

## DemcoTECH Engineering – an integral role in growing Africa’s mining and minerals industry

Recent work for Lētseng Diamond Mine, located in Lesotho’s Maluti Mountains, is indicative of the integral role bulk materials handling specialist, DemcoTECH Engineering, plays in the development of Southern Africa’s mining and minerals resources. The contract, which was awarded as part of the mine’s expansion initiatives, is a continuation of a working relationship DemcoTECH has had with Lētseng, since 2008 when it supplied the original tailings disposal system for the second diamond treatment plant at the mine.

This most recent work for Lētseng, which follows a number of studies for the mine, focused on upgrading part of the mine tailings materials handling capability to handle higher capacities resulting from Lētseng’s Project Kholo.

In addition, DemcoTECH carried out a design audit on the run-of-mine (ROM) stockpile system at Lētseng, and based upon this audit, has upgraded the ROM stacker as a turnkey contract. The drive for the 24m high boom was relocated to ground level for ease of maintenance, as well as redesigning the head arrangement to ensure that the material is distributed evenly over the stockpile reclaimers. In addition, a new WEBBA headchute arrangement was installed to ensure that material particle sizes are also distributed evenly over the dump. To minimize any disruption to production, the improvements to the ROM stacker were implemented during a shutdown period of 10 days in February 2015.

DemcoTECH is also completing the conveyor design and dump expansion layouts in order to cater for the increased tailings due to the expanded throughput.

DemcoTECH’s extensive engineering design capability, state-of-the-art technologies and innate understanding of remote mining sites, typical of Southern Africa, were showcased in the 2008 contract for Lētseng. This contract required innovative engineering solutions to overcome the challenges presented by the location of Lētseng - the highest diamond mine in the world at an altitude of 3,200 m. The project included design and supply of a conveyor with fixed tripper and multiple discharge points, a 1.6km overland conveyor over undulating terrain and a 1km long tail-driven downhill extendable conveyor with a rail-mounted tripper and boom spreader, as well as an emergency dump system.

Solutions, such as the inclusion of a regenerative braking system on the tail pulley of the extendable conveyor to prevent the conveyor from over acceleration, were included to accommodate the tortuous route the overland conveyors had to follow. Lesotho’s mountainous terrain meant steep inclines and declines en-route to the tailings dump had to be designed for.

The system was also required to operate at ambient temperatures ranging from +35°C to –20°C in wind speeds higher than 100kmph on a very exposed site.

### FIRMLY ROOTED IN SUB-SAHARAN AFRICA

Recent work illustrates both the company’s international and local track record, and also its capability to undertake small to mega projects. This capability ranges from being engineering contractor on the major Teluk Rubiah maritime terminal, established by Vale in Malaysia, to a turnkey contract for a 10,000tph shuttle conveyor for a mining house in South Africa. The latter project included the project management, fabrication, shop assembly and installation of the shuttle belt into its final position in a building at a height of approximately 43m above



*Pipe conveyor for Koidu Mine, Sierra Leone.*

ground, under rigorous working conditions, extremely limited space constraints, as well as an “extremely tight” shutdown window.

“Despite having seen growing international success in recent years, DemcoTECH remains firmly rooted in Sub-Saharan Africa,” says DemcoTECH General Manager, Paul van de Vyver.

“Our strong track record servicing the materials handling industries from South Africa right up to West Africa is evidence of this, in addition to the many other projects we have carried out for the mining and minerals industry, such as the supply of niche process plants.

These projects include the expansion of a manganese export facility for manganese miner Assmang at its Cato Ridge Alloys plant, and the establishment of a new 40,000 tonne capacity, multi-discharge clinker silo at NPC Cimpor’s Simuma Plant, both in KwaZulu-Natal, South Africa. .

For the ports and terminals industry, DemcoTECH’s track record in Africa range from various studies, such as that carried out for an iron ore mining house, optimizing the materials handling layout at the port and development of an export jetty and berths, to the execution of projects for major shipping and logistics company, Grindrod, at Maydon Wharf and Richards Bay in South Africa.

DemcoTECH has also designed and supplied sampling plants that enable exporters to have both physical and chemical qualities of ore products certified independently before they are loaded for export.

“We supplied such an iron ore sampling plant for the Saldanha iron ore terminal in the Western Cape, South Africa for Kumba Resources, and later completed an upgrade to the facility,” says van de Vyver.

Also in South Africa, DemcoTECH successfully completed a project for a belt filter and cooling system for the processing facility at the Tronox Namakwa Sands heavy minerals mine near Brand-se-Baai on the Western Cape coastline.

Beyond South Africa’s borders, DemcoTECH was responsible for the design, engineering and layout of the front end and the layout of the complete process plant for Noventa Limited’s tantalite processing facility at Marropino, northern Mozambique.

Moving further north, DemcoTECH’s project portfolio includes the provision of a conveyor system for Mali-based Syama Gold Mine, a pipe conveyor for Koidu mine in Sierra

*Expansion to the manganese export facility at Assmang Limited's Cato Ridge Alloys plant in KwaZulu Natal, South Africa.*



Leone, and a pneumatic transport system at Nova Cimangola's cement plant in Luanda, Angola. In addition, DemcoTECH supplied a sulphur storage and lime dosing system for the sulphuric acid plant for Freeport-McMoRan Copper & Gold's project in the DRC.

"The industry is under continuing pressure to maximise productivity as a result of depressed economic conditions, as well as facing legislative and public pressure to reduce its impact on the environment. Our success is based on our proven



*Recent work for Lêtseng Diamond Mine continues a long working relationship with the mine which commenced when DemcoTECH supplied the original tailings disposal system for the second diamond treatment plant.*



ability to assist industry surmount these challenges by providing reliable and efficient, fit-for-purpose systems," says van de Vyver.

DemcoTECH services are offered though contracting mechanisms from EPCM to Lumpsum Turnkey including studies and from concept design through to detailed feasibility studies. After-sales services include spares, maintenance, refurbishments and operational readiness packages covering procedures, systems and workplace tools required to successfully operate and maintain a new or upgraded plant.