**NSW Department of Climate Change, Energy, the Environment and Water**

Our ref: OUT25/15469

Gen Lucas
Planning Group
NSW Department of Planning, Housing and Infrastructure

Email: Gen.Lucas@planning.nsw.gov.au

27/11/2025

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Subject: **Ulan West Continued Operations Modification 8 (MP08_0184) – Modification Report**

Dear Gen Lucas,

I refer to your request for advice sent on 16 October 2025 to the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) Water Group about the above matter.

NSW DCCEEW Water Group has reviewed the Modification Report and has significant concerns regarding risks to water sources and dependent ecosystems. This is due to connective fracturing to surface and enhanced aquifer stream connectivity, drawdown impacts on groundwater dependent ecosystems and water users, and the potential for long-term water quality impacts to watercourses.

DCCEEW Water makes recommendations regarding groundwater impact assessment, monitoring and water take and licensing. Please see **Attachment A** for more detail.

Should you have any further queries in relation to this submission please do not hesitate to contact the Water Assessments team at water.assessments@dpie.nsw.gov.au.

Yours sincerely

Rob Brownbill,
Manager, Water Assessments, Knowledge Division
**NSW Department of Climate Change, Energy, the Environment and Water**

Attachment A

# Detailed advice to DPHI Planning & Assessment regarding the Ulan West Continued Operations Mod 8 (MP08_0184) Modification Report

## 1.0 Groundwater and surface water impacts and management

### 1.1 Recommendation – pre-determination

That Department of Planning, Housing and Infrastructure (DPHI) request the proponent to amend the mining layout to provide a minimum 40m buffer between where the 26.5 degree angle of draw reaches the surface (20mm subsidence limit) and the boundary of the alluvium associated with any 4th order or higher watercourse or the high bank of the watercourse where alluvium is not present.

#### Explanation

The proposed mine extension is situated to the east of Cockabutta Creek to which a 4th order stream (Central Tributary) traverses the intended longwall extraction area. With depth of overburden ranging from 130 m – 170 m, and longwall panel widths of 411 m, and mined seam thickness of 2.8 - 3.3 m, subsidence fracturing from seam to surface fracture is anticipated. The highest risk of impact is within the topographical landscape low points i.e. the surface water drainage features.

Alluvium is hydrologically connected with the Central Tributary 4th order stream. This introduces several significant risks, which warrants a precautionary approach. These risks include:

- Enhanced hydrological connectivity due to subsidence fracturing extending beneath and into the alluvium. These fractures may increase aquifer-stream connectivity and water take well beyond current predictions.
- The peak modelled drawdown zone in the alluvium overlaps areas supporting moderate potential GDEs.
- Long-term water quality degradation may directly impact upon a 4th order stream, with potential consequences for downstream water- dependent assets.

Based on the subsidence mapping in Figure 5 of the Subsidence Assessment (Appendix 5) the subsidence extent indicates the mine plan has excluded mining in the area underneath the Central Tributary. The exact relationship of the subsidence extent to the alluvium and the high bank of the watercourse however is unclear. A minimum 40 m buffer between the 20 mm subsidence limit and the alluvial boundary, or the high bank of the watercourse where no alluvium is present will:

- Minimise risk of direct subsidence fracture connection between mine workings and the alluvium and therefore limit water losses from the alluvium.
- Reduce potential stream losses during active mining.
- Reduce drawdown impacts on GDEs.
- Prevent long-term risk of poor-quality groundwater in alluvial aquifers discharging into Wollar Creek as groundwater pressures re-equilibrate.

Aquifer depressurisation within the topographical low points is noted within the calibration hydrographs where the rate and level of decline is exceeding model predictions e.g. Mona Creek monitoring bores DDH598, PZ06B, PZ06C, MCB03B, MCMB40A, MCMB04B. The timing for the rapid decline coincides with recent mining of wider long wall panel LW07. These bores being somewhat proximal to LW07, without any direct undermining, was part of the rationale for DCCEEW Water recommending not to undermine Mona Creek in a prior project assessment.

Collectively, the high stream order combined with the highly productive alluvium and moderate potential GDEs supports the need for establishing a clear boundary that maintains a natural barrier to minimise degradation of the more sensitive and significant water assets in this location.

## 1.2 Recommendation – pre-determination

That DPHI request the proponent to clarify the water quality assessment to confirm that post mining mounding will not negatively impact surface water sources and groundwater dependent/opportunistic ecosystems (terrestrial or aquatic).

### Explanation

The Groundwater Impact Assessment (Appendix 6) (GIA) is deficient in assessing long term water quality impacts from predicted mounding, particularly under future climate scenarios. Specifically, there is no assessment of:

- Possible reversal in vertical gradients.
- Upward flux with increased baseflow from the Permian to overlying or adjoining hydrostratigraphic units as a consequence of extensive fracture propagation into overlying alluvial formations along fourth and third order watercourses.

The above is critical because:

- Tailings emplacement is proposed within former open-cut pits adjoining a Goulburn River diversion area.
- There is significant potential for mine spoil/tailings to be placed adjacent to alluvium hydrologically connected to the Goulburn River.
- Post mining modelling indicates spot areas near the Goulburn River and ‘central tributary’ with predicted contour changes.
- There is undermining of a third order ‘southern tributary’ and mining up to the high bank of a fourth order tributary, ‘central tributary’, to Cockabutta Creek.
- Intermixing or altering groundwater quality due to cross contamination may be incompatible with the NSW Aquifer Interference Policy (AIP, 2012).

## 1.3 Recommendation – pre-determination

That DPHI request the proponent to

- Conduct a bore census (with landholder consent) to assess bore status and improve predictions.

- Clarify or revise information on actively used aquifers and potential impacts to bores in the Groundwater Impact Assessment (GIA).
- Summarise or revise make good provisions for impacted bores in the GIA.
- Commit to installing nested monitoring bores (shallow <5 mbgl and deeper 10 mbgl) in alluvial aquifers where drawdown impacts are predicted.

### Explanation

The GIA does not identify a bore census undertaken in the modification area. A bore census (with landholder consent) would improve predictions and interpretation of impacts.

The GIA provides inconsistent statements regarding the location of and potential impacts to private water users. For example, section 5.6.4 notes many private bores target Permian strata, however section 7.2 states that drawdown in the Ulan seam is not a significant concern because there are no known beneficial users of this resource in the area. Figure 7.6 shows the location of a number of private bores within the predicted drawdown area indicating the potential for impacts to water users.

The Triassic Quartzose unit (Layer 7) is identified as a more commonly targeted aquifer due to its lower salinity, and modelling indicates minimal impact. Several bores are located in the alluvium in Layer 1 of the model. Although an increase in impacts are predicted for this area, these bores are not explicitly identified to be impacted. Clarity of which aquifers are actively used by third parties and the degree of impact is required.

Under the NSW Aquifer Interference Policy, maximum predicted drawdown within 250m of registered private bores may trigger make good provisions and require monitoring. The GIA provides limited discussion on what make-good provisions would entail. The Groundwater Guidelines for SSD/SSI documentation (DPE 2022) requires at least a high-level summary of proposed make good provisions in the GIA.

Increasing the monitoring where drawdown is predicted in the alluvial aquifer systems would improve detection of potential impacts on private bores and support annual review assessments.

## 1.4 Recommendation – pre-determination

That DPHI requests the proponent to provide the following to support the assessment of groundwater dependent ecosystems (GDEs).

- A summary of the evidence used to determine groundwater dependence or independence of aquatic and vegetative communities.
- A map showing depth to water table and bore locations (typically >10 metres below ground level).
- Re-evaluate the drawdown thresholds for watertable impacts on aquatic GDEs, considering vegetation requirements.
- A summary of the biodiversity assessment report and stygofauna study report in the GIA).

### Explanation

The recommendations provided by the independent peer reviewer are supported by DCCEEW Water. This includes summarising the evidence used to determine groundwater dependence or independence and including a map of depth tom groundwater.

The GIA assesses potential impacts using the 2 m predicted drawdown contour, however drawdown less than 2 m can still be significant for GDEs. A re-evaluation of the 2m drawdown threshold is required.

The findings of the biodiversity assessment report and stygfofauna report are not summarised in the GIA. This creates a gap in the information which limits the ability to conduct a thorough review.

### 1.5 Recommendation – pre-determination

That DPHI requests the proponent to clarify potential groundwater impacts on cultural heritage sites other than "The Drip" and if none exist, provide a clear statement confirming this.

### Explanation

The GIA provides a detailed discussion on the cultural importance of "The Drip" and a conclusion of no impacts, however no other cultural heritage sites are addressed. Confirmation is requested that there are no other cultural heritage sites that require consideration.

### 1.6 Recommendation – pre-determination

That DPHI requests the proponent to correct errors in referencing water sharing plans (WSP) and groundwater sources within the submitted documentation and consider for any necessary updates within the assessment provided.

### Explanation

The GIA includes errors in how the WSPs are referenced. For example.

- An outdated reference is included to the Hunter Unregulated and Alluvial Water Sources WSP.
- Incorrect/inconsistent references to the NSW Murray Darling Basin Fractured and Porous Rock Groundwater Source, which was cited as 2016 but the current WSP is dated 2020.

## 2.0 Water take and licensing

### 2.1 Recommendation – pre-determination

That Department of Planning, Housing and Infrastructure (DPHI) requests the proponent to provide a summary table which:

- Confirms the maximum annual water take and cumulative water take from each water source for the future operations and post closure.
- Calculates indirect take from surface water sources in accordance with Figure 7 of the Guidelines for Groundwater Documentation for SSD/SSI projects (DPE 2022). This

is to include potential streamflow take via cracking during rainfall runoff events, not just low/baseflow periods.

- Clarifies the percentage of annual streamflow loss due to subsidence related impacts for the Northern, Central and Southern Tributaries.
- Identifies which Water Access Licences (WALs) and/or options to obtain additional entitlement are to be used to account for the operational and post closure water take.

### Explanation

There is insufficient information to confirm the maximum predicted water take for the future operations from each water source and how this is to be licensed. Table 2.1 of the Groundwater Impact Assessment (Appendix 6) partially provides take information, however the take volume provided for the North Coast Groundwater Source is from 2015/2016 and the take volumes for the Upper Talbragar River Water Source and the Talbragar Alluvial Groundwater Source have been combined.

Section 5.2 of the Surface Water Impact Assessment refers to indirect take comprising baseflow losses from depressurisation of groundwater and diversion of streamflow due to cracking, and that both these volumes are to be accounted for in the surface water source. This is inconsistent with the DPE 2022 guidelines which specifies reduced groundwater contributions to baseflow is to be licensed as groundwater take and induced leakage from a river to groundwater is licensed as surface water take.

The Surface Water Impact Assessment provides the percentage of impact to streamflow in the Talbragar River, however it is not clear what the impact is to the local tributaries that flow through or have catchments within the project area. Further information is required to understand the potential impacts to these watercourses.

Cumulative volumes from each water source are also requested to assist in interpreting the impact assessment. While inflow will slow over time, groundwater inflow to voids is unlikely to cease entirely. Even small volumes should be included to inform cumulative impact modelling.

Table 2.1 indicates insufficient entitlement is held in the Sydney Basin North Coast Groundwater Source and the Sydney Basin MDB (Macquarie Oxley) Management Zone. It is also noted there is a reference to an incorrect assigning of 7000 unit shares of water entitlement, however DCCEEW Water has no recent requests in relation to this matter. Further information is required to confirm how water take from the North Coast Groundwater Source and the other water sources with insufficient entitlement is being addressed to ensure water take does not occur without a licence. Additionally, relying on carryover water and temporary trades is discouraged due to their unreliability.

## 2.2 Recommendation – pre-determination

That DPHI requests the proponent to assess all water supply works proposed as part of this modification.

### Explanation

The documentation indicates there may be several additional dewatering bores to be constructed as a part of this modification. The proponent must identify and assess the

impacts of all water supply works to meet the exclusion in section 4.41 of the *Environmental Planning and Assessment Act 1979* to not require a water supply work approval under the *Water Management Act 2000*.

### 2.3 Recommendation – pre-determination

That DPHI requests the proponent to quantify the site water demands and demonstrate availability in water sources to meet these demands.

#### Explanation

The documentation has noted there would be an increase in site water demands (e.g. CHPP usage) due to the modification; however this does not appear to be quantified and water sources to meet those demands have not been identified. It is requested that the proponent quantify the changes and demonstrate there are feasible water sources available to meet demands.

### 2.4 Recommendation – pre-determination

That DPHI requests the proponent to clarify that the proposed infrastructure layout meets the buffer requirements from watercourses as defined in the Guidelines for Controlled Activities on Waterfront Land (DCCEEW 2024).

#### Explanation

The documentation identifies several areas for proposed infrastructure which will form part of the modification as shown in Figure 1.3 of the modification report. The proponent must review these areas and the works proposed in these disturbance areas to consider the Guidelines for Controlled Activities on Waterfront Land (DCCEEW 2024).

### 2.5 Recommendation – post-determination

That DPHI requests the proponent to ensure the WALs proposed to account for water take by the project have nominated an extraction point, and that any dealing applications required to facilitate this are completed prior to water take occurring.

#### Explanation

Table 2.2 of the Groundwater Report identifies relevant WALs and provides a description of their use. The proponent must ensure that relevant extraction points are nominated by each WAL. WAL42900 does not nominate an extraction point, WAL34921 and WAL19047 which are linked to work approvals for a bore or dam, respectively, but are described as for baseflow loss which is inconsistent with the linked approvals. Water take should not be occurring without the correct work being nominated.

### 2.6 Recommendation – post-determination

That DPHI requests the proponent to update the Water Management Plan and relevant sub-plans to include the changes to water take, water supply works, and disturbance areas should this modification be approved.

End Attachment A