

# Research helps tackle mine tailings disasters

May 1 2015, by David Stacey

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Research and technology transfer activities at The University of Western Australia are helping address a persistent and serious problem facing the mining industry worldwide.

UWA's Professor Andy Fourie said when mines stored their tailings in large mounds that also held water, the structures occasionally failed and discharged toxic slurries with disastrous effects for [local communities](#) and the environment.

And the results can be lethal, according to Professor Fourie, Head of UWA's School of Civil, Environmental and Mining Engineering.

Late last year, three people were killed after a tailings dam collapsed at

an iron ore mine in Brazil.

Professor Fourie said an emerging solution involved treating tailings to thicken them or make them into a semi-paste, a process that can reduce water losses due to evaporation and also help reduce operating costs.

Professor Fourie and Associate Professor Richard Jewell, of the Australian Centre for Geomechanics at UWA, are co-editors of *Paste and Thickened Tailings, A Guide*.

The book is a collection of industry and academic articles regarded by many as the definitive reference for the new technology and is about to go into its third edition.

Professor Fourie said the School of Civil, Environmental and Mining Engineering played a key role in raising awareness of the [emerging technology](#).

"We're certainly leading the way in terms of the technology transfer and we are conducting associated research," he said.

"We have a couple of PhD students at the School making advances in this area, but it's a worldwide initiative with some very good work also being done in Canada and elsewhere."

Professor Fourie said the use of thickened tailings had been evolving over the past 15 years had been adopted at more than a dozen mine sites around Australia - including the Mt Keith nickel mine in WA - and some 30 or 40 other mines around the world.

"At the Osborne mine in Queensland, they reported a 35-40 per cent saving in water with thickened tailings, and that's a heap of [water](#)," he said.

"It also has the advantage of reducing the risks of these catastrophic failures. As communities become more concerned about [mining](#) impacts, this issue will become greater and greater."

Provided by University of Western Australia

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