

Hunter Water S170 Register

SHI No.: *Name:*
3630004 Buttai No. 1 Reservoir

Location Lot 1 Buttai Rd, Four Mile Creek NSW 2323

Other ID nos IW ID: 4. Other ID: WRBUI1.



Description:

A brick rectangular inground reservoir situated in remnant bushland, at the top of a hill. The reservoir has an arched brick roof, consisting of 6 arches, with a bitumen capping. The brick walls of the reservoir have a sandstone capping. Original steel vents are located intermittently along the brick walls, with some cracking to bricks in places.

There is a decorative sandstone portico entry point to reservoir, with "1882" engraved on the pediment. The portico's sandstone is somewhat degraded. A green painted wooden door is located in the portico, in addition to a circular window at the rear, the glass of which has been replaced with steel mesh.

Internally, the brick arches are supported on brick columns.

Significance:

Buttai Reservoir No 1 is the oldest operating reservoir within the Hunter Water system. Constructed as an intermediate water storage for the original water supply scheme which pumped water from the Hunter River into Newcastle, it continues to function within the modern water supply system. The vaulted brick arch construction is uncommon and includes a finely detailed sandstone entry. The reservoir is unusual in that the tops of the arches are exposed, allowing the structure of the reservoir to be fully viewed.

Assessed Significance: State

Endorsed Significance: State

Historical Notes:

Constructed: 1880-1881

Construction on the Buttai Reservoir commenced in 1880, after the passage of the Country Towns Water Supply Act by NSW Parliament. Completed in 1881, it, along with the other water infrastructure erected in the region by Newcastle Council and the Public Works Department, was transferred to the Hunter District Water Supply and Sewerage Board at the time of its formation in 1892.

Constructed of brickwork set in Portland cement with solid concrete foundations on a sandstone bed, Buttai Reservoir originally measured approximately 120 feet by 95 feet, was 15 feet deep, and had a capacity of 1 000 000 gallons of water.

Originally, Buttai Reservoir received water from the Walka Waterworks, which extracted, filtered and treated water from the Hunter River, before transferring it into the two summit reservoirs (the other being East Maitland Reservoir). As the Hunter River water delivered from Walka Waterworks needed to be sheltered from light to prevent recontamination after treatment, the reservoirs were covered. Buttai Reservoir was roofed with brick arches covered with earth and grass, which also helped maintain the water at a low temperature. Constructed on top of a range about 5 ½ miles from the pumps at Walka Waterworks, Buttai Reservoir was supplied through a 15 inch rising main. The high elevation of the reservoir, which saw a direct lift of about 270 feet, combined with the friction losses through the 9 000 yards of mains, necessitated special gears on the engines that forced the water from the waterworks to the reservoir.

Buttai Reservoir supplied water, via gravitation, to the six district reservoirs at Minmi, Hamilton, Wallsend, Newcastle, Lambton and Obelisk Hill, providing reticulation to the City of Newcastle, Carrington, Wickham, Hamilton, Waratah, Merewether, Adamstown, New Lambton, Lambton, Wallsend, Plattsburg, and Minmi. From Buttai, the 15-inch cast-iron gravitation main extended for about 17 miles across hills, ravines, and swamps as far as the reservoir in Tyrrell Street. The first water from Buttai arrived at the Newcastle Reservoir on December 31, 1885.

The old water line was tapped at various places along the route. A 15 cm diameter branch pipe, just over 3 kilometres long, supplied Minmi Reservoir. Wallsend and Plattsburg received water through an 8-inch branch pipe, and at the junction of Tudor and Beaumont Street, a 38 cm branch pipe supplied the reservoir at The Glebe. Lambton Reservoir was located adjacent to the main delivery pipe.

In 1898 the pipeline from Walka Waterworks to Buttai was duplicated. This new rising main was constructed of 20 inch riveted steel pipes and was completed and vested in the Board on 10th May 1898. In 1903-04 a 20 inch trunk main was laid from Buttai Reservoir to Heddon Greta following approval of a scheme to extend the water mains to the townships of the coalfields to the south of Maitland. New outlet works were constructed at Buttai Reservoir to feed the

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old 15-inch and the new 20-inch gravitation mains which supplied the Newcastle District in 1908-09. These works comprised a valve-house with a Venturi water meter for controlling and measuring the flow of water. The work was completed in late 1908, and the permanent connection of the new 20-inch main was made in February 1909.

As part of the scheme prepared by the Constructing Authority for the Public Works Department in the mid 1910s, which would lead to the construction of Chichester Dam, it was proposed that a steel gravitation main of 8 million gallons capacity per day be constructed from the dam to connect with the existing pipe-line to Buttai Reservoir, as well as an additional gravitation main from Buttai Reservoir to Waratah Reservoir.

In the late 1920s, due to the increases in water reticulation thanks to the construction of Chichester Dam, Buttai Reservoir was extended (known as Buttai No. 2 Reservoir) to hold a further 3 514 00 gallons of water to obviate shortages of water supply to Cessnock. This extension was completed in 1928, and made available for the summer of 1928-29. The reservoirs have been connected internally.

In 1947-48 a scheme to amplify the water distribution was investigated, which included the augmentation of supply from Buttai Reservoir to Neath Pumping Station. In 1956 a 24-inch pipeline was laid for 2 ½ miles between Stoney Pinch and Buttai Reservoirs to improve supply. In 1960-61 a 20-inch cement-lined cast iron water main was completed between Buttai Reservoir and Heddon Greta, replacing an 18-inch wood stave main.

It was decided in the late 1990s to roof the remaining open reservoirs under the control of the Hunter Water Corporation. By June 1999 construction on the roof of Buttai Reservoir No. 2 had commenced

Designer/Builder: Public Works Department/Newcastle Council

Current Use: Reservoir

Former Uses: Reservoir

Physical Condition:

The portico's sandstone is somewhat degraded.

The reservoir is in good structural condition in general.

Further Information:

A later addition, Buttai Reservoir No. 2, forms an L shape around the Buttai No. 1 Reservoir and is made of concrete. The two structures are connected internally.

To the north of Buttai No. 1 Reservoir is the site of the old turncock's cottage, which was burnt down.

Recommended Management:

- This item is important to the heritage of NSW and must be conserved.
- A Conservation Management Plan should be prepared for this item to facilitate appropriate long-term management.
- Original details must be maintained including doors, windows and original signage.
- New materials should be sympathetic to the nature and character of the original building.
- In the event of major proposed changes prepare a Statement of Heritage Impact and undertake an archival recording.
- Assess proposed changes against the Standard Exemptions for Works Requiring Heritage Council Approval and, if necessary, seek approval under the Heritage Act.
- Wherever possible, changes should be restricted to the interior of the building and be designed to minimise impact to significant fabric.
- Routine maintenance of existing fabric is essential.

Note - SHR curtilage includes the Buttai No. 1 Reservoir structure (including entry portico) only. Buttai No. 2 Reservoir is excluded from the SHR listing.

Specific Recommendations:

- 1 *Statutory Instrument* Nominate for State Heritage Register (SHR)
 - 2 *Recommended Management* Produce a Conservation Management Plan (CMP)
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References:

Clem Lloyd, Patrick Troy and Shelley Schreiner 1992, For the Public Health. The Hunter District Water Board 1892-1992. Publisher: Longman Cheshire Pty Ltd, Melbourne.
Department of Public Works, Annual Reports, 1888 to 1892 and 1893-94 to 1960-61.
Glennie Jones 1967, The Movement for Newcastle's First Water Supply 1875-1885, Newcastle History Monographs No. 2. Publisher: The Council of the City of Newcastle, Newcastle.

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Hunter District Water Board , Annual Reports, 1938-39 to 1987-88.

Hunter District Water Supply and Sewerage Board , Annual Reports, 1897-98 to 1937-38.

Hunter Water Board , Annual Reports, 1988-89 to 1990-91.

Hunter Water Corporation , Annual Reports, 1991-92 to 2008-09.

John W Armstrong 1967, Pipelines and People. The History of the Hunter District Water Board Newcastle, New South Wales. Publisher: The Hunter District Water Board, Newcastle.

Mal Hindley 1983, 'From Weirs, Dams and Sand', in Shaping the Hunter. Publisher: The Newcastle Division of the Institute of Engineers Australia, Newcastle.

Studies:

- 1 Futurepast Heritage Consulting Pty Ltd 2010, 'Hunter Water Conservation and Heritage Register Study'.
Reference: .
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Listings:

- 1 *Heritage Act - Under consideration for SHR/IHO listing:*
Listing date: . Reference Number:
 - 2 *Heritage Act - s.170 NSW State agency heritage register:*
Listing date: . Reference Number:
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Data Entry: *Date First Entered:* 26/Apr/2010 *Date Updated:* 10/Sep/2010 *Status:* Partial

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Images



Buttai No. 1 Reservoir

File: Buttai Reservoir 1.jpg

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Buttai No. 1 Reservoir

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Buttai No. 1 Reservoir location (Courtesy of Google Earth)

File: buttai reservoir
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Buttai No. 1 Reservoir Curtilage Map

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