



OUT21/16833

James McDonough
Planning and Assessment Group
NSW Department of Planning and Environment

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Dear Mr McDonough

**Deep Creek Quarry Project (SSD-11591659)
EIS**

I refer to your email of 17 November 2021 to the Department of Planning and Environment (DPE) Water and the Natural Resources Access Regulator (NRAR) about the above matter.

Ironstone Developments Pty Ltd proposes to develop a new hard rock quarry in the Limeburners Creek area to extract up to 500,000 tonnes per annum of hard rock aggregate products. Construction will include a new intersection and access road, workshop, stockpiles, weigh bridge, power line and office.

DPE and NRAR require the proponent to provide more information on water take and licences, and address the aquifer interference policy requirements and impacts on waterfront land.

Please find our pre-determination and post approval recommendations in Attachment A.

Any further referrals to DPE Water and NRAR can be sent by email to water.assessments@dpie.nsw.gov.au, or to the following coordinating officer within DPIE Water:

Donna Priestley – Senior Project Officer
E: donna.priestley@dpie.nsw.gov.au
M: 0456 738 727

Yours sincerely

A handwritten signature in blue ink that reads 'Liz Rogers'.

Liz Rogers
Manager Assessments
Department of Planning and Environment: Water
24 December 2021

Attachment A

Detailed advice to DPE Planning & Assessment regarding the Deep Creek Quarry Project (SSD-11591659)

1.0 Water take and licensing

1.1 Explanation

The proponent has provided insufficient information to confirm dams on the landholding are within the Maximum Harvestable Rights Dam Capacity (MHRDC). The EIS references 8 dams within the project area, one of which is to be an external water source. The capacity of these dams could not be identified.

Uncertainty exists as to the need to extract water from a third order watercourse. This is referenced in two sections of the EIS, however no further detail is provided in terms of volumes or an impact assessment. As water take from third order watercourses needs to be accounted for, clarification is required of this requirement, the associated volumes and the ability to acquire entitlement if necessary.

The water balance for the project relies on water being retained on the site to meet the annual demands if dry times were sustained. The water demands would be more than met by onsite supply if average to wet conditions occur and there would be a need to discharge excess water from the site. The risk of inadequate water during sustained dry times would need to be understood and planned for by the proponent.

Aquifer interference activities resulting from this project are predicted to result in groundwater take within the range of 8 – 51ML/yr. The proponent has not demonstrated the ability to acquire this entitlement, however based on a review of existing entitlements in the relevant water source and previous releases under Controlled Allocation Orders, the proponent has a viable pathway to secure the necessary entitlement.

A comprehensive water balance for the quarry pit will be required to validate groundwater take predictions and to inform model updates and potential changes to licence requirements. This will need to include accurate metering of water pumped into and out of the quarry combined with modelled inputs and outputs. This will also inform surface water capture within the quarry that may be subject to a licence exclusion. The groundwater level monitoring program will assist in identifying and understanding potential changes to groundwater inflows from that predicted, in the event that drawdown either exceeds or does not reach impact predictions.

1.2 Recommendation – Prior to Determination

That the proponent:

- confirm the combined capacity of all dams on minor streams on the landholding, are within the MHRDC for the property.
- confirm the need to extract water from a third order watercourse. If required, the proponent should provide an impact assessment and demonstrate the ability to acquire sufficient entitlement to account for this water take in the relevant water source.
- secure groundwater entitlement in the New England Coast Fractured Rock Groundwater Source to account for ongoing groundwater take during the quarrying operational period and post closure

1.3 Recommendation – Post Approval

That the proponent:

- prepare a Water Management Plan in consultation with relevant government agencies to detail the groundwater and surface water management system, water balance and the monitoring, mitigating and management measures. Where existing monitoring bores are

to be impacted, suitable alternatives need to be installed with baseline data collection commenced prior to mining activities.

- develop a plan to accurately meter and monitor water take from surface and groundwater sources with ongoing review of actual versus modelled predictions.
- report on water take at the site each year (direct and indirect) in the Annual Review. This is to include water take where a water licence is required and where an exemption applies. Where a water licence is required the water take needs to be reviewed against existing water licences.
- ensure sufficient water entitlement is held in a water access licence/s to account for the maximum predicted take for each water source prior to take occurring.
- ensure that relevant nomination of work dealing applications for water access licences proposed to account for water take by the project have been completed prior to the water take occurring.
- ensure consistency with the rules of the relevant water sharing plans.

2.0 Groundwater impacts

2.1 Explanation

The proposal is an aquifer interference activity that requires an assessment against NSW Aquifer Interference Policy (AIP) (2012) minimum impact considerations. Although many requirements of the AIP could be found in the EIS and Appendix P (Groundwater Impact Assessment), the absence of a summarised response to AIP requirements using the Aquifer Interference Impact Assessment Framework tool hinders the comprehensive adequacy assessment of the proposal against the AIP.

The proponent has provided groundwater inflow estimates that are based on rudimentary calculations using pit flow estimation method developed by Martinelli and Niciolli 2000. However, the AIP requires the groundwater inflow estimate and the predicted impacts associated with the aquifer interference activity to be based on complex modelling platform that is independently reviewed and determined to be robust and reliable and deemed fit for the purpose.

2.2 Recommendation – Prior to determination

That the proponent:

- assess the proposal against the AIP requirements and include the summarised responses using the Aquifer Interference Assessment Framework Tool (https://www.industry.nsw.gov.au/_data/assets/pdf_file/0007/171097/Aquifer-Interference-Assessment-Framework.pdf) in section 7.5 of the EIS.
- estimate the volume of groundwater take and impacts associated with the aquifer interference activity during and post closure based on complex modelling platform that is: consistent with the Australian Modelling Guidelines; independently reviewed and determined to be robust and reliable, and deemed fit for purpose.

3.0 Waterfront land assessment

3.1 Explanation

Significant disturbance of the channel of Deep Creek is proposed to install a culvert crossing as part of the main access road to the site. This includes realigning the channel to improve hydraulics. Rock rip rap is proposed to mitigate scour and this will need to be appropriately sized to withstand the local shear stresses. It appears pipe culverts may be proposed for the Deep Creek crossing. Box culverts or a bridge are recommended due to the size of this watercourse and the need to maintain natural hydrologic and hydraulic functions. This can be addressed at detailed design stage and all watercourse crossings need to be consistent with the “Guidelines for Watercourse Crossings on Waterfront Land”.

Uncertainty exists as to whether the sediment basins at the infrastructure area and the stockpile are within waterfront land and meet relevant buffer requirements. As Deep Creek is a 4th or higher order watercourse, a vegetated buffer of 40m is recommended between the top of the high bank of the watercourse and the basin.

3.2 Recommendation – Prior to determination

That the proponent:

- confirm the vegetated buffer distance between the proposed sediment basins and the high bank of Deep Creek is 40m. Redesign is recommended if the current layout does not meet this.

3.3 Recommendation – Post approval

That the proponent:

- ensure watercourse crossings and other works within waterfront land are in accordance with the Guidelines for Controlled Activities on Waterfront Land (NRAR 2018).

End Attachment A