

Aveng Water adds value to Middelburg Water Reclamation Project

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The Aveng Water operations team working on the Middelburg Water Reclamation Project (MWRP) with an initial five-year Operations & Maintenance (O&M) contract for South 32, has since its inception not recorded a single lost time injury (LTI), proving that the project team is dedicated to upholding high safety standards.

Commenting on this significant achievement, Suzie Nkambule, General Manager of Aveng Water, said: "The team is doing an outstanding job; both from a safety as well as a technical operation perspective."

The MWRP Project was awarded to Aveng Water on an EPCM contract by BHP Billiton Energy Coal South Africa (BECSA) – now South 32 – in April 2012. The project entailed the detailed design, construction and commissioning of a 20MI/d mine-impacted water treatment plant. Ground was broken on the site soon after the contract was awarded, and the first concrete was poured in December 2012.

Careful planning allowed commissioning of the plant to start in November 2014, while construction was still active on the site. This allowed the commissioning team to reach a crucial milestone for the client by achieving first water at the end of February 2015. The performance test and practical completion was achieved on 1 June 2015. This entailed operating the plant at over 20MI/d for five consecutive days.

However, the feed water to the plant has a very different make-up to the original design basis, which adds complexity to keeping the plant stable.

"This project has opened up numerous opportunities for Aveng Water to help South 32 upgrade the infrastructure of the MWRP to handle the higher salinity water, and to increase capacity in line with their mining ambitions," added Nkambule.

The MWRP is the most recent HiPRO® mine water treatment plant installation by Aveng Water. The in-house HiPRO® technology allows acid mine drainage (AMD) and mine affected water to be treated to potable drinking standard through a series of reactors and membranebased separation technologies, at class-leading water recoveries of 98%.

"To date, the three Aveng Water HiPRO® plants have treated over 70 billion litres of AMD water to drinking water quality," shares Nkambule.

The remaining liquid waste that typically remains from a membrane plant is exceptionally difficult and expensive to deal with. The MWRP is the first AMD treatment plant that does not produce a liquid brine waste stream. This technical edge ensured far lower operational costs for South 32, and confirmed HiPRO® as the technology of choice for this project.

Importantly, the MWRP has created employment for the surrounding communities. To date, 15 local community members have been hired and trained – of which one person has already been

promoted and moved to the Optimum plant when a vacancy became available. A total of 40 Aveng operational staff are currently involved with the day-to-day operations of the plant.

“The MWRP is a great showcase for what Aveng Water is capable of, and dispels doubts as to whether there is a robust technical solution available locally for the AMD legacy that threatens our drinking water supply in South Africa,” concludes Nkambule.