

**COPPABELLA COAL MINE
OUT OF PIT DUMP - NORTH**

EROSION AND SEDIMENT CONTROL IMPLEMENTATION AND MONITORING PLAN
October 2014

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1 Implementation Plan

The Out of Pit Dump North Area (Project) Erosion and Sediment Control (ESC) implementation plan is represented in Figure 1 below.

The ESC plan is based on a combination of erosion, sediment and drainage controls. The primary control to ensure the movement of sediment off lease is through erosion management in particular Permian rock capping waste dumps to encapsulate exposed dispersive material. Where Permian capping cannot be achieved due to operational dumping requirements the focus is through end of pipe sediment controls.

Erosion Controls

- Reshaped slopes are to be capped at a 1:7 batter angle, using available Permian material.
- Slopes are to be topsoiled, ripped and seeded for revegetation for long term erosion and sediment control.

Drainage Controls

- 1m high bund to be constructed at the crest of reshaped slope
- Contour banks are to be installed at pre-determined intervals at a 1% grade to direct water flow towards rock verges which enter into constructed down drains.
- 10m Permian rock lined verges capture water flow from the east or west and direct it into an 8m wide rock lined down drain. A cross section of this down drain design is shown in Figure 2.

Sediment Controls

- Chain mesh sediment fences are to be installed every 50m of the down drains and are to be rock mulched to anchor the base.
- Sediment traps will be installed at the base of each of the rock lined down drain and will be designed to capture base load sediment
- Sediment traps will be monitored by installing an indication peg approximately $\frac{3}{4}$ along the length of the trap, where loading beyond this point will trigger corrective action.

Implementation time line;

- Permian Capping of the project area – Completed by End of May 2016
- Water Management structures – Commenced construction by July 2016
- Topsoil, Rip and Seed – Commenced by September 2016
- Project completed – December 2016

2 Inspection and Maintenance Plan

The project will be inspected bi-annual, with a major inspection completed post wet season to highlight any required remediation works for that year. A minor inspection plan will then be completed pre wet season ensuring that any identified remediation requirements have been completed. Actions from inspections will enter the Peabody action tracking system.

2.1 Major Maintenance Inspection

A major maintenance inspection will be conducted post wet season (May), to ensure the structural integrity has been maintained and adequate sediment capacity is present.

- Contour banks, rock verges and down drains inspected for tunnel and rill erosion, remediated as required.
- Sediment traps will be desilted once loading has reached the indication peg (approximately $\frac{3}{4}$ along the length of the trap).
- Riprap remains in place and operational, to be replaced where necessary.

2.2 Minor Maintenance Inspection

A minor maintenance inspection will be completed pre wet season (November) or on completion of any actions from the Major inspection. The minor inspection will allow time for any minor remediation works to be completed prior to the wet season.

Figure 1 – Out of Pit Dump North – Project area (Conceptual design)



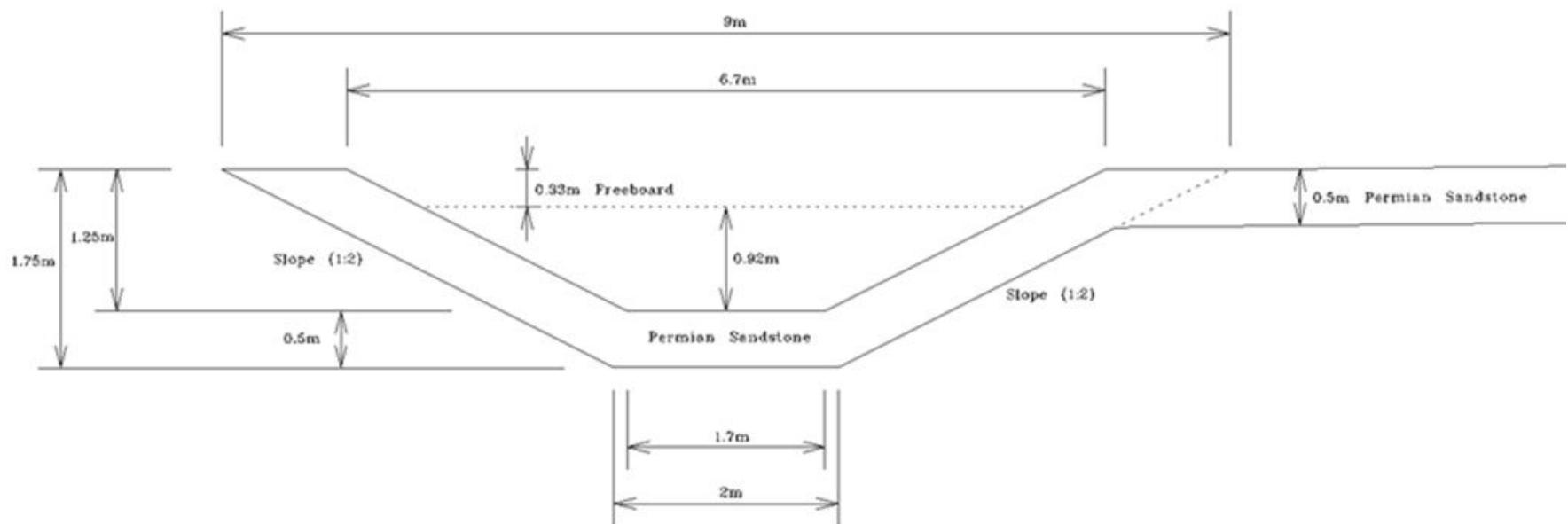


Figure 2 – Down-Drain Specifications