



**SMARTT**

Smart Tailings Facility – Solutions for Tailings Management

*Tommi Kauppila, GTK*



# SMARTT

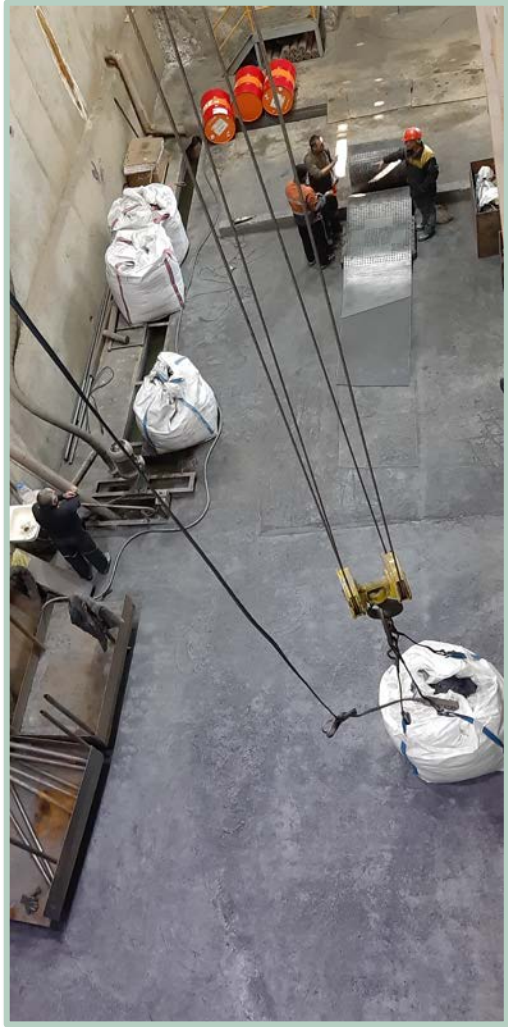
Designing the best possible tailings

Providing tools and data for tailings management

# MOST OF WHAT WE MINE IS WASTE



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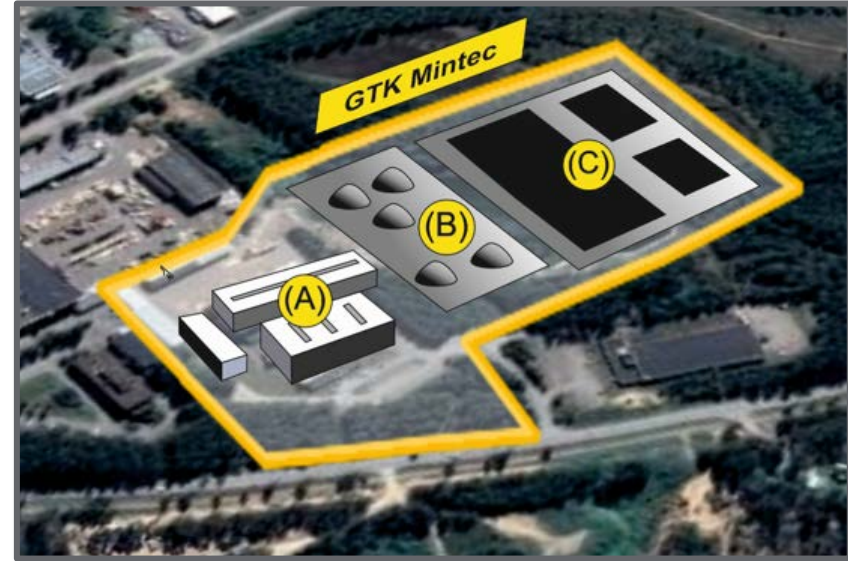


# DATA FOR LIFE-OF-MINE MANAGEMENT



## *Process development:*

- Process mineralogy and chemistry
- Bench scale testing for all unit processes
- Full scale pilot runs

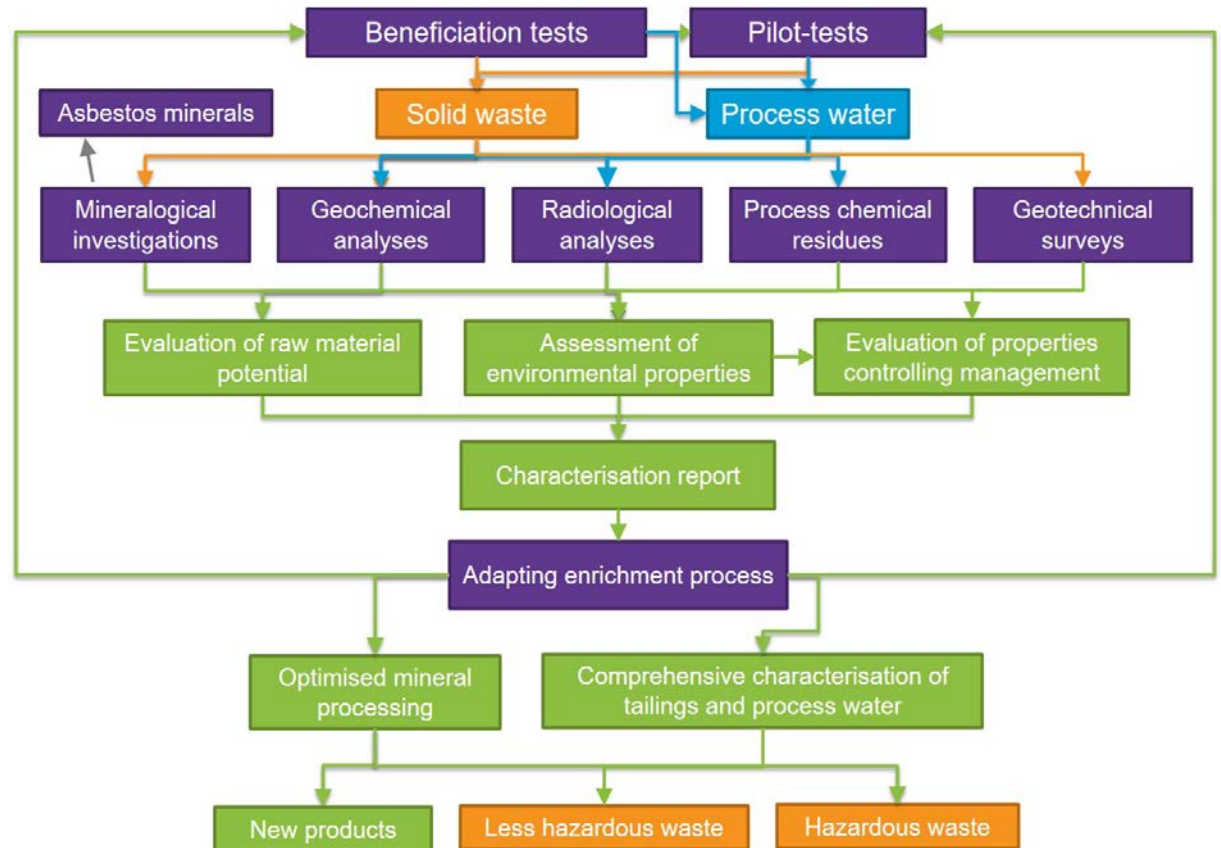


## *Tailings and water management:*

- Tailings optimization
- Dewatering, water treatment and recirculation
- Laboratory testing of tailings properties
- Long term field tests

# BEST TAILINGS FOR PROJECT NEEDS

- Mineral processing testworks aim at optimizing grade, recovery, energy use etc.
- We will also analyze the tailings to see if it can be improved for cost savings and creation of value
- This approach is best integrated into the flow sheet from the start
- Should be done without compromising the processing results
- The aim: easier waste management, more value



# LONG TERM TESTING

- GTK Mintec will upgrade its tailings facility in 2022
- This facilitates large scale field testing of tailings and waste rocks
- Observing phenomena and properties that cannot be replicated in the lab
- Starting long term instrumented tests in the piloting phase
- Testing and modeling basal and cover structures
- Conventional and dewatered tailings



# NEW SPACE FOR LONG TERM FIELD TESTS





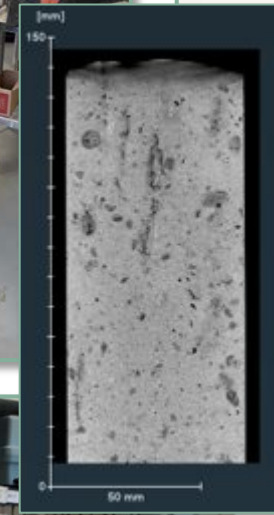
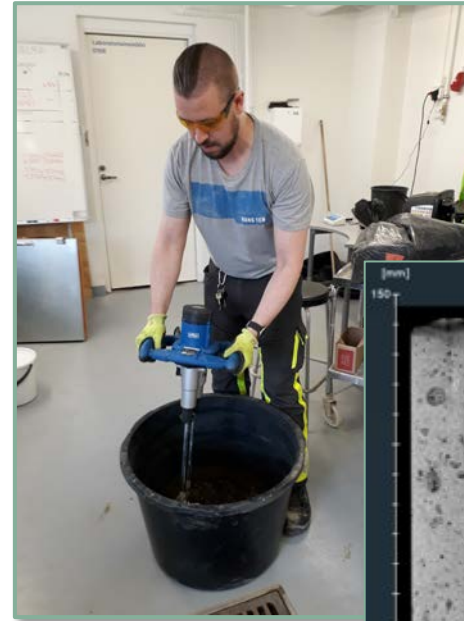
# TAILINGS PROPERTIES

- Quantitative mineralogy
- Environmental properties
  - *Leaching behavior (batch, kinetic)*
  - *Acid production and neutralization*
  - *Radiological properties*
- Geotechnical properties
- Dewatering and hydraulic
- New products from bulk tailings
  - *Geopolymers, SCMs, 3D printing...*



# TESTING FOR CPB

- Tailings are increasingly used for backfilling
- Suitability for tailings for backfilling can be tested
- Development of recipes, also involving e.g. slags or ashes
- Dewatering, technical, pumping, environmental properties



# PROCESS AND EFFLUENT WATERS

- Tailings and process waters are intimately linked
  - *Dewatered tailings options*
- Lab design of water treatment flow sheets with state-of-the-art unit processes
- Pilot scale testing with a fully automated and monitored continuous process, also on-site
- Combined with mineral processing tests to increase water recycling rates and reduce makeup and effluent waters
- Fit-for-purpose treatment
- Recovery of valuables



# YOU ARE WELCOME TO WORK WITH US

- GTK Mintec and the SMARTT facility have been designed for co-creation
- Do you want to run large scale tests on tailings or waste rocks?
- Can you make something useful from tailings?
  - *Especially if we tailor it for you first*
- Do you have a new method for tailings management or treatment?
- Do you have a great water treatment method or agent?





**THANK YOU**

[tommi.kauppila@gtk.fi](mailto:tommi.kauppila@gtk.fi)

[www.gtk.fi](http://www.gtk.fi)