

OUT17/39713

Ms Melanie Hollis
Resource Assessments
NSW Department of Planning and Environment

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Dear Ms Hollis

**Wambo Coal Mine South Bates Extension (DA 305-7-2003 MOD 17)
Comment on the Response to Submissions (RTS)**

I refer to your email of 12 September 2017 to the Department of Primary Industries (DPI) in respect to the above matter. Comment has been sought from relevant branches of DPI. Views were also sought from NSW Department of Industry – Crown Lands and Water that are now a division of the broader Department and no longer within NSW DPI.

Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

DPI has reviewed the RTS and advises that the department considers the proponent has not adequately addressed matters previously raised in relation to water resources and that there is insufficient detailed baseline data, information and a means to establish reliable ongoing performance measures as required under the Aquifer Interference Policy.

Prior to any approval being granted for this project the proponent should be required to complete the following to improve the understanding of impacts on water resources:

- Characterise the aquifer systems and investigate the hydrological connection between aquifers and the water dependent assets of North Wambo Creek, including stream flow and riparian vegetation, within the Modification 17 area. It is recommended that this should include the installation of a representative selection of clustered bore observation sites and stream gauge site(s). This investigation should be supported with the use of remote sensing techniques to evaluate with scientific rigour the groundwater dependence for Endangered Ecological Communities (EEC) mapped across the Modification 17 area.
- Demonstrate the degree of impact associated with fracturing to the bed of North Wambo Creek and/or Wambo Creek, using an evidence based approach.
- Provide the following to better characterise the hydrological connection that will be generated with North Wambo Creek, the changes in stream and subsurface flow, the potential impact to the riverine EEC and to define the licensable take of water:
 - a dataset and assessment of the following from bores and gauges upstream and downstream of the development.:
 - water levels,
 - water quality,
 - volumes and flow rates
- Establish ongoing performance measures.

- Demonstrate that successful remediation can be achieved that would sustain low and moderate flow in North Wambo Creek across Mod 17, using an evidence based approach.
- Demonstrate the extent of goaf fracture and vertical limits to aquifer depressurisation directly above longwall mining for application in the groundwater model, using an evidence based approach.
 - Existing longwall operations at the adjoining South Bates Underground provides an opportunity to undertake the above assessment. As previously advised, sites selected for observation should include water sensitive parts of the landscape, i.e. proximity to North Wambo Creek.
- Provide further detail to demonstrate how the re-equilibrated water level in Mod 17 area is held lower without changes in discharge dynamics. It is noted that the discharge through the un-mined geology into the Hunter and Wollombi Alluvium would be diminished under a reduced hydraulic gradient.

In the event approval is granted for the project, the following should be included as conditions of consent:

- The proponent must prepare subsidence management and rehabilitation plans in consultation with Department of Industry - Crown Lands and Water (water.referrals@dpi.nsw.gov.au). The plans should include
 - Installation of a flow gauge upstream of the diversion cutting, to allow comparison of flow persistence and volumes above and below the cumulative subsidence zone.
 - Development of options and response measures to alteration in channel form and incision arising from mining-induced subsidence.
 - Selection of appropriate management actions and rehabilitation techniques for a slug affected, sand bed river.
 - Provide timeframes and actions to prevent and address incision, channel form alteration or avulsion occurring following mining passes under North Wambo Creek. This should include description relating to techniques and actions to arrest any incipient subsidence development, and should be provided with adequate timeframe to allow assessment and construction prior to substantial channel alteration occurring.

Yours sincerely



Alison Collaros

A/Director, Planning Policy & Assessment Advice

12 October 2017

DPI appreciates your help to improve our advice to you. Please complete this three minute survey about the advice we have provided to you, here:

<https://goo.gl/o8TXWz>