OUT19/10642

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Dear Ms Evans

Marulan South Limestone Mine Continued Operations Project (SSD-7009)
EIS Exhibition – Revised Response

The NSW Department of Planning, Industry and Environment (DPIE) - Water and the Natural Resources Access Regulator (NRAR) met with the proponent (Boral and their consultants (Element Environment) on 29 July 2019, to discuss issues raised in its submission for the EIS exhibition. Accordingly, this letter replaces the earlier advice to the EIS submission provided (dated 4 July 2019) by DPIE – Water.

In its July submission (reference – OUT19/8880), DPI – Water / NRAR specified that the Marulan Creek Dam Proposal was not supported because:

- Marulan Creek is within the Barbers Creek Management Zone, where new in-river dams are prohibited under Clause 62(5) of the Water Sharing Plan (WSP) for the Greater Metropolitan Unregulated River Water Sources 2011. **Attachmen**t A provides further comments regarding the intent of the WSP.
- Online Detention basins are not allowed in 3rd or 4th order streams, as per the Guidelines for Controlled Activities on Waterfront Land Riparian Corridors (NRAR, 2018).

However, it is now noted that certain exemptions apply to State Significant Developments (SSDs) under section 4.41 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This includes an exemption from the need for water use and water supply works approvals under sections 89-91 of the *Water Management Act 2000*. As such, a dam on Marulan Creek can be considered, however substantial and appropriate justification is required. An options analysis has been provided by the proponent in the EIS, but further information is requested (**see Attachment A**) regarding the impacts (and associated mitigation measures) of the proposed Marulan Creek Dam. This information will enable adequate assessment of the impacts on Marulan and Barbers Creek downstream.

Furthermore, information is also requested regarding Water Access Licences (**see Attachment A**). It is noted that the EP&A Act exemptions do not apply to volumetric licensing and so all predicted water use (take) must be accounted for by having adequate entitlement and appropriate licensing.

The Post-approval Recommendations provided in **Attachment B** are the same as those provided in the 4 July submission, and DPIE – Water is assisting the proponent in their enquiries regarding these. The recommendations previously provided by DPI Fisheries (OUT19/4318) to DPIE – Planning and Assessment in response to the exhibited EIS are related to the Marulan Creek dam proposal and water management, and are therefore provided again in **Attachment C.**

Yours sincerely

Liz Rogers - Manager, Assessments
Water – Strategic Relations
15 August 2019

ATTACHMENT A

Marulan South Limestone Mine Continued Operations Project (SSD-7009)
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Water Sharing Plan

Key objectives under clause 10 of the Water Sharing Plan for the Greater Metropolitan Unregulated River Water Sources 2011 include:

(a) provide for the water supply for the people of Sydney, the Illawarra, the Shoalhaven, the Southern Highlands and the Blue Mountains, which comprise approximately 70% of the NSW population,

(b) contribute to the sustainable and integrated management of the water cycle across these water sources,

(c) protect, preserve, maintain and enhance the important river flow dependent and high priority groundwater dependent ecosystems of these water sources,

Clause 12 describes the performance indicators that are used to measure the success of the strategies of the WSP in reaching the objectives of the Plan, some key ones related to the Marulan Creek dam proposal are:

(a) change in low flow regime,

(b) change in moderate to high flow regime,

(c) change in surface water extraction relative to the long-term average annual extraction limits,

(d) change in water quality in these water sources,

(e) change in the ecological condition of these water sources and their dependent ecosystems,

Impacts of the Proposed Marulan Creek Dam

The proposed dam will impact total flows downstream in Marulan Creek and into the Barbers Creek gorge and flow variability and ecological resilience within the channel and fringing zone. The EIS does not assess the likely cumulative impacts on flow dependent species, nor does it present an analysis of reducing flow variability on sediment transport or interruption of geomorphic processes in Barbers Creek. It is important that the proponent address the above objectives and performance indicators in the water sharing plan when preparing additional information to support consideration of a new dam.

Recommendations

DPIE (Water) recommends that the proponent provides further detail in their Response to Submissions regarding:

- **Marulan Creek Dam Impacts and Mitigation**
    - Description of the current geomorphology, aquatic environment and ecological communities downstream of the proposed dam in Marulan Creek and Barbers Creek.
    - Management of the impacts to the above including the impact of the proposed dam on the flow regime, and geomorphic and ecological processes in Marulan Creek and Barbers Creek;
    - Consideration of managing impacts through retirement and removal of existing dams managed by Boral. This should include a discussion on the effectiveness of dam removal in mitigating the impacts of a new dam on catchment hydrology including Barbers Creek;

- Detail of how and when monitoring, evaluation and reporting mechanisms will be designed to demonstrate the effective management of the river system and its catchment to minimise impacts on hydrology, geomorphic processes and downstream ecological health.

- **<u>Water Access Licence (WAL) purchase(s) and transfer</u>**
  - A plan of when and how the proponent intends to acquire the necessary water entitlements to cover supply from the proposed Marulan Creek Dam should it be approved;
  - Consideration of the transfer and/or retirement of WALs to address the medium to long term alteration in flow characteristics into Barbers Creek including consideration of offsets elsewhere in the Barbers Creek Management Zone.

END ATTACHMENT A

ATTACHMENT B

Marulan South Limestone Mine Continued Operations Project (SSD-7009)
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Post-approval Recommendations

Should the project be approved, DPIE and NRAR provide the following recommendations:

- Impose a condition requiring Boral to remediate and rehabilitate channel degradation along Marulan Creek and other watercourses within its ownership. Prioritisation and development of rehabilitation options should follow the procedure set out in *A Rehabilitation Manual for Australian Streams* (Cooperative Centre for Catchment Hydrology, Land and Water Resources Research and Development Corporation, 2000).
- Review the site water balance upon the commencement of operations and update every three years. This must include a review of all forms of take of water as set out in section 60I of the *Water Management Act 2000*.
- Develop alternate water quality trigger threshold values to ensure impacts from mining operations at each surrounding watercourse are detected at an early stage.
- Consider release measures for Tallong weir and Tangarang Creek dam to increase flow variability downstream into Barbers Creek gorge. This should be designed around downstream ecosystem flow requirements, following review of likely and potential ecological niches within Barbers Creek to the Shoalhaven River junction.
- Prepare a groundwater monitoring and management plan in the first year that includes:
    - Continuation of data gathering from the existing monitoring network throughout the project lifetime.
    - Establishment of a groundwater level and quality monitoring network in and around Mt Frome Middle Limestone within one year from the granting of the approval. Formations hydraulic parameters are required to be characterised during that program.
    - Monitoring of seepage from the overburden emplacements and mine inflows.
    - Model validation by verification and update of the groundwater model within three years of approval and every three years ongoing throughout the project lifetime. The model is to be informed by the data collected on formation characterisation and groundwater levels.
    - Definition of a trigger threshold identifying if the capture of water and impact prediction remain within predictions specified in the environmental assessment. A response plan must be prepared to define the management and mitigation actions to be implemented if site observations or model update predictions are above that trigger.

END ATTACHMENT B

ATTACHMENT C

Marulan South Limestone Mine Continued Operations Project (SSD-7009)
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DPI Fisheries Recommendations

DPI Fisheries provided the following recommendations on 6 June 2019 (OUT19/4318) to DPIE – Planning and Assessment:

- Marulan Dam should be constructed to be a leaky structure so that it maintains environmental flows to the aquatic habitats downstream.
- DPI Fisheries requests the opportunity to review the draft Construction Environmental Management Plan for the construction of Marulan Dam. Erosion and sediment control measures must be implemented in accordance with Landcom's (2004) *Managing Urban Stormwater: Soils and Construction*.
- DPI Fisheries request the opportunity to review the draft Water Management Plan.
- DPI Fisheries requests some justification as to why it is only proposed monitor aquatic biodiversity for one year following the commencement of the 30-year mine plan.

END ATTACHMENT C