

TOWARDS SUSTAINABLE MINING

2016 Progress Report



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Introduction

About Towards Sustainable Mining

Towards Sustainable Mining (TSM) is an award-winning performance system that helps mining companies evaluate and manage their environmental and social responsibilities.

It is a set of tools and indicators to drive performance and ensure that key mining risks are managed responsibly at participating mining and metallurgical facilities. Mining companies that participate in the TSM initiative demonstrate their strong commitment to responsible mining.

By adhering to the TSM Guiding Principles, mining companies exhibit leadership by:

Engaging with communities.

Driving world-leading environmental practices.

Committing to the safety and health of employees and surrounding communities.

Established in 2004 by the Mining Association of Canada (MAC), TSM's main objective is to enable mining companies to meet society's needs for minerals, metals and energy products in the most socially, economically and environmentally responsible way.

At its core, TSM is:



Accountable

Participation in TSM is mandatory for all MAC members, and the Mining Association of British Columbia and the Québec Mining Association are currently implementing TSM for their members. Assessments are conducted at the facility level where the mining activity takes place - the only program in the world to do this in our sector.



Transparent

Mining companies publicly report their facilities' performance against 23 indicators in the annual *TSM Progress Report*. Results are externally verified every three years.



Credible

TSM is overseen by an independent Community of Interest (COI) Advisory Panel. This multi-interest group helps mining companies and communities of interest foster dialogue, improve the industry's performance and shape the TSM initiative for continual advancement.



TSM Guiding Principles

As members of the Mining Association of Canada, our role is to responsibly meet society’s needs for minerals, metals and energy products. To achieve this, we engage in the exploration, discovery, development, production, distribution and recycling of these products. We believe that our opportunities to contribute to and thrive in the economies in which we operate must be earned through a demonstrated commitment to sustainable development.*

Accordingly, our actions must demonstrate a responsible approach to social, economic and environmental performance that is aligned with the evolving priorities of our communities of interest.** Our actions must reflect a broad spectrum of values that we share with our employees and communities of interest, including honesty, transparency and integrity. And they must underscore our ongoing efforts to protect our employees, communities, customers and the natural environment.

We will demonstrate leadership worldwide by:

- Involving communities of interest in the design and implementation of our Towards Sustainable Mining initiative.
- Proactively seeking, engaging and supporting dialogue regarding our operations.
- Fostering leadership throughout our companies to achieve sustainable resource stewardship wherever we operate.
- Conducting all facets of our business with excellence, transparency and accountability.
- Protecting the health and safety of our employees, contractors and communities.
- Contributing to global initiatives to promote the production, use and recycling of metals and minerals in a safe and environmentally responsible manner.
- Seeking to minimize the impact of our operations on the environment and biodiversity, through all stages of development, from exploration to closure.
- Working with our communities of interest to address legacy issues, such as orphaned and abandoned mines.
- Practising continuous improvement through the application of new technology, innovation and best practices in all facets of our operations.

In all aspects of our business and operations, we will:

- Respect human rights and treat those with whom we deal fairly and with dignity.
- Respect the cultures, customs and values of people with whom our operations interact.
- Recognize and respect the unique role, contribution and concerns of Aboriginal peoples (First Nations, Inuit and Métis) and indigenous peoples worldwide.
- Obtain and maintain business through ethical conduct.
- Comply with all laws and regulations in each country where we operate and apply the standards reflecting our adherence to these guiding principles and our adherence to best international practices.
- Support the capability of communities to participate in opportunities provided by new mining projects and existing operations.
- Be responsive to community priorities, needs and interests through all stages of mining exploration, development, operations and closure.
- Provide lasting benefits to local communities through self-sustaining programs to enhance the economic, environmental, social, educational and health care standards they enjoy.

* MAC draws on the 1987 Brundtland Commission definition of sustainable development: “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

** We use the term communities of interest to include all of the individuals and groups who have or believe they have an interest in the management of decisions about our operations that may affect them. This includes employees, contractors, Aboriginal or indigenous peoples, mining community members, suppliers, customers, environmental organizations, governments, the financial community, and shareholders.



Message from the Chair of the TSM Governance Team and MAC's President and CEO

Welcome to the 2016 *TSM Progress Report*. We are pleased to present a detailed look at our members' environmental and social performance for 2015.

HIGHLIGHTS OF 2015 RESULTS

This report includes the 2015 TSM performance results of 62 facilities belonging to 22 of our member companies, six of which had their results externally verified as part of TSM's three-year external verification cycle. Two mines reported TSM performance for the first time and are included in aggregate graphs for each of the protocols.

Once again, we saw improvements across all protocols:

- 85% of facilities reported having a comprehensive management system for energy use and greenhouse gas (GHG) emissions, compared to 75% in 2014.
- More than 90% of facilities achieved a Level A or higher across all indicators in the Tailings Management Protocol.
- 86% of companies and facilities reported they have a crisis management plan that adheres to the criteria of the Crisis Management Planning Protocol, compared to 83% in 2014.
- 95% engaged in effective and meaningful two-way dialogue with communities of interest.
- 71% have senior management commitment to biodiversity conservation in place.
- 100% have a fully implemented safety and health management system.

INCREASED UPTAKE OF TSM

Uptake of TSM continues to grow within the MAC membership and beyond. After officially adopting TSM for its membership in 2014, the Québec Mining Association (QMA) focused on preparing its members for public reporting and external verification throughout 2015. The Mining Association of British Columbia (MABC), which has also adopted TSM, continued to help members work towards implementation and initiated a peer-mentoring program for companies experienced with TSM to provide support to those just starting out.

With the Finnish Mining Association's (FinnMin) adoption of TSM in 2015, our made-in-Canada sustainability standard has been exported globally. Since signing the licensing agreement in November 2015, FinnMin has been working towards implementation by translating the TSM documents into Finnish and organizing training sessions for its member companies. FinnMin has also introduced two new protocols for its members that address mine closure and water stewardship. In 2016, the Argentinian Chamber of Mining Entrepreneurs (CAEM) became the second association outside of Canada to adopt TSM.

TAILINGS MANAGEMENT

MAC's focus in 2015 was to fulfill the commitment made following the Mount Polley tailings incident to thoroughly review the tailings management components of TSM to ensure they reflect best practice. Throughout the year, the Independent TSM Tailings Management Review Task Force conducted an in-depth analysis of the TSM tailings management requirements, including MAC's three tailings management guides and protocol. In November 2015, the Independent Task Force presented MAC with its final report comprising 29 recommendations to strengthen the requirements and guidance under TSM. Since November, we have been focused on amending the TSM Tailings Management Protocol and the accompanying guides to implement all of the Task Force's recommendations.

In parallel to the work of the Independent Task Force, MAC's Tailings Working Group also conducted a thorough review of TSM. Although this work was separate from the Task Force process, there was a high degree of convergence between the Task Force's recommendations and the outcomes of the Tailings Working Group review.

Implementation of the Independent Task Force's report and the recommendations of the MAC Tailings Working Group have already produced several enhancements to the TSM Tailings Management Protocol.



In 2016, the MAC Board of Directors approved a set of revisions to the protocol that address all of the Task Force's recommendations related to the Tailings Management Protocol. Throughout 2016, with the support of the Community of Interest (COI) Advisory Panel, MAC and its members will work to implement the remaining recommendations of the Task Force's report.

Additionally, MAC's Tailings Working Group is working to revise the tailings guides to have a stronger emphasis on the technical aspects of tailings management, especially those critical to the physical and chemical stability of tailings facilities. An enhanced *Guide to the Management of Tailings Facilities* is expected to be released in 2017.

NEW WATER STEWARDSHIP POLICY FRAMEWORK

In 2015, MAC published a new TSM Policy Framework on Water Stewardship, reflecting the ongoing evolution of TSM and our members' expanding commitments to the environment and the communities where they operate. The new framework complements the commitments spelled out in the TSM Guiding Principles and includes 13 elements that further strengthen the membership's commitment to sustainable practices. Through adoption of this framework, MAC members commit to implementing responsible water-related policies and practices. These include identifying and managing risks, seeking opportunities to conserve water, and ensuring that water use and discharge decisions consider the needs of other users and the ecosystem. They will engage collaboratively with communities of interest to understand water needs and uses, and manage potential impacts of their facilities on water resources. The framework also includes commitments related to managing water in a transparent and accountable manner, which includes publicly reporting on water-related performance.

COI ADVISORY PANEL

Throughout 2015, the COI Advisory Panel continued to be integral to the success of TSM. Specifically, in the role that it plays in the Post-Verification Review (PVR) component of TSM, the Panel selected Agnico Eagle Mines and Taseko to participate in the PVR process, which led to interesting discussions on topics ranging from how companies evaluate the effectiveness of their community engagement activities to how companies are preparing for and adapting to climate change. As described in the COI Panel's annual statement on page 7, the group remains focused in 2016 on pushing the industry forward on these important issues.

We hope you enjoy the *2016 TSM Progress Report*.



Louise Grondin
Agnico Eagle Mines Limited
Chair of the TSM Governance Team*



Pierre Gratton
President and CEO
The Mining Association of Canada

*Louise Grondin stepped down as chair of the TSM Governance Team in 2016. Peter Read, Syncrude Canada was appointed as the new TSM Governance Team Chair in 2016.

Statement from the Community of Interest Advisory Panel

The Community of Interest (COI) Advisory Panel is an independent, multi-interest group comprised of individuals from Aboriginal groups, communities where the industry is active, environmental and social NGOs, and labour and financial organizations. Several representatives of the MAC Board of Directors sit on the Panel as ex-officio members to provide a mining industry perspective to the discussions. The Panel serves as a platform for communities of interest and MAC members to discuss and collaborate on issues of mutual concern.

 [Read more about the COI Panel at www.mining.ca/tsm](http://www.mining.ca/tsm)

This Panel Statement serves as an independent reflection from the non-industry members of the COI Panel on key areas of interest and progress since the previous statement. It covers the October 2015 meeting in Saskatoon, the March 2016 meeting in Toronto and all interim activities.

This year, the Panel established task forces to take a more proactive role in setting the meeting agendas and advancing work on key areas of interest.

This statement provides an overview of the following topics:

- Climate change (led by a Panel-driven task force)
- Effectiveness of community engagement (led by a Panel-driven task force)
- Tailings (as reported on by a COI Panel member who sat on the Independent TSM Tailings Management Review Task Force)
- Summary of the Post-Verification Reviews of Taseko Mines Limited and Agnico Eagle Mines Limited

COI PANEL TASK FORCE ON CLIMATE CHANGE

The COI Panel has been very active this past year with a continued focus on climate change-related activities. In October 2015, two Panel members led an introductory discussion on climate change. The Panel engaged in a 'blue sky' thinking exercise to challenge and encourage MAC and its members to take a more holistic and long-term approach to climate change, as understood by COI Panel members. Panel members also had the opportunity to learn about current and future innovations by MAC members to address climate change.

Climate change was also a central focus of the Panel at its March 2016 meeting. Set in the context of a new federal government with renewed commitments to addressing climate change, including the creation of a national action plan with the provinces and territories and the adoption of the historic Paris Agreement, the Panel focused on challenges and opportunities for MAC. Four experts joined the meeting for an engaging discussion on climate change opportunities for the mining industry, with presentations from Toby Heaps (Corporate Knights), James Larson (Advanced Energy Centre, MaRS Discovery District), Steve Coupland (Canadian Nuclear Association), and Nicholas Séguin (TUGLIQ Energy). The Panel also viewed a short video on Glencore's wind turbine installations at its Raglan mine in northern Quebec. This project was subsequently the winner of the 2016 TSM Environmental Excellence Award.

MAC provided an opportunity for Panel members to provide feedback on the association's *Principles for Climate Change Policy Design*, including a call for carbon pricing, which was publicly released in April 2016. The Panel task force on climate change drafted and shared its own Panel Advisory Statement on Climate Change during the October meeting. Panel members reviewed the statement and shared their substantive comments. The goal of this statement is to provide MAC and its members with a concrete understanding of the opportunities the COI Panel sees regarding MAC member engagement on climate change in six main areas: operations, local and Indigenous communities, supply chains, public and policy engagement, disclosure of climate risks and opportunities, and the TSM program. This statement will encourage MAC to view its work through a more articulated climate lens, including mitigation, adaptation and resiliency. The advisory statement, which was publicly released in November 2016, can be found on page 11 of this report.



EFFECTIVENESS OF INDIGENOUS AND COMMUNITY ENGAGEMENT

The COI Panel continues to discuss the TSM indicators and has taken an interest in looking closely at how to measure the effectiveness of management systems, beginning with the Aboriginal and Community Outreach Protocol. In 2015, four Panel members worked together informally between the October and March meetings to think critically about how to measure the effectiveness of Indigenous and community engagement systems. The objectives are to review the current TSM indicators, how they are measured and reported, gauge their effectiveness, and to recommend improvements if necessary. Overall the intent is to ensure the TSM framework enables companies to be effective in Indigenous and community engagement by providing methods to conduct, measure and report on their activities.

The COI Panel supported the objective that this work continue in 2016, with a view to presenting firm recommendations at the fall COI Panel meeting.

TAILINGS

Tailings has been an important and ongoing topic of interest for the Panel, particularly since the Mount Polley tailings dam failure in 2014.

Throughout 2015, Alan Young, a long-time Panel member who recently stepped down, participated in the Independent TSM Tailings Management Review Task Force. In the aftermath of Mount Polley, the group was asked to examine whether or not the TSM requirements could be modified or strengthened to help meet the goal of zero major incidents. Over the course of six months, the Task Force examined the TSM Tailings Management Protocol and accompanying guides and provided recommendations to MAC on how to improve tailings management and performance requirements. The Task Force also looked at how to improve engagement with affected communities on tailings-related issues and how to ensure the protocol and guides deliver greater transparency and accountability. The Task Force's 29 recommendations can be found in its final report found at www.mining.ca/reports. MAC's Board of Directors accepted all recommendations and has committed to reporting progress on their implementation as changes are made. The COI Panel will be monitoring this progress and will provide its guidance going forward.

In addition to devoting the entire March 2015 meeting to the topic of tailings (as described in the previous year's Panel Statement), the COI Panel selected tailings as a key issue to probe during the 2015 Post-Verification Reviews of Agnico Eagle Mines Limited and Taseko Mines Limited at the October 2015 meeting (as discussed below).

The Panel also spent time at the March 2016 meeting reviewing the Task Force's recommendations and providing advice on two specific recommendations:

1. How to organize the aspects of community engagement across the protocols; and
2. whether to remove Levels C and B from the tailings management protocol and/or require facilities not yet at a Level A to develop action plans to achieve that level or higher.

OVERVIEW OF THE PANEL'S POST-VERIFICATION REVIEW AND THE VISIT TO CAMECO'S OPERATIONS

2015 Post-Verification Review

A key part of the COI Panel's mandate is to take part in the Post-Verification Review (PVR) process. The purpose of the PVR is to test a sample of companies' verified TSM results to see whether and how facility systems are leading to performance improvement and to discuss key issues of interest to the Panel. This exercise has been, and continues to be, a valuable opportunity for Panel members to examine site and company-specific information, not only for the evaluation of TSM scores, but to improve the Panel's overall understanding of the successes and challenges facing companies in specific mining sectors. In 2015, the Panel selected Taseko Mines Limited and Agnico Eagle Mines Limited to participate in the PVR process. View the PVR report at www.mining.ca/reports.

Taseko has a single operating mine, the Gibraltar mine, that it purchased in 1999 as a closed operation and reopened it in 2004. Located near Williams Lake in the interior of British Columbia, it is the second largest open pit mine in Canada and produces copper and molybdenum. Taseko has undertaken a significant modernization process since reopening the mine and is acquiring the experience of implementing the TSM indicators and developing working relationships with Williams Lake and other neighbouring communities as part of this process. The company indicated its active interest in working with MAC on the issues involved in community relations and community engagement.



Taseko has several other exploration and development projects in British Columbia, including the New Prosperity Project. Taseko, like other mining companies operating or planning to operate in British Columbia (and perhaps elsewhere) has a direct interest in the recent ruling of the Supreme Court of Canada in the Tsilhqot'in Nation decision, and its implications for the recognition of Aboriginal title.

Agnico Eagle Mines Limited, in contrast, operates a number of mines both in Canada and overseas, and specializes in gold production. Its operations in Northwest Québec (the Malarctic mine and other operations) and in Nunavut (the Meadowbank mine and Meliadine project) are particularly relevant in the Canadian setting. In Northwest Québec, Agnico Eagle, although a relatively recent arrival, is operating in a region with a complex history of mining extending back to the early years of the 20th century. The social, economic and cultural issues associated with that history, including relationships with Indigenous communities, are an important part of that history and are relevant to the work of the COI Panel. In the case of Meadowbank (and probably Meliadine, in the coming years), Agnico Eagle is acquiring significant experience with mining in the new institutional and cultural setting of Nunavut, and is in a position to explore and discuss many of the issues associated with Impact and Benefit Agreements (IBAs) and their implementation.

The Panel's PVR working group selected the following key topics to explore with both companies:

- **Effectiveness of Aboriginal and community engagement:** Even if companies have systems in place to engage communities, how do you know they are working? How can you measure the effectiveness of your engagement activities?
- **Climate change:** Many Panel members wanted to see more action on climate change from companies – from being more visible in their efforts and support in the fight against climate change, to better planning for climate change.
- **Tailings:** Considering that Taseko's Gibraltar mine is close to the Mount Polley mine, the Panel wanted to know how Taseko managed in the aftermath of the incident and how it planned for tailings management for the long-term (in perpetuity).
- **The value of TSM:** How do companies ensure that TSM is actually adding value?

October 2015 Meeting in Saskatoon and Northern Saskatchewan

Since 2011, the Panel has met in important mining regions across Canada for the fall meeting. This year, the Panel met in Saskatoon in October and was hosted by Cameco.

The Panel visited Cameco's McArthur River and Key Lake operations in northern Saskatchewan and met with a number of Cameco's local communities of interest in Saskatoon. This was the first direct opportunity the Panel has had to familiarize itself broadly with the social and economic issues associated with contemporary uranium mining. Substantial employment drawing from Cree, Dene and Métis communities is a notable feature of these operations, and the company relies on complex 'fly in and fly out' arrangements with some 30 communities. The complex range of social and economic issues are addressed in a number of reports and continuing programs that were of interest to the Panel, among which we should single out the Community Vitality Monitoring Partnership (CMVP), which the Panel heard about during its meeting with local stakeholders and is an interesting partnership model worth exploring. Beyond the social and economic issues, it is also clear that environmental issues are central in the exploration of relationships between the uranium mining industry and communities, although environmental issues were not the primary focus of this site visit. A full report on our October 2015 meeting can be found at www.mining.ca/reports.

CONCLUSIONS

This year marked an evolution towards a more engaged and involved COI Panel. Panel members came forward with their own ideas and approaches for tackling issues of interest such as effectiveness of community engagement and climate change, and took a more active role in designing the meetings and facilitating specific sessions.

Moving forward, we will continue to advance these issues, with hopes that we can support and improve performance in the mining industry, and will reflect on this new approach at the upcoming meeting in October 2016.



TSM Community of Interest Advisory Panel

COI PANEL CATEGORY		INDUSTRY REPRESENTATIVES (EX-OFFICIO)
Social NGOs, including faith-based groups	Individuals who represent civil society with knowledge of social justice issues.	Joy Kennedy
Media/communications	Individuals with expertise in the reputation of industry and perceptions of the public.	Claudine Renaud*
Aboriginal peoples	Individuals who represent the interests of Métis, First Nations and Inuit.	Dan Benoit Chief Earl Klyne Theresa Hollet
Environmental NGOs	Individuals with environmental expertise and advocates for environmental protection.	Alan Young* Nathan Lemphers
International development	Individuals with expertise in alleviating poverty and improving the standard of living through responsible development.	Philip Oxhorn
Economic/community development	Individuals with expertise in business development at the community level and knowledge of community interactions with mining facilities.	Tim Johnston Chief David Walkem
Finance/investment	Individuals with financial expertise and knowledge of socially responsible investing.	Stephen Kibsey
Labour/workforce	Individuals with knowledge of the interests, safety and needs of workers.	Doug Olthuis
Expert category	The Panel may choose to select expert categories to be filled as specific issues are identified.	Alan Penn* Luc Zandvliet Maya Stano**
Industry representatives (ex-officio)	Industry participation comprises four MAC Board members, one representative of the exploration sector, and the MAC President and CEO. Additional MAC Board members are strongly encouraged to regularly sit in as observers. MAC staff members also participate as resource persons.	Pierre Gratton Louise Grondin* Scott Yarrow Peter Read Mark Travers* Cory McPhee** Glen Koropchuk* Mark Wiseman** Michel Julien**

*Left the COI Advisory Panel in 2016

**Joined the COI Advisory Panel in 2016



Rising to the Challenge: COI Panel Advisory Statement on Climate Change

PURPOSE

The Community of Interest Advisory Panel (the “Panel”) of the Mining Association of Canada (“MAC”), in fulfillment of its terms of reference, strives to:

- advise and encourage improvements in social, environmental and economic performance of the Canadian mining industry; and
- identify to the MAC Board of Directors current and emerging priority issues (environmental, social/cultural and economic) for the sector for the purposes of strategic planning.

To this end and consistent with its mandated responsibility, the Panel is pleased to present the following Advisory Statement on Climate Change to MAC and its members. This Advisory Statement is intended to build and expand on MAC’s recently released *Principles for Climate Change Policy Design*.

INTRODUCTION

Climate change is a global concern. Its impacts pose increasingly widespread threats to local and Indigenous communities, vulnerable ecosystems, economic activities (including mining) and the security of nations. The adoption of measures to address climate change, mitigate its effects and strengthen the resilience of ecosystems has the potential to alleviate long-term impacts, minimize necessary future modification costs, and create social and economic benefits for both public and private interests – be they local, regional, national or international in focus.

Recent commitments by the Canadian federal government and international community, including the United Nations’ *Paris Agreement*, are triggering innovative policies and activities focused on addressing climate change and mitigating its impacts. The Panel challenges and strongly urges MAC and its members to continue to lead and innovate in:

- reducing emissions;
- engaging with local Indigenous interests, rights-holders and stakeholders;
- actively pursuing effective means to mitigate climate change impacts;
- focusing efforts on achieving a just transition and proper adaptation for long-term resilience; and
- challenging supply chain partners and investors to support these efforts.

To that purpose, the Panel proposes specific ideas and actions herein to assist MAC and its members in building on the progress already made in addressing climate change, and to help guide future endeavours with respect to planning, managing and operating mines and related activities in this changing global context.

CALLS TO ACTION

1. *Towards Sustainable Mining Program*

Rationale: MAC’s Towards Sustainable Mining Program (“TSM”) is focused on continual improvement that is credible and responsive to the expectations of communities of interest. The ongoing development of TSM provides opportunities to go beyond existing efforts, and expand its focus on climate change in such a manner that the urgency of the current situation, the increasingly stringent government reporting requirements, and the opportunities afforded to demonstrate pro-active leadership in addressing climate change can be taken into account.

Accordingly, the Panel recommends that MAC and MAC members:

- In the course of implementing MAC’s strategic priorities, systematically review TSM, including all TSM documents (i.e., guiding principles, protocols, frameworks and guides), to explicitly integrate consideration and references to climate change, including mitigation and adaptation and resiliency measures;



- In TSM guides, include reference lists to appropriate tools for climate risk assessment and disclosure;
- Strengthen expectations of MAC members regarding climate change to meet at least the Level A requirements in the Energy Use and GHG Emissions Management Protocol, especially around performance. Additionally, consider making current requirements for Level AAA in the Protocol, such as going beyond energy efficiency and savings and reporting scope 3 emissions, necessary to obtain a Level AA rating. An enhanced Level AAA rating could include extra measures such as demonstrated implementation of the MAC Principles for Climate Change Policy Design, mandatory climate risk disclosure and required educational and training initiatives on emission reductions;
- As TSM evolves, include appropriate climate-related terms, definitions and criteria in all other Protocols, especially Biodiversity Conservation Management, Tailings Management, Crisis Management, and Water (once approved); and
- Add climate change considerations, terms and requirements into the Frameworks around Aboriginal and Community Outreach, Safety and Health, Mine Closure, and Energy Use and GHG Emissions Management.

2. Operations Level

Rationale: The mine site, processing plants (i.e., mills) and smelters have historically been a focus for emission mitigation and energy efficiency activities. While efficiency improvements have already led to significant emission reductions, operational-level actions centred on continuous improvement should remain an important focus for additional action on climate change.

Accordingly, the Panel recommends that MAC and MAC members:

- Actively implement and incorporate the use of cost-competitive, value-creating, low carbon emission energy production and energy storage technologies in mine-site operations (i.e., expand the use of these technologies beyond demonstration projects, where feasible);
- Conduct climate change risk assessments that consider direct and indirect risks – such as receding permafrost, increasing frequency and severity of droughts, floods, snow falls and wildfires – at all stages of mine-site design and planning;
- Implement appropriate adaptation measures based on risk assessments that also account for the considerable uncertainty in modelling climate change risks; and
- Engage, educate and empower mine-site workers to consider potential climate change risks and creative solutions.

3. Local and Indigenous Communities

Rationale: Local, remote and/or Indigenous communities often experience the earliest and most severe impacts from climate change. Concurrently, energy costs are often high, energy use often relies on high emission sources, and energy sources are often unreliable. This presents an important opportunity for MAC and MAC members to work with government, industry, and local and Indigenous communities to address these insecurities.

Accordingly, the Panel recommends that MAC and MAC members:

- Assist local and Indigenous communities by improving renewable energy production and energy storage solutions;
- Build capacity among local and Indigenous businesses to maintain clean energy infrastructure at or near the mine site; and
- Where appropriate, aid in the development of capacity for the development of energy efficient quality local sustainable food supplies.

4. Supply Chains

Rationale: The mining industry can play a significant role in strategically positioning itself as a supplier of minerals and metals that are critical for the transition to a low carbon future. Potential benefits associated with a global supply chain can be leveraged, with risks minimized, to yield positive economic, social and environmental change, while concurrently creating a growing market for these critical products.



Accordingly, the Panel recommends that MAC and MAC members:

- Build on the work of the Canada Mining Innovation Council and use its members' purchasing power to encourage suppliers to offer cost-competitive, value-creating, low carbon emission products (e.g., low-emission electric mining equipment and energy storage technology that can meet the needs of remote operations);
- Strategically position the mining industry as a key source of metals for renewable energy manufacturers (e.g., copper and nickel in wind farms, and lithium and rare earth elements in electric vehicle batteries), sustainable transportation manufacturers (e.g., passenger rail and buses) and non-emission fuels (e.g., uranium); and
- Assess the opportunities for mining companies and industry associations (including MAC) to work with partners and customers to recycle or reuse products containing metals and minerals.

5. *Public and Policy Engagement*

Rationale: Enhanced, strategic public and policy engagement on climate change can create additional value both broadly and specifically to the mining industry. Sharing success stories with the public can improve the social license to operate and encourage innovation both within and beyond the mining industry. In addition, proactively addressing the concerns of impacted workers and communities can help build trust and reduce risk exposure. Concurrently, actively engaging policy makers and building coalitions with other stakeholders can help shape and legitimize policy that facilitates a just transition towards de-carbonization.

Accordingly, the Panel recommends that MAC and MAC members:

- Build on existing campaigns by MAC and other industry associations to educate Canadians on existing success stories and the role of the mining industry in supplying the metals and minerals needed to de-carbonize our energy and transportation systems;
- Enhance advocacy for public policies that stimulate demand for low-carbon infrastructure, and put a price on carbon that reflects the social costs of climate change while remaining competitive on the international stage – MAC's recent Principles for Climate Change Policy Design offer an excellent example of this approach, and we encourage more such work by MAC and MAC members;
- Align with other interested organizations to seek common goals for climate action. This model – long proven successful on other social and environmental issues facing Canada's mining industry (e.g., the Whitehorse Mining Initiative, the Resource Revenue Transparency Working Group, the Devonshire Initiative, the National Orphaned and Abandoned Mines Initiative and MAC's Community of Interest Panel) – should now be adopted to focus on the impacts of, and opportunities for, the mining industry with respect to climate change;
- Advocate for industry and government-supported transition funds for impacted workers (i.e., those workers who face increasingly precarious employment, underemployment, or unemployment) and communities dependent on companies adversely impacted by climate change mitigation policies; and
- Acknowledge the need for policies in support of impacted workers (in the mining sector and beyond), including re-training for new job opportunities, employment insurance flexibility for worker transitions, enhanced severance and salary continuance, pension bridging and early retirement options.

6. *Disclosure of Climate Risks and Opportunities*

Rationale: Increasing numbers of long-term oriented institutional investors are encouraging mining companies to continue developing meaningful disclosure of climate change-related risks and opportunities.

When assessing any type of emerging risk (such as climate change), the key to beginning to understand the possible impacts lies in the availability of pertinent and accurate information which the mining sector strives to provide.

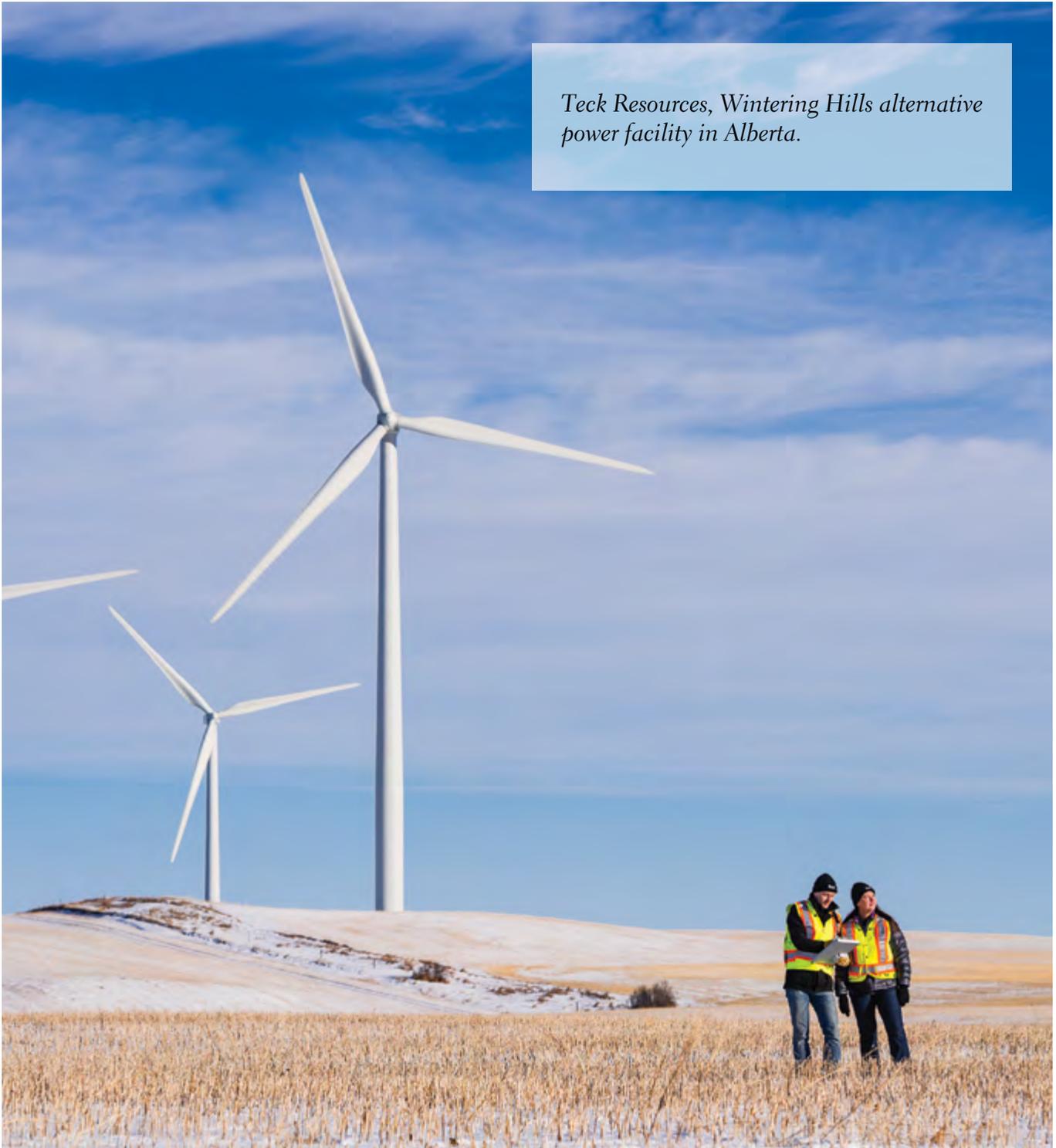
Accordingly, the Panel recommends that MAC and MAC members:

- Continue to disclose absolute GHG emission levels and relevant corresponding metrics, while promoting consistent international standards to ensure accuracy;



- Where possible, clearly segment categories of capital expenditures and research development expenses to effectively disclose risks and opportunities. For example, although difficult to provide, disclosing distinctions on capital expenditures between continuing operations, new projects and climate adaptation requirements would provide critically useful information; and
- Continue to further enhance material disclosure (beyond current regulatory requirements) of climate change risks and opportunities (based on qualitative and quantitative information) to investors and other stakeholders seeking to assess the long-term strategic resilience of mining companies.

Teck Resources, Wintering Hills alternative power facility in Alberta.



How TSM Works

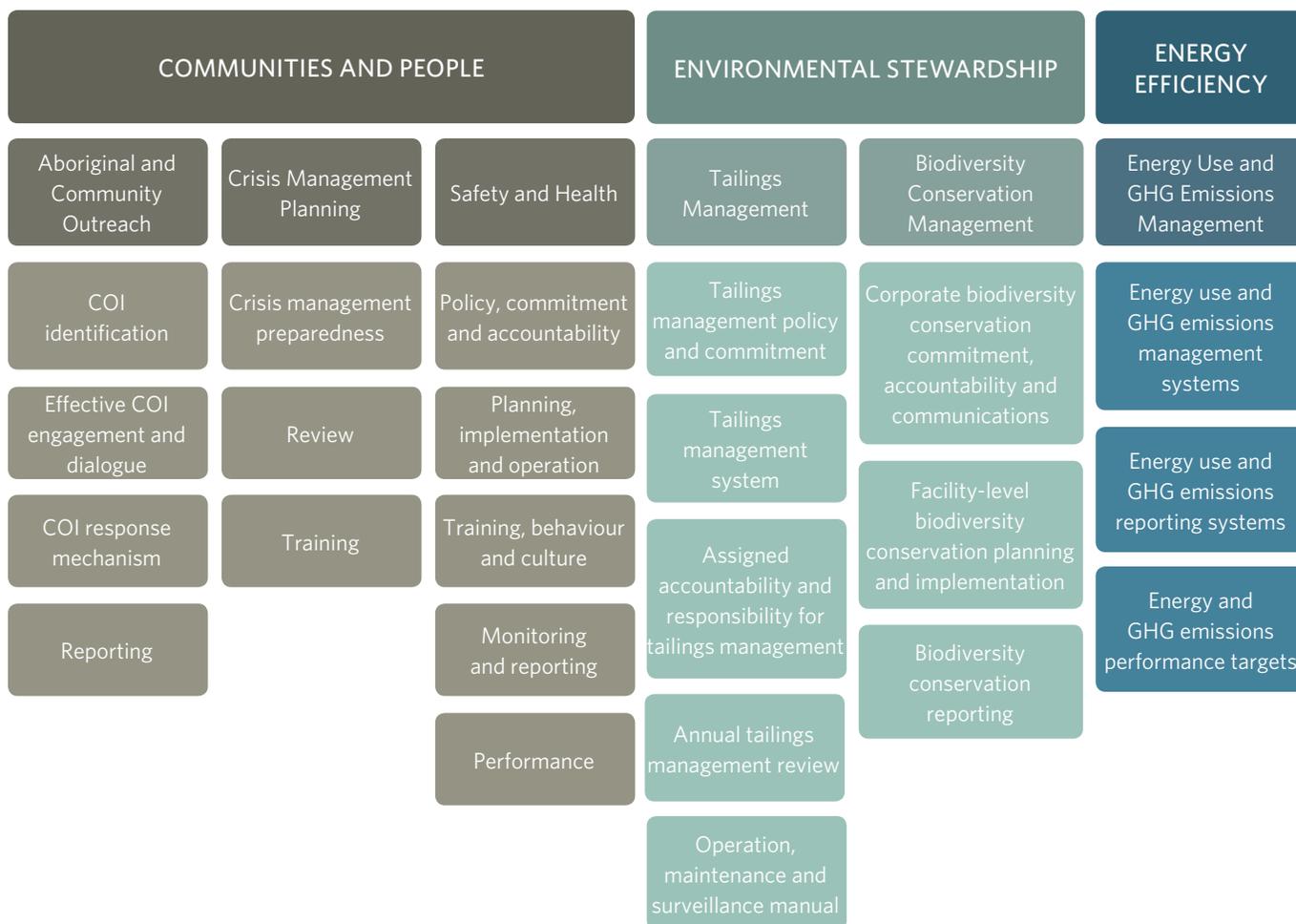
OUR COMMITMENTS

Mining companies that participate in TSM have collectively articulated their commitment to responsible mining through the TSM Guiding Principles. The TSM Guiding Principles are at the core of the initiative and represent mining companies' commitments pertaining to community engagement, environmental stewardship and energy efficiency, with the goal of leaving lasting benefits for communities and future generations.

WHAT WE MEASURE

To translate commitments into action at the facility level, TSM employs performance protocols that focus on three core areas: communities and people, environmental stewardship and energy efficiency. The performance protocols are designed to help companies build and evaluate their systems and processes for key aspects of mining activity, as well as show Canadians what the industry's current environmental and social performance is and how it can be improved.

TSM Performance Protocols and Indicators



Each performance protocol is made up of a set of indicators that focus on different components of a management system. Participating facilities are required to assess their management practices against the indicators for each of the six performance protocols:



Detailed assessment protocols for each performance area provide guidance to assist companies in their self-assessments and to facilitate consistent application of TSM across companies and their facilities.

For each indicator, facilities receive one of five scores based on the criteria they meet. The scores are described below.

TSM Rating Scale

AAA	Excellence and leadership.
AA	Integration into management decisions and business functions.
A	Systems/processes are developed and implemented.
B	Procedures exist but are not fully consistent or documented; systems processes planned and being developed.
C	No systems in place; activities tend to be reactive; procedures may exist but they are not integrated into policies and management systems.

TSM’s overarching goal is for all facilities to achieve a Level A or higher, which means they have fully implemented leading practices and procedures to effectively address the Aboriginal and Community Outreach, Safety and Health, Tailings Management, Biodiversity Conservation Management, and Energy Use and GHG Emissions Management protocols. For the Crisis Management Planning Protocol, head offices and facilities are assessed based on a “yes” or “no” rating scale.

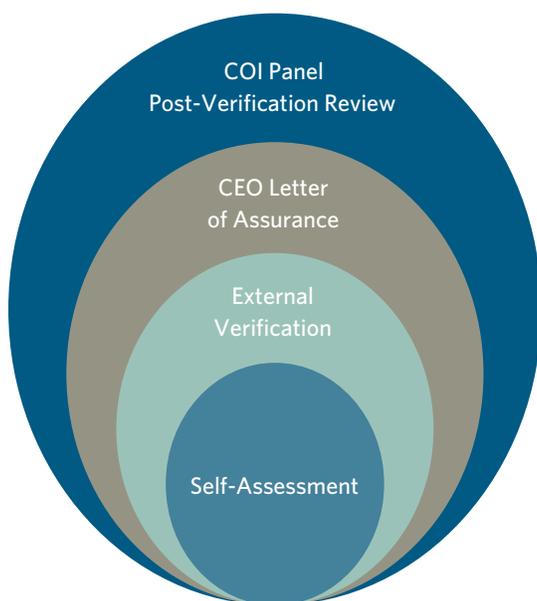
REPORTING AND EXTERNAL VERIFICATION

TSM’s primary objectives are to drive performance improvement and, through demonstration of this improvement, to build trust with communities of interest. This means that communities need to understand TSM and trust the performance results that the mining companies report. To build this trust, the program includes a number of checks and balances to ensure that reported results present an accurate picture of each facility’s management systems and performance.

Self-Assessment: Facilities annually self-assess their performance against each of TSM’s 23 indicators across six protocols. For each indicator, they assign a letter grade that reflects their performance ranging from Level C to Level AAA. These grades are available in the *TSM Performance by Company* section of this report.



Layers of TSM External Verification



New members have three years to start publicly reporting, which allows them the opportunity to train employees for full implementation.

This report includes externally verified performance results for 11 of the 62 facilities assessed in 2015.

External Verification: Every three years, a trained Verification Service Provider (VSP) critically reviews a company's self-assessments to determine if there is adequate evidence to support the performance ratings the facility has reported. The VSPs are experienced auditors who are independent of the company being verified. The VSPs rigorously apply the protocols and, where required, can change the ratings to ensure they accurately reflect the facility's management practices and performance.

CEO Letter of Assurance: In the year of external verification, the company's CEO, or most senior executive in Canada, submits a letter to MAC that confirms the external verification has been conducted in accordance with the Terms of Reference for Verification Service Providers. The letter is then posted on MAC's website (www.mining.ca).

COI Panel Post-Verification Review: Each year, MAC's independent COI Advisory Panel selects two companies to appear before it to present and discuss their TSM results. Through these discussions,

the Panel tests to see whether and how facility systems are leading to performance improvement. The Panel explores the challenges faced by the facilities and the steps companies are taking to address them.

New Member Phase-In: New members and facilities that have recently entered into production have three years to start publicly reporting TSM performance. This phase-in period allows companies to conduct a gap analysis against TSM protocol criteria and train relevant employees.

NEW MEMBER PHASE-IN SCHEDULE

Year 1: Training and gap analysis

Year 2: Aggregate-level reporting

Year 3: Public facility-level reporting

Year 4: External verification

In 2015, two facilities began reporting TSM results for the first time and their performance is incorporated into the aggregate graphs for each of the six protocols.

REPORTING AND VERIFICATION PROCESS FOR HIGH PERFORMERS

In 2014, a revised reporting and verification process was developed for facilities that consistently achieve high levels of TSM performance. For facilities that follow this optional process, these changes reduce reporting burdens and provide more flexibility to align TSM verification requirements with other audit and verification commitments.

The new framework is applied as follows:

Externally Verified Level A or AA

When a facility achieves an externally-verified Level A or AA across all indicators of a protocol (or meets all requirements of the Crisis Management and Communications Planning Protocol), the annual self-assessment becomes voluntary for three years for the protocol(s) that reach these levels. The facility must then undergo external verification before the end of that three-year period. During the three-year period, facilities will remain at the same level for each indicator, but they can voluntarily report annually if they choose to demonstrate improved performance.

Goldcorp's Cerro Negro Mine in Argentina.



Two Cycles of Level A or AA/Externally Verified Level AAA

When a facility achieves an externally-verified Level A or AA across all indicators of a protocol (or meets all requirements of the Crisis Management Planning Protocol), the annual self-assessment becomes voluntary for three years for the protocol(s) that reach these levels. This means that the facility would conduct an internal verification and submit a letter of assurance from its CEO after three years. The facility would then undergo an external verification after six years.

In 2015, several companies were eligible to apply the revised reporting and verification framework for at least one protocol. However, the majority decided to continue conducting self-assessments at their facilities.

COMMUNITY OF INTEREST ADVISORY PANEL

The MAC Board established the Community of Interest (COI) Advisory Panel in 2004 to advise on the design and implementation of TSM and to provide a mechanism for two-way dialogue between MAC and its communities of interest in Canada. To date, the Panel has held 25 formal meetings and discussed a wide range of topics including biodiversity conservation, tailings management, human rights, international development and most recently, climate change and effectiveness of community engagement mechanisms. The Panel's core functions include:

1. Identifying current and emerging priority issues (environmental, social/cultural and economic) for the sector.
2. Receiving feedback from MAC on the industry's performance and on issues raised by its communities of interest including through community-level engagement processes undertaken by member companies.
3. Providing a place for rich and well-informed (national-level) dialogue and for MAC and its members to test industry policies and approaches, and to raise issues of concern (beyond the TSM program elements).
4. Advising and encouraging MAC and its members to improve and raise the bar for environmental, social and economic performance.
5. Advising MAC on the ongoing development and implementation of TSM and reviewing TSM performance results.
6. Contributing to the understanding of and support for the goals and achievements of TSM among MAC communities of interest.

🔗 For more information on the COI Panel, visit: www.mining.ca/tsm



Industry Performance

Understanding the Results

TSM assessments are conducted at the facility level, where they are most meaningful. In 2006, 15 companies reported facility-level performance, and in 2015, this number grew to 22 companies, totalling 62 facilities. This report includes externally verified results for six companies: Hudbay Minerals, New Gold, Shell Canada Energy, Suncor, Teck Resources Limited, and Vale.

In 2006, all reporting MAC members went through external verification of their TSM performance. The graphs that follow compare the percentage of facilities that achieved a Level A or higher in 2006 to the percentage of facilities that achieved a Level A or higher in 2014 and 2015 for the Aboriginal and Community Outreach Protocol and the Tailings Management Protocol. The graph for the Crisis Management Planning Protocol shows the percentage of companies and facilities that answered “yes” for each indicator. The graphs for the Biodiversity Conservation Management Protocol and the Safety and Health Protocol compare the aggregate results for 2012, 2014 and 2015, as 2012 is the baseline year for these two protocols. The graph for the Energy Use and GHG Emissions Management Protocol compares the aggregate results for 2013, 2014 and 2015, as 2013 is the baseline year for this revised three-indicator protocol. For detailed facility-level results, please see the *TSM Performance by Company* section of this report.



Workers at Dominion Diamond's Ekati Mine in the Northwest Territories.



Industry Performance

Communities and People

Our actions must demonstrate a responsible approach to social, economic and environmental performance that is aligned with the evolving priorities of our communities of interest.

- TSM Guiding Principles

This section highlights members' performance in the following protocols: **Aboriginal and Community Outreach**, **Crisis Management Planning**, and **Safety and Health**.

ABORIGINAL AND COMMUNITY OUTREACH

The Aboriginal and Community Outreach Protocol evaluates facilities' activities and practices related to engagement with Aboriginal peoples and other communities of interest (COI). To achieve a Level A, a facility must identify whom it should engage with, ensure engagement and dialogue is ongoing and meaningful, effectively respond to community concerns, and report on engagement activities in an open and transparent manner. See *Figure 1* for a description of the requirements for achieving Levels A, AA and AAA.

Performance in this protocol is measured against four indicators:

Indicator 1: COI identification

Indicator 2: Effective COI engagement and dialogue

Indicator 3: COI response mechanism

Indicator 4: Reporting

In the early years of TSM, many facilities' community engagement activities were guided by informal mechanisms. In 2006, approximately half of the participating facilities met the criteria of Level A performance, and only a handful had achieved Level AAA.

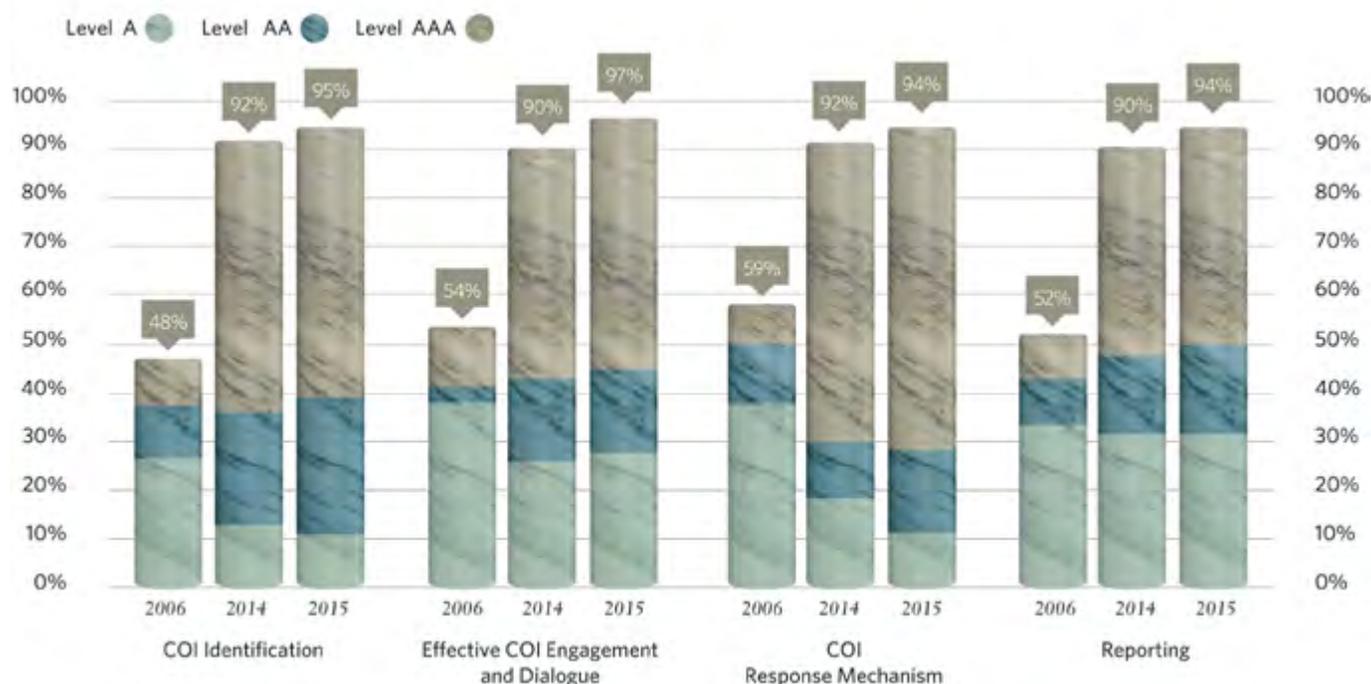
FIGURE 1 - ABORIGINAL AND COMMUNITY OUTREACH PROTOCOL: WHAT IS GOOD PRACTICE?

AAA	<ul style="list-style-type: none"> ✓ COI are invited to provide input into the identification of COI. ✓ COI contribute to reviews of engagement processes. ✓ Negotiated agreements with Aboriginal people are in place where appropriate. ✓ Facilities collaborate with COI to establish and achieve common objectives.
AA	<ul style="list-style-type: none"> ✓ COI with indirect and issue-based interests in the operation have been identified (e.g., a national non-governmental organization). ✓ COI capacity-building needs are identified to allow them to engage in effective participation on issues of interest or concern. ✓ Culturally specific engagement training is provided to the appropriate personnel. ✓ COI are invited to provide feedback on public reporting.
A	<ul style="list-style-type: none"> ✓ COI have been identified. ✓ Meaningful two-way dialogue with COI occurs on a regular basis. ✓ Employees are trained in meeting Aboriginal consultation requirements. ✓ Assistance is provided to ensure COI are able to participate in engagement and dialogue processes when appropriate. ✓ A complaint and response mechanism provides the facility with an understanding of COI concerns. ✓ COI input is considered in decision making. ✓ Reporting on COI engagement includes responses to COI concerns.



Since 2014, improvements were made across all four of the protocol's indicators. Of the facilities achieving a Level A, an increasing number are being assessed at a Level AAA for indicator 2. This means that a facility has a consistent history of meaningful engagement with COI. As *Figure 2* below indicates, the results for this protocol are strong, with an overwhelming majority of facilities surpassing the goal of a Level A performance.

FIGURE 2 - ABORIGINAL AND COMMUNITY OUTREACH
PERCENTAGE OF FACILITIES AT A LEVEL A OR HIGHER 2006, 2014 AND 2015



2015 Highlights

- 95% implemented mechanisms to identify COI.
- 97% engaged in effective and meaningful two-way dialogue with COI.
- 94% have implemented a COI response mechanism.
- 94% report publicly on their engagement and dialogue activities.

CRISIS MANAGEMENT PLANNING

The Crisis Management Planning Protocol provides mining companies with tools to effectively plan for communications in the unfortunate event of a crisis at one of their facilities or at the corporate level. Where the crisis is caused by a physical emergency, such as a fire or flood, the tools offered in this protocol are intended to work in conjunction with emergency response plans at the facility.

The protocol requires both head offices and facilities to develop crisis management plans, as well as establish crisis communications teams to support the execution of these plans. Facilities must be able to demonstrate, among other requirements, that they have crisis communications programs in place to effectively alert employees and the public of a crisis, its development and its resolution. They must also be able to demonstrate that their crisis management plan is regularly tested and updated. See *Figure 3* for a description of the requirements of this protocol.



Performance in this protocol is measured using a “yes” or “no” rating scale against three indicators:

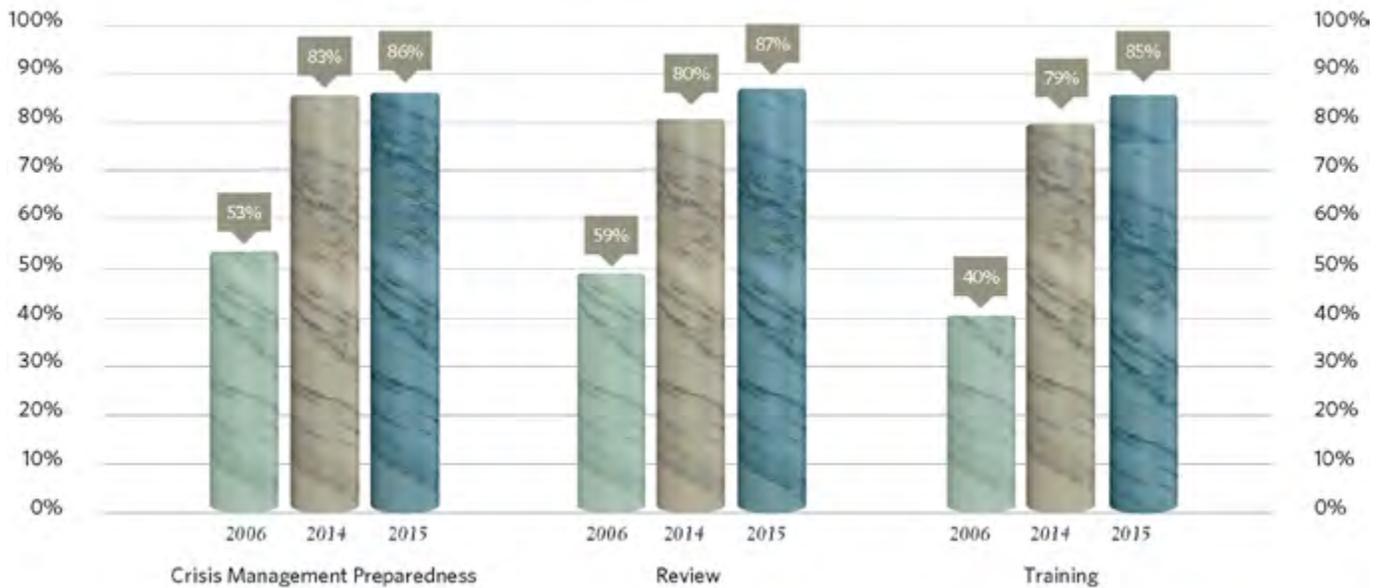
- Indicator 1: Crisis management preparedness
- Indicator 2: Review
- Indicator 3: Training

FIGURE 3 - CRISIS MANAGEMENT PLANNING PROTOCOL: WHAT IS GOOD PRACTICE?

YES	<ul style="list-style-type: none"> ✓ Crisis management plan is implemented and regularly updated. ✓ CEO has endorsed the crisis management plan. ✓ A media spokesperson is trained. ✓ Threats and risks have been identified. ✓ A notification system to activate the crisis management plan is in place. ✓ Key media contact and telephone logs are prepared. ✓ Crisis management team is established and trained. ✓ Crisis control centre is established and equipped. ✓ Meetings with senior members of the local emergency response authorities occur every year. ✓ Mechanisms designed to communicate with employees and key stakeholders in the event of a crisis are tested. ✓ Crisis simulation training exercises are conducted every year.
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In 2006, approximately half of the participating facilities and companies had a crisis management program that fulfilled TSM requirements. Since then, on an aggregate basis, the results show steady improvement, with further progress since 2014. *Figure 4* below shows the results for each indicator.

FIGURE 4 - CRISIS MANAGEMENT PLANNING
PERCENTAGE OF COMPANIES AND FACILITIES RESPONDING “YES” 2006, 2014 AND 2015



2015 Highlights

- 86% have a crisis management plan.
- 87% regularly review and update their crisis management plan.
- 85% conduct crisis simulation training exercises.

SAFETY AND HEALTH

The Safety and Health Protocol is designed to evaluate a facility's management practices related to occupational safety and health. Protecting the safety and health of employees and contractors is a fundamental component of TSM and is deeply engrained in the Canadian mining industry's culture. To achieve a Level A performance, facilities must demonstrate clear accountability for safety and health management, have processes in place that prevent the occurrence of incidents, provide proper training, and report their performance internally and externally. See *Figure 5* for a description of the requirements for achieving Levels A, AA and AAA.

Performance in this protocol is measured against five performance indicators:

Indicator 1: Policy, commitment and accountability

Indicator 2: Planning, implementation and operation

Indicator 3: Training, behaviour and culture

Indicator 4: Monitoring and reporting

Indicator 5: Performance

FIGURE 5 - SAFETY AND HEALTH PROTOCOL: WHAT IS GOOD PRACTICE?

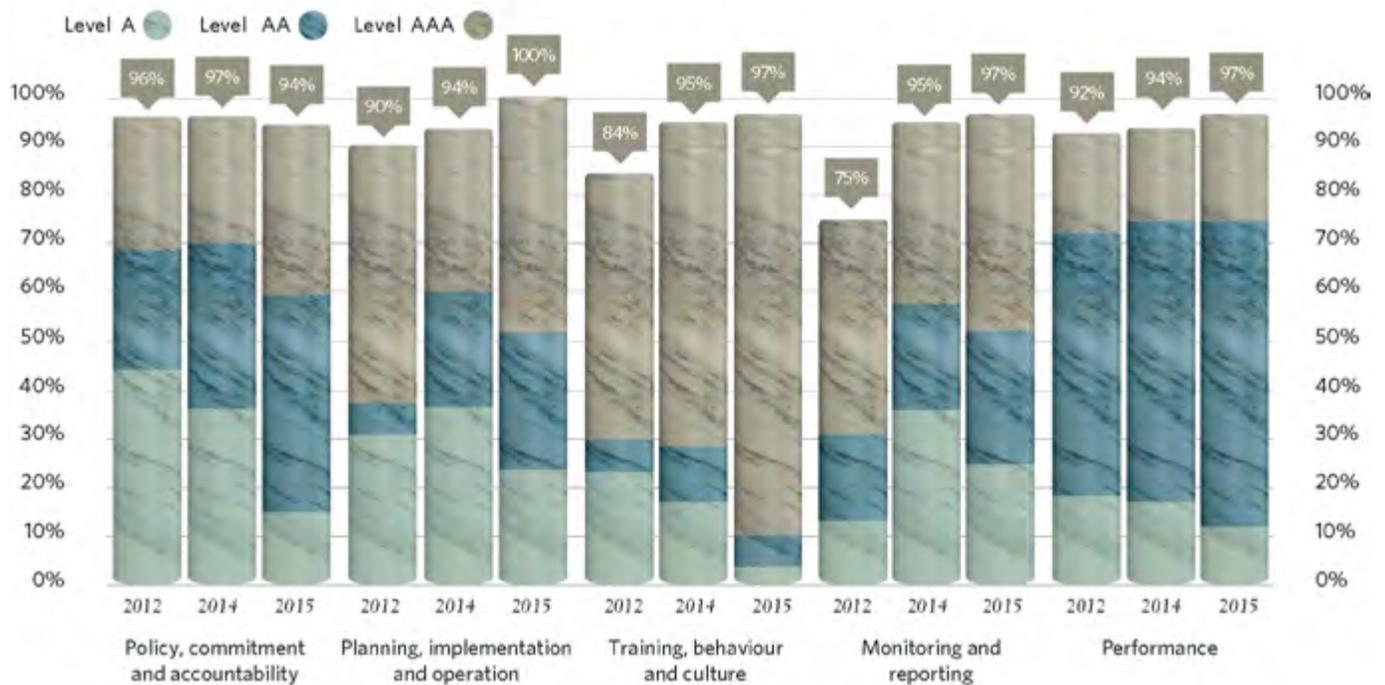
AAA	<ul style="list-style-type: none"> ✓ External audit of safety and health commitments, management system and reporting mechanisms occurs. ✓ Commitment to safety and health is visibly embedded throughout the facility. ✓ Continual improvement targets are met and the facility is fatality-free for at least four years.
AA	<ul style="list-style-type: none"> ✓ Internal audit of safety and health commitments, management system and reporting mechanisms occurs. ✓ Safety-based culture is encouraged by integrating safety and health criteria into business processes (e.g., in purchasing decisions). ✓ Benchmarking of safety and health performance against peers is conducted. ✓ Performance targets are set for leading and lagging indicators.
A	<ul style="list-style-type: none"> ✓ Commitments to safety and health are endorsed by senior management and communicated facility-wide. ✓ Documented safety and health standards and procedures are implemented. ✓ Workplace inspections occur. ✓ Roles and responsibilities for safety and health are understood by all. ✓ Risk-based training as well as orientation for all personnel is conducted. ✓ Training is focused on hazard identification and presentation measures. ✓ Safety and health performance is monitored and tracked against leading and lagging indicators. ✓ Safety and health performance is publicly reported. ✓ Safety and health performance targets are established and communicated to the workforce.



On an aggregate basis, the results for this protocol have been strong since public reporting began in 2012. Over 90% of facilities have achieved a Level A or higher across all five indicators, with many facilities assessed at Levels AA and AAA. For indicator 2, 100% of facilities achieved Level A performance in 2015.

As Figure 6 below shows, the results for 2015 are consistent with data presented in previous *TSM Progress Reports*.

FIGURE 6 - SAFETY AND HEALTH ASSESSMENTS
PERCENTAGE OF FACILITIES AT A LEVEL A OR HIGHER 2012, 2014 AND 2015



2015 Highlights

- 94% have policies and commitments to safety and health.
- 100% have formal safety and health management systems.
- 97% have safety and health training programs.
- 97% monitor and report safety and health performance.
- 97% have safety and health performance targets established.



Case Studies

Communities and People

The following case studies illustrate what TSM excellence and leadership looks like in practice. The initiatives described below are in the spirit of the TSM Guiding Principles and protocols related to communities and people.

Case Study: Dominion Diamond Corporation Partnering with Aboriginal communities to protect caribou in the Northwest Territories

The North is experiencing a decline in the Bathurst caribou herd population, which is concerning for all northerners, but particularly for Aboriginal peoples. While the cause is unknown, some residents have wondered whether resource development has played a role. Dominion Diamond Corporation, which owns and operates the Ekati Diamond Mine in the Northwest Territories heard these concerns and immediately took action.

Working alongside local and Aboriginal communities, Dominion Diamond developed Caribou Mitigation Measures to help identify factors behind the herd's decline and take proactive steps to limit potential impacts from mining activity and the company's proposed Jay Project expansion. Community engagement was paramount to the measures' design, and Aboriginal groups and other stakeholders continue to be integral to their implementation. Aboriginal groups are taking a lead role in monitoring the herd's activities and sharing critical information with the company and with Aboriginal and territorial governments to support the management and protection of the herd. Traditional knowledge has been sought out for all measures, which has translated into changes on the ground.

For example, Aboriginal groups advised on the design and placement of the future Jay pipe access road to make it more caribou friendly and to ensure it crosses at the narrowest point of the Esker – known as a “caribou highway” – to minimize impacts. Traditional knowledge has also contributed to Dominion Diamond's reclamation efforts, with Aboriginal groups advising on the locations of wildlife access ramps in the waste rock areas being reclaimed.

Despite the fact that Dominion Diamond's research has shown that the Jay Project is expected to contribute little to the cumulative effects on caribou, the company is committed to eliminating any small residual impacts from the Ekati mine on the herd. The company is also lending its support to the territorial government, investing more than \$1 million on zone of influence research. The funds will go towards geo-fence collars, which will generate the data necessary to help the government determine the causes of the herd's decline in the region, and develop strategies and plans to improve the health of the caribou population.



Student participation in reclamation efforts at the Ekati Diamond Mine in the Northwest Territories.

Case Study: Iron Ore Company of Canada

Collaborating on community priorities in Labrador West

Over the last few years, communities in Labrador West have experienced the ups and downs associated with the cyclical nature of the mining industry. To help manage community impacts in both boom times and periods of low commodity prices, the Iron Ore Company of Canada (IOC) created the Community Advisory Panel (CAP) in 2006. The consultative forum includes mining company representatives and community stakeholders, and helps IOC respond to the needs of residents of Labrador City and neighbouring communities.

In 2012, IOC took one step further by creating the Regional Task Force (RTF) to complement the CAP's efforts. Where the CAP addresses issues at the local level, the RTF, comprising industry representatives and senior government officials, addresses and escalates issues at the provincial or federal levels. Both the CAP and RTF meet four times each year, and their priorities are re-validated annually to ensure they continue to address the most critical community needs at any given period. These groups have generated positive results for the region, including advocating for affordable housing, addressing homelessness issues, working to ensure the region has appropriate health, emergency and child care services, supporting the development of community infrastructure, and partnering with colleges to improve education and training opportunities.

Although the CAP and RTF were established during times of rapid expansion and growth in the community, IOC believes that multi-stakeholder consultation is equally important during a downturn. That's why IOC remains committed to these forums and has even expanded its stakeholder engagement over the past year. In 2015, IOC introduced Project RESET, which involves working with suppliers and stakeholders to cut \$70 million in business costs to help the company adjust to significant declines in iron ore prices but remain a major employer in the region. IOC also increased its engagement with Aboriginal communities, reaching formal agreements with the Innu Nation and the NunatuKavut Community Council to facilitate such benefits as employment, skills training and business development opportunities now and well into the future.



Iron Ore Company of Canada security and Emergency Response Team coordinating the Pack the Back Christmas food drive for the Labrador West Ministerial Foodbank.

Case Study: Teck Resources Limited

Community-led partnership to improve family health in Trail, BC

The Trail Area Health and Environment Committee (THEC) is a community-led partnership between Teck Trail Operations, the City of Trail, the BC Ministry of Environment, the Interior Health Authority and local residents. The THEC's core work is to prevent and reduce exposure to lead and other smelter metals in the community, with a particular focus on child health. As young children are most vulnerable to the risks of lead exposure, the THEC works to educate all families of young children to prevent exposure risk in their homes and surrounding environment.

The THEC offers a suite of programs focused on risk prevention, education and outreach. This includes in-home visits for families with young children, blood lead testing, garden and yard soil testing, and additional support for families where children have levels above the typical range. Furthermore, a Community Program Office operates in downtown Trail, which allows residents to drop in and learn more about air quality, family health, home and garden remediation, and other preventative measures. Since 1989, the partners of the THEC have achieved many significant outcomes – air quality and blood lead levels have improved considerably, and smelter stack emissions of lead and other metals have been reduced by 99%. The THEC attributes its success to the community, which plays a leading role in establishing priorities, objectives and targets related to emissions, the environment and health. The structure of the THEC puts the community in the driver's seat – the Chair is the Mayor of Trail, and 11 out of 16 seats are held by community representatives.

The THEC has garnered a reputation for being a leader in collaboration between community, government and industry. Companies and governments across Canada and internationally have asked the THEC to share its experiences at conferences and meetings. Its collaborative approach has also been recognized as best practice within the public sector. In 2011, the Government of British Columbia gave the Interior Health Authority and the BC Ministry of Environment a Premier's Innovation and Excellence Award for Partnership.



The Zhou family (Caimi, mom; Shoxiong, dad; Zin Zin, daughter; Lily, baby), recipients of the Healthy Families Healthy Homes program in Trail, BC.



Industry Performance

Environmental Stewardship

A goal of TSM is to minimize the impact of mining activity on the environment and biodiversity through all stages of development, from exploration to closure.

- TSM Guiding Principles

This section describes how facilities have developed systems to bolster environmental stewardship through best practices in **Tailings Management** and **Biodiversity Conservation Management**.

Overall, the industry's performance in key environmental areas, including tailings management, has improved significantly over the years. Nevertheless, with the tailings dam failure at the Mount Polley Mine in 2014, the industry faced a significant challenge in tailings management and is committed to building on efforts made in recent decades to strengthen the TSM Tailings Management Protocol and accompanying guides. Amending the protocol and guides will ensure that the industry is working to achieve zero failures.

TAILINGS MANAGEMENT

Immediately following the Mount Polley tailings dam breach in 2014, the MAC Board of Directors launched a thorough review of the Tailings Management Protocol and associated guidance documents. As part of this review, MAC commissioned an Independent TSM Tailings Management Review Task Force in March 2015 to perform an external review of TSM's requirements and guidance for tailings management. In November 2015, the Task Force provided MAC with its final report containing 29 recommendations to enhance the protocol and guides.

🔗 The full Task Force's report can be downloaded at www.mining.ca/reports

TASK FORCE MEMBERS

Doug Horswill, Chair: Retired Senior Vice President, Sustainability and External Affairs, Teck

Peter Lighthall: Senior geotechnical engineer

Nalaine Morin: Member of the Tahltan Nation and mechanical engineer

Alan Young: Member of MAC's COI Advisory Panel and Director of the Secretariat of the Boreal Leadership Council

Dr. Craig Ford: Independent consultant and member of the International Council on Mining and Metals' Independent Expert Review Panel

Dr. John Sobkowicz: Senior geotechnical engineer

Dr. Michael Davies: Chair of MAC's Tailings Working Group and Vice President of Environment at Teck

Dirk Van Zyl (UBC): Member of the BC Independent Expert Engineering Investigation and Review Panel and a special advisor to the Task Force

AMENDMENTS TO THE PROTOCOL

Since November, MAC has been working with its members to implement these recommendations. In June 2016, the MAC Board approved several amendments to the Tailings Management Protocol.

Currently, performance in this protocol is measured against five indicators:

Indicator 1: Tailings management policy and commitment

Indicator 2: Tailings management system

Indicator 3: Assigned accountability and responsibility for tailings management

Indicator 4: Annual tailings management review

Indicator 5: Operation, maintenance and surveillance manual



Amendments to this protocol and indicators are described below:

Tailings Management Policy and Commitments are Effectively Communicated and Well Understood

Amendments to indicator 1 will ensure that tailings management policy and commitments are communicated to all employees. Additionally, indicator 1 will now require that the policy is fully understood by those with direct and indirect responsibility for the safety of tailings facilities. This means that policy requirements are understood by personnel with direct responsibility, such as the mill manager who is directly responsible for tailings management, and that processes are in place to ensure that those with indirect responsibilities, such as individuals making purchasing decisions, understand the facility's commitments under this protocol.

Endorsement at the Highest Level of a Company

Another amendment to indicator 1 requires that the governance or board level of a company endorse its tailings management policy and commitments. Previously, senior management approved the policy and commitments.

Stronger Audit Requirements

MAC has strengthened the audit requirements across all five indicators of the protocol. An internal audit is now required to achieve a Level A; an external audit is required to achieve a Level AA; and an external audit, which includes an evaluation of effectiveness, is required for a Level AAA. These amendments will help ensure that the criteria of the tailings management guides are effectively implemented.

Action Plans to Achieve a Level A

The Task Force recommended that Levels C and B be removed from the protocol and that companies which have not achieved a Level A performance be required to develop action plans to attain a Level A or higher. Although MAC agrees that it is unacceptable for a facility to remain at a Level C and B, the Board decided not to remove these levels from the protocol at this time. Instead, MAC has amended the protocol to require facilities that have not achieved a Level A performance to develop and publish action plans (in the *TSM Progress Report*) for attaining that level. The amendment also requires that those actions be implemented within three years.

Stronger Requirements for Emergency Preparedness and Accountability

During its work to implement the Task Force's recommendations, MAC identified additional opportunities to strengthen the protocol's requirements for emergency preparedness and accountability for tailings management.

Currently, the protocol requires that companies develop their emergency preparedness plans at a Level A and achieve a Level AA when the plans are tested. MAC has amended the protocol to require that companies develop and test their emergency preparedness plans at a Level AA.

MAC has amended the criteria for achieving a Level B for indicator 3. The criteria for Level B require that companies assign accountability to an executive officer and delegate responsibility for tailings-related issues and performance to appropriate personnel. Previously, the requirement to delegate responsibilities was at Level A.

MAC has also strengthened the criteria for Level A by specifying that companies delegate responsibility for tailings facilities to *qualified* personnel.

ENHANCEMENTS TO THE TAILINGS MANAGEMENT GUIDES

In addition to the amendments MAC has made to this protocol, it is working to update the associated tailings management guides. The MAC Tailings Working Group is focused on improving the *Guide to the Management of Tailings Facilities* first and then plans to revise the *Guide to the Development of an Operation, Maintenance and Surveillance Manual*. Revision of the *Guide to Audit and Assessment of Tailings Facilities* will be the final stage of this process.

The next iteration of the *Guide to the Management of Tailings Facilities* will continue to provide essential guidance on management systems, but it will include additional guidance on the technical aspects of responsible tailings facility management. Since the requirements of the Tailings Management Protocol are linked to the *Guide to the Management of Tailings Facilities* and the *Guide to the Development of an Operation, Maintenance and Surveillance Manual*, full implementation of the revised protocol is scheduled to begin following the finalization of the guides.



Next Steps

Throughout 2016, MAC, with input from the COI Advisory Panel, will continue to work towards implementing the remaining recommendations of the Task Force. Specifically, MAC will work to:

- Improve the criteria for community engagement on tailings-related issues.
- Strengthen requirements for annual tailings management reviews to ensure deficiencies in the tailings management systems are identified and corrected.
- Incorporate a process into the MAC membership application to determine whether prospective members meet Level A criteria of the Tailings Management Protocol.
- Bring high-risk closed facilities into TSM.

CURRENT TAILINGS MANAGEMENT PROTOCOL

The amended Tailings Management Protocol will build upon the current protocol, which is designed to go beyond adherence to technical standards and to ensure the responsible management of tailings facilities. Currently, in order to achieve a Level A or higher, facilities must demonstrate adherence to the tailings management guides. This includes having a policy and demonstrating their commitment to responsibly manage tailings facilities. Achieving a Level A or higher also includes implementing a robust tailings management system, conducting annual reviews of tailings management performance, and assigning accountability for tailings management to the most senior officer of the company (e.g., the CEO). See *Figure 7* for a description of the requirements for achieving Levels A, AA and AAA.



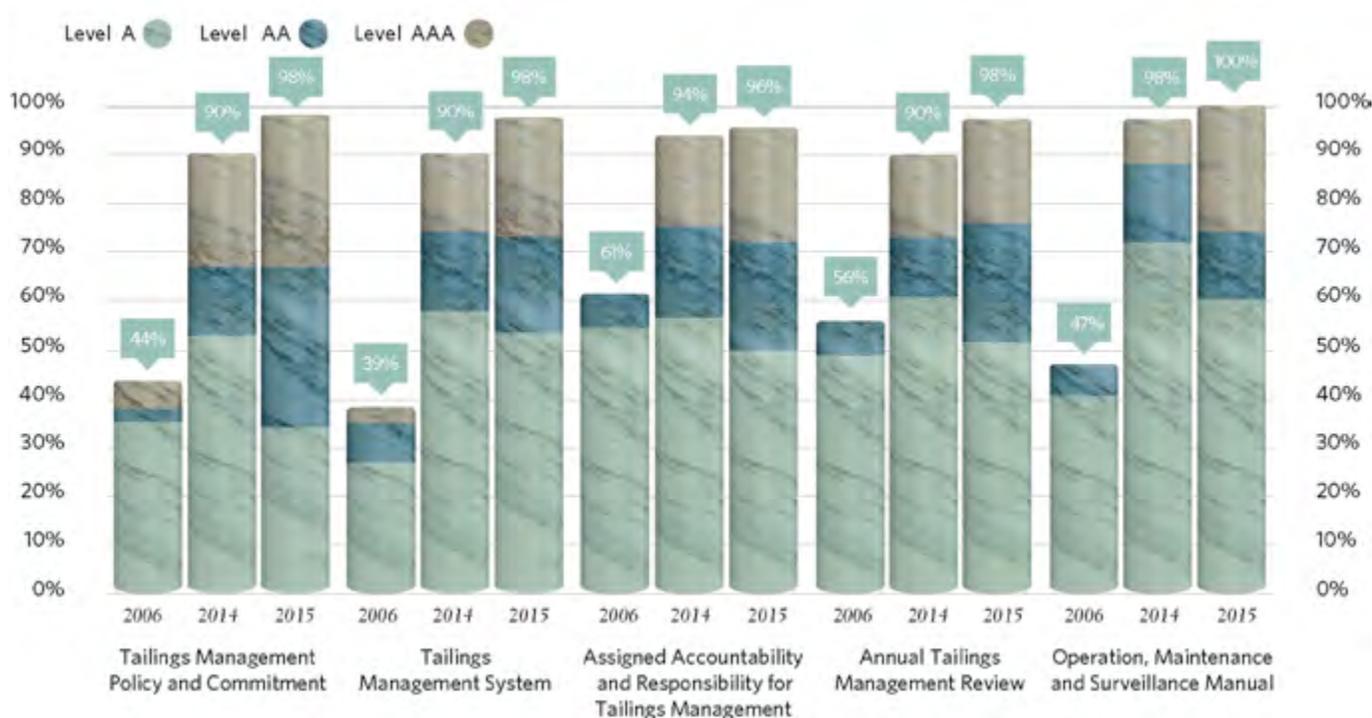
The fen reclamation research area at Syncrude's oil sands facility near Fort McMurray, Alberta.

FIGURE 7 - TAILINGS MANAGEMENT PROTOCOL: WHAT IS GOOD PRACTICE?

AAA	<ul style="list-style-type: none"> ✓ Independent external audit or assessment of the facility's tailings management policy, system and procedures occurs.
AA	<ul style="list-style-type: none"> ✓ Independent internal audit or assessment of the facility's tailings management policy, system and procedures occurs.
A	<ul style="list-style-type: none"> ✓ Tailings management policy is implemented and commitment demonstrated. ✓ Tailings management system includes criteria and procedures to: <ul style="list-style-type: none"> - Mitigate negative environmental impacts. - Protect public health and safety. - Plan for decommissioning and closure. - Ensure regulatory requirements are met and company policies followed. ✓ Overall accountability for tailings management is assigned to the company's CEO or COO. ✓ Risk assessment is conducted. ✓ Emergency preparedness plans are developed. ✓ Annual review of tailings management system occurs. ✓ Operation, maintenance and surveillance manual is in place.

Overall, the results for this protocol remain strong, with over 90% of facilities assessed at a Level A or higher. As Figure 8 below shows, a growing number of facilities are achieving Level AA and AAA performance across all five indicators. Notably, in 2015, 62% of facilities achieved a Level AA or higher for indicator 1 compared to 36% in 2014.

FIGURE 8 - TAILINGS MANAGEMENT ASSESSMENTS
PERCENTAGE OF FACILITIES AT A LEVEL A OR HIGHER 2006, 2014 AND 2015



2015 Highlights

- 98% have implemented a management policy for and demonstrated commitment to responsible tailings management.
- 98% have implemented a tailings management system.
- 96% have assigned accountability for tailings management to the company's CEO or COO.
- 98% have conducted an annual tailings management review.
- 100% have developed and implemented an operation, maintenance and surveillance manual.

BIODIVERSITY CONSERVATION MANAGEMENT

Adopting best practices in biodiversity conservation management through all stages of a mine's life cycle is an industry priority. The TSM Biodiversity Conservation Management Protocol evaluates and confirms a facility's commitment to biodiversity conservation. Facilities that achieve Level A performance in this protocol engage with key communities of interest – government, Aboriginal communities and conservation organizations – to develop biodiversity objectives and strategies. They also put in place mechanisms to assess, mitigate and compensate for impacts on biodiversity. See *Figure 9* for a description of the requirements for achieving Levels A, AA and AAA.

Performance in this protocol is currently measured against three indicators:

Indicator 1: Corporate biodiversity conservation commitment, accountability and communications

Indicator 2: Facility-level biodiversity conservation planning and implementation

Indicator 3: Biodiversity conservation reporting

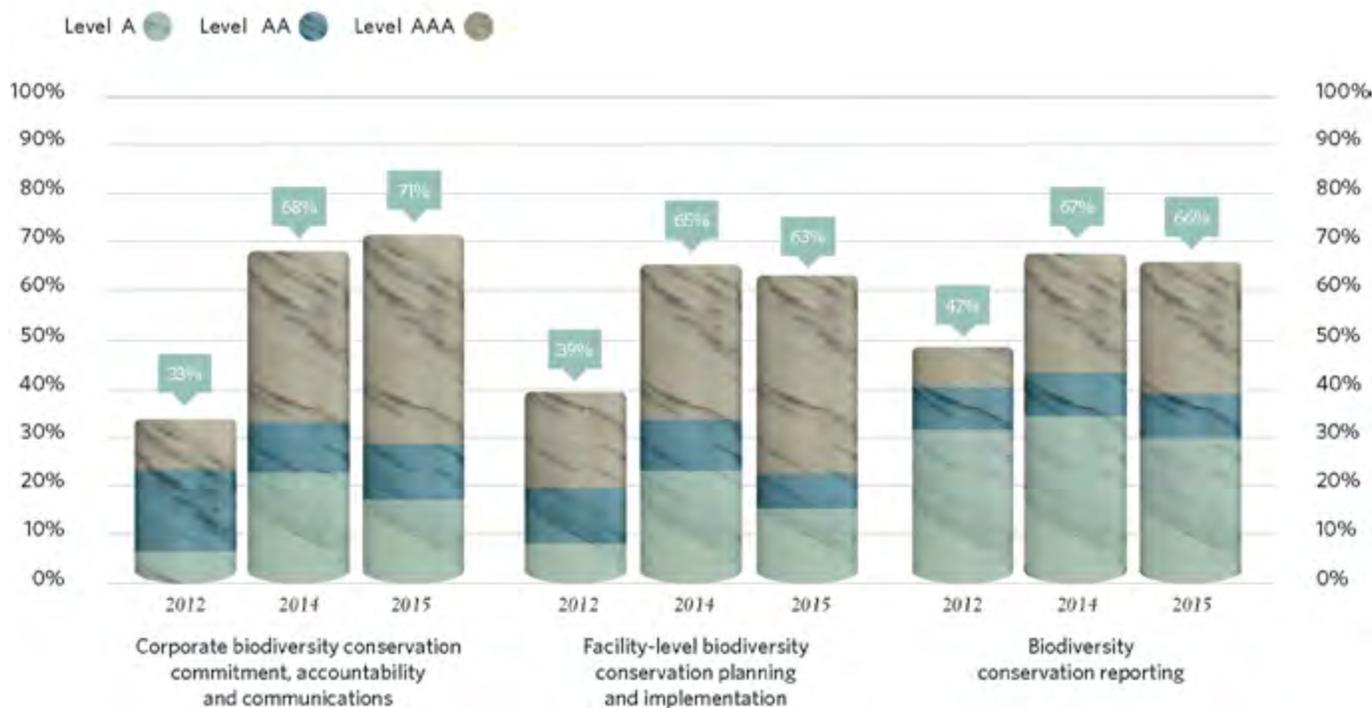
FIGURE 9 - BIODIVERSITY CONSERVATION MANAGEMENT PROTOCOL: WHAT IS GOOD PRACTICE?

AAA	<ul style="list-style-type: none"> ✓ Partnerships are sought with other organizations (e.g., an environmental non-governmental organization) to achieve conservation objectives. ✓ Investments in research and development enhance understanding of and contribution to biodiversity conservation, science and Traditional Knowledge. ✓ Enhancements to biodiversity are made beyond the facility. ✓ Employee volunteerism in community-based biodiversity initiatives is encouraged. ✓ Community of interest feedback on public reporting is actively sought and publicly reported.
AA	<ul style="list-style-type: none"> ✓ Biodiversity conservation management is integrated into core business planning processes (e.g., the annual budget process). ✓ Internal verification of biodiversity conservation commitments, management and public reporting occurs.
A	<ul style="list-style-type: none"> ✓ Senior management commitment to biodiversity conservation is demonstrated. ✓ Impacts and risks to biodiversity are assessed and mitigated. ✓ Key communities of interest (e.g., governments, Aboriginal communities and conservation groups) are involved in biodiversity conservation efforts. ✓ Awareness for biodiversity conservation is included in facility training programs. ✓ Biodiversity conservation activities and performance are publicly reported.



MAC members have continued to make significant improvements across the three indicators since 2012, the first year of public reporting for this protocol. While the number of facilities achieving a Level A or higher is similar to 2014, the results for 2015 show an increase in facilities assessed at a Level AAA. For example, 40% of facilities achieved a Level AAA performance for indicator 2 compared to 33% in 2014.

FIGURE 10 - BIODIVERSITY CONSERVATION MANAGEMENT ASSESSMENTS
PERCENTAGE OF FACILITIES AT A LEVEL A OR HIGHER 2012, 2014 AND 2015



2015 Highlights

- 71% have senior management commitment to biodiversity conservation in place.
- 63% have implemented a biodiversity conservation management system.
- 66% report publicly on biodiversity conservation activities and performance.





Case Studies

Environmental Stewardship

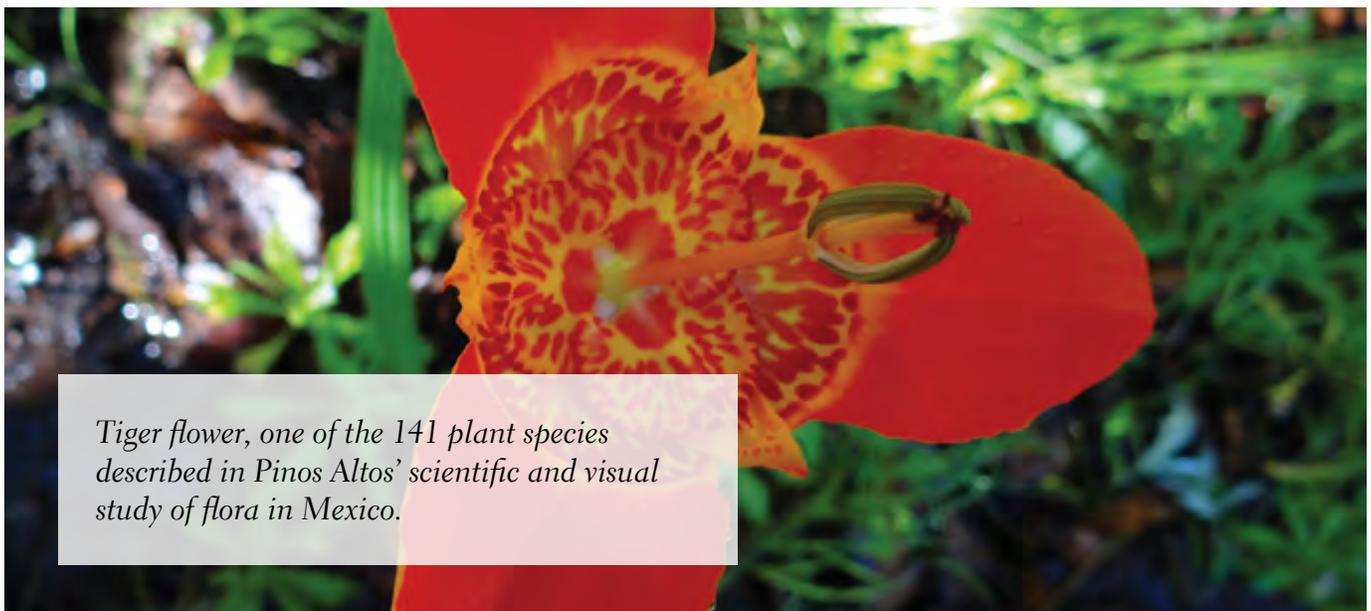
The following case studies illustrate what TSM excellence and leadership looks like in practice. The initiatives described below are in the spirit of the TSM Guiding Principles and protocols related to environmental stewardship.

Case Study: Agnico Eagle Mines Limited Contributing to environmental science in Pinos Altos, Mexico

Agnico Eagle's Pinos Altos mine is located in the Sierra Madre Occidental mountain range of Chihuahua, about 300 kilometres northwest of the City of Chihuahua. The region surrounding the mine is characterized by a very steep topography with limited road access and a very sparse population. These factors were responsible, in part, for the fact that no thorough inventory of native flora had been performed and documented for the region. As the Pinos Altos staff worked to apply the Biodiversity Conservation Protocol, which required the identification of biodiversity in and around the mine site, staff saw an opportunity to expand the scope of its research and contribute more broadly.

In 2013, Agnico Eagle joined forces with the Autonomous University of Chihuahua to perform a thorough forensic inventory. The intention was to develop a book that inventories native flora of the region, which could be used by the university and other educational institutions in natural resources courses, as well as by mine staff in their conservation efforts and project planning. The resulting book, *Pinos Altos, scientific and visual study of flora*, was published in 2015 and contains detailed descriptions of 141 plant species divided into three categories: trees, shrubs and herbaceous species. The inventory also contains traditional use of the species and knowledge from the community.

The book has already made a significant contribution to scientific knowledge of the diversity of plant species in the region. In fact, as a result of the research, species of economic interest such as blackberry, wild blueberry and stevia were discovered, which could help diversify the economic activities in the region beyond the dominant forestry industry. The book provides invaluable data for staff at the Pinos Altos mine, and is being used to inform decisions for conservation and restoration programs and regional flora management. The information has also enabled Agnico Eagle to act in advance of impacts by establishing and implementing conservation measures.



Tiger flower, one of the 141 plant species described in Pinos Altos' scientific and visual study of flora in Mexico.

Case Study: Dominion Diamond Corporation

Transforming waste management in Canada's North

When Dominion Diamond Corporation purchased the Ekati Diamond Mine in the Northwest Territories in 2013, the company saw an immediate opportunity to improve the mine's sustainability practices in the area of waste management. Dominion Diamond began by purchasing environmentally friendly products for the mine. This involved changing to corn-oil-based garbage bags, sugar cane take-out containers, wooden stir sticks, and compostable utensils to reduce the amount of chlorine-rich plastics in the waste incinerator.

The company then restricted incineration input to paper and organic waste. Items such as oily rags, glass, plastics, cans and other recyclables are removed from the mine site by supply plane or winter road, depending on the season. To support staff in the transition to the new processes, Dominion Diamond conducted an awareness campaign for all staff on waste management and segregation. By introducing biodegradable products to Ekati and restricting incineration to paper and organic waste, the company has prevented nearly 59,000 kilograms of plastics and more than 145,000 kilograms of oily rags from being incinerated since the start of the waste management project.

These waste management practices have reduced harmful emissions into the environment. Recent testing on Ekati's two incinerators has confirmed that releases of dioxins and furans are now well below the Canada-Wide Standard. Further improvements were made in 2015 when Dominion Diamond installed an in-vessel composter - the first mine in Canada's North to do so. Now, roughly half of organic waste, such as food waste and paper products, generated at Ekati is composted. By moving away from incineration of organic waste, and after only three months of the composter's operation, the company has saved more than 25,000 litres of diesel and reduced GHG emissions by 80 tonnes CO₂ equivalent.

Dominion's goal is to compost all organic waste at Ekati in the near future. The company is also conducting a study in 2016 to evaluate the use of the site-generated compost in reclamation work to add nutrients to the tailings and promote vegetation growth. The composter project has generated positive feedback from local Aboriginal communities, government and community groups. It has also sparked interest among other northern mining operations that are looking for innovative ways to reduce emissions and protect the environment.

Installation of the composter at the Ekati Diamond Mine in the Northwest Territories.



Case Study: IAMGOLD Corporation

Protecting vulnerable ecosystems and improving biodiversity in Burkina Faso

Growing plants, trees and other flora in the Sahel region of Burkina Faso is challenging given the climate, a shortage of water and the lack of essential minerals needed for plant survival. The environment is also facing a loss of biodiversity due to erosion and desertification. IAMGOLD Corporation, which operates the Essakane Gold Mine in the region, has been working with communities to overcome these challenges through innovative biodiversity initiatives.

One such example is a partnership between the town of Gorum-Gorum and IAMGOLD that resulted in the creation of a communal forest. In 2013, 10,000 seedlings were planted in the 16-hectare forest area. A fence funded by the mine provides needed protection against wildlife that graze in the area, and farmers can obtain feed for their animals during times when grass is lacking. Village nurseries were created and are run by residents, with the aid of employees from the mine. Community members have been trained in forestry techniques and are able to produce plants for various purposes, including for food, pharmaceutical and economic purposes.

In 2014, IAMGOLD and the town undertook another project – establishing a grove of trees and other plants at a local school. The grove has not only taught students techniques in planting, but has also empowered them to take an active role in caring for the environment. Additionally, the produce harvested from the grove is used in the school's canteen for meals for the students and teachers.

The projects' success is owed to the community for being a driving force behind their design, locations, development and ongoing maintenance. Beyond the socio-economic benefits that the community has generated through these projects, transformative improvements have occurred in the local environment. For example, the communal forest has added needed plant cover for the once degraded area, which will help increase plant diversity and contribute to carbon sequestration in the region.



Tree planting as part of efforts to reclaim mining areas and contribute to sustainable development near IAMGOLD's Essakane Mine in Burkina Faso.



Industry Performance

Energy Efficiency

Mining companies that participate in TSM practice continuous improvement by applying new technology, innovation and best practices in all facets of their operations. – TSM Guiding Principles

This section highlights members' performance in **Energy Use and GHG Emissions Management**.

ENERGY USE AND GHG EMISSIONS MANAGEMENT

Improving energy efficiency and reducing GHG emissions are priorities for the Canadian mining industry as a way to limit impacts to the environment and help reduce operational costs at a facility. The TSM Energy Use and GHG Emissions Management Protocol evaluates practices and processes related to energy conservation and GHG emissions reduction. To achieve a Level A in this protocol, facilities must ensure energy data are reviewed regularly and are well integrated into operator actions. They must also set and achieve performance targets. See *Figure 11* for a description of the requirements for achieving Levels A, AA and AAA.

Performance in this protocol is measured against three indicators:

Indicator 1: Energy use and GHG emissions management systems

Indicator 2: Energy use and GHG emissions reporting systems

Indicator 3: Energy and GHG emissions performance targets

**FIGURE 11 - ENERGY USE AND GHG EMISSIONS MANAGEMENT PROTOCOL:
WHAT IS GOOD PRACTICE?**

AAA	<ul style="list-style-type: none"> ✓ Procurement policies incorporate energy efficiency and GHG emissions reduction elements. ✓ Investments in renewable energy and research and development occur. ✓ Energy use and GHG emissions reporting and performance is externally verified ✓ Some Scope 3 emissions are included in public reporting. ✓ Continuous improvement targets are used to demonstrate reductions against historical trends.
AA	<ul style="list-style-type: none"> ✓ Energy use and GHG emissions are factored into business planning. ✓ Energy use and GHG emissions reporting and performance is internally verified. ✓ Corporate energy use and GHG emissions strategy is publicly available. ✓ Energy use and GHG emissions performance targets are consistently met.
A	<ul style="list-style-type: none"> ✓ Comprehensive procedures and practices related to energy use and GHG emissions are in place. ✓ Energy consumption and GHG emissions data are monitored, tracked and publicly reported. ✓ Energy and GHG emissions data are used to support senior management decision making. ✓ Accountability for energy use and GHG emissions is assigned to operational managers. ✓ Training on energy efficiency is provided to personnel. ✓ Energy use and GHG emissions performance targets are set and achieved.

Recognizing that energy use and GHG emissions are not a material business risk for all companies and facilities, MAC has incorporated a materiality threshold into the protocol.

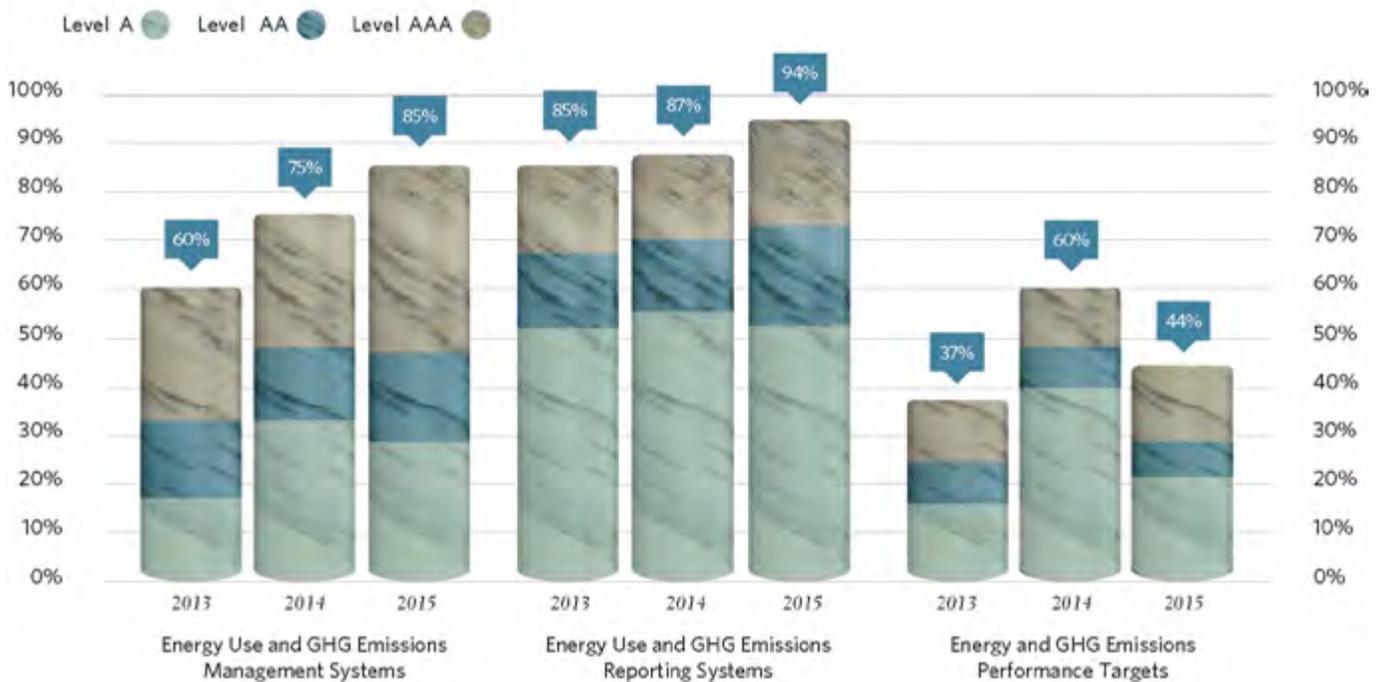
Facilities whose GHG emissions are less than 25 kilotonnes of CO₂ equivalent, or whose on-site energy usage is less than 25,000 gigajoules, are not required to report on indicators 1 or 3 of this protocol.



In 2013, MAC introduced a revised Energy Use and GHG Emissions Management Protocol, condensing the number of indicators for this protocol from six to three. This change acknowledged that in the mining sector, facilities produce GHGs primarily through the burning of fossil fuels for energy and, as a result, GHG emissions are controlled by managing energy consumption. Historical data from 2006 to 2012 are available in the *2014 TSM Progress Report*. The graph that follows shows the 2013, 2014 and 2015 performance for the three indicators.

As *Figure 12* below shows, steady improvements have been made since 2013 for indicators 1 and 2. However, on an aggregate basis, the percentage of facilities that have achieved a Level A or higher for indicator 3 has declined. This indicator requires a facility to set and achieve its energy use and GHG emissions performance targets in the reporting year. The majority of participating facilities established performance targets (a requirement of Level B); however, many did not meet their targets in 2015. One factor that has contributed to the decline in this area is that facilities set multiple targets for energy use and GHG emissions. When a facility has not met all of its targets and has not established a net target or conducted a materiality analysis of its targets, it is assessed at Level B. In 2015, this was the case for several facilities.

**FIGURE 12 - ENERGY USE AND GHG EMISSIONS MANAGEMENT ASSESSMENTS
PERCENTAGE OF FACILITIES AT A LEVEL A OR HIGHER 2013, 2014 AND 2015**



2015 Highlights

- 85% have comprehensive energy use and GHG emissions management systems.
- 95% have implemented energy use and GHG emissions management reporting systems.
- 44% have established and met performance targets.





Case Studies

Energy Efficiency

The following case study illustrates what TSM excellence and leadership looks like in practice. The initiative described below is in the spirit of the TSM Guiding Principles related to energy efficiency and reflect ongoing efforts to address the challenge of climate change.

Case Study: Teck and Alternative Energy Generation

Climate change is a major global challenge and an area of increasing importance for businesses and communities alike. In a carbon-constrained world, energy production and consumption needs to change in order to reduce greenhouse gas (GHG) emissions and transition to a low-carbon economy.

To support this transition, Teck is focused on reducing their carbon footprint and advocating for global climate action. As part of reducing their carbon footprint, Teck has invested in low-carbon technologies, including alternative energy generation.

In 2011, Teck set a goal of implementing 100 megawatts of alternative energy generation by 2030. As of the end of 2015, Teck had implemented 30.7 MW of alternative energy as it advances towards their long-term goal.

As part of their investment in clean energy, Teck partnered to develop a large-scale wind power facility in Alberta called Wintering Hills and a community solar power facility in B.C. called SunMine.

Wintering Hills is an 88 MW wind power facility consisting of 1.6 MW turbines that deliver power to the electrical grid. Teck's role in developing Wintering Hills provided an opportunity to develop their understanding of alternative power generation, which facilitates evaluation of other opportunities to develop alternative power around their operations.

The SunMine was built on Teck's fully reclaimed Sullivan Mine site and supported through a \$2 million contribution. SunMine, which is owned and operated by the city of Kimberley, has 4,032 solar-cell modules, mounted on 96 solar trackers which follow the sun's movement to maximize solar exposure. It is Western Canada's largest solar power facility, the first developed, owned and built by a municipality in Canada, and the first built at a reclaimed mine site.

🔗 [Learn more at www.teck.com](http://www.teck.com)



Teck's SunMine solar power facility was built on the fully reclaimed Sullivan Mine site near Kimberley, BC.



MAC

Towards a successful national climate change policy

MAC released its first climate change position statement in 2000. In the years that followed, the association and its member companies worked to improve energy efficiency and reduce GHG emissions through measures such as the Energy Use and GHG Emissions Management Protocol and through individual company efforts. In 2009, MAC adopted the International Council on Mining and Metals' climate change policy, which recognizes that comprehensive and sustained global action is required to reduce the scale of human-induced climate change and to adapt to its impact.

In April 2016, MAC and its members released *Principles for Climate Change Policy Design*. The principles are designed to support the government as it works on a pan-Canadian approach to address climate change and determine how Canada can meet its commitments under the historic Paris Agreement.

Encouraging significant emissions reductions while maintaining the competitiveness of Canada's industries is at the heart of MAC's *Principles for Climate Change Policy Design*.

The principles recommend that any national carbon price regime be structured in the following way to both reduce emissions and support growth in Canada's economy:

- **Establish a broad-based carbon price** that is applicable to all sectors of the Canadian economy.
- **Be revenue neutral** by investing revenues generated through carbon pricing into the development of lower emission technologies to manage the transition to a lower carbon future, including climate adaptation, and to ensure a level playing field for trade-exposed industries that are emission intensive.
- **Address competitiveness and carbon leakage concerns** across all sectors to prevent declines in investment, employment, tax revenues and trade.
- **Be predictable, flexible and sensitive** to changing economic conditions and geographic circumstances to ensure consumers and industry are able to adapt and regions are treated fairly.
- **Be simple, complementary and effective** to ensure that a national climate change regime works in tandem with existing provincial schemes, avoids duplication, and is simple to understand and administer.
- **Support investments in the development and implementation** of technologies that lower emissions through capital investments, which could include public-private partnerships.
- **Recognize early action**, acknowledging that some companies have been proactive in reducing their climate footprints and that several provinces have already established climate change mitigation regimes.

 [MAC's *Principles for Climate Change Policy Design* can be found at \[www.mining.ca\]\(http://www.mining.ca\)](http://www.mining.ca)



International Application of TSM

While mandatory for their Canadian facilities, a growing number of MAC members are voluntarily applying TSM standards and publicly reporting performance for their international operations. These include First Quantum Minerals, Agnico Eagle Mines Limited, IAMGOLD Corporation and New Gold. Although not yet publicly reporting performance, Hudbay Minerals is applying TSM to its project in Peru. By adopting TSM, these companies demonstrate that they are managing mining risks responsibly throughout the world at the same high standard as their Canadian operations.

International application of TSM, however, is not always feasible for companies. Many MAC members follow other standards and participate in various international initiatives that drive environmental and social performance in the mining sector and foster performance improvement. The table on page 42 summarizes the implementation of these standards globally.

GLOBAL UPTAKE OF TSM

MAC is helping to build capacity within the global mining industry by sharing its expertise in sustainable mining practices. One of the most effective ways MAC and its members have been doing this is by freely sharing the TSM initiative with mining associations in other countries that are seeking tools to improve the environmental and social performance of their mining industries.

In 2015, TSM achieved an important milestone with the Finnish Mining Association's (FinnMin) adoption of TSM for its members' operations in Finland. Although organizations in other jurisdictions have shown interest over the years, this was the first time a mining association outside of Canada officially signed on to the program. In 2016, the Argentinean Chamber of Mining Entrepreneurs (CAEM) became the second association outside of Canada to adopt TSM. Argentina's adoption of TSM represents a significant step forward in cooperation on responsible mining standards between Canada and a very significant mining jurisdiction in Latin America. While each jurisdiction has the ability to tailor its performance areas so that they reflect the unique aspects of their domestic mining sector, there are seven core components that must be implemented when adopting TSM. The implementation of TSM in Finland and Argentina is being guided by these core components to ensure that each jurisdiction implements TSM to the same high standard that it is applied in Canada. Throughout the implementation process of TSM, mining associations must work in conjunction with their Community of Interest Advisory Body.

The core components of TSM include:

1. **Guiding Principles:** Associations must commit to a set of Guiding Principles that reflect the environmental and social goals of the industry and its communities of interest.
2. **Performance Indicators:** Associations must implement performance indicators to measure success in adhering to those Guiding Principles.
3. **Facility-Level Reporting:** Associations must have measures to track progress against the performance indicators at the facility level, where the mining activity takes place.
4. **Independent Verification:** Associations must implement an appropriate framework for independent verification of performance to ensure that reported self-assessed results accurately reflect performance.
5. **Public Disclosure of Facility-Level Reporting:** A mechanism must facilitate the public reporting of facility-level performance results.
6. **Condition of Membership:** TSM must be a condition of membership in the implementing association.
7. **Community of Interest Advisory Body:** Associations must ensure that a Community of Interest Advisory Body, which represents challenging interests and a broad spectrum of societal perspectives, is in place.

In addition to Finland and Argentina, other organizations outside of Canada are expressing interest in TSM. In fact, the Brazilian Mining Association (IBRAM) has translated all three of MAC's tailings management guides into Portuguese. MAC has also met with mining company representatives and government officials from Botswana, Ecuador and Guatemala on the feasibility of TSM implementation. In 2017, MAC will continue to respond to requests from other jurisdictions that are seeking to learn more about TSM.



INTERNATIONAL INITIATIVES

MAC MEMBER COMPANY APPLICATION OF INTERNATIONAL STANDARDS AND PROGRAMS	Industry Sustainability Initiatives			Management System Standards		International Voluntary Initiatives				Reporting, Disclosure and Transparency Standards			Financing Standards	Listed on Socially Responsible Investing Indices	Commodity Specific Standards			
	MAC Towards Sustainable Mining*	ICMM Sustainable Development Framework	WGC Conflict Free Gold Standard	ISO 14001: EMS Standard	OHSAS 18001	UN Global Compact	Extractive Industries Transparency Initiative	Voluntary Principles on Security and Human Rights	OECD Guidelines for Multinational Enterprises	AA 1000	Global Reporting Initiative	Carbon Disclosure Project	Water Disclosure Project	IFC Social and Environmental Performance Standards	Dow Jones Sustainability Index	Jantzi Social Index	Responsible Jewellery	International Cyanide Code
*Applied at international facilities. **TSM is applied at international facilities, but results are not reported publicly.																		

COMPANIES/BUSINESS UNITS HEADQUARTERED IN CANADA WITH INTERNATIONAL OPERATIONS

Agnico Eagle Mines Ltd.	✓		✓							✓	✓	✓		✓			✓	✓
Barrick Gold Corporation		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓				✓
IAMGOLD Corporation	✓			✓	✓			✓		✓	✓		✓		✓			
Kinross Gold Corporation			✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓			✓
HudBay Minerals Inc.**	✓			✓	✓		✓	✓		✓	✓	✓	✓					
First Quantum Minerals Inc.	✓					✓	✓	✓					✓					
Teck Resources Limited **	✓	✓		✓		✓	✓	✓		✓	✓	✓	✓	✓	✓			
Vale (Base Metals)				✓	✓	✓	✓	✓		✓	✓	✓	✓					
New Gold Inc.**	✓		✓	✓	✓	✓				✓	✓				✓			✓
Eldorado Gold			✓	✓	✓	✓				✓	✓	✓						✓
Goldcorp		✓	✓		✓	✓	✓	✓		✓	✓	✓	✓					✓

COMPANIES HEADQUARTERED OUTSIDE OF CANADA WITH CANADIAN OPERATIONS

Glencore		✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓				
De Beers Canada Inc.**	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓			✓		✓
Newmont Mining Corporation		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
Rio Tinto		✓				✓		✓	✓	✓	✓	✓	✓	✓		✓		✓
ArcelorMittal				✓	✓		✓			✓								





TSM Awards

TSM Excellence Awards

The TSM Community Engagement Excellence Award and the TSM Environmental Excellence Award honour companies, facilities and individuals that have implemented projects and initiatives that expand and promote sustainable development within the mining sector.

TSM Community Engagement Excellence Award – 2016 Winner and Finalists

★ **WINNER** ★

Glencore, Kidd Operations: Helping local non-profits secure long-term sustainability

FINALISTS

Dominion Diamond Corporation: Partnering with Aboriginal communities to protect caribou in the Northwest Territories

Iron Ore Company of Canada: Collaborating on community priorities in Labrador West

Teck Resources Limited: Community-led partnership to improve family health in Trail, BC

TSM Environmental Excellence Award – 2016 Winner and Finalists

★ **WINNER** ★

Glencore, Raglan Mine: Putting energy into wind power in northern Quebec

FINALISTS

Agnico Eagle Mines Limited: Contributing to environmental science in Pinos Altos, Mexico

Dominion Diamond Corporation: Transforming waste management in Canada's North

IAMGOLD Corporation: Protecting vulnerable ecosystems and improving biodiversity in Burkina Faso

GLENCORE SWEEPS THE 2016 TSM EXCELLENCE AWARDS

For their innovative projects that raise the bar for corporate responsibility in the Canadian mining sector, Glencore's Kidd Operations and Raglan Mine were recognized with the 2016 TSM Excellence Awards at the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Awards Gala in Montreal in May 2016.

A total of 23 nominations were submitted by mining companies that participate in the TSM initiative. The selection committee, comprising members from MAC's COI Advisory Panel, selected the finalists based on criteria such as innovation, involvement of and engagement with communities, and project outcomes. TSM performance was also considered as an indicator of the company's ongoing commitment to corporate responsibility.



TSM COMMUNITY ENGAGEMENT EXCELLENCE AWARD 2016 WINNER: GLENCORE, KIDD OPERATIONS

Glencore's Kidd Operations, including the Kidd Concentrator and the Kidd Mine, is Timmins' largest private-sector employer. Kidd Operations is a major corporate funder in Timmins, and has donated nearly \$4 million towards community initiatives since 2007. With an anticipated closure date of 2022, Kidd has reinvented its corporate giving approach to mitigate the impacts of its eventual exit and to ensure its contribution to long-term capacity-building and sustainability in the community.

Based on stakeholder feedback and identified local priorities, Kidd developed an innovative social investment program called Community Partnerships, which transforms how the site invests in the community. In the new model, Kidd takes a proactive approach to social investment by brokering strategic projects to community partners and moving away from traditional corporate philanthropy. This has enabled Kidd to engage meaningfully with stakeholders to design collaborative, multi-partner projects that contribute to the long-term sustainability of the community at large. An example of this was Timmins' first sustainability conference for the local non-profit sector in 2013. Another innovation of the model is that it measures social return on investment for Kidd's major projects, allowing the company to evaluate the reach of its social investments based on financial and social impact data. For example, Kidd was able to determine that its \$320,000 investment in a recent expansion project at a local retirement home showed a return of \$1.58 for each dollar Kidd invested in the project.

The success of the Community Partnerships program and its ability to measure social return on investment attracted the attention of Canada's largest public-sector grantmaker, the Ontario Trillium Foundation (OTF). In 2015, Kidd and the OTF launched the \$1 Million Kidd Operations-Ontario Trillium Foundation Legacy Fund, which will begin making grants when Kidd ceases operations. This partnership will see Kidd Operations and the OTF each invest \$500,000 into the fund. This collaboration, a first for the government agency, paves the way for future private-public sector partnerships.

TSM ENVIRONMENTAL EXCELLENCE AWARD 2016 WINNER: GLENCORE, RAGLAN MINE

Sitting on a plateau 600 metres high on the Ungava Peninsula in northern Quebec, Glencore's Raglan Mine is well situated to take advantage of wind power. In 2014, the company did exactly that when it completed its construction of a 120-metre-high wind turbine and storage facility, the largest in Quebec.

Like most other northern mines, the off-grid Raglan Mine was heavily dependent on diesel to fuel its operations. In light of climate change considerations, commitments to limit environmental impacts and rising diesel costs, Glencore had a strong business case for exploring renewable energy solutions. The mine's location in the Canadian Arctic affords it one of the world's richest wind resources. Glencore set out to diversify its energy mix with wind to improve sustainability, reduce emissions and cut costs.

The project, a private-public partnership between Raglan Mine, TUGLIQ Energy and the federal and provincial governments, was unprecedented in scale, and was specially designed for severe Arctic climate conditions. Communities were consulted throughout the project and the company acted on their feedback. For example, when the Inuit raised concerns about the potential of blade reflection on local fish patterns, Glencore moved the turbine to another location.

In its inaugural year, the 3-megawatt wind turbine and storage facility has already saved 2.1 million litres of diesel and reduced greenhouse gas emissions by 5.85 kilotons. Based on these results, Glencore estimates that it will save more than \$40 million in fuel-related costs over the projected 20-year life of the wind turbine. This successful pilot project could have transformative impacts across northern Canada, helping to pave the way for the more widespread adoption of greener energy alternatives. As a fully developed and tested wind power and storage system, it could be duplicated in Aboriginal communities and other northern mining operations in the future.





TSM Awards

TSM Leadership Awards

A TSM Leadership Award is granted only when a facility meets or exceeds a Level A ranking for all indicators under the Tailings Management, Energy Use and GHG Emissions Management, Aboriginal and Community Outreach, Biodiversity Conservation Management and Safety and Health Protocols, and meets all requirements of the Crisis Management Planning Protocol. To be eligible for a TSM Leadership Award, a facility's results must have been externally verified.

The following facilities were granted TSM Leadership Awards for their 2015 results

Hudbay Minerals Inc., Hudson Bay Mining and Smelting Co.

New Gold Inc., New Afton Mine

Suncor Energy Inc., Oil sands facility

Teck Resources Limited, Elkview Operations

Teck Resources Limited, Highland Valley Copper

Vale Newfoundland and Labrador Limited, Voisey's Bay Mine



Representatives from Teck discuss a project with members of the Ktunaxa Nation Council.



Case Studies

TSM Awards

Case Study: Teck's Elkview Operations Achieves Highest Level of TSM Performance

This year, Teck's Elkview Operations not only achieved a TSM Leadership Award for a second time, but did so by achieving Level AAA performance in all of the program's indicators and meeting all of the requirements of the Crisis Management Planning Protocol during external verification. No other MAC member site has done this before.

Elkview Operations, located approximately three kilometres east of Sparwood in southeastern British Columbia, was one of the first recipients of the TSM Leadership Award when it achieved Level A performance across all of the protocols in 2013. Since then, Teck has continued to be a leader in the industry and excel in all of TSM's focus areas.

"We are proud of this achievement, which is a direct result of the hard work and commitment of our employees," said Don Sander, General Manager, Elkview. "There is a strong culture of safe, responsible resource development here at Elkview and across all of Teck's steelmaking coal operations."

Notably, Teck has demonstrated a strong commitment to Aboriginal and community engagement in the Elk Valley over the years. Most recently, the Ktunaxa Nation Council and Teck signed an Impact Management and Benefits Agreement that creates numerous long-term benefits for the Ktunaxa people and increased certainty around future sustainable mining development in the Elk Valley region. The agreement, spanning approximately 40 years and all five steelmaking operations including Elkview Operations, is one of the most comprehensive agreements of its kind in place in Canada and sets out commitments for both parties in the areas of consultation and engagement, environment and land stewardship, employment and business opportunities for Ktunaxa citizens and cultural resources management.

Elkview Operations' performance in the area of biodiversity conservation management further demonstrates the facility's commitment to TSM. The facility has developed a comprehensive Biodiversity Management Plan that aligns with Teck's commitment to achieve a net-positive impact on biodiversity in the areas where they operate. This plan includes ongoing reclamation planning and activities such as wildlife monitoring and compiling land characteristics to guide progressive reclamation plans. Reclamation activities include re-establishing landforms in previously mined areas, and seeding and replanting programs which are carried out to re-establish native vegetation. Reclaimed areas are then monitored with a focus on vegetation quality and wildlife use. Elkview reclaimed 25 hectares of land in 2015.

This commitment to biodiversity extends from the site to the entire region. In October 2013, Teck purchased approximately 7,150 hectares of private lands in Elk Valley and Flathead River Valley – one of the single biggest private sector investments in land conservation in British Columbia's history – to conserve an area over 17 times the size of Vancouver's Stanley Park. Teck is currently working in cooperation with the Ktunaxa Nation, communities and other stakeholders to develop management plans to protect key wildlife and fish habitat in the area of those conservation lands.

 [Learn more at www.teck.com](http://www.teck.com)



TSM Performance by Company

Measuring Company Performance



This section of the report presents facility-level results for all companies participating in TSM. The number of facilities participating in TSM continues to grow. In 2006, 49 facilities publicly reported performance, and in 2015, this number grew to 62 facilities. This section includes externally verified results for seven companies (Hudbay Minerals, New Gold, Shell Canada Energy, Suncor, Teck Resources Limited*, and Vale).

Besides being MAC members, many companies in this report belong to either the Mining Association of British Columbia or the Québec Mining Association, which are both formal participants in TSM.

Each company's affiliation is indicated by the following logos:



Mining Association of Canada



Mining Association of British Columbia



Québec Mining Association

*Teck Resources Limited conducts external verification for a sample of its facilities on an annual basis. In 2015, Teck's Highland Valley Copper Operation, Elkview Operation and Fording River Operation underwent external verification.



TSM Performance by Company
Agnico Eagle Mines Limited



Agnico Eagle is a senior Canadian gold mining company that has produced precious metals since 1957. The company's eight mines are located in Canada, Finland and Mexico, with exploration and development activities in each of these regions as well as in the United States and Sweden. The company employs more than 7,500 people.

Agnico Eagle's four fundamental values of operating safely, respecting its employees, protecting the environment and respecting its communities are integral to the company's culture and social responsibility leadership. In 2015, Agnico Eagle improved its performance in the areas of health and safety, water management and community engagement. The company also identified opportunities to improve its energy management and reduce greenhouse gas (GHG) emissions.

Agnico Eagle is aiming to achieve an overall Level A TSM rating at all its facilities. In 2015, an external verification was conducted at the Kittila, LaRonde, Goldex, Lapa, Meadowbank and Pinos Altos mines. Out of the 132 indicators verified, Agnico obtained a Level A or better in 124 of them. The Kittila, LaRonde and Goldex mines obtained a Level A or better in all protocols, and each received a TSM Leadership Award from MAC. In 2015, Agnico Eagle helped to facilitate the adoption of the TSM initiative by FinnMin, the Finnish Mining Association. This is the first time TSM has been adopted by a mining association outside of Canada.

During 2015, Agnico Eagle took steps to further enhance its internal Health, Safety, Environment and Community Relations (HSEC) Management System, labelled the Responsible Mining Management System (RMMS). An internal audit of the management system is planned for 2016. The following are highlights in sustainable development for 2015.

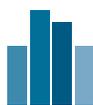
- **Combined lost time accident frequency:** In 2015, Agnico Eagle's combined lost time and restricted work frequency was 1.23 – a 17% reduction from the previous year's performance and substantially below the company's target rate of 1.5. This is the sixth year in a row Agnico Eagle has posted its lowest ever combined rate.

Water sampling at Agnico Eagle's Meliadine advanced-stage gold project in Nunavut.



- **Safety First:** The Québec Mining Association recognized 23 of Agnico Eagle's supervisors for achieving more than 50,000 hours without any compensable accidents on their work teams from July 1, 2014, to June 30, 2015. Eight of the company's supervisors were also recognized for achieving 100,000 to 250,000 hours without any compensable accidents during the same time period.
- **Total direct GHG emissions:** In 2015, Agnico Eagle's average GHG emission intensity (tonnes of CO₂ equivalent per tonne of ore processed) for all of its operating mines was 0.0200, a modest 2% reduction from 0.0204 in 2014. This is due to a combination of more efficient energy use and more electrical power use.
- **International Cyanide Management Code Certification:** Three of Agnico Eagle's operations – Kittila, Meadowbank and Pinos Altos – were certified under the International Cyanide Management Code in 2015. The Cyanide Code is a voluntary industry program for companies involved in the production of gold using cyanide and for companies producing and transporting this chemical.
- **Awards and recognition:**
 - Agnico Eagle was awarded top prize in the Sustainable Development category at the 26th Annual Gala of Elites hosted by the Central-Abitibi Chamber of Commerce and Industry. The company also received the Innovation Award for its unique and effective solution to upgrading the air-conditioning system at the LaRonde mine.
 - Agnico Eagle's Kittila mine in Finland was awarded the Environmental Contribution of the Year Award for 2015 at the second annual EuroMining Technology Trade Fair. The award recognizes a mining industry operator that demonstrates a high level of environmental protection.
 - Agnico Eagle Mexico was once again recognized in the Great Place to Work program for the northwest Mexico region. It achieved a ranking of fourth overall of employers with more than 1,000 employees. The program recognizes companies that facilitate the sharing of employee knowledge and experience to improve both their business and the quality of their workplace. The rankings are established from data compiled annually through employee surveys.

🔗 For more information, please visit: www.agnicoeagle.com



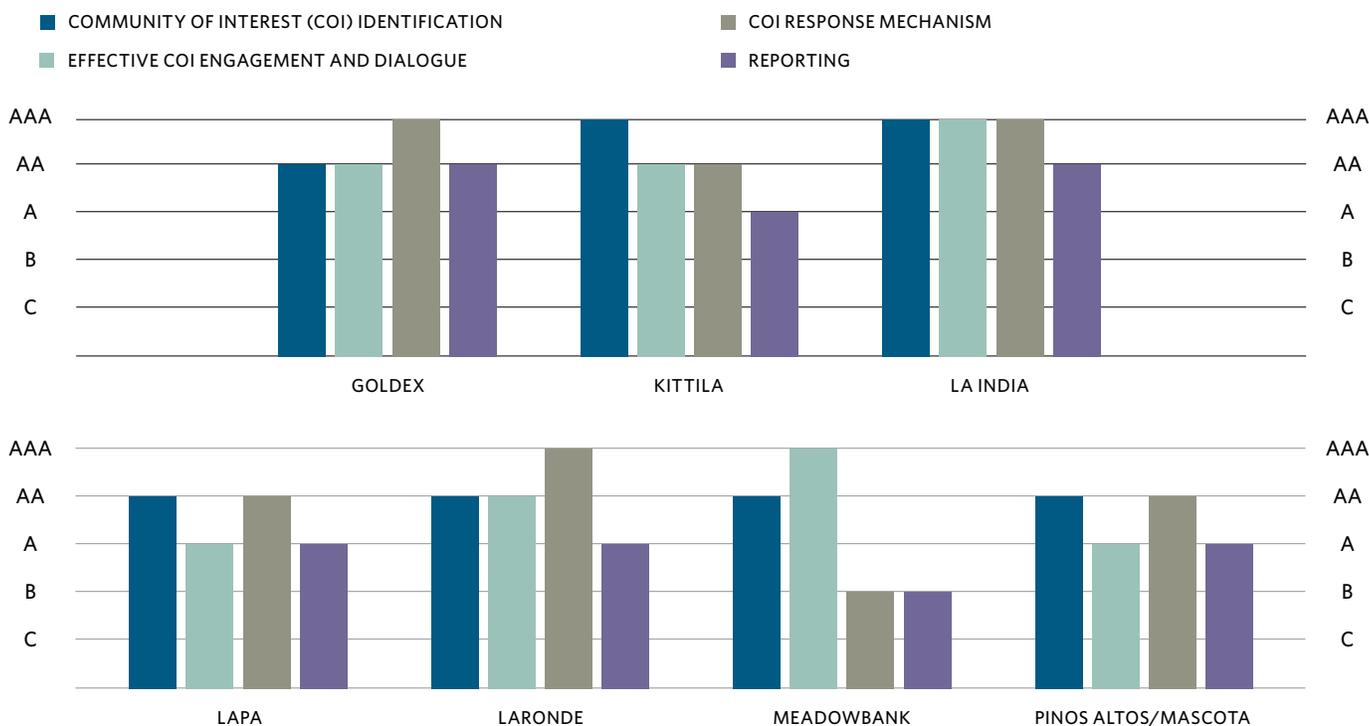
2015 TSM Results

Agnico Eagle Mines Limited

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
AGNICO EAGLE CORPORATE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
GOLDEX	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
KITTILA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LA INDIA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LAPA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LARONDE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MEADOWBANK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PINOS ALTOS/MASCOTA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment

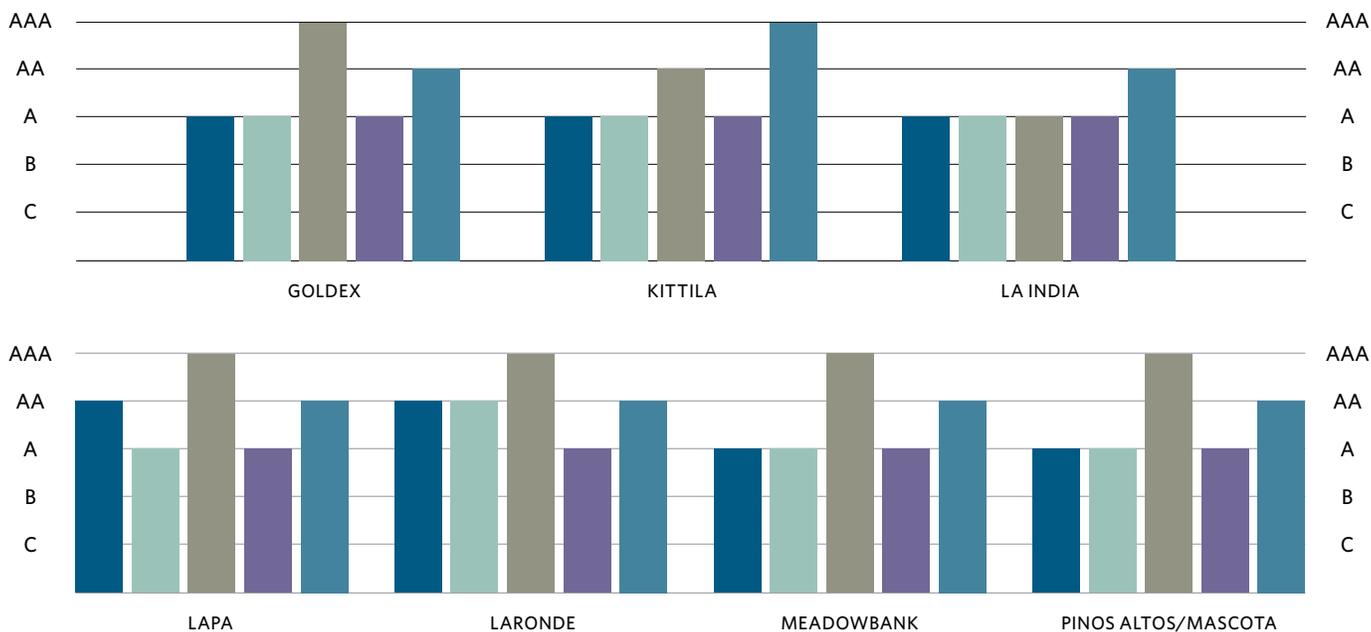


Self-assessed results; last external verification: 2015; next external verification: 2018.



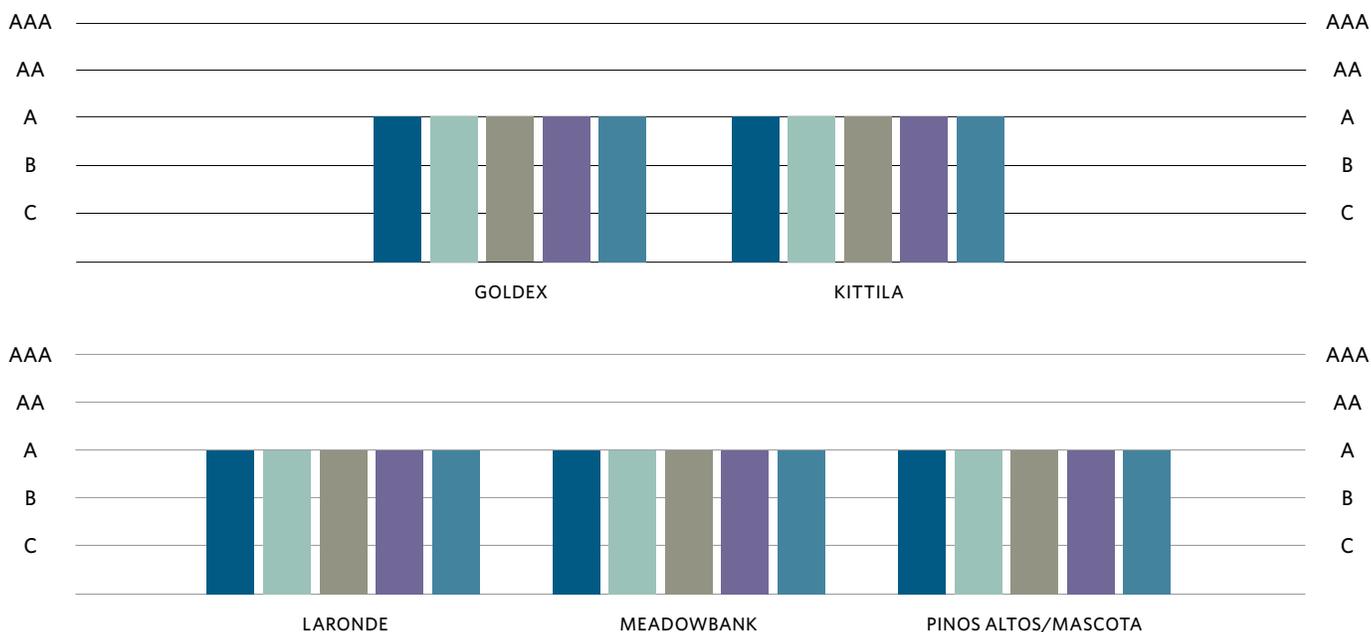
Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- MONITORING AND REPORTING
- PLANNING, IMPLEMENTATION AND OPERATION
- PERFORMANCE
- TRAINING, BEHAVIOUR AND CULTURE



Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- TAILINGS MANAGEMENT SYSTEM
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT

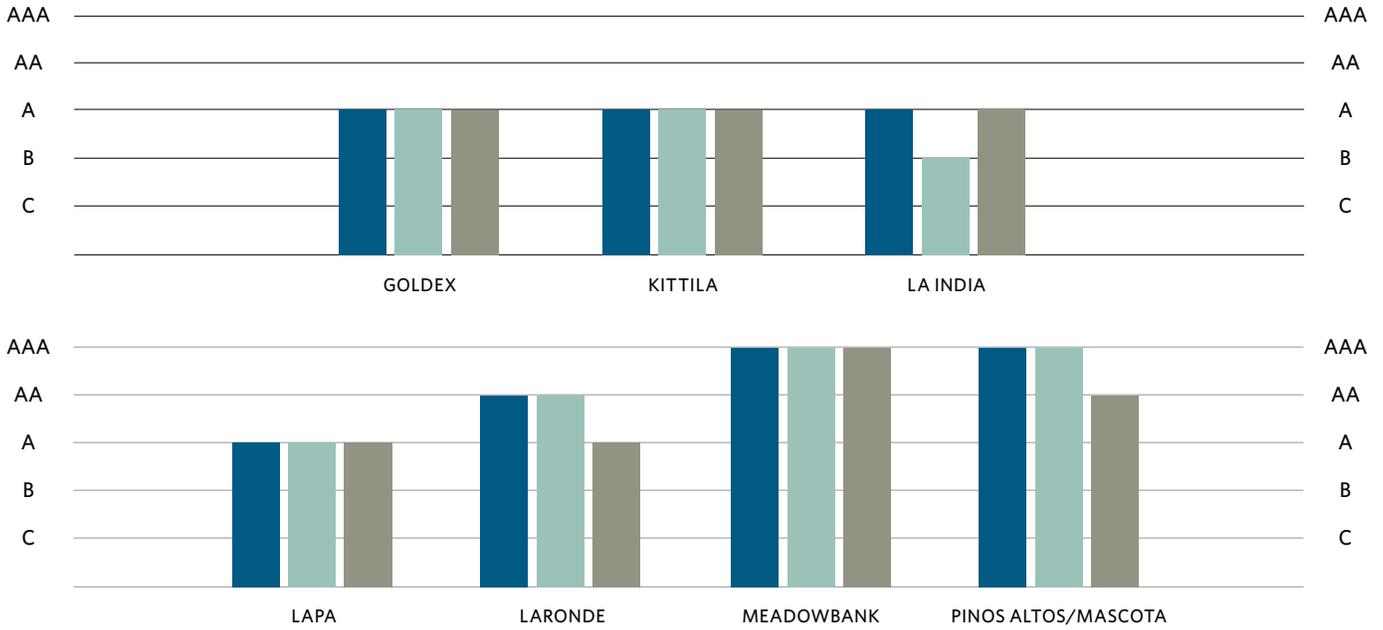


Self-assessed results; last external verification: 2015; next external verification: 2018.



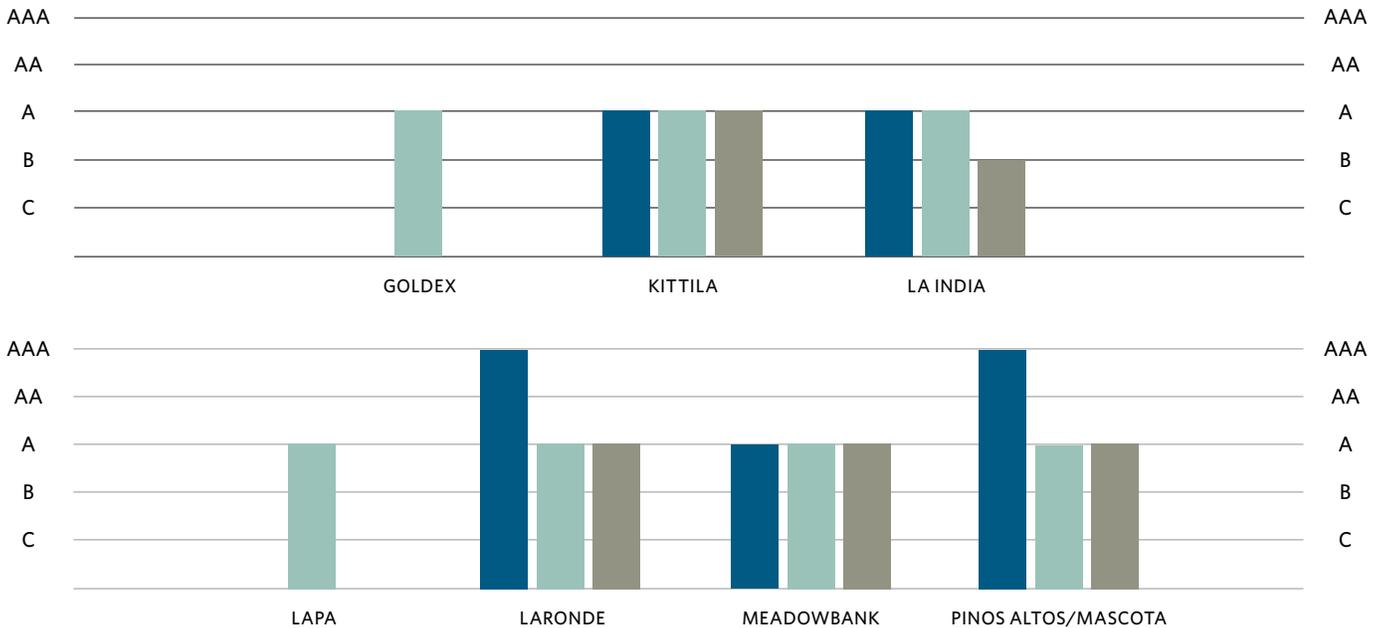
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Self-assessed results; last external verification: 2015; next external verification: 2018.



TSM Performance by Company

ArcelorMittal Mines Canada



ArcelorMittal is the largest Canadian supplier of iron ore for steel markets around the world. In 2015, the company produced 26 million tonnes of iron ore concentrate and is active in the mining and primary processing sector. In addition to its mining complex in Mont-Wright, Quebec, ArcelorMittal operates a 420-kilometre railroad, a pellet plant, a private port and railroad shops in Port-Cartier.

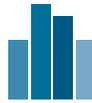
As a MAC member, ArcelorMittal is involved in an improvement process through the TSM initiative and continuously strengthens its application of the different protocols. ArcelorMittal is also committed to employee health and safety and the environment as demonstrated through its adoption of other management system standards. The company has achieved the ISO 14001:2004 certification for its environmental management systems and the ISO 9001:2008 certification for its quality management systems. Its occupational health and safety system was certified to the OHSAS 18001:2007 standard in June 2011. In addition, ArcelorMittal implemented its Courageous Leadership program, aimed at changing behaviours in the workplace and increasing rigour in all management processes. This initiative contributed to the significant improvement of its lost time injury (LTI) frequency rate, from 4.1 in 2011 to 0.6 in 2015. ArcelorMittal still strives to achieve an LTI frequency rate of zero.

The company is continuously improving its overall energy efficiency (EE). A dedicated EE team carries out projects that reduce both costs and GHG emissions. In 2015, ArcelorMittal held a pilot test at its pellet plant using pyrolytic oil, a bio char. In the medium term, the company is confident that this could be an effective alternative, which would result in a reduction of its GHG emissions. The research and development team's efforts will lead to the use of new energy sources, which will improve efficiency, while further reducing GHG emissions. ArcelorMittal strives to be a pioneer in this area.

The company has been highly involved in its communities for more than 50 years. This involvement continues today in a number of ways, including allocation of funds, a formal joint committee that involves community representatives, and support of northern development. ArcelorMittal has signed an impact and benefit agreement with the Uashat mak Mani-Utenam Inuit community, which is now being jointly implemented. More than ever, ArcelorMittal is committed to continue improving its approach to the TSM initiative.

🔗 For more information, please visit: www.transformerlavenir.com/en





2015 TSM Results

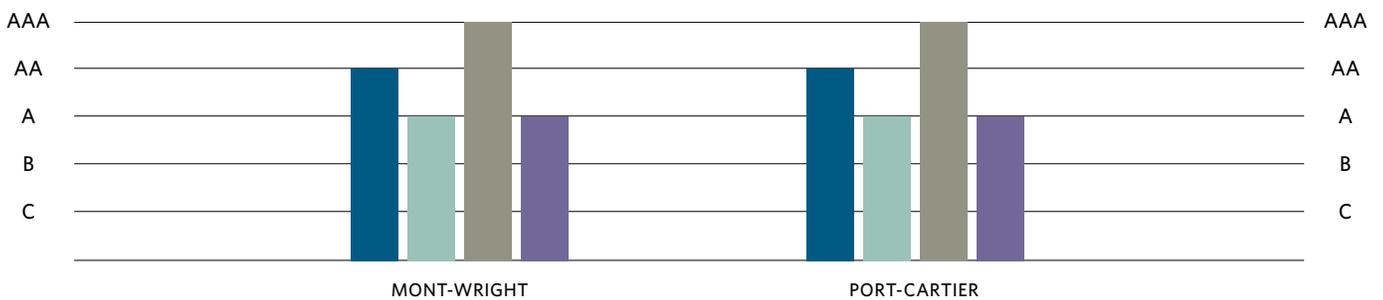
ArcelorMittal Mines Canada

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
ARCELORMITTAL MINING CANADA G.P.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MONT-WRIGHT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PORT-CARTIER	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

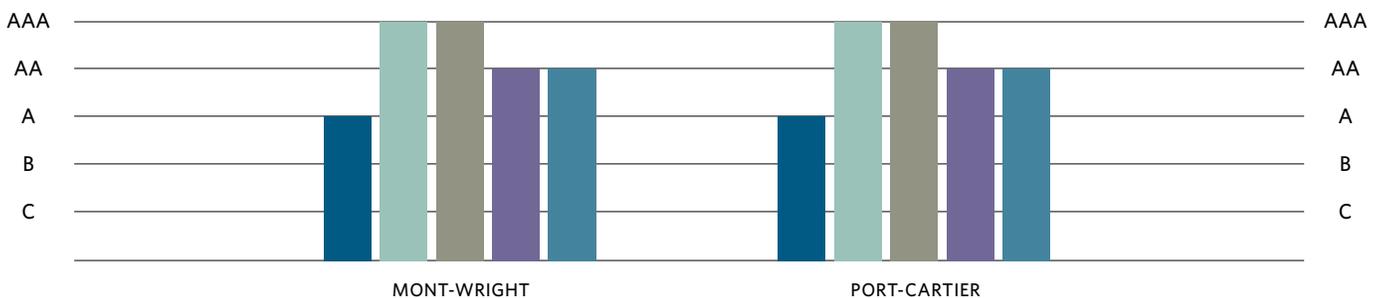
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- COI RESPONSE MECHANISM
- REPORTING



Safety and Health Assessment

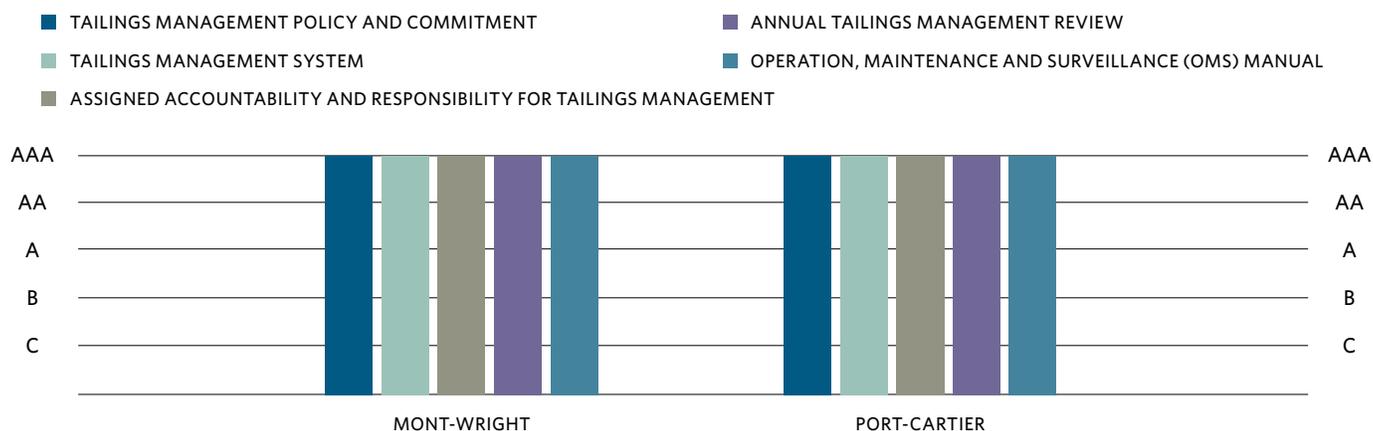
- POLICY, COMMITMENT AND ACCOUNTABILITY
- PLANNING, IMPLEMENTATION AND OPERATION
- TRAINING, BEHAVIOUR AND CULTURE
- MONITORING AND REPORTING
- PERFORMANCE



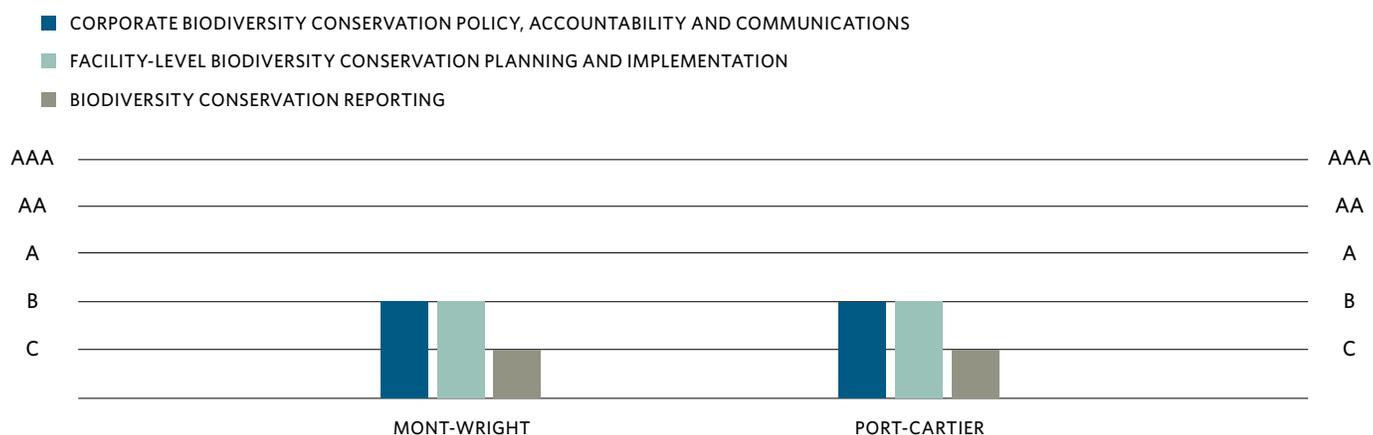
Self-assessed results; last external verification: 2014; next external verification: 2017.



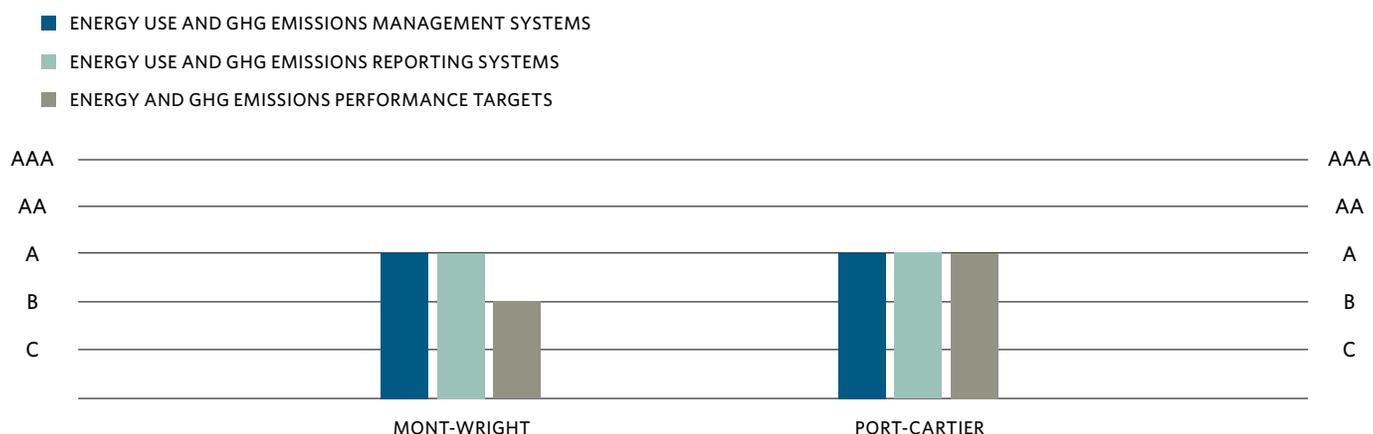
Tailings Management Assessment



Biodiversity Conservation Management Assessment



Energy Use and GHG Emissions Management Assessment



Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Avalon Advanced Materials



Avalon Advanced Materials (formerly Avalon Rare Metals) is a Canadian mineral development company with a primary focus on niche market metals and minerals with growing demand in new technologies. The company has three advanced-stage projects across Canada, all 100% owned, which are focused on lithium, tin, indium, zirconium and the rare earth elements. Avalon is currently focusing on its Separation Rapids Lithium Project near Kenora, Ontario, and its East Kemptville Tin-Indium Project in Yarmouth, Nova Scotia.

Avalon believes a strong sustainability framework is fundamental to its long-term success. The company has implemented the TSM Guiding Principles in order to meet or exceed industry best practices, and to continuously improve on its social, environmental, and health and safety performance. As Avalon is a development stage company, its annual TSM self-assessment is voluntary.

Avalon has demonstrated leadership among junior companies in the mineral development sector by producing an annual sustainability report compliant with the Global Reporting Initiative's (GRI) guidelines. Avalon reports on its activities to hold itself accountable, drive company performance and demonstrate the benefits of sustainable practices to its stakeholders.

In December 2015, Avalon published its fourth annual sustainability report and its second in accordance with GRI G4 guidelines. For two consecutive years (2015 and 2016), Avalon has placed among Corporate Knights' Future 40 Responsible Corporate Leaders in Canada.

HIGHLIGHTS OF AVALON'S VOLUNTARY 2015 TSM SELF-ASSESSMENT

During the 2015 reporting period (September 1, 2014, to August 31, 2015), Avalon continued to advance its projects openly and transparently, with a commitment to the economic and social well-being of its projects' local communities.

At the East Kemptville project in Yarmouth County, Avalon met with local political representatives, Chamber of Commerce representatives and members of the Tusket River Environmental Protection Association, a local NGO concerned with the Tusket River watershed in which the East Kemptville site is located.

“Avalon has also developed a risk management program to identify and manage risks and opportunities.”

Avalon also initiated discussions with the Acadia First Nation. These discussions were focused largely on business opportunities, leading to a contract with a local First Nation-owned business to manufacture the 2,000 core boxes needed for the 2015 drilling program.

Avalon has also developed a risk management program to identify and manage risks and opportunities. The program was expanded in 2015 to address risks associated with the increasingly important East Kemptville and Separation Rapids projects to ensure both are managed effectively.

SAFETY AND HEALTH ASSESSMENT

Avalon's Sustainability Policy, which broadens and clarifies the company's sustainability objectives to encompass health and safety, environment, and communities and people, was endorsed by company management during the reporting period. Avalon's Board of Directors and employees were then introduced to and trained on the policy.

The company updated health and safety training for all employees at the East Kemptville project site, and all employees participated in a site-specific health and safety risk assessment. Regrettably, there was one medical-aid accident during the year. The accident investigation resulted in retraining of personnel at the East Kemptville site in key areas of concern.

ENERGY USE AND GHG EMISSIONS MANAGEMENT

Avalon implemented energy use monitoring at the East Kemptville project site; however, attempts to identify energy intensity performance targets were unsuccessful due to the lack of control on material effects (e.g., ground conditions during drilling).

Avalon also completed an air quality management plan at the Nechalacho project and initiated environmental studies at the East Kemptville project.

ABORIGINAL AND COMMUNITY OUTREACH

Avalon identified the communities of interest surrounding the East Kemptville project and established a core box construction contract with the local Acadia First Nation.

CRISIS MANAGEMENT PLANNING

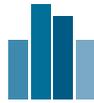
Avalon updated all emergency response plans, and completed a risk assessment and emergency response training at the East Kemptville project site.

BIODIVERSITY CONSERVATION MANAGEMENT

Avalon prepared Wildlife, Wildlife Habitat Protection and Wildlife Effects monitoring plans for its Nechalacho project, and initiated baseline and Species at Risk Act studies at the East Kemptville project. The company also participated in Caribou Management Area planning in the Northwest Territories.

📄 For more information, please visit: www.avalonadvancedmaterials.com





2015 TSM Results

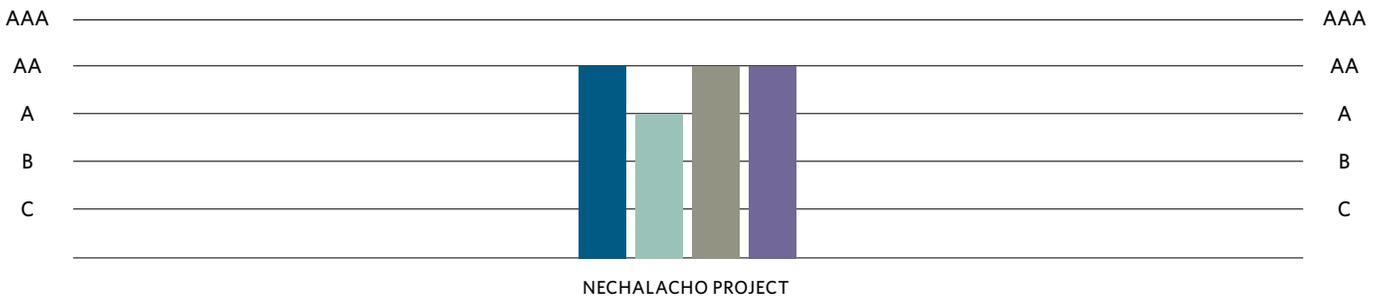
Avalon Advanced Materials

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
NECHALACHO PROJECT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

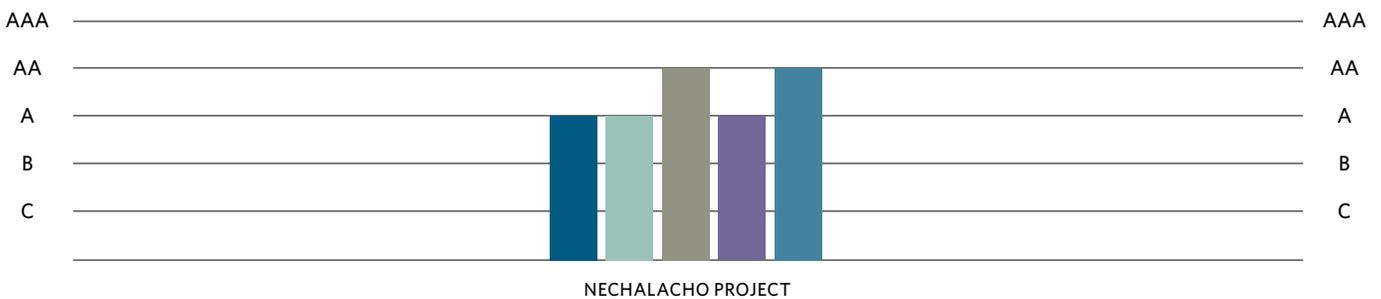
Aboriginal and Community Outreach Assessment

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- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
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- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE

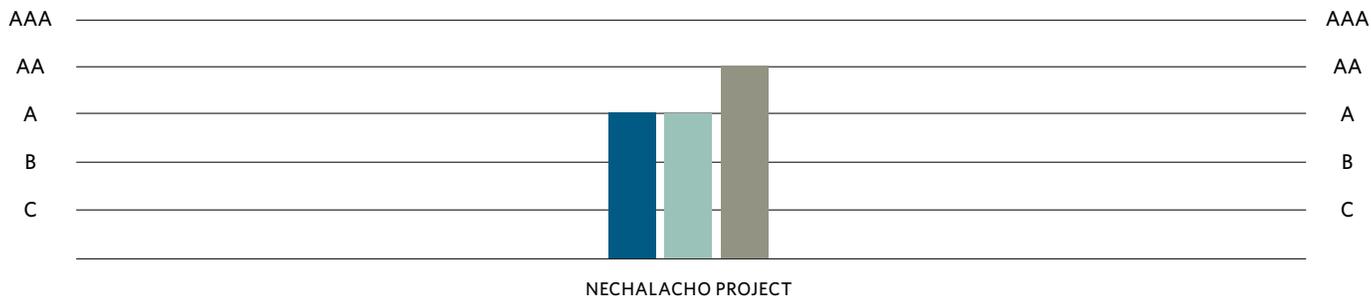


Voluntary self-assessment.



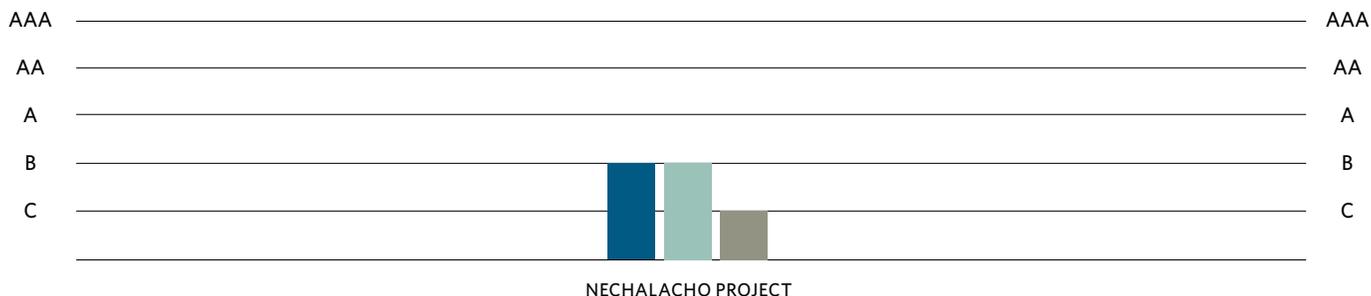
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Voluntary self-assessment.



TSM Performance by Company

Barrick Gold Corporation



Barrick has mining operations in Argentina, Australia, Canada, Chile, Dominican Republic, Papua New Guinea, Peru, Saudi Arabia, the United States and Zambia. More than 75% of its gold production comes from the Americas. The company was founded in 1983 by Canadian entrepreneur and philanthropist, Peter Munk, and is headquartered in Toronto. Barrick's shares trade on the New York and Toronto stock exchanges under the symbol ABX.

Barrick's vision is the generation of wealth through responsible mining – wealth for the company's owners and people, and for the countries and communities with which it partners. Barrick aims to be the leading mining company focused on gold. It aspires to grow its cash flow per share by developing and operating high-quality assets through disciplined allocation of human and financial capital and operational excellence.

The Hemlo mining operation is located approximately 46 kilometres east of Marathon, Ontario, and has produced gold continuously since 1985. The operation includes an underground mine and open-pit mine complex with a processing facility. Recently, the Hemlo operation entered a new phase of its productive life with the purchase of adjacent lands, increasing the site's mineable reserves. The site's mine life is now extended until 2020 with the possibility of additional expansions.

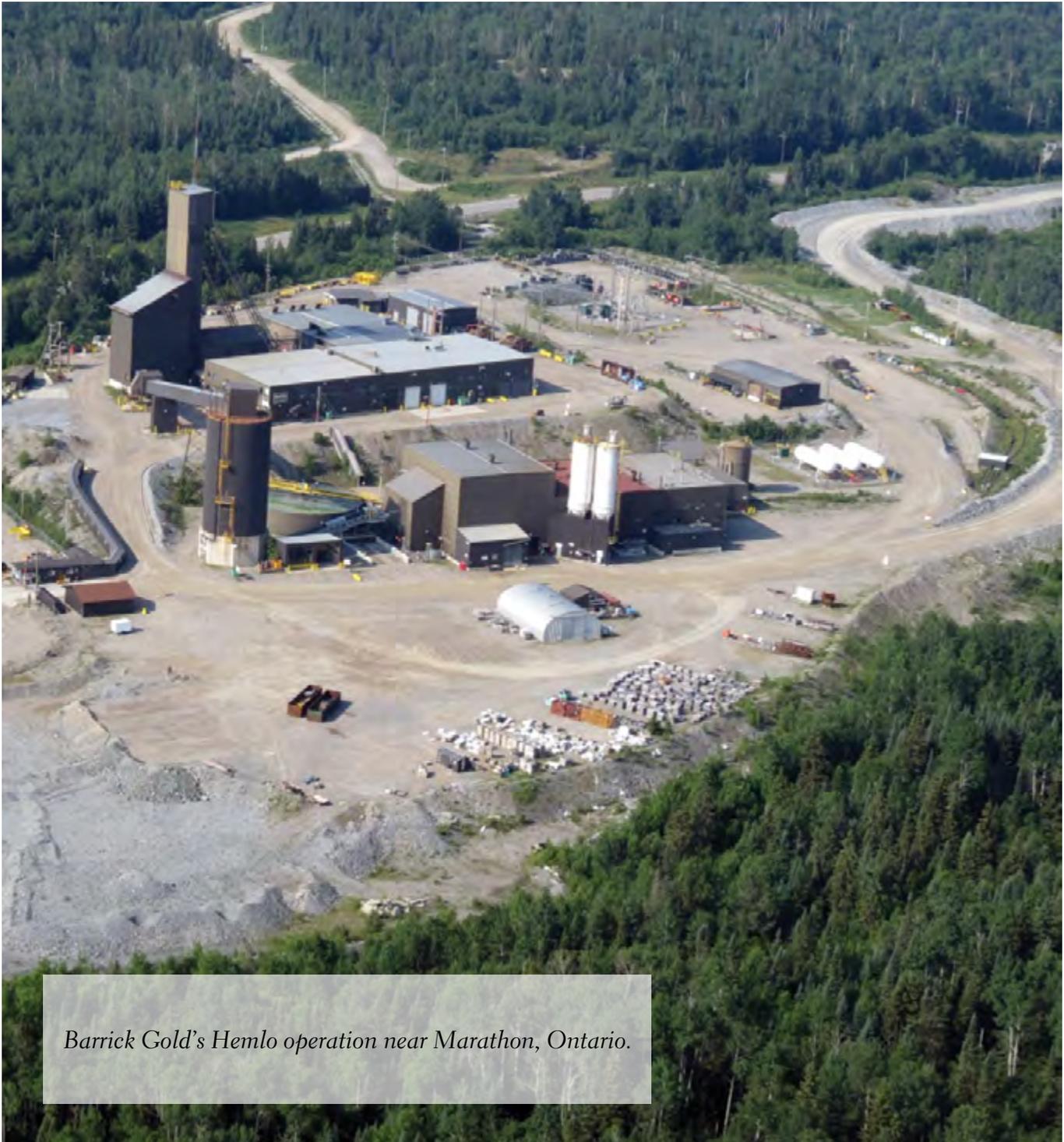
Hemlo's original TSM goal was to achieve and maintain a minimum ranking of a Level A within each protocol. The site's extended mine life provides new opportunities for further enhancements to Hemlo's practices and operating standards. As a result, the site is now seeking higher rankings through continued diligence and the application of TSM, coupled with other international practices and standards.

Hemlo's commitment to improve is further demonstrated by the site's continued certification by independent third-party auditors under the International Cyanide Management Code and ISO 14001 for environmental management systems. These certifications, together with TSM, reinforce Barrick's commitment to the environment and continued sustainability. Hemlo has been recognized by Canada's Department of Natural Resources for its innovative energy conservation program.

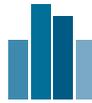
It received a Canadian Industry Program for Energy Conservation (CIPEC) Leadership Award for implementing a project that reduced greenhouse gas emissions by 24% and lowered energy consumption by 10% between 2013 and 2015.

As part of its commitment to sustainability, Hemlo continues to expand its external engagement and partnerships. The site was the first in Canada to receive the Mining Essentials and Environmental Monitoring training program for Aboriginal people. This program enabled 10 members of the Pic River First Nation and Pic Mobert First Nation to receive training. Hemlo continues to work on several initiatives with both First Nations communities and other communities of interest.

🔗 For more information, please visit: www.barrick.com



Barrick Gold's Hemlo operation near Marathon, Ontario.



2015 TSM Results

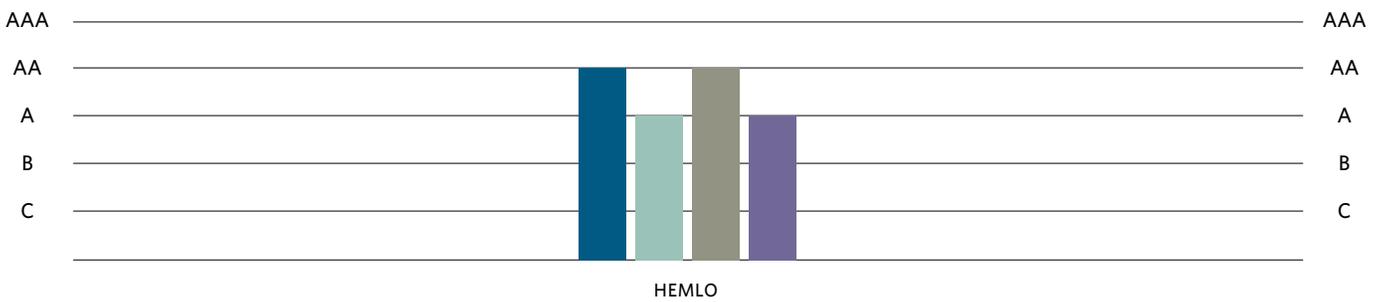
Barrick Gold Corporation

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
BARRICK GOLD CORPORATION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HEMLO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

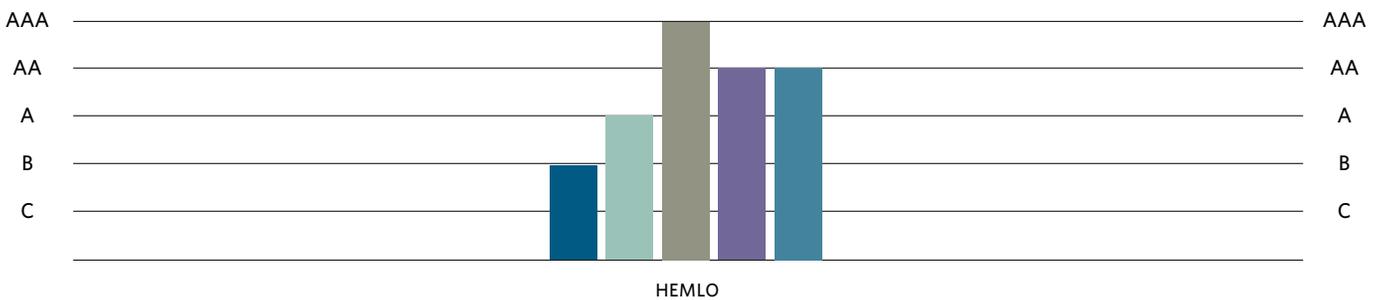
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- COI RESPONSE MECHANISM
- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- PLANNING, IMPLEMENTATION AND OPERATION
- TRAINING, BEHAVIOUR AND CULTURE
- MONITORING AND REPORTING
- PERFORMANCE

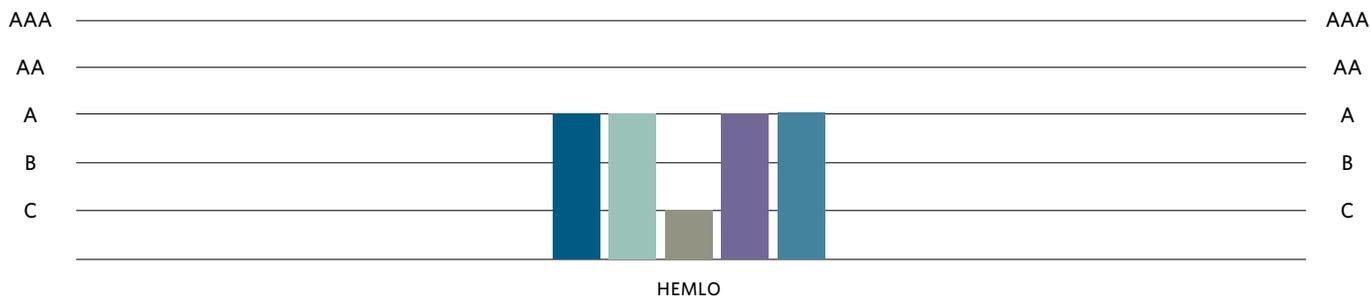


Self-assessed results; last external verification: 2014; next external verification: 2017.



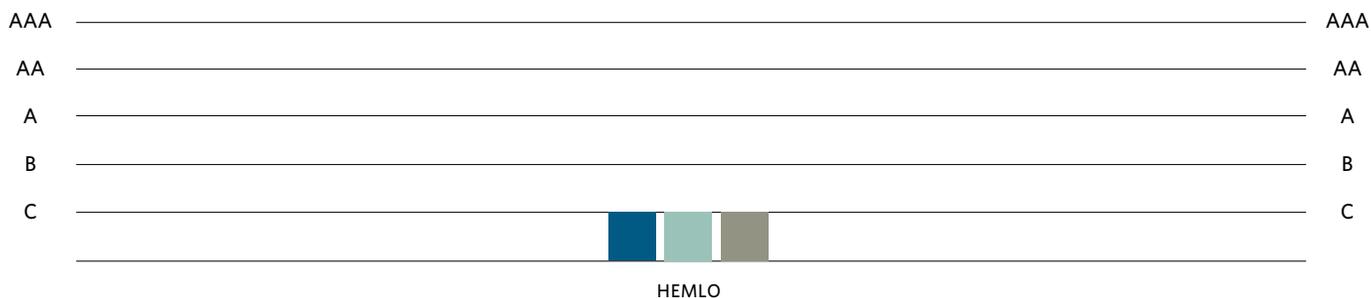
Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- TAILINGS MANAGEMENT SYSTEM
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT



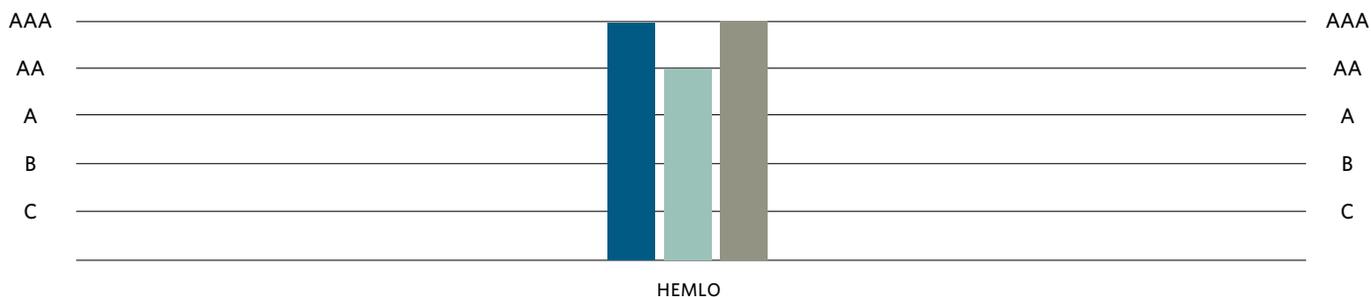
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
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Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Cameco Corporation



Cameco Corporation is one of the world's largest uranium producers. Nuclear energy plants around the world use its uranium products to generate one of the cleanest sources of electricity available today. Cameco is committed to delivering its products safely and responsibly. As part of its commitment to responsible and sustainable development, the company reports its performance through the TSM initiative and uses the results to improve its management systems.

A significant change has occurred in Cameco's Canadian operations since the company's 2015 report. In April 2016, Cameco decided to close mining and milling operations at Rabbit Lake until market conditions improve. Although Rabbit Lake has been placed into long-term care and maintenance mode, Cameco continues to employ a robust environmental management program: all collected mine and surface runoff is treated to ensure protection of the local and regional environment. As well, the program's environmental monitoring and regulatory reporting remains unchanged. This commitment to sustainability has resulted in Rabbit Lake maintaining its TSM scores even during this period of reduced activity.

Cameco needs the trust and support of communities, of Indigenous people living in communities closest to its operations and of governments and regulators. Stakeholder support is essential to Cameco's operations, and the company earns it by being a good corporate citizen. Cameco strives to engage proactively with stakeholders in a variety of ways, and to respond to questions and concerns in a timely, transparent and culturally appropriate manner.

Cameco is the number-one industrial employer of Aboriginal people in Canada. About half of its northern mine site employees are residents of northern Saskatchewan (RSNs), with nearly 90% of these workers self-declaring as Aboriginal.

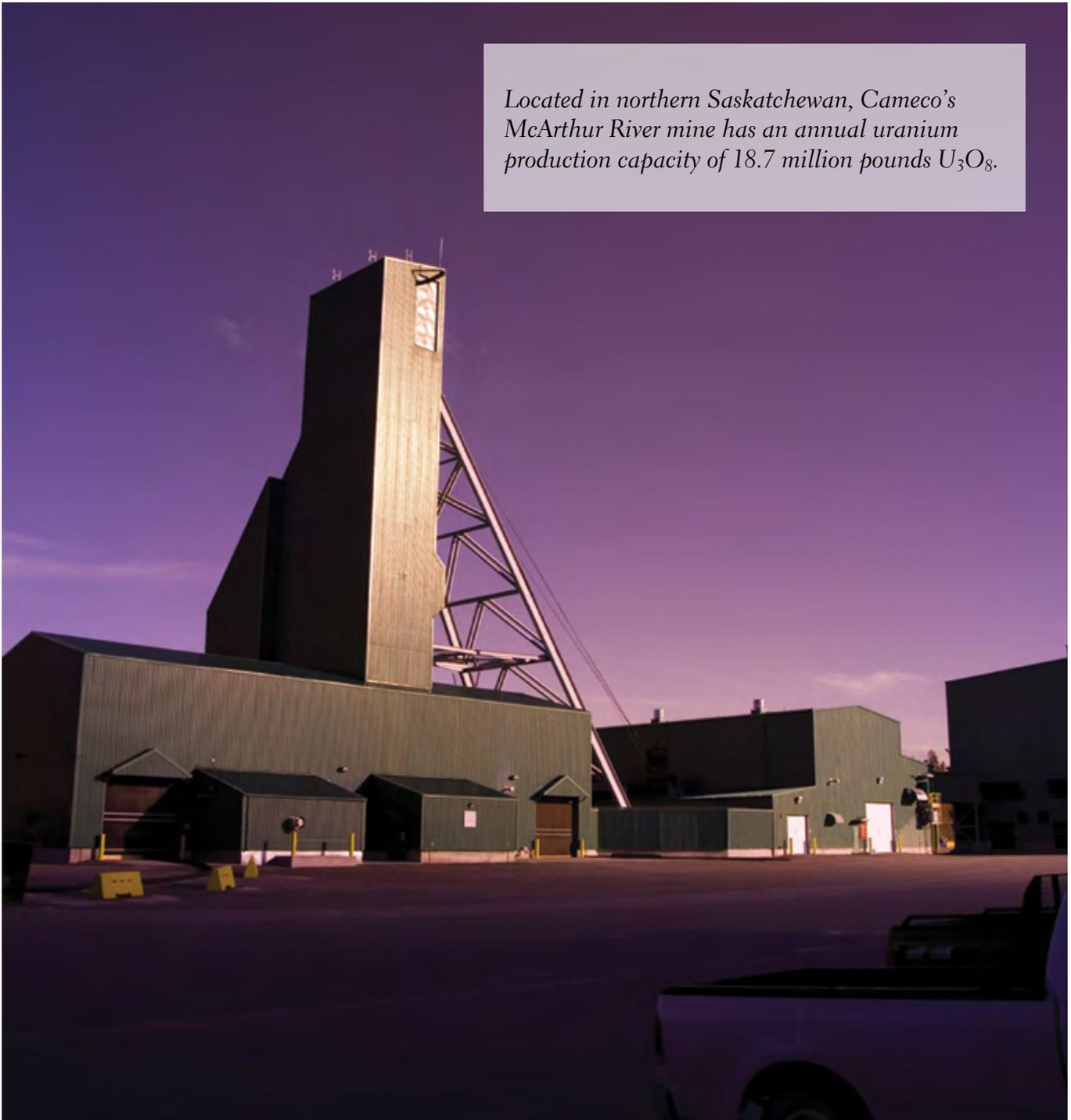
As well, 70% of the services Cameco's Saskatchewan operations use come from northern businesses, most of which are Métis- or First Nations-owned. These businesses also make it their policy to hire Aboriginal people from northern communities.

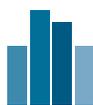
Cameco's efforts have not gone unnoticed. The company has been honoured for progressive Aboriginal relations three times by the Canadian Council for Aboriginal Business in recognition of its commitment to recruit, retain and advance Métis and First Nations employees within the organization. However, supporting northern communities goes beyond supporting businesses and creating jobs. It also means investing in the long-term sustainability of the region through strategic investments in the future.

A link to Cameco's sustainable development report using the latest Global Reporting Initiative sustainability guidelines (GRI 4.0) is on its website.

🔗 For more information, please visit: www.cameco.com

Located in northern Saskatchewan, Cameco's McArthur River mine has an annual uranium production capacity of 18.7 million pounds U_3O_8 .



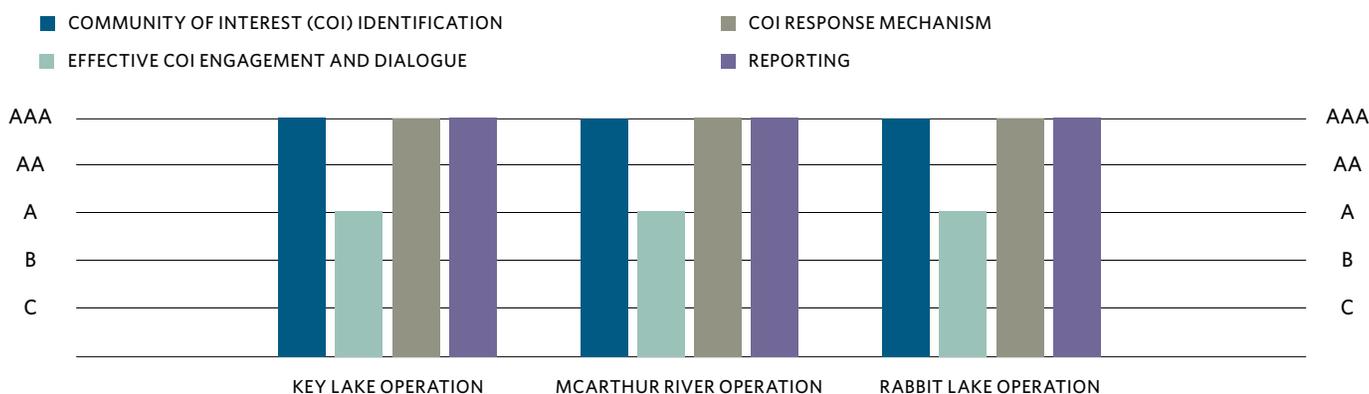


2015 TSM Results Cameco Corporation

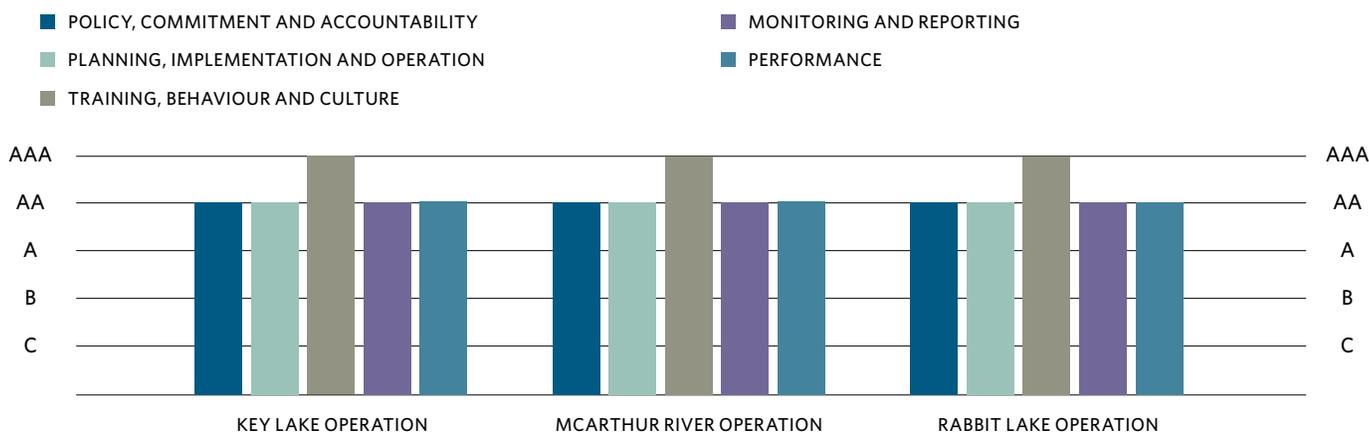
Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
CAMECO CORPORATION	☑	☑	☑
KEY LAKE OPERATION	☑	☑	☑
MCARTHUR RIVER OPERATION	☑	☑	☑
RABBIT LAKE OPERATION	☑	☑	☑

Aboriginal and Community Outreach Assessment



Safety and Health Assessment

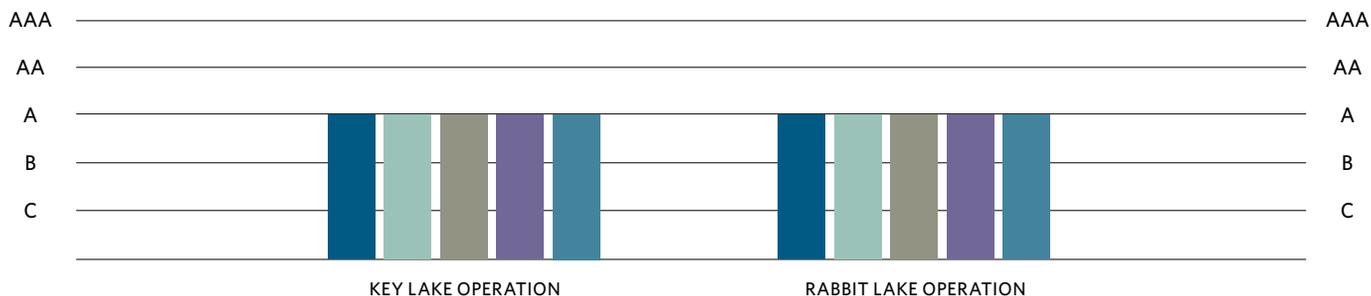


Self-assessed results; last external verification: 2015; next external verification: 2018.



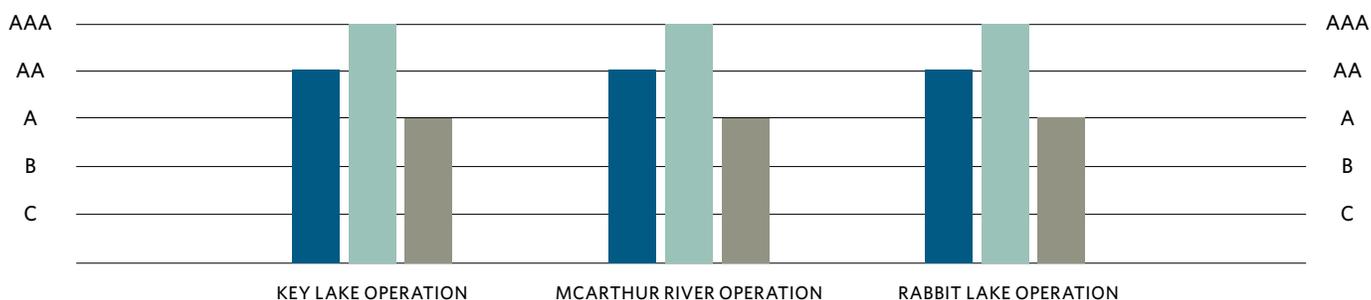
Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



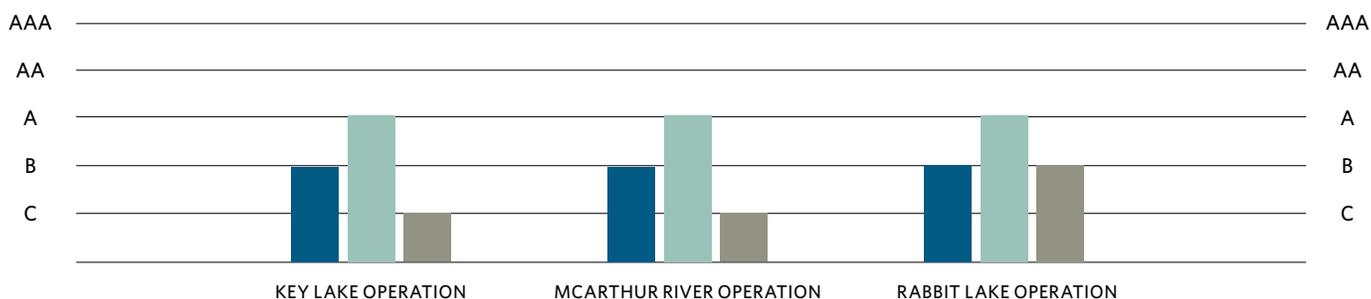
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS

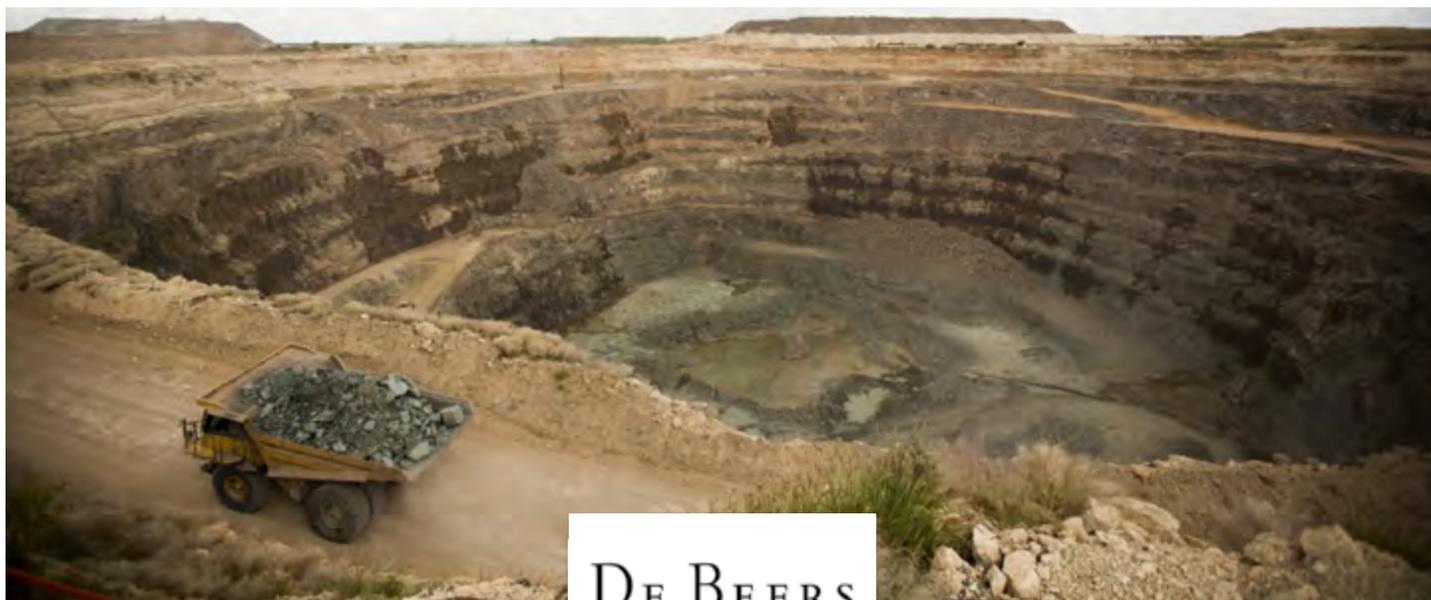


Self-assessed results; last external verification: 2015; next external verification: 2018.



TSM Performance by Company

De Beers Canada Inc.



DE BEERS
GROUP OF COMPANIES

De Beers has three major assets in Canada: the Victor Mine, the Snap Lake Mine and the Gahcho Kué Mine. The Victor Mine, Ontario's first and only diamond mine is located 90 kilometres west of the Attawapiskat First Nation in northeastern Ontario. The Snap Lake Mine, located approximately 200 kilometres northeast of Yellowknife in the Northwest Territories, was Canada's first fully underground diamond mine. In December 2015, the mine was placed into care and maintenance due to a downturn in market conditions. De Beers is also the majority partner and operator of the Gahcho Kué project, which began production on August 2, 2016. The site is located 280 kilometres northeast of Yellowknife.

De Beers' operations are committed to sustainable development. Gahcho Kué, Snap Lake and the Victor mines have a combined total of 14 Impact Benefit Agreements with First Nations and Metis communities in Canada. The operating mines, Gahcho Kué and Victor, maintain safety, health and environmental management systems that have been certified to OHSAS 18001 and ISO 14001.

De Beers is a member of the Canadian Diamond Code of Conduct and Jewelers Vigilance Canada. As part of the larger De Beers Group of Companies, De Beers Canada is also a supporter, participant or signatory of the Global Reporting Initiative, the Responsible Jeweler Council standards, the United Nations Global Compact, the Extractive Industries Transparency Initiative and the Kimberley Process.

The following is a summary of TSM results for De Beers Canada in 2015.

CRISIS MANAGEMENT PLANNING

Crisis management plans for the corporate office and the Victor and Snap Lake mines conform to all TSM performance requirements and Gahcho Kué's plan will in the near future.

ENERGY USE AND GHG EMISSIONS MANAGEMENT

The Victor Mine has a mature energy management system, with two out of three indicators assessed at Level AA.

The energy use and GHG emissions reporting system was assessed at Level A.





De Beers' Victor Mine located in the James Bay Lowlands of Northern Ontario.

The Snap Lake Mine's energy reporting system was assessed at Level A, with the other two indicators achieving a Level B. Vacancies in the engineering and maintenance department and ongoing changes to the mine's power generation system during the past two years have limited progress.

Gahcho Kué is in the process of developing an energy management system.

TAILINGS MANAGEMENT

Victor and Snap Lake mines maintained either a Level AA or AAA for all of the Tailings Management performance indicators except Indicator 5 for Snap Lake, which was assessed at Level A. Both mines participated in the De Beers Group's annual tailings management assurance and review program. The Victor Mine also undertook a third-party audit of selected elements of its tailings management program.

ABORIGINAL AND COMMUNITY OUTREACH

Both Victor and Snap Lake mines maintained either a Level AA or AAA for all of the Aboriginal and Community Outreach performance indicators.

BIODIVERSITY CONSERVATION MANAGEMENT

Both Victor and Snap Lake mines improved and were assessed at Level A or above.

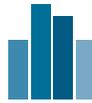
The Victor Mine has extensive environmental monitoring programs, which were already in place for various permits, environmental assessment follow-up programs and research initiatives. Improvements focused on increasing communication with communities of interest and making information publicly available about the mine's biodiversity conservation performance.

The Snap Lake Mine also has a comprehensive environmental monitoring program as required by various licences, permits and environmental assessment follow-up programs. Improvements focused on linking these programs to a Biodiversity Action Plan framework and documenting annual target setting and reporting systems.

SAFETY AND HEALTH

The safety and health management systems at both Victor and Snap Lake mines are certified in 2015 to OHSAS 18001, and were self-assessed at Level AAA, except for one indicator at each mine, which was assessed at Level AA.

📄 For more information, please visit: www.debeersgroup.com/canada/en



2015 TSM Results

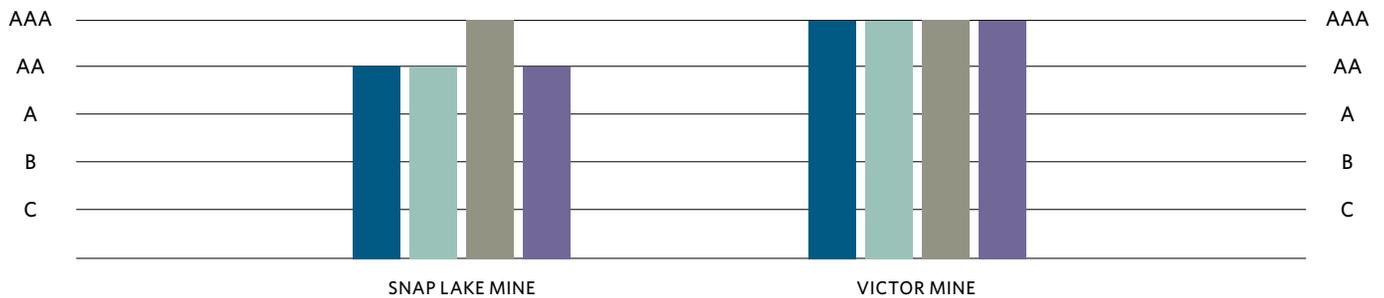
De Beers Canada Inc.

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
DE BEERS CANADA INC.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SNAP LAKE MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
VICTOR MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

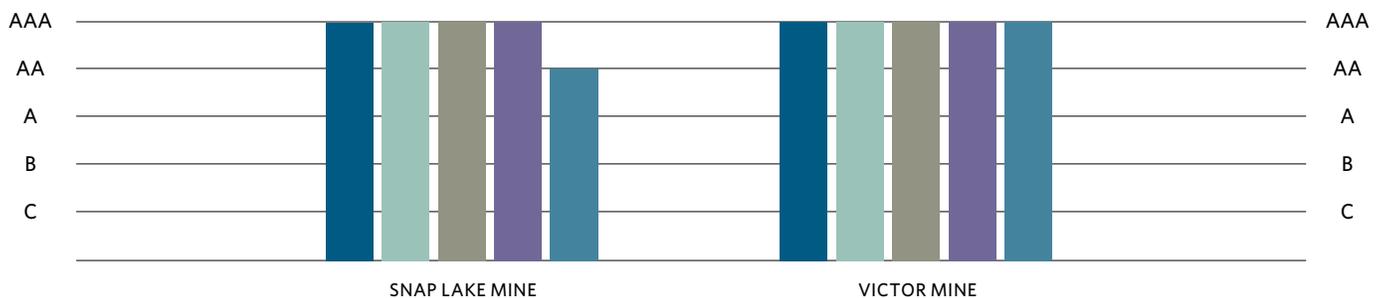
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE

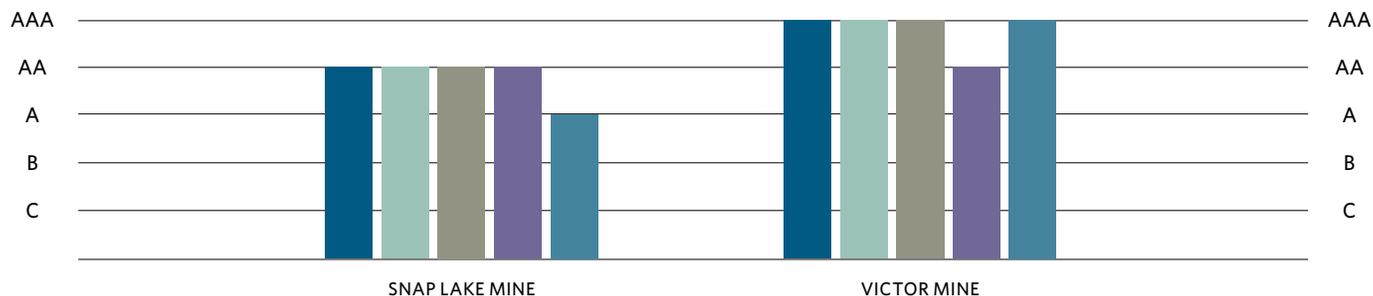


Self-assessed results; last external verification: 2014; next external verification: 2017.



Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



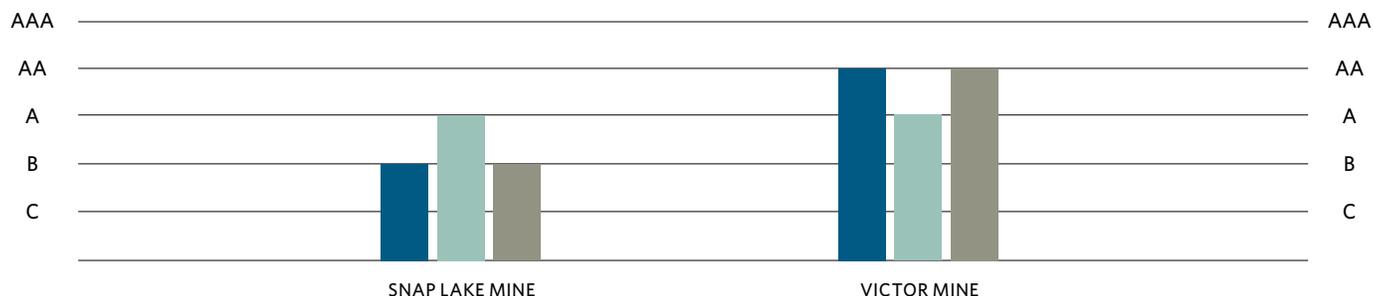
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS

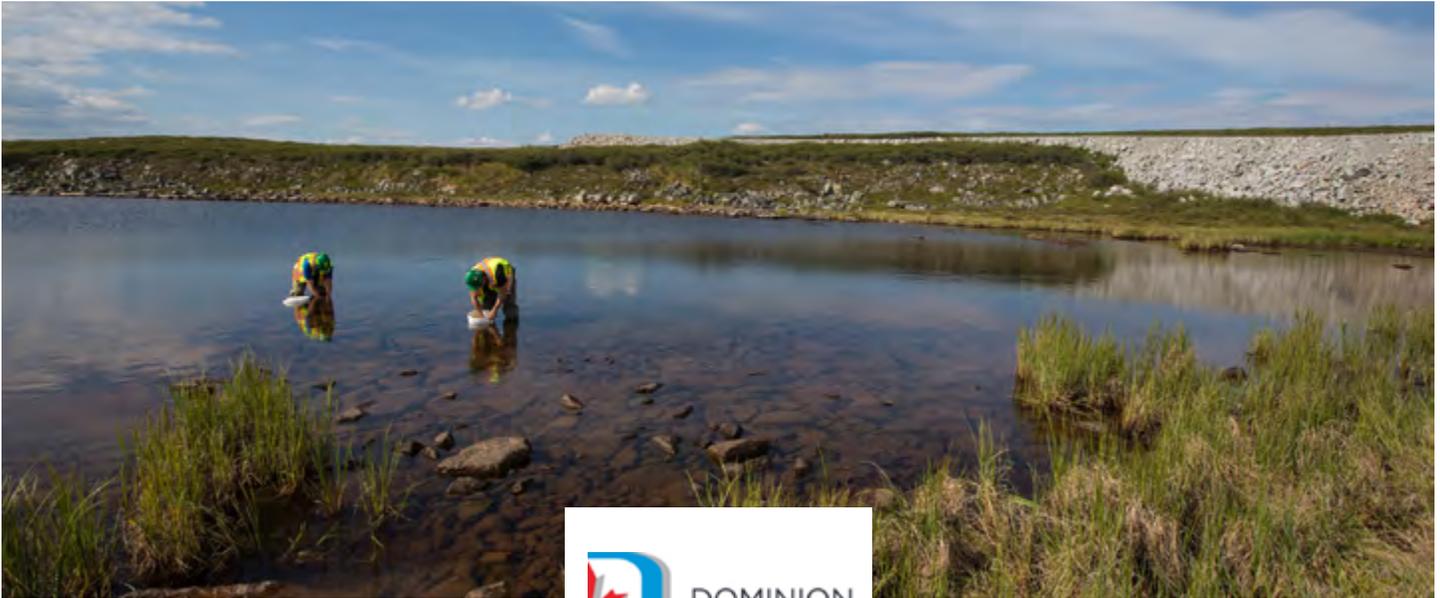


Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Dominion Diamond Corporation



Dominion Diamond Corporation is a Canadian diamond mining company with ownership interests in two major producing diamond mines situated approximately 200 kilometres south of the Arctic Circle in the Northwest Territories. The company operates the Ekati Diamond Mine, in which it owns a controlling interest, and owns 40% of the Diavik Diamond Mine. The company supplies rough diamonds to the global market through its sorting and selling operations in Canada, Belgium and India, and is the world's third-largest producer of rough diamonds by value.

The Ekati Diamond Mine is located roughly 300 kilometres northeast of Yellowknife and can be accessed by air and by a 400-kilometre ice road in the winter. Diavik Diamond Mines Inc., a subsidiary of Rio Tinto plc, operates the Diavik Diamond Mine. TSM results for Diavik are provided by Rio Tinto and can be found on page 111 of this report.

At Dominion Diamond, performance means delivering sustainable growth by investing in the future. This involves supporting excellence in leadership and, most of all, delivering on the commitment of zero harm: to the company's own people, through consistent and risk-based work practices; to its host communities, through communication and the inclusion of their opinions and concerns in mine plans and mine-life extension projects; and to the environment, through innovative, adaptive management and intensive monitoring of the mine's impact.

Dominion Diamond is proud of the Ekati mine's performance and is dedicated to building on its legacy by promoting the safety, development and well-being of all its employees, and upholding its commitment to the land, the North and all who live there. The company will continue to work closely with its Impact Benefit Agreement (IBA) groups, maintaining the focus on the empowerment and sustainability of the northern communities.

Dominion Diamond uses TSM reporting as part of a suite of tools that drive continuous improvement across the company's operations. The company conducts extensive internal and external monitoring and auditing of all sustainable development practices, and the TSM initiative draws many of these processes into a forum for wider reporting across Canada. This extra level of self-regulation adds value because processes are reviewed from a different reporting perspective than would be the case under other HSEC (health, safety, environment and community) and ISO audits.

“ The Ekati mine has created community development plans that facilitate a sharp focus on where its efforts will make the most difference in communities. ”

Biodiversity Conservation Management and Aboriginal and Community Outreach are two areas where the Ekati mine has consistently scored high, and that trend continued in 2015. The company met regularly with stakeholders to share information about its operations and future plans, and to hear feedback on decisions that may affect them. The Ekati mine has created community development plans that facilitate a sharp focus on where its efforts will make the most difference in communities. While the company inherited the IBAs, which are in place until the end of mine life, Dominion Diamond is in dialogue with its IBA partners to explore additional community development initiatives above and beyond the original agreements.

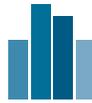
Dominion Diamond continues to make considerable efforts in environmental stewardship. The results achieved in 2015 confirm that the company is on track in terms of understanding and conserving biodiversity, effectively disposing of processed kimberlite, and managing associated water quality.

As a result, of the company's commitment to safety and training, in September 2015, the Ekati Underground Competition Team was the overall winner of the underground events at the 12th Biennial National Western Regional Mine Rescue Competition in Fernie, British Columbia. The team made history when it took the overall underground prize for the first time, dominating in all events and coming in first place in four out of the seven competition events. The Ekati Surface Competition Team also excelled in its events and finished with the best showing for an Ekati surface team.

Dominion Diamond's results illustrate that the company remains focused on the North and is committed to fulfilling its vision of strengthening and deepening its relationships with community stakeholders and extending mine life. The Jay Project was recently approved after undergoing an environmental assessment, and has been approved by the Board of Directors based on the positive results of the feasibility study. The Jay pipe is the most significant undeveloped diamond deposit at the Ekati mine and will add over 10 years to the current mine life, keeping the mine open until at least 2030. The natural resource extraction through the Jay Project will be beneficial to the strength and diversity of Canada's economy but more importantly, it will be extraordinary beneficial to the Northwest Territories and our community partners. The company genuinely cares about its people and wants to make investments that have long-lasting impacts that benefit all northerners.

📄 For more information, please visit: www.ddcorp.ca





2015 TSM Results

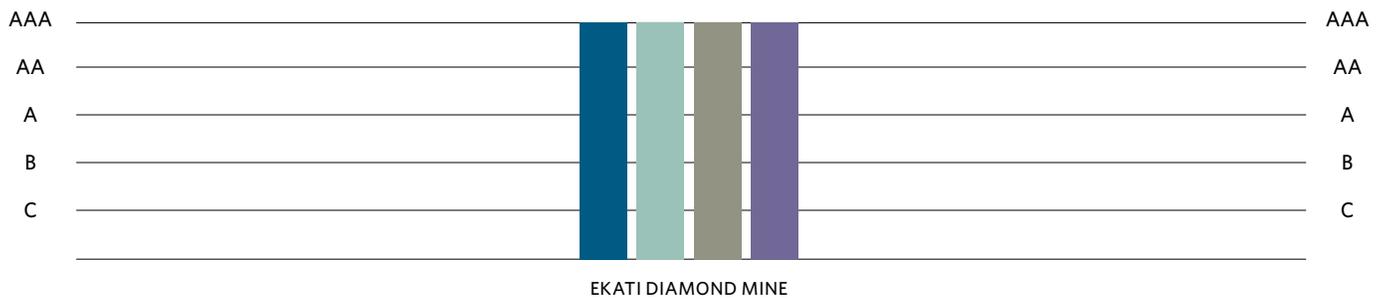
Dominion Diamond Corporation

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
EKATI DIAMOND MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

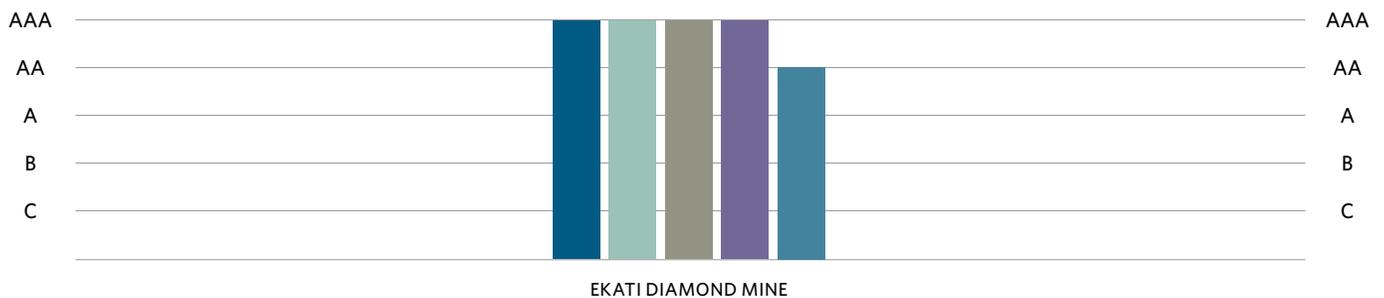
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE

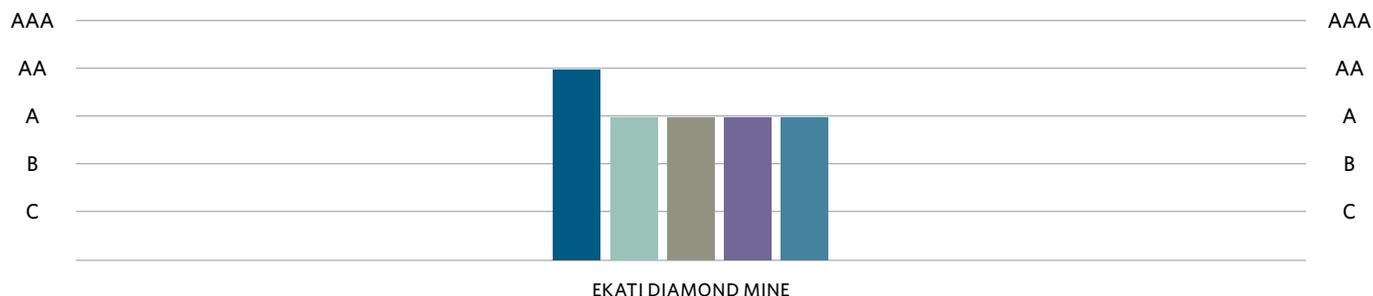


Self-assessed results; last external verification: 2014; next external verification: 2017.



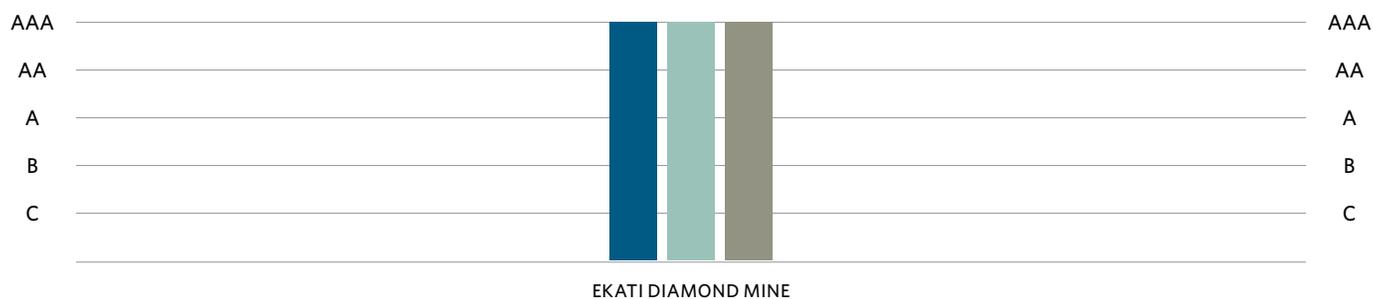
Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



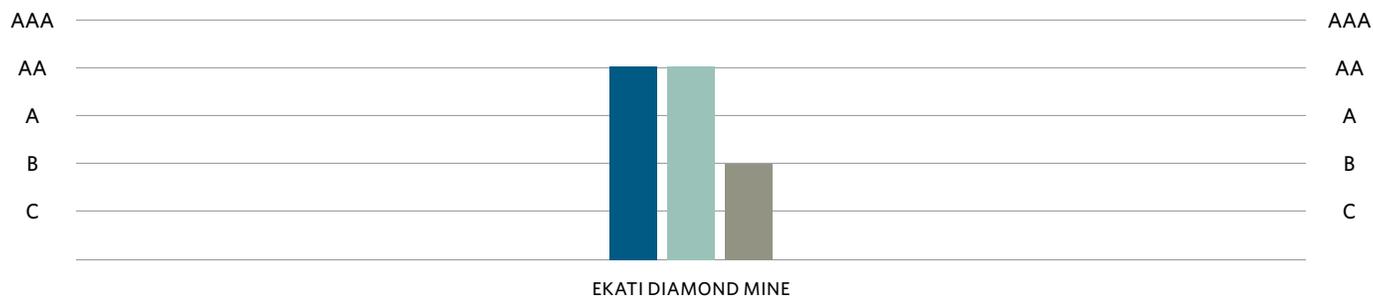
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company
 First Quantum Minerals Ltd.



First Quantum Minerals Ltd. is a well-established and rapidly growing mining and metals company engaged in mineral exploration, development and mining. The company produces copper, gold, nickel, platinum, palladium, zinc and sulphuric acid. All of First Quantum's Canadian facilities, which are closed mines, participate in TSM. In addition, the company's operations in Turkey and Finland voluntarily participate in TSM and have reported on their progress.

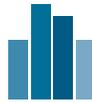
In 2015, all participating facilities underwent external verification, which confirmed their performance and demonstrated continuous improvements. When combined, those facilities achieved a conformance rate of 85% at a Level A or better across all TSM indicators. The external verification confirmed that all of First Quantum's facilities achieved a Level A or higher across all of the indicators for the Tailings Management and the Aboriginal and Community Outreach protocols.

The company's operating mines in Turkey met the requirements for a Level A across all indicators of the biodiversity conservation management protocol. The facilities' crisis management systems met all the requirements of the TSM Crisis Management protocol, having updated their plans and conducted crisis simulations in 2015.

While First Quantum is pleased with the overall performance achieved this year, it is committed to continuous improvement and has put measures in place to continue pursuing excellence. The company aims to improve its performance in the area of setting targets for energy use and GHG emissions management and in biodiversity conservation management at its closed properties in Canada.

In 2015, First Quantum's Çayeli mine in Turkey qualified for a TSM Leadership Award for achieving a Level A or higher across all indicators for each of TSM's six protocols based on its 2014 performance.

🔗 For more information, please visit: www.first-quantum.com



2015 TSM Results

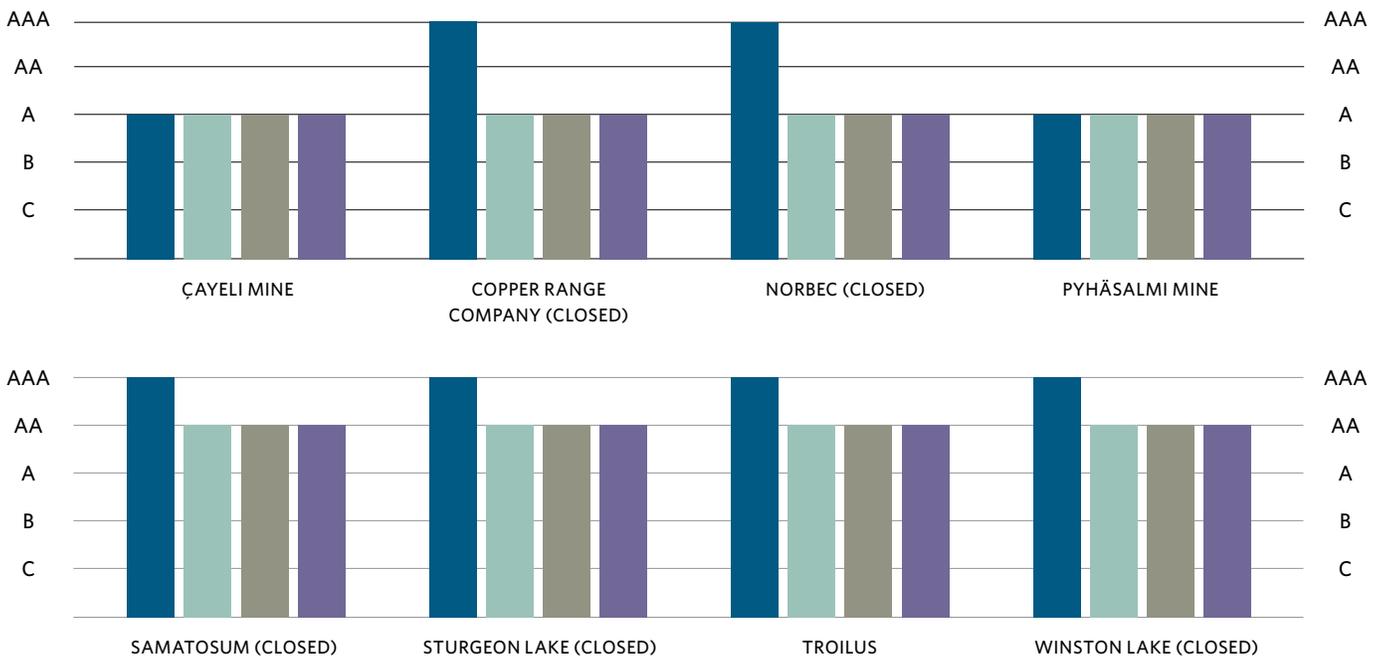
First Quantum Minerals Ltd.

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
ÇAYELI MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
COPPER RANGE COMPANY (CLOSED)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FIRST QUANTUM MINERALS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
NORBEC (CLOSED)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PYHÄSALMI MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SAMATOSUM (CLOSED)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
STURGEON LAKE (CLOSED)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TROILUS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WINSTON LAKE (CLOSED)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING

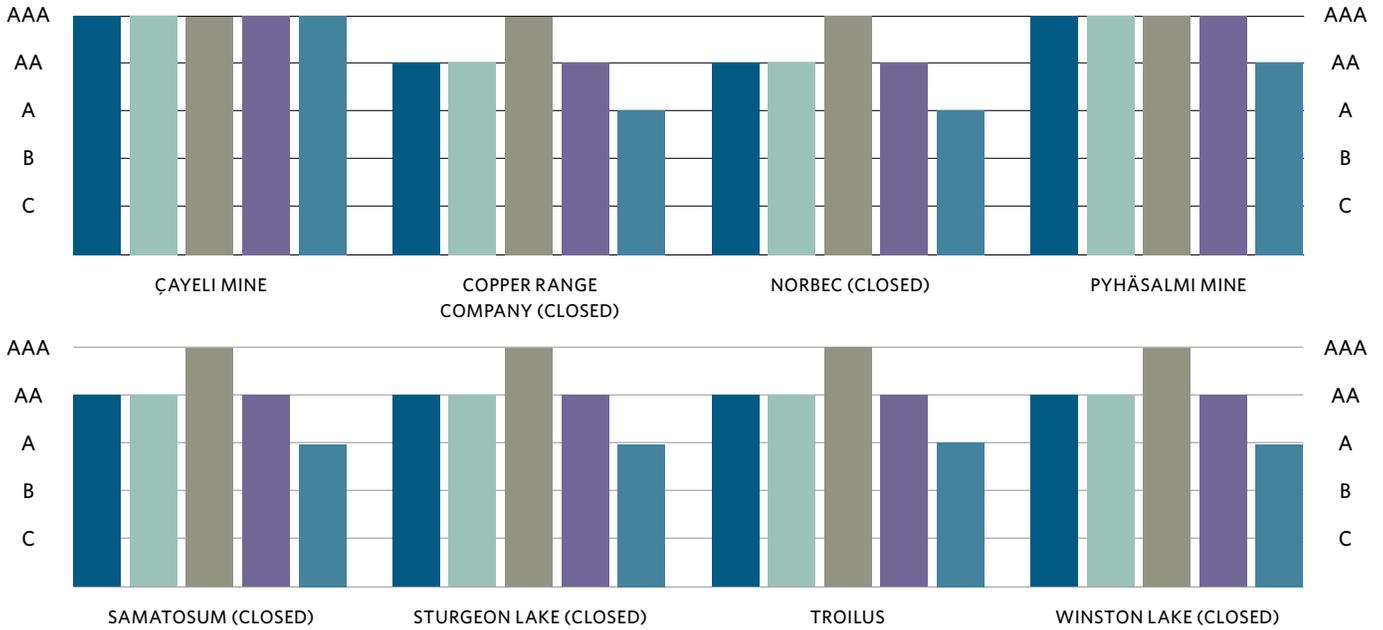


Self-assessed results; last external verification: 2015; next external verification: 2018.



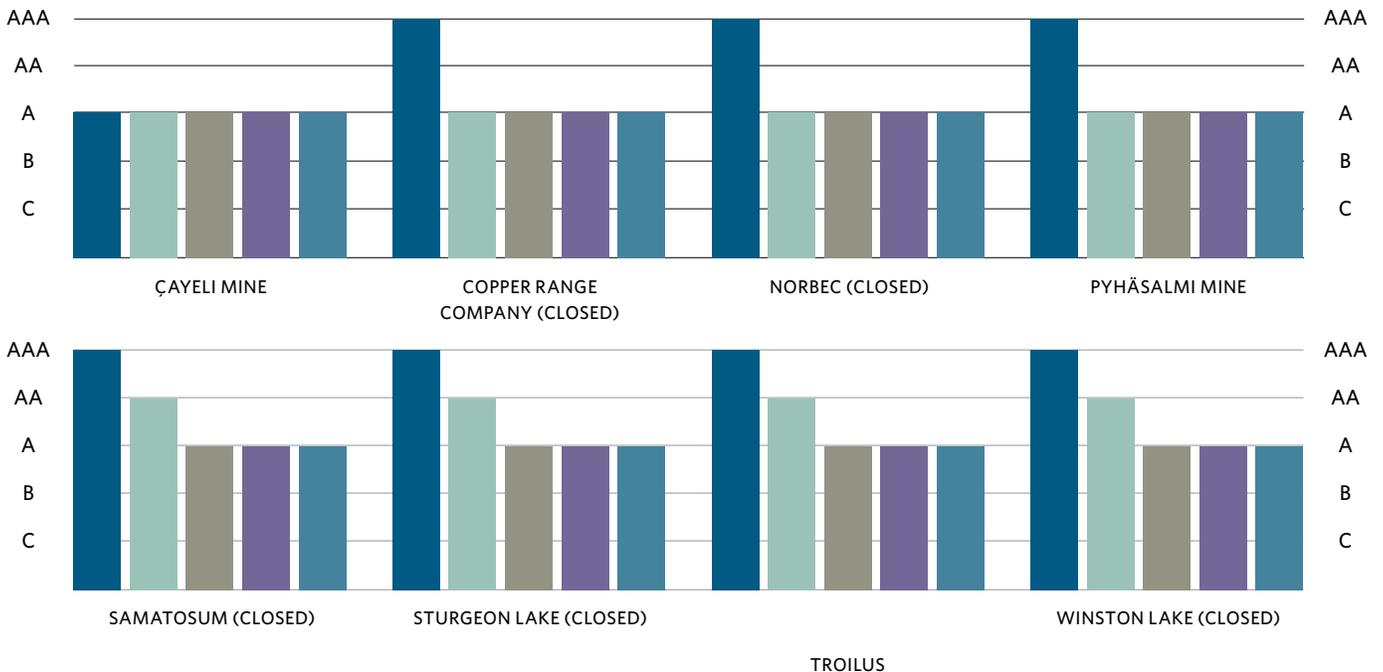
Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- MONITORING AND REPORTING
- PLANNING, IMPLEMENTATION AND OPERATION
- PERFORMANCE
- TRAINING, BEHAVIOUR AND CULTURE



Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- TAILINGS MANAGEMENT SYSTEM
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT

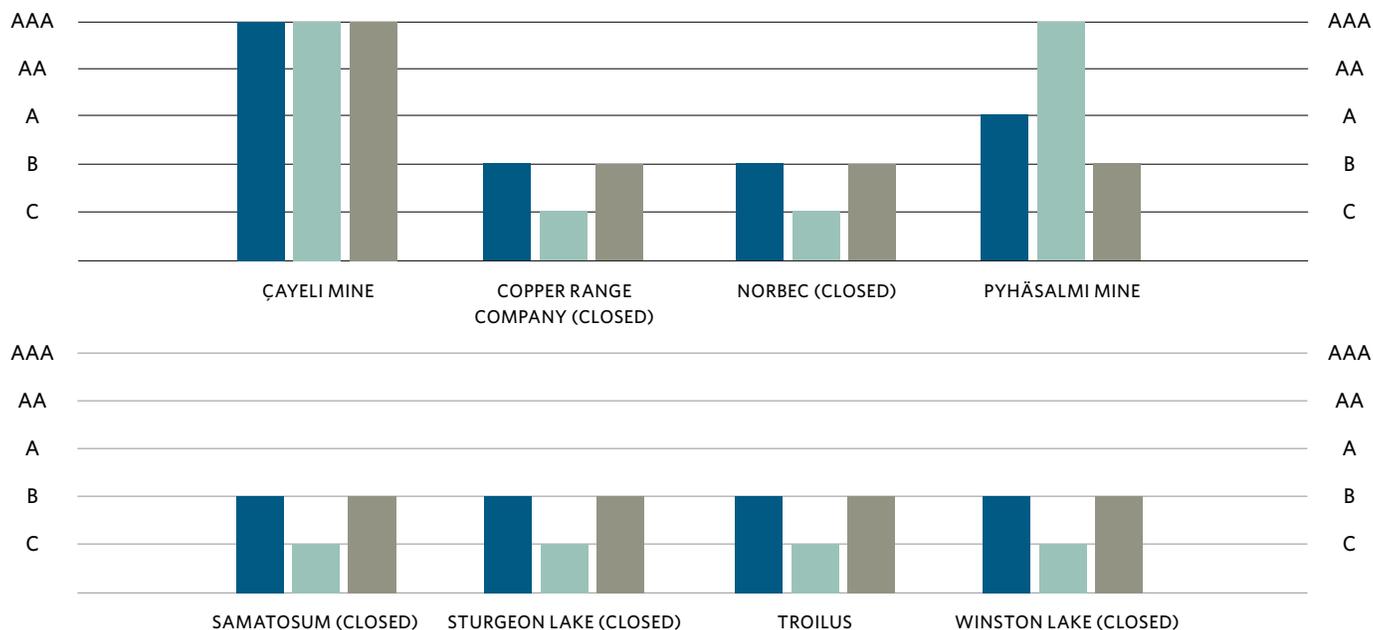


Self-assessed results; last external verification: 2015; next external verification: 2018.



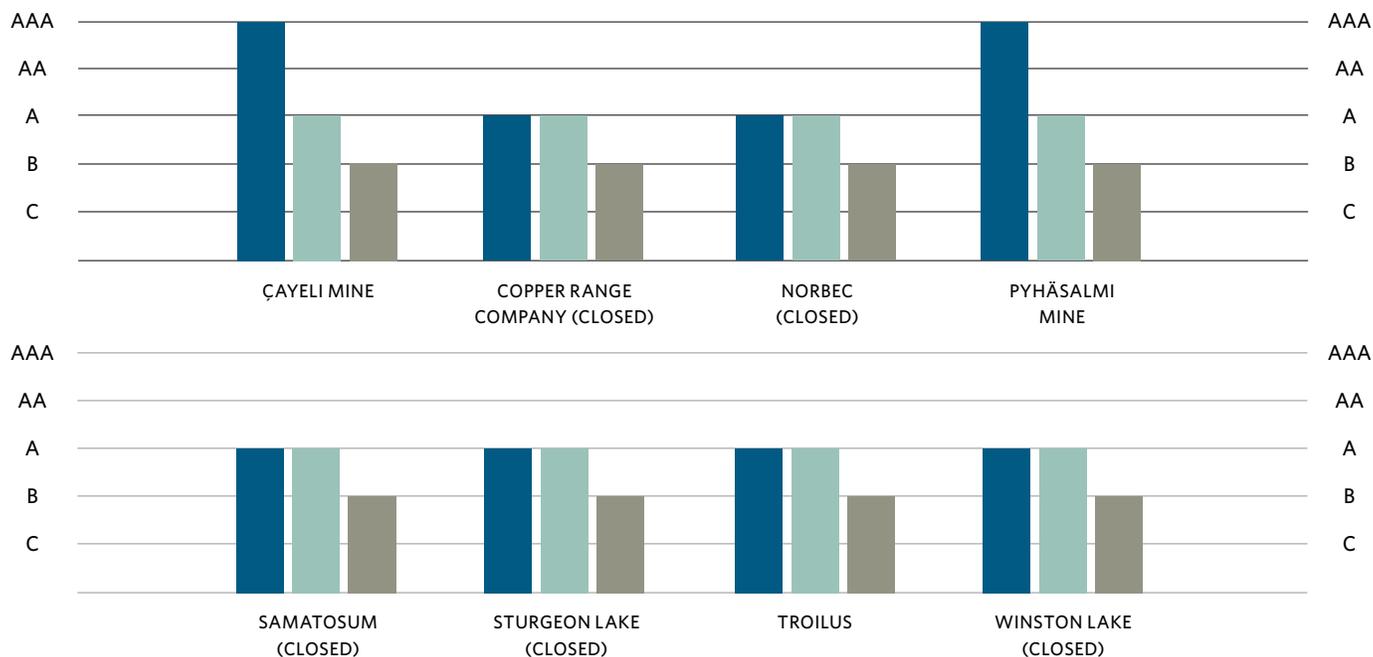
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS

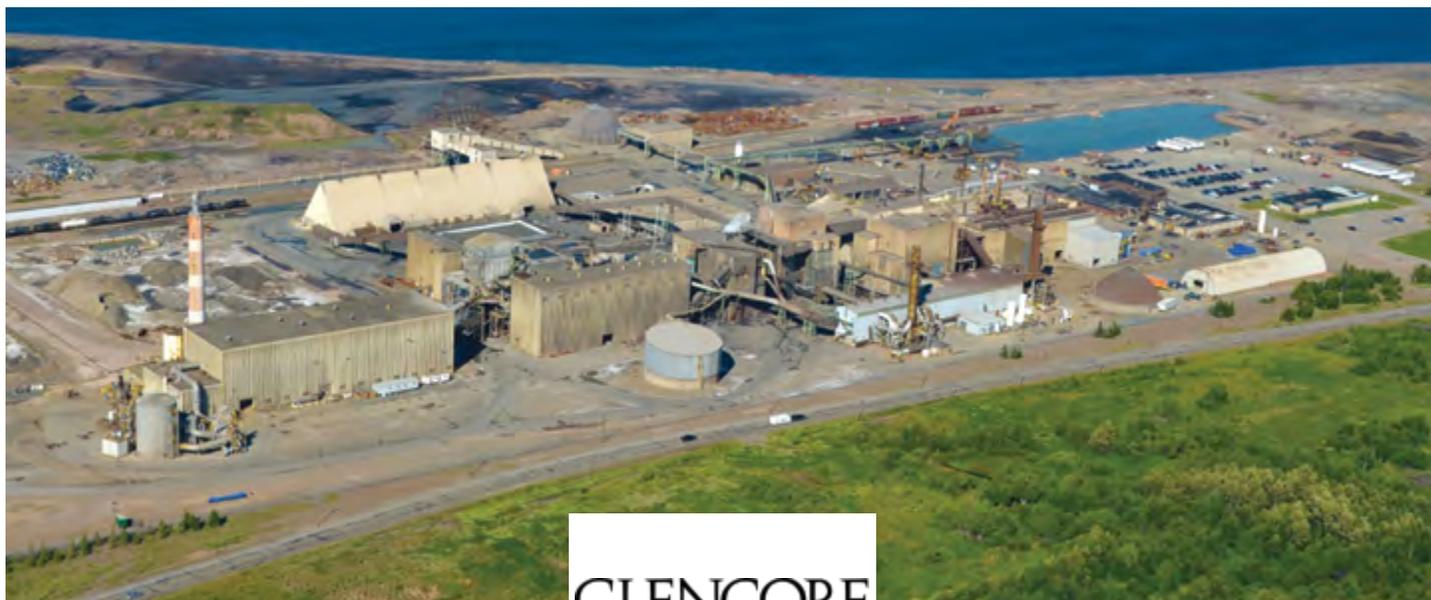


Self-assessed results; last external verification: 2015; next external verification: 2018.



TSM Performance by Company

Glencore



Glencore is one of the world's largest global diversified natural resource companies and a major producer and marketer of more than 90 commodities. The company's operations comprise more than 150 mining and metallurgical sites, oil production assets and agricultural facilities. Glencore's Canadian operations are guided by the TSM initiative and have participated since 2004.

The following Glencore facilities have implemented the TSM initiative:

- Horne Smelter, Rouyn-Noranda, Quebec
- Canadian Copper Refinery (CCR), East Montreal, Quebec
- Sudbury Integrated Nickel Operations (INO), Sudbury, Ontario
- Raglan Mine, Nunavik region, Quebec
- Brunswick Smelter, Bathurst, New Brunswick
- Kidd Operations, Timmins, Ontario
- CEZinc Refinery, Valleyfield, Quebec

Sustainability lies at the foundation of Glencore's business strategy and activities. Sustainability requires meaningful engagement with communities of interest (COI). At the same time, it requires maintaining the highest regard for environmental stewardship, social responsibility, corporate governance and transparent reporting, while delivering superior shareholder returns.

COPPER CANADA OPERATIONS

Glencore Copper Canada Operations are part of a network of transformation operations, which includes smelters and refineries. With support services based in Toronto, the smelters and refineries are part of the larger Glencore copper business.

Aboriginal and Community Outreach

Horne Smelter has rated all aspects of this protocol at a Level AAA. The facility has a long-standing collaborative relationship with the local community. CCR's COI response mechanism is currently rated at a Level AAA. All other indicators are rated at a Level AA. These strong results are achieved as a result of active and meaningful engagement and communications with le Comité des Citoyens de Montréal-Est, which has been in place since 1992.

Biodiversity Conservation Management

The biodiversity results for CCR and Horne Smelter are consistent with their externally verified 2013 results, and biodiversity programs are in place at both sites.

Crisis Management Planning

Glencore Copper's corporate crisis management plan meets the criteria of this protocol and has been implemented at all sites. At CCR, several emergency simulations occur throughout the year.

Energy Use and GHG Emissions Management

CCR has energy management plans, a reporting system, and targets in place. Horne Smelter is self-assessed at a Level B for its energy use and GHG emissions performance targets, as it did not achieve its performance targets in 2015. CCR reviews its energy management program on an annual basis and communicates the results to all employees.

Safety and Health

CCR and Horne Smelter self-assessed all indicators at a Level AAA and demonstrated continual improvement in total recordable injury rate reduction and for being fatality free.

Tailings Management

For this protocol, Horne Smelter achieved a Level AA performance for all five indicators.

NICKEL OPERATIONS

In Canada, Glencore's nickel assets include Sudbury INO and Raglan Mine. Sudbury INO activities include exploration, two underground mines (Nickel Rim South Mine and Fraser Mine), the Strathcona Mill and the Sudbury Smelter. Raglan Mine facilities include four active underground mines, a concentrator, power plant, and administrative and accommodation facilities.

Glencore nickel operations' 2013 TSM performance was verified in 2014. Consistent with the new reporting framework for TSM, self-assessments were conducted in 2015 for those protocols that were not previously verified at a Level A or above for all the indicators.

In 2014, Sudbury INO was awarded the TSM Leadership Award, the highest TSM Performance Award, in recognition of its outstanding performance in the six protocols of the TSM initiative.

Aboriginal and Community Outreach

Raglan Mine and Sudbury INO maintained Levels AAA and AA for this protocol in 2015.

Biodiversity Conservation Management

In 2013, Raglan Mine achieved Levels AA, C and B for this protocol. In 2015, Raglan Mine self-assessed at Levels B, C and C, indicating that this is an area of focus for improvement. Going forward, Raglan Mine will enhance its biodiversity requirements through the recertification of ISO 14001 and the implementation of an environmental forum with communities. Sudbury INO maintained a Level AAA for indicators 1 and 2 and a Level A for indicator 3 in 2015.

Energy Use and GHG Emissions Management

Although robust reporting and verification systems are in place, Sudbury INO dropped from a Level AAA to a Level A for indicator 2 compared with 2013 results, as the facility did not publish a sustainability report for Sudbury INO in 2015 indicating its performance against its energy and GHG targets. Raglan Mine maintained Levels AAA and AA, which is consistent with its 2013 verified performance.



Tailings Management

In 2014, Raglan Mine conducted a formal independent review of its tailings management system. Based on the result, indicator 4 moved from a Level C in 2013 to a Level AAA in 2015. Sudbury INO maintained Level AAA ratings.

ZINC OPERATIONS

Glencore Zinc Canada Operations include mining and metallurgical operations in eastern Canada.

Aboriginal and Community Outreach

Brunswick Smelter self-assessed at a Level AAA across all indicators within this protocol, which is consistent with 2014 performance. CEZinc had the same scores as in 2014.

Glencore's Kidd Operations, which is Timmins' largest private-sector employer and the operator of the deepest base metal mine in the world, achieved Level AA or higher for all of the indicators of the Aboriginal and Community Outreach Protocol in 2015. Kidd's strong performance in this area was showcased this year when the site was recognized with the 2016 TSM Community Engagement Excellence Award for its Community Partnerships Initiative. Kidd is also celebrating its 50th anniversary in 2016.

Biodiversity Conservation Management

Brunswick Smelter has improved its biodiversity scores once again. All three indicators have been self-assessed at a Level AAA. The score for indicator 1 improved from a Level AA to a Level AAA because of documented evidence showing the facility's commitment to actively partner with other organizations for biodiversity conservation.

Kidd Operations' rating remained at a Level AAA for indicators 1 and 2. Kidd achieved a Level A for indicator 3, and needs increased reporting and independent review to improve. CEZinc reported the same scores as in 2014 for all three indicators.

Crisis Management Planning

A lot of work on crisis management planning and preparedness occurred in 2015 with positive results. By conducting a table top exercise with senior members of the local emergency response authorities and a crisis simulation, Brunswick Smelter now meets all criteria for indicator 1. However, the results still identified gaps, indicating the need for a full crisis simulation every three years with a complete evacuation drill plan. Kidd Operations reported "yes" for all three indicators.

Energy Use and GHG Emissions Management

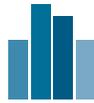
All sites have energy management plans and reporting systems in place. Brunswick Smelter moved from a Level A to a Level AA for indicator 2, because of evidence that the facility provides annual public reporting of its performance against its targets. Kidd maintained a Level A for all indicators in this protocol.

Safety and Health

Brunswick Smelter and CEZinc self-assessed their performance at a Level AAA for indicators 2 and 3. Brunswick Smelter self-assessed the other three indicators at a Level AA – the same results as in 2014. Kidd Operations maintained a Level AAA for indicators 1 to 4 and a Level AA for indicator 5.

 For more information, please visit: www.glencore.com





2015 TSM Results Glencore Copper

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
GLENCORE	☑	☒	☑
CCR REFINERY	☑	☑	☑
HORNE SMELTER	☑	☑	☑

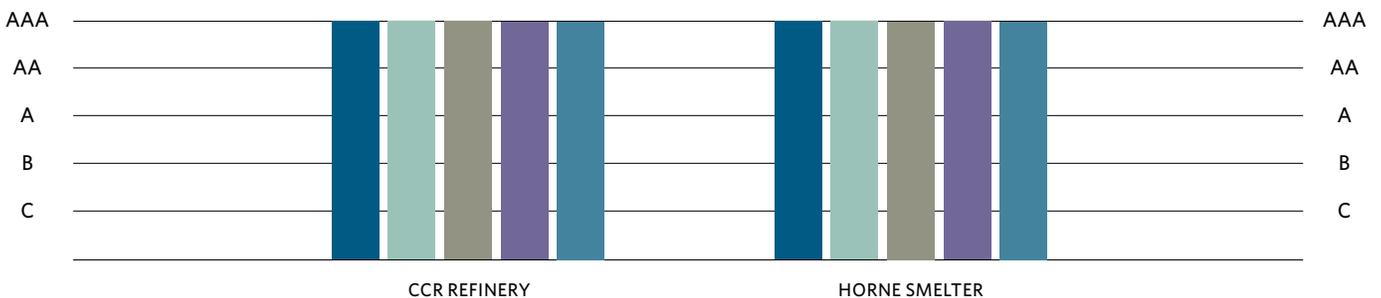
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE



Self-assessed results; last external verification: 2014; next external verification: 2017.



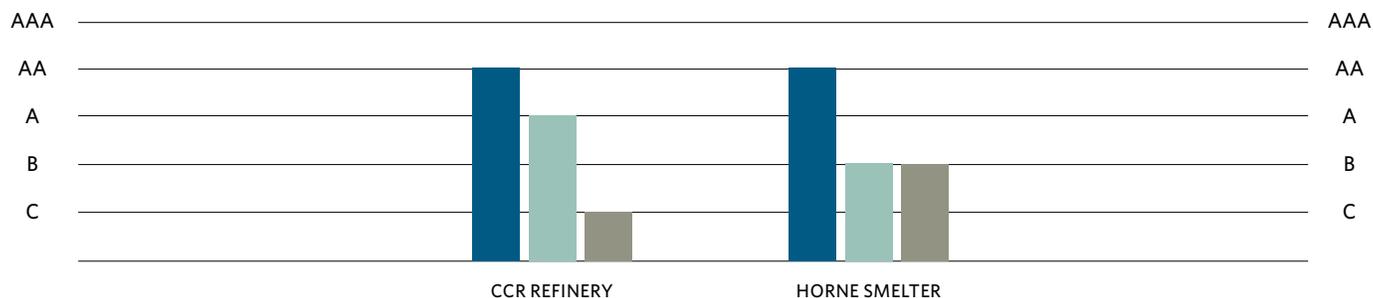
Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



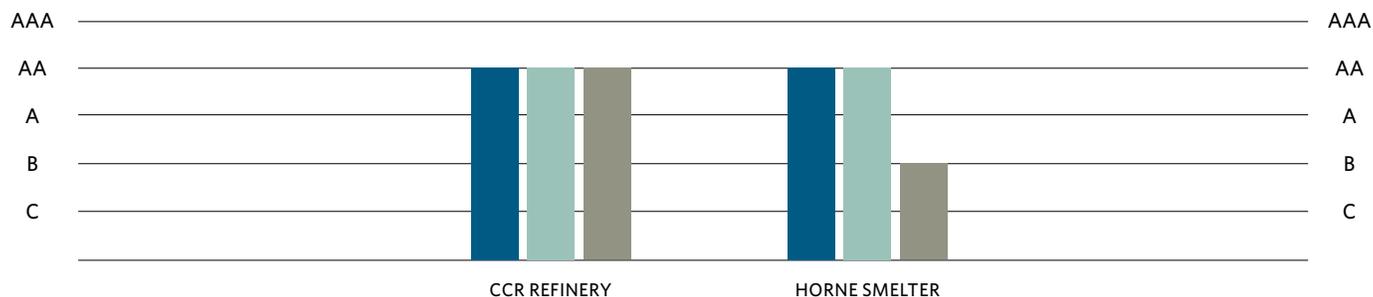
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



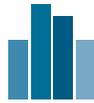
Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Self-assessed results; last external verification: 2014; next external verification: 2017.





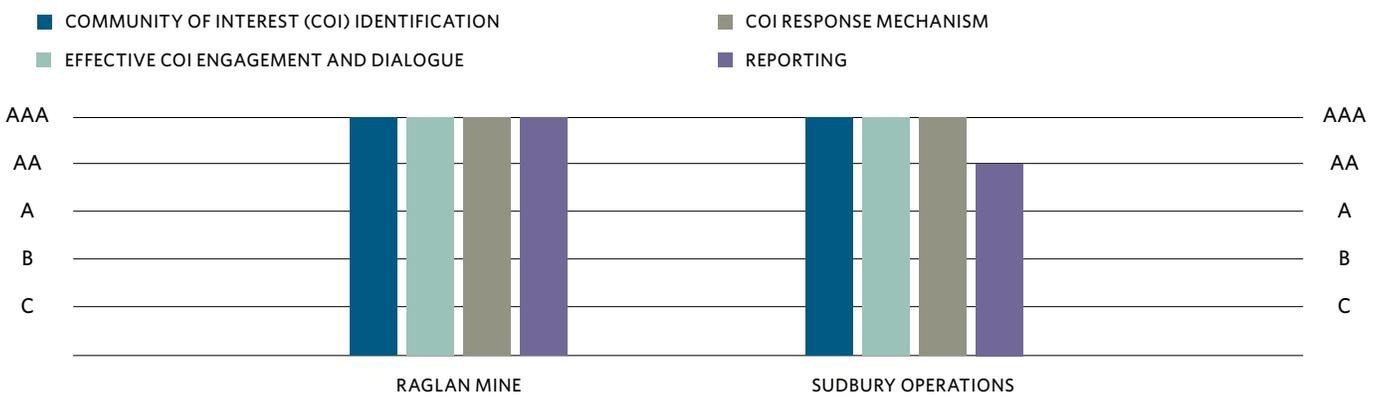
2015 TSM Results

Glencore Nickel

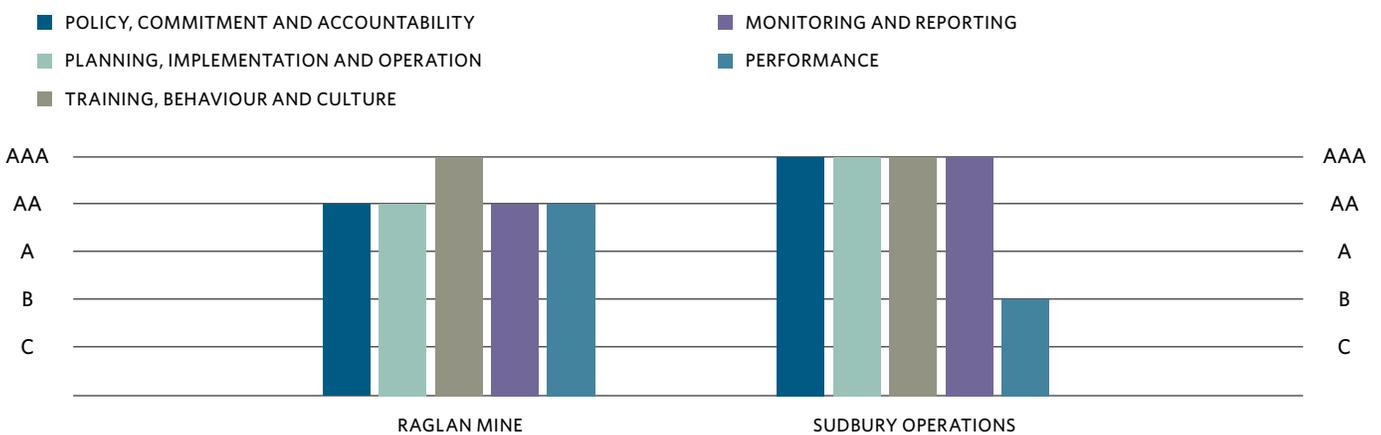
Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
RAGLAN MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SUDBURY OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment



Safety and Health Assessment

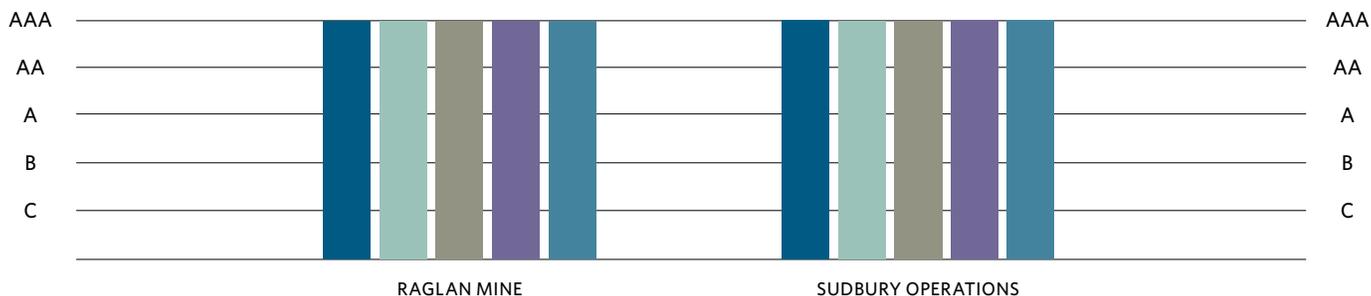


Self-assessed results; last external verification: 2014; next external verification: 2017.



Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
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- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



Biodiversity Conservation Management Assessment

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- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



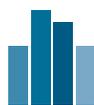
Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
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2015 TSM Results

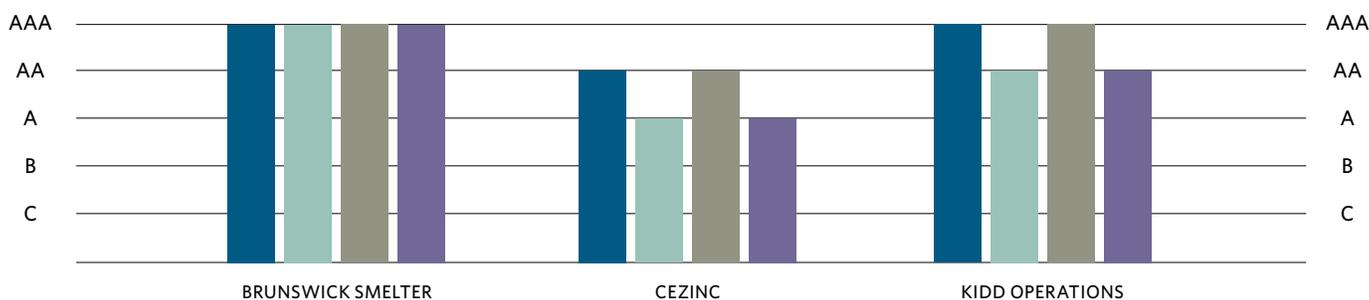
Glencore Zinc

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
BRUNSWICK SMELTER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CEZINC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
KIDD OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

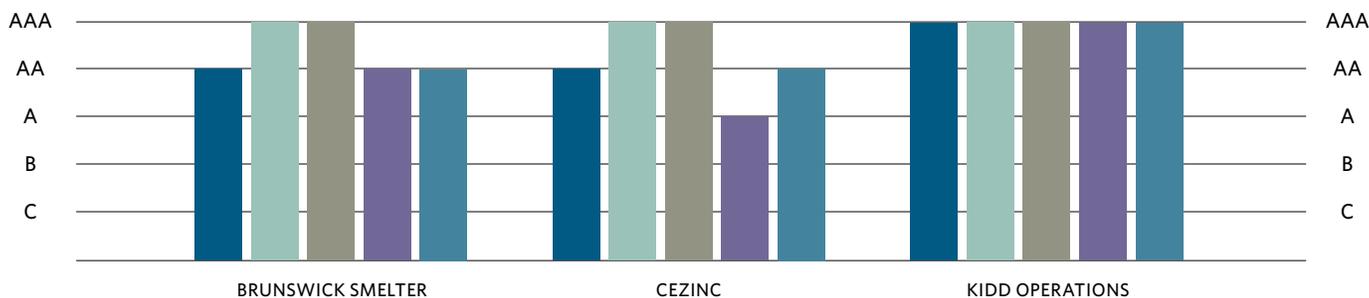
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

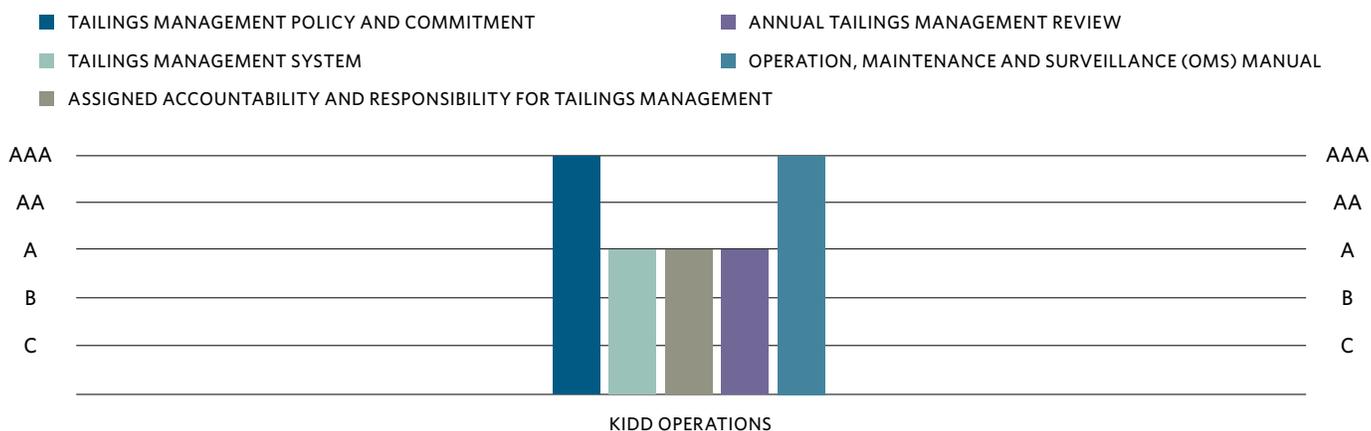
- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE



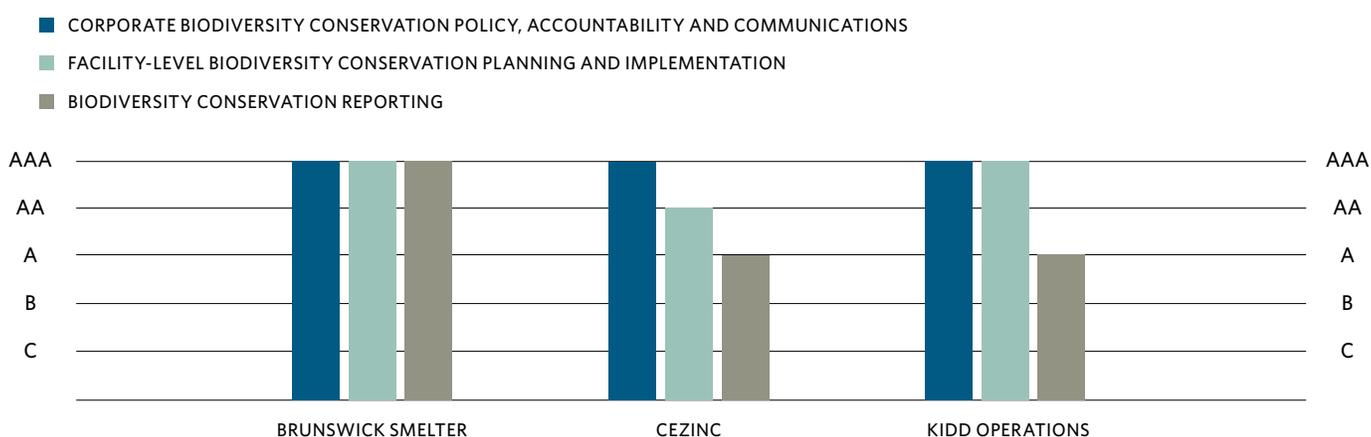
Self-assessed results; last external verification: 2014; next external verification: 2017.



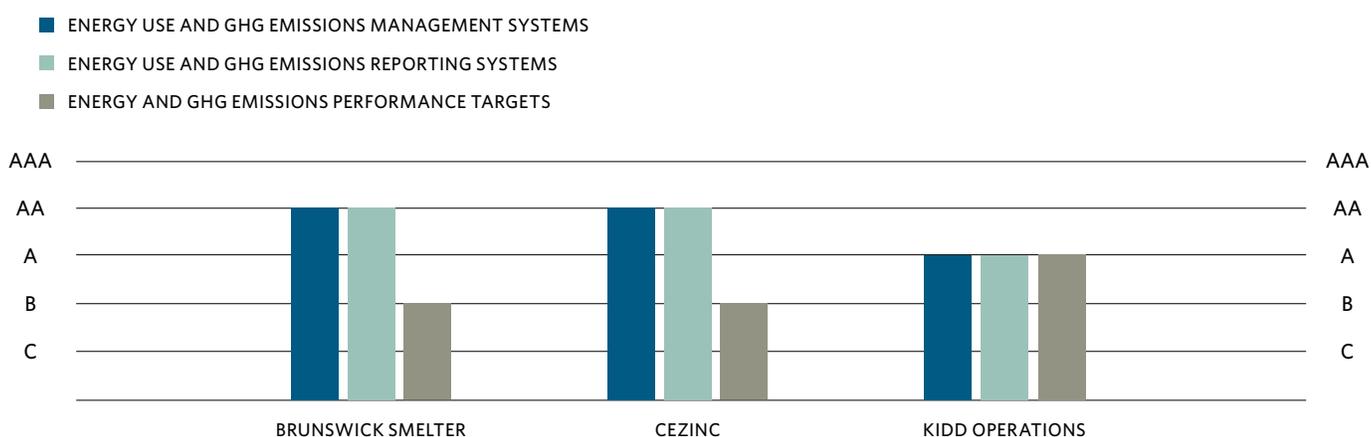
Tailings Management Assessment



Biodiversity Conservation Management Assessment



Energy Use and GHG Emissions Management Assessment



Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Hudbay Minerals Inc.



Hudbay is an integrated mining company that produces copper concentrate (containing copper, gold and silver) and zinc metal. The company is headquartered in Toronto, and is listed on the Toronto, New York and Lima stock exchanges under the symbol "HBM." Hudbay has operating mines in Manitoba and the Cusco Region of Peru and has a development project in Arizona.

Founded in 1927, the company has benefitted from every opportunity and endured every challenge this industry can present. Between 2010 and 2015, Hudbay met the test of simultaneously developing what are now three outstanding mines. Today, its low-cost metals production and growth potential position the company for continued success as a solid investment and a reliable partner everywhere it operates.

In 2015, Hudbay successfully ramped up to full commercial production at its Constancia mine in Peru. This transitioned the company from one focused on development to one focused on optimizing production and processes at operating mines. The volume of copper sales from its mines – Constancia, Lalor, Reed and 777 – increased 850% year-over-year in the fourth quarter of 2015. This is a remarkable achievement by any measure and in any market conditions.

This report provides TSM performance results for the operating facilities located in Flin Flon and Snow Lake, Manitoba. This year, Hudbay undertook external verification of its TSM performance and achieved a Level A or higher (and "yes" in Crisis Management Planning) in all of the TSM indicators

Performance under the COI response mechanism indicator within the Aboriginal and Community Outreach Protocol has improved since last year. Performance improvements in the area of Energy Use and GHG Emissions Management were also achieved by meeting reduction targets.

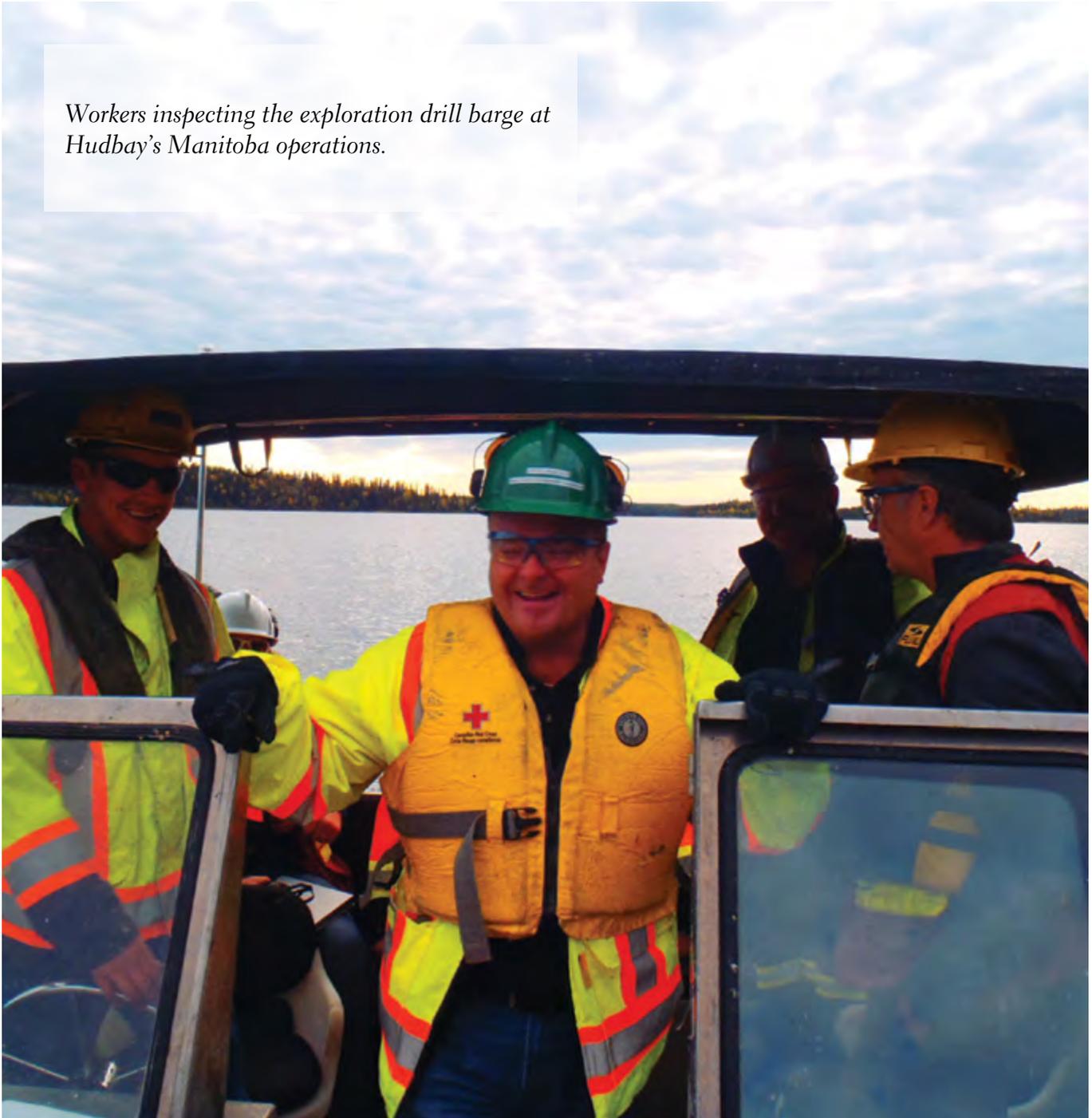
Although Hudbay's tailings program has been consistently strong, extra focus on tailings management continued throughout 2015. The company is prepared to implement any new requirements coming as a result of the ongoing MAC review of the protocol and guidance documents.

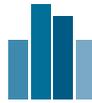
For 2016, Hudbay is again anticipating that its TSM performance results will be maintained. The company is committed to participating in the ongoing reviews of the TSM Tailings Management Protocol and guidance documents. Voluntary implementation of the TSM requirements at the Constancia operation in Peru is also progressing.

Hudbay's annual sustainability reports are available on its website.

🔗 For more information, please visit: www.hudbayminerals.com

Workers inspecting the exploration drill barge at Hudbay's Manitoba operations.





Externally
Verified Results

2015 TSM Results

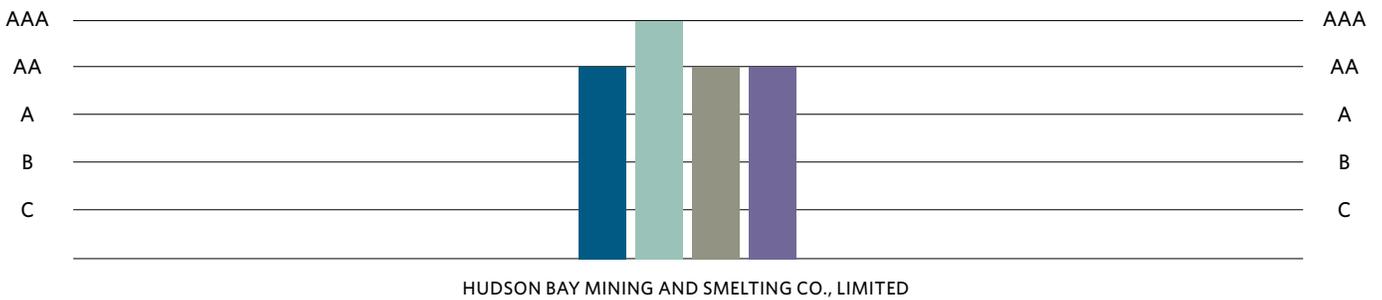
Hudbay Minerals Inc.

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
HUBBAY MINERALS INC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HUDSON BAY MINING AND SMELTING CO., LIMITED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

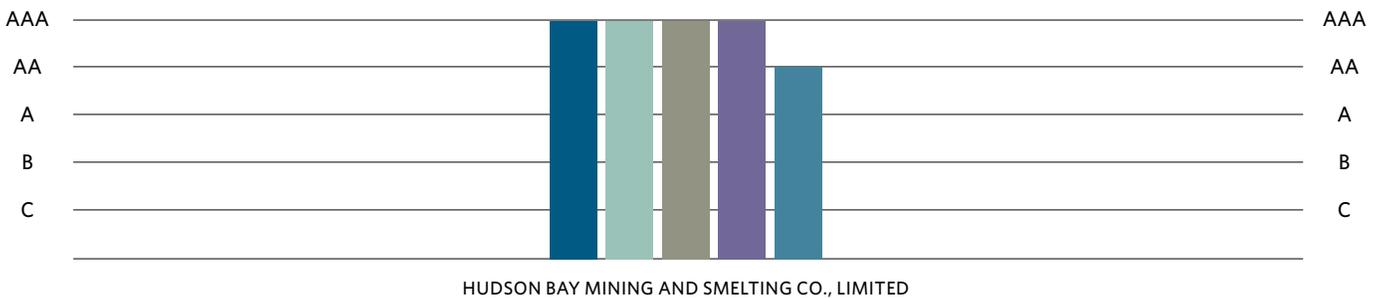
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

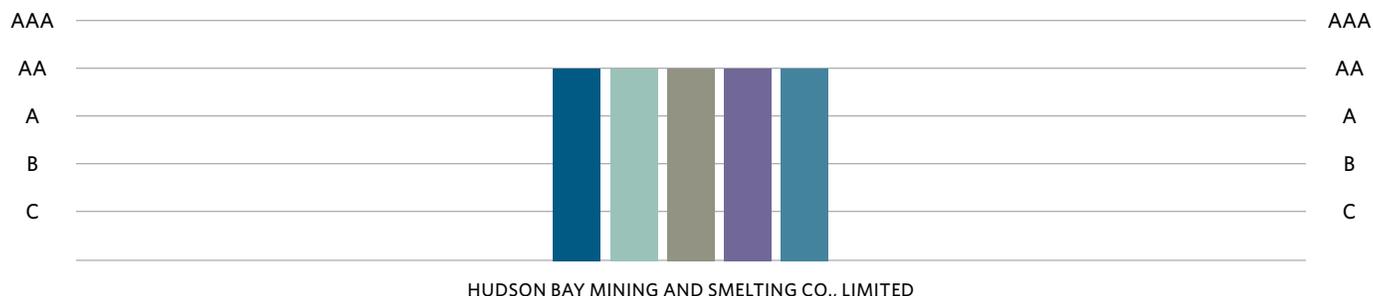
- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE



Tailings Management Assessment

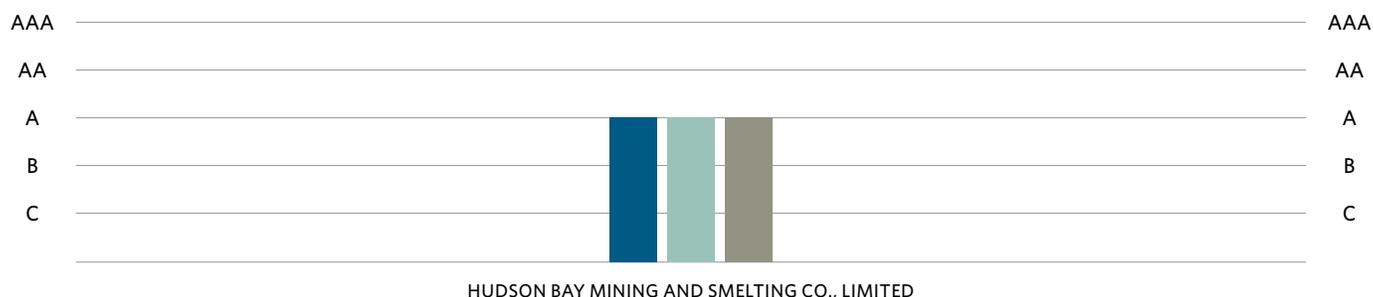
Externally
Verified Results

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



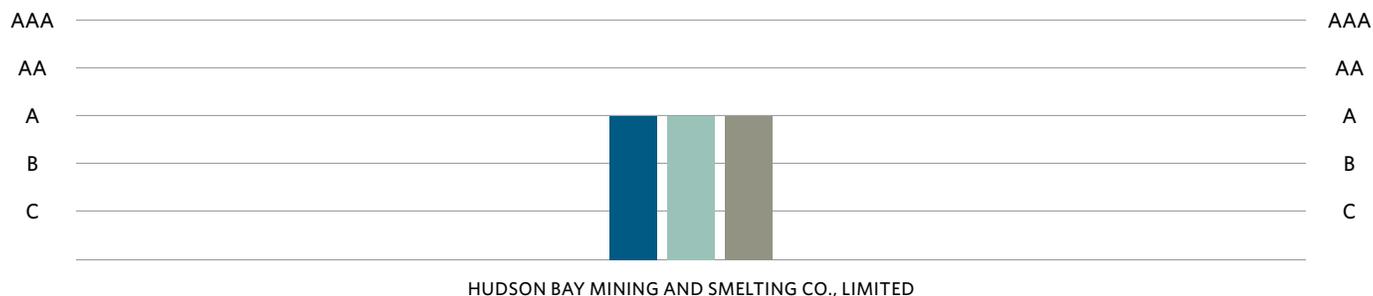
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



TSM Performance by Company

IAMGOLD Corporation



IAMGOLD is a leading mid-tier Canadian gold mining company, with four operating gold mines (including current joint ventures) on three continents. IAMGOLD has a solid base of strategic assets in Canada, South America and Africa, which are complemented by development and exploration projects.

As part of its vision to achieve zero harm, IAMGOLD brings high standards of safety, environmental responsibility and social sensitivity to areas without a history of modern mining or exploration. IAMGOLD believes that partnering with employees, communities and host countries to build a healthy, safe and sustainable future is the right thing to do as well as good business practice. The TSM initiative is strongly embedded in IAMGOLD's operating practices and pursuit of excellence.

Over the years, IAMGOLD has continued to strengthen the application of the TSM protocols. In 2015, TSM performance across IAMGOLD operations was externally verified for 2014 and demonstrated an overall improvement from the previous year. The self-assessment of the company's 2015 TSM performance continues to show results that meet or exceed a Level A ranking across all six TSM protocols for IAMGOLD's three operations.

Westwood Gold Mine, Rosebel Gold Mine and Essakane Gold Mine are included in the 2015 TSM self-assessment. The Mouska and Niobec mines are no longer included in IAMGOLD's TSM reporting. The Mouska Mine was closed in 2014 and the Niobec Mine was sold in January 2015.

Westwood is located in Quebec and began commercial production in 2014. IAMGOLD has included the mine in its TSM reporting since 2009. Westwood uses some of the former Doyon mine infrastructure for its operations, such as the former Doyon open pit for tailings storage. This is an example of how Westwood is minimizing its overall environmental footprint by reducing the amount of newly disturbed land.

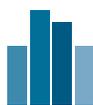
The TSM Environmental Excellence Award celebrates leadership in sustainable mining practices through innovative approaches to environmental protection. In 2016, IAMGOLD's Essakane Gold Mine in Burkina Faso was selected as a finalist for this award because of Essakane's involvement in a school groves project, which has enhanced biodiversity around schools near the mine, and taught students techniques in tree planting and care.

In 2012, IAMGOLD acquired the Côte Gold Project in northern Ontario. The project is located in the Chester and Neville Townships, District of Sudbury, in northeastern Ontario. It is approximately 20 kilometres southwest of Gogama, 130 kilometres southwest of Timmins, and 200 kilometres northwest of Sudbury. IAMGOLD is assessing the potential to construct and operate a new open-pit gold mine on the property. If this project advances towards construction and development, IAMGOLD will incorporate it in future TSM reporting.

🔗 For more information, please visit www.iamgold.com

Community tree planting near IAMGOLD's Essakane Mine in Burkina Faso.





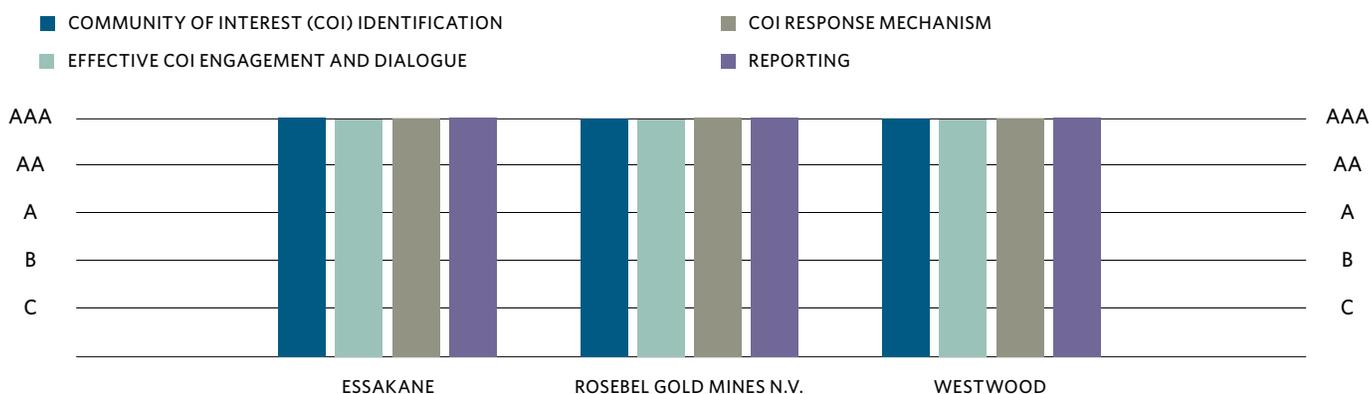
2015 TSM Results

IAMGOLD Corporation

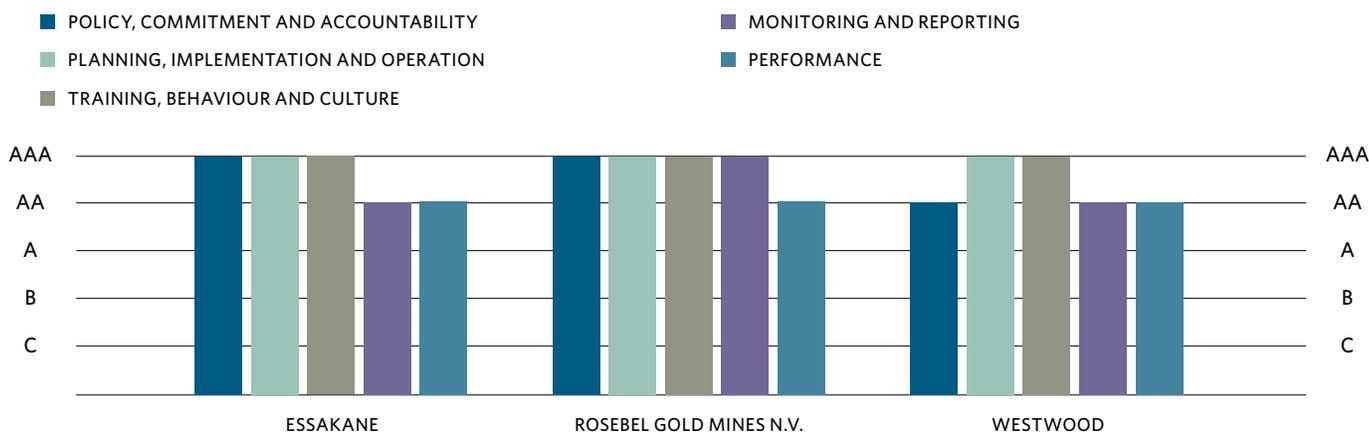
Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
IAMGOLD CORPORATION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ESSAKANE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ROSEBEL GOLD MINES N.V.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WESTWOOD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment



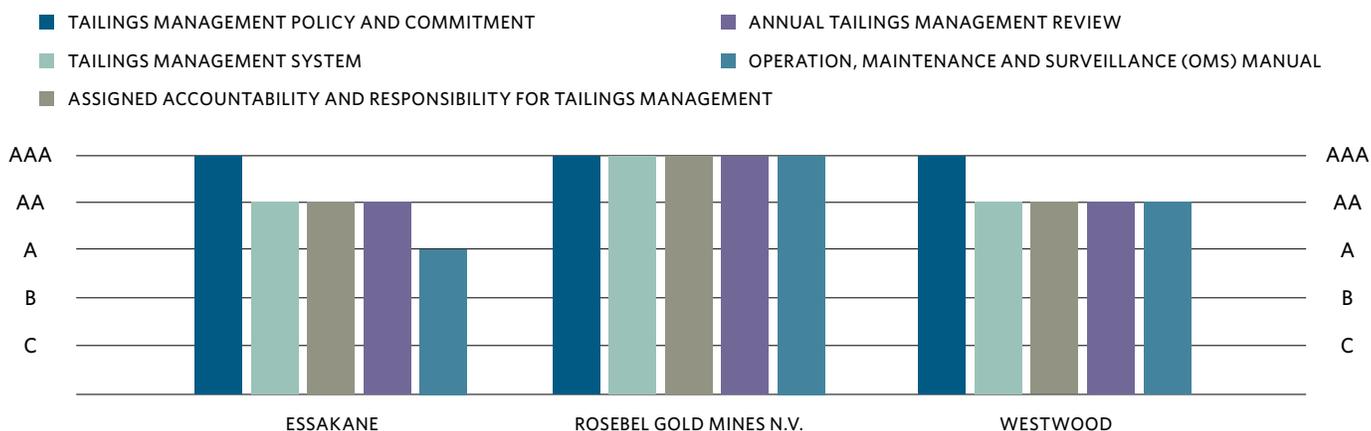
Safety and Health Assessment



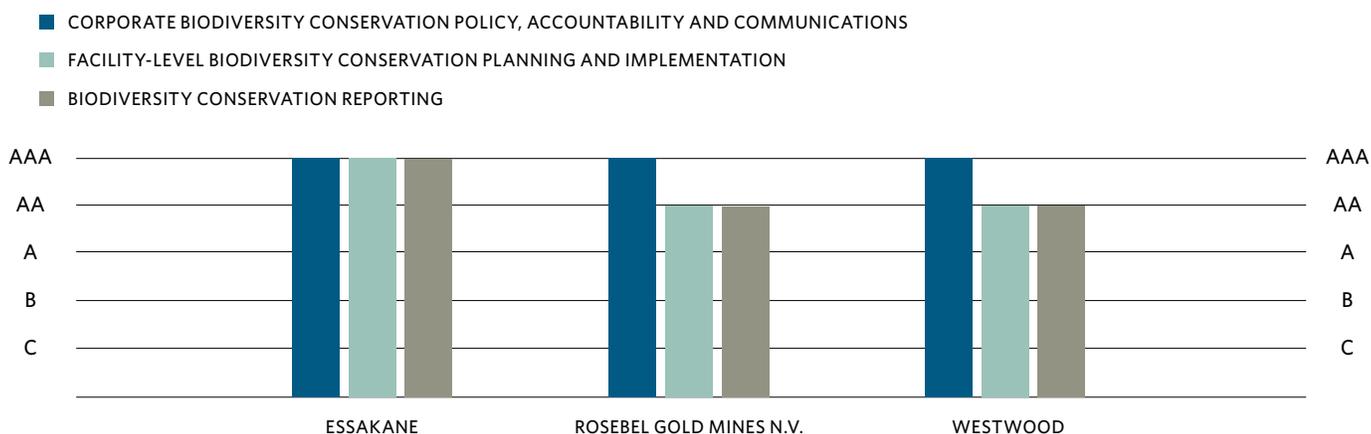
Self-assessed results; last external verification: 2014; next external verification: 2017.



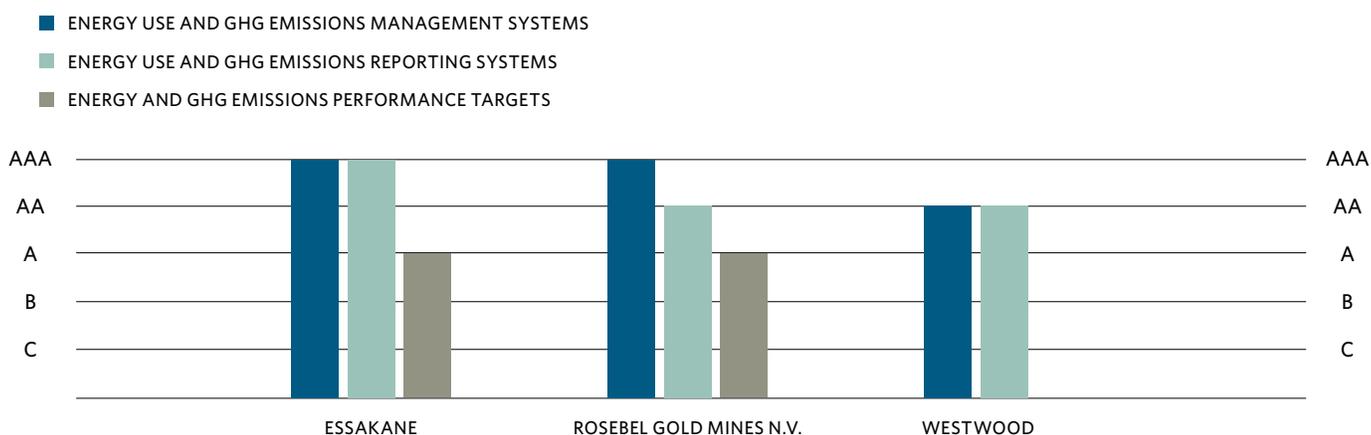
Tailings Management Assessment



Biodiversity Conservation Management Assessment



Energy Use and GHG Emissions Management Assessment

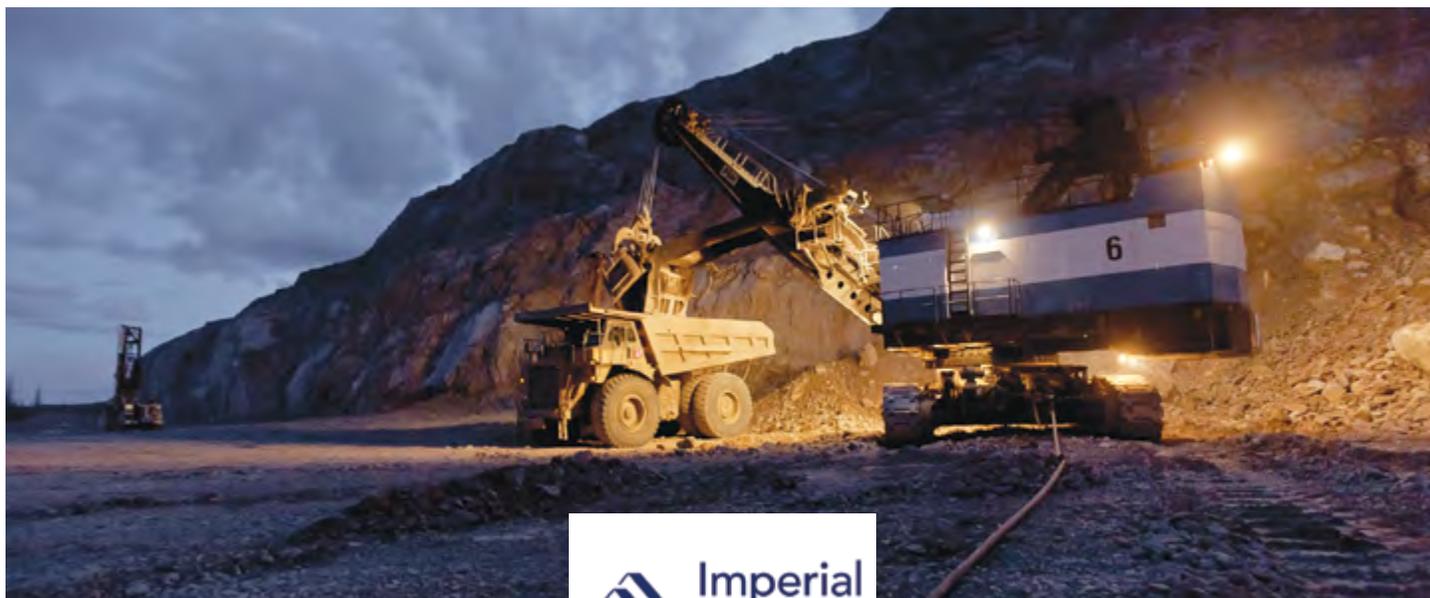


Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Imperial Metals Corporation



Mount Polley Mining Corporation (MPMC) saw minor improvements in self-assessed TSM results in 2015 as compared to the last formal reporting period in 2013. In light of the Tailings Storage Facility (TSF) failure at the Mount Polley mine in August 2014, MPMC had spent the 2014 reporting period reviewing its TSM assessment across all areas.

While still reporting strong results in Tailings Management (Level A), Aboriginal and Community Outreach (Level AA) and Safety and Health (Level A), progress in aligning existing site strategies for Energy Use and GHG Emissions Management (Level C), Crisis Management Planning (No) and Biodiversity Conservation Management (Level C) with TSM reporting protocols continued throughout 2015 following the 2014 post-TSF failure review period.

TAILINGS MANAGEMENT

MPMC has a strong alignment with MAC guidance through the five indicators of this protocol, and lacks only internal and external auditing (respectively) of existing documentation and processes in order to improve this protocol from Level A to Level AA/Level AAA.

While there were rigorous internal and external reviews of the tailings management system completed through the various activities associated with the failure investigation, repair and subsequent initiation of permitting for return to use of the Mount Polley mine TSF, none of these activities were suggested by MPMC as formal internal or external auditing under the TSM initiative. The internal and external reviews did, however, lead to a robust examination of tailings management at the Mount Polley mine and serve to further support the self-assessed Level A.

ABORIGINAL AND COMMUNITY OUTREACH

Strong relationships between Aboriginal and community groups and MPMC were once again proven in the discussion, explanation and consultation on the aforementioned TFS failure investigation and permitting activities as well as the application for (and subsequent return to) restricted operations at the Mount Polley mine in 2015.



Of the four indicators, three were assessed as Level AAA, with the results for indicator 4 (reporting) assessed at Level AA. All consultation is completed in a transparent manner, but formalized feedback and publishing of COI feedback and concerns outside of the COI groups themselves has not yet been instituted by MPMC. Strategies for completing this are being evaluated for incorporation into reporting standards for the Mount Polley mine.

SAFETY AND HEALTH

MPMC has a strong alignment with the TSM Safety and Health Protocol and, as referenced above in Tailings Management, spent 2015 keeping all processes updated and “live” following the TSF failure and through the return to operations at the Mount Polley mine. In order to progress to Level AA and AAA internal and external auditing of these systems is necessary.

ENERGY USE AND GHG EMISSIONS MANAGEMENT

MPMC reports in accordance with the GHG requirements at both the Provincial (mandatory) and Federal (voluntary) level, having a comprehensive understanding of contributing processes at the facility level. Integration of energy use and GHG emissions management systems into the operation represents a new focus area for MPMC, and this, along with the resulting setting and achievement of facility-level targets, limit the TSM-assessed level to a Level C.

CRISIS MANAGEMENT PLANNING

MPMC does not have formalized crisis management plans at the facility or corporate level (or corresponding sharing of these between parties) at this time, though site level mine emergency response and TSF emergency preparedness response plans are established and regularly tested. Initial stage development of a crisis management plan at the corporate level is underway.

BIODIVERSITY CONSERVATION MANAGEMENT

While MPMC is committed to biodiversity conservation management, and has worked extensively with Aboriginal groups, COI, industry, government and the scientific community in pursuing initiatives on site both historically and presently, there lacks translation of these processes to fit under the indicator prerequisites of improved scoring with TSM.

MPMC does not see this TSM indicator score as reflective of the facility commitment to biodiversity conservation management, rather a translational issue between site processes and TSM protocol requirements. Work will continue to assimilate facility-level work with TSM protocols, but this is not seen by MPMC as a deficient area at this time.

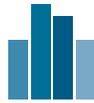
EXTERNAL VERIFICATION

In 2016, MPMC undertook an extra (i.e. voluntary) external verification of the self-assessed 2015 Tailings Management Protocol results. This extra external verification of the Tailings Management Protocol in 2016 follows the external verification completed in 2015 for all TSM Protocols self-assessed in 2013. Both the 2016 and 2015 external verifications confirmed that self-assessed results fairly stated the company’s performance against TSM Protocols.

In summary, MPMC has improved TSM scores in 2015 as compared to 2013 self-assessed results, with Aboriginal and Community Outreach improving to a Level AA from the previously self-assessed Level A. Following the TSF failure and through the return to restricted operations, the focus for the TSM initiative has been on reviewing and maintaining existing processes and ensuring their applicability through this reporting period.

🔗 For more information, please visit: www.imperialmetals.com





2015 TSM Results

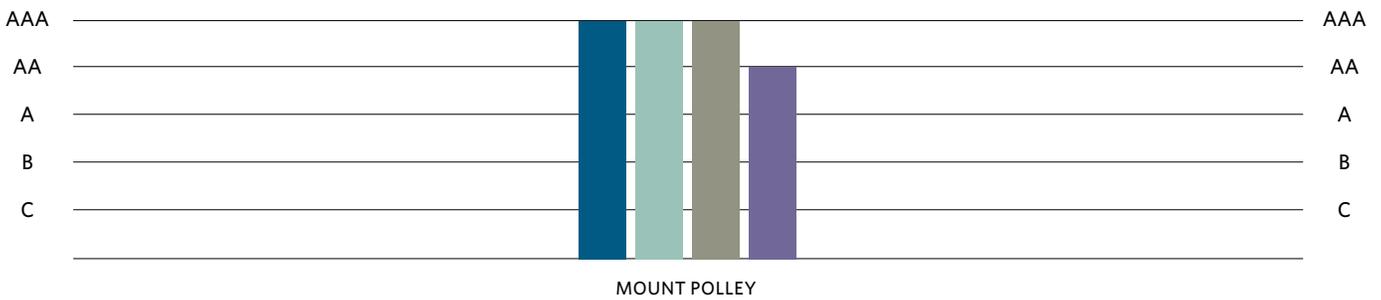
Imperial Metals Corporation

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
IMPERIAL METALS CORPORATION			
MOUNT POLLEY			

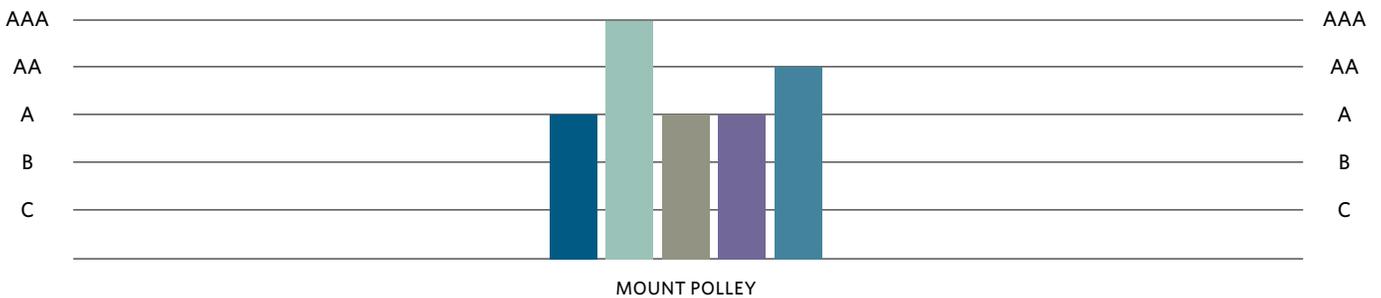
Aboriginal and Community Outreach Assessment

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- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- COI RESPONSE MECHANISM
- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- PLANNING, IMPLEMENTATION AND OPERATION
- TRAINING, BEHAVIOUR AND CULTURE
- MONITORING AND REPORTING
- PERFORMANCE

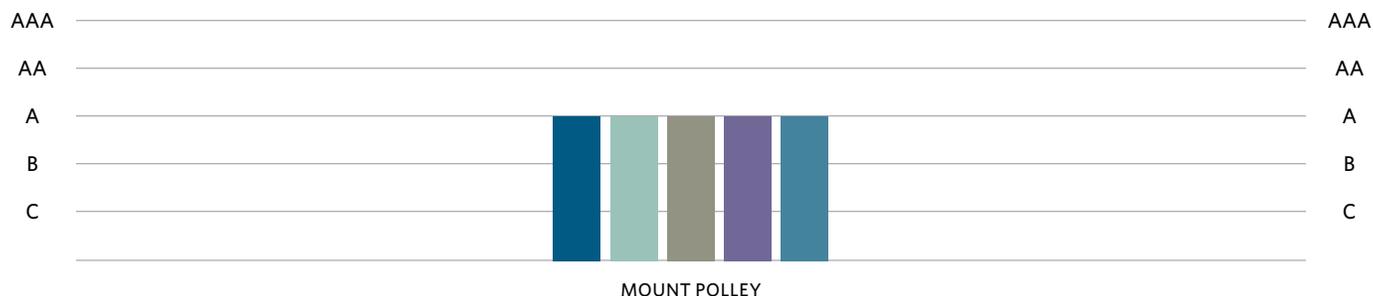


Results not externally verified, except for Tailings Management.
 Last external verification: 2015; next external verification: 2018.



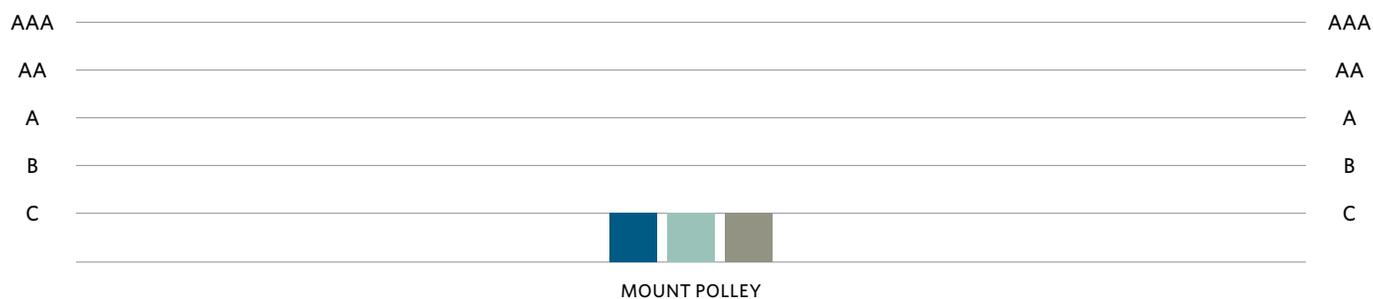
Tailings Management Assessment

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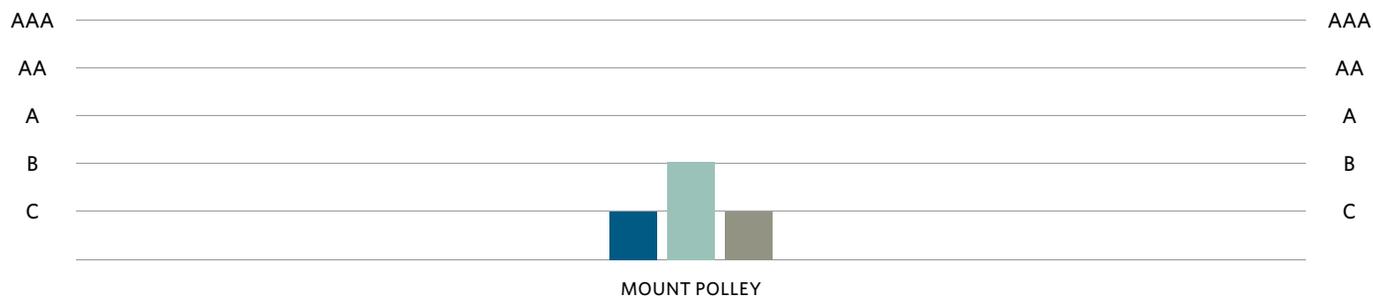
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- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Results not externally verified, except for Tailings Management.
 Last external verification: 2015; next external verification: 2018.



TSM Performance by Company

New Gold Inc.



New Gold is an intermediate gold producer with operating mines in Canada (New Afton Mine), the United States (Mesquite Mine), Australia (Peak Mines) and Mexico (Cerro San Pedro Mine). In addition, New Gold's principal development projects are its 100% owned Rainy River and Blackwater projects, which are both in Canada.

New Gold is committed to excellence in corporate social responsibility. The company considers its ability to make a lasting and positive contribution to host communities a key driver in achieving a productive and profitable business. New Gold contributes to sustainable development by ensuring it understands how its activities impact communities and the environment, and works to mitigate them. This approach is applied throughout the mine life cycle, from early exploration through development and operation, to decommissioning and mine closure.

New Gold is also committed to positively contributing to the mining industry. The company is a member of the World Gold Council, Business for Social Responsibility, the Mining Association of Canada, the Prospectors and Developers Association of Canada, the Ontario Mining Association and the Mining Association of British Columbia. It is also a member of the Mexican Mining Chamber, the Canadian Chamber of Commerce in Mexico and the American Exploration and Mining Association in the United States.

New Gold is committed to achieving the highest possible level of performance for safety, environmental protection and sustainable community development. This commitment drives New Gold to seek out those standards, protocols and performance indicators that assist its people in achieving these goals. As a result, the company has adopted standards such as the International Cyanide Management Code and the United Nations Global Compact's 10 principles on human rights, labour standards, the environment and anti-corruption. New Gold has also attained ISO 14001 environmental management certification for two of its four operations, and follows the guidelines of the Global Reporting Initiative and the Carbon Disclosure Project to ensure relevant information is made known to its communities of interest.

New Gold has developed Environmental Standards and Community Engagement and Development Management Standards, which incorporate TSM requirements.

“ New Afton has achieved significant success in tailings management – a key area of interest to the mine’s neighbours and First Nations partners. ”

These standards ensure that the TSM principles are applied at all New Gold operations – in Canada and abroad.

In its first year of TSM implementation, New Afton enthusiastically adopted TSM protocols, in addition to implementing ISO 14001, as it moved from the project development phase through commissioning and into production in July 2012. In 2013, New Afton completed its first full year of operation and its first year of mandatory TSM reporting.

This is New Afton’s third year of TSM reporting and the company continues to demonstrate its commitment to transparency and the TSM program. Although not required to have its results externally verified, New Gold wanted assurance that progress had been achieved in areas important to its local communities and First Nations partners. Managed Process Consulting Inc. completed a verification report, which assessed New Afton’s reported TSM performance results against the TSM performance indicators.

The scope of the review included the company’s TSM verification processes for Tailings Management, Energy Use and GHG Emissions Management, Biodiversity Conservation Management, Aboriginal and Community Outreach, Safety and Health, and Crisis Management Planning. The review was conducted in accordance with generally accepted standards consisting primarily of interviews, data analysis, and examination of other evidence relevant to management’s assertion of conformance to the requirements of the TSM performance indicators.

The results achieved in 2015 demonstrated continual improvement from the previous year’s results. Notably, New Afton has achieved significant success in tailings management – a key area of interest to the mine’s neighbours and First Nations partners. New Afton also maintained or improved its good results in Biodiversity Conservation Management, Aboriginal and Community Outreach, and Energy Use and GHG Emissions Management.

New Afton hosted its first Independent Tailings Review Board meeting within New Gold. This group is made up of experts in geotechnical engineering, hydrology and geochemistry, and provides additional peer review as well as corporate oversight of the company’s tailings facilities. This increased diligence ensures that the mine’s structures are safe because risks are understood, studied and mitigated.

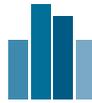
To meet the requirements of the Aboriginal and Community Outreach Protocol, New Afton has successfully developed a partnership agreement with the Skeetchestn Indian Band and the Tk’emlúps te Secwepemc, and has won several awards, such as the Mining Association of BC’s 2011 Mining and Sustainability Award, the 2012 Corporate Champion for Aboriginal Business Award, and the 2013 BC Mining Human Resources Diversity Award. In 2013, New Afton met its targets and reached a Level AA or AAA in all of the protocol’s performance indicators.

In 2013, New Afton made significant progress towards achieving its vision of sustainable energy management. In early 2014, the mine was first in North America to be certified under ISO 50001 (for energy management systems). During 2015, as a result of New Afton’s energy management system, the facility was able to conserve energy, which not only saved money, but also reduced GHG emissions. New Afton expects further savings in the near future.

All of New Gold’s sites (both Canadian and international) were assessed in 2015 against the protocols for the first time. Public reporting for these facilities is being phased in and facility-level results will be included in future TSM progress reports.

🔗 For more information, please visit: www.newgold.com





Externally
Verified Results

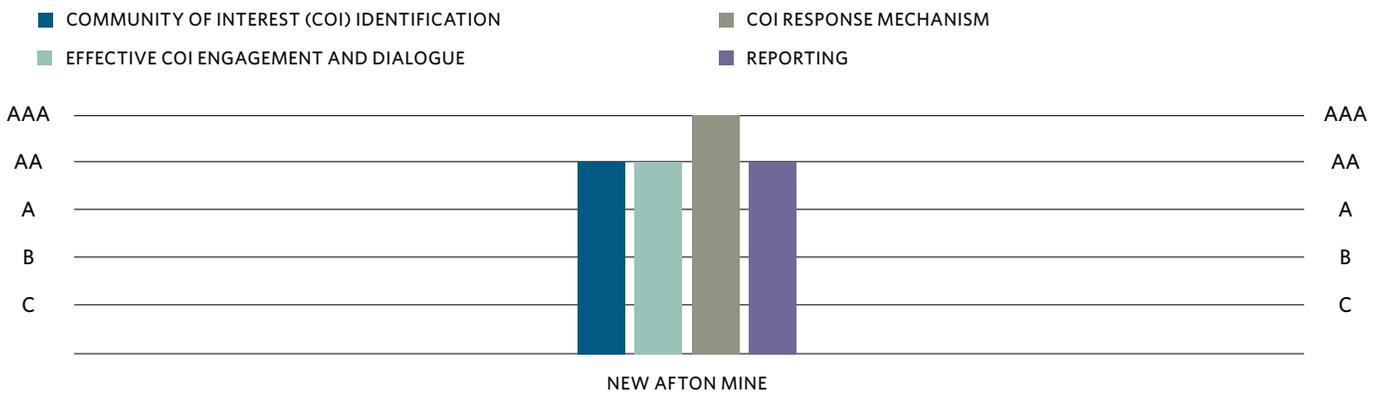
2015 TSM Results

New Gold Inc.

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
NEW GOLD CORPORATE	☑	☑	☑
NEW AFTON MINE	☑	☑	☑

Aboriginal and Community Outreach Assessment



Safety and Health Assessment



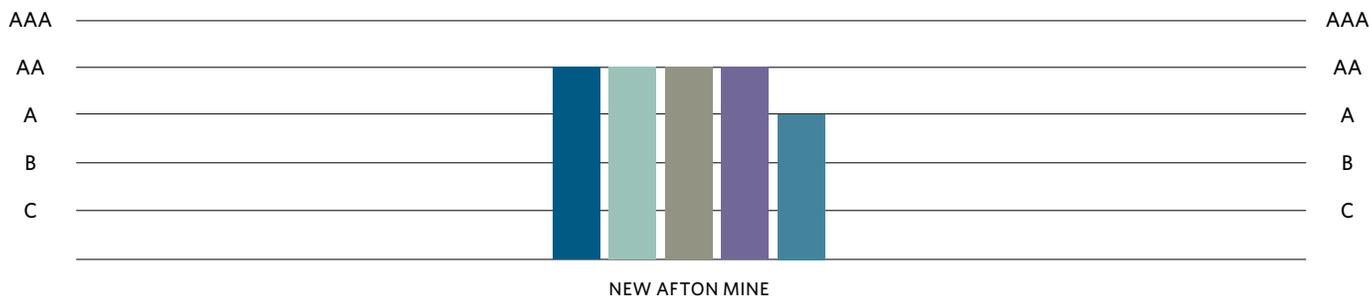
Self-assessed results; last external verification: 2015; next external verification: 2018.



Tailings Management Assessment

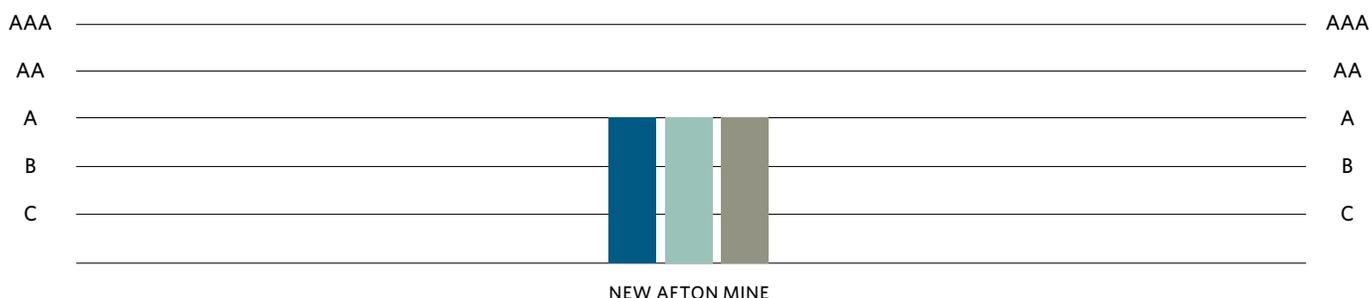
Externally
Verified Results

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



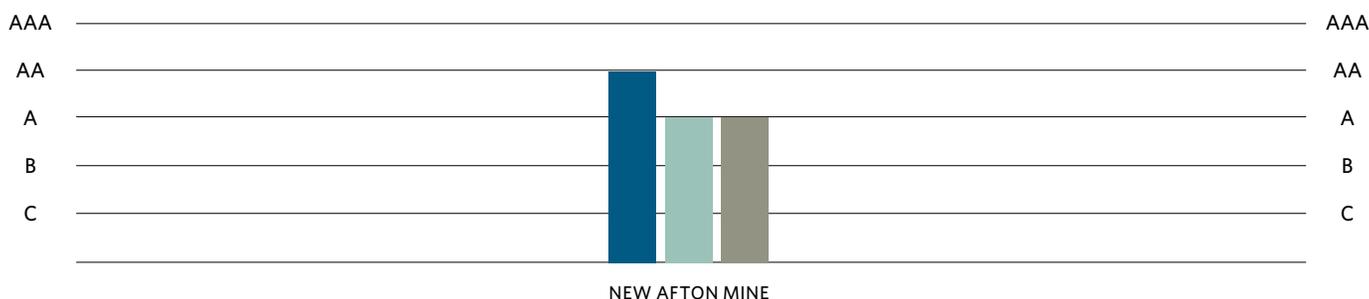
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Next external verification: 2019.



TSM Performance by Company

Nyrstar



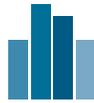
Nyrstar is a global multi-metals business with market-leading positions in zinc and lead, and growing positions in other base and precious metals. Nyrstar employs approximately 5,200 people, and has mining, smelting and other operations located in the Americas, Australia and Europe. Its operations include two mines in Canada: Myra Falls in British Columbia and Langlois in Quebec. The company's corporate office is located in Zurich, Switzerland. At Nyrstar, sustainability is viewed as a key driver of business success, and the company is committed to working with its stakeholders to achieve continual improvement in safety, health, environment and community (SHEC) performance. Nyrstar's Group SHEC Management Framework sets the direction for all SHEC activities and establishes a common approach to the management of SHEC risks at Nyrstar's sites. The framework is aligned with ISO 14001 and OHSAS 18001, and many of Nyrstar's sites are certified to these standards. TSM performance protocols help Nyrstar's Canadian sites address key safety, health and environmental risks and processes, and TSM requirements are integrated into the sites' SHEC management systems.

The Myra Falls and Langlois operations joined Nyrstar in 2011 as part of the acquisition of Breakwater Resources. Nyrstar Myra Falls is an underground base metal mine located on Vancouver Island, BC, 90 kilometres southwest of Campbell River. The mine's location inside Strathcona Provincial Park provides unique challenges that heighten the importance of robust environmental and community management programs. Myra Falls has been reporting under MAC's TSM program since 2006. In 2015, the Myra Falls operation was placed on care and maintenance. As TSM applies to operating facilities, public reporting of TSM performance will resume once the mine begins production activities again. In the meantime, the mine is working to address gaps identified during its internal self-assessment.

The Langlois mine is located in northwest Quebec near the town of Lebel-sur-Quévillon. The mine, which was restarted in 2011 following a period of care and maintenance, resumed commercial production in the first half of 2012. As a result, Langlois publicly reported its facility-level TSM results for the first time this year. The results of its 2015 self-assessment revealed several improvement opportunities across Langlois' crisis management, safety and health, and environmental and community management systems. These opportunities are being addressed through prioritized action plans, which are overseen by senior management. The improvements achieved under these plans and the continued implementation of Nyrstar's SHEC Management Framework are expected to result in elevated TSM performance in coming years.

For more information, please visit: www.nyrstar.com





2015 TSM Results

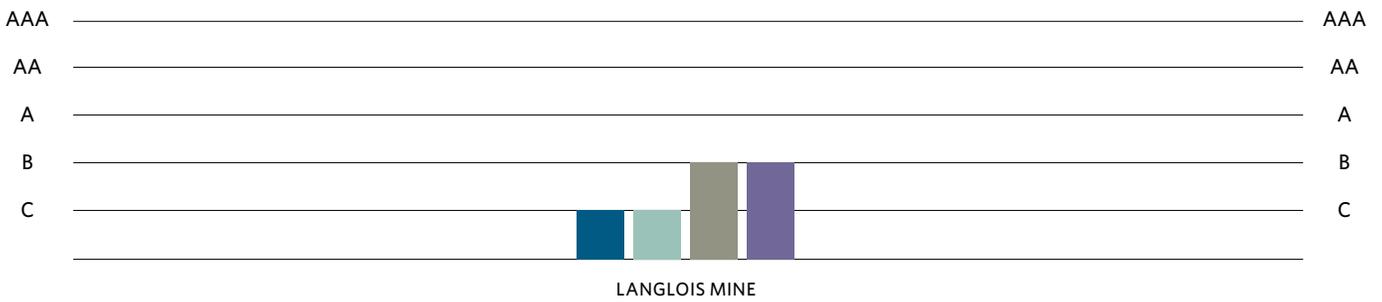
Nyrstar

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
NYRSTAR			
LANGLOIS MINE			

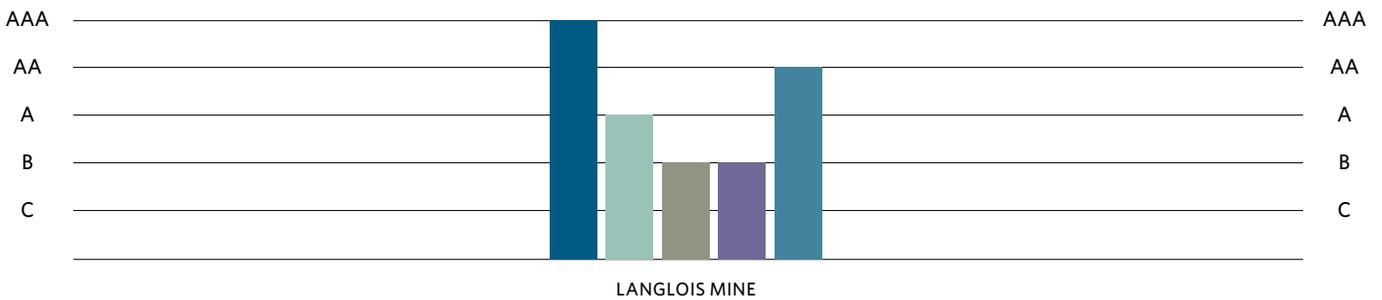
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- PLANNING, IMPLEMENTATION AND OPERATION
- TRAINING, BEHAVIOUR AND CULTURE
- MONITORING AND REPORTING
- PERFORMANCE

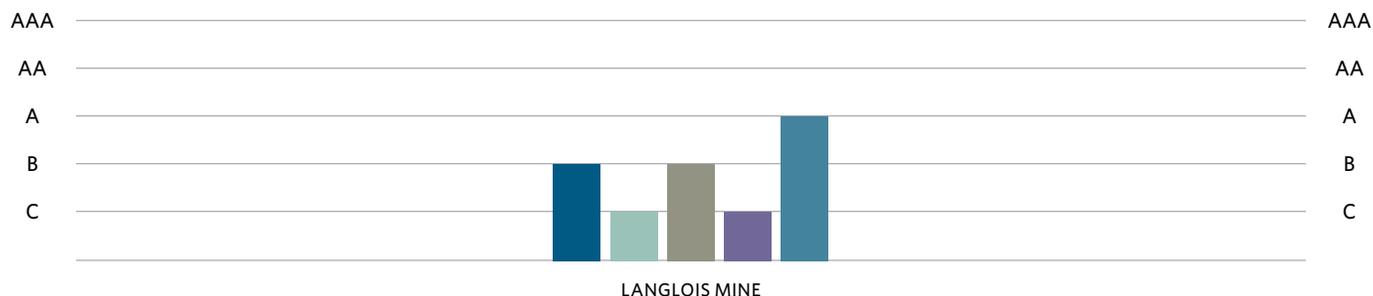


Self-assessed results; next external verification 2018.



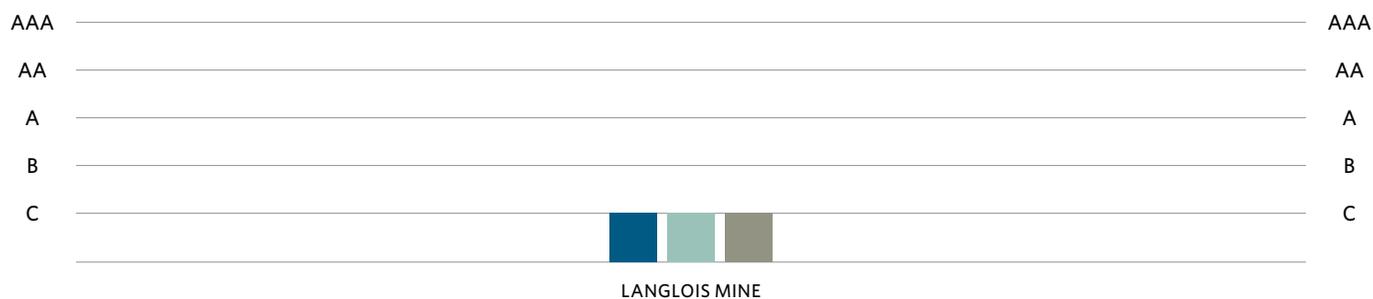
Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- TAILINGS MANAGEMENT SYSTEM
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT



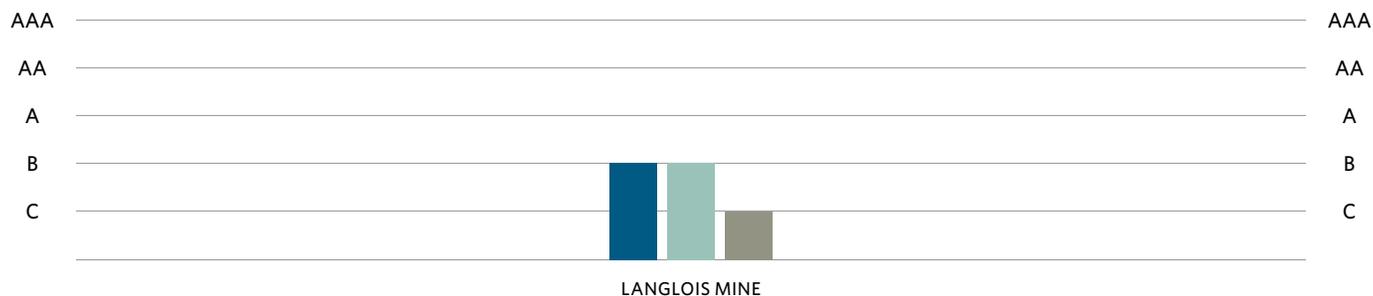
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS

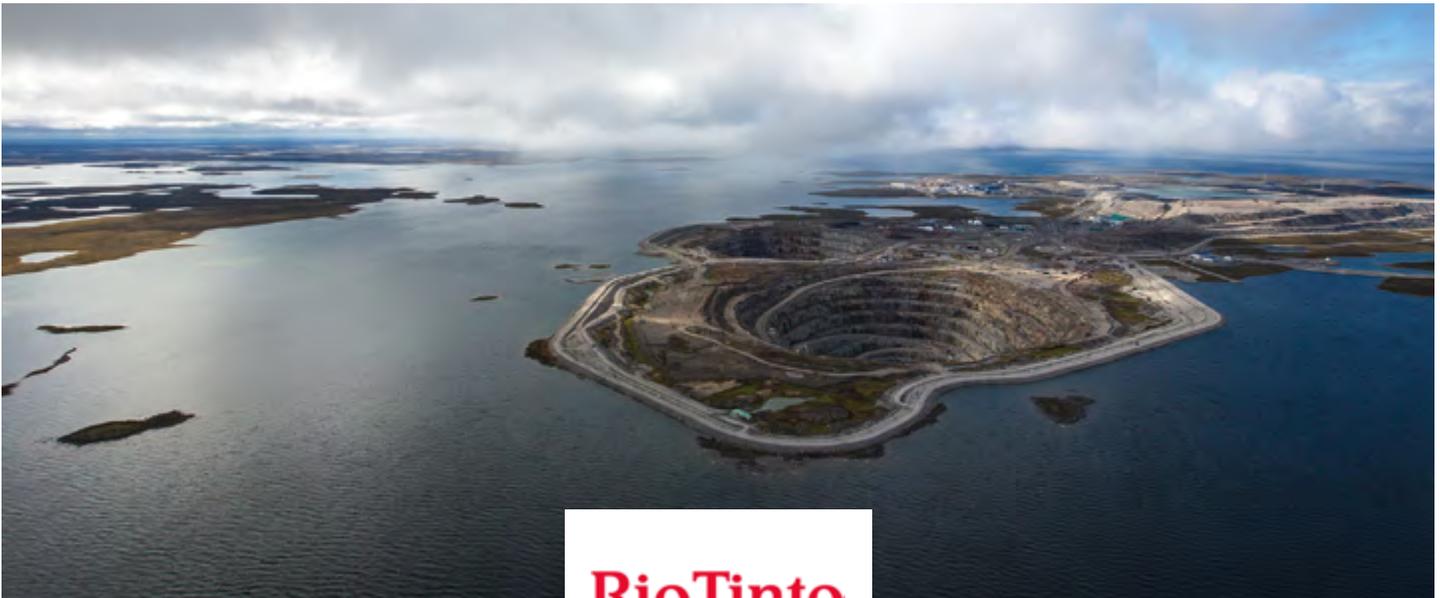


Self-assessed results; next external verification 2018.



TSM Performance by Company

Rio Tinto



Rio Tinto's business is finding, mining and processing mineral resources. Its major products are aluminum, copper, diamonds, thermal and metallurgical coal, uranium, gold, industrial minerals (borax, titanium dioxide and salt) and iron ore. The company's activities span the world, notably in Australia and North America, and particularly in Canada. Rio Tinto also has significant businesses in Asia, Europe, Africa and South America.

Rio Tinto is a leading international mining group headquartered in the United Kingdom, combining Rio Tinto plc, a London and New York Stock Exchange-listed company, and Rio Tinto Limited, which is listed on the Australian Securities Exchange.

In Canada, Rio Tinto operates 35 sites across seven jurisdictions and employs approximately 11,000 people. Its investments have been focused on improving health and safety and environmental performance, advancing innovative technologies and supporting community development. The company's Canadian assets that currently report on TSM include the following:

- The Iron Ore Company of Canada (IOC) is a leading Canadian producer of iron ore pellets and concentrate that serves customers worldwide. IOC is a joint venture of Rio Tinto, Mitsubishi Corporation and Labrador Iron Ore Royalty Corporation. The company operates a mine, a concentrator and a pelletizing plant in Labrador City, Newfoundland and Labrador, as well as port facilities in Sept-Îles, Quebec. It also operates a 418-kilometre railroad that links the mine to the port. IOC maintains its commitment to environmental stewardship with programs such as tailings rehabilitation and mine dust suppression, as well as air quality monitoring. Working directly with the community is also an integral part of IOC's culture. In 2015, despite challenging market conditions, IOC strengthened its relationship with its stakeholders, including Indigenous partners, and launched an Inclusion and Diversity Committee. IOC also received government approval to move forward with the Wabush 3 Project, an additional open pit that will extend IOC's iron ore resources.
- The Diavik Diamond Mine in the Northwest Territories is a joint venture between Rio Tinto (60%) and Dominion Diamond Corporation (40%). Diavik is recognized for its success in providing socio-economic benefits to local Aboriginal communities. In 2015, Diavik focused on the construction of its fourth ore body, A21, which was kept on schedule and on budget. It will take four years to build the US\$350-million dike.

“Community engagement is an integral part of Rio Tinto’s culture. Rio Tinto continues to strengthen partnerships with Indigenous peoples in communities where it operates through strategic investments.”

- Diavik has hired new staff thanks to the A21 project. As of 2015, Diavik has 1,134 employees, 546 of whom are northerners and 280 are Aboriginal. Diavik maintains a strong relationship with its community partners and is committed to supporting sustainable northern and Aboriginal development, with an objective of developing self-sufficient businesses. It does so through direct support for local businesses, and a strong commitment to training and innovation. In 2013, Diavik opened Canada’s first large-scale wind farm in the North and now operates the world’s largest hybrid wind-diesel power facility at a remote mine site.
- Rio Tinto Fer et Titane (RTFT), which is wholly owned by Rio Tinto, operates a world-class ilmenite deposit at Lac Tio near Havre-Saint-Pierre, and a cutting-edge metallurgical complex in Sorel-Tracy, Quebec. RTFT is one of the leading manufacturers of raw materials for the titanium dioxide industry and a leader in the production of iron, steel and high-quality metal powders. It pioneered the process of removing iron from ilmenite and has operated in Quebec for 65 years. As of 2015, RTFT has 1,744 employees in both Sorel-Tracy and Havre-Saint-Pierre. In 2015, RTFT focused on strengthening its relationship with its Indigenous partners in Havre-Saint-Pierre. As a result of capital investments made in 2014, RTFT also reduced its sulphur dioxide emissions in 2015 by 60%, exceeding expectations. Both the mine and metallurgical complex continue to focus on health and safety, implementing its Critical Risk Management Framework. In 2015, RTFT also partnered with the Research Institute on Mines and Environment at UQAT – Polytechnique to research ways to rehabilitate waste rock at the mine.

ABORIGINAL AND COMMUNITY OUTREACH

Community engagement is an integral part of Rio Tinto’s culture. Rio Tinto continues to strengthen partnerships with Indigenous peoples in communities where it operates through strategic investments. In 2014, Rio Tinto contributed \$1 million over five years to Indspire to create the Rio Tinto Award for Indigenous Students, which is intended for those pursuing post-secondary education. This contribution is the most significant made by a metal and mining company to Canada’s largest Indigenous-led education organization. In 2015, Rio Tinto and Indspire launched the award in several communities across the country, and hosted an event in Ottawa in May 2016.

IOC has been partnering with communities in Labrador West and Sept-Îles for more than five decades. Rio Tinto is a strong believer in developing and maintaining good relationships with local Indigenous groups, which is reflected by its strong performance in stakeholder outreach. While 2015 was challenging, through the Regional Taskforce and Community Advisory Panel, IOC strengthened its relationship with its communities of interest. Labrador City achieved a Level AAA across all indicators, and Sept-Îles attained a Level AA or higher across all indicators.

The Diavik Diamond Mine sees itself as a guest in a land where Indigenous people assert a centuries-old presence. In recent years, Diavik renewed its formal participation agreements with all five of its community partners. These long-term renewals ensure northerners, including Indigenous communities, continue to benefit from training, employment and business opportunities at Diavik. The mine has consistently reported a Level AAA under the Aboriginal and Community Outreach Protocol since TSM first began.



RTFT has worked hard in the last year to strengthen its engagement with its community stakeholders, including its Indigenous partners near the mine. Despite the economic conditions, RTFT maintained its commitment to community investment in 2015, which helped to mitigate impacts on the community of the downturn in the sector. RTFT has self-assessed at a Level A or above for three of the indicators, except the COI response mechanism.

CRISIS MANAGEMENT PLANNING

IOC's business resilience and recovery plan meets the requirements of the TSM Crisis Management Planning Protocol, and is implemented at the company's three sites: corporate (Montreal), Labrador City and Sept-Îles. This year's assessment again confirmed that IOC's crisis management system meets all the requirements of this protocol, while Diavik's and RTFT's management systems meet the criteria for all three indicators.

TAILINGS MANAGEMENT

Responsible tailings management is a priority for Rio Tinto. Over the last few years, the company has demonstrated strong improvements in all of the indicators in this protocol and, for 2015, is reporting Level AAA performance across all indicators for its IOC operations. In 2010, IOC adopted the TSM Guiding Principles for tailings management, which helped strengthen the company's commitment to tailings management and encourages continuous improvements. Diavik has also maintained strong performance for tailings management over the years. This year, it achieved a Level A rating across all five indicators.

ENERGY USE AND GHG EMISSIONS MANAGEMENT

Rio Tinto has maintained good levels of performance for its energy use and GHG emissions management practices. In 2015, Labrador City and Sept-Îles achieved a Level AA for two out of three indicators for this protocol. Diavik scored a Level A or higher for each indicator for the last three years.

In 2015, the mine's four-turbine, 9.2-megawatt wind farm resulted in a diesel fuel reduction of 5.2 million litres lowering GHG emissions by 14,404 tonnes (6.5% offset). For the year, renewable energy provided 11% of the mine's power needs.

Rio Tinto remains committed to responsible energy management and continues to explore opportunities to improve performance for this protocol.

SAFETY AND HEALTH

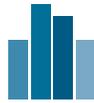
A priority for all Rio Tinto operations is the safety and health of its employees. The company has undertaken several initiatives to help foster education and awareness, including the 2015 launch of Critical Risk Management, which focuses on fatality prevention. The company hosts workshops for union leaders, design engineers and general managers, conducts team-based safety talks, acknowledges safety-conscious acts and encourages employee-driven innovation. Rio Tinto's commitment to safety is reflected in this year's TSM results, with strong performance across the four indicators.

BIODIVERSITY CONSERVATION MANAGEMENT

Rio Tinto's corporate biodiversity strategy governs biodiversity management systems across its business. The operations have focused their attention on implementing Rio Tinto's strategy and furthering understanding of the requirements of this TSM protocol. Diavik and Dominion Diamond Corporation were jointly awarded the 2015 TSM Environmental Excellence Award for their grizzly bear monitoring program in the Northwest Territories. This was the largest grizzly bear study ever completed in the territory.

🔗 For more information, please visit: www.riotinto.com/canada





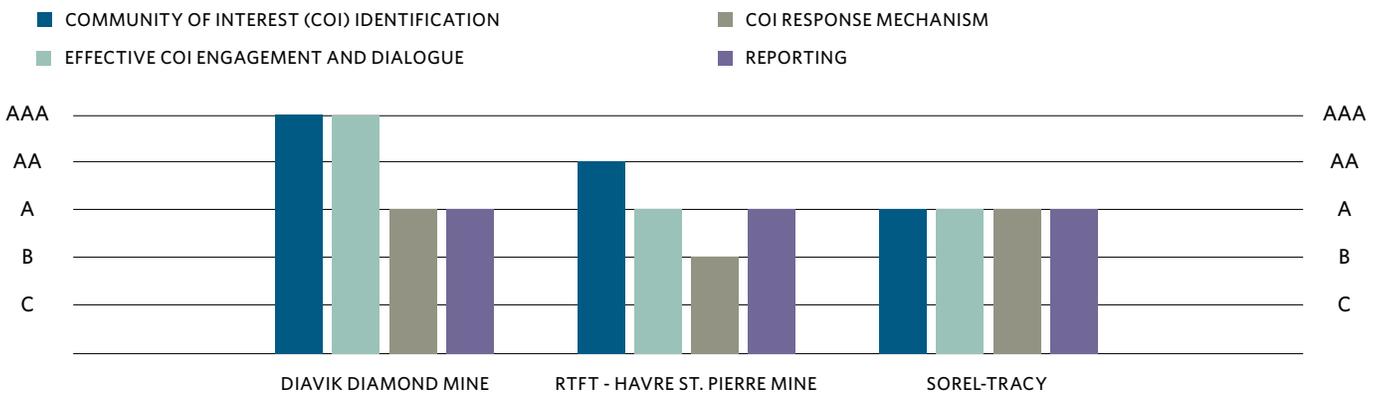
2015 TSM Results

Rio Tinto

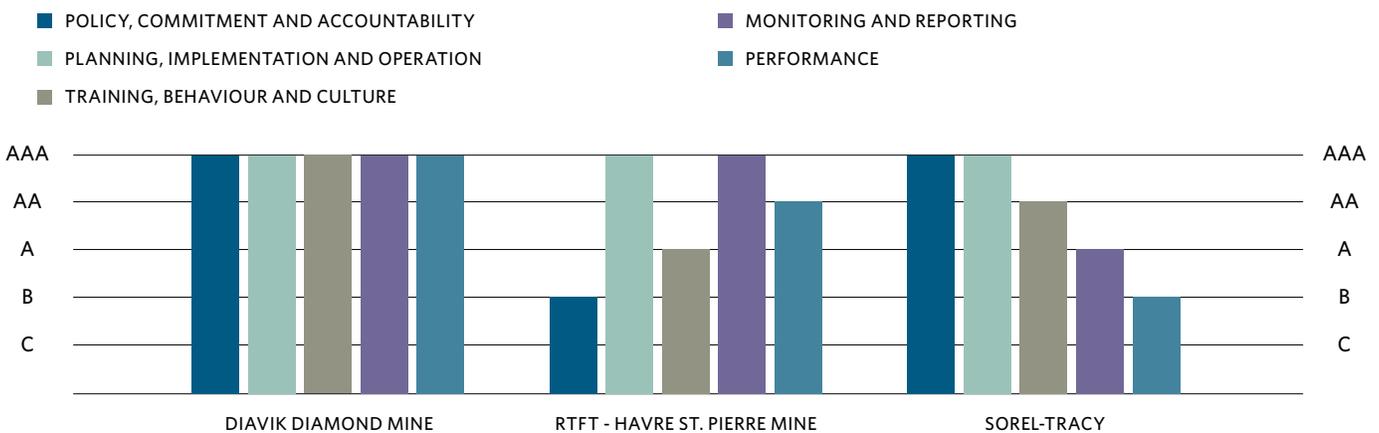
Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
RIO TINTO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DIAVIK DIAMOND MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RTFT - HAVRE ST. PIERRE MINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SOREL-TRACY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment



Safety and Health Assessment

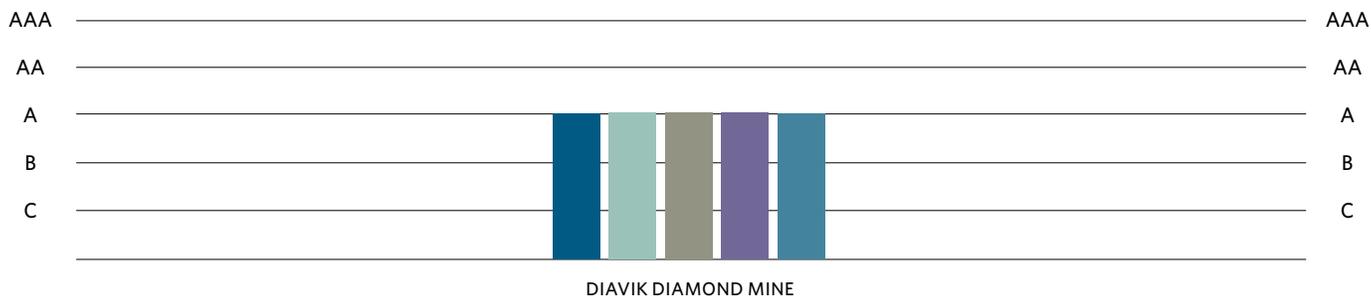


Self-assessed results; last external verification: 2014; next external verification: 2017.



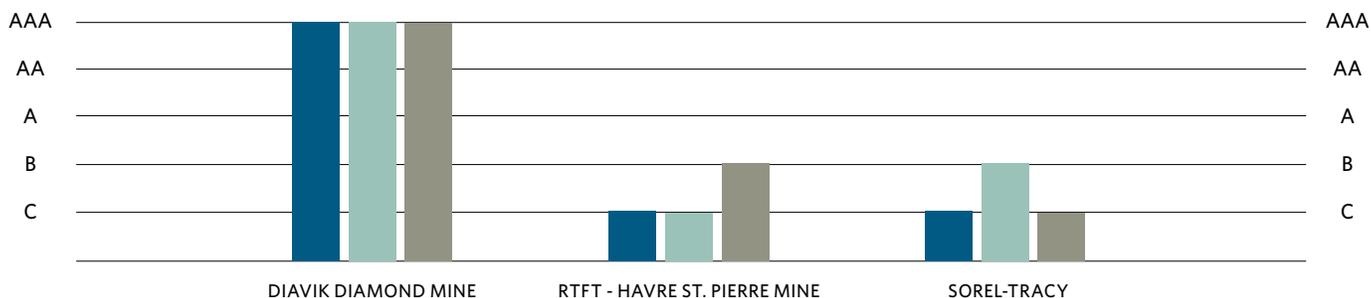
Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



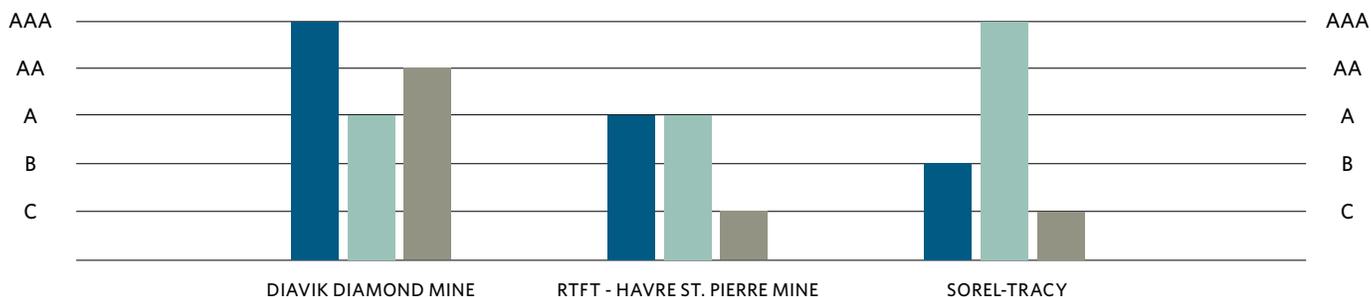
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



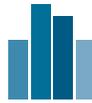
Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Self-assessed results; last external verification: 2014; next external verification: 2017.





2015 TSM Results

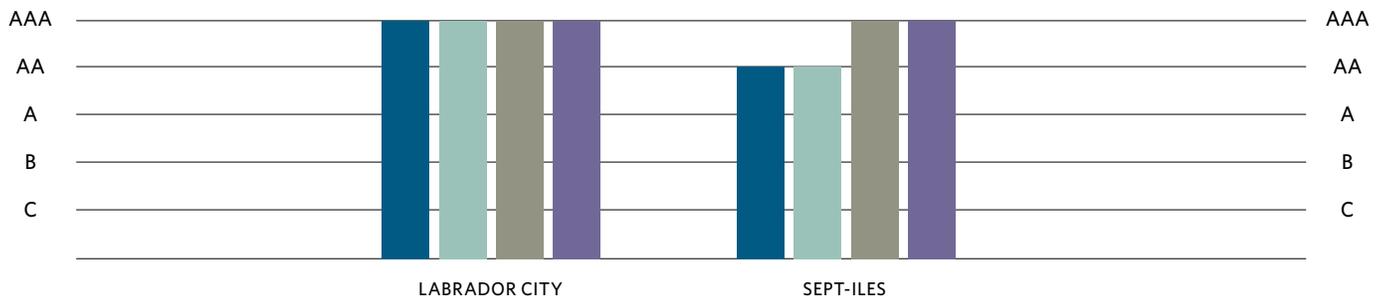
Iron Ore Company of Canada

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
CORPORATE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LABRADOR CITY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SEPT-ILES	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

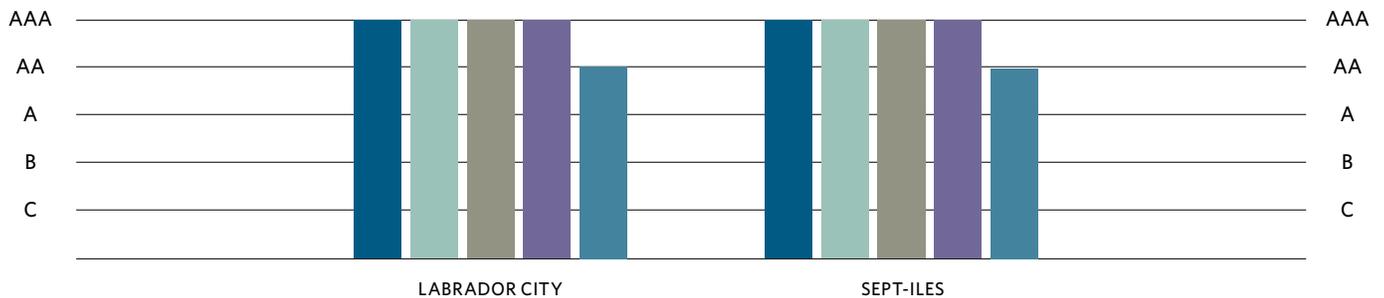
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

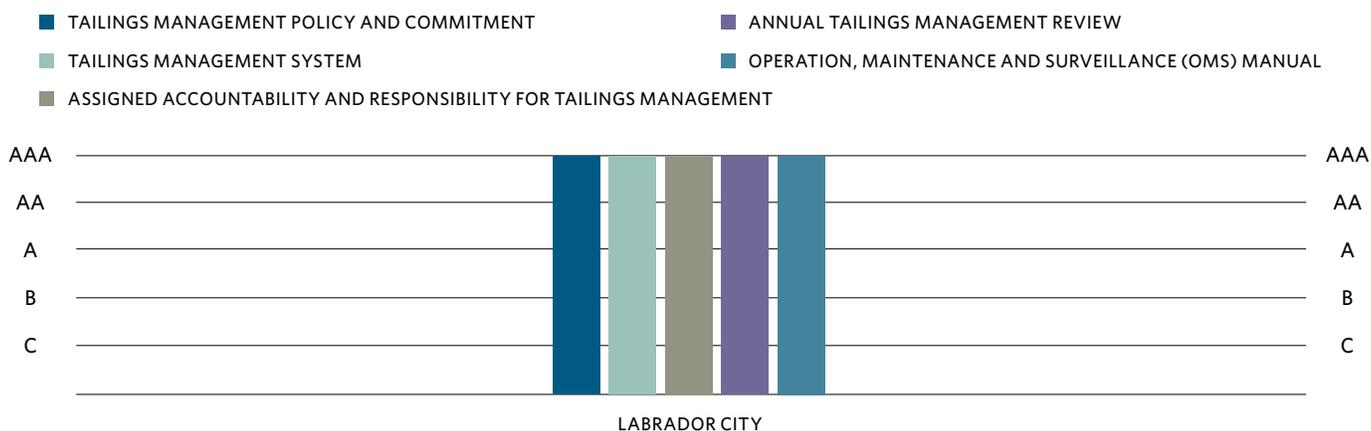
- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE



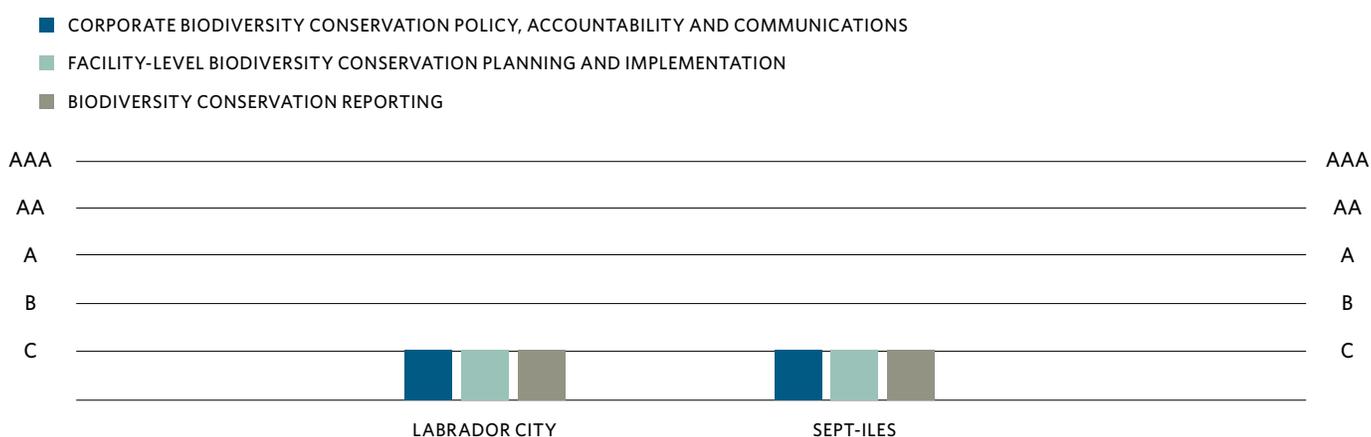
Self-assessed results; last external verification: 2014; next external verification: 2017.



Tailings Management Assessment



Biodiversity Conservation Management Assessment



Energy Use and GHG Emissions Management Assessment



Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Shell Canada Energy



Shell Canada Energy (Shell) operates the Muskeg River and the Jackpine mines, located 75 kilometres north of Fort McMurray, Alberta, on behalf of the owners of the Athabasca Oil Sands Project (AOSP): Shell Canada Energy (60%), Chevron Canada Limited (20%) and Marathon Oil Canada Corporation (20%).

As the average life cycle of an oil sands project is typically 40 years, Shell has a long-term interest in the communities where it operates and is committed to working in ways that mitigate environmental and social impacts and create positive benefits.

INDIGENOUS COMMUNITIES

Shell has been working closely with Indigenous peoples in Canada for many years. Engagements include direct consultation on projects and operations, ongoing interaction and collaboration through industry relations committees, and formal engagement with Elders, and First Nation and Métis Leaders.

Shell greatly values the perspectives and input of Indigenous communities, and has successfully established agreements with several local First Nations and Métis groups. Shell also provides opportunities to qualified local businesses and residents, with an emphasis on ensuring Indigenous businesses are able to participate in the contracting and employment processes. Since 2005, the AOSP has invested over \$1.8 billion with more than 70 Indigenous-owned businesses and contractors that provide a broad array of products and services to Shell's operations.

In 2015, Shell received gold certification for Progressive Aboriginal Relations, a Canadian Council for Aboriginal Business-sponsored program that acknowledges leadership and performance in Indigenous relations.

INVESTING IN THE COMMUNITY

Social investment is Shell's voluntary contribution to communities in Canada. The company seeks to initiate and support programs relevant to its business activities and focuses its social investment around science, education, innovation and business skills.

In 2015, Shell made approximately \$2.2 million in contributions on behalf of the AOSP and in-situ operations.

One example is Shell's long-term support for Indspire, an Indigenous-led charitable organization that invests in the education of Indigenous youth in Canada. Shell's 26-year partnership with Indspire began with investments in Indigenous post-secondary education, but has expanded to investments in Kindergarten to Grade 12 programs, post-secondary scholarships and events that recognize Indigenous leaders.

ENVIRONMENTAL PERFORMANCE

Producing oil sands safely and in a manner that minimizes impact to the environment and society is of the utmost importance to Shell.

In 2004, the Muskeg River Mine was certified to the ISO 14001:2004 standard – the first oil sands operation in the world to attain this accreditation. This certificate was renewed in 2013, extending the scope to include the Jackpine Mine. The most recent ISO 14001:2004 surveillance audit was completed in October 2015. This ISO standard, though voluntary, is externally audited and is recognized as the top international standard for environmental management systems.

Shell was one of the founding members of Canada's Oil Sands Innovation Alliance (COSIA). COSIA is a first-of-its-kind alliance of oil sands producers that collaborate on innovation and technology to drive accelerated environmental performance improvement. Shell's own internal Environmental Performance Improvement (EPI) program is structured to mirror the COSIA focus areas, and the delivery model is embedded in daily operations. Since implementing EPI in 2012, the company continues to make progress towards its short and long-term goals with respect to land (including tailings), water and air.

Shell's view is that climate change is one of the most pressing challenges our society faces today. From increasing energy efficiency to advancing fuel technology to educating customers on ways to consume fuel more efficiently, Shell is focused on reducing GHG emissions at all stages of the energy life cycle – from the mine to the motorist.

Launched in November 2015, Shell's Quest carbon capture and storage (CCS) project in Alberta is designed to capture over one million tonnes of CO₂ per year from the Scotford Upgrader for storage deep underground. Quest includes a rigorous monitoring program to ensure the CO₂ remains safely and securely in place. This includes continuous monitoring and early warning systems, groundwater sampling and 3-D seismic surveying. The experience gained from Quest will be crucial to reducing the time and cost of advancing new CCS projects worldwide. Shell expects its Quest project to decrease GHG intensity, bringing Shell's oil sands products more in line with the average emissions of North American crude oil.

TSM PERFORMANCE

Shell continues to maintain high standards in the TSM performance protocols of Crisis Management Planning, and Aboriginal and Community Outreach, with management programs in place that are reviewed, tested and documented. The company is working extensively on community of interest engagement and dialogue. Shell informs stakeholders about its environmental performance through its annual Oil Sands Performance Report.

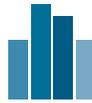
Shell's tailings management initiatives continued in 2015, focusing on advancing technologies to treat fluid fine tailings (FFT) that would meet the Alberta Tailings Management Framework set in March 2015. In 2014, Shell completed a successful pilot of a tailings centrifuge, which advanced the units to be moved into commercial scale in 2015. Shell has invested approximately \$465 million over the past decade in research to develop technologies that speed up the drying or dewatering process for FFT. Shell continues to work towards improving tailings treatment technologies to treat FFT that have a high percentage of fine particles.

MULTI-STAKEHOLDER MEMBERSHIP

Ongoing, meaningful involvement with multi-stakeholder groups is an important part of Shell's environmental management strategy. In addition to MAC, Shell is an active member of the Oil Sands Community Alliance, the Wood Buffalo Environmental Association, Joint Oil Sands Monitoring, the Canadian Association of Petroleum Producers, COSIA, and the Integrated CO₂ Network.

🔗 For more information, please visit: www.shell.ca/oilsands





Externally
Verified Results

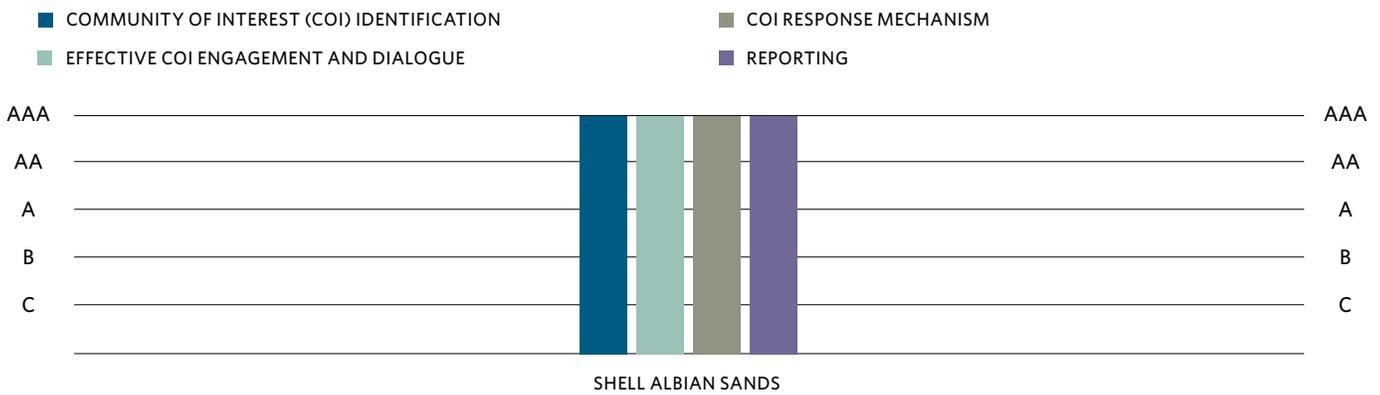
2015 TSM Results

Shell Canada Energy

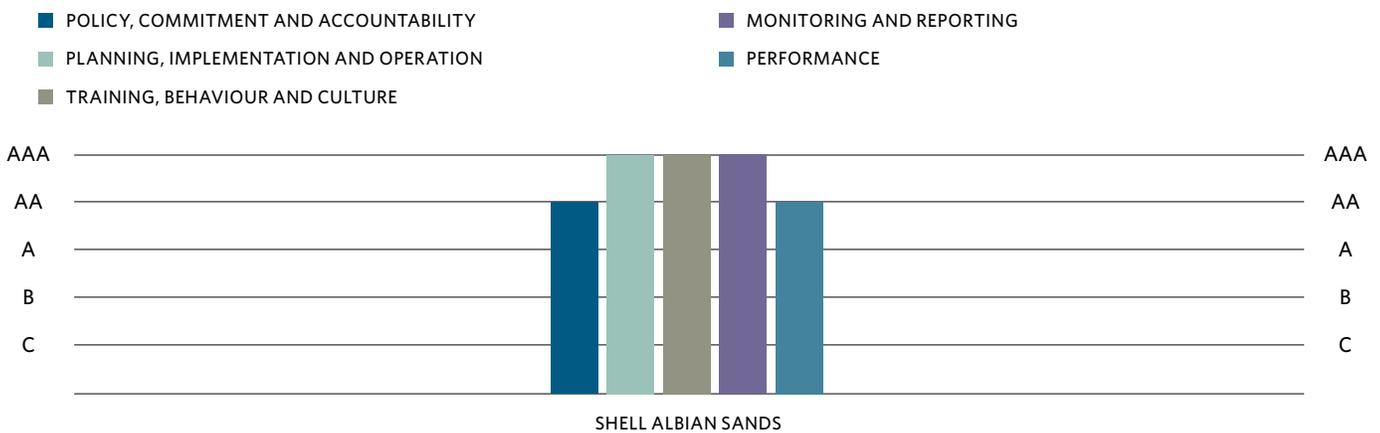
Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
SHELL CANADA ENERGY	☑	☑	☑
SHELL ALBIAN SANDS	☑	☑	☑

Aboriginal and Community Outreach Assessment



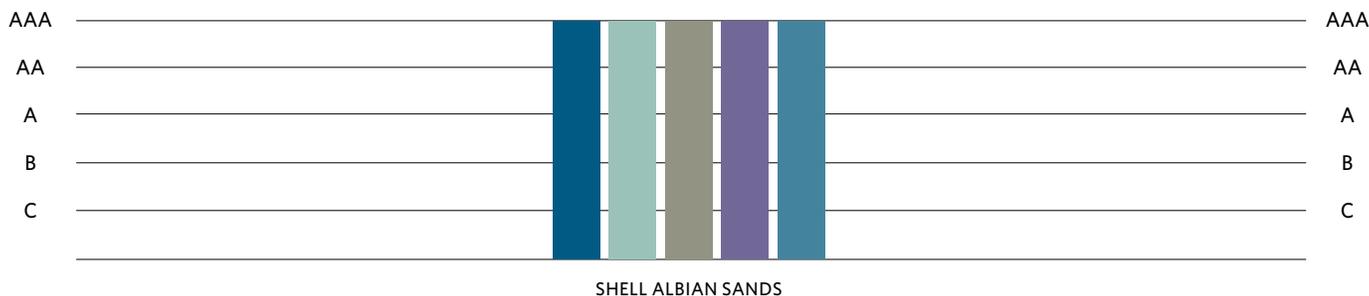
Safety and Health Assessment



Tailings Management Assessment

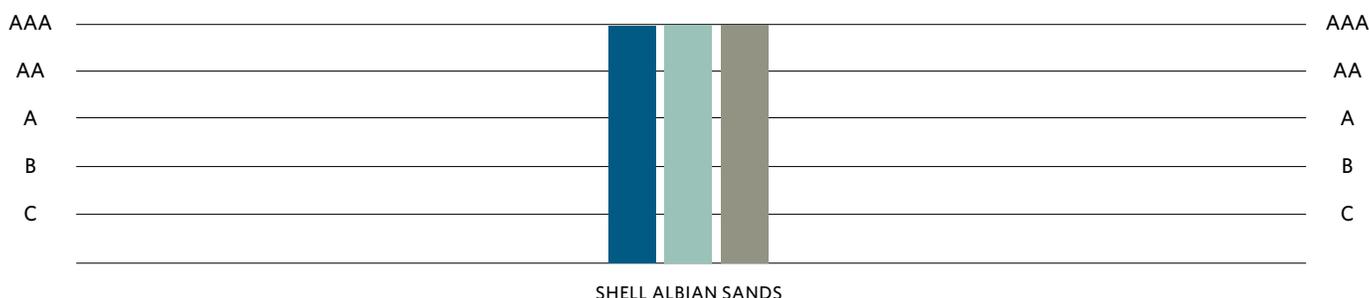
Externally
Verified Results

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



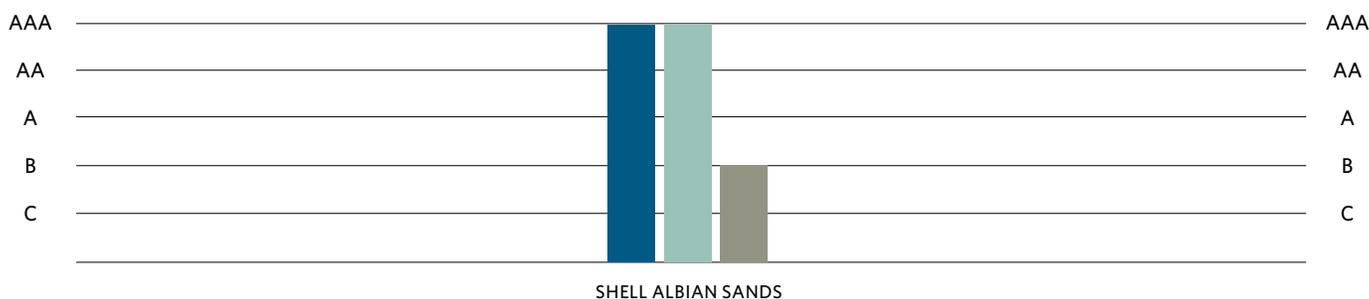
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



TSM Performance by Company

Suncor Energy



Suncor Energy recovers bitumen from oil sands near Fort McMurray, Alberta, and upgrades it to refinery-ready feedstock and diesel fuel. With production capacity of about 300,000 barrels per day and enough reserves to sustain production for the next 50 years, Suncor remains a leader in oil sands development.

In 2009, Suncor merged with Petro-Canada to become Canada's largest energy company. The merger will result in a second oil sands mining operation for Suncor in the region in the coming years.

Suncor's 2015 TSM results were externally verified. For the most part, the results were either consistent or improved from the company's 2011 externally verified results.

CRISIS MANAGEMENT PLANNING

Suncor completed all requirements for this protocol and received a "yes" score for all indicators.

ENERGY USE AND GHG EMISSIONS MANAGEMENT

Although the facility received a Level AAA for the energy use and GHG emissions management systems and the energy use and GHG emissions reporting systems indicators, it did not meet the reporting requirements for energy use and GHG emissions performance targets. The facility achieved a Level A for the remaining indicator by meeting its performance targets.

TAILINGS MANAGEMENT

Oil sands tailings ponds have come under increased public scrutiny in the past few years. Suncor has worked hard in this area to ensure compliance with all performance indicators. Consistent with its externally verified results for 2014, Suncor achieved a Level AA for all indicators. Work continues in this area to ensure that the company can continue to maintain a high level of compliance in the future.



Reclamation activities at Suncor's oil sands operation near Fort McMurray, Alberta.

ABORIGINAL AND COMMUNITY OUTREACH

Suncor has consistently performed well (Level AAA for all indicators) in this area as external outreach has always been a key part of maintaining its social license to operate. Suncor regularly reviews its communities of interest (including several Aboriginal communities) and its interaction with them. Communities of interest have an important say in how the company conducts its business. Moreover, success depends on earning the trust and consent of residents in the communities where the company operates.

Suncor has a stakeholder relations framework that outlines the company's commitment to collaboration, transparency and respect for all views. The framework guides Suncor as it develops long-term relationships with those affected by its business, including employees, community members, shareholders, customers, organizations and governments.

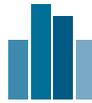
SAFETY AND HEALTH

Safety is a key aspect of Suncor's operations. The company's safety performance met all the requirements of a Level AAA rating for indicators 1 through 4 and a Level AA for indicator 5 (performance), which reflects the impact of a fatality in 2014.

BIODIVERSITY CONSERVATION MANAGEMENT

Biodiversity conservation management is a key part of Suncor's closure plans, and has been identified as an issue to be managed in the company's strategic issues management process. Through Suncor's continuous commitment to biodiversity, the facility was able to increase its score this year and achieve Level AAAs for all three indicators.

📄 For more information, please visit: www.suncor.com



Externally
Verified Results

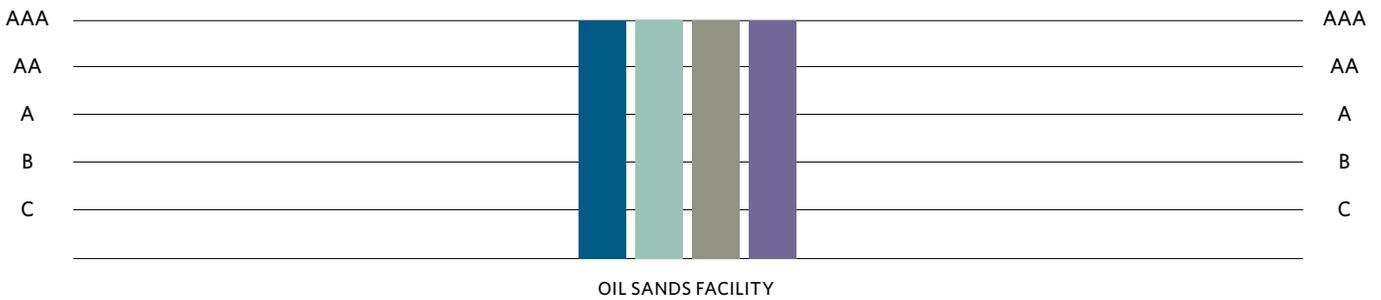
2015 TSM Results
Suncor Energy

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
OIL SANDS FACILITY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

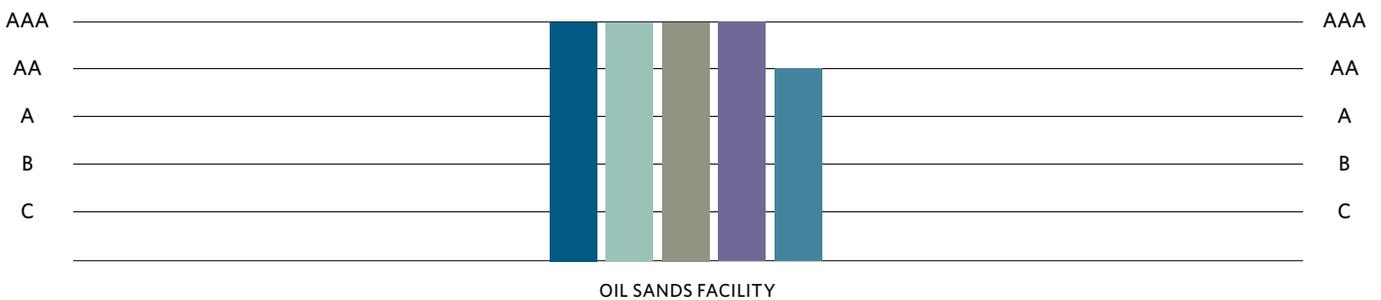
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

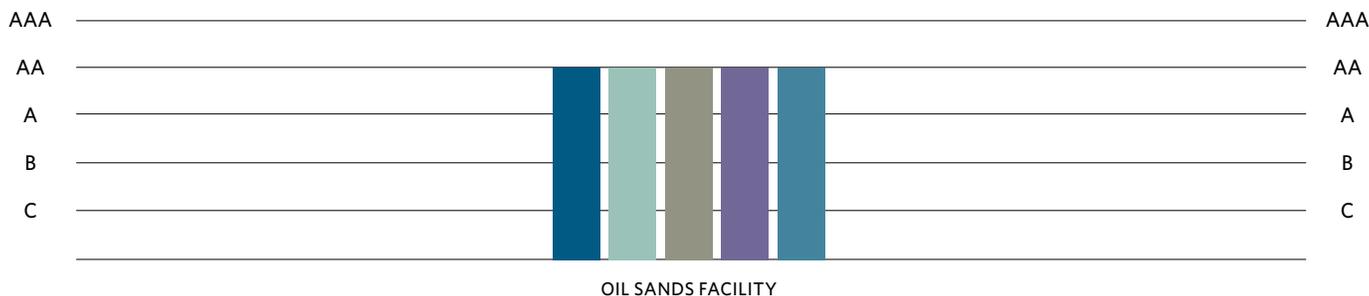
- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE



Tailings Management Assessment

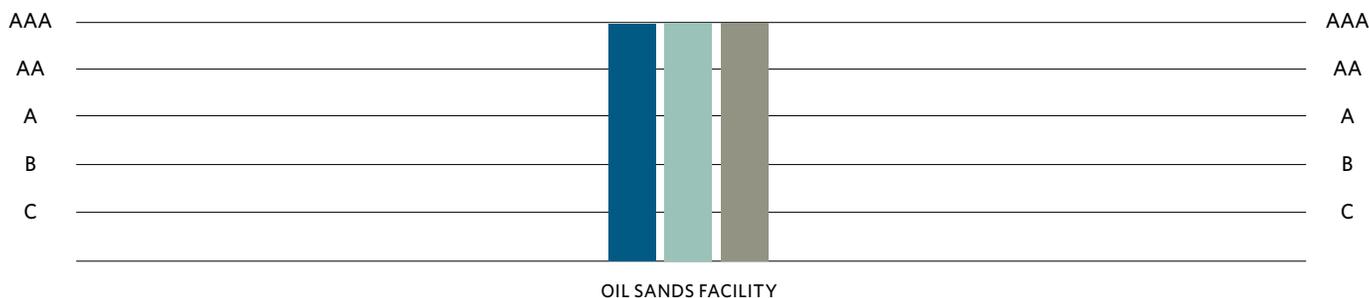
Externally
Verified Results

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- TAILINGS MANAGEMENT SYSTEM
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT



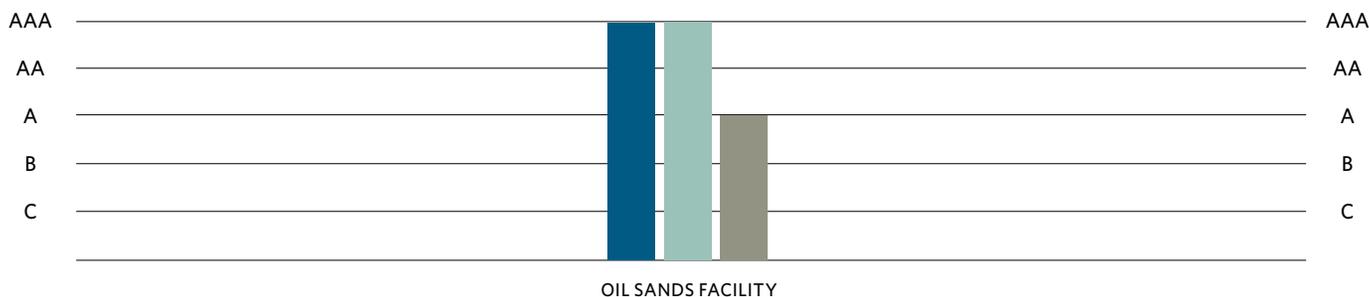
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



TSM Performance by Company

Syncrude Canada Ltd.



Syncrude is one of the largest operators in Canada's oil sands industry, with over 50 years of responsible operations and ongoing innovation. Based in Fort McMurray, Alberta, and supported by a large research and development facility in Edmonton, Syncrude is known for pioneering many of the technologies used in the industry today.

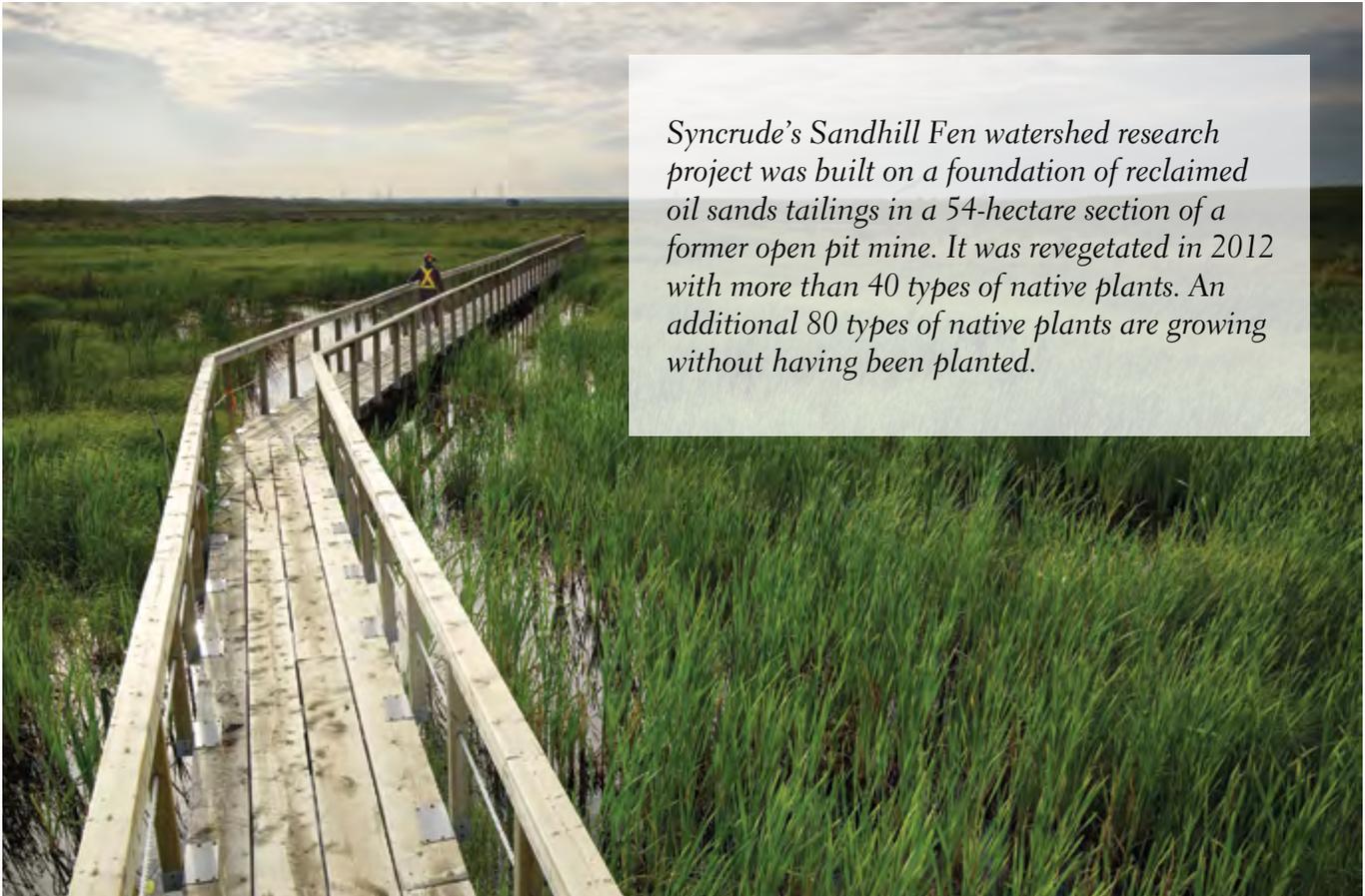
Over the last few years, Syncrude has achieved major milestones in its sustainability and environmental performance. The startup of a \$1.6 billion sulphur scrubbing project in 2014 has helped reduce sulphur dioxide emissions by 60% from 2005 levels. Another \$3 billion has been invested in tailings reclamation projects, including the startup of a major centrifugation plant in 2015, which actually spins the water out of tailings. The resulting clay material is then incorporated into land remediation activities. To date, the company has permanently reclaimed over 3,500 hectares of former open-pit mining areas and co-manages a herd of wood bison with the neighbouring Fort McKay First Nation.

Syncrude is a recognized leader in Aboriginal relations. The company is one of the largest industrial employers of Aboriginal people in Canada and has spent a cumulative \$2.5 billion with local Aboriginal companies.

Syncrude produces a high-quality light, low sulphur crude oil, which is used by refineries across North America to produce products needed by society, including automobile and jet fuel. Cumulative production now exceeds 2.4 billion barrels. Through its operations, Syncrude annually contributes more than \$6 billion to Canada's economy through the payment of wages, royalties and taxes, and through procurement of goods and services.

Syncrude's commitment to excellence in safety, health and environmental performance and its leadership in community relations have been strengthened by its participation in the TSM program. The company internally verified its performance for 2015 and the following is a summary of the results:

- Level A ratings were achieved in all areas of tailings management. Syncrude's focus includes regular updates to its operation, maintenance and surveillance (OMS) manuals for all tailings facilities. The company also monitors the integrity of all dams on its site, holds external geotechnical reviews, and ensures emergency plans are in place to respond to incidents involving these facilities.

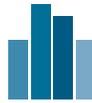


Syncrude's Sandhill Fen watershed research project was built on a foundation of reclaimed oil sands tailings in a 54-hectare section of a former open pit mine. It was revegetated in 2012 with more than 40 types of native plants. An additional 80 types of native plants are growing without having been planted.

- Syncrude's energy and GHG emissions management and reporting systems are fully implemented and effectively integrated into its operations, resulting in Level AAA ratings for these indicators. However, targets for 2015 were not met. This was the result of reliability issues and lower than anticipated production, which affected overall performance.
- Level AAA ratings were achieved again for Aboriginal and community outreach. An executive and management level group oversees the strategic plan of Syncrude's Aboriginal engagement, and community of interest (COI) input is sought to drive future performance. In 2015, Syncrude was reaccredited at Gold Level status in the Progressive Aboriginal Relations program of the Canadian Council for Aboriginal Business for the sixth consecutive time. In addition, through a community-oriented philosophy, the company works extensively with regional stakeholders to manage social and environmental effects of oil sands development. This includes numerous multi-party organizations and industry associations that deal with local socio-economic impacts and policy issues.
- Syncrude scored "yes" in all areas of crisis management planning. The company regularly conducts emergency response simulations, including desktop and site-wide simulations, to ensure all personnel are properly trained and tested. Pre-plans exist for all medium- and high-level risks, and approved company spokespeople are identified and trained.
- Level AAA ratings were achieved for biodiversity conservation management. Significant effort continues on returning former mining areas back to nature, including the recent completion of the world's first fen wetland restoration project constructed on a foundation of reclaimed tailings. This project was the recipient of a 2015 Alberta Emerald Award, which recognizes outstanding environmental achievements in the province. The project was also recognized with the TSM Environmental Excellence Award in 2014.
- Syncrude is committed to protecting and promoting the safety and well-being of employees, contractors, communities and the environment. This is evident in the reported results of Level AAA ratings across four of the five safety and health indicators, with Syncrude's safety performance in 2015 among its best ever.

🔗 For more information, please visit: www.syncrude.ca





2015 TSM Results

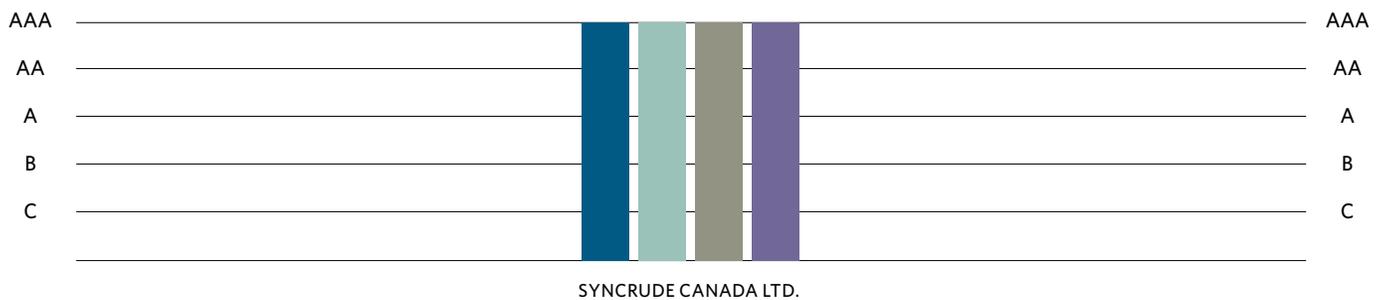
Syncrude Canada Ltd.

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
SYNCRUDE CANADA LTD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

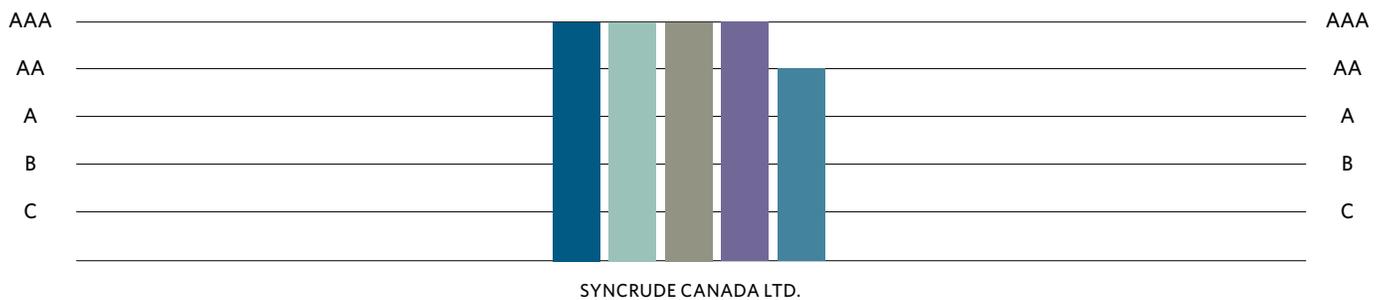
Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



Safety and Health Assessment

- POLICY, COMMITMENT AND ACCOUNTABILITY
- TRAINING, BEHAVIOUR AND CULTURE
- PLANNING, IMPLEMENTATION AND OPERATION
- MONITORING AND REPORTING
- PERFORMANCE

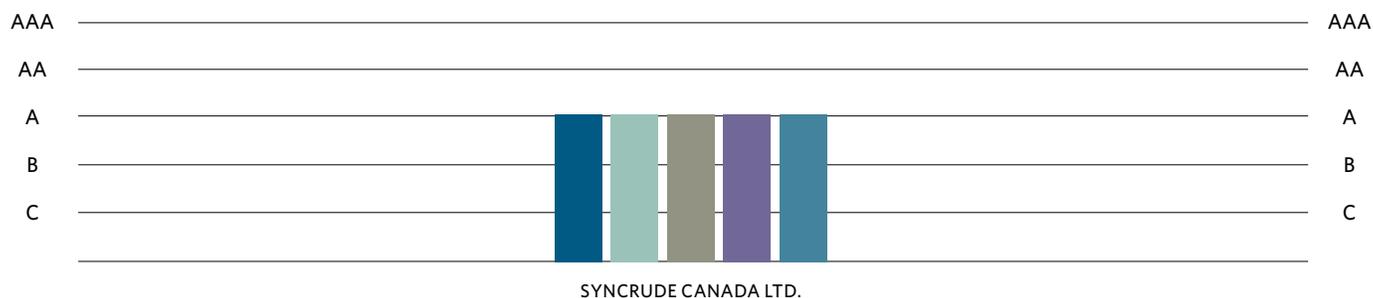


Self-assessed results; last external verification: 2014; next external verification: 2017.



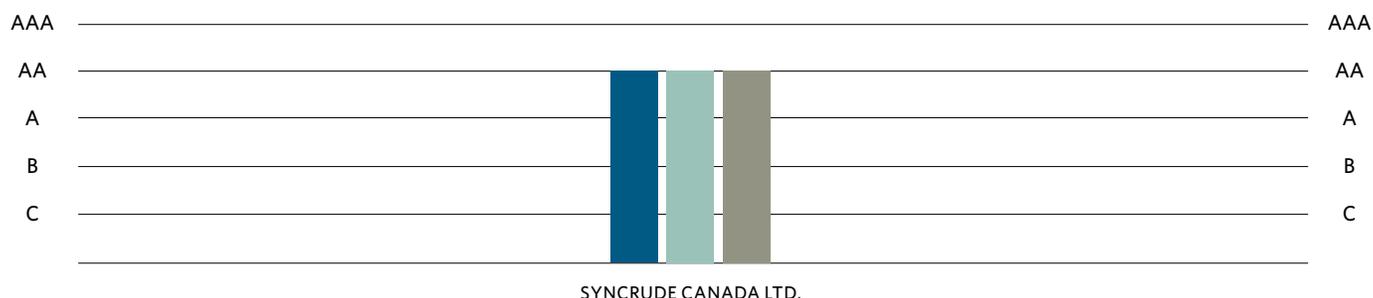
Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



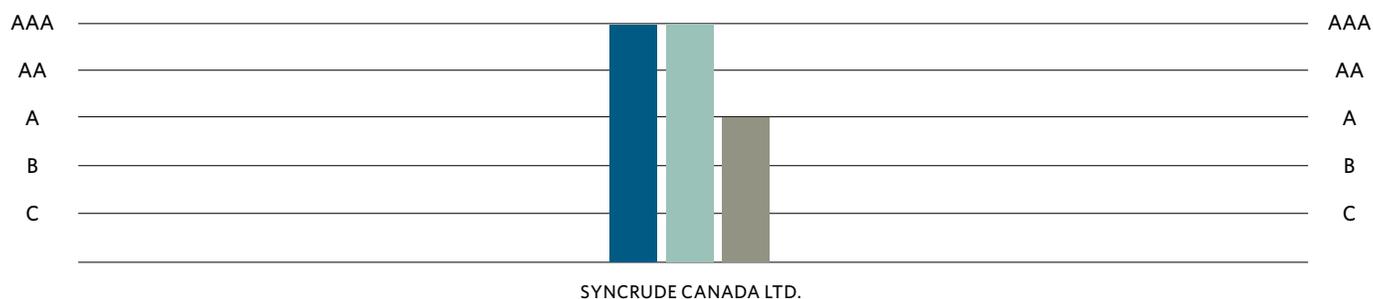
Biodiversity Conservation Management Assessment

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Taseko Mines Limited



Taseko is a mining company focused on the operation and development of mines in North America. Headquartered in Vancouver, British Columbia, Taseko is the owner (75%) and operator of the Gibraltar Mine, the second largest open-pit copper-molybdenum mine in Canada. Taseko's Aley Niobium Project in northern BC, Florence Copper Project in Arizona, and New Prosperity Gold-Copper Project in central BC are all advanced-stage projects that provide the company with a diverse commodity pipeline.

The company is committed to continual improvement in the protection of human health and stewardship of the natural environment. To fulfill this commitment, Taseko adheres to corporate policies that guide the conduct of all employees in the areas of environment, safety and health, and Aboriginal relations. The Gibraltar Mine has an environmental policy and an associated environmental management system (EMS) in place to uphold a high standard in meeting TSM requirements.

Taseko had its first external verification of its TSM performance for the period ending December 31, 2014. All indicators conformed with the company's self-assessment results, with the exception of two indicators in which verified rankings were a Level B rather than an a Level A. One of these indicators was in Biodiversity Conservation Management and the other in Energy Use and GHG Emissions Management. During 2015, however, activities were effective in achieving a Level A for both indicators. In 2015, Taseko also participated in the post-verification review process conducted by MAC's Community of Interest (COI) Advisory Panel.

The following details Taseko's 2015 TSM ratings and continual improvement programs.

BIODIVERSITY CONSERVATION MANAGEMENT

Biodiversity Conservation Management is a key component of activity at the Gibraltar Mine through its annual mine reclamation programs, site monitoring and COI engagement. Engagement often centres on the use of country foods, which directs both biological diversity monitoring and investigation into native species for possible use in planting programs. Gibraltar's biological diversity conservation plan is integrated with existing programs implemented at the mine.

“ The mine also promotes an employee awareness campaign on idling to reduce the use of diesel in trucks. ”

It also captures new initiatives that support biological diversity conservation with First Nations and local environmental groups. Taseko was successful in establishing formal linkages between the plan and targets for significant biodiversity aspects in its EMS, which improved the planning and implementation indicator in 2015, resulting in a Level A ranking across all indicators in the protocol.

ENERGY USE AND GHG EMISSIONS MANAGEMENT

Energy Use and GHG Emissions Management performance continued to be excellent in 2015 and exceeded the performance target set for energy savings by an additional 5 megawatt hours per year. All Energy Use and GHG Emissions Management indicators were assessed at a Level A, reflecting that Gibraltar has a formal management system in place, an energy management team with assigned roles and responsibilities, and a rigorous data management system that tracks energy use and emissions. In 2015, the mine successfully integrated this data into operator actions for energy intensive processes.

As well, Gibraltar instills energy awareness in all employees through computer-based training and provides additional training for key operators in energy intensive areas. The mine also promotes an employee awareness campaign on idling to reduce the use of diesel in trucks. Energy and GHG emissions data and details on energy targets and programs are publicly available on the Taseko website.

SAFETY AND HEALTH

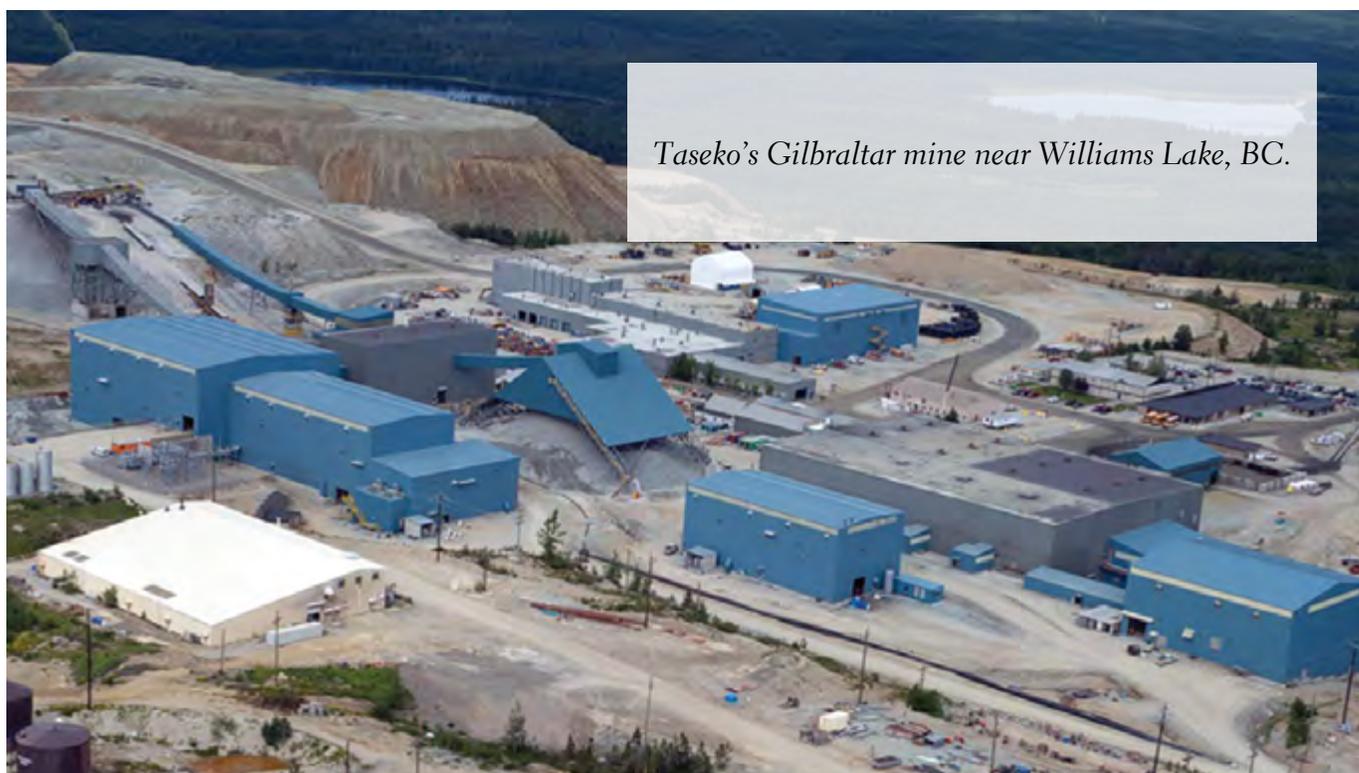
Safety and health have always been a high-level commitment for Taseko and the Gibraltar Mine, with the credo that: *Nothing is more important to the Company than the safety, health and well-being of our workers and their families.* In recognition of this commitment, Taseko has received the provincial John Ash Award for safety performance in both 2014 and 2015 from the BC Ministry of Energy and Mines. The award recognizes a BC mining operation that has achieved the lowest lost time accident frequency for at least one million worker hours.

In 2015, Taseko reported the following results for this protocol: maintained a Level AA for the indicators policy, commitment and accountability, and performance; rose to a Level AAA in training, behaviour and culture; and remained at a Level A for both planning, implementation and operation and monitoring and reporting. Taseko's health and safety policy and lost time statistics for the previous three years are publicly available on the Taseko website.

CRISIS MANAGEMENT PLANNING

Crisis Management Planning met all requirements of the TSM protocol at both the corporate office and the Gibraltar Mine.





Taseko's Gibraltar mine near Williams Lake, BC.

TAILINGS MANAGEMENT

Responsible tailings management is a key priority for the Gibraltar Mine, and in 2015 it retained a Level AA for all five indicators. The internal audit against the tailings guides conducted in 2014 remained valid for 2015, as the facility's ratings for tailings management policy and commitment, tailings management system, assigned accountability and responsibility for tailings management, COI engagement processes, and the operation, maintenance and surveillance (OMS) manual stayed the same or improved. All indicators were discussed and confirmed at the annual 2015 corporate tailings management review.

Taseko is committed to meeting the requirements of MAC's tailings guides, and since the Mount Polley breach in 2014, the company has been fully engaged with the MAC Tailings Working Group to assist in incorporating the Independent Tailings Task Force recommendations into TSM.

ABORIGINAL AND COMMUNITY OUTREACH

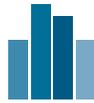
Aboriginal and community outreach was exceptional in 2015. Taseko retained Level AAA ratings for COI identification, effective COI engagement and dialogue, and COI response mechanism. The StakeTracker™ system continued to facilitate COI identification and record-keeping, and was particularly useful in tracking stakeholder communications related to an important permit amendment, which was approved by the BC Ministry of Environment in October.

A new COI feedback mechanism on public reporting was introduced during the year for use at meetings and in the company's public newsletter. As well, public reports on Taseko's responses to COI's suggestions for change to environmental monitoring, their participation in field sampling programs, and their suggestions for wetland research will be enhanced in 2016. Taseko will be seeking feedback on these enhancements to achieve an AA level in reporting.

The company remains committed to continuous improvement with First Nation educational initiatives and contract procurement in the Cariboo-Chilcotin region.

Taseko's promise is to help realize collective potential and, consistent with that promise, promote public engagement. If you have comments or concerns please email us at communityfeedback@tasekomines.com.

📄 For more information, please visit: www.tasekomines.com/our-commitment/environment



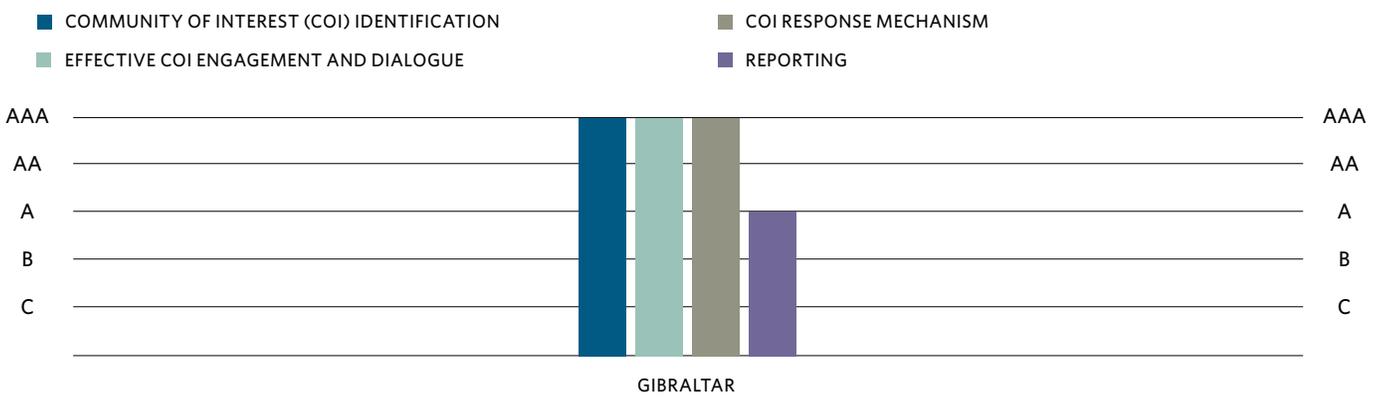
2015 TSM Results

Taseko Mines Limited

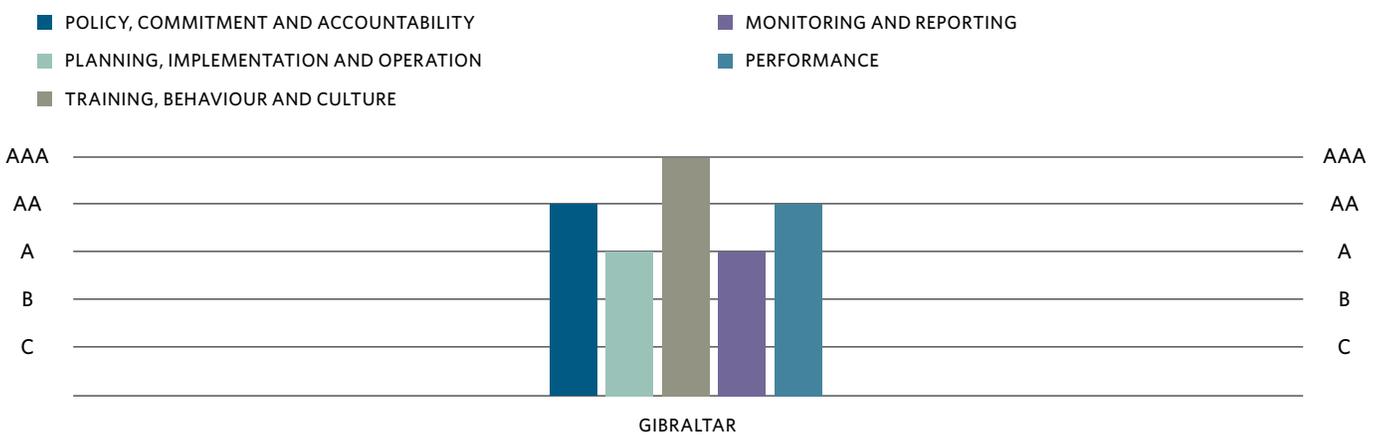
Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
GIBRALTAR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TASKEKO MINES LIMITED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment



Safety and Health Assessment

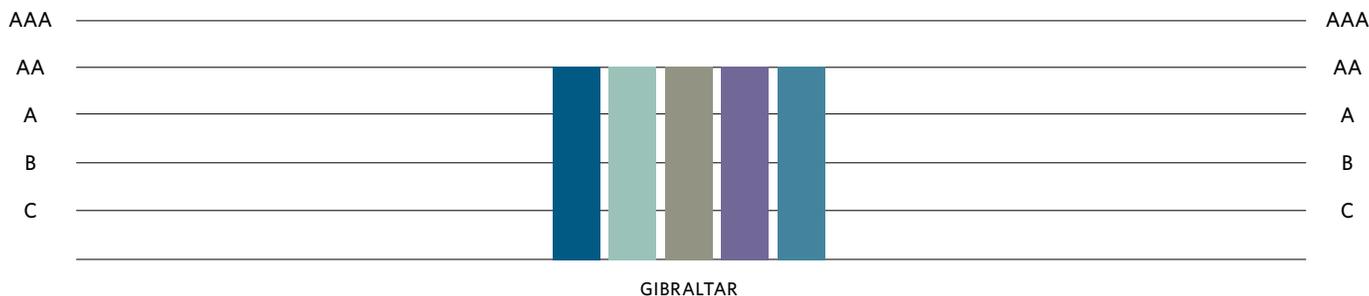


Self-assessed results; last external verification: 2014; next external verification: 2017.



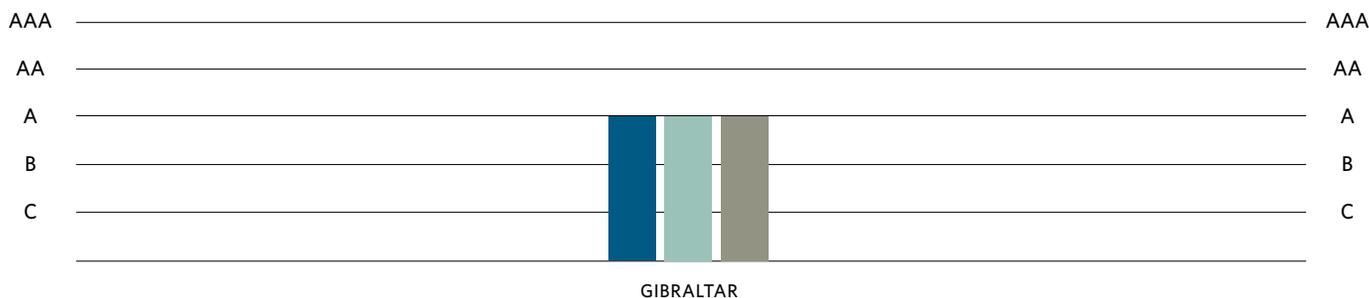
Tailings Management Assessment

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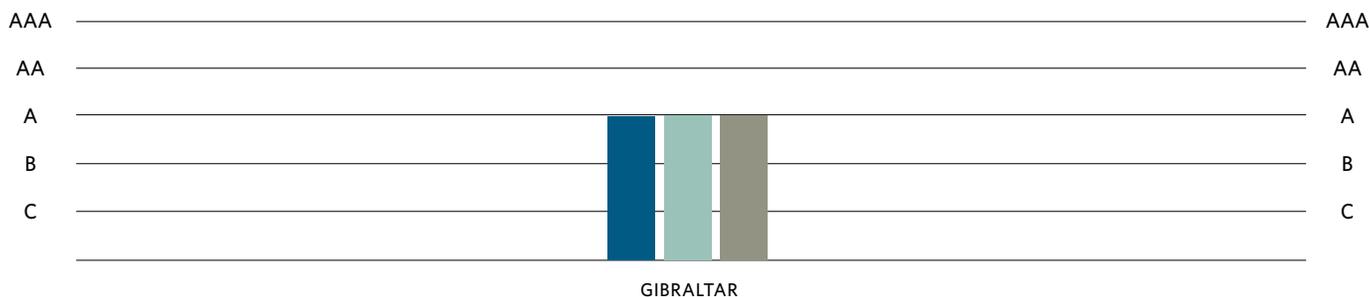
Biodiversity Conservation Management Assessment

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- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



Self-assessed results; last external verification: 2014; next external verification: 2017.



TSM Performance by Company

Teck Resources Limited



Teck is a diversified resource company committed to responsible mining and mineral development, with business units focused on copper, steelmaking coal, zinc and energy. Headquartered in Vancouver, Teck owns or has an interest in 12 mines in North and South America, as well as one large metallurgical complex and a wind power facility in Canada. Teck has expertise across a wide range of activities related to exploration, development, mining and minerals processing, smelting and refining, safety, environmental protection, materials stewardship, recycling and research.

TSM RESULTS

All of Teck's operations apply TSM, and all Canadian operations publicly report their TSM results. These include Highland Valley Copper and Trail operations in British Columbia, and the company's six steelmaking coal operations in British Columbia and Alberta: Cardinal River, Coal Mountain, Elkview, Fording River, Greenhills and Line Creek.

In 2015, three of Teck's operations, Elkview, Fording River and Highland Valley Copper, underwent third-party verification. Teck is pleased to report that the verifications confirmed continued improvements, and that Elkview Operations near Sparwood, British Columbia, and Highland Valley Copper near Logan Lake, British Columbia, qualified for a TSM Leadership Award. Elkview also attained a Level AAA for all indicators across all protocols, a very significant accomplishment, and a first for any MAC member facility.

Teck's overall results for 2015 were strong, and the company achieved high levels of performance across all six TSM protocols. All eight of Teck's Canadian operations achieved a Level AAA for all indicators in the Biodiversity Conservation, Energy Use and GHG Emissions Management and Aboriginal and Community Outreach protocols.

Through its Sustainability Strategy, Teck has identified six areas that represent the biggest challenges and opportunities for its work in sustainability: community, people, water, biodiversity, energy and climate change, and air. Within each area, Teck has set short-term and long-term goals and targets to continually enhance sustainability performance and assess progress, which the company reports in its annual sustainability report.

🔗 For more information, please visit: www.teck.com



Externally
Verified Results

2015 TSM Results

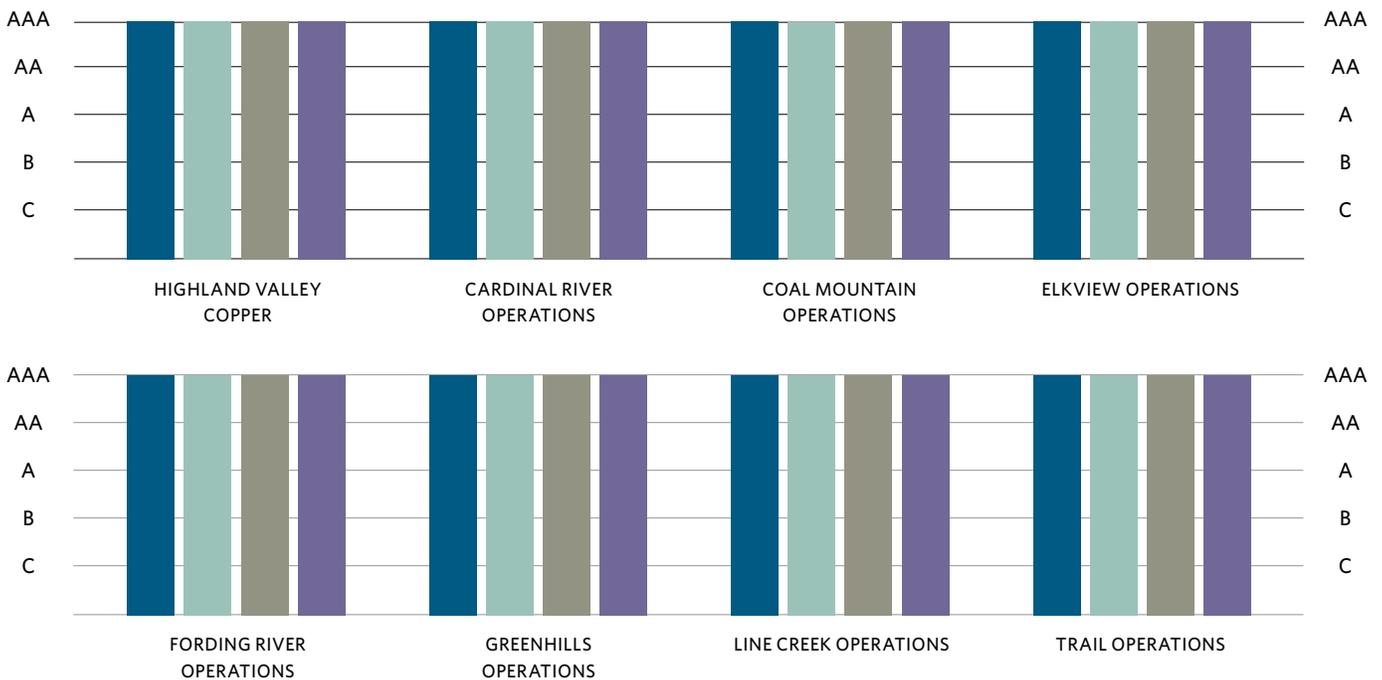
Teck Resources Limited

Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
HIGHLAND VALLEY COPPER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CARDINAL RIVER OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
COAL MOUNTAIN OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ELKVIEW OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FORDING RIVER OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
GREENHILLS OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LINE CREEK OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TRAIL OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TECK RESOURCES LIMITED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment

- COMMUNITY OF INTEREST (COI) IDENTIFICATION
- COI RESPONSE MECHANISM
- EFFECTIVE COI ENGAGEMENT AND DIALOGUE
- REPORTING



In 2015, Highland Valley Copper, Elkview Operations and Fording River Operations were externally verified.



Safety and Health Assessment

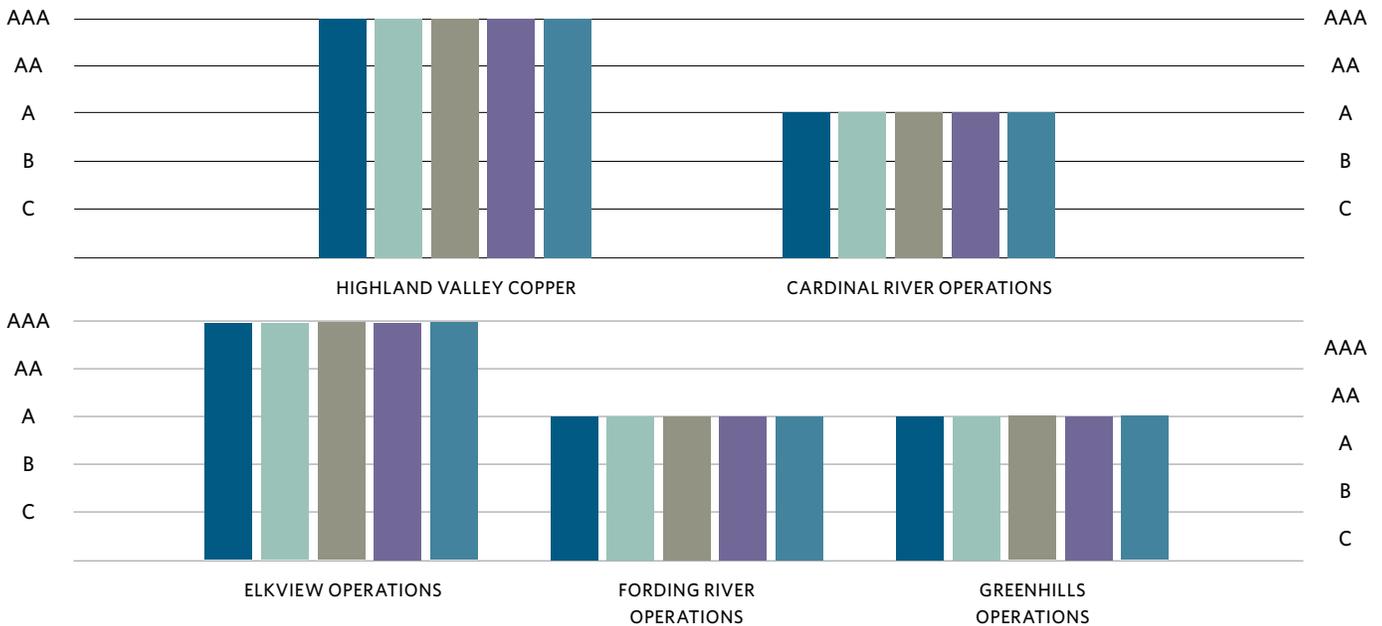
Externally
Verified Results

- POLICY, COMMITMENT AND ACCOUNTABILITY
- PLANNING, IMPLEMENTATION AND OPERATION
- TRAINING, BEHAVIOUR AND CULTURE
- MONITORING AND REPORTING
- PERFORMANCE



Tailings Management Assessment

- TAILINGS MANAGEMENT POLICY AND COMMITMENT
- TAILINGS MANAGEMENT SYSTEM
- ASSIGNED ACCOUNTABILITY AND RESPONSIBILITY FOR TAILINGS MANAGEMENT
- ANNUAL TAILINGS MANAGEMENT REVIEW
- OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL



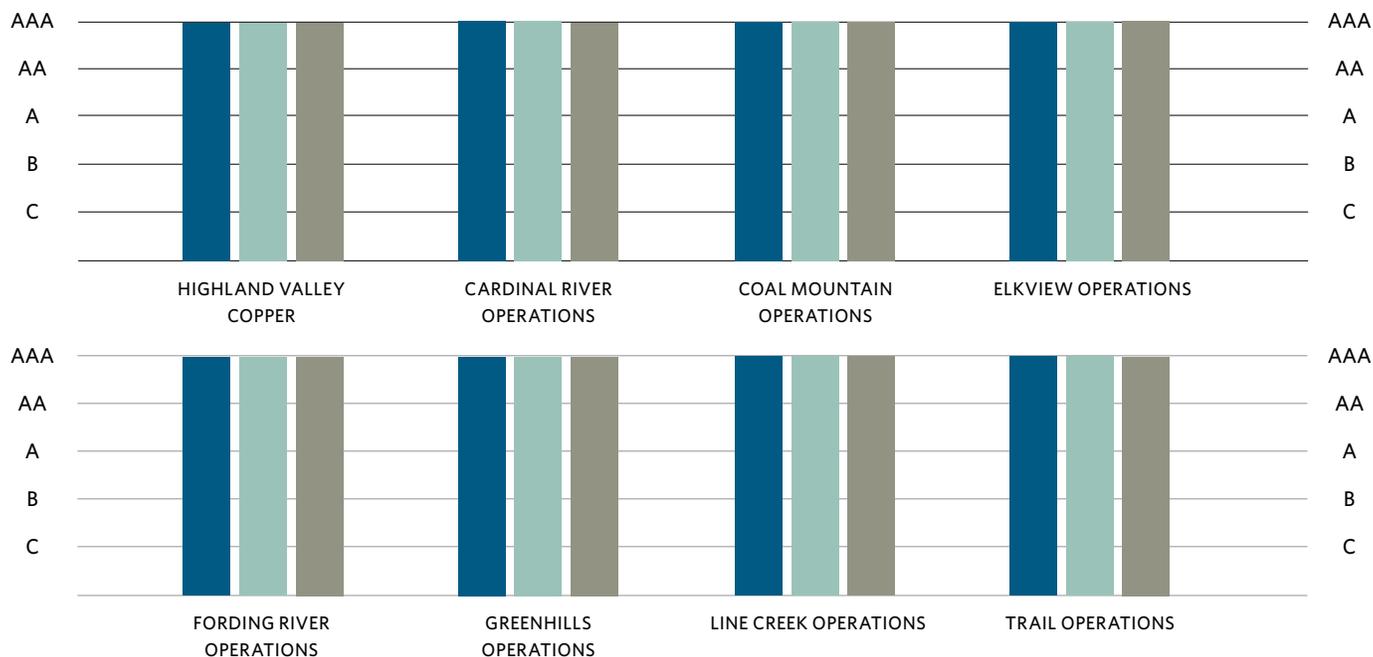
In 2015, Highland Valley Copper, Elkview Operations and Fording River Operations were externally verified.



Biodiversity Conservation Management Assessment

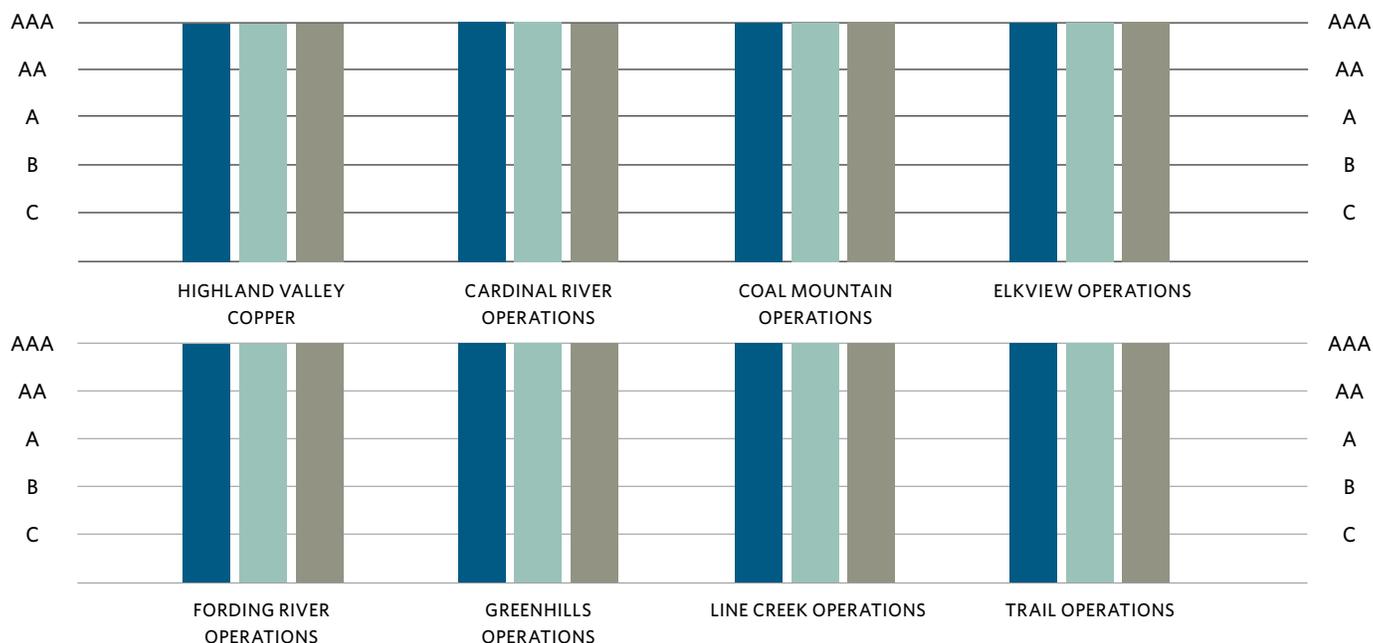
Externally
Verified Results

- CORPORATE BIODIVERSITY CONSERVATION POLICY, ACCOUNTABILITY AND COMMUNICATIONS
- FACILITY-LEVEL BIODIVERSITY CONSERVATION PLANNING AND IMPLEMENTATION
- BIODIVERSITY CONSERVATION REPORTING



Energy Use and GHG Emissions Management Assessment

- ENERGY USE AND GHG EMISSIONS MANAGEMENT SYSTEMS
- ENERGY USE AND GHG EMISSIONS REPORTING SYSTEMS
- ENERGY AND GHG EMISSIONS PERFORMANCE TARGETS



In 2015, Highland Valley Copper, Elkview Operations and Fording River Operations were externally verified.



TSM Performance by Company

Vale



Vale's Base Metals Business is headquartered in Toronto, Ontario. Much of Vale's nickel production is derived from its Canadian operations, as is the company's production of copper, cobalt, platinum group metals, gold and silver. In Sudbury, Ontario, and Thompson, Manitoba, Vale operates integrated mine, mill, smelter and refinery operations. In Port Colborne, Ontario, Vale operates a cobalt refinery and a precious metals upgrading facility. In Newfoundland and Labrador, Vale operates a mine and mill at Voisey's Bay and is ramping up a new, state-of-the-art processing facility in Long Harbour. Vale employs about 7,000 people in Canada.

Vale's vision is to become the number-one global natural resource company in creating long-term value through excellence and a passion for people and the planet. Vale believes in zero harm to its people, to its workplaces, to the communities in which it operates and to the natural environment. Vale demonstrates its commitment to zero harm by integrating sound risk management practices into all aspects of its business, by continually improving these practices, and by fully merging safety, health and environmental considerations into its economic and production goals. At all times, the company strives to leave a positive social, economic and environmental legacy in the areas where it operates. Vale is committed to meeting or exceeding MAC's TSM targets, and is always working to improve its sustainable performance. In 2015, Voisey's Bay was Vale's first site to be verified at a Level A or better across all indicators.

The following summarizes Vale's TSM performance in Canada in 2015:

ABORIGINAL AND COMMUNITY OUTREACH

Vale is proud that all of its Canadian facilities have developed Aboriginal and community outreach activities and management programs that meet the performance expectations of TSM. The company's management systems and activities are tailored to the site and requirements of neighbouring communities. Vale's Manitoba and Voisey's Bay operations achieved a Level AAA across all of the Aboriginal and community outreach indicators in 2015. A few examples of Vale's local outreach activities are highlighted below.

“ The company provides engagement and dialogue training to employees as required, including cultural training. ”

Across Canada, Vale is the leading corporate sponsor of the One Laptop per Child program, helping distribute more than 3,750 laptops to Aboriginal youth. The program promotes technology and math literacy in 40 northern communities across the country.

In Sudbury, Vale collaborated with local First Nations and Métis communities to identify the Aboriginal traditional lands and treaty rights potentially affected by its operations. The company provides engagement and dialogue training to employees as required, including cultural training. Vale seeks Traditional Knowledge, as appropriate, from local Aboriginal communities and organizations, and uses it to support decisions and inform practices such as environmental monitoring. Vale follows consultation protocols established by Aboriginal communities and organizations and integrates these into company consultation procedures as much as possible. To ensure continual improvement, the company invites Aboriginal communities to contribute to periodic reviews of engagement processes.

In May 2011, Vale funded the creation of the Thompson Economic Diversification Working Group (TEDWG). The group comprises stakeholders across northern Manitoba and has developed a series of plans to promote economic diversification in the City of Thompson and region. The plans include a proposed restorative justice facility, education and training (including an industrial skills and trades centre), housing, local and regional identity, economic development, regional infrastructure and a regulatory framework to modernize the city. The TEDWG project was awarded the 2015 TSM Community Engagement Excellence Award.

In Port Colborne, Vale partnered with a group called Port Cares (www.portcares.on.ca). The company allowed the group to use several of Vale’s vacant residential lots to create the With My Own Two Hands community garden. The program provides community members with the opportunity to learn how to become successful gardeners. Participants plant, maintain and grow a variety of fresh vegetables for community members to pick and take home. Port Cares has also expanded the program to help local residents plant and grow raised-bed gardens in their own backyards.

At Voisey’s Bay, Vale’s community of interest (COI) identification process involved extensive community consultations for the environmental assessment of the mine and concentrator project, and the negotiation of separate Innu and Inuit impact and benefit agreements (IBAs). As a result of this engagement, management practices and processes are in place to ensure that ongoing COI and stakeholder engagement occurs on a regular basis. Engagement and dialogue activities include IBA committees (Inuit and Innu), regular community visits by Vale’s employment coordinators, annual community barbecues hosted by Vale in each Aboriginal community, a toll-free information line and website to notify communities of Vale’s marine transportation activities, and a community concerns line.

In 2015, Vale continued the ramp-up of its new nickel processing plant and port facility in Newfoundland and Labrador. The facility is adjacent to the Town of Long Harbour-Mount Arlington Heights, which has a population of approximately 300 people. Engagement and dialogue activities at Long Harbour include a community liaison committee for quarterly communication between the company and local communities, and a fisheries and aquaculture liaison committee for regular communication with local fisheries and aquaculture stakeholders. The facility currently employs 371 people.



ENERGY USE AND GHG EMISSIONS MANAGEMENT

Overall, Vale's energy and GHG performance has improved since 2014. Globally, Vale is committed to reducing its projected 2020 GHG emissions by 5% (its carbon target). Vale continues to execute its Sustainability Action Plan at its Canadian sites to improve performance on several key environmental indicators, including the use of direct and indirect energy. Performance in achieving these targets is measured and contributes to a portion of the annual variable remuneration of facility staff. Building on Vale's 90% overall reduction of sulphur dioxide emissions over the past 40 years, the Atmospheric Emissions Reduction project, known as Clean AER, will reduce current emission levels by a further 85%. It will also reduce smelter greenhouse gases by 40% through a \$1 billion retrofit of the Copper Cliff smelter in Sudbury, Ontario. The project is on track for completion by 2017.

Vale's new emissions-free, state-of-the-art nickel processing facility in Long Harbour also continued to ramp-up in 2015.

TAILINGS MANAGEMENT

Vale maintained its performance across all indicators of the TSM Tailings Management Protocol in Ontario and Newfoundland and Labrador, averaging a Level A or higher. In Thompson, Vale achieved a Level AA for its performance for three of the five indicators, including improving from a Level B to a Level AA for the annual tailings management review indicator. The company has reviewed all tailings management policies with its COI, and senior management has endorsed and implemented the policies within budget allocations.

In Sudbury, tailings management performance improved, achieving a Level AAA as a result of work completed by the third-party expert Tailings Review Board that oversees the Central Tailings Area (CTA) operation.

CRISIS MANAGEMENT PLANNING

Crisis management planning and preparedness is a critical component of Vale's risk management activities. Crisis management teams are well trained, and are willing to respond to internal emergencies and help the community when possible. Testing of the crisis management systems were conducted at all sites. In Sudbury, testing included an integrated exercise with the corporate team.

SAFETY AND HEALTH

At Vale, life matters most. The company maintains a Level AAA performance for safety training, behaviour and culture at all its mining operations. When possible, Vale shares its safety knowledge and experience with its communities by supporting such activities as Safe Workers of Tomorrow and Threads of Life. In Thompson, Vale has reviewed the city's annual Safe Operations Audit results and offered guidance for the next steps in the city's journey to zero harm. This dialogue and sharing of best practices has allowed the City of Thompson to reduce workplace injuries.

At Voisey's Bay, Vale implemented the SafeProduction system across the operation, which provides tools for risk recognition, management and mitigation, with expectations for management coaching and interaction. In 2015, Vale's Sudbury operations introduced a new safety program called HomeSafe, with a primary goal to effectively manage risk so that everyone goes home to their loved ones every day without injury. The company also launched a three-year study called Mining Mental Health to gain vital information to develop key strategies that promote positive mental health for workers.

BIODIVERSITY

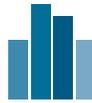
Biodiversity protection demonstrates how much Vale prizes the planet. In 2015, the company continued to actively support biodiversity work by partnering with the Manitoba department of conservation's woodland caribou collaring program, supporting the Vale Living with Lakes Centre, and conducting extensive biodiversity studies in Voisey's Bay.

In Sudbury, more than 300,000 pine seedlings are grown annually in greenhouses at Vale's underground and surface-level operations. In the same greenhouses, Vale raised over 6,000 fish in 2015 and released them into area lakes and streams. Beehives have been placed at the base of Vale's revegetated slag hills to pollinate the flowering plants that provide a source of nectar and pollen for the bees and aid efforts to restore declining bee populations in the local area.

In 2015, Vale was a finalist for the TSM Environmental Excellence Award for the company's black bear management strategy at the Voisey's Bay mine.

For more information, please visit: www.vale.com





Externally
Verified Results

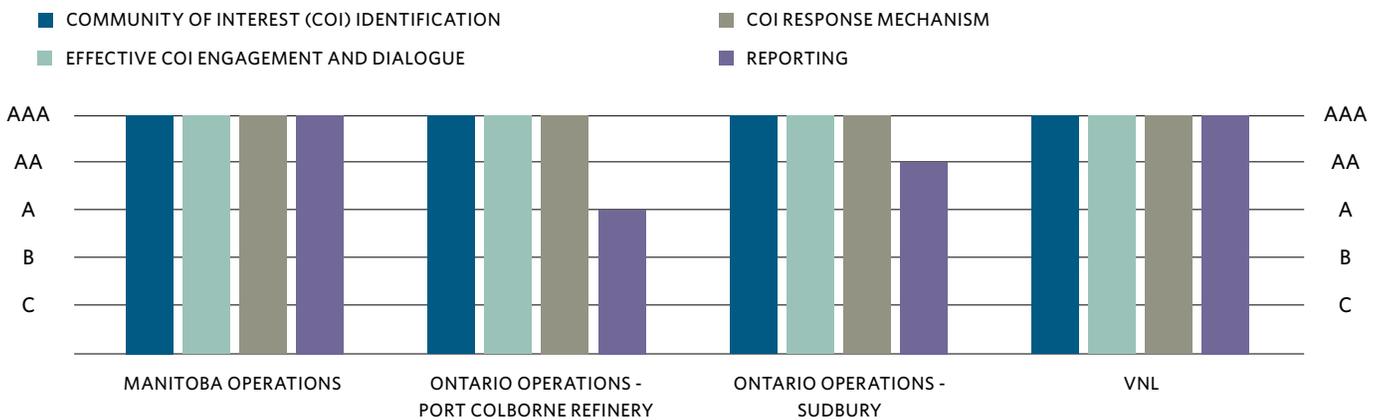
2015 TSM Results

Vale

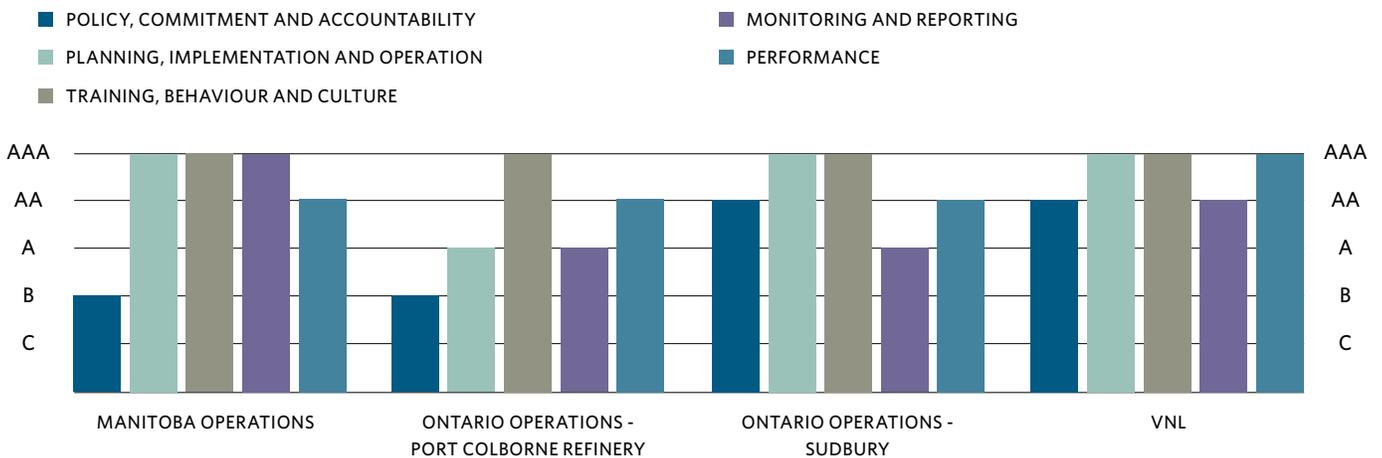
Crisis Management Planning Assessment

FACILITY	PREPAREDNESS	REVIEW	TRAINING
CORPORATE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MANITOBA OPERATIONS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ONTARIO OPERATIONS - PORT COLBORNE REFINERY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ONTARIO OPERATIONS - SUDBURY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
VNL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Aboriginal and Community Outreach Assessment



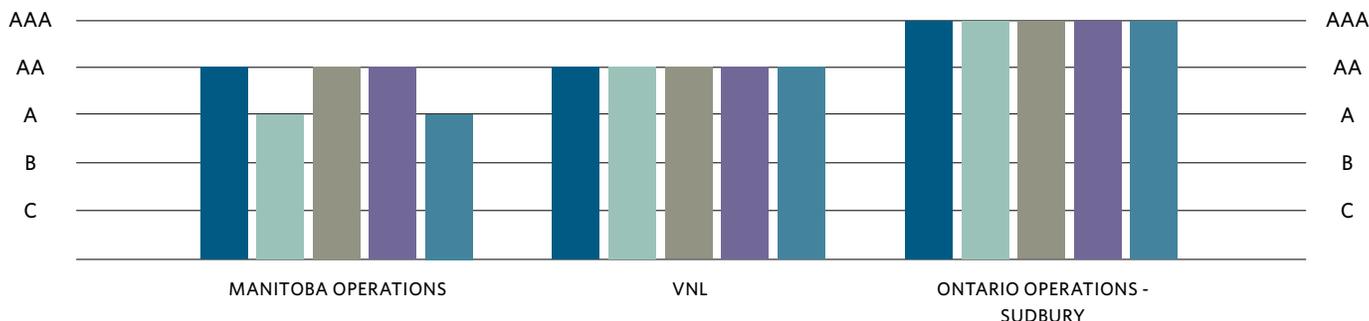
Safety and Health Assessment



Tailings Management Assessment

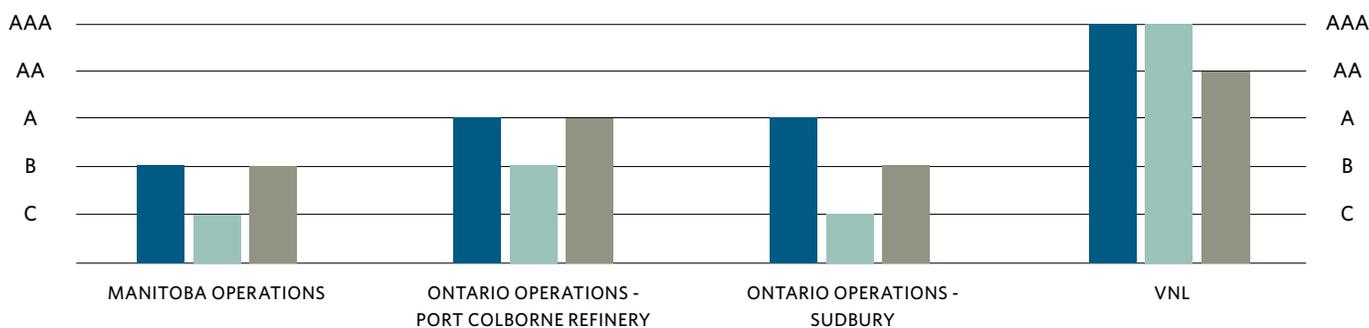
Externally Verified Results

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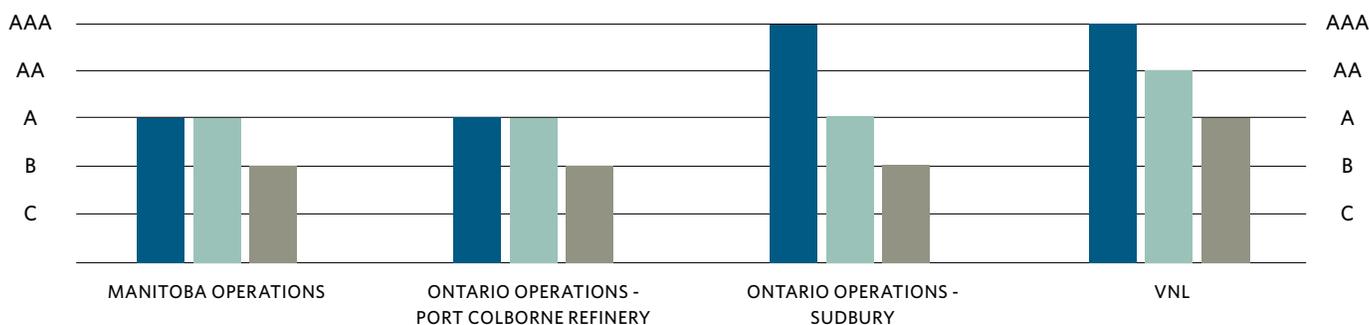
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