Project remediation efforts, GMOB has these priorities for 2019.

- Fully participate in the water licensing process.
- Continue to promote a more effective and inclusive socio-economic and capacity-building strategy to help local residents benefit from job and contract opportunities presented by the Project.
- Continue to promote meaningful Project actions toward reconciliation by the co-proponents.
- Continue to work with TERRE-NET and others on potential solutions to arsenic trioxide stored underground at the Giant Mine site.
- Advance our administrative goals. These, include creating a publicly-accessible inventory of Giant Mine related documents, auditing GMOB's effectiveness, and updating our communication policies.

APPENDICES

APPENDIX 1: 2017 Public Concerns and Current Status

The following table lists concerns that GMOB heard from the public during 2017 and summarized in our 2017 annual report. The table includes responses from both GMOB and the Project Team, as appropriate. Please note that the Giant Mine Remediation Project responses do not necessarily represent the views of GMOB.

| PUBLIC CONCERN | STATUS |
|---|--|
| Community and Socio-Economic Concerns | |
| Requests continue for a formal apology and compensation to YKDFN for the loss of traditional land uses resulting from the Giant Mine operation. | CIRNAC and YKDFN have had preliminary discussions. Funds have been approved for 2019-2020 for YKDFN to gather evidence and elder narratives and to access records at the National Archives. Future meetings are planned. |
| The Yellowknife Historical Society, formerly the NWT Mining Heritage Society, asked that a distinct geological feature at the Giant Mine site be preserved for educational and research purposes. | The Society provided a map showing the location of a distinct geological feature (pillow lava). The GMRP committed to preserving the area to the extent that remediation allows. |
| Some members of the public are not aware of a formal policy or procedure to ensure protection of documented archaeological sites on the Giant Mine site. | The Project Team stated that it follows the regulations as set out in the Mackenzie Valley Resource Management Act and the Mackenzie Valley Land Use Regulations. In 2018 the Team carried out an Archaeological Overview Assessment and an Archaeological Impact Assessment. Leading up to the field component of the impact assessment, the Project Team sent out an invitation to meet with the City of Yellowknife Historical Committee and the Yellowknife Heritage Society. It met with members of the YKDFN numerous times in the planning stages of the impact assessment, including the YKDFN Giant Mine Advisory Committee, the Elder's Senate, and YKDFN staff. The Project Team reported back to YKDFN staff and the community in November 2018 and January 2019 on the results of the field study. The Team also communicated with the North Slave Metis Association on the Archaeological Impact Assessment. |
| There is widespread concern about how local communities and stakeholders can access socio-economic benefits associated with the remediation activities. | The Project Team is currently developing key performance indicators. A socio-economic advisory body, and a Socio-Economic Working Group have been formed. |

| PUBLIC CONCERN | STATUS |
|--|---|
| Engagement and Consultation | |
| <p>Some members of the public want to be more active partners in the Project and in GMOB initiatives. They want to more effectively ensure community values, expectations, and feedback are considered.</p> | <p>GMOB has an open-door policy and welcomes public comment and suggestions at any time. GLOB's website (www.gmob.ca) and its annual public meeting offer additional opportunities to engage with GLOB.</p> <p>The Project Team stated that it works diligently to inform the people of Ndilo, Dettah, and Yellowknife and to provide opportunities to hear their concerns, seek their advice, and, where possible, incorporate their recommendations. This includes regular meetings with the Giant Mine Advisory Committee, which represents the interests of the YKDFN in the remediation process, as well as monthly meetings with the Giant Mine Working Group, which makes recommendations to the Project Team about technical and operational aspects of the remediation plan. In addition, the Project's phone and email contact information is on the www.giant.gc.ca website. The Project Team attends public tradeshows, encourages the public to attend community information sessions and stakeholder meetings, posts on Twitter @GiantMine, arranges to visit members of the public at its offices, and encourages people to subscribe to the Project newsletter.</p> |
| <p>GMOB was asked to include the Project Team and support staff in GLOB annual meetings so they can answer questions from the public.</p> | <p>The GLOB 2017 annual public meeting included the Project Team and its support staff. GLOB will continue this practice.</p> |
| <p>Some members of the public asked that GLOB and/or the Project Team hold an "Arsenic 101" course for the public.</p> | <p>GLOB does not plan to develop an "Arsenic 101" course itself but would support others doing so.</p> <p>The Project Team hosted an Arsenic 101 session with the YKDFN Giant Mine Advisory Committee in 2016 and said they would happy to share that presentation with the public on request.</p> |
| <p>Parties to the Agreement said that their limited capacity is restricting their ability to meaningfully engage in the remediation planning processes.</p> | <p>This concern is shared by GLOB; see recommendations in this and previous GLOB Annual reports.</p> |
| Safety and Security | |
| <p>Members of the public asked about the risks if the freeze technology fails, and about response plans in case of a catastrophic event or terrorist threat.</p> | <p>The Project Team is currently conducting a Quantitative Risk Assessment that will evaluate all risks to the project, including the risk of the freeze technology failing. The results will be communicated to the public in summer of 2019.</p> |
| <p>The public asked about the quality of information concerning arsenic trioxide contamination in the region, and the need for warning signs in contaminated areas for tour operators and individual tourists.</p> | <p>The City of Yellowknife and the GNWT have worked jointly to post signs at various locations in the Yellowknife area following the Health Advisory issued by the NWT Chief Public Health Officer in June 2018.</p> <p>The Project Team stated that contamination outside the Project boundary is not within the responsibility of the Project. It advised the public to contact the GNWT and/or the City of Yellowknife. Signage is posted at key areas around the perimeter of the site. The Project provided funding for the YKDFN to produce a sign for the Ndilo air monitoring station.</p> |

| PUBLIC CONCERN | STATUS |
|--|--|
| Environment | |
| Recent research and published studies indicated that there are arsenic “hotspots” in soil on Latham Island and Ndilo. People suggested a comprehensive soil-testing program for all of Yellowknife and that contaminated areas be cleaned up. | CIRNAC re-tested identified hotspots near the school in Ndilo in 2018. The results indicated that there was no cause for concern. These findings are supported by YKDFN. There has been no movement on comprehensive soil testing for all of Yellowknife. |
| Some residents expressed frustration that the remediation isn’t advancing fast enough on the land and water that has been “poisoned” by historic contamination. | The Project will submit its water licence application to the Mackenzie Valley Land and Water Board in early 2019. |
| People asked about the reliability of the underground arsenic chambers and the safe treatment of associated mine water. | <p>The Project Team engaged in Qualitative Risk Assessment consultation in 2018. The risk scenario for the underground storage chambers and the safe treatment of associated water has been included in these consultations.</p> <p>The Project Team stated that managing water is an important part of the Giant Mine Remediation Project, both now and into the future. All water that enters the underground mine is collected so it can be treated. This contaminated water is pumped to the surface and temporarily stored in one of the four tailings ponds until it can be pumped to an on-site water treatment plant in the summer. The water treatment plant removes arsenic and other contaminants to meet safe discharge criteria before it is released into the environment.</p> <p>See more information on the federal government website: https://www.aadnc-aandc.gc.ca/eng/1100100027431/1100100027435.</p> |
| People asked whether the Giant lease boundaries and the project area could be extended to include the entire Baker Creek watershed. | The Project Team stated that the project boundary will not be extended to include the upper Baker watershed. Its Reclamation Research Plan includes examining technologies that could help improve water quality, including in upstream watersheds. |
| On numerous occasions, people said a formal traditional knowledge study of the Giant Mine site and area is needed with the results applied to the remediation program. | CIRNAC and the GNWT funded a Traditional Knowledge study of the Giant Mine area, to be finalized in 2019. |
| Health Issues | |
| The Yellowknife Health Effects Monitoring Program (YkHEMP) includes a random volunteer sampling of the people in Yellowknife, Ndilo, and Dettah. Some people told GMOB that separate research should target the health concerns and causes of death of people who worked directly with arsenic trioxide at the Giant and Con mines in Yellowknife. | <p>The Project Team stated that this legacy work is still important to the YkHEMP project and has not been forgotten. Dr. Chan made a commitment at a public meeting April 2017 to look into this. Currently the YkHEMP team is concentrating on the sample analysis and getting the results back to the participants. This legacy work requires an epidemiologist to look at what legacy data is available and how it can be applied.</p> <p>The Project itself is not considering a legacy study of this type.</p> |
| People are concerned about the contaminant levels in animals and vegetation and if it is safe to conduct traditional activities, such as trapping and food gathering, in the Project area. | <p>The various current and proposed health-related studies may address these concerns.</p> <p>The Project Team stated that the Human Health and Ecological Risk Assessment completed in 2018 addressed this issue and found that risk levels were very low to low. Ongoing monitoring continues to ensure that the risks do not change.</p> |

APPENDIX 2: GMOB 2017 Annual Report Recommendations and Giant Mine Project Team Responses

| # | GMOB RECOMMENDATIONS (REFERENCE) | GIANT MINE PROJECT TEAM RESPONSE (VERBATIM) |
|--|--|---|
| Project Impacts on Community Opportunities and Wellness | | |
| 2017-1 | GMOB recommends the Project Team meet with federal, territorial, municipal, and Indigenous representatives (and others deemed appropriate) to develop a socio-economic strategy that identifies specific economic, social, and educational opportunities to be generated by the Giant Mine Remediation Project. Meetings should continue annually to implement and monitor progress, and to plan for each year. A formal process with multi-party involvement (e.g., through a steering committee) for the life of the project will give socio-economic considerations the attention they deserve. | <p>The Project is developing a Socio-economic Benefits Approach for the Project. This approach will provide an overarching framework to guide the project's actions to maximize economic opportunities for Northerners and local Indigenous people and address socio-economic impacts. Its implementation will be guided through an annual Socio-economic Action Plan. Both the Socio-economic Benefits Approach and Action Plan will be made available to the public for review in 2018.</p> <p>The Project recognizes the potential impact of the Giant Mine remediation on the Northern economy. As such, the team is working with organizations, with programs to promote capacity-building to ensure they can work together to maximize the benefits to Northern and Indigenous groups and businesses.</p> <p>The Project is developing a Terms of Reference for a Strategic Advisory Board with representatives from the GNWT, the City of Yellowknife, CanNor, Service Canada, Parsons Inc., PSCP (Public Services and Procurement Canada), and CIRNAC. This committee will leverage capacity within their respective organizations and ensure socio-economic issues are given required support in the region.</p> |
| 2017-2 | GMOB recommends that the Project Team meet with the Parties and GMOB, to assess capacity needs and the best use of resources to fully understand where there are gaps, and how they can be closed. This needs assessment should happen as soon as possible to allow the Parties to participate effectively in the upcoming water licensing process. Timely attention to capacity issues could facilitate both current socio-economic opportunities and those that will open up when the remediation gets underway. | <p>The Project team regularly meets with all Parties and funds annual proposals from the Yellowknives Dene First Nation, North Slave Metis Alliance, and Alternatives North for technical and administrative resources to participate in all aspects of the Project.</p> <p>In 2017/18 the Project team funded a new position with the YKDFN to support the Health Effects Monitoring Program and this position continues in 2018/19. In 2018/19 the Project team has agreed to fund two additional positions with the YKDFN, a Junior Coordinator and an Economic Development Officer.</p> <p>In 2017/18 the Project team funded a half time position with the NSMA and this continues in 2018/19.</p> <p>The project team welcomes the suggestion to meet with GMOB and the parties to continue this discussion.</p> |

| # | GMOB RECOMMENDATIONS (REFERENCE) | GIANT MINE PROJECT TEAM RESPONSE (VERBATIM) |
|--|--|--|
| Project Impacts on Community Opportunities and Wellness | | |
| 2017-3 | As in 2016, GMOB recommends that Project Team communication and engagement responsibilities be given equal importance as other parts of the Project and that they be resourced accordingly. Similarly, the Parties and GMOB should seek input from their constituencies on how to best represent constituent interests and expand awareness of the challenges and opportunities provided by the Project. | <p>We welcome the insights gathered by GMOB and the Parties. The GMRP has human resources dedicated to maintaining open two-way communication, and ensuring engagement occurs on all aspects of the Project.</p> <p>Engagement is one of the highest priorities for the Project, which has been demonstrated by the commitment to processes in the past few years including Surface Design Engagement and the dietary survey and voluntary sampling program as part of extensive engagement for the HHERA completed in 2017.</p> <p>After much effort and considering feedback from stake holders, the updated website is now live.</p> <p>The Project notes that a plain language summary of the 2017 Annual Report has not been produced but will endeavor to complete it as soon as possible.</p> |
| 2017-4 | GMOB continues to recommend that the Federal Government formally respond to requests from Indigenous groups for an apology and compensation related to the historic operations at the Giant Mine. | <p>The issues arising from the legacy of the Giant Mine and other local mine sites are complex.</p> <p>While the Project team is focused on the remediation of the former mine site, and as formal responses on the issue of apology and compensation for Indigenous groups are outside the Project team's mandate, the team has conveyed this request within INAC's NWT regional office. Regional staff has in turn, met with the Yellowknives Dene First Nation to hear concerns directly in order to develop a path forward.</p> |

| # | GMOB RECOMMENDATIONS (REFERENCE) | GIANT MINE PROJECT TEAM RESPONSE (VERBATIM) |
|--|---|--|
| Project Management and Planning | | |
| 2017-5 | GMOB recommends that the Project Team provide a five-year project plan and critical path to show how all Project elements are linked and integrated. The Project schedule should highlight major milestones, a budget, specific performance measures, and a flowchart showing the decision-making model for the Project. The Project Team's annual report should detail what was achieved compared to what was planned and budgeted for each year. The report should explain variations between goals and achievements. | <p>A draft integrated project schedule has been prepared by the Project Team. This includes both the definition and implementation phases of the project through 2031. The schedule has been provided to GMOB at the May 14, 2018 semi-annual meeting.</p> <p>This draft integrated schedule will be a key tool to allow tracking progress, major milestones and critical path. This schedule is draft and represents the current project understanding and approach, recognizing that some design elements are not yet finalized and therefore, future schedule adjustments will be necessary.</p> <p>Short term performance indicators have been shared with GMOB at the May 14, 2018 semi-annual meeting. The project plans to incorporate the performance targets in future annual reports.</p> |
| 2017-6 | GMOB recommends that the co-proponents describe the responsibilities that the MCM will inherit from the Project Team, and how this arrangement will affect relationships among the co-proponents, the Parties, GMOB, and the public. | <p>The Main Construction Manager will take over the role of Mine Manager as of July 1, 2018, which is a role required under Northwest Territories mining regulations. Since the Government of Canada assumed responsibility of the site, this role has been filled by the site's Care and Maintenance contractor. The MCM will take over this role from current care and maintenance contractor, DetonCho/Nuna.</p> <p>The Government of Canada, along with the Government of the Northwest Territories as co- proponent, will continue to be responsible for the Giant Mine site and its remediation. The relationship with partners and stakeholders should remain largely unchanged.</p> <p>The MCM will be a key partner and advisor as it relates to scheduling, constructability reviews, project implementation plan preparation, resourcing and other aspects related to the socio- economic benefits, working with the Project team as it is integrated into the project. However, the Project team remains responsible and accountable and will continue to maintain its relationships with partners and stakeholders.</p> |
| 2017-7 | GMOB recommends that the Independent Peer Review Panel (IPRP) respond to the Project Team's conclusion that the remediation and stabilization of arsenic dust is progressing at a rate appropriate for the associated risk. | This recommendation was discussed at the May 8, 2018 IPRP and Project Team Meeting. IPRP has indicated that it will provide the Project Team with the results of its review. |

| # | GMOB RECOMMENDATIONS (REFERENCE) | GIANT MINE PROJECT TEAM RESPONSE (VERBATIM) |
|--|--|---|
| Project Management and Planning | | |
| 2017-8 | GMOB recommends that the Project Team make it a priority to fulfill all requirements associated with Measures 5 and 6 in MVEIRB's Report of Environmental Assessment. | The Project team has made both Measure 5 and 6 a priority for 2018/19. Measure 5: Engagement started with the Giant Mine Working Group in 2017 on the Quantitative Risk Assessment (QRA). Several decisions are required as inputs to the QRA that needed other activities to conclude prior to starting this work, such as the SOE process cited above. There are many interdependent elements that add to the complexity of the Giant Mine project, as well as the need to fully involve stakeholders at each stage of the development of the remediation plan, which takes time. The Project team met with the Working Group on April 19, 2018 to present the proposed methodology and engagement plan for review and input. Engagement for the implementation of the QRA started in June 2018 and will continue throughout the year. A draft report is anticipated in December 2018. Measure 6: A report was completed and presented to the Giant Mine Working Group in 2017, as required by the Measure, and a number of meetings were subsequently held with a sub-committee of the Working Group to discuss the report and provide recommendations, also required by the measure to involve stakeholders and the public in discussions on funding options. The Project team will strive to meet stakeholder expectations to finalize the report in advance of the Water License package submission. |
| 2017-9 | GMOB recommends that the MVLWB review the current absence of a valid water licence at the Giant Mine site to determine if the Project Team should obtain a short-term, focused water licence as an interim measure, until a broader remediation water licence is issued. | N/A -action for MVLWB. |

| # | GMOB RECOMMENDATIONS (REFERENCE) | GIANT MINE PROJECT TEAM RESPONSE (VERBATIM) |
|-------------------------------|---|--|
| Environment and Health | | |
| 2017-10 | <p>GMOB again recommends that the Project Team develop a fully-integrated Environmental Management System.</p> <p>Further, GMOB recommends that related program descriptions and their results be made easily accessible to the public.</p> | <p>The Giant Mine Project team currently has an Environment, Health, Safety and Community Management System in place for the project.</p> <p>It includes aspects of an Environmental Management System (ISO-14001), Health and Safety (OHSAS-18001) and socio-economic aspects.</p> <p>The Project is currently updating the Management System to be compliant with the revised 2015 ISO 14001 Standard. In addition, the intent is for the Project to work with the MCM to develop an integrated management system.</p> <p>Environmental Management Plans and associated Environmental Protection Plans will be encompassed within this integrated system. The Project team will provide this to the Board once completed.</p> |
| 2016-11 | <p>GMOB recommends that the Project Team develop a communication and education strategy to improve the public understanding of arsenic risks. The strategy should aim to reduce the gap between scientists and the broader community in their perceptions of risk and safety.</p> | <p>The Project team will continue to work with GNWT Health and Social Services to improve public understanding of arsenic risks, and take every opportunity available to share knowledge as it emerges, such as through our public information sessions on the results of the Human Health and Ecological Risk Assessment (HHERA) update held in October 2017, our newsletter and at the community forums with the Yellowknives Dene First Nations members, North Slave Metis Alliance members, and members of the Yellowknife-area public.</p> <p>The Project team also continues to share reports and information, such as the results of the Human Health and Ecological Risk Assessment, to the appropriate authorities with responsibilities for health and public education, in order that they can take new information into consideration in their program decision-making processes, public health advisories and public education information.</p> |

| # | GMOB RECOMMENDATIONS (REFERENCE) | GIANT MINE PROJECT TEAM RESPONSE (VERBATIM) |
|-----------------------------|---|--|
| Remediation Planning | | |
| 2017-12 | <p>As in 2016, GMOB again recommends that the federal, territorial, and municipal governments make it a priority to ensure offsite contamination issues are resolved to satisfy public health and environmental concerns.</p> | <p>While clean-up efforts at Giant Mine contribute to the Government's actions to protect the health and safety of NWT residents and the environment legacy issues such as offsite contamination fall outside the scope of the Giant Mine Remediation. Government of Canada recognizes the importance of this issue and as such, departmental officials continue to work with the Government of the Northwest Territories and other departments to address it.</p> |

APPENDIX 3: GMOB Performance Measures Table

| TASK | WHAT WAS DONE | RATING |
|---|---|--|
| Mandate Requirements | | |
| Review and make recommendations in response to the co-proponents' Annual Reports | The 2016-17 GMRP Plain Language Summary of the 2016-2017 GMRP Annual Report was received October 31, 2018. The 2017-2018 GMRP Annual Report was received by GMOB on November 2, 2018. The report was reviewed and submitted to the Project Team, Parties and posted publicly on the GMOB website on January 29, 2018. | Completed |
| Review and make recommendations in response to the co-proponents' Status of the Environment Report | According to the Environmental Agreement, the first Status of the Environment Report is not due from the Project Team until 2021 | Not applicable |
| Review and make recommendations to the 20-year Independent Project Review. | According to the Environmental Agreement, the 20-year Independent Project Review is not due until 20 years after Project implementation | Not applicable |
| Participate in and advise on the co-proponents' process to assess options for the management of Baker Creek. | GMOB reviewed and commented on the draft GMRP Closure and Reclamation Plan which included Baker Creek. | Complete |
| Manage the Research program, toward a permanent solution for dealing with arsenic at the Giant Mine. | See next page. | See the Research tab, next page. |
| Promote public awareness of itself, the Environmental Agreement, and its roles under this Agreement. | Established GMOB storefront, developed and enhanced public displays and web based public information tools; school and public information sessions and presentations. | The GMOB storefront, website, and permanent displays have been established. Development of engagement tools and planning for public and educational engagement are ongoing.. |
| Establish a publicly-accessible repository of records that it considers relevant to its responsibilities. | GMOB is engaged in an ongoing collection of records related to Giant Mine, the Giant Mine Remediation Project, Arsenic Trioxide, and Arsenic Research. This information is being compiled, organized, and prepared as an online library resource. | In Progress |
| Provide all of its reports and evaluations to the co-proponents and make them available to the public. | Distribution to all of the Parties is a priority. All reports, minutes and financials of GMOB are delivered to the Parties electronically and are made available to the public through the GMOB website. | Continuing |
| Issue an annual report each year and hold a public annual meeting each year for the first five years of its operations. | A GMOB Annual Report and a GMOB Public Annual Meeting is planned for each year. The 2017 GMOB Annual Report was released on April 17, 2018. GMOB hosted its Annual Public Meeting on May 15, 2018. | Completed |

| TASK | WHAT WAS DONE | RATING |
|--|--|-------------|
| Communications Management | | |
| Provide opportunities and communications tools for Parties to the Agreement, the Project staff, and the general public to collect information and comments made by GMOB and to increase the awareness of actions and positions taken by the Board. | GMOB is engaged in content communication with the Parties, Project staff, and the public through daily business, public presentations, and Working Group meetings. GMOB records formal evaluations of meetings and public presentations. All GMOB meeting minutes, correspondence, financials, and reports are posted on the GMOB website. | Continuing |
| Provide feedback to the Parties and the Project staff regarding Project activities. | GMOB keeps a list of issues and concerns, incorporating them into their Annual Report. | In Progress |

| TASK | WHAT WAS DONE | RATING |
|---|---|-------------|
| Research Program | | |
| Manage the Research program, toward a permanent solution for dealing with arsenic trioxide at the Giant Mine. | <ul style="list-style-type: none"> GMOB has met regularly in person and via teleconference with TERRE-NET representatives to set up a formal, collaborative research program. GMOB met regularly in person and via teleconference with TERRE-NET to set up a formal, collaborative research program. TERRE-NET is based at the University of Waterloo. It brings together leading experts from Canadian universities to find sustainable ways to deal with hazardous mine wastes. The experts work in various scientific and social science fields. GMOB hosted a research workshop March 19-20, 2018 in Yellowknife with TERRE-NET researchers to talk about our research mandate and introduce TERRE-NET's expertise. We have since had monthly progress meetings. GMOB attended TERRE-NET's Annual General Meeting in Ottawa, June 26-27, 2018) along with guests from YKDFN and NSMA. We presented an overview of the Giant Mine Remediation Project, GMOB's role, activities, and research mandate. GMOB signed contracts with the University of Waterloo for TERRE-NET to undertake a formal document review and to attend the GMOB Research Workshop in Edmonton October 2-4, 2018. TERRE-NET presented the results of the technical document review and we explored an initial focus of the joint research program. GMOB is currently negotiating an MOU with the University of Waterloo to establish a formal research relationship with TERRE-NET. GMOB has also made arrangement for samples of the Giant Mine's arsenic trioxide dust to be made available to TERRE-NET for their research efforts. GMOB and the Project Team are working with a company called SGS-Lakefield, where samples of the dust are currently safely stored, to develop protocols for access. | In Progress |

| TASK | WHAT WAS DONE | RATING |
|---|--|-----------|
| Financial and Physical Resource Management | | |
| Provide the necessary financial records to the respective authorities in a timely fashion. | The completed GMOB audit is delivered annually to CIRNAC and then presented at the GMOB AGM. The audit describes the GMOB financial position to March 31, 2018, its operations and its cash flows for the fiscal year end, in accordance with Canadian accounting standards for non-profit organizations. The 2017-2018 GMOB Financial Statement was delivered to CIRNAC on July 6, 2018 and signed off by CIRNAC on September 13, 2018. The audited 2017-2018 GMOB Financial Statement was presented at the GMOB AGM on November 15, 2018. | Completed |
| Manage GMOB funds in a prudent and responsible manner so as to receive a positive review of the annual financial audit. | GMOB is funded by the federal government according to the terms set out in Article 11 of the Agreement. Crowe MacKay LLP prepared the 2017-2018 Audited Financial Statements, formally accepted at the GMOB Annual General Meeting on November 15, 2018. In its report, the Auditor stated, "In our opinion, the financial statements present fairly, in all material respects, the financial position of Giant Mine Oversight Body Society as at March 31, 2018, and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations." | Completed |
| Manage GMOB physical resources in a prudent and responsible manner. | GMOB completed the 2018-2019 annual inventory of assets on January 9, 2019, according to GMOB policy. | Completed |

| TASK | WHAT WAS DONE | RATING |
|---|--|-------------|
| Human Resource Management | | |
| Maintain an appropriate level of staff to assist in GMOB activities. | In accordance with the GMOB Operational Policy, GMOB administration and board review staffing requirements on a quarterly basis. | In Progress |
| Maintain positive relations with GMOB employees. | In accordance with the GMOB Operational Policy, the Board monitors staff relations. | In Progress |
| Provide employees with an annual evaluation and performance feedback. | In accordance with the GMOB Operational Policy, the GMOB staff members receive annual evaluations and performance feedback. | Completed |
| Provide employees with training as required. | In accordance with the GMOB Operational Policy, staff training is identified and supported. | Completed |

Endnotes

- 1 <https://www.ece.gov.nt.ca/en/services/skills-4-success/skills-4-success-engagement>
- 2 <https://www.epa.gov/ems/learn-about-environmental-management-systems#what-is-an-EMS>
- 3 <https://uwaterloo.ca/earth-environmental-sciences/news/uwaterloo-leads-national-initiative-manage-hazardous-waste>
- 4 <https://uwaterloo.ca/earth-environmental-sciences/news/uwaterloo-leads-national-initiative-manage-hazardous-waste>

GMOB Board of Directors



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