

ABERGELDIE COMPLEX INFRASTRUCTURE



Abergeldie is well-known to the Australian mining industry as a leader in blind bore drilling for ventilation shafts. They operate four of the largest drilling rigs of their kind in the world. But how many mining companies realise that shaft drilling is only one element of Abergeldie's much broader mine infrastructure capabilities? They also boast a twenty-years-plus record on conveyor systems for bulk materials handling, roads, bridges, rail, tunnels, marine ports and, especially, water treatment plants.

"Without water, the blind bore drilling process cannot work," said Abergeldie founder and managing director, Mick Boyle. "The same goes for mining in general. Without water, not much happens."

The company has an award-winning history of design and construction of water treatment and recycling

projects. More than 12 years ago, they pioneered installation of a membrane bioreactor plant at North Head in Sydney to treat and recycle raw sewage to a standard good enough to replace potable water in the plant's operational processes. At the time, it was the biggest membrane bioreactor plant in Australia. More recently, at Wollongong Abergeldie designed and built a reverse osmosis plant to treat sewage and wastewater to tertiary standards, delivering 25ML of safe water every day to the Port Kembla Coal Terminal for coal dust suppression, and to Wollongong Council and a local golf club for irrigation. They have also built and upgraded very large municipal sewage and wastewater treatment plants for Sydney Water Corporation and Hunter Water Corporation as well as in Canberra and Queensland.

"On our mine ventilation shaft projects, we use tens of thousands of litres of water in the drilling process. We don't want any of it to go to waste," said Mick Boyle. "We recover, treat, recycle and re-use as much of it as we can, again and again."

Blind bore drilling uses a reverse circulation process for extracting spoil from the drilled shaft. The shaft is kept full of water and the spoil, suspended in the drilling fluid, is pumped from the drilling face to settlement ponds for treatment. Once the spoil settles out, the processed water goes back into the drilled shaft in a continuous cycle.

"Where water is at a premium, we take the settlement and treatment process a step further," said Mick

Boyle. "Through our years of designing and building sewage and wastewater treatment plants, we have developed sludge removal systems that do a great job in treating mine drilling process water. With some technical adjustments to the set up, the same sorts of polymer treatment and belt press filter systems you'll find dewatering sewage sludge on our sewage treatment plant projects can work just as well on cleaning up water for re-use on drilling projects."

Abergeldie's experience with water treatment plant design and construction spans the full range of technologies and process systems. Their broad expertise and capacity was recently recognised by Sydney Water Corporation's appointment of Abergeldie as one of a small panel of prequalified companies for its five year, \$300 million Network Facilities Renewal Program which will upgrade sewage and wastewater treatment facilities right across the Sydney region. To date Abergeldie has been awarded project package contracts for upgrades at Bondi, North Head, Malabar, Meadowbank and Westmead. There will be more to come.

"Any mining operation that has any kind of water supply or treatment needs will find that Abergeldie can deliver a practical solution," said Mick Boyle. "Whether it's a pipeline, a pumping station, a tunnel, an aqueduct, a treatment plant for drinking water or a treatment and recycling plant for process water, Abergeldie can deliver."

The company's materials handling and general civil construction expertise also has direct applications on mining sites. Recent and current projects include a \$36 million road and bridge construction project for Transport NSW Roads and Maritime Services, and a \$47 million contract for cyclone damage repairs to the sea jetty, ship loader and 5.8 km long conveyor belt system for Queensland Sugar Limited at Lucinda.

"When we mobilise for a blind bore drilling project on a mining site in a remote location, very often we have to build a complete infrastructure set up as well," said Mick Boyle. "There's a heavy vehicle access road to be built, often with a bridge or two along the way, electricity supply sometimes with a stand-alone substation, water supply, handling systems for spoil management, and major bulk earth works to be carried out for the process water settlement and recycling ponds. Add to that our experience on marine, rail, dams, pipelines, tunnels, water processing and building construction, and you have as complete a package of infrastructure construction services as most mining operations are ever likely to need."

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