Government accepts Auditor General’s recommendations

VICTORIA – The B.C. government is accepting all recommendations from the Office of the Auditor General (OAG) audit report “An Audit of Compliance & Enforcement of the Mining Sector” with the exception of one recommendation that government will seriously consider.

“I want to thank the Office of the Auditor General for this report. We are well on our way to implementing the audit report’s 17 recommendations, as well as the combined 26 recommendations from the Independent Expert Panel and the Chief Inspector of Mines,” said Bill Bennett, Minister of Energy and Mines. “I agree with the Expert Panel and the Auditor General’s Office that ‘business as usual’ on mine sites in British Columbia is just not good enough, and that’s why we are acting on all 43 recommendations.”

Government is currently reviewing the Health, Safety and Reclamation Code for Mines in B.C. and expects the tailings storage facility portion of the code review to be completed this spring, with revisions expected to be in place by mid-2016. Government will also work with the Association of Professional Engineers and Geoscientists BC (APEGBC), which has the legislative authority and responsibility to oversee engineers in B.C. to ensure that recommendations directed at them are implemented. This work should be done by spring 2017.

Recent changes to the Mines Act enable government to include administrative monetary penalties as a more flexible, responsive compliance and enforcement tool. The legislation also increases existing penalties available for court prosecutions under the act. The maximum penalties were raised from $100,000 and/or up to one year imprisonment to $1 million and/or up to three years imprisonment.

“Government believes there is no evidence its compliance and enforcement regimes place the environment at risk generally. But the Mount Polley disaster, despite being unprecedented in modern B.C. history and despite the hidden, sub-surface cause of the accident, is evidence that improvements in regulation are necessary to increase protection against the unforeseen,” said Bennett. “We are committed to improving the regulatory oversight and reducing the margin of risk so that such a disaster can never happen again.”

Despite embracing the vast majority of recommendations in the audit report, government believes a number of assertions in it are incorrect and therefore was compelled to set the record straight in the audit report’s “Response from Government”. Government’s position on these assertions in no way undermines its commitment to making the changes recommended by the Expert Panel, the Chief Inspector of Mines and the Office of the Auditor General.

Government does not, at this time, agree with the OAG’s main recommendation to reorganize the Ministry of Energy and Mines compliance and enforcement programs into a separate
ministry or agency. This recommendation suggests that the public servants in the Ministry of Energy and Mines are incapable of differentiating between promotion, and regulation of mining, a view government does not share.

However, government does agree that a new, separate compliance and enforcement board will strengthen government’s regulatory oversight of the mining sector and government will, within 90 days, set up a mining compliance and enforcement board. This board will create greater integration between Ministry of Energy and Mines and the Ministry of Environment, as well as with the Environmental Assessment Office.

Unfortunately, the report fails to understand government's management of the water issues in the Elk Valley. Mining has occurred for over 100 years in the Elk Valley and government began monitoring water quality in the area in the mid-1980s. However, it was not until recently that a more detailed understanding of the increasing selenium levels was realized.

The Ministry of Environment took significant steps to reduce selenium levels in the Elk Valley when, in 2013, it directed Teck Coal to take steps to stabilize and reverse water quality concentrations for selenium, cadmium, nitrate and sulphate. Government stands behind these concrete actions, including the valley-wide Area Based Management Plan.

“As it stands today, Teck Coal has built one water treatment facility, has committed to building a minimum of eight more such facilities, and has invested millions in testing selenium reduction technologies,” said Bennett. “By following the Area Based Management Plan, selenium levels will be reduced over time to acceptable levels and the company, not the taxpayer, will cover those costs.”

In addition, the audit does not align with what two investigations of the dam failure at Mount Polley – one by the Independent Expert Panel and one by the Chief Inspector of Mines – determined that the dam failed because the strength and location of a layer of clay underneath the dam was not taken into account in the design or in subsequent dam raises. Based on both reports, it was not a question of the number of ministry staff on the ground or the number of inspections performed. The audit also relies on a misinformed view that “original design” remains a constant benchmark for development of a TSF dam, while in reality, dam designs change regularly at all mines around the world.

“Starting in 1995, there were nine design stages over the life of the tailings storage facility at Mount Polley,” said Harvey McLeod, chair of the Code Review tailings storage facility sub-committee and a vice president with Klohn Crippen Berger Engineering. “This is the nature of mining. The tailings dam design at Mount Polley, just as it is at mines around the world, is not static and evolves throughout the life of operations. This is appropriate engineering practice. Operating mines evolve their tailings dam designs over time to reflect actual operating conditions, all with the assessment and approval of licensed engineers.”

The Independent Expert Panel released 35,000 pages of information as part of its investigation and the report is available here: https://www.mountpolleypreviewpanel.ca/. The chief inspector of mines investigation released 100,000 pages of information and the report is available here: http://goo.gl/kBgP13.

Learn More:
Government’s full response to each of the Auditor General’s recommendations can be found online at: http://ow.ly/4nimD

A complete list of the recommendations from the Independent Expert Panel and the Chief Inspector of Mines is available here: www.gov.bc.ca/minecodereview

Two backgrounders follow.

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Government actions to date to address Mount Polley recommendations

Two investigations into the Aug. 4, 2014, Mount Polley tailings storage facility (TSF) failure resulted in 26 recommendations to prevent similar incidents from occurring in the future. On Jan. 30, 2015, the Independent Expert Engineering Panel completed its investigation and made seven recommendations and on Dec. 17, 2015, the Chief Inspector of Mines presented his investigation findings and made 19 recommendations.

Making progress on all recommendations:

Work to implement the 26 recommendations is either substantially underway or complete, including improving corporate governance, improving professional engineering practices, and strengthening current regulatory operations. Significant progress has been made on the seven recommendations from the Independent Expert Engineering Panel – government has fully addressed one recommendation and six others are expected to be complete by the end of 2016. Government will also work with industry and professional organizations to ensure recommendations directed at them are implemented. It is anticipated this work will be completed by spring 2017.

Code Review:

Five of the panel recommendations, along with 12 recommendations from the Chief Inspector of Mines, will be addressed through the ongoing Code Review. The tailings storage facility portion of the Code Review is well underway and revisions could be legally in force by mid-2016. The Code Review Committee is chaired by the Chief Inspector of Mines and includes an equal number of representatives from First Nations, mine labour unions, and mine operations management.

All tailings storage facility (TSFs) reviewed:

Immediately following the failure at Mount Polley, the Chief Inspector of Mines ordered geotechnical reviews and third-party reviews of TSFs at all permitted mines in B.C. These did not identify any immediate safety concerns and are available online at: http://www2.gov.bc.ca/gov/topic.page?id=9F8D3F4D2F264F7FA278B528D2F08432

In addition, last January, in response to the independent panel’s recommendation to strengthen current regulatory operations, the Chief Inspector of Mines ordered mines to confirm whether foundation materials similar to those at Mount Polley exist below any of their dams. This work was completed in June and no immediate risks or safety concerns were identified.

Environmental Assessment Office brings in new requirements:
In March 2015 the B.C. Environmental Assessment Office established additional information requirements in order to evaluate tailings management options for proposed major mines in B.C. The new requirements apply to all mine projects with new tailings dams that are currently undergoing an environmental assessment. The required information ensures that companies proposing to build mines with new tailings dams have:

- In addition to the selected option, considered other options that can address the potential for adverse effects on environmental, health, social, heritage and economic values.
- For the option selected, considered the potential risks and implications of that option and have a technically and economically feasible plan to address them.
- Provided a clear and transparent rationale to support the selected option.

**Government boosts penalties for non-compliance:**

On March 15, 2016, government passed legislation that enables government to include administrative monetary penalties as a much more flexible and nimble compliance and enforcement tool under the Mines Act. The legislation also increased penalties available for court prosecutions under the act from $100,000 and/or up to one year imprisonment to $1 million and/or up to three years imprisonment.

**New guidelines for engineers and geoscientists:**

As well, the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) is developing new guidelines to improve professional engineering practices for dam site characterization assessments. It is expected that these new guidelines will be released by summer 2016.

**Mining industry making changes:**

In response to the independent panel’s recommendation to improve corporate governance, the Mining Association of Canada (MAC) last year initiated an independent, multi-stakeholder expert task force review of its tailings management requirements and guidance documents under its Towards Sustainable Mining program. Last December, MAC released the final report from this task force and is working to implement its recommendations.

**New boards examine TSFs:**

The Province also committed to implementing a new requirement that all operating mines with TSFs in British Columbia establish Independent Tailings Dam Review Boards. This is being addressed as part of the ongoing Code Review. These boards will support improved engineering practices by providing third-party advice on the design, construction, operation and closure of TSFs.

**Province to set up new compliance and enforcement board:**

Within the next 90 days government will establish a mining compliance and enforcement board to oversee an integrated and co-ordinated regulatory approach to mining in the Province of B.C. The board, comprising the Deputy Minister of Energy and Mines, the Deputy Minister of Environment and the Associate Deputy Minister of the Environmental Assessment Office, will:
• Provide guidance and oversight to the full scope of compliance and enforcement for mines in British Columbia (including but not limited to the Mines Act, Environmental Management Act, and Environmental Assessment Act).
• Oversee compliance and enforcement plans to map out proactive annual activities based on a risk-based approach.
• Oversee strategic improvements to further compliance and enforcement effectiveness through integration and coordination, planning, training, policies, procedures and tools, evaluation and public reporting.

Ministry of Energy and Mines compliance and enforcement team:

Work is already underway to establish a dedicated compliance and enforcement team within the Ministry of Energy and Mines. Once in place, the team will include a new Deputy Chief Inspector of Mines for Compliance and Enforcement to oversee compliance and enforcement in the ministry and be accountable to the board. The team’s responsibilities will include:

• Developing and implementing an annual compliance and enforcement plan.
• Enhancing the framework and expertise for major investigations.
• Improving the compliance and enforcement tracking system.
• Co-ordinating compliance and enforcement with other government agencies and ministries.

A complete list of the recommendations from the Independent Expert Panel and the Chief Inspector of Mines is available here: www.gov.bc.ca/minecodereview

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Connect with the Province of B.C. at: www.gov.bc.ca/connect
Government response to Auditor General’s report

The Ministry of Energy and Mines (MEM) and Ministry of Environment (ENV) acknowledge receipt of the Auditor General’s Report: An Audit of Compliance and Enforcement of the Mining Sector (Audit Report). Government wishes to thank the Auditor General for undertaking the audit and her staff for their efforts.

We note there are areas of agreement between the Audit Report’s 16 sub-recommendations and the combined 26 recommendations by the Mount Polley Independent Expert Engineering Investigation and Review Panel (Expert Panel) and the regulatory investigation of the Chief Inspector of Mines. Government has accepted all of the recommendations put forward by the Expert Panel and Chief Inspector of Mines and implementation is well underway.

We accept the majority of the recommendations in the Audit Report. However, there are five points where we feel obliged to share our perspective for the public record.

Appropriate standards:

There is a lack of clarity in the Audit Report on what the operational effectiveness of the compliance and enforcement programs should be measured against. Often the measure or standard of expected performance stated in the Audit Report is unclear and/or unsupported by reference to an identified, established authority, such as the legislation and regulation that guides the actions of C&E staff in both ministries. This concern applies at various points in the Audit Report, with the report’s general reference to the Organisation for Economic Co-operation and Development or the International Network for Environmental Compliance and Enforcement rather than the laws of B.C., the stated objectives of the ministries, or Canadian industry standards.

As a specific example in relation to Mount Polley, the Province is criticized for adopting the Canadian Dam Association’s (CDA) Dam Safety Guidelines which, the audit report states, “resulted in a tailings dam that was built below generally accepted standards for tailings dams.” Not only do we disagree with this assertion of opinion, the CDA guidelines are in fact professionally recognized guidelines that are used throughout Canada by geotechnical engineers. Whether the guidelines could be improved is a separate question, one which the CDA is currently reviewing. Further, the Minister of Energy and Mines has struck a committee that is tasked with reviewing the Health, Safety and Reclamation Code for Mines in B.C. to determine whether and in what ways requirements may appropriately be improved or clarified.

Professional public servants:

The Audit Report suggests that professional public servants are unable to differentiate between mandate components or that they are unwilling to enforce existing regulations. The Audit
Report contains no factual evidence that the current ministry structure results in any such risk, or in a mind-set of acquiescence on the part of staff involved. The report lists a number of indicators of potential risk of what it refers to as “regulatory capture.” But there is nothing whatsoever in the report to suggest any actual causal linkage. Specifically, there is no evidence that decisions were made at Mount Polley, in relation to the Elk Valley, or anywhere else to ease or enhance the position of the mining companies involved.

We do not accept that mere appearances are sufficient to warrant the act of removing compliance and enforcement from MEM. No one is more aware of the need to find the appropriate balance between promotion and regulation of mining in ministry decision-making than those who are asked to do so on a daily basis. It is the legislative framework in B.C. that drives compliance and enforcement activities not the organizational structure.

**Disclosure of Information:**

The Audit Report implies that the ministries failed in their duty to disclose information regarding decisions on mining operations.

In the instance of Mount Polley, there was no breach of any duty to disclose information to the public or to the Legislature. The Information and Privacy Commissioner recently ruled that there was **no** failure by MEM to meet the disclosure requirements of section 25 of the Freedom of Information and Protection of Privacy Act in relation to environmental risk at Mount Polley.

With respect to the permitting of mining operations in the Elk Valley, there was also no breach of any duty on the part of Ministry of Environment and no failure on the part of cabinet to disclose information to the public or to the Legislature. Before addressing that point, it may be of assistance for the government to set out the decision making process that did occur, the extensive consultations that were undertaken, and to clarify the legal authority under which decisions were made.

As the Audit Report notes, mining in this area has been going on for more than 100 years and over the past 20 years, Ministry of Environment has been monitoring the health of the watershed with increasing concern. Emerging science began to indicate the potential effects of selenium and other water quality parameters in the Elk Valley watershed, including Fording River, Elk River and Lake Koocanusa. With ENV staff bringing these issues to the attention of the Minister of Environment, the minister used powers under the Environmental Management Act to issue an order requiring the mining operator to immediately begin to stabilize and reverse the water quality trends.

The order required the development of an Area Based Management Plan (ABMP) which meets specific environmental objectives and outcomes such as protection of aquatic ecosystems, protection of human health and protection of groundwater. The ABMP also sets out short, medium and long-term water quality targets. The ABMP lays out a schedule for the installation of nine active water treatment plants over the next 18 years. The long-term targets consider: 1) current contaminant concentrations, 2) current and emerging economically achievable treatment technologies, 3) sustained balance of environmental, economic and social costs and benefits, and 4) current and emerging science regarding the fate and effects of contaminants.

Substantial public and stakeholder consultations were undertaken during the development of the ABMP and after permits were granted, various news releases and media interviews by
ministers set out for the general public the nature of government decisions.

The ABMP was developed by a technical advisory committee with representatives from the mining operator, the local environmental group (Wildsight), the Province, Government of Canada, U.S. Government, the State of Montana, the Ktunaxa Nation, and an independent scientist from UBC. Parallel to the technical advisory committee work, the Province was engaged in a government-to-government process to ensure the Ktunaxa Nation’s interests and concerns were addressed. The Ktunaxa Nation Council’s public support for the ABMP and the subsequent Elk Valley permit is a reflection of the commitment of the Province, the Ktunaxa Nation and the mining operator to see water quality levels stabilize and improve.

In November 2014, the Minister of Environment approved the ABMP which became policy for the ministry statutory decision maker to consider when making permitting decisions in the Elk Valley. The comprehensive Valley permit, subsequently issued by the ministry statutory decision maker, authorizes water quality discharges and sets legal requirements for the mining company to install nine treatment plants and to implement widespread monitoring to ensure water quality trends are stabilizing and reversing.

A tangible result of this unprecedented effort in problem solving and public and First Nations consultation is the recent announcement of the completion of the commissioning phase of the first treatment plant. The recognition of the ministry’s efforts to effectively and responsibly address a historically generated water quality problem while balancing economic, social, cultural and environmental interests was not addressed in the Audit Report.

The Audit Report criticized Cabinet for approving the Line Creek Expansion Permit via an Order in Council (OIC) in 2013 on the grounds that the rationale for the decision was not publicly disclosed. Decisions, when they are issued in the form of OICs such as this one, are always published on the BC Laws website. Furthermore, section 137 of the Environmental Management Act specifically outlines what factors Cabinet may consider. These considerations extend to factors such as social and economic needs and whether it is in the public interest to ensure a functioning industry so that longer term investments can continue to be made in areas such as research and development and water treatment technologies.

**Audit Scope:**

The fourth point relates to audit planning decisions as to what was properly within or outside the audit scope.

For example, it is difficult for us to understand why, in a case study examining permitting in the Elk Valley in detail, the Audit Report failed to record the concerted efforts that ENV has undertaken in order to ensure these permits are complied with. After the Minister of Environment approved the ABMP in 2014, the ministry statutory decision maker approved a valley-wide permit for Teck Coal Limited that specified the regulatory requirements for reducing selenium levels. Permit requirements will bend down the curve of growth in selenium levels in Lake Koocanusa by requiring additional investment in water diversion and treatment facilities over the next two decades.

The Audit Report does not comment on the extensive efforts by the ministry to ensure that Teck Coal Limited complies with these regulatory requirements. For instance, in 2014, ENV created a dedicated management position supported by two technical officers to oversee Teck
Coal Limited. A compliance plan has been developed that specifies a schedule of inspection frequency and water sampling. The amount of resources and effort that has been focused on compliance of these five particular mines is significant and the ministry has no intention of reducing that attention.

We also wonder why, in examining whether compliance and enforcement activities of the mining sector are protecting the Province from significant environmental risk, the Audit Report did not consider the key role played by the Environmental Assessment Office (EAO) in upholding the Environmental Assessment Act. Many of the mines in British Columbia (new and expansions) have been subject to the Environmental Assessment process and received environmental assessment certificates with legally binding requirements.

Permitting by MEM and ENV happens subsequent to that environmental review process. Additionally, the EAO has its own compliance and enforcement program, which includes oversight of mines and functions complementarily to MEM and ENV. The Auditor General recently reviewed EAO’s progress in addressing the recommendations from the 2011 audit on the EAO’s oversight of major projects. In that follow-up, the Auditor General acknowledged significant improvements in oversight of environmental assessments projects, including mines.

**Mount Polley:**

The Audit Report contains the inference that MEM might have been able to, through proper exercise of its regulatory powers, act to prevent the dam failure at Mount Polley. The Audit opinion is contrary to the Expert Panel finding of cause and is not reflective of the regulatory regime in place at the time. Specifically:

The Panel found that inspections of the TSF would not have prevented failure and that the regulatory staff are well qualified to perform their responsibilities. The Panel found that the performance of the Regulator was as expected.

It is important to understand that mine design, at Mount Polley just as at mines around the world, is not static and evolves throughout the life of operation. This is appropriate engineering practice. Operating mines evolve their designs over time regularly, all with the approval of licensed engineers. Starting in 1995, there were nine design stages over the life of the Tailings Storage Facility (TSF) at Mount Polley.

All stages, including the design stage in place at the time of the breach had been approved by the design engineer. Each stage of construction was certified by the Engineer of Record (EOR) in the as-built reports. MEM authorized permit amendments for each stage of the TSF. The failure of the TSF was not a compliance and enforcement issue.

It is also important for the reader to understand the difference in design, actions and recommendations for each of the three embankments: Perimeter Embankment, Main Embankment, and South Embankment. Specifically, the Audit Report seems to suggest that items identified by both the EOR and ministry staff at the Main Embankment can be translated, or are somehow related, to the failure of the Perimeter Embankment. Such inferences are not supported by facts or engineering and do not offer supporting evidence that the breach of the Perimeter Embankment was somehow preventable through compliance and enforcement actions.
The ministry appreciates that the purpose and process of the audit may have been different than those of the Expert Panel and the regulatory investigation of the Chief Inspector of Mines. We are nonetheless concerned about the different findings on fundamental facts that have come out of these processes.

The Expert Panel, which was empowered in its Terms of Reference to examine any matters it deemed necessary, including the “regulatory oversight by the Ministry of Energy and Mines and the Ministry of Environment” and “to comment on what actions could have been taken to prevent this failure and to identify practices or successes in other jurisdictions that could be considered for implementation in B.C.” concluded:

The Panel finds that the MEM Geotechnical Staff and the Contract Inspectors are well qualified to perform their responsibilities. The team is well organized and has clear targets and schedules for annual inspections. The Panel considers the technical qualifications of the MEM Geotechnical Staff as among the best that it has encountered among agencies with similar duties.

The Panel further concluded:

Additional inspections of the TSF would not have prevented the failure.

Similarly, the extensive investigation by the Chief Inspector of Mines, which considered over 100,000 pages of documents and hundreds of hours of interviews, did not find that the company breached its obligations under the Mines Act, the Health, Safety and Reclamation Code for Mines in British Columbia, its permit conditions or any orders to prosecute. This is the regulatory framework that governs the ministry’s compliance and enforcement actions. We of course await the results of the Ministry of Environment’s investigation of potential breaches of its legislation.

The Audit Report states that “government has adopted an approach to reduce the regulatory burden on industry.” The public relies on qualified professionals in many areas. Examples of qualified professionals include architects, accountants, lawyers, physicians, pharmacists and engineers.

In each case, the qualified professionals are regulated by their respective governing body or association to ensure members meet their association’s standards of conduct or code of ethics. If qualified professionals do not adhere to these standards or codes, then the associations are responsible for disciplinary actions. This is the system that holds professional engineers accountable across Canada. The OAG concern about over-reliance on qualified professionals is a criticism of professional bodies’ ability to regulate their professions.

Furthermore, the Audit Report’s assertion that there is over-reliance on qualified professionals is not substantiated in the context of mining. Reliance on engineers and other qualified professionals in the mining industry has been a fact of life in British Columbia for decades. The longstanding model used in engineering throughout the world relies on professional engineers to prepare and seal designs. Government then reviews these plans. Through legislation like the Engineers and Geoscientists Act, government has created technical bodies to formalize accountability and protect the public interest.

Just as the original design for the Mount Polley TSF was prepared and signed by a Professional
Engineer in 1995 and then reviewed by government staff, this was the same for subsequent lifts. In fact, the Expert Panel found:

MEM geotechnical engineers addressed significant issues during the reviews and inspections of the Mount Polley TSF. They had insightful questions for the designers at many instances during their review of the design documents, as noted above. The EOR responded to these questions based on their observations and understanding of site conditions. The EOR is responsible for the overall performance of the structure as well as the interpretation of site conditions. The Regulator has to rely on the expertise and the professionalism of the EOR as the Regulator is not the designer.

Both the Expert Panel and the CIM investigation concluded that the fundamental cause of the Mount Polley failure was the lack of appropriate subsurface site characterization when the dam was designed and built. We respectfully point out that this was not a question of the number of ministry staff on the ground, the number of inspections performed, or an increase in professional reliance since.

In conducting the Mount Polley case study, the audit team – quite understandably – augmented their own knowledge of environmental principles, geotechnical engineering and regulatory law. They did so by consulting a panel of subject matter experts, comprising an environmental academic, environmental lawyer, engineer and a former employee. We understand this to be consistent with normal audit practice.

However, proceeding in that manner did not give the ministries the opportunity to know who was on the panel, what data the panel may have considered on specific points, what opinions they might have offered, or to challenge the thinking of panel members with additional engineering evidence and/or competing legal or scholarly opinions.

Government wishes to thank the Auditor General for undertaking the audit and her staff for their efforts. In particular, we appreciate the extended processes by which the Audit Team allowed the ministries to raise and discuss factual and legal concerns arising in connection with successive drafts of the Audit Report.

The Audit Team responded to many of our concerns, but points of disagreement remained which we believed could not be left unanswered. While we do not accept that the ministries have been deficient in protecting the environment, or the recommendation to reorganize the compliance and enforcement programs within a separate agency, we do believe the 16 recommendations provide meaningful and constructive guidance that will complement current initiatives already underway.

Government’s full response to each of the Auditor General’s recommendations can be found online at: [http://ow.ly/4nnimD](http://ow.ly/4nnimD)

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