Longwalls 205 to 208

Land Management Plan Addendum

October 2020

DOCUMENT CONTROL

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-	1	Draft for Consultation	ACOL	July 2020
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1 INTRODUCTION AND SCOPE

This Addendum references the relevant sections of the currently approved Flora and Fauna Management Plan (Ashton Coal Operations Pty Ltd [ACOL], 2017) and Mining Operations Plan 2018-2024 (MOP) (ACOL, 2018) to ensure the requirements of the Extraction Plan are met. Due to the mine layout, a standalone document has not been prepared as the impacts associated with the Extraction Plan are addressed in the existing site wide management plans.

2 PREDICTED IMPACTS

This Addendum addresses potential subsidence impacts to land from underground mining (secondary extraction) of Longwalls 205 to 208 in the Upper Lower Liddell Seam only.

2.1 PREDICTED SUBSIDENCE

See **Section 4** of the Extraction Plan Main Text for a detailed description of the predicted subsidence impacts.

In summary, SCT (2020) predicts that incremental subsidence will range from 2.2 metres (m) to 2.8 m, and cumulative subsidence will range from 3.1 m to 5.8 m. Incremental tilts are predicted to range from 33 millimetres per metre (mm/m) to 56 mm/m, and from 73 mm/m to 106 mm/m on stacked edges. Incremental strains are predicted to range from 21 mm/m to 30 mm/m and from 37 mm/m to 53 mm/m on stacked edges. Cumulative tilts are predicted to range from 44 mm/m to 94 mm/m, and from 103 mm/m to 219 mm/m on stacked edges. Cumulative strains are predicted to range from 22 mm/m to 47 mm/m and from 52 mm/m to 110 mm/m on stacked edges.

The maximum values of cumulative vertical subsidence forecast for the Longwalls 205 to 208 Extraction Plan are consistent with forecasts in previous assessments for approval modification or for extraction plans (SCT, 2020). The values of tilt and strain forecast for Longwalls 205 to 208 are consistent with those forecast for two and three seams of mining in DA 309-11-2001i (MOD6) for the *Bowmans Creek Diversion Modification Environmental Assessment* (EA) (Evans and Peck, 2009).

SCT (2020) concluded that, in general, the subsidence impacts from the forecast subsidence effects are expected to be similar in nature and magnitude to those forecast for the mining of Longwalls 105 to 107 in the Upper Liddell Seam. Similar management strategies to those used for Longwalls 105 to 107 and Longwalls 201 to 204 are expected to be effective to mitigate and remediate subsidence impacts and environmental consequences from the planned mining of Longwalls 205 to 208.

2.2 PREDICTED IMPACTS TO LAND

The predicted impacts to water and biodiversity are outlined in the Water Management Plan Addendum, and the Flora and Fauna Management Plan Addendum, respectively. The below sections summarise the predicted impacts to land in general overlying the Longwalls 205-208 Extraction Plan area.

2.2.1 Land Overlying Longwalls 205-208

Most of the surface topography within the Extraction Plan area is located within the floodplains and gently sloping terrain associated with Bowmans Creek and the Hunter River. SCT (2020) reviewed the surface topography within the Extraction Plan area and surrounds, and concluded that:

- Mining of Longwalls 205-208 is expected to cause further subsidence of up to 2.8 m on the slopes and general floodplain adjacent to Bowmans Creek, with maximum cumulative subsidence expected to reach 5.8 m.
- No instability of the steeper ground on AGL Macquarie land is anticipated.
- Within the subsidence troughs, zones of surface cracks, steps or steeper ground are likely near the panel edges. These types of impacts are likely to be most prevalent where permanent stacked goaf edges are formed.
- The change in landform due to subsidence is expected to restrict natural drainage causing ponding in some areas. The ponding may be up to several metres deep and has the potential to impact the integrity of surface and sub-surface infrastructure. The duration of ponding is expected to depend on a range of factors, mainly associated with the hydraulic conductivity of the immediate overburden strata.
- There is the potential for subsidence to increase the storage volume of farm dams, which would be retained post-mining.
- Billabongs and other natural depressions are likely to require draining in order to maintain the pre-mining character of the landform.

ACOL committed to creating a free draining landform at the completion of mining at the Ashton Underground Coal Mine (i.e. after the Lower Barrett Seam has been mined).

As described in the MOP (ACOL, 2018), environmental monitoring undertaken in accordance with ACOL Environmental Management Plans will identify areas of ponding in the Extraction Plan area. Mitigation and remediation measures will be implemented as required. The strategies required may be different for each area of ponding and may include:

- Cuts in the humps above each of the chain pillars.
- Cuts to Bowmans Creek or Hunter River.
- Creation of drainage channels.
- Filling of large areas.
- Installation of a permanent pumping system.

Further assessment would be undertaken to evaluate the options for each area once identified.

2.2.2 Property 130

Property 130 is located more than 600 metres to the southeast of the Extraction Plan area and is the only private property in the vicinity of the Ashton Underground Coal Mine. SCT (2020) has predicted subsidence impacts to Property 130 and concluded no mining related subsidence impacts are expected from the planned mining of Longwalls 205 to 208.

SCT (2020) has also predicted potential impacts to the alternative access road to Property 130 as this road crosses the south eastern extent of the Extraction Plan area, directly above Longwall 205. Inundation by potential ponding may occur on the alternative access road. Some crack filling, regrading and drainage works of the alternative access road may be necessary to manage potential subsidence impacts from mining Longwall 205. Access to Property 130 is expected to be maintained via the primary access road throughout the period of mining.

3 LAND MANAGEMENT GAP ANALYSIS

The following gap analysis demonstrates where the requirements of the Extraction Plan Guidelines are covered within the existing approved MOP or Flora and Fauna Management Plan.

Table 1 has been completed rather than repeating information in a separate Management Plan document.

Table 1. Land Management Plan – Gap Analysis

Aspect	Section/Comment
Overview of all landscape features, heritage sites, environmental values, built features or other values to be managed under the component plan;	Overall MOP. ACOL Flora and Fauna Management Plan **Section 4.2.** SCT (2020) Subsidence Assessment **Section 5.**
Setting out all performance measures included in the development consent relevant to the features or values to be managed under the component plan;	ACOL Flora and Fauna Management Plan **Section 4.1.**
Setting out clear objectives to ensure the delivery of the performance measures and all other relevant statutory requirements (including relevant safety legislation);	ACOL Flora and Fauna Management Plan **Section 2.2.**
Proposing performance indicators to establish compliance with these performance measures and statutory requirements;	ACOL Flora and Flora and Fauna Management Plan **Section 4.1.** ELA (2020) Flora and Fauna Assessment for Longwalls 205 to 208 **Section 3.**
Describing the landscape features, heritage sites and environmental values to be managed under the component plan, and their significance. It should be noted that a full description of such features, sites and values would commonly have been provided and considered in a recent environmental impact assessment. Consequently, this section can be relatively brief, and focus on the presentation of appropriate figures and/or graphical plans;	ACOL Flora and Fauna Management Plan **Section 4.** SCT (2020) Subsidence Assessment **Section 5.** ELA (2020) Flora and Fauna Assessment for Longwalls 205 to 208 **Section 2.**
Fully describing all currently-predicted subsidence impacts and environmental consequences relevant to the features, sites and values to be managed under the component plan;	This document **Section 2.1.** SCT (2020) Subsidence Assessment **Section 4.**
Fully describing all measures planned to remediate these impacts and/or consequences, including any measures proposed to ensure that impacts and/or consequences comply with performance measures and/or the Applicant's commitments;	ACOL Flora and Fauna Management Plan **Section 4.** MOP **Section 3.21.**
Describing the existing baseline monitoring network and the current baseline monitoring results, including pre-subsidence photographic surveys of key landscape features and key heritage sites which may be subject to significant subsidence impacts (such as significant watercourses, swamps and Aboriginal heritage sites);	ACOL Flora and Fauna Management Plan **Section 4**.

Aspect	Section/Comment
Fully describing the proposed monitoring of subsidence impacts and environmental consequences;	Extraction Plan **Section 5.** ACOL Flora and Fauna Management Plan **Section 4.3.** Subsidence Monitoring Program.
Describing the proposed monitoring of the success of remediation measures following implementation;	ACOL Flora and Fauna Management Plan **Section 4.3**. Subsidence Monitoring Program.
Fully describing adaptive management proposed to avoid repetition of unpredicted subsidence impacts and/or environmental consequences;	ACOL Flora and Fauna Management Plan **Section 6.** MOP **Section 9**.
Fully describing contingency plans proposed to prevent, mitigate or remediate subsidence impacts and/or environmental consequences which Substantially exceed predictions or which exceed performance measures;	ACOL Flora and Fauna Management Plan **Section 4.7.**
Listing responsibilities for implementation of the plan; and	ACOL Flora and Fauna Management Plan **Section 3.**
An attached Trigger, Action, Response Plan (effectively a tabular summary of most of the above).	ACOL Flora and Fauna Management Plan **Section 4.6.**

4 REFERENCES

Ashton Coal Operations Pty Ltd (2017) *Ashton Coal Project Flora and Fauna Management Plan*.

Ashton Coal Operations Pty Ltd (2018) *Mining Operations Plan 2018-2024*. Revision 3, September 2019.

Strata Control Technology (2020) S*ubsidence Assessment for the Extraction Plan for Longwalls 205 – 208 in the Upper Lower Liddell Seam*, Report Number ASH4927.