



Department of Primary Industries

OUT15/35715

Mr Matthew Riley
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Matthew.Riley@planning.nsw.gov.au

Dear Mr Riley,

Boggabri Coal Project (PA 09_0182 Mod 5) Proposed Modification

I refer to your email dated 30 November 2015 requesting advice from the Department of Primary Industries (DPI) in respect to the above matter.

Comment has been sought from DPI Water, Fisheries, Agriculture & Lands. Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au. DPI Fisheries and Lands advise no issues. DPI Agriculture and Water comments are provided below.

Comment by DPI Agriculture

DPI Agriculture has reviewed the Environmental Assessment and provides the following recommendations;

- the proponent confirm the existence of mapped BSAL and include mitigation measures in the rehabilitation plan if there are any likely impacts.
- Conduct an assessment to identify the impact of the proposed modification's water requirement on agriculture and propose mitigation measures.
- Finalise the *Leard Forest Mining Precinct Water Management Strategy*, required under the existing consent, incorporating the proposed borefield, before the borefield is permitted to operate.

For further information please contact Helen Squires, Agricultural Resource Management Officer (Tamworth office) on 6763 1270 or at helen.squires@dpi.nsw.gov.au.

Comment by DPI Water

The Department of Primary Industries – Water (DPI Water) has reviewed the Environmental Assessment (EA) for Modification 5.

The proposed modification involves the establishment of a borefield consisting of two production bores to supply water for use in the coal process and mining operations and four contingency production bores to supply water for use at the mine when an existing water supply source is not available. The EA outlines there will be an average deficit of 4.7ML/ day during peak production under average weather conditions, with a total shortfall of 1,015 ML under average weather conditions.

DPI Water's comments on Modification 5 are outlined as follows, with more detailed comments included in ATTACHMENT A.

Water Supply and Licencing Requirements

DPI Water has reviewed the modification and outlined the licencing requirements below:

- Boggabri Coal is required to obtain Water Access Licences (WALs) to account for the take of water associated with the proposed borefield. The WALs must be located within the same water source as the bores Boggabri Coal will be using. Currently this appears to be predominately Zone 4 within the Upper Namoi Groundwater Sources (in the Upper and Lower Namoi Groundwater Sources Water Sharing Plan).

However, Figure 6.2 in the EA identifies the Heathcliffe bore is located in Zone 5, whilst all the other bores are in Zone 4. There is no record currently of Boggabri Coal holding a WAL in Zone 5, therefore they would be required to obtain the appropriate entitlement.

- The WALs do not need to permanently contain the total volume of water that the EA for Modification 5 outlines will be extracted (as the proponent can temporary trade in water on a yearly basis to cover any shortfall in their permanent entitlement) however the proponent must always have sufficient water allocation in their account prior to extracting from these bores. Extracting water with insufficient allocation is an offence under the *Water Management Act 2000* (WMA).
- Whilst the works (groundwater bores) do not require approval under the WMA because they would be subject to an exemption under the *Environmental Planning & Assessment Act 1979*, the works are required to be nominated on the relevant Water Access Licences in accordance with section 71W of the WMA. As the works would not have approvals under the WMA, the proponent will need to liaise with DPI Water to ensure the nomination can occur.
- DPI Water would require all the bores as part of the proposed borefield to be metered to account for the take of water from each Zone. The proponent must ensure safe access to each work and the relevant meter is available to Government officers.
- Section 6.1.3 of the EA outlines the drawdown due to extraction of groundwater is predicted to extend as far as the Namoi River, with drawdown of at least one metre for scenario 1A and drawdown of over two metres under

scenario 1B. The EA states this would reduce the volume of groundwater discharging into the Namoi River and increase river loss into the groundwater within the zone of influence, assuming the river is well-connected to the aquifer. Boggabri Coal will be required to obtain the relevant licences to account for the predicted loss of baseflow to the Namoi River as a result of the proposed borefield operation.

Groundwater Management

The following recommendations are outlined below with more detailed comments in Attachment A.

The following inadequacies in the EA and Appendices should be addressed:

- A full assessment of the proposal against the Aquifer Interference Policy (AIP) is required. The relevant documentation 'Assessing a proposal against the NSW Aquifer Interference Policy' can be found at:
<http://www.water.nsw.gov.au/water-management/law-and-policy/key-policies/aquifer-interference>
- Address inaccuracies regarding details of access licences and share volumes in relevant water sources specifically in Table 2.2 Section 2.3. All entitlements must be accurately documented in the report.
- Ensure all entitlement requirements are addressed. Entitlement is required in all water sources where extraction is planned.
- Include a table listing all monitoring bores, depth screen interval, water source intersected, monitoring regime, and other relevant information.
- Provide DPI Water with bore completion reports and/or DPI Water 'Form As' for all completed and abandoned bores at Cooboobindi, Victoria Park and Roma.
- Provide details of third party bore impact management plan with further clarification around the specifics of 'make good provisions'.
- The minimum distance conditions in the relevant Water Sharing Plan should be incorporated as part of the general licence conditions for the modification.
- Clarification of the groundwater usage data used in the model is required. It appears not all available groundwater usage data was included, this could impact on the accuracy of the model, further explanation is required.
- Clarification on why Groundwater Vistas MODFLOW 2005 was used for the model development instead of USGS Modflow Unstructured Grids as was originally discussed with DPI Water.

DPI Water requires additional information to adequately assess groundwater impacts. Further information on the bore completion reports and pump tests for each bore will be required to be submitted to DPI Water.

Pending provision of further information to assess the impact of the development it may be necessary to include specific conditions as part of the dealing process to assign licences to enable extraction from the bores referenced in this development. These conditions may include restrictions on volumes of water that can be taken from each bore identified, to manage impacts on the river and third parties.

DPI water requests the Department of Planning and Environment liaise further with DPI Water to assist drafting specific conditions of project approval.

Groundwater Model

The report under review summarises the results of the numerical modelling. The groundwater model predicts the extent of drawdown from bore field operations, with consideration of impacts to the aquifer resource, landholder bores and wells, and surface water resources.

DPI Water's review has found no errors or deficiencies in the modelling, including the climate scenarios and cumulative drawdown assessments, that would limit the validity of the results. This modelling is adequate to assess the impacts of the proposed bore field.

Whilst DPI Water considers the model adequate for the purpose of assessing the drawdown impacts of the proposed bore operations, DPI Water requires clarification regarding the groundwater pumping data used in the model. The Parsons Brinckerhoff report refers to only ten pumping bores within the model area, however the DPI Water database has more active bores within the model calibration area. The proponent should clarify which bores and what usage data was used in the model and this should be reconciled with DPI Water's database records.

For further information please contact Christie Jackson, Water Regulation Officer, (Tamworth office) on (02) 6763 1426 or at christie.jackson@dpi.nsw.gov.au.

Yours sincerely



Mitchell Isaacs

Director, Planning Policy & Assessment Advice

16/12/2015

Attachment A

Boggabri Coal Project (PA 09_0182 Mod 5) Proposed Modification Detailed Groundwater Comments on Boggabri Coal Mine Modification 5

Groundwater Monitoring

The EA has not referenced all monitoring bores in the area and there is no list of the monitoring bores or any information on the depth, screen interval, lithology and water groundwater sources measured. The documentation provided does not clearly identify if monitoring bores in the alluvium as presented on Figure 6.3, are planned, or have already been drilled. The EA states that an expanded groundwater monitoring program in the alluvium will be developed in consultation with DPI Water should the proposed borefield be approved.

The documentation of the current monitoring program in the EA should be improved.

Aquifer Interference Policy

Although the Aquifer Interference Policy has been discussed in the EA, the proposed development has not been assessed against the AIP Aquifer Interference Assessment Framework 'Assessing a proposal against the NSW Aquifer Interference Policy – step by step guide'.

The EA indicates the impacts are manageable. The EA and Appendix B refers to make good provisions in principle but lacks specifics with respect to individual landholders. The EA refers to developing a borehole monitoring program in conjunction with DPI Water to validate modelling predictions and assess consistency with the AIP. Further detail should be provided on the make good provisions proposed.

Specific comments on Boggabri Coal Mine Modification Environmental Assessment (MOD 5) Main Report

Section 2.3- Existing Approvals p8

Table 2.2 is incorrect. It includes WALs that are not owned by Boggabri Coal and lists WALs that are currently cancelled. WAL 31084 is owned by Whitehaven Coal Pty Ltd and is assigned to Tarrawonga Coal Mine. WAL 14483 and WAL 14495 are both cancelled. Cancelled licences should not be listed.

The EA needs to accurately reflect all licences held by Boggabri Coal Pty Ltd that are assigned only for Boggabri Coal Mine.

Section 2.4 – Environmental Management p9

The environmental management refers to only 14 Boggabri Coal groundwater monitoring bores. The groundwater bores are shown on Figure 2.1. DPI Water has information on more than 14 BCM monitoring bores.

The EA needs to be accurate in the number of monitoring bores reported.

Section 3.1.1 – Site Water Balance pp12 to 15

The volume of groundwater available to Boggabri Coal is incorrectly stated. There is no mention of Boggabri Coal being required to obtain access licences in Upper Namoi Zone 5 (Gin's Leap to Narrabri) Groundwater Source for the Heathcliffe bore.

Inaccuracies in, and inconsistencies between, tables that state details of access licences and share volumes in relevant water sources should be addressed.

Section 4.3.2 – Other NSW legislation pp 22 to 24

Table 4.1 outlines the relevant sections of the *Water Management Act 2000* (WM Act) and Water Sharing Plans in relation to the proposed borefield. The proponent outlines the distance conditions relating to works approvals under the Water Sharing Plan do not apply, as they are exempt from the requirement to obtain a works approval under the *Environmental Planning and Assessment Act 1979*. Whilst the proponent is exempt from the requirement to obtain a works approval therefore the distance conditions do not apply, DPI Water recommends that the relevant distance conditions within Division 2 of the *Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003* are incorporated when finalising this project.

It is recommended that the minimum distance conditions in the relevant WSP be incorporated as part of the modification.

Section 6 – Environmental Impact Assessment pp 29 to 31

Groundwater monitoring pp 31. The monitoring bores referred to in this section are not listed in a table. Locations of the monitoring bores are shown in Figure 6.3. DPI Water is not aware of all these bores.

A table listing all monitoring bores, depth, screen interval, water source intersected, monitoring regime etc, should be provided in the EA.

APPENDIX A Site Water Balance

Section 4.4.3.1 Groundwater Entitlement pp30

Table 4.4 is incorrect. WAL 29473 is for the Gunnedah - Oxley Basin MDB Groundwater Source and not the Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap) Groundwater Source as indicated on the table. The supplementary licences WAL 14483 and WAL 14495 were cancelled on the 30 June 2015. It is unnecessary to include them in this table.

The total alluvial entitlement of 848 for the Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap) Groundwater Source is incorrect. It should be 706 ML as the WAL 29473 from the Gunnedah - Oxley Basin MDB Groundwater Source has been included in the entitlement sum.

All entitlements have to be accurately documented in the report.

APPENDIX B Drawdown Impact, Assessment of Proposed Borefield Operations

Section 5.2 pp 14 Alluvium Aquifer

Hydraulic properties were determined for bores at Cooboobindi, Victoria Park, Daisymede, Roma, Heathcliffe, Belleview 1 and Belleview 2. DPI Water has information on completed bores at Daisymede, Heathcliffe, Belleview 1 and Belleview 2.

It appears that the production bores have been drilled at Cooboobindi, Victoria Park and Roma, but DPI Water has no record of them being drilled, or of completed bores.

Clarification is required on completed bores for Cooboobindi, Victoria Park and Roma.

Section 5.3.3 Landholder Census pp 18 and Section 7.5.5, pp 29 Groundwater abstraction

The borehole census indicates that more bores have groundwater usage than was used in the model as indicated in section 7.5.5.

The groundwater abstraction says 'Boggabri town water supply bore (0.65 ML/day)' the Boggabri Town Water Supply bore that has been used in the model has zero usage in the Water

Accounting System data base since the 2008/2009 water year. This needs to be addressed in the model.

The report mentions "*10 irrigation bores with varying metred data available*". DPI Water has more than 10 bores in the model area with historical usage over the calibration period of 2004 to 2014 and more bores are indicated in the landholder census. This needs to be addressed in the model.

Available usage data should be used in the model calibration.

Section 7.2 pp 24 Model software and Complexity

Groundwater Vistas MODFLOW 2005 was use as the modelling platform for this model. At a meeting with Boggabri Coal and the modellers with DPI Water earlier in 2015 it was said that USGS Modflow Unstructured Grids Modelling platform would be used for developing this model.

Clarification is sought on why Groundwater Vistas MODFLOW 2005 was used for the model development instead of USGS Modflow Unstructured Grids as was originally discussed.

End Attachment A