



The Mining Association
of Canada | L'association minière
du Canada

IGF AGM

Panel Session on Tailings Management

October 27, 2016



TAILINGS MANAGEMENT WAS A KEY DRIVER FOR TSM

- Responding to world wide tailings failures



Obed Coal
2013
Alberta, Canada



Kolontar, 2010
Hungary



Samarco
2015
Brazil



Talvivaara
2012
Finland



Mount Polley
2014
Canada

TSM Tailings Management Indicators

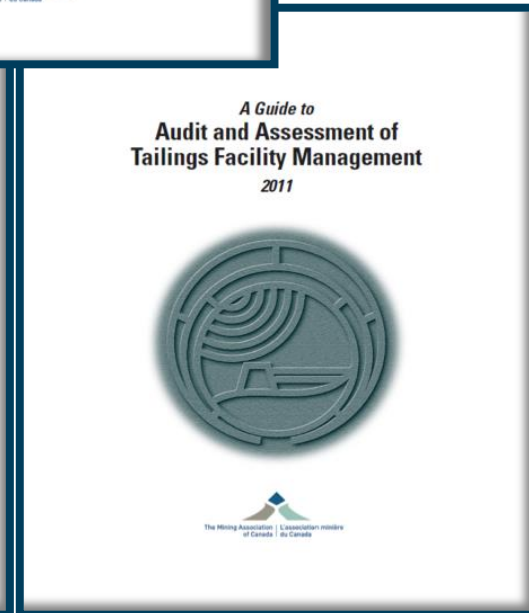
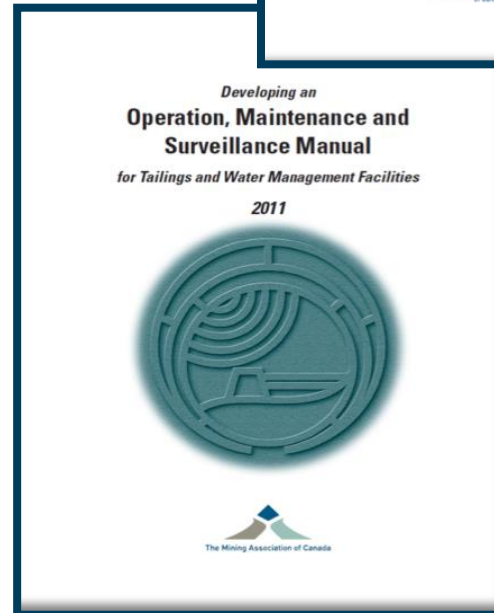
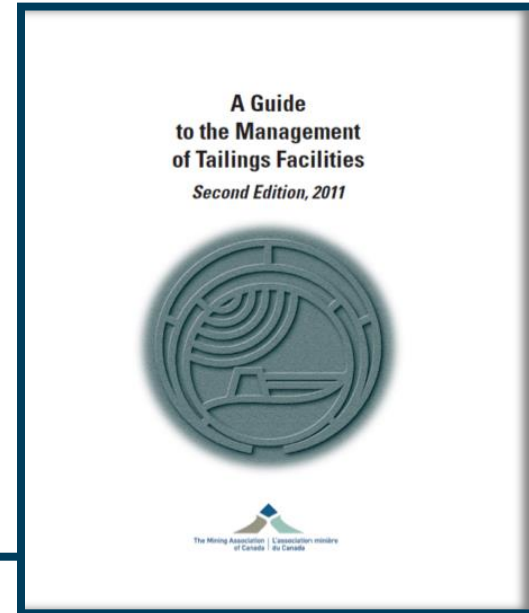
**Tailings management policy and
commitment**

Tailings management system

**Assigned accountability and
responsibility for tailings
management**

**Annual tailings management
review**

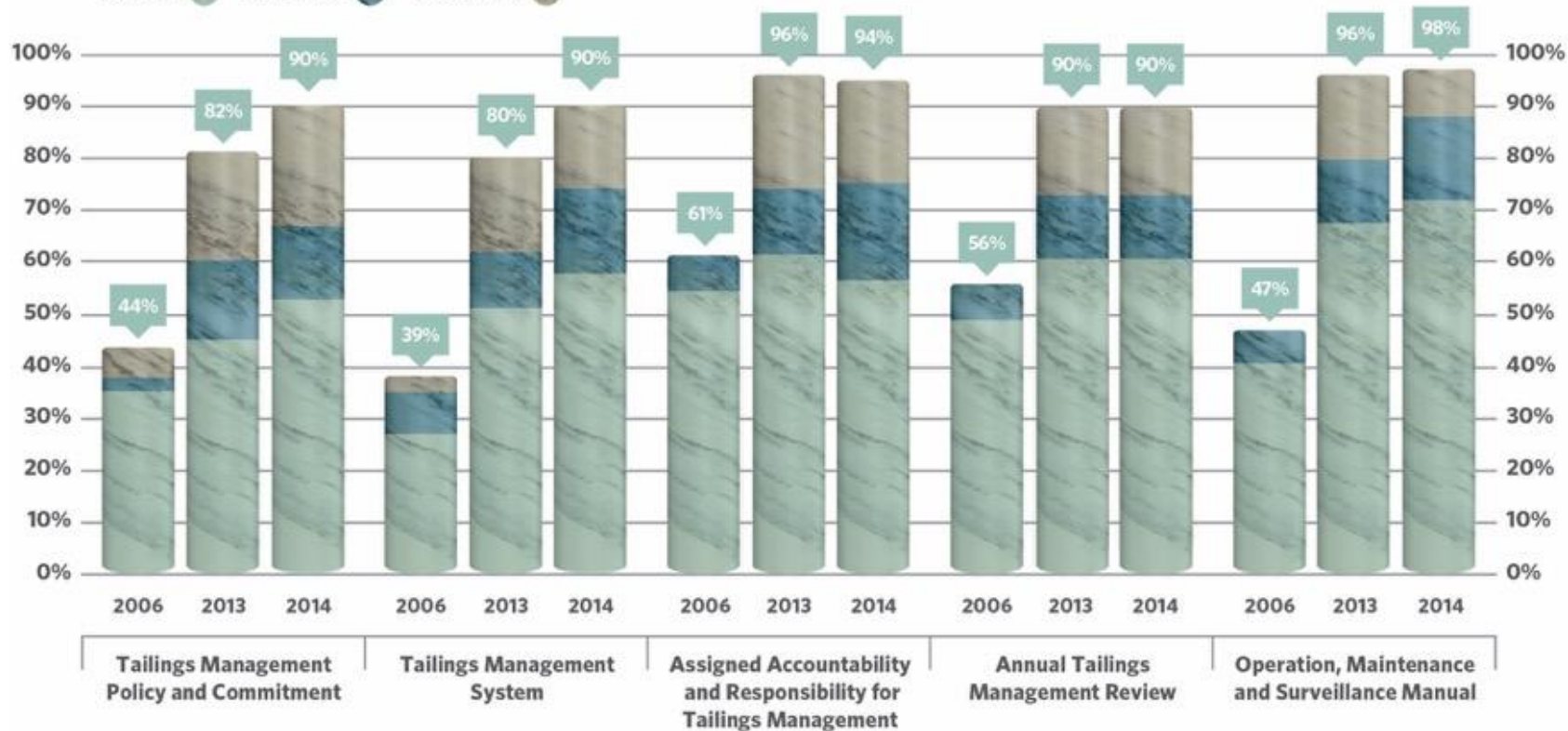
**Operation, maintenance and
surveillance (OMS) manual**



TAILINGS MANAGEMENT: PERCENTAGE FACILITIES AT LEVEL A OR HIGHER IN 2006, 2012 AND 2013

TAILINGS MANAGEMENT PERCENTAGE OF FACILITIES AT LEVEL A OR HIGHER 2006, 2013 AND 2014

Level A ● Level AA ● Level AAA ●





Mount Polley



Samarco

Independent Expert Engineering Investigation and Review Panel on Mount Polley:

Compliance with the TSM initiative is an element of BAP [Best Applicable Practice] for the mining industry today.

Recommendation #2

To improve corporate governance:

Corporations proposing to operate a tailings storage facility (TSF) should be required to be a member of the Mining Association of Canada (MAC) or be obliged to commit to an equivalent program for tailings management, including the audit function.

MAC's response to Mount Polley:

- Commissioned an independent review of all TSM tailings components.
- Independent Task Force completed their work in October with 29 recommendations.
- MAC responded to the Task Force by committing to implement all the recommendations.

TSM Tailings Management Review Task Force

Mandate: To review MAC's *Towards Sustainable Mining* tailings management requirements, including MAC's Tailings Management Guides and TSM Tailings Management Protocol, and to provide advice on potential improvements to them.

www.mining.ca/resources/reports

KEY TASK FORCE RECOMMENDATIONS FOR THE TSM TAILINGS MANAGEMENT PROTOCOL

- ◆ **Recommendation 2.1** - Consider new criteria for Levels A, AA and AAA for each of the Indicators in the Tailings Management Protocol related to the types of audits and assessments required at each level. Specifically:
 - ◆ A: Internal Audit
 - ◆ AA: External Audit
 - ◆ AAA: External Assessment
- ◆ **Recommendation 3.2** - Develop guidance on how to implement independent review mechanisms.
- ◆ **Recommendation 6.1** - Remove Levels C and B and require members that have not achieved Level A in all tailings management Indicators to develop action plans to achieve Level A and identify a reasonable timeframe to complete the action plans.
- ◆ **Recommendation 9.1** - Bring all aspects of community engagement from the Guides and Indicators into a new single indicator to address Aboriginal and community of interest (COI) engagement. The Indicator should be adaptable to reflect the priorities and concerns of individual communities.

The task force made 29 recommendations. 50% will have been completed by November with the remaining completed by March.

TSM ASSESSMENT PROTOCOL

A Tool for Assessing Tailings Management Performance

Introduction

Launched in 2004, Towards Sustainable Mining (TSM) is an initiative of The Mining Association of Canada designed to enhance the industry's reputation by improving its performance. MAC members subscribe to TSM guiding principles, a set of commitments that addresses all areas of our industry's performance.

These guiding principles are backed by specific performance indicators, which member companies began reporting against in 2004. These indicators are designed to identify the industry's current performance in key areas, and point to actions that could be taken to improve. Areas for which performance indicators have been developed include tailings management, energy use and greenhouse gas emissions management, Aboriginal and community outreach, crisis management planning, safety and health, and biodiversity conservation management.

This document provides a tool to assist companies in the assessment of the standard of tailings management currently being implemented by their sites, in conformance with the TSM tailings management performance indicators. It enables key performance indicators to be segregated, and performance improvements for each indicator tracked year to year. The use of this protocol also enhances the consistency of assessments conducted across companies. In addition, this tool has been designed to enable external verification of company performance, consistent with the TSM verification system and the initiative's commitment to transparency and accountability.

Assessing Tailings Management Implementation

Tailings management has been an area of significant focus by The Mining Association of Canada, first through a Board Task Force and subsequently through the Tailings Working Group. This focus has led to the preparation and publication of: *A Guide to the Management of Tailings Facilities*; *Developing an Operation, Maintenance and Surveillance Manual for Tailings and Water Management Facilities*; and *A Guide to Audit and Assessment of Tailings Facility Management*. This effort reflects recognition by The Mining Association of Canada of the risk posed by tailings facilities, and the importance of ensuring their environmentally responsible management.

What is a tailings facility?
MAC's *A Guide to the Management of Tailings Facilities* defines a tailings facility "includes the collective structures, components and equipment pertaining to tailings impoundment and management, including dams and reservoirs, other related facilities and appurtenances"

The purpose of the assessment protocol is to provide guidance to the member companies in completing their evaluation of tailings management against TSM indicators. The assessment protocol sets out the general expectations of MAC for tailings management by its member companies in support of the TSM initiative. Assessment should also:

- Assist member companies to develop capacity to monitor and improve performance; and
- Provide a basis for company assurance.

- ◆ The updates to the Tailings Storage Facility portion of the BC mining code include:
 - ◆ new design and operations criteria for TSFs
 - ◆ Closure designs at permitting stage
 - ◆ minimum static factor of safety,
 - ◆ requiring water balance and water management plans for TSFs; and,
 - ◆ requiring mines with TSFs to establish Independent Tailings Review Boards
- ◆ The BC government has also introduced a new web-based records system that provides easier access and greater transparency to permit information, inspection reports and other details about mines.
- ◆ The Association of Professional Engineers and Geoscientists of B.C. (APEGBC) has completed the new professional practice guidelines for site characterization for tailings dams in British Columbia.