



MEDIUM TERM PLAN

Clients: *Tshipi e Ntle Manganese Mining*
Duration: Ongoing (2019-2020)

Project Team:

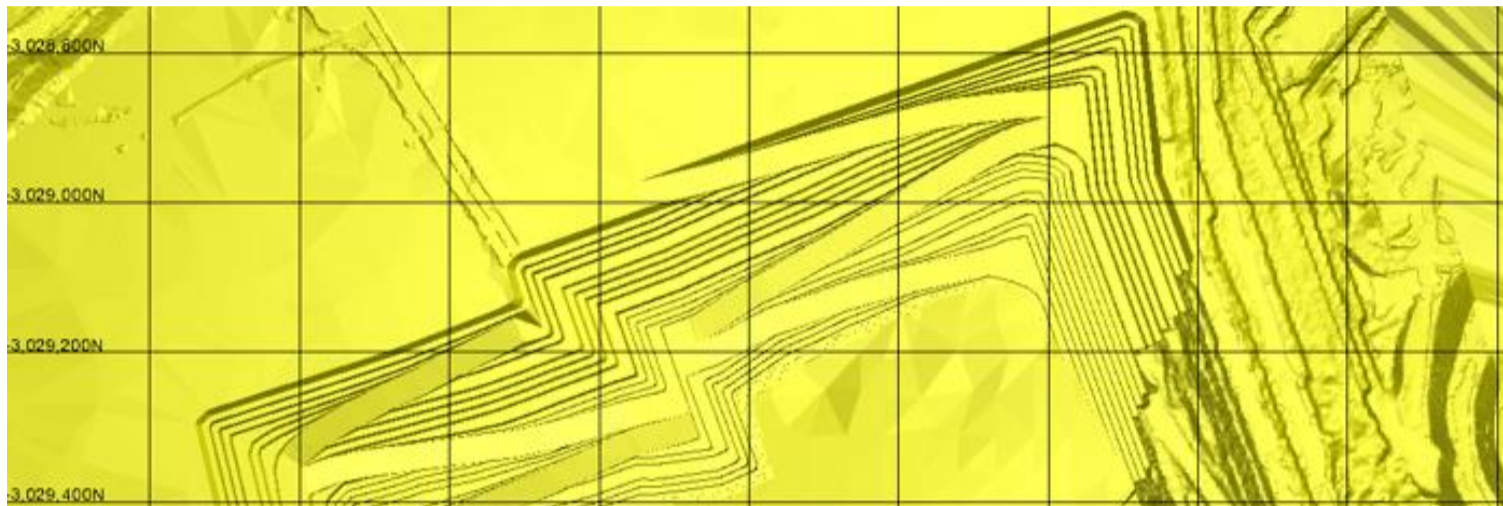


FIG 1: Tshipi Borwa Pushback Design



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CLIENT NEED

Tshipi Borwa mine is a brownfields Manganese open pit mining operation located in the Northern Cape; and requested VBKOM to update the Medium-Term-Plan (MTP) for the current operation while considering the long-term and short-term requirements.

APPROACH

VBKOM assists the mining operation with various activities as requested from site. These include pushback designs, waste rock dump designs, monthly reconciliations, production scheduling, truck allocation studies and fleet selection.

VALUE DELIVERED AND RESULTS

VBKOM has been involved with the mine since 2013, assisting with short term planning, medium term planning, assisting the on-site technical team with budget planning and various other studies. VBKOM has gained invaluable insight into the operations, and added tangible value on the short, medium and long-term planning horizon.

The deliverables included:

- > Pushback pit designs;
- > Completed MTP scheduling scenarios with production risk mitigation;
- > Fleet selection study;
- > Truck allocations;
- > Pit reconciliations; and
- > Short term planning.

The completed designs were implemented into the medium-term mine plan and the plan was implemented. The MTP is updated periodically.

DELIVERABLES

VBKOM delivered various deliverables to the mine and were incorporated into the Medium-Term Plan:

- > **Mining Block Model:** Re-blocking and validating the resource model for mine planning
- > **Review:** Reviewing the Long-Term Plan and Mine Design Criteria to include in the MTP
- > **Pushback Designs:** Various designs trade-offs
 - > Corrections to previous designs
 - > Updated designs to new design criteria
 - > Pushback size design optimization to incorporate increased production requirements
- > **Waste Rock Dump (WRD):** Updating WRD designs
- > **Production Scheduling:** MTP scheduling
 - > Incorporating all the parameters and designs
 - > Scheduling as per mine requirements to 5-year horizon inclusive of in-pit backfill
 - > Scenarios on increased production rates
 - > Final MTP schedule implemented
- > **Monthly Reconciliations:** Reconciliation with the MTP and actual production on a monthly basis
- > **Truck Allocation:** Biweekly truck allocation for the operation based on VBKOM's congestion tool
- > **Fleet Size Estimation:** Fleet size estimation for the current operation and increased production scenarios based on VBKOM's fleet selection tool



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