The Lowering of Lake Mulwala

To deliver potable water to five towns - Yarrawonga, Bundalong, Tungamah, St James & Devenish

The level of Lake Mulwala was recently dropped by 3.5 metres. This was done to enable Goulburn Murray Water to eliminate algal growth and routine maintenance in the weir structure.

This resulted in major challenges for the Yarrawonga Operations team, including:

- installation and monitoring of a temporary off-take pontoon in the Murray River to supply water to the Yarrawonga water treatment plant
- a high level of manganese leaching from the bank
- pre-dose chlorine for mitigation

Yarrawonga weir was built to supply irrigation water to Deniliquin NSW and as far as Nathalia and the Broken River system on the Victorian side. The weir was built between 1934 and 1939. It has a capacity of 118GL and covers an area of 4450 hectares. Yarrawonga originally drew its water directly from the Murray River about 500 metres from where the weir is situated today. Water was pumped and chlorinated directly to the water tower. It was in the late 70’s/ early 80’s that a new water treatment plant was built about one kilometre upstream from the old pump station. It was built as a direct filtration plant but the turbidity of the water was high and a lot of water was wasted backwashing. It wasn’t until the early 90’s that a DAF unit was built which proved successful. Problems occur when the lake is emptied for maintenance on the weir and the water level drops below our intake tower.

Issues recognised due to low lake levels

- intake tower suction dry
- keeping supply to five towns
- infiltration of manganese from river banks
- high levels of turbidity
- public concern on water quality
- 24hr water quality monitoring in each town

Solutions

- installation of pontoon into Murray River
- connections of pipes to pumps and raw water main
- connection of electrical cables from pumps to switch board
- installation of hypo tank and bunding for hypo and dosing pump
- hypo dosing rate 2.9 litres per hour
- monitoring rates while pumping

Hypo (pre dosing chlorine) raw water pump shed

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- hypo dosing rate 2.9 litres per hour
- monitoring rates while pumping

Filtration plant and DAF set up

- plant reduced to 50 litres a second
- aluminium pre dose set at 37mg/l
- soda ash dosing at 15mg/l
- post mix soda ash dosing at 5mg/l
- carbon dosing set point 7mg/l and batch strength 15 gr/l

Project team

- Justin Bourke
- Garry Phillips
- Christian Phillips
- Mark Pitches
- Rohan Pull
- Dylan Scott
- Michael Fletcher

Challenges

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History of the lake

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