

Land

Cliffs and Overhangs

Five cliffs and overhangs have been identified within 600 metres (m) of Longwalls 20-22 secondary extraction and are shown on Figure 1, namely, sites COH1, COH2, COH3, COH4 and COH14.

Visual inspections of sites COH1, COH2, COH3, COH4 and COH14 are conducted monthly for the period of time that longwall extraction is within 400 m of cliffs and overhangs and following the completion of each longwall.

Specific details that are noted and/or photographed during the inspections include:

- the date of the inspection;
- the location of longwall extraction (i.e. the longwall chainage);
- the location of the cliff instability (i.e. freshly exposed rock face and debris scattered around the base of the cliff or overhang) relative to the cliff face or overhang;
- the nature and extent of the cliff instability (including an estimate of volume);
- the length of the cliff instability;
- other relevant aspects such as water seepage (which can indicate weaknesses in the rock);
- whether any actions are required (e.g. implementation of management measures, initiation of the Contingency Plan, incident notification, implementation of appropriate safety controls, review of public safety, etc.); and
- any other relevant information.

Additional opportunistic observations of subsidence impacts are also conducted during routine works and sampling by Metropolitan Coal and its contractors.

No cliff instabilities (i.e. freshly exposed rock face and debris scattered around the base of the cliff or overhang or areas of water seepage in excess of that expected to result from rainfall conditions) were evident at sites COH1, COH3, COH4 and COH14.

On the 17 December 2013, a vertical tension crack (approximately 50 millimetres wide and 15 m in length) was noted on the cliff face of site COH2 (Plate 1) along with a small rock fall (approximately 1.5 m long, 0.5 m wide and approximately 0.5 m³) (Plate 2). No water seepage was observed. Neither of the subsidence impacts were considered to represent a safety or environmental hazard and no management measures were considered necessary.

The monitoring results were used to assess the Project against the subsidence impact performance measure:

Less than 3% of the total length of cliffs (and associated overhangs) within the mining area experience mining-induced rock fall.

The subsidence impact performance measure was not exceeded during the reporting period.



Plate 1 Tension Crack on Cliff Face at Site COH2 (Looking West toward Cliff)



Plate 2 Rock Fall on Cliff Face at Site COH2 (Looking toward Cliff)

Steep Slopes and Land in General

Opportunistic visual inspections for subsidence impacts on steep slopes and land in general are conducted by Metropolitan Coal and its contractors as part of routine works conducted in the catchment.

Specific details that are noted and/or photographed during the inspections include:

- the location, approximate dimensions (length, width and depth), and orientation of surface tension cracks;
- the location of the surface tension crack in relation to fire trails;
- the location and approximate dimensions of rock falls (e.g. rock ledges that occur along the Waratah Rivulet);
- whether any actions are required (for example – implementation of management measures, initiation of the Contingency Plan, incident notification, implementation of appropriate safety controls, review of public safety, etc.); and
- any other relevant information.

The date of the observation, details of the observer and the location of longwall extraction are also documented.

No additional surface tension cracks, to those reported previously, were observed in the catchment during the reporting period.

The performance indicator, *Steep slopes and land in general are expected to experience surface tension cracking no greater than 0.1 m wide and 25 m in length*, was not exceeded during the reporting period.

METROPOLITAN COAL - ENVIRONMENTAL MONITORING SUMMARY

