

Toward Predictive Reporting of Mineral Waste

Materiality, Transparency, Competency...and Opportunity?

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The hidden cost of waste

\$72B

Estimated closure costs
for 24 miners

50%

Current mines expected
to close by 2040

75%

Closures premature or
unplanned

>40%

Closure liabilities due to waste
management

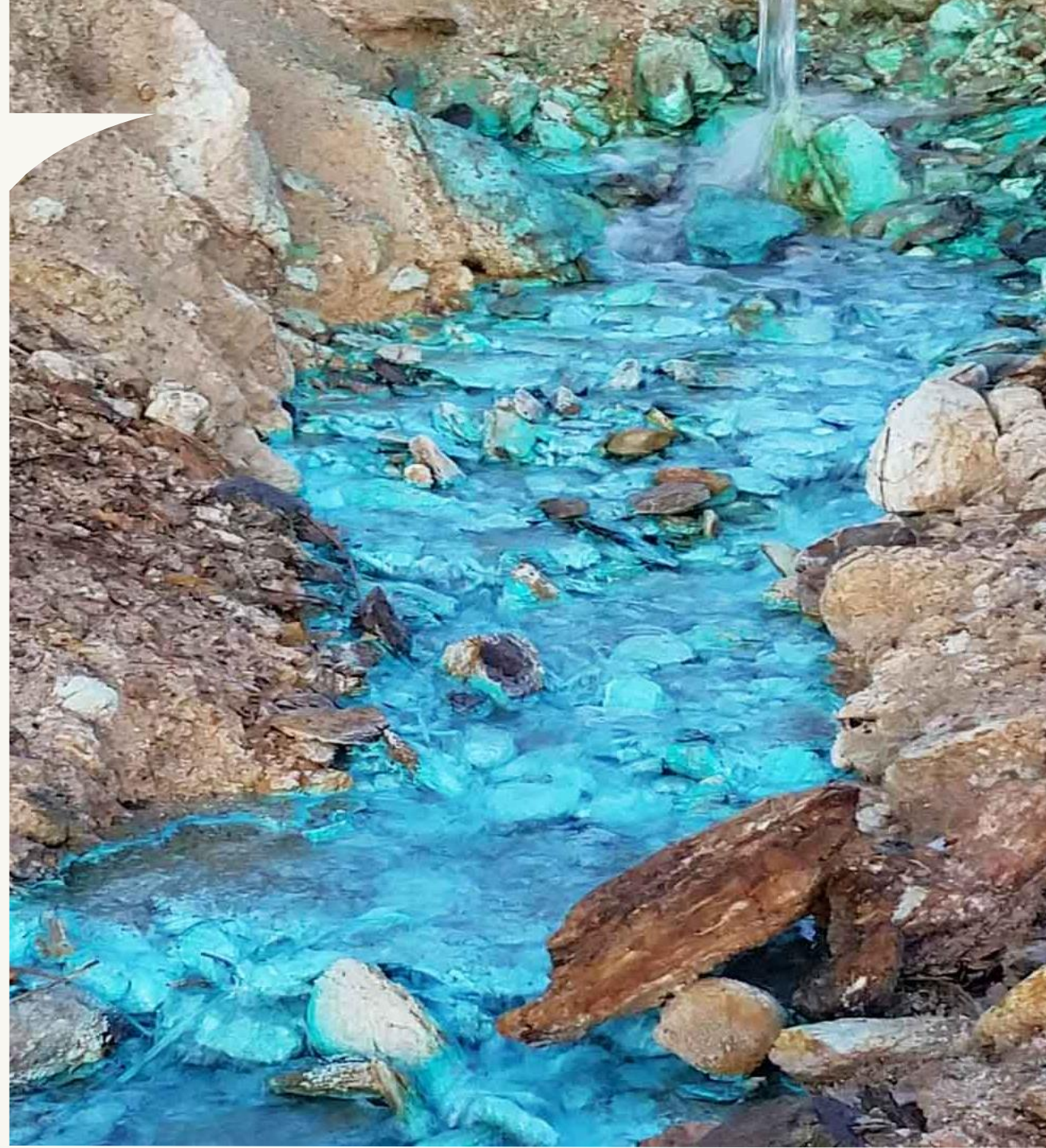


Image: Joe Cain

Benefits of MW Reporting

- Deeper understanding → stronger value articulation
- Transparency and trust → better investor and stakeholder relations
- Data governance and reconciliation → continuous improvement
- Knowledge base for future use → legacy + opportunity

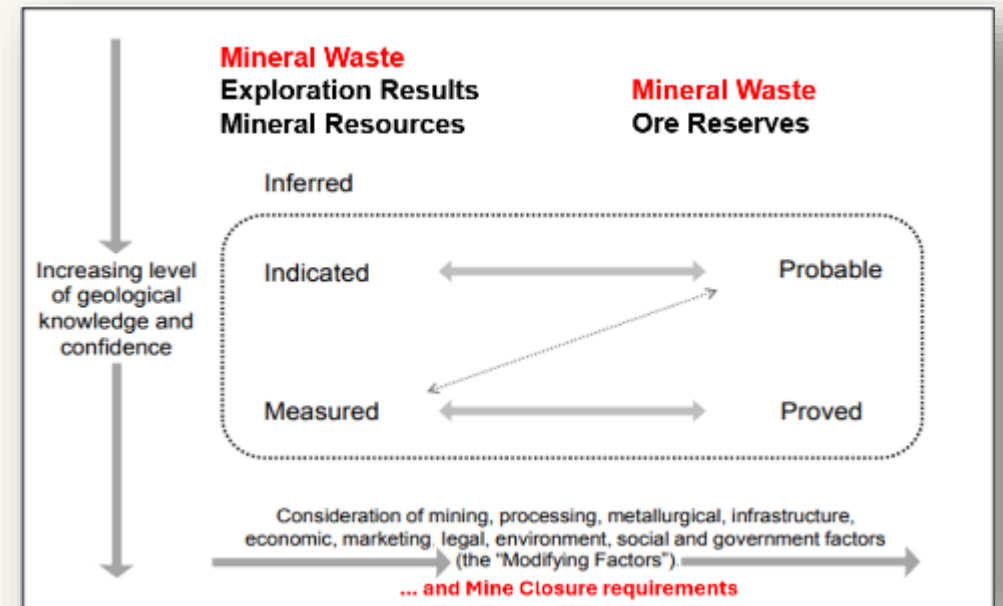
Image: Theiss



A JORC Style Definition of MW

‘Mineral Waste’ is the occurrence of solid material in or on the Earth’s crust in such form, quality and quantity that it is considered justified to be moved aside when demonstrating the reasonable prospects of eventual economic extraction of a Mineral Resource, or when determining the economic viability of an Ore Reserve. The location, quantity, quality, continuity and other geological characteristics of Mineral Waste are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Waste is sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. This definition of MW excludes tailings, heap leach or other processing residues as these are captured within Mineral Resource and Ore Reserve estimates (MROR).

JORC Figure 1 and MW



MW confidence – more than a modifying factor

- Improved confidence in MW → unlocks latent **opportunity**
- Dependent on **robust data governance**

Improved resource
stewardship

Improved investor relations

Broader economic
opportunities

Stronger closure outcomes

Is it time for MW to have a seat at the Reporting table?

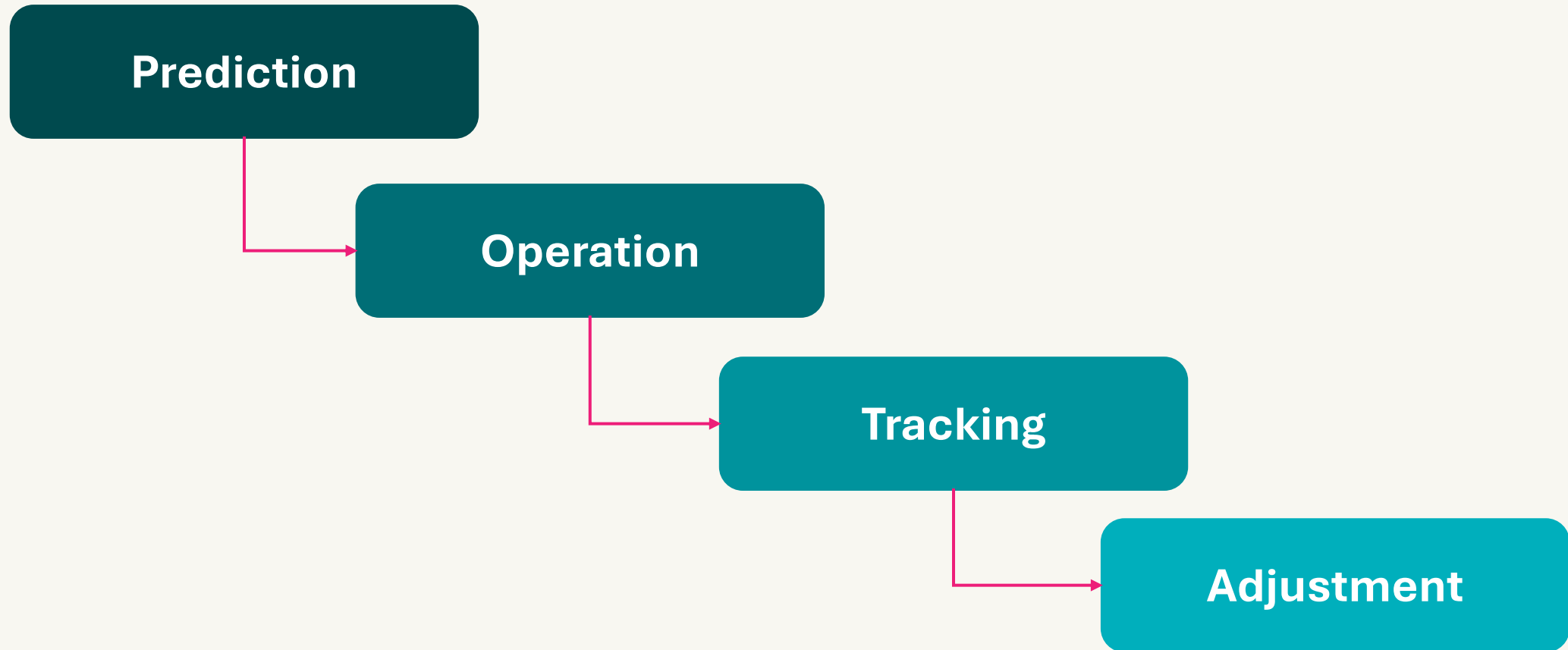
- **MW is material** – impacts LoM value and closure success
- **Transparency** – drives accountability and trust
- **Competence matters** - define and develop MW CP role
- **Data governance** - a critical enabler

Image: Adobe #401760700



Mine Reconciliation

The art and science of comparing predictions with outcomes to reveal the quality of performance.



Call to Action

- Characterise MW early
- Integrate into Life-of-Mine planning
- Embrace technology
- Govern data & reconciliation
- Define competence & drive debate



...from liability
to opportunity

 Quartex



RUN
EVERY
SITE
RIGHT