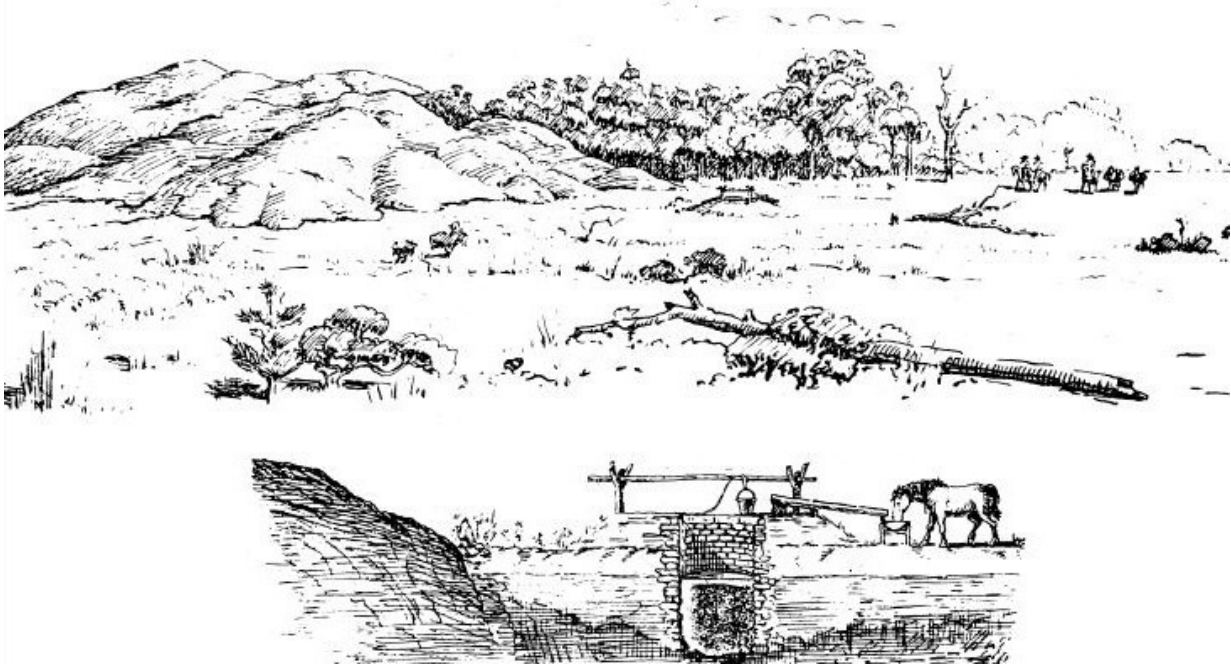


Sketch of a well, 1894



Description

This is a black-and-white sketch by S Göczel that appeared in the first annual report of the Western Australian Department of Mines in 1894. The sketch is in two parts - the top part shows a natural landscape with trees in the background and, faintly visible on the far right, a party of three men on horseback accompanied by two packhorses approaching a well near the base of a large rock. The bottom part of the sketch shows a cross-section of the well revealing it to be lined with stones and holding water.

Educational value

- This sketch illustrates one source of water on the track to the gold fields in the eastern part of Western Australia. Until the railway to Coolgardie was completed in 1896 and the water pipeline in 1903, thousands of men and 600 or more teams (about 4,000 horses) as well as numerous camel trains depended on water sources such as wells, soaks and distilled water from condensing plants. The search for water consumed a great deal of the prospectors' time and energy. Prospectors' first-hand accounts reveal that they looked primarily for water and found gold in the process.
- Prospectors largely followed the water supply route laid down by Charles Hunt, who had led two expeditions to search for agricultural land east of York in the mid-1860s and had used convicts to build dams, dig wells and improve natural soaks, enlarging them and lining them with stone. Thirty years later, Hunt's wells, soaks and dams were a lifeline for travellers in this arid region, with prospectors in their thousands tramping east from one of Hunt's key watering places to the next.
- Wells were sited to take advantage of water accumulated in the soil at the base of granite outcrops. Rain runs off the impermeable rocks and gathers in the spaces between grains of sand and decomposed rock. Many of the watering places that Hunt's parties established bear this out in names such as Granite Hill



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Well and Horse Rocks Well. Almost all underground water in the gold fields was saline except for this rock drainage.

- The sketch illustrates principles used in the construction of a well in general and those constructed in the eastern gold fields in particular. The well is lined with local rock and situated at the lowest point of the rock's profile to maximise seepage. Although shallow, each of Hunt's wells took hundreds of hours to excavate and line with slabs of granite and timber poles, as the convict builders had to do everything manually. A fulcrum-lever mechanism was used to get water from the well. A bucket was raised and lowered by a rope usually pulled over a branch placed horizontally between two forked branches across the mouth of the shaft.
- There is a clear relationship between the groundwater and the water in a well. When the groundwater is not replenished through rain, the well dries up. The depth of the water in the well corresponds to the level of the groundwater table, so when the watertable drops, for instance in dry periods or because of excessive extraction, the well does not fill. In this sketch the level of water in the well suggests that there is significant groundwater available.
- The inclusion of the sketch in the Department of Mines' first annual report in 1894 suggests that the importance of water was recognised within the Western Australian Government. The development of the gold fields was being hindered by water shortages. During his extensive tour of the gold fields at the end of 1895, Premier John Forrest found mines idle due to water shortages, a fact he reported to Parliament in proposing a 350-mile (about 560 km) pipeline to carry fresh water from the Perth hills to solve the problem.
- The Government realised how precious the water was and tried to conserve supplies through a range of measures. Caretakers were appointed to live onsite to protect wells and tanks. Charging for the water was also implemented to help curb consumption. During particularly dry times, the gold fields Warden would order that only one team of horses could travel the route every 24 h to avoid large numbers of horses waiting for hours near a well to be watered. Violent encounters even occurred, such as one that followed the disastrous gold rush to Siberia in WA in 1893, when 600 thirsty men and their animals rushed the 35-Mile Soak at Moorowing Rock, and firearms were used to protect the water.
- The sketch was drawn by S Göczel, who described himself as a mining engineer and metallurgist and who worked for the Western Australian Government as an assistant field geologist at the time of the gold rush in WA.

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Creator S Göczel, illustrator, 1894

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