

FACT SHEET – GROUNDWATER

This fact sheet has been prepared by Monaro Rock to provide information about the groundwater environment in the vicinity of the project, and the management measures that will be implemented by Monaro Rock throughout the life of the project.

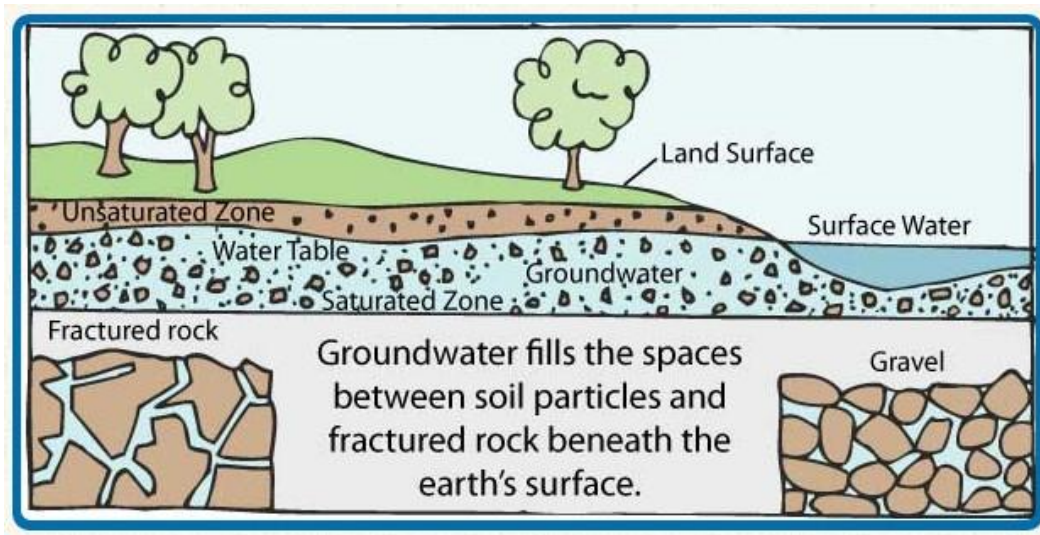
Monaro Rock is aware that many community members rely upon groundwater for their properties and will carefully assess any potential risks to groundwater supply and water quality as a result of the Project.

WHAT IS GROUNDWATER?

Groundwater is the water below the land surface and is commonly referred to as the water table or aquifers. Groundwater slowly moves between gaps (pores) in rock and sediments. It can connect to rivers, streams, lakes and wetlands. Trees and other vegetation can tap into groundwater (Water NSW, 2024¹). Groundwater settings are often complex and they rely upon geology, topography and climate.

Under natural conditions, groundwater moves from areas of recharge to areas of discharge. Recharge is the movement of water into a groundwater system from rainfall, rivers or streams. Under natural conditions, groundwater discharges into springs, lakes, rivers or wetlands (Water NSW, 2024¹). Groundwater levels can change naturally over time due to changes in weather patterns and climate. Groundwater levels can also react to withdrawal by humans using wells or bores, or through construction, mining and quarrying operations. These activities also have the potential to alter the natural flow of groundwater.

Human activities can also alter groundwater quality, with contamination at surface a key risk due to the infiltration of contaminants such as salts, hydrocarbons or metals.



Source: State Water Resources Control for California (2018)²

¹ Water NSW (2024) What is Groundwater? <https://water.dpie.nsw.gov.au/our-work/science-data-and-modelling/groundwater-management-and-science/managing-groundwater-in-nsw> [Accessed 30/04/2024]

² State Water Resources Control for California (2018) Groundwater Basics https://www.waterboards.ca.gov/water_issues/programs/groundwater/gw_basics.html [Accessed 30/04/2024]

GROUNDWATER ENVIRONMENT AT THE PROJECT SITE

Groundwater within the project site is located at depths between 5m and 60m below ground level (mBGL). Seasonal rainfall and surface water flow within minor creeks infiltrate the ground surface and flow through the unsaturated upper layers of soil and weathered rock to recharge the groundwater table, which is located in the underlying geological units (the Deakin Volcanics and Colinton Volcanics). All creeks in the vicinity of the project are ephemeral with no measurable base flow and no contribution from groundwater.

Extraction at the project site would be undertaken over four stages of development. The final depth of the extraction area would be no greater than 795m AHD. Based on an initial site investigation, extraction during Stages 1, 2 and 3 will remain above the groundwater table and are highly unlikely to intersect groundwater. Therefore, only Stage 4 of the project will intersect the groundwater table and have the potential to impact groundwater levels. A groundwater impact assessment will be undertaken to confirm the influence of the project on surrounding groundwater users.

PROJECT ASSESSMENTS RELATING TO GROUNDWATER

Risks to the groundwater setting from quarrying activities principally include changes to water availability and quality.

- The creation of an extraction void may intercept an aquifer and create a new location for water discharge. This may result in a reduction of groundwater levels in an aquifer (drawdown). This process may result in impacts to:
 - local groundwater users who may be using the water for household purposes, stock watering or irrigation;
 - groundwater dependent ecosystems that rely on groundwater as a water source;
 - local streams and springs that may rely upon groundwater to maintain flows.
- Contamination at the surface may infiltrate to the groundwater setting in salts, hydrocarbons or metals entering groundwater resources. Hydrocarbons are commonly used in the quarrying industry and must be managed to avoid contamination.

Monaro Rock is committed to minimising the impacts of the project on the groundwater system and surrounding groundwater users. A preliminary census of registered groundwater bores within the region has been undertaken to identify groundwater bores that may be impacted by the project and therefore should be considered during the project assessment. We have engaged a specialist consultant to prepare the following assessments relevant to groundwater for the project's environmental impact statement (EIS).

- A groundwater site investigation to characterise hydrogeological conditions within the project site (including construction of seven monitoring bores) (completed).
- Development of a hydrogeological conceptual model (completed).
- A groundwater impact assessment supported by a 3D numerical groundwater flow modelling to enable prediction of drawdown and potential impacts to surrounding groundwater users (in progress).

Outcomes of the groundwater assessments will be communicated through the EIS and other consultation. Monaro Rock will continue to engage with the community and provide updates as the EIS is developed.

GROUNDWATER MANAGEMENT MEASURES

The NSW Aquifer Interference Policy (2012) sets the requirements for groundwater assessment and acceptable outcomes for proposed changes to the groundwater setting. The groundwater impact assessment will be subject to independent peer review and assessed by the NSW Department of Climate Change, Energy, the Environment and Water.

Operating procedures will be specifically designed to minimise impacts to groundwater. A summary of industry-standard groundwater management and mitigation measures is provided below. Additional measures may be recommended during the environmental impact assessment.

- Preparation of a water management plan for the project that incorporates a groundwater management strategy and trigger action response plan.
- Licensing of water taken through the development of the Quarry in accordance with the NSW Government requirements.
- Implementation of a comprehensive groundwater monitoring program.
- Appropriate storage of all hydrocarbons used on site (i.e. stored within bunded and covered storage areas or in self-bunded tanks).

HOW DO I FIND OUT MORE?

Community members are encouraged to contact us with any project-related questions or ask to be included in ongoing consultation.

Enquiries may be sent directly to the project team via the Monaro Rock website (<https://monarorock.com.au/>) or to Nicholas Warren either by email at nick@rwcorkery.com or call 0437 635 975.