The “Responsible Person” as a key control for mitigating risks related to management of Tailings Facilities

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Recent catastrophic failures of tailings facilities
Paradigm shift

Where do we go from here?
Technical knowledge

- Technical aspects of the Mt. Polley and Samarco failures have been extensively analyzed and evaluated.
- We seem to have a good understanding of the technical reasons for these failures.
Paradigm shift

So...what’s missing?
Achieve excellence in our operations

• We all want to achieve excellence in our work and operations.
• We want to be recognized by our quality and safe products and actions.
• We need to focus in implementing proper management systems.
Tailings facilities are not only large engineered earth structures.
Sophisticated tailings management systems

Tailings facilities are sophisticated tailings, mine waste and water management systems.
Implement a tailings management framework

As such, tailings facilities require of implementation of an adequate management framework.
Risk-based approach

- A risk-based approach to the management of tailings is recommended by MAC.
- Allows for proper identification of risks, and
- Development and implementation of adequate mitigation strategies and controls.
Risk-based approach
Risk-based approach

Some key risk controls and best practices recommended by MAC, include:

• Development of an OMS manual
• Risk assessment
• Engineer of Record
• Independent Reviewer(s)
• Responsible Person
Who is the “Responsible Person” for a tailings facility and its management system?
Responsible Person as a key risk control

Frequently, mine operations have tried to assign some of this responsibility to external entities, such as the EoR and other contractors.

NOT A RECOMMENDED APPROACH!
The “Responsible Person” should:

• Belong to the owner’s team.

• Have the required qualifications and knowledge of tailings management systems.

• Have been designated by the accountable officer to take responsibility over the management of the site’s tailings facilities.
In general, some of the key responsibilities for the “Responsible Person” of a tailings facility include:

• Implementation and execution of operations, maintenance and surveillance activities.
• Identification, evaluation, and ranking of risks.
• Development and implementation of mitigation strategies and risk controls.
Responsible Person as a key risk control

• Schedule and budgets preparation for the area (pending approval by accountable officer).
• Engages qualified personnel and professionals.
• Adequate training to staff in the area.
• OMS manual and ERP preparation/ updating.
• Communicates key risks to accountable officer and EoR.
• Provide site-based operational input to designs
Responsible Person as a key risk control

From a risk perspective, the “Responsible Person” is:

• A key control for risk mitigation related to tailings management.
• Acts as a hub for the development and proper implementation of the other risk controls and best practices.
Responsible Person as a risk control

Designation of the “Responsible Person” can vary among companies and operations.
Responsible Person as a key risk control

Some key aspects of the operation that might factor on the designation of the “Responsible Person” include:

- Size of the mining company and complexity of the operation.
- Operating status of the mine and its tailings facilities (construction, operations, closure).
- Assigned budget for the facility is under operating or capital budgets.
Responsible Person as a key risk control

• Several larger mining companies run their tailings operations under an operational budget.
• Expansion of the facilities are executed under capital budgets.
• In some cases, some companies might have the design engineer and EoR role in-house.
Responsible Person as a key risk control

- Under such scenarios, a tailings management systems manager or a dam safety responsible engineer as proposed by the Alberta Dam Safety Committee might act as the RP.
What about the smaller mines?

• Several smaller mines run most of their tailings operations under a capital budget.

• Work is coordinated among various department including projects, environment, and process departments.

• Design Engineer and EoR remain external.
Responsible Person as a key risk control

- In such cases, either the projects or environmental manager or superintendent can be designated as the RP.
- Strong tailings management background is required.
- Coordination among departments to cover for surveillance, maintenance and operational aspects of the operation is required.
Responsible Person as a key risk control

- On the other hand, the environmental superintendent might be the most appropriate person for taking the role of the “Responsible Person” if the facility is under care and maintenance or closure.
Responsible Person as a key risk control
References

• Refer to my paper and the new version of the MAC tailings management guidelines for additional details and information on this topic.
Thank you!