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Civil works at Moralané Break Pressure tank, North South Carrier 2 Water Transfer Project, Botswana

The Moralané Break Pressure Tank forms a part of the EPC/turnkey project for NSC-2.1, which in turn forms a part of the North South Carrier 2 Transfer Project in Botswana.

The project is currently under construction for the Government of Botswana, Ministry of Minerals, Energy and Water Resources by the EPC contractor, a joint venture between WBHO Construction (WBHO) and Consolidated Contractors Group S.A.L (Offshore) (CCC).

Situated on the eastern side of Botswana is the North South Carrier corridor that stretches from the newly constructed Dikgatong dam in the north eastern corner of Botswana, all the way down to Gaborone in the south. Situated on the pipeline, west of Selebi Phikwe is the Moralané Break Pressure Tank.

Consisting of a total foot print area of 5537 m² and storage capacity 27 million litres of raw water, Moralané Break Pressure tank was an extremely technically challenging

reinforced concrete structure to construct. It consists of a reservoir, divided into two individually operational tanks with each half sub-divided into two additional sections.

The biggest challenge from a constructability point of view was provided by the introduction 32 sludge collection hoppers. Imagine an egg carton holder that is 6,6 m deep by 7,9 m² at the top with a mere 0,5 m² base.

Construction started early April 2013 with the box cut excavations for the hoppers. The first main challenge was to shape the actual outside face of the hopper walls. This was achieved by filling and hand placing 64 340 sand bags and backfilling the sections in between.

The second challenge was the actual placing of the concrete, and the methodology required to keep it in place and prevent the formwork from 'floating' while concrete was being placed.

The next major challenge was to

construct a roof over the 32 hoppers. The initial plan was to employ standard 13 metre long I-beams for primary support over the hoppers and to erect the support-work for the roof soffit from these beams. The complication introduced by the idea of I-beams was the removal thereof after construction. The idea of I-beams was abandoned and replaced by preassembled support-work, fixed outside the reservoir and lifted into place. The support work was secured to the sloped hopper walls by specially made 'wedge shoes' that were temporarily anchored.

The overall completion of the project is forecast for early 2015 and the team at the Moralané Break Pressure tank is immensely proud of their valuable contribution. ▼

Project information

- **Company entering:** WBHO Construction
- **Project start date:** March 2013
- **Project end date:** January 2014
- **Client:** Botswana Ministry of Minerals, Energy and Water Resources
- **Project team:** CWJV (CCC & WBHO) and NECJV
- **Main contractor:** CWJV
- **Principal agent:** Bigen Africa
- **Project manager:** CWJV
- **Consulting engineers:** NECJV
- **Project value:** BWP1 124 000 000 (excl VAT)