

*Metago Environmental Engineers (Australia) Pty Ltd*

*Integrating specialist engineering, scientific, social, financial and legal skills for sustainability.*

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**HAPPY NEW YEAR**

# Mining and Beyond



## Welcome

Welcome to Metago's mining newsletter - a newsletter to update our current and potential clients with developments relating to mine closure planning, mining strategies and outcomes. If you have any comments, or do not want to receive the newsletter please e-mail: [tiffany@metago.com.au](mailto:tiffany@metago.com.au).

## Mine Closure, 2010

Last year's Mine Closure Conference was held in Chile in November. The chairman of the conference, Roger Higgins, related a mine closure plan to an invitation to a picnic or barbeque. He states "...we like to be invited, we want to have a good time where everyone enjoys each others' company and creates good memories, we want to leave on good terms with our hosts, and we want to be invited back next time. The closure plan is our plan to leave on good terms and to be invited back."

The reputation of the mining industry is dependent on how well that closure plan is executed. More information and conference proceedings from [www.mineclosure2010.com](http://www.mineclosure2010.com)

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## Closing on Schedule

Less than 25% of Australian mines close according to planned schedules (Laurence, 2006). Given the high likelihood of unplanned closure, closure plans should incorporate strategies to manage the potential effects. South Australia, Queensland and New South Wales all require companies to include contingency for unplanned closures in their mine closure plans (Department of Primary Industries, '06 & '07; Primary Industries and Resources South Australia, '09; Queensland Mining Council, '01). Undertaking closure and rehabilitation while the mine is still operating may logistically be more complex, but reduces liability even if sudden falls in commodity prices, extreme weather events or other situations occur which lead to premature closure (Blackman et al, '09).

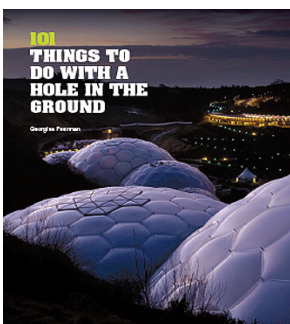
The International Institute for Environment and Development stated that most closure

plans only consider the environmental aspects of closure, leaving socio-economic aspects of closure as an externality (IIED,'02). This absent information may become even more pronounced when unexpected closure occurs as many of the social benefits of a mining project may take many years to be realised, and these opportunities are lost when a mine ceases prematurely.

Financial assurance instruments, e.g bonds, are increasingly being accepted by industry as the most effective manner in which to ensure public expectations can be met at closure. Fortunately, these measures require stakeholder engagement and partnerships long before closure (Peck & Sinding,'09).

More information from S. Finucane & T. Santini. 2010. *Corporate (ir)Responsibility: What is it really worth when times are tough*. Mine Closure Proceedings 2010.

## Book: 101 Things to do with a Hole in the Ground



This book, by Georgina Pearman ('09), displays the vast range of activities that have transformed old mines into new futures. Brief descriptions and photos show how many innovative projects have been built in disused mines instead of restoring the natural capital of the area. Structures include a football stadium, film set, hotel, mushroom farm, sauna, wine cellar and airport - demonstrating

that mining voids can be transformed into viable landscapes and culturally-relevant spaces in former mining communities, leaving a positive legacy for future generations. A common theme for the success of such ventures is that they are often located in an area which is already well-populated or has a strong tourist season. The book is available at [www.edenproject.com/shop/101](http://www.edenproject.com/shop/101)

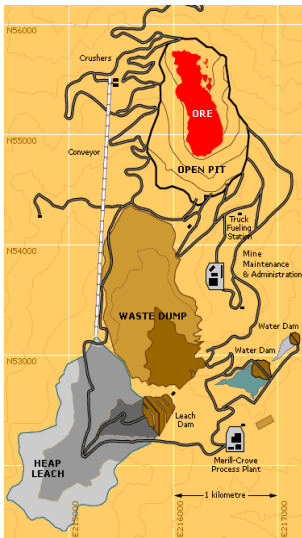


## Remediation Obligations due to the Queensland Floods

The recent rain events, flood and inundation will of course create environmental risk for many industries in Queensland. These extraordinary conditions may give rise to a range of legal issues which may have significant impact on the operation of resource projects. Flooding may cause sumps, environmental traps, tailing dams and mine water ponds to overflow or fail. Mismanagement of contaminated wastewater or unauthorised release of floodwaters may contravene environmental authorities and could lead to penalties and prosecutions. The Department of Environment and Resource Management (DERM) has been notified of 13

coal mines and 4 coal seam gas operations that have released water outside of their environmental authority conditions since November 2010. Even though there is an extraordinary cause from the flooding, DERM will investigate the cause of these breaches and prosecutions may result. These mines may need to consider additional water testing and the extent to which they are capable of complying with remediation obligations under their mining/petroleum tenement given the impact of the floodwaters. More information available at [www.mondaq.com/australia/article.asp?article\\_id=120012](http://www.mondaq.com/australia/article.asp?article_id=120012)

## Pierina Mine Closure



The Pierina Gold Mine is operated by Minera Barrick Misquichilca S.A, a Peruvian subsidiary of Barrick Gold Corporation, and is located in the north-western part of Peru. Operations at the mine will continue until 2013. The mine is committed to review the mine closure plan in accordance with Barrick's standard during the last three years of operation prior to closure and prepare a closure execution plan.

The Closure Plan consists of three major stages: Progressive Closure, Final Closure and Post Closure.

**Progressive Closure** takes place during operations and includes:

- Reclamation of minor areas that are no longer used by the operation.
- Rehabilitation and reforestation of areas outside the mine perimeter.
- Reclamation of waste rock dumps.
- Reclamation of the leach pad.

**Final Closure** begins at the end of production leaching. The activities of this stage include:

- Demolition of mine infrastructure.
- Rehabilitation of infrastructure areas.

- Final reclamation of waste dump and pit filling.
- Demolition of processing plant.
- Closure and rehabilitation of borrow areas and quarries.
- Rehabilitation of topsoil collection areas.

**Post Closure** will include maintenance and monitoring of the closed facilities to verify that the closure completion criteria have been achieved for chemical and physical stability, surface and groundwater quality, as well as fauna and flora. The following activities will occur:

- Inform stakeholders of closure progress.
- Continue to operate the cyanide detox plant and ARD treatment plant to achieve water quality objectives.
- Maintenance on closed facilities for water control, sediment control, runoff and erosion control.

More information is available from R. Orellana and M. Robledo in the Mine Closure 2010 Proceedings.

## Closure of the Ravensthorpe Nickel Mine

Barbara Pini, Robyn Mayes and Paula McDonald have written about the emotions surrounding the closure of the Ravensthorpe Nickel Mine in the south-west of W.A in January 2009. The article, *The emotional geography of a mine closure: a study of the Ravensthorpe Nickel Mine in Western Australia*, discusses two themes from the

pre- and post-mine community members. The first focuses on the intense feelings the shut-down invoked amongst participants. The second theme explores the way in which the owner of the mine, BHP Billiton, worked to suppress and regulate affective reactions and thus reveals the highly political nature of emotions. Article at: [www.eprints.qut.edu.au](http://www.eprints.qut.edu.au)

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