



Client
Fraser Alexander



Location
Bindura, Zimbabwe



Period
July 2015

Freda Rebecca Gold Mine TSF – Cone Penetration Testing

Fraser Alexander was conducting a geotechnical evaluation on the tailings dam at Freda Rebecca Gold Mine. As part of the investigation, Fraser Alexander contracted PMI Construction Services (PMI) to perform Piezocone tests with dissipation testing on the northern boundary of the tailings dam. PMI subsequently mobilised and executed the contract, gathering the required subsurface data at the selected locations.

The Scope of Work included

- 6 No CPT tests on penetrable tailings dams to be conducted to 20m or earlier refusal
- 6 Hours of Dissipation testing
- Reporting.

PMI Resources on Site

- Geomil 200kN trailer mounted hydraulic CPT rig

Methodology

The methodology involved in Cone Penetration Testing is a four step process which is detailed below.

Set up Rig:

- Client marks out positions and prepares access
- Position and level rig

- Install ground anchors and load concrete lintels onto rig for additional counterweight support, if needed. The installation of ground anchors is illustrated in the figure below.

Prepare for Testing:

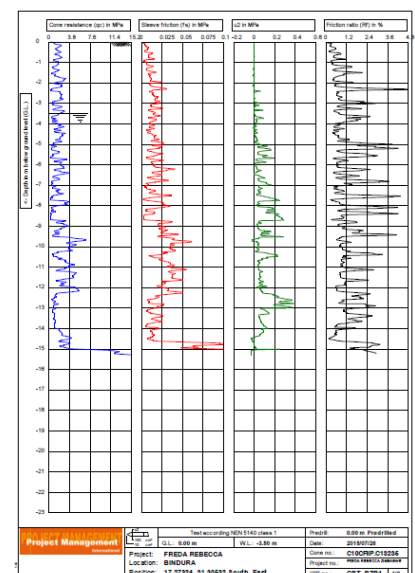
- Set out sufficient length of 1m probing tubes for the test and feed data cable through the tubes
- Remove calibrated, saturated Piezocone from secure storage and attach to the first to the end of the data cable as well as first probing tube.
- Set up data acquisition system, data logger and computer and allocate new test number
- Perform pre-test calibration

Testing:

- Advance probing tubes into the formation using rig hydraulics
- Monitor tests parameters on-screen to ensure that the test is advancing as expected
- Pause for dissipation test, at Client-specified depth
- Complete test when:
 - Target depth is reached
 - Refusal of the Piezocone is reached

- Test inclination exceeds 10 degrees

- Remove probing tubes and conduct post-test zero-load calibration
- Ensure that test data is saved.



Conclusion

The contract was executed to the required standards requested by the Client.