



Water Industry Operators Association of Australia Submission of Abstract

Title of Abstract: **Managing Health and Safety Challenges on the Western Treatment Plant 5 West Nutrient Removal Plant Project**

Abstract (200 words):

BMD Constructions is delivering the final stage of Melbourne Water's three stage augmentation works at the Western Treatment Plant (WTP) in Cocoroc, Victoria. The Stage 3 project involves the construction of a new 150ML/d Nutrient Removal Plant (NRP) to replace an existing 55E Activated Sludge Plant (ASP). As the WTP processes approximately 50% of Melbourne's sewage, the upgrade will address historical and future growth, renew aging equipment, improve overall plant efficiency and significantly enhance safety for operation and maintenance activities.

Unique safety challenges exist to accommodate complex civil, mechanical, and electrical works, including:

- civil construction involving bulk excavation, steel reinforcement and protective no-fines placement for five NRP base tanks
- seven kilometres of trenching and 580 metres of microtunnelling completed, including complex shaft designs, to accommodate feed and effluent pipeline connections
- earthworks, stockpiling and haul road design
- high movement of vehicles, construction plant and cranes when building modular design structures, i.e. 5 x NRP
- tanks, blower building, feed pump station, and electrical buildings
- construction of 5 x 30ML/d concrete NRP tanks consisting of one clarifier, three anoxic zones and four aeration zones
- cofferdam construction, involving sheet piling into effluent ponds and diving
- electrical HV/LV installation
- mechanical subground and above ground installation
- brownfield commissioning.

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