

Our ref: OUT25/8408

Jarrold Blane
Planning Group
NSW Department of Planning, Housing and Infrastructure

Email: jarrod.blane@dpie.nsw.gov.au

16 July 2025

Subject: Cabbage Tree Road Sand Quarry Modification 4 (SSD-6125) – Modification Report

Dear Jarrod Blane,

I refer to your request for advice sent on 3 July 2025 to the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) Water Group about the above matter.

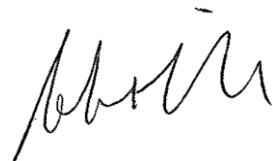
NSW DCCEEW Water Group has reviewed the Modification Report and makes pre-determination recommendations to:

- Determine the potential for groundwater mounding in the area of the modification.
- Identify quarry bench levels that ensure operations are consistent with Condition 6 in Schedule 2 of the current project approval (ie. not undertaking operations within 0.7m of the predicted maximum groundwater level).

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 DCCEEW 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 Cabbage Tree Road Sand Quarry Mod 4 (SSD-6125) – Mod report

1.0 Groundwater conditions and monitoring

1.1 Recommendation – pre determination

The Department of Planning, Housing and Infrastructure request the proponent to:

- Conduct and present findings from a study to determine potential groundwater mounding in the sand dunes of the proposed modification area.
- Identify bench quarry working levels that are consistent with Condition 6 in Schedule 2 of the current project approval (ie. not undertaking operations within 0.7 m of the predicted maximum groundwater level).

Explanation

No evidence of groundwater investigation across the MOD 4 area has been presented to confirm the existing groundwater conditions and potential interactions with the proposed modification. The water table surface is commonly a subdued replica of landform topography and therefore may be mounded below the dune crest landform of the proposed Mod 4 Area. The dune landform has been cleared of vegetation in areas of existing occupation and hence may have enabled enhanced percolation of precipitation into the dune facies forming a perched aquifer within the dune.

DCCEE Water identified significant variation between model predictions and observed groundwater levels in the northwest, where terrain is flatter and prone to recharge and ponding during heavy rainfall. This is determined to be due to the Minimum Extraction Level (MEL) that was projected across the Mod 4 area not accounting for the elevated topography of the Mod 4 area. To consider this further, DCCEE Water overlaid the MEL plot on Google Earth and projected a traverse from the nearest Hunter Water Corporation bore to estuarine mud flats, revealing higher groundwater levels along the northern boundary.

DCCEE Water notes a greater risk of non-compliance with Schedule 2, Condition 6, which requires excavation to remain at least 0.7 metres above the predicted maximum groundwater level. This is further supported where Groundwater Exploration Services (GES, 2025) observed the greatest deviations from model predictions near BH11 in the northeast, where catchment relief is low.

Further assessment and review against the design of the project is required.

1.2 Recommendation – post determination

The Department of Planning, Housing and Infrastructure requests the proponent to install additional groundwater monitoring location(s) along the northern boundary of the proposed western extension area and include them in the existing monitoring program alongside the consultant recommended sites.

Explanation

Whilst GES recommends installing three new monitoring bores in the southern part of the western extension, DCCEE Water recommends additional monitoring along the northern boundary to:

- Track groundwater levels more accurately.
- Ensure MEL compliance.
- Support adaptive management of quarry operations.

1.3 Recommendation – post determination

The Department of Planning, Housing and Infrastructure requests the proponent to:

- Update the Water Management Plan and monitoring program to incorporate all new monitoring sites.
- Include data from all new monitoring sites in the quarry's annual environmental reporting.

Explanation

The Mod 4 western extension would operate under the existing conditions of approval for SSD-6125, the Water Management Plan (WMP) and Groundwater Monitoring Programme (GWMP). Both the WMP and GWMP must be updated to include all recommended additional monitoring sites.

Annual reporting of groundwater monitoring in relation to quarry mining activities levels must be reported as part of the annual environmental reporting for the operations.

End Attachment A
