

# MEETING FUTURE WATER DEMANDS

MAIN CONSTRUCTION COMPANY : Haslin Constructions  
CONSTRUCTION VALUE : \$54 Million  
COMPLETION DATE : Mid 2014  
DAM CAPACITY : 4,640 Megalitres

The \$54 million Bowraville Off River Water Storage Project involves the construction of a series of new bores, a collection tank, a water transfer pipeline, water pumping station and a new storage area.



The Bowraville Off River Water Storage Project has been designed to secure the Nambucca Shire water supply against drought, and to meet current and future water demands. The original water supply was a single source supply drawn from bores sunken into alluvial deposits adjacent to the Nambucca River, upstream of Bowraville. The project itself involves the construction of a series of new bores, a collection tank, a water transfer pipeline, water pumping station and a new storage area, which is filled by pumping water from an enlarged borefield during times when the river flow is not low. Environmental flows of the river will be maintained by feeding the stored water directly into the town water supply system throughout periods of low river flows.

The \$54 million project is part of a wider integrated water cycle management strategy for the region, and is delivered by Nambucca Shire Council with the NSW Department of Public Works as Project Managers. Funding is through the Australian Government via its National Water Security Plan for Cities and Towns (\$10 million), and the NSW Office of Water (\$14.8). The construction works were separated into two separate packages. Package A consisted of the storage construction, which included embankment earthworks, outlet tower, spillway, valve house and the access road. Package B was for the bores, collection tank, pump station, valve cluster and transfer pipework.

In August 2012, Haslin Constructions were awarded the construction of package A, valued at approximately \$35 million. The contract included the construction of a 4500 ML soft-earth foundation drinking-water storage dam and the associated dam management infrastructure.

Haslin Constructions oversaw a total of 32 contractors and sub contractors on the project. Haslin's Project Manager, Hugh Milliken, advised that the project's real innovation was around erosion and sediment control management. "We have developed a site-wide approach to erosion and sediment control that has allowed us to withstand several severe weather events and be able to minimise both environmental effects as well as enabling the site to be operational again in a very short time."

To achieve this, Haslin approached the project from a different angle—by considering the site as a whole from the beginning and by incorporating the erosion and sediment controls into the planning of the works, rather than considering each excavation or earthmoving task as a discrete item of work. Due to the nature of the ground encountered on site, the Haslin team were faced with the significant challenge of controlling ground water throughout the excavation operations, in addition to cleaning and disposing this water in an environmentally sensitive manner. They achieved this by a combination of cutting off the groundwater flow-paths under the ground, dewatering the works area, installing significant water treatment ponds and enforcing a rigorous monitoring and reporting regime to ensure compliance with the contract specifications. This, coupled with three substantial rain events in excess of 300 mm in two days, caused a considerable delay to the project that had to be recouped. Haslin successfully achieved this by increasing the dump truck resources threefold.

Further projects that Haslin are proud to be currently working on include the Shell Cove Railway Station, the Bakehouse Quarter Redevelopment, the Ballina Waste Water Treatment Plant, and the Waste Water Treatment Plant at the Toohey's Brewery.

A mid-tier Civil and Building Construction Contractor, Haslin Constructions work within the government sector. Over a period of 20 years they have sustained a healthy growth and the company now boasts a turnover of over \$90 million per annum. They are proud to continue a long tradition of delivering publicly funded projects to the benefit of the communities that have been involved in Haslin's conception.

For more information contact Haslin Constructions, PO Box 363, Sutherland NSW 1499, phone 02 9545 1855, website [www.haslin.com.au](http://www.haslin.com.au)





## DE DRILLING - AN ASSET TO ALL

**DE Drilling are a small owner operator geotechnical drilling company located in Tintenbar, on the Far North Coast of NSW.**

The company came to fruition in 2008 and is run by directors David Frappell and Elias Martin.

In 2007, Nambucca Council enlisted NSW Public Works, Coffs Harbour, to project manage the pre-construction works for the Bowraville Off River Storage project. They procured GHD to carry out the Environmental Impact Statement (EIS), concept design and finally the detailed design of the project infrastructure, of which DE Drilling was involved in. The council approved the DA for the dam project and associated works on 21 October 2010, under Part 5 of the Environment Planning and Assessment Act.

DE Drilling were contracted to perform the geotech drilling as part of the detailed design phase. With a team of four experienced employees engaged on the project, DE Drilling obtained over 100 soil samples from the Bowraville Dam site, which were then passed on to GHD, the engineering company.

Elias Martin from DE Drilling advised that the work they performed at Bowraville Dam was relatively straight forward. The drilling process took approximately ten days to complete, in which time a number holes

were drilled. DE Drilling utilised both their track mounted and truck mounted rigs for the Bowraville Dam project. The overall detailed design for the project was completed in February 2012.

Their MD100 track mounted rig is a 3.2 tonne rubber tracked crawler rig, which is driven by umbilical cord. It has a main winch and 3 aux winches allowing it to hang 24m of drill string. This rig is ideal for standard penetration testing (SPTs), U50/U75 tubes and NMLC coring. It has a 3.6 m stroke, dump mast and is set up to do angle holes if needed. The mast can also be downsized from a 7.5m mast to a 5m mast to fit under power lines or low structures such as bridges. The rig is capable of depths of up to 50 m.

DE Drilling's other rig is the GOT2008 truck mounted rig, which is mounted on a 2007 6T 4WD Canter.

This rig has a main winch and 2 aux winches allowing it to hang 18m of drill string. It is set up for standard penetration testing (SPTs), U50/U75 tubes, NMLC and HMLC coring. The truck mounted rig has 3.5m stroke, a 7.5m mast and can also be set up for angle holes if required, and it's capable of depths of up to 80 m.

Both the track and truck mounted rigs are fitted with E-stop buttons, safety cages and electronic cut out switches.

DE Drilling are available for all of your Geotechnical Site Investigation needs. Their past projects have ranged from large scale jobs such as the Kempsey Bypass and a port off Daru Island (in the Western Province of Papua New Guinea), to smaller projects such as bridges, land slips, and house blocks in their local area. DE Drilling specialise in Geotechnical Drilling, and are also licensed to install water level and quality monitoring wells.

DE Drilling pride themselves on delivering services that are safe, efficient and cost effective and strive to continually improve their environmental performance.

They offer competitive rates, on their owner operated machines, as well as an experienced team of staff with a commitment to workplace health and safety.

Their ability and willingness to undertake new and challenging drilling projects, and their hands on approach, together with their commitment to continuous improvement in health, safety and environmental standards, ensure that they are an asset to all future projects.

**For more information contact DE Drilling,** Directors David Frappell on 0417 194 824 or Elias Martin on 0431 207 445, 2 Hillcrest Drive, Tintenbar NSW 2478, email [de\\_drilling@live.com.au](mailto:de_drilling@live.com.au)