



OUT21/15268

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Planning and Assessment Group
NSW Department of Planning, Industry and Environment

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Dear Ms Anderson

**Newstan Mine Extension Project (SSD-10333) –
Environmental Impact Statement (EIS)**

I refer to your email of 22 September 2021 to the Department of Planning, Industry and Environment (DPIE) Water and the Natural Resources Access Regulator (NRAR) about the above matter.

The Newstan Mine Extension Project (the project) proposes to extract up to 25.9 million tonnes (Mt) over a fifteen-year period at a maximum production rate of 4 million tonnes per annum (Mtpa) of run of mine (ROM) coal. Bord and pillar mining is proposed using continuous mining methods that will include areas of first workings, partial extraction and total extraction.

The proponent will need to demonstrate that it holds sufficient entitlement to account for groundwater take.

Our recommendations and advice regarding licencing, surface water and groundwater impacts are provided in **Attachment A**. Any further referrals to DPIE Water and NRAR can be sent by email to water.assessments@dpie.nsw.gov.au and to the following coordinating officer within DPIE Water:

Simon Francis – Senior Project Officer
E: simon.francis@dpie.nsw.gov.au
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Yours sincerely

A handwritten signature in blue ink, appearing to read 'M Isaacs'.

Mitchell Isaacs
Chief Knowledge Officer
Department of Planning, Industry and Environment: Water
10 November 2021

Attachment A

Detailed advice to DPIE Planning & Assessment regarding the Newstan Mine Extension Project (SSD-10333) – EIS

DPIE Water and NRAR provide the following recommendations.

Water Licencing

1. Pre-approval Recommendation:

- a) That the proponent confirm that they have adequate groundwater entitlement once they have received NRAR's assessment of their applications under Part 5 of the *Water Act 1912*. The proponent may need to demonstrate that additional required groundwater entitlements can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan.

Explanation

The proponent identifies groundwater inflow to the deeper West Borehole Seam at 4 ML/day (1460 ML/yr). The proponent has submitted applications under Part 5 of the *Water Act 1912* which are currently under consideration by NRAR. The proponent's strategy for addressing this licensing requirement depends upon NRAR's assessment of these applications.

However, the current EIS outlines that operationally the maximum total dewatering of underground workings is predicted to be 13 ML/day (4745 ML/year).

As there is no return of flows or crediting system for water input to the underground workings, the full volume extracted from underground mine workings (4745 ML/yr) is licenseable take as defined under the Aquifer Interference Policy.

2. Post-approval Recommendations:

- a) Ensure sufficient water entitlement is held in water access licence(s) to account for the maximum predicted take for each water source prior to take occurring, unless an exemption under Schedule 4 of the Water Management (General) Regulation 2018 applies. This may need to include surface water take due to infiltration into underground storages and voids.

Explanation

As a consequence of historical shallow mining, large infiltration losses from overlying streams are reporting to the underground mine workings. This could potentially be exacerbated if goaf fracturing from deeper mining connects to historical mined shallow workings which extend across the western half of the project. The proponent has outlined mitigation options to address this which includes avoidance and/or only partial extraction in more sensitive risk areas of 3rd or higher streams and shallow overburden depths.

Should these infiltration losses occur, this would be considered water take and will need to be licenced under the Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009. There are two surface water sources on site, North Lake Macquarie Water Source and Dora Creek Water Source.

The proponent holds Water Access Licence (WAL) 18735 (with 750 shares) in the North Lake Macquarie Water Source which covers part of the site, and a portion of the site is covered by the Dora Creek Water Source (which currently no entitlements are held by the proponent). The EIS proposes that WAL 18735 is currently being underutilised and can be used if there were to be surface water take.

Surface Water impacts

3. Post approval Recommendations:

The Proponent should:

- a. Ensure monitoring of impacts to streams include visual inspection for visual fractures or cracking and any loss of longitudinal connectivity of stream flow, particularly during low flow conditions.
- b. Identify triggers for remedial action and provide to the Department for review. These should be specified in a detailed Trigger Action Response Plan (TARP) as part of the approval of the extension. The TARP should include explanation of objectives, timing, frequency and duration of monitoring programs and how the TARP's response triggers will be followed and reported.
- c. nominate options for response and remediation of subsidence channel gradient alteration and bed and bank cracking where existing channel deterioration is detected. These measures should be identified in the TARP and provided to DPIE Water for review.
- d. Report on performance of channel form and any remedial actions. This should be provided to DPIE Water for assessment and review of River Style condition and future geomorphic recovery.

Explanation

A number of watercourses overlie the proposed extraction area. These watercourses cross multiple subsidence block alignments and are expected to have significant channel gradient change as subsidence occurs and stream flow velocities increase from upstream towards the centre of the individual longwall subsidence trough.

The geomorphic assessment has identified high and moderate geomorphic risk ratings for areas impacted by subsidence induced changes to streams based on flows of 0.5 and 2 exceedances per year. No information has been provided for possible impacts due to low flow or base flow changes in streams.

It is noted that fracturing (up to 50 mm) is likely to occur along some watercourses. *'Larger fracturing could develop along these sections of creek, due to the proposed mining beneath and adjacent to them, and this could result in the diversion of the surface water flows into the strata beneath the beds and the draining of any ponded surface water.'* (EIS p.105)

The Surface Water Flow assessment stated that *'Based on the predicted subsidence, the potential changes to flow depths and velocity were assessed using a hydraulic model, as described in the Flood Impact Assessment (EMM, 2019). The majority of watercourses were assessed as having negligible or low risk of impact from subsidence, with localised short lengths recommended for targeted monitoring.'* However, these impacts could cause a disconnect along the watercourse.

The Flood Impact Assessment (Appendix D Flooding) details the likely impacts from higher flows, but no values have been modelled or reported for the lower or base flow values. These are important for assessing and monitoring impacts to low-flow and base-flow from subsidence induced ponding and/or losses due to fracturing.

Aspects relating to changes in gradient and flow velocity have been covered adequately in the Surface Water (Appendix K) and Flood Impact Assessment (Appendix L) where *'monitoring and management plans will be developed for watercourses with a moderate or high geomorphic risk rating'*.

Groundwater Impacts

4. Post-approval Recommendation:

- a. The proponent should commit to 'make-good' provisions for the registered groundwater works potentially impacted. This applies to registered works GW052111, GW052381, GW053438 and GW061202.

This requires a census including collated baseline monitoring to define reference levels from which make-good provision will apply and that can be prescribed in an updated Water Management Plan.

Explanation

The impacts of the activity are reported as adhering with the Category 1 criteria of the Aquifer Interference Policy 'minimal impact considerations'. The proponent's conclusions in this regard are based on:

- I. No changes to water quality as any inter-connection between deeper porous rock aquifer systems and shallow alluvial aquifer is restricted with no modelled declines in the alluvial aquifers predicted; or observed in monitoring bores to date.
- II. No impact on surface 'high priority' Groundwater Dependent Ecosystems (GDEs) as no interconnection between deeper porous rock aquifer systems is predicted.
- III. Maximum modelled incremental drawdown impact on any registered water supply bore is less than the 2m threshold; and does not shift potential impacts in any bore from a Category 1 to Category 2 impact.

The impact predictions are reliant on the groundwater model predictions. The independent review of the model concluding: "Based upon the information provided to date for the peer review, the reviewers are not able to draw a conclusion on model fitness to meet the objectives of the study". However, an addendum to the independent review is submitted providing a satisfactory response to the groundwater model limitations reported in the independent review.

DPIE Water accepts a Category 1 impact for both water quality and 'High Priority' GDEs. However, there are four registered bores with a Category 2 drawdown impact predicted. The proponent's position is that these works are predicted to exceed the 2m drawdown limitation under existing approvals and the incremental impact does not result in a Category 2 impact. There is no census of these registered bores and no 'make good' provision presented. As these predicted impacts are: (i) an outcome of Centennial Coal's mining project activities; and (ii) may have or may not have eventuated under existing approvals, potential losses in water security under the pending project should be reconciled as a condition of approval.

End Attachment A