

22 December 2021

Mr Stephen O'Donoghue
Resource Assessments
Department of Planning, Industry & Environment
GPO Box 39
Sydney, NSW 2001

Seq No: 80/21

Dear Mr O'Donoghue,

Re: Ulan Coal Groundwater Model Update – Revised Estimates of Baseflow losses

I am writing to advise of revision of baseflow loss estimates, resulting from the recent update of the Ulan Coal Operations Groundwater Model. The Ulan Coal Mine Pty Limited (UCMPL) Project Approval 08_0184, Schedule 3, includes the following condition:

Baseflow Offsets

29. The Proponent must offset the loss of any baseflow to the Goulburn and Talbragar Rivers caused by the project to the satisfaction of the Secretary. The offset should be effected by the retirement of water entitlements within the catchments of the Goulburn and Talbragar Rivers unless the Proponent can provide alternative means of offsetting baseflow to the satisfaction of the Secretary, in which case the Proponent may offset any losses by those alternative means.

Note: As at the date of this approval, baseflow losses for the Goulburn River and Talbragar River are modelled as 0.05ML/day and 0.13ML/day respectively. Improved or additional hydrological data may lead to amendments to these modelled losses.

The Groundwater model construction was revised to be consistent with current practice as part of recalibration which commenced in 2020. The groundwater model structure was re-configured to a 'MODFLOW USG' (Unstructured Grid) type, the layers in the model were increased and the boundaries of the model were extended so that it would operate effectively. Refining and calibrating the model to ensure its reliability has taken considerable time, however the resultant modelled drawdowns and the forecast peak groundwater takes for each water source within water sharing plans are considered to more accurately represent observed values. Furthermore, the revised model represents indirect take from Jurassic sources as was recommended by the peer review of the model undertaken as part of the groundwater assessment for MOD4.

The re-forecast peak baseflow losses for the Goulburn and Talbragar Rivers, using the updated and recalibrated model are 0.276 ML/day and 0.083 ML/day respectively. The increase from the 2018 estimate is due to having more surface drainage length interacting with groundwater through saturated shallow aquifers caused by nearby perching depicted in the model. A flow departure method was used to assess upstream and downstream flow data for the Goulburn River, from 15 Aug 2018 to 8 Feb 2020 and 1 April to 16 September 2019 (reported in the 2020 Ulan Coal Annual Review). The indicated average daily baseflow losses over 711 days is

0.156ML/day, although it is noted that more data is needed to provide effective assessment. It is noted that the average departure method does not subtract the baseflow losses due to mining that occurred prior to the current project approval, which is assumed for the groundwater model.

UCMPL retains Water Access Licence (WAL) allocations for each relevant NSW Water Sharing Plans (WSP) to more than compensate for the revised baseflow loss estimates as indicated in the below table.

Table Annualised Forecast Baseflow Losses per WSP and WAL

Catchment	WSP and Water Source	WAL Allocation (Units)	Licence available water supply (ML)	2021GW model forecast peak baseflow loss (ML/year)
Goulburn River Catchment	WSP for Hunter Unregulated and Alluvial Water Sources 2009 – Upper Goulburn River Water Source	600 (WAL 19047)	600	100.76
Talbragar River Catchment	WSP Macquarie Bogan Unregulated Rivers Water Sources 2012 – Upper Talbragar River Water Source	50 (WAL 41817)	40	27.28
	WSP for Macquarie – Castlereagh Groundwater Sources 2020 – Talbragar Alluvial Groundwater Source	30 (WAL 34921)	24	2.33

The attached letter, describing the updated forecast makes from the model for the above WSPs and others was provided to the Natural Resources Access Regulator and discussions to resolve outstanding licencing issues are continuing.

Could the Secretary of the Department of Planning, Infrastructure and Environment please provide an acknowledgement of the revised forecast for baseflow losses for the Goulburn and Talbragar Rivers, now being estimated at 0.276 ML/day and 0.083 ML/day respectively and indicate that the Secretary is satisfied the baseflow losses are adequately offset by the WALs in the relevant WSPs as indicated above per Project Approval 08_0184, Schedule 3, condition 29? Please contact Lucy Stuart (lucy.stuart@glencore.com.au) on (02) 6372 5300, if you have any questions. Thank you for your consideration of this matter.

Yours sincerely,



Charlie Allan
General Manager
Ulan Coal Mines Pty Limited

Attachment: Letter: Australasian Groundwater and Environment Consultants Pty Ltd (AGE) to UCMPL: Ulan Licencing Summary