

CASE STUDY

PROJECT WASH BAY WASTEWATER RECYCLING FOR TRAIN SUPPORT FACILITY

PRODUCT Dissolved Air Flotation

INDUSTRY Infrastructure

LOCATION Hexham, New South Wales



BACKGROUND

When Aurizon Holdings constructed a long-term Train Support Facility, for provisioning, inspection, maintenance and cleaning of locomotives and wagons, they engaged MAK Water to design and construct the wash bay wastewater recycling system.

With 20 years of experience in providing wash bay recycling solutions, and having used MAK Water treatment plants on other sites, the client had confidence in MAK Water's ability to deliver a smart solution that would comply with health and safety regulations for onsite reuse of recycled wastewater.

SOLUTION

MAK Water had previously built a number of wastewater treatment systems for similar industrial applications, and recommended a dissolved air flotation (DAF) process, with secondary polishing and disinfection, as the most suitable solution for reuse in the wash bay.

This was confirmed by bench-testing water samples during initial process design.

DISSOLVED AIR FLOTATION

- The system uses hydroxide precipitation, flocculation and DAF clarification to remove silt, heavy metals and oil and grease.
- Post-clarification treatment included multimedia filtration, pH neutralisation, UV and chlorine sterilisation to ensure the treated effluent met the stringent requirements of the NSW wash bay recycled water quality guidelines.
- Supply and installation of interconnecting pipework and electrical works prior to plant commissioning.
- Fast 10-12 week delivery time.
- Onsite commissioning and training of local operators, with an ongoing service and maintenance agreement.

RESULTS AND BENEFITS

- **Compliance.** Compliance with regulatory requirements for industrial recycled water.
- **Turnkey solution.** Design and construction of wastewater treatment system enabling water to be reused in the wash bay.
- **Lowest total operating cost.** All but eliminated the use of potable water for wash down, with zero discharge to the local sewer.



The DAF system includes post-clarification multimedia filtration, pH neutralisation, ultraviolet sterilisation and chlorine dosing



The dissolved air flotation system on site in Hexham, NSW