

# Satisfying client's needs with technically advanced, robust and flexible solutions

TRILITY designed, built and currently operates a wastewater treatment facility to treat sewage effluent to log six virus removal standard, making it suitable for unrestricted irrigation of private residents, community parklands and golf courses. Department of Health regulations and further reuse options required the upgrade of the South Australian Victor Harbor plant in 2010/11 to meet the growing need of water reuse. TRILITY designed and constructed the plant enhancement which was financed by the client.





# Victor Harbor's population of 14,000 grows to more than 30,000 during the holiday season. A new sewage treatment plant was required that could not only cope with these peak seasonal loads but replace the ageing and overloaded infrastructure that had been in use. The plant design incorporates several staged upgrades to financially align it with the population growth in the region.

The Wastewater Treatment Plant (WWTP) and ancillary infrastructure treat sewage effluent to log six virus removal incorporating the Submerged Membrane Bioreactor (SMBR) process fitted with Kubota flat sheet membranes.

The current design incorporates multi-point load balancing with the addition of carbon from liquid sugar and alum precipitation for enhanced denitrification and phosphorous reduction. Pathogens are removed by membrane filtration and the treated effluent is then subjected to Ultraviolet (UV) disinfection and chlorine contact time of greater than 30 minutes prior to being delivered to the finished water storage lagoon.

The agreement also involved the construction of pump stations and approximately 13km of pipelines to enable storage of the reclaimed water in the Hindmarsh Valley Reservoir, an unused reservoir which SA Water has re-commissioned. The treated effluent is suitable for the unrestricted irrigation of crops, parks and gardens and is delivered by a controlled gravity reticulation network system. The nutrient concentration of the treated wastewater, as required by the Environment Protection Authority (EPA) is one of the lowest specifications in Australia, to allow winter discharges to the sensitive Inman River Catchment.



## Who

SA Water is a water utility wholly owned by the South Australian Government. It delivers water and wastewater services to approximately 1.5 million people across South Australia and has more than 1,500 employees. It operates 29 water treatment plants and has almost 26,000km of water supply mains.

## What

A modular 5.1 ML/d Wastewater Treatment Plant (WWTP) including the construction of pump stations and a pipeline to treat sewage effluent to log six virus removal standard.

## Where

Victor Harbor, a popular coastal resort on the Fleurieu Peninsula 90km south of Adelaide.

## Why

SA Water required a WWTP with the flexibility to manage seasonal peaks (up to 30,000 people) during the holiday seasons. The solution had to be able to treat the wastewater to a standard for irrigation reuse and with characteristics to allow discharge to sensitive waterways.

## Awards

- 2011** finalists for the South Australian Engineering Excellence awards
- 2006** Overall South Australian winner of the Institution of Engineers Australia, Engineering Excellence award
- 2006** National award winner of the Engineering Excellence for Environment Projects
- 2001** Finalist of the South Australian Engineering Excellence award

## Snapshot

<b>Client</b>	SA Water
<b>Type of Contract</b>	Design, Build, Finance, Operate, Maintain (DBFOM)
<b>Facilities</b>	Wastewater Treatment Plant (WWTP), pumping stations, reuse network and storage reservoir
<b>Technology</b>	Immersed membrane bioreactor
<b>Design Capacity</b>	5.1 ML/d
<b>Term</b>	20 years
<b>Capital Cost</b>	c. \$18m



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### For further information

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