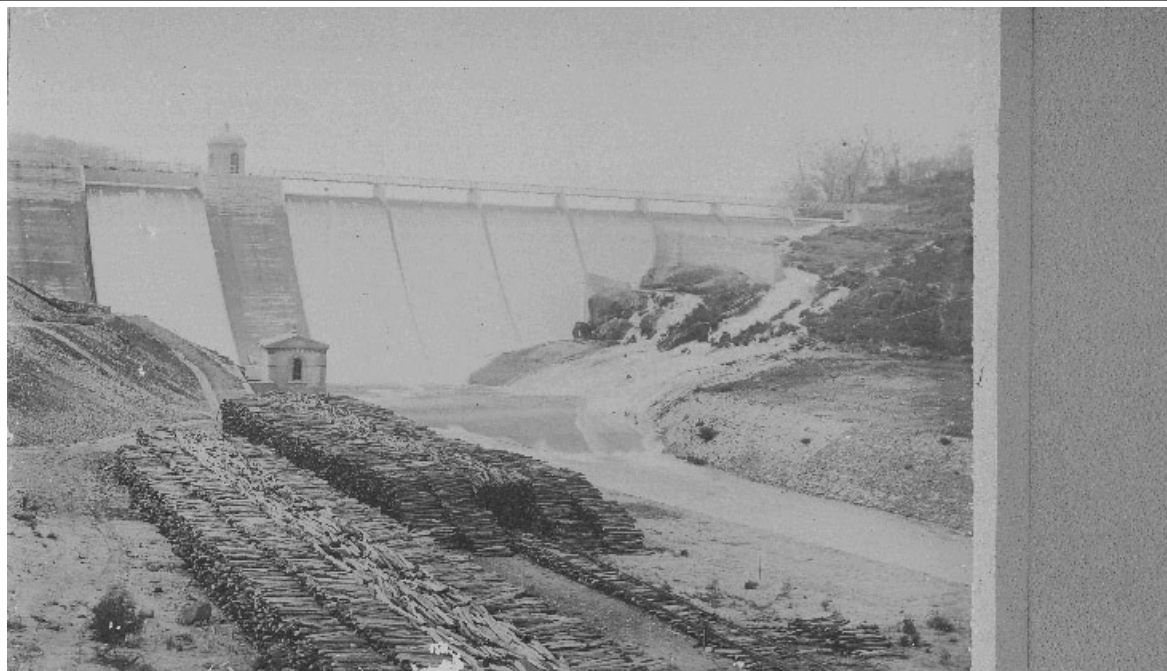


Wood stacks at Mundaring Weir, c1910



Description

This is a black-and-white photograph of firewood stacked at the base of Mundaring Weir, the source of water for Western Australia's eastern gold fields. The wood was destined for use in the boilers of the nearby No 1 Pumping Station to generate steam for powering the engines that pumped water through the eight pumping stations of the 560-km pipeline. The photograph measures 15.5 cm x 11.0 cm.

Educational value

- This photograph shows part of the infrastructure of the Coolgardie Water Supply Scheme, designed to pipe water from a dam near Perth to WA's arid gold fields in the early 1900s. A shortage of fresh water had impeded development and resulted in death and disease from insanitary conditions before the Scheme successfully solved the problem. The Scheme was an ambitious engineering feat of constructing the world's then longest freshwater pipeline, officially opened in January 1903. It is still in operation today, drawing water from the original dam and using more than half of the original pipes, although electricity has replaced steam for powering the pumps.
- A huge amount of wood was used in the boilers at No 1 Pumping Station to generate the steam to pump water on the first part of its journey to Kalgoorlie. The 2-m lengths of wood shown here would have been fed into fireboxes below tanks of water and burnt to convert the liquid into steam. Originally the boilers used coal but within two years coal had been discontinued in favour of the more readily available and less expensive local firewood. The fireboxes had to be modified for wood. Larger doors were needed and ledges were built around the grates.
- There were 20 engines in total pumping water along the pipeline. Each engine would consume 8 t of wood a day, with the wood being sourced from surrounding areas. In the case of No 1 Pumping Station, the wood came from a local jarrah forest.



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- Mundaring Weir, built between 1898 and 1902, is an example of a mass concrete gravity dam that relies on its weight to resist the pressure from the body of water behind it. In a survey conducted in 1997, the weir was ranked by the National Committee on Engineering Heritage as one of Australia's most significant major dams. The dam was constructed using 77,508 casks of cement for concrete, the cement having been transported in barrels from Britain and Germany by ship. The weir wall was originally 32 m high but was raised by 10 m in the 1940s.
- This is an important photograph of Mundaring Weir, showing the original weir wall and, to the right of the photograph, the two training or guide walls. These are of particular significance because engineer-in-chief C Y O'Connor left instructions about them before his suicide in 1902, writing in a last message: 'Put the wingwalls to Helena Weir at once'. The two guide walls were built on the rocks at right angles to the dam wall and O'Connor intended them to calm the water overflowing the dam wall and prevent it undermining the wall's foundations. When the main wall was raised it was also thickened to increase its strength, and the smaller of the two guidewalls was covered by concrete. The second was deliberately left visible because of its historical significance.
- Although it is now unusual for the dam to be overflowing as it is in the photograph, before the wall was raised after the Second World War, the dam would overflow annually. In fact, the only way surplus water could be released from the dam was through overflowing, as a bypass was considered too expensive to build.
- Overflowing has been a rare occurrence since the 1970s, when WA's climate entered a sustained period of increasing dryness. When the dam overflowed in 1996 after more than 20 years, the event attracted national and international press coverage and thousands of people visited the weir to view the phenomenon.

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