

Lesotho's Metolong Dam close to completion

Ash Resources, South Africa's leading manufacturer and supplier of fly ash products, is adding the Metolong Dam Water Supply Programme (MDWSP) to their impressive track record of water infrastructure projects in Lesotho. MDWSP is designed to cater for the long-term needs of the important lowland areas of Lesotho. In particular, it will provide a new raw water supply for the country's capital, Maseru, and the surrounding area, which has historically suffered from water shortages.

Ash Resources has supplied approximately 22 000 tons to date of its classified siliceous fly ash DuraPozz® to Sinohydro, the Chinese contractor for the key component of the MDWSP, the Metolong Dam, which impounded on 17 February 2014, together with its inlet tower and associated pumping station. A further estimated 11 000 tons is required to complete the dam contract, which is expected to be achieved in September 2014. Ash Resources has also delivered approximately 4 000 tons of fly ash to other contractors and ready-mixed concrete producers for the construction of the MDWSP's water purification works, a raw water reservoir and portions of the pipelines.

Metolong Dam is a 83 m high roller compacted concrete (RCC) dam with a design crest length of 280 m, constructed on the Phuthiatsana River, approximately 35 km from Maseru. Contractor, Sinohydro, established an on-site batch facility to provide the estimated requirement of 280 000 m³ of RCC and 40 000 m³ of conventional vibrated concrete (CVC). The Beijing based contractor is a global top-ranking construction and hydropower group that is involved in a range of projects on the African continent and has worked on major international projects such as China's Three Gorges Dam, the world's largest water scheme.

"Our association with Sinohydro began over three years ago with the construction of the Kariba North Bank project in Zambia," said David Kanguwe, Ash Resources' Commercial Manager. "For Metolong Dam, they required a consistent quality classified fly ash and wanted to deal with a company that had a track record for reliable supply of large quantities of quality fly ash to major dam construction sites."

A high fly ash content in the RCC for construction of a dam helps to control heat of hydration during mass concrete pours. Arising from discussions in Maseru with consultants, Arcus GIBB, and Sinohydro, Lafarge's Quality Department Southern Africa (QDSA) advised on the mix designs for RCC and CVC and conducted laboratory evaluations. The outcome was that Sinohydro accepted QDSA's mix design recommendations for the RCC mix to contain 66% and the CVC mix (grade 25/38) 52% of Ash Resources' DuraPozz® classified siliceous fly ash.

The recent abnormal rainy season has had a significant impact on the Metolong Dam construction programme, which has contributed to pushing back the anticipated completion time of April by five months. Delivering to the Metolong project site had its own challenges: in addition to coping with border

crossing delays, the final 18 km of dirt road were frequently flooded and damaged by the rains. Apart from this, the very nature of dam construction leads to considerable variance in the fly ash usage – when the conditions were right, the contractor did major non-stop pours, and the consumption of cementations materials increased dramatically. However, Ash Resources has a great deal of experience to call on from the days of supplying the Lesotho Highlands Water Scheme and, in particular, supplying almost a quarter of a million tons of fly ash for the construction of the enormous Katse Dam.

“While being able to guarantee supplies of large quantities of consistent high quality fly ash from our SANS 50450 certified plants is a major competitive advantage for us, our aim is to satisfy a construction contractor’s needs in all respects,” adds Kanguwe. “This is where our logistics team plays a major role in ensuring fly ash is always available on site no matter what delivery challenges may be encountered.”

“We are very pleased that we chose the right fly ash supplier in Ash Resources,” comments Mr Xie Yunhua, Deputy Project Manager of Sinohydro. “They not only lived up to their guarantees but they lived up to their reputation for acting as committed supply partners in a project. The company gave us outstanding support which meant that we never ran out of fly ash. If we build other projects in Lesotho or South Africa, we will select Ash Resources as the fly ash supplier too.”

“Water is such a vital commodity in Southern Africa: it can completely transform the economies and quality of life in disadvantaged communities. This makes water infrastructure projects especially important to all of us at Ash Resources,” says Kanguwe. “We are proud to maintain our status as the preferred supplier of fly ash for water schemes in Lesotho and look forward to building on our good relationship with Sinohydro.”