Geotechnical works

for the former Pioneer-Burdekin Project

From June 2023 until September 2024, Queensland Hydro's contractors conducted geotechnical works in the Netherdale and Dalrymple Heights areas. Geotechnical works are commonly one of the first steps in planning and designing construction projects including roads, buildings and dams.

Why did Queensland Hydro complete geotechnical works?

The purpose of the works was to understand the suitability of the soil and rock for the construction of a pumped hydro scheme. We were looking to understand the type of soil and rock present, its properties (such as strength, density and permeability), and how it would respond to the potential infrastructure. Together, all of the geotechnical works were intended to understand the regional geology.

What were the geotechnical works?

The works included extracting soil and rock from various depths by drilling boreholes, digging test pits and soil coring. Test pits and soil coring were used to understand the shallow subsurface, and drilling was used to understand the soil and rock deeper than 5 metres below the surface.

Geotechnical works were only carried out on some of the land that may have been needed for the scheme.

What is borehole drilling?

Purpose: Drilling was used to understand the soil and rock at depths greater than 5 metres. Borehole cores typically less than 100mm in diameter were collected during the drilling process.

Standards: The drilling was carried out by qualified and experienced contractors under the supervision of a geotechnical engineer. It was done in accordance with the Australian Standard for Geotechnical Investigations.

Once the works were completed, the boreholes were either sealed with grout (which is like cement) or repurposed as groundwater monitoring bores.

What is test pitting?

Purpose: Test pitting was used to understand the soil and rock at depths up to 5 metres. It involved digging shallow open pits using a backhoe or excavator. The pits varied in size but were typically 3 metres long and 1 metre wide, and up to 5 metres deep.

Standards: The pitting was supervised by qualified geotechnical engineers and/ or soil scientists and rehabilitated immediately after inspection.

What is soil coring?

Purpose: Soil coring was used to understand the soil and rock at depths between 0.5 and 2 metres. The soil cores were extracted using either a hand auger or a mechanical push tube mounted on the back of a ute.

Standards: Soil core sampling was carried out by qualified soil scientists. Once the assessment of each core was complete, the soil was placed back in the hole.

Geotechnical works and groundwater

There is a concern in the community that the geotechnical works changed the groundwater.

Queensland Hydro takes its environmental obligations seriously and acted quickly once notified of the concern. Queensland Hydro engaged specialists to investigate. The assessments found no evidence that Queensland Hydro or its contractors caused any water contamination.

Both the Department of Local Government, Water and Volunteers (DLGWV) and Department of Environment, Science, Tourism and Innovation (DETSI) also conducted investigations into the complaint. No adverse findings were made against Queensland Hydro or our contractors. DETSI concluded that there was no evidence to support allegations of contamination due to geotechnical works conducted by Queensland Hydro.

Data indicates that the soils in the area naturally contain various metals. There is a lot of farming activity in the area, which is relevant because animal waste from activities like grazing can contain *E. coli* which has the ability to seep into shallow groundwater after rainfall events.

The assessments indicate that any water quality issues are from sediment containing metals and *E. coli* flowing into shallow groundwater wells following heavy rainfall.

Testing of water in any shallow groundwater wells may result in similar findings.

Managing drinking water quality

Queensland Health provides the following advice for safe drinking water on rural properties:

Shallow groundwater is riskier for home use than rainwater or deep groundwater, because it's more likely to be affected by contaminants like animal waste and naturally-occurring metals.

Installation of simple water treatment to kill any pathogens that may cause illness prior to drinking should be considered. Treatment options of drinking water on rural properties generally consist of one, or a combination of, filtration, ultraviolet (UV) disinfection and chlorination.

Queensland Hydro is willing to work with landholders on any issues raised related to groundwater. If you have a residential lease with Queensland Hydro and are concerned about your drinking water supply, please contact us on **1800 875 099**.

More information

Scan the QR codes below to access additional resources for managing private drinking water supplies.

Queensland Health
"Safe water on rural properties"

Department of Health Disability and Ageing
"Guidance on the use of rainwater tanks"

Contact us

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1800 875 099
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This document was created on 23 Dec 2025 and is of a general nature and subject to change.

CE-FTS-0027