

23 February 2022

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Dear Jessie,

RE: Martins Creek Quarry Project (SSD 6612) – Request for additional information – DPIE Water

As per correspondence dated 4 February 2022, the Department of Planning, Industry and Environment (DPIE) has requested that Daracon provide additional information in relation to advice received from DPIE's Water Group (Water Group) on the Martins Creek Quarry Project (SSD 6612) (the Revised Project).

Specifically, DPIE has requested:

'Consistent with the attached advice, the Department is requesting that you quantify the maximum surface water take for the project during operations and void filling and demonstrate that adequate water licences can be acquired within the water market.'

The Water Group's advice indicates that further assessment is required to quantify the surface water take for the Revised Project. Specifically, the Water Group indicates that the use of average runoff figures as part of the water take calculation is inappropriate when the ability to account for the maximum water is required. The Water Group recommends the runoff volumes be recalculated based on a wet scenario with the understanding that all water take needs to be accounted for.

It is unclear from the Water Group advice what they define as a 'wet scenario'. However, in order to address the request, water balance modelling has been undertaken to estimate the potential surface water entitlement requirements (for both operational and post closure periods) with consideration of 'wet scenarios'. The following parameters have been applied:

- Use of historical rainfall data from 1968 to 2019, which includes a range wet and dry climatic periods, as used in the Amended Development Application (ADA) water balance.
- Undisturbed catchment runoff has been estimated in the water balance using Australian Water Balance Model (AWBM) calibrated to average regional runoff of 0.95 ML/year/ha. Note that AWBM predicted runoff will be higher during above average rainfall years and lower during below average rainfall years.

- Surface water take for the operational period based on runoff volumes from upslope undisturbed catchments for additional intercepted upslope undisturbed catchment due to the Revised Project.
- Surface water take for post closure period based on runoff from entire catchment, i.e. upslope undisturbed and final void catchments. Undisturbed catchment AWBM parameters were applied to the entire catchment (i.e. to the void catchments in addition to the upslope undisturbed catchments) as undisturbed catchment runoff is considered to be representative of the volume of take from the water source.
- Surface water entitlement requirements were estimated using the predicted runoff volumes for the operational and post closure scenarios based on a three-year period accounting for carry over volumes in accordance with typical Water Access Licence (WAL) conditions.

Table 1 provides a summary of the results based on the runoff volume modelling.

Table 1 Wet Scenario Licence Requirements

Catchment to be licenced	Area (ha)	Entitlement Required (ML) excluding Harvestable Rights	Entitlement Required (ML) accounting for Harvestable Rights Entitlement
Operational Additional Undisturbed	16.2	35	23.3
Operational All Disturbed	29.42	60	48.3
Final Landform Void Recovery Period	89.03	180	168.3
Final Landform Post Void Recovery	89.03	180	105.3

Daracon has committed to obtaining appropriate surface water access licences to cover licensable take from the Paterson/Allyn Rivers water source prior to lateral extension of the quarry that results in the interception of additional undisturbed catchment, as outlined in the ADA and Submissions Report.

Further, as part of the quarry closure planning process, Daracon has committed to consult with the Water Group regarding the surface water licensing associated with the final voids and ensure that sufficient surface water entitlement is maintained in accordance with the relevant legislative requirements and policies in place at the time of closure.

In regards to water market, there are a total of 3,924 shares in the Patterson/Allyn Rivers water source across 101 tradeable WALs. Elders has indicated that the maximum take across the water source in the past 10 years was 216 ML (as sourced from the online NSW Water Register) (Elders, 2022). Assuming a full water allocation, there are currently 3,924 ML available per annum within the water source. Based on the historical usage of 216 ML

over 10 years, it is considered likely sufficient entitlement should be obtainable in the market, if required.

We trust this information meets with your current requirements. Please do not hesitate to contact myself, or Kirsty Davies at Umwelt (0409 372 344 / kdavies@umwelt.com.au) should you require clarification or further information.

Yours sincerely



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