



Building the Baseline of Trust: Real-Time  
Monitoring and  
Social License in Tailings Management  
Lessons from Canada and the Dominican  
Republic.

Jeff Simpson, CEO & President



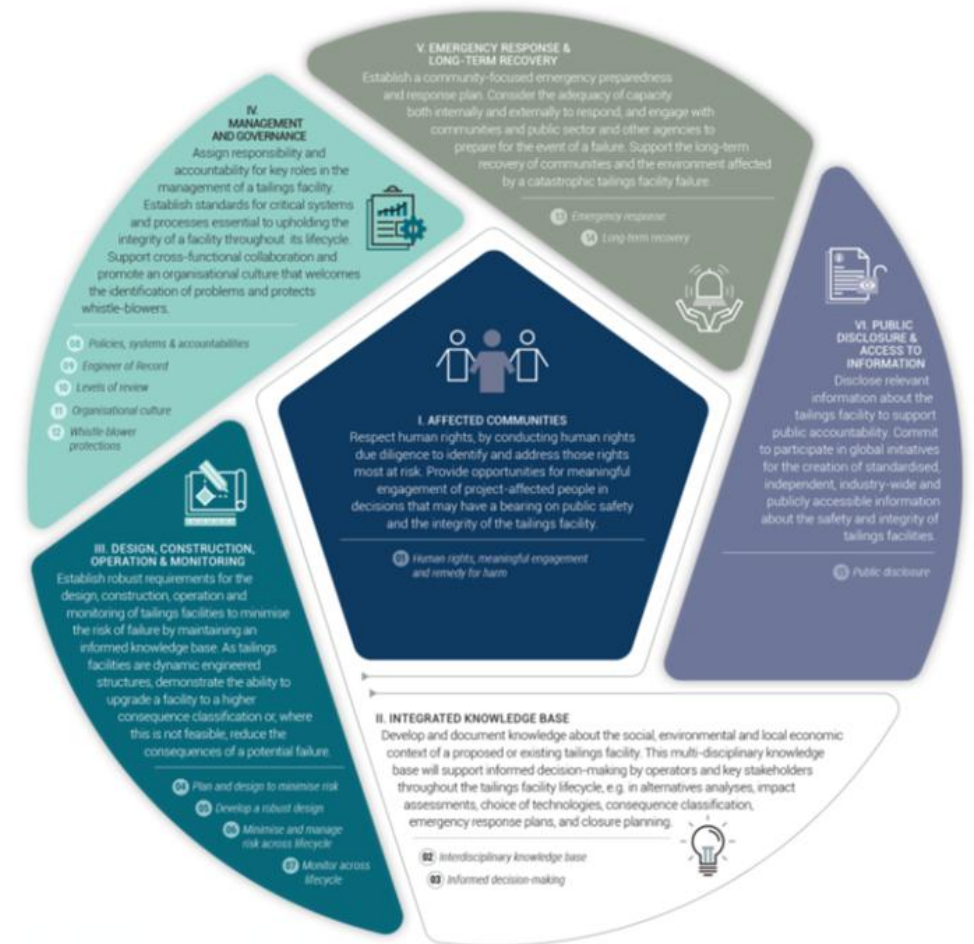
# The GISTM Imperative: From Compliance to Stewardship

- **The New Standard:** Moving beyond "internal-only" data to meet the Global Industry Standard on Tailings Management.

- **Principle 15:** Shifting the focus toward public disclosure and meaningful stakeholder engagement.

- **The Proof Culture:** Transitioning from "Trust us, we're experts" to "Here is the data, see for yourself."

- **Objective:** Using technical integrity to secure long-term Social License to Operate (SLO).



# The "Trust Gap": Why Traditional Reporting Fails

**The Information Void:** In the months between manual readings and quarterly reports, public anxiety grows.

**The Misinformation Trap:** Without accessible data, communities rely on rumors or "perceived risk" rather than technical reality.

**Lagging vs. Leading Indicators:** Traditional reports tell us what happened *last season*; stakeholders want to know what is happening *right now*.

**The Neutral Arbiter:** Why real-time data is required to align "Actual Risk" with "Perceived Risk."



# Defining "Radical Transparency"

- **Beyond Disclosure:** Moving from reactive reporting to proactive, live data sharing.
- **The "Open-Data" Philosophy:** Treating environmental data as a shared community resource rather than a corporate secret.
- **Democratizing Information:** Providing stakeholders with the same high-fidelity information as the site engineers.
- **Key Components:**
  - **Live Access:** Near-real-time updates.
  - **Simplified Visualization:** Turning raw numbers into safety status.
  - **Independent Oversight:** Data that is verifiable by third parties.



# Case Study: Sio Silica (The Social Challenge)

**Location:** Sandilands Aquifer, Southeastern Manitoba, Canada.

**The Stakeholders:** 120,000 households reliant on a single, sensitive groundwater source.

**The Conflict:** Deep public skepticism on aquifer mixing, water quality, and long-term integrity.

**The 2024 Rejection:** A project stalled not by technical failure, but by a lack of public trust.

**The 2026 Pivot:** Rebuilding the proposal with "Radical Transparency" as the core pillar.



# Sio Silica - The Community Dashboard Interface

**The User Experience:** Translating complex geotechnical data into intuitive, safety-oriented visuals for non-experts.

**Near-Real-Time Access:** Replacing quarterly PDFs with a 24/7 stream of factual, on-site conditions.

**Community Empowerment:** Providing Indigenous groups and residents the same "Source of Truth" used by mine engineers.

**Outcome:** Shifting the narrative from "What are they hiding?" to "Let's look at the data together."



# Verification: The Role of Independent Oversight

**Beyond "Self-Reporting":** Why the industry is moving away from mines being the sole auditors of their own environmental impact.

**The Third-Party Arbiter:** Utilizing independent oversight to validate data integrity before it reaches the public.

**Shared Access, Shared Reality:** When regulators and community leaders see the same live data as the mine manager, the "Cover-up" narrative is neutralized.

**A Shared Resource:** Shifting monitoring from a corporate obligation to a collaborative tool for regional environmental stewardship.



**Source:** Adapted from the Global Industry Standard on Tailings Management (GISTM).

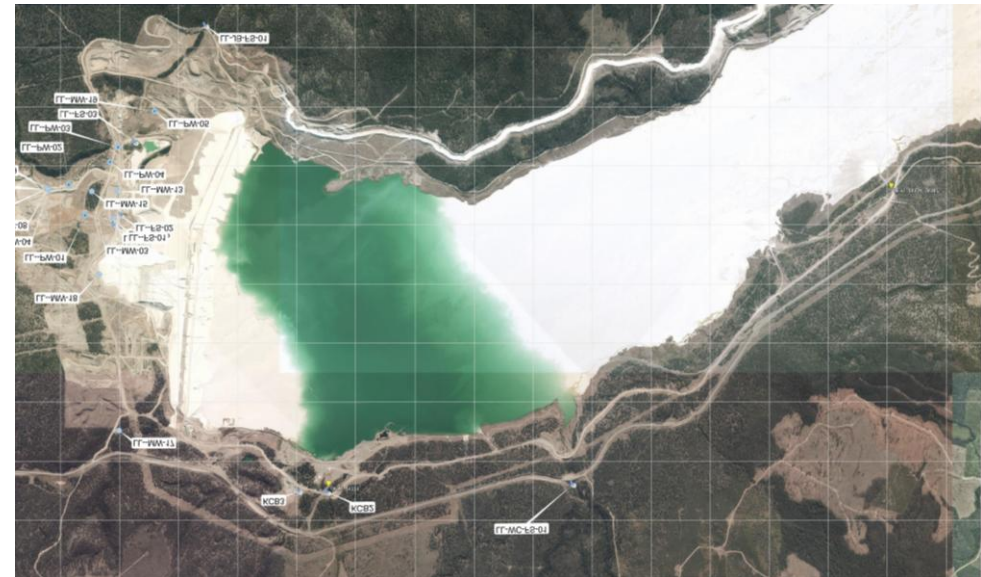
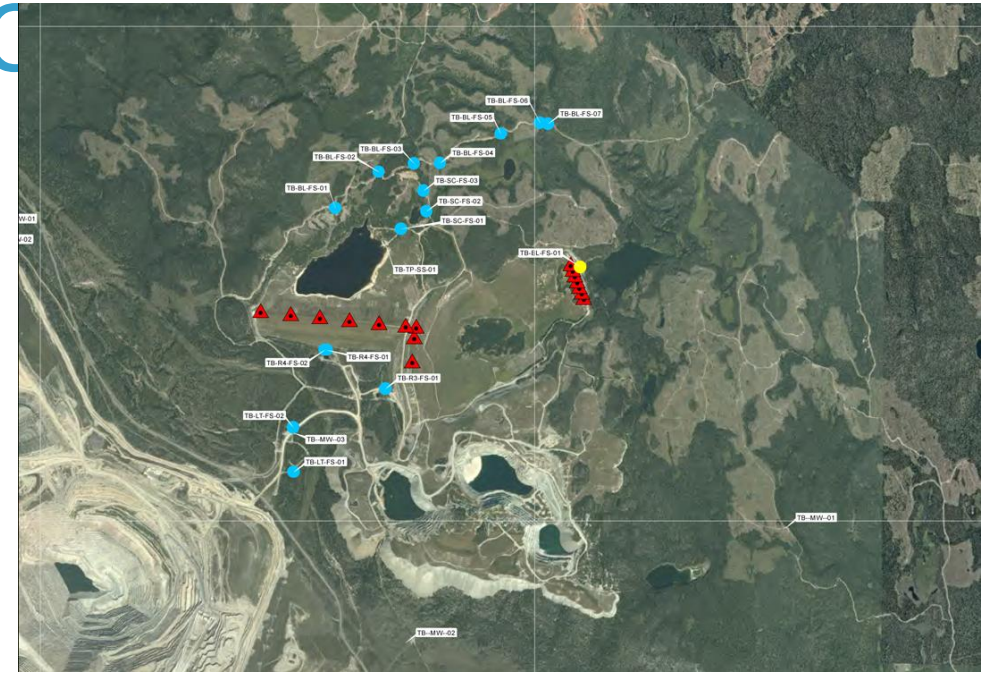
# Case Study: Teck Highland Valley C (Engineering at Scale)

**The Technical Anchor:** Multiple years of continuous, automated data collection at one of the world's largest open-pit copper mines.

**The Challenge:** Transitioning from conventional, manual weir readings to a site-wide automated network.

**The Scope:** Comprehensive monitoring of seepage, streamflow, and pond levels around a large cyclone sand dam.

**The Goal:** Providing the high-frequency data required for a functional, site-wide water balance.



# Automating the Water Bal

**The Network:** Deployment of 30+ automated weir and flume systems across the watershed footprint.

**Comprehensive Data:** Simultaneous tracking of seepage, streamflow, and pond levels.

**Historical & Predicted Flows:** Systems engineered to manage both baseline conditions and extreme weather events.

**The Result:** A dynamic, site-wide water balance that replaces static estimates with verified, real-time measurements.



# From Data to Action: Functional Monitoring & TARPs

**Closing the Loop:** Moving from "Observation" to "Active Risk Management."

**Integrating with Site TARPs:** Automated pond levels and seepage data feed directly into Trigger Action Response Plans.

**Automated Decision Support:** Real-time alerts that allow operators to respond to trends before they become incidents.

**GISTM Principle 10:** Achieving the requirement for "Functional Monitoring" through integrated, high-frequency data streams.



# Regional Leadership: The Cormidom Partnership

**Strategic Collaboration:** Multi-year partnership focused on advanced environmental stewardship.

**Local Context:** Applying international monitoring standards to the unique geological and social landscape of the Dominican Republic.

**Beyond Compliance:** Moving from regulatory requirements to a proactive model of "Social License."

**The Regional Blueprint:** An established Dominican mine is utilizing real-time data to lead the transition to GISTM alignment.



# Rugged Design: Built for the DR

**Extreme Environment Engineering:** Hardware designed to operate from -40°C in Canada to the high humidity and heat of the Caribbean.

**Resilience & Uptime:** Redundant power (solar/battery) and hardened enclosures to ensure data continuity during hurricanes or seismic events.

**Data Integrity:** Hardware "Ruggedness" is a prerequisite for Social License - if the sensors fail, the transparency fails.

**Proven Durability:** Utilizing the 12-year lifespan of our Canadian installations as the benchmark for Dominican operations.



# The Regional Blueprint: A Vision for the Dominican Republic

**From Site to Province:** Expanding the "Baseline of Trust" beyond a single operation to a regional environmental network.

**The Sentinel Network:** Establishing watershed-level monitoring that connects mining stewardship with regional water security.

**National Competitiveness:** Standardized real-time transparency makes the Dominican Republic an attractive destination for "Green" investment.

**Collaboration:** Partnering with academic institutions to turn site-level data into a national knowledge base for TSF safety.



# Conclusion: The Baseline of Trust



## Conclusion: The Baseline of Trust

- **The Bottom Line:** Real-time monitoring is no longer an "option" - it is the foundation of modern, responsible mining.
- **The Opportunity:** Positioning the Dominican Republic at the forefront of GISTM-aligned stewardship.
- **Our Commitment:** Providing the technical integrity required to build lasting community trust.
- **Final Thought:** "We don't just monitor to be safe; we monitor to be trusted."



# QUESTIONS & NEXT STEPS?

**JEFF SIMPSON**

CEO & Founder • Aquatic Life

[www.aquaticlife.ca](http://www.aquaticlife.ca)

[www.aquatest.ca](http://www.aquatest.ca)

[jsimpson@aquaticlife.ca](mailto:jsimpson@aquaticlife.ca)



**AQUATEST™**  
water technology solutions