Planning, Industry & Environment

Chloe Piggford
Environment and Community Manager
HV Coking Coal Pty Ltd
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01/03/2021

Dear Ms Piggford

Integra Underground Project (MP 08_0101)
Extraction Plan for Longwalls 17-20

I refer to the Extraction Plan for Longwalls 17-20 which has been prepared in accordance with condition 20 of Schedule 3 of the above development consent and revised to address the Department's comments dated 23 December 2020.

The Department has carefully reviewed the Extraction Plan (including its various sub-plans) and is satisfied that it addresses the relevant requirements of the development consent (see **Attachment A**).

Accordingly, the Secretary has approved the Extraction Plan (Version 3 dated February 2021).

Please ensure that the footers of the Main Document are updated to reflect the correct document version and date above prior to its publication on the Project website.

If you wish to discuss the matter further, please contact Lauren Evans on 9274 6311.

Yours sincerely

Matthew Sprott
Director
Resource Assessments (Coal & Quarries)

as nominee of the Secretary

ATTACHMENT A

Consideration of Approval of Extraction Plan for Longwalls 17-20

1. As required by condition 20 of Schedule 3 of the development consent for the Integra Underground Project (MP 08_0101), the Extraction Plan (EP) for proposed Longwalls (LWs) 17-20 consists of an overarching document that describes the proposed mining operations, supported by specialist subsidence, surface water and groundwater assessments, and a suite of subplans, including a:
   - Coal Resource Recovery Plan;
   - Subsidence Monitoring Program;
   - Built Features Management Plan;
   - Public Safety Management Plan;
   - Water Management Plan;
   - Biodiversity Management Plan;
   - Land Management Plan;
   - Heritage Management Plan;
   - Trigger Action Response Plans;
   - Contingency Plan; and
   - a baseline data collection program.

   The EP was submitted by HV Coking Coal Pty Ltd (HVCC), a subsidiary of Glencore. The EP was prepared by suitably qualified experts appointed by the Secretary.

2. HVCC provided a copy of the draft EP to relevant government agencies and key stakeholders (including Forestry Corporation of NSW and the Australian Rail Track Corporation) in August 2020 for comment. No concerns were raised during this consultation process.

3. The Department sought advice on the draft EP from the Resources Regulator, Mining Exploration and Geoscience (MEG), the Natural Resources Access Regulator (NRAR), Heritage NSW and the Department's Biodiversity and Conservation Division (BCD) in November 2020.

4. The Resources Regulator did not identify any mine safety issues of note during its review of the EP and advised that subsidence risks could be appropriately managed without any changes to the planned mine layout for LWs 17-20.

5. MEG advised that it was satisfied that the extraction of LWs 17-20, as described in the EP, would adequately recover coal resources and provide an appropriate return to NSW.

6. The Department has not received any comments from NRAR to date.

7. Heritage NSW advised that it was satisfied with the Heritage Management Plan.

8. BCD declined to provide comment on the EP.

9. LWs 17-20 were approved under Modification 8 (MOD 8) to the development consent. MOD 8 was approved by the Independent Planning Commission on 16 April 2018. MOD 8 included two potential longwall layouts:
   - five longwalls (LWs 15 to 19) with a void width of 330 metres (m); or
   - six longwalls (LWs 15 to 20) with a void width of 257 m.

   HVCC elected to pursue the latter option. As this option features narrower longwalls, potential subsidence impacts associated with secondary extraction have been substantially reduced.

10. The Secretary approved an EP for LWs 15-16 on 16 August 2019. Secondary extraction of LW 16 is currently nearing completion.

11. HVCC proposes to commence extraction of LW 17 in March 2021.

12. The extraction of LWs 17-20 would recovery approximately 7 million tonnes of run-of-mine coal from the Middle Liddell Seam.

13. LWs 17-20 would be 257 m wide, with 49 m wide chain pillars and lengths ranging from 1,315 m to 1,681 m. The height of mining is expected to range between 2.8 and 3.2 m, with a depth of cover ranging between 340 and 600 m.

14. Key surface features overlying LWs 17-20 are shown in **Figure 1**. Subsidence impacts would be limited to approved disturbance areas associated with the Mount Owen Continued Operations Project (SSD 5850). The subsidence zone for LWs 17-20 contains rail infrastructure, dams, a coal conveyor, haul roads, transmission lines and overburden emplacement areas associated with open cut mining at the Mount Owen Complex. The Mount Owen Complex is also owned by a subsidiary of Glencore.

15. The Extraction Plan included a Subsidence Assessment (SA) prepared by SCT Mining Research and Consulting Group. This assessment incorporates monitoring data obtained during the mining of LWs 1-14.

16. Subsidence monitoring data collected to date indicates that observed subsidence impacts are typically consistent with predictions in previous environmental assessments (EAs) for the Project. Some minor unconventional subsidence impacts, including localised uplifting of up to 75 mm, have been adaptively managed under approved EPs in accordance with the conditions of consent.

17. The SA predictions for LWs 17-20 are summarised in **Table 1** below.

Table 1: *Subsidence Predictions – LWs 17-20*

Impact Area	Subsidence (m)	Tilt (mm/m)	Tensile Strain (mm/m)	Compressive Strain (mm/m)
Natural Ground	2.0	14	7	10
Emplacement Areas	2.5	14	14	20

18. Due to the steep nature of coal seam gradients near the Hebden Thrust Fault, LWs 17-20 are up to 437 m shorter than previously indicated in the MOD 8 EA. Consequently, predicted subsidence impacts are equal to or less than predictions in the MOD 8 EA.

19. LWs 17 to 19 would partially undermine the Mount Owen Complex's West Pit, which is used for tailings and water storage and overburden emplacement. Segments of the southern and eastern highwalls are within the EP area. Predicted subsidence impacts on the West Pit highwalls have been reduced through the shortening of the longwalls. In addition, the progressive backfilling of the pit has substantially reduced the height of highwalls and the associated risk of cracking and rock falls. The Built Features Management Plan includes measures to restrict access during periods of active subsidence.

20. Subsidence impacts on the Mount Owen Complex's North Pit highwall and haul road are predicted to be imperceptible. Glencore has commissioned a geotechnical assessment of the highwall. Based on the low magnitude of observed subsidence impacts during the extraction of LW 16, this assessment indicates that continued subsidence and stability monitoring of the North Pit highwall is not required for LWs 17-20.

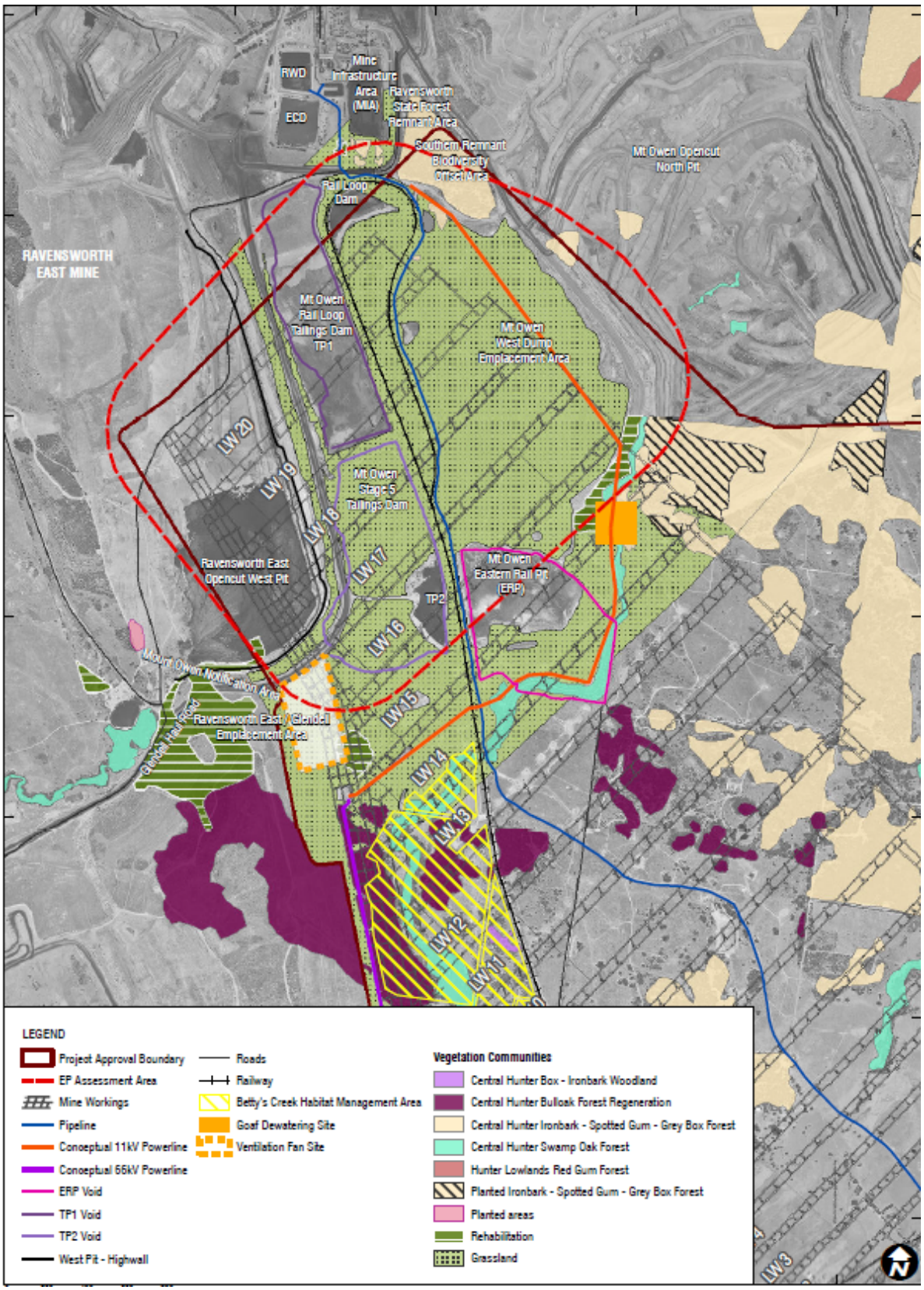

Figure 1 *- Surface features in proximity to LWs 17-20*

21. The Mount Owen Rail Loop Tailings Dam (shown in **Figure 1**) is a declared dam under the *Dams Safety Act 2015*. The SA indicates that strains in the vicinity of the dam would be less than 4 mm/m and be imperceptible. Nonetheless, HVCC has committed to regular monitoring and management of any ponding to reduce the risk of overflow and will obtain all necessary approvals from Dams Safety NSW prior to undermining the dam.

22. Subsidence-induced cracks in natural ground are predicted to remain generally less than 25 mm wide, with some cracks up to 50 mm wide. Larger cracks are expected in emplacement areas, particularly at the tops of overburden dumps. These impacts would be adaptively managed and remediated as required in accordance with the Built Features Management Plan, which includes a dedicated Asset Management Plan for operational areas at the Mount Owen Complex.

23. The SA indicates that:
    - the secondary extraction of LWs 17-20 is likely to comply with the subsidence performance measures outlined in condition 17 of Schedule 3 of the development consent;
    - the shortening of LWs 17-20 has substantially reduced the likelihood of interactions with open cut mining in the Mount Owen Complex's North Pit (and any risk of highwall instability); and
    - predicted subsidence impacts can be appropriately managed under the various subplans outlined in paragraph [1] above.

24. The EP also included a Groundwater Assessment prepared by Australian Groundwater Environmental Consultants Pty Ltd (AGE). This assessment indicates that:
    - groundwater inflows associated with the extraction of LWs 17-20 are likely to be consistent with predictions in the MOD 8 EA;
    - impacts on Permian aquifers are expected to fall within the range of impacts which have previously been assessed and approved; and
    - impacts on alluvial aquifers are likely to be negligible.

25. There are two Aboriginal heritage sites (AHIMS Sites #37-3-1173 and #37-3-1175) located within the EP area. Both are isolated finds and are unlikely to be materially impacted by predicted surface cracking. Subsidence impacts would be managed in accordance with HVCC's existing site-wide Heritage Management Plan.

26. Overall, it is considered that the EP satisfies the relevant requirements of the development consent and should be approved.