

# Breakthrough in sewage treatment

A collaboration between two Australian companies has resulted in a custom-made treatment system that uses submerged electrolytic chlorinators instead of chemical dosing to treat black and grey water. By Paula Wallace.



The AIS technology is "the last line of defence" against waterborne pathogens.

When Australian Innovative Systems was approached by Taylex to help create a simpler, safer, more affordable alternative for sewage treatment, the result was a breakthrough in sewage treatment technology.

Historically, companies used a cocktail of chemicals such as chlorine dioxide, chlorine tablets or sodium hypochlorite combined with ozone-based technology to treat sewage. This resulted in an endless, expensive cycle of regular chemical ordering, delivery and storage.

Electrolysis was not considered a viable technology for treating low-salinity black water due to desired mineral/salt total dissolved solids (TDS) levels of 5000ppm upwards in order for the technology to be employed. AIS' innovative technology has addressed both challenges, with the company designing

a custom-made system to treat sewage using submerged electrolytic chlorinators that produce chlorine onsite.

## How does it work?

AIS modified its existing AutoChlor system, which operates at TDS levels as low as 2500ppm, for a Taylex treatment plant.

The AutoChlor system is now processing 2000-5000 litres of sewage daily without the need for expensive and hazardous chemical dosing, with the technology now in operation in various other sewage treatment projects.

Taylex director Alistair Le Plastrier is delighted with the result of the companies' teamwork.

"At first we didn't know if chlorine generation using electrolysis was possible in low-salinity wastewater or if it was going to be commercially viable", he said.

But producing chlorine via the electrolytic cells and within the treatment water itself is proving simple and economical.

"Ultimately, we think this will be far better for installers, operators, and maintenance staff also," said Le Plastrier.

The customised AIS technology is 'the last line of defence' against waterborne pathogens for Taylex's black and grey water. It works by effluent leaving the primary chambers is broken down by anaerobic and then aerobic bacteria. The water is then separated from biomass before going through a two-step disinfection regime. In the first step, UV is applied to water that is super-chlorinated by a submerged, purpose-built AIS chlorine generator. Water is then disinfected a second time in an adjacent chamber via a second AIS chlorine generator. AIS's own designed and manufactured Genuine AIS Anodes feature in the technology.

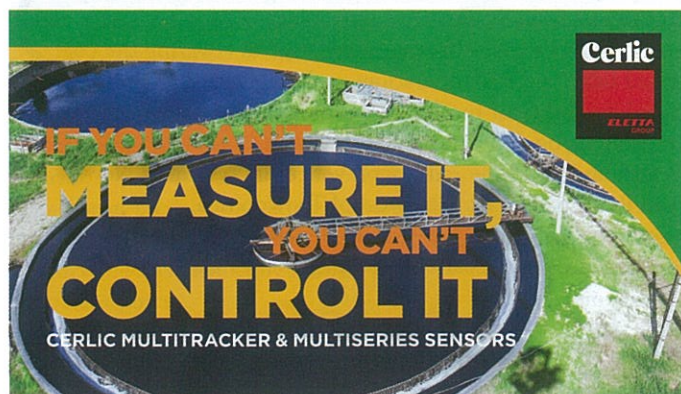
AIS CEO Elena Gosse explains that as an Australian-owned and based company, it is ideally positioned to undertake this kind of bespoke challenge.

"We conduct all research, development and manufacturing from our Brisbane-based headquarters and three production facilities. We pride ourselves on our reputation for continuous innovation."

The company's staff are employed in a range of roles including micro-electronics, chemistry, power systems, electrical and mechanical engineering, water system design, assembly, metalworking and plumbing.

"This means we have the technical knowledge onsite in order to create highly customised solutions for clients," said Gosse.

"The fact that we design and manufacture our own power systems and are the only Australian water disinfection company to manufacture our own high-quality anodes also offers our clients tremendous flexibility in the case of custom-designing systems."



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