



TAILINGS 2.0: A TWO PRONGED APPROACH TO DELIVER VALUE AND COMPLY WITH SOCIETAL DEMANDS IN THE XXI CENTURY.

Presented By

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A brand new course from the authors of Improving Sustainability through Reasonable Risk and Crisis Management (2007) and The Long Shadow of Human-Generated Geohazards: Risks and Crises (2016), in cooperation with MDA corporation, the largest provider of space observation data and solutions (radar interferometry -InSAR- and optical solutions).

A course beneficial for all who have to:

- design,
- permit,
- construct,
- operate,
- insure and perhaps
- close a geo-environmental facility in the mining and oil&gas arena.

Why this course?

The key note lecture by Henry Brehaut at TMW2017 stated that *"...clearly, the need emerges to develop risk assessments that are detailed and updatable, that allow determining residual risks (after mitigations)... and draw rational and sensible mitigative roadmaps"*.

The recent UNEP report entitled "Mine Tailings Storage: Safety Is No Accident" asks mining companies to make environmental and human safety a priority in management actions and on-the-ground operations by requiring:

- detailed and ongoing evaluations of potential failure modes,
- residual risks (UNEP uses this term to indicate the risks after known mitigation)
- and perpetual costs of waste storage facilities.
- All those point go in the direction of long term monitoring and observation, updated risk assessments which are the subject of this article.

In this course we will show how a seamless two pronged approach consisting of Space Observation and Quantitative Risk Assessment synergy deliver value to the mining industry and regulators. We will show how modern Space Observation (a mix of radar and optical satellite image data, as well as specific algorithms) can become input into a Quantitative Risk Assessment (QRA) platform.

We describe a QRA platform capable of using that "Rich Data" context to deliver an enhanced, updated risk landscape of a project or operation. The QRA platform has to be updatable, scalable, drillable and convergent to maximize benefits.

This course provides case histories of specific applications where this joint technology delivers clear benefits to miners and governments, allowing for better Risk Informed Decision Making, which in turn generates value.

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The two pronged approach brings significant advantages to mining end-users, whether they are mining managers, tailings stewards, other key stakeholders, or the general public.

By virtue of this joint technology it is also possible to identify emerging crises; check and update alert thresholds and, in timely and orderly manner, update probabilities and all other significant hazards and risk

It is then possible to define a sustainable risk mitigation road-map for a dam portfolio.

parameters. This allows to understand where projects or operations stand in term of risk mitigation at discrete and up to almost real-time pace, if and when required.

During the day we will work through all the phases of the approach (based on the ORE methodology -Optimum Risk Estimates- ©Oboni Riskope Associates Inc.), including:

- System definition
- Success/failure criteria.
- Delivered data
- "Rich Data" context
- What methods to use for probabilistic estimates?
- Hazards Identification
- Simplified breach analyses
- Multi-dimensional consequences analyses
- Risks
- Risk tolerances
- Dashboards
- Decision-making (alternative selection, mitigation, resilience enhancements, etc.)
- Actions (includes communication)
- Back to the start: monitoring, new data, etc.

Agenda

09:00-10:30

- Introductions
- System definition
- Success/failure criteria.
- What methods to use for probabilistic estimates?
- Hazards Identification

Coffee

11:00 -12:30

- "Rich Data" context
- Space observation capabilities
- Case histories

Lunch

1:30-3:00

- Simplified breach analyses
- Multi-dimensional consequences analyses

Coffee

3:00 – 3:30

3:30-5:00

- Risk
- Risk tolerances
- Dashboards
- Decision-making (alternative selection, mitigation, resilience enhancements, etc.)
- Back to the start: monitoring, new data, etc.
- Discussions