

Geotechnical and geological investigations

Assessing Tasmania's pumped hydro potential

Pumped hydro developments are major infrastructure projects that consist of water storages and underground structures including power stations, tunnels and caverns.

Before projects are chosen to proceed to development, you need to know what the surface and underground conditions are like at the site.

An important early part of the feasibility study is completing the work that helps us understand this.

One of the many different inputs we need is geological and geotechnical data, that tells us what the ground conditions will be like both at the surface and at depth.

Geological and geotechnical investigations help us understand the physical properties of the ground where major infrastructure might go. For example, is the rock hard or soft, are there faults that may make conditions unstable, are there areas of potential leakage? This information is then used to inform the engineering design of the project.

Before we do field investigations, our team have looked at other information such as previous drilling and reports from the area to help us decide where to drill.

What's happening in the Mersey-Forth area?

Hydro Tasmania will be doing two types of geotechnical and geological investigations – test pitting and drilling – in the Lake Cethana and Lake Rowallan areas between September and December 2019.

We are targeting locations at Lake Cethana and Lake Rowallan where some of the major pumped hydro infrastructure might go – the intake from the lake, the water tunnels, the power station and the new upper water storage. The sites being investigated are on the western side above Lake Cethana and the western side above Lake Rowallan.



How do we do this?

Access

- Firstly, we will use a civil contractor to help create safe access to the testing areas. This work involves minimal vegetation clearing for access and drill pads and we will minimise site disturbance.
- You can expect to see earthmoving equipment in the area at that time including trucks and an excavator of up to 20-tonne in size.



Test pitting and drilling

- Once we have safe access, the specialist contractors can start their investigations.
- Test pitting involves digging a small hole to 5 metres deep with an excavator. After data and samples are collected, the hole is filled in and the site rehabilitated.
- The drilling machine will drill a deep hole at each site ranging between 450 metres and up to 650 metres. The drilling method collects a core sample of rock that geologists then use to measure and map the underground conditions. The machine sends the drill rods down deep into the ground and takes a 'core' of the earth – like coring an apple but on a much larger scale.
- You can expect to see light trucks and deep hole drill rigs in the area at that time.

Analysis

- Once the work is done, we send all of our samples to a specialist geotechnical laboratory for testing. The samples are analysed to see what it is made up of and whether it is what we expected to find.
- Geologists use the drilling data and other information to create a geological model, which is a 3D picture of what the underground conditions are like. This helps us to site where underground infrastructure will go.
- All this information helps inform the team to make decisions about where the new assets might go and how they are best constructed.

Site restoration

- After our samples and data are collected, all holes are filled in and disturbed areas are rehabilitated. This work is done to the standards outlined in our Environmental and Social Impact Assessment.

Contact us

We welcome feedback! You can reach us on 1300 360 441 or pumpedhydro@hydro.com.au

The latest information is available at www.hydro.com.au/clean-energy/battery-of-the-nation