

The 3rd Annual WATER IN MINING SUMMIT

16-18 September 2014, Four Points by Sheraton, Perth, Australia

Revealing best practices and innovative solutions for cost-effective, sustainable water management in mining and resource projects

Hear from leading water management
experts & regulators, including:



Sibusiso Sidu
Senior Environmental
Officer
**Gold One
International, South
Africa**



Peta Barnes
Manager – Services,
Group Project
Management
BHP Billiton



Paul Brown
Executive Director,
Regional Delivery &
Regulation
**Department of Water,
Western Australia**



Rynhard Kok
Regional Manager
Sustainability –
Systems and Services,
Sustainability & External
Relations, **Newmont**



Ron Colman
Manager Water
Roy Hill



Dr Don McFarlane
Portfolio Coordinator,
Water for a Healthy
Country Flagship
CSIRO



Phil Whittle
Regional Manager,
Western Australia
Hydrobiology



Gary Smith
Senior Project
Manager & Senior
Principal Engineer
URS Corp



Jon Hall
Technical Director
– Mine Water
Management
RPS



Michael Cairnduff
Managing Editor
**Australia's Mining
Monthly**

Six reasons to attend:

1. **HEAR** mine site case studies from across Australia and internationally
2. **LEARN** from best practices in cost-effective, sustainable water management and water re-use
3. **EXCHANGE** ideas with peers who are passionate about improving water quality and sustainability
4. **EXPLORE** the latest innovations and solutions for water management at mine and CSG sites
5. **DISCUSS** the most recent research and regulation to safeguard ground and surface water quality
6. **EVALUATE** how to involve surrounding communities in water re-use projects

Key conference
topics include:

- Accurately predicting seasonal fluctuations in water supply to avoid excess flooding and mine downtime along with mine water inflows
- Groundwater modelling and use in understanding and predicting hydrogeological systems
- Underground and open pit mining water hazard control
- Mine water contamination and de-leaching
- State and Federal water & environmental regulations
- Integrated water management throughout the lifecycle of a mine
- Dewatering solutions and ways to control costs
- Water re-use & recycling strategies
- Waste management & water treatment
- Zero Liquid Discharge solutions

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Revealing **best practices** and **innovative solutions** for cost-effective and sustainable water management in **resource projects**

Building on the success of the previous Water in Mining Summits, the **3rd Annual Water in Mining Summit** will bring together water and environmental experts from across the resource industry, as well as government regulators and industry consultants to **discuss new technologies, innovative solutions and successful strategies for managing water at mine sites.**

The case study-led program will highlight new techniques and best practices for dewatering, water treatment, sustainable re-use of water, mine pit lake and tailings management, and the latest modelling tools and assessment frameworks to monitor the water quality and quantity at your projects.

In addition to relevant case studies from Australia, the conference will also feature international case studies to offer you access to valuable expertise and perspectives from across the mine water management community.

The event provides a timely opportunity to discuss key stakeholder issues and enables you to network with industry peers. Our panel of industry experts and regulators will provide answers to the questions you are dealing with on a daily basis and offer practical solutions that will help you to implement cost-effective and sustainable water management plans.

What's new in 2014?

- Regulators from key states providing updates on relevant state regulation
- Technology and Solutions Showcase to highlight new innovations in water management
- Broader range of mine site case studies from Australia as well as internationally
- Stronger focus on sustainable and economically viable ways to re-use mine water
- Interactive networking sessions

Here's **what delegates** said about past **Water in Mining Summits**:

“

Great presentations!
I felt as if I learnt something new from each talk.

Great overview of issues, diverse information & speakers.

Very useful content, relevant, and good balance of presenters.

Provided the opportunity to learn what other mines are doing to enhance water management.

”

Conference Day One Tuesday 16 September 2014

- 08:00 Registration and morning coffee
- 09:00 **Chairman opening remarks and business card exchange**
Michael Cairnduff, *Managing Editor, Australia's Mining Monthly*

Regulatory Updates: Government Guidelines for Water Management

- 09:20 **Regulator Keynote I: Western Australia's evolving regulatory framework for sustainable water management**
- Regulatory update: Anticipating the major Water Resources legislation consolidation and update, replacing the Rights in Water and Irrigation Act from 1914
 - Licensing & approvals processing: Enhancing ease of use through a new e-business system and web portal for data access and filing
 - New water supply planning documents looking at demand and supply for the critical mining areas of the Pilbara and the Mid-West
 - Outlook: Key policy focus areas for WA Department of Water in years to come
- Paul Brown**, *Executive Director, Regional Delivery & Regulation, Department of Water, Western Australia*
- 09:50 **Regulator Keynote II: Water management and water recycling regulation for mine sites in Queensland**
- Updates on regulation with regard to mine water discharge
 - Effectively dealing with surplus mine water in environmentally friendly ways
 - Water quality and reporting requirements for recycled mine and CSG water
- Chris Loveday**, *Manager Environmental Services - Mining, Department of Environment and Heritage Protection, Queensland*

- 10:20 Morning refreshments and opening networking session

Integrated and Sustainable Water Management throughout the Lifecycle of a Mine

- 10:50 **Keynote: Developing a global water strategy - A miner's perspective**
- Why is water and water management of growing importance in mining projects? And to what extent are sustainability and cost-saving solutions two sides of the same coin?
 - Developing a global water strategy and incorporating maximum sustainability into the project from the outset through to mine closure
 - Mitigating water risks and linking technical and operational water management aspects with long-term strategic and social responsibility objectives
- Rynhard Kok**, *Regional Manager Sustainability – Systems and Services, Sustainability & External Relations, Newmont*
- 11:20 **Best practices in sustainable mine closure planning, mine pit lake management and repurposing**
- Key issues to consider when preparing mine site reconciliation plans
 - Identifying ongoing environmental risk from mine pit lakes and on-site water storage facilities
 - Predicting and managing flow paths and environmental impacts to avoid contamination of ground and surface water - Lessons from the mine site
- Phil Whittle**, *Regional Manager Western Australia, Hydrobiology*
- 11:50 **Innovative and cost-effective solutions to manage groundwater quality and cumulative impacts**
- Identifying impacts of dewatering and groundwater abstraction on groundwater quality throughout your mine project lifecycle
 - Understanding the relationship between altered hydrological regimes and the functioning of groundwater and surface water dependent ecosystems
- Peta Barnes**, *Manager – Services, Group Project Management, BHP Billiton*
- 12:20 **Panel Discussion: Stakeholder perspectives on key drivers & success factors for future-proof, sustainable water management**
- Looking at the full “life cycle of water” – from sourcing to fluid containment, transportation, discharge and re-use – where do opportunities and challenges lie?
 - Examining the benefits and potential pitfalls when developing a holistic, all-encompassing water management strategy, involving multiple departments in the process
 - Considering water as a valuable resource instead of a problem – How does this paradigm shift impact your organisation and mining project?
 - The future of mine water management: How are water management technologies and techniques changing?
- Panel Moderator:*
Michael Cairnduff, *Managing Editor, Australia's Mining Monthly*
- Panellists:*
Ron Colman, *Manager Water, Roy Hill*
Rynhard Kok, *Regional Manager Sustainability – Systems and Services, Sustainability & External Relations, Newmont*

13:00 Lunch and networking

Dewatering Solutions

- 14:00 **Case Study: A look at some of Rio Tinto's water management systems**
- Environmental and management challenges posed by increased below water table (BWT) mining
 - Water strategy in mine operation, dewatering and environmental impact
 - Case study of Greater Paraburdoo Water Scheme – opportunities in the integration of a new dewatering pit
 - Case study of Yandi dewatering reticulation system – balance in meeting increased water demands and aligning with environment protection regulations
 - Case study of Hope Downs 1 dewatering – hydraulic analysis for efficient planning

Dr Weixi (James) Zhan, *Civil Engineer/Hydrologist*, **Rio Tinto**

- 14:30 **Effectively controlling costs of mine dewatering**
- Best practices in mine dewatering to achieve optimal mine operations
 - Cost vs Price: Analysing the economics of mine dewatering
 - Exploring ways to meet a range of complex water management objectives through new innovations and technology
 - Redefining safety in bore hole equipment installation, testing and removal procedures

Senior Representative, **Resource Equipment Ltd**

15:00 Afternoon refreshments and networking break

- 15:30 **Monitoring and managing groundwater dependent vegetation**
- Identifying impacts of dewatering and groundwater abstraction on vegetation health and knowing when management intervention is needed
 - Cutting-edge tools and approaches for determining the ecological water requirements of vegetation
 - Understanding the relationship between altered hydrological regimes and the functioning of groundwater and surface water dependent vegetation

Dr Tim Bleby, *Senior Scientist*, **Astron Environmental Services**

Water Management Technology & Solutions Showcase

- 16:00 **Water solution for the copper mining industry: reducing environmental impact**
- Mining can have an adverse impact on the quality of fresh water through heavy use of water in processing ore which could result in water pollution from discharged mine effluent as well as seepage from tailings and waste rock impoundments. There is a growing worldwide awareness of these impacts and the need to implement better practices to protect our water resources and the environment
 - The last decade has seen an improvement in the development of best practices for water management in the industry. These best practices focus on improved water treatment processes to improve water quality before release to the environment. The **El Teniente Molybdenum Removal Plant**, designed and operated by Degremont in Chile, has been selected as an example to illustrate the implementation of some of these improvements

Veronique Bonnelye, *Process Manager*, **Degremont Australia**

- 16:30 **This session will highlight innovative water management applications**

Service providers and consultants grab this opportunity to present your new water management solutions. Contact Shahid Shaikh at +852 9635 5254 or shahid.shaikh@beaconevents.com for more details

17:00 Close of conference day one and networking drinks

Conference Day Two Wednesday 17 September 2014

08:00 Registration and morning coffee

09:00 Chairman opening remarks and day one recap

Innovative Strategies for Water Re-Use, Recycling and Renewable Energy Creation at Mine Sites

- 09:10 **Keynote International Case Study I: Effective mine water management for tailings facilities**
- Maintaining tailings, waste and by-products disposal that meet environmental standards
 - Managing seepage from tailings dams
 - Planning, implementing, operating and sustainably closing tailings dams
 - Outlining how costs associated with tailings containment facilities can be reduced
 - Monitoring assessment and remediation processes for contaminated sites
 - Looking at recycling of materials as an alternative

Dr John Lupo, *Senior Director, Geotechnical Engineering*, **Newmont Mining, USA**

- 09:40 **Keynote International Case Study II: Water quality monitoring and mine water treatment at the Grootvlei proprietary mines in South Africa**
- Introducing the Grootvlei gold mines at the East Rand Basin, Witwatersrand in South Africa
 - Dealing with acid mine drainage and subsequent impacts on the environment
 - Utilising a HDS treatment plant and monitoring the quality of HDS effluent
 - Avoiding contaminated groundwater to interact with surface water and contaminate the nearby Wetlands
 - Implementing a long-term water re-use strategy to achieve optimum (re-) use of on-site water
 - Staying ahead of water treatment: Avoiding contamination altogether as long-term goal

Sibusiso Sidu, *Senior Environmental Officer*, **Gold One International, South Africa**

- 10:10 **Turning excess water and waste water into commercially viable products and a source of renewable energy**
- Revealing the hidden commercial opportunities that water can offer to forward-thinking mining companies
 - Exploring three scenarios for dealing with mine water in innovative and business savvy ways:
 - Handling an overcapacity of fresh water
 - Dealing with hyper saline water
 - Treating contaminated mine water
 - Involving local communities in your water treatment and renewable energy projects

Richard Paterson, *Founder and CEO*, **C3L Innovations**

10:40 Morning refreshments and networking break

- 11:10 **Panel Discussion: Policy makers' and industry perspectives on water re-use and environmental management in the mining sector**
- Australia-wide developments in environmental water management
 - Utilising water as a source for renewable energy: Government policies and incentives to stimulate the re-use and recycling of mine water
 - Available options for water re-use: Best practices per state
 - How to involve local communities in water recycling projects

Panellists:

Paul Brown, *Executive Director, Regional Delivery & Regulation*, **Department of Water, Western Australia**
Gary Smith, *Senior Project Manager & Senior Principal Engineer*, **URS Corp**

11:50 **Overview of the Pilbara Water Resource Assessment and some findings to date**

- Project scope and outlook: How will the project assist government and industry to manage water resources now and into the future?
- Extrapolating data from well-studied areas to those with little information
- Assessing the effect of past and future climate and development on the Pilbara's surface water and groundwater resources
- Historical and future climate change impacts on water dependent ecosystems

Dr Don McFarlane, Portfolio Coordinator, Water for a Healthy Country Flagship, **CSIRO**

Waste Management & Water Treatment Solutions

12:20 **Case Study: Benefits and environmental economics of water in mining best practices**

- Examining the beneficial use of Coal Seam Gas Water in irrigation
- Understanding how mine waste water can be beneficially used for irrigation and pastoral cropping
- Understanding the role water management plays within mine site rehabilitation, planning and closure processes
- Assessing the environmental and project economics of water management within a mine site

Dr Glenn Dale, Managing Director and Chief Technical Officer, **Tree Crop Technologies**

12:50 Lunch and networking

13:50 **International Case Study: High rate treatment methods for mine pit slurry at an open cut coal mine in Indonesia**

- Importance of water balance model for mine sites
- Use of water balance models to determine water storage requirements
- Specific mine water treatment methods for difficult slurries
- High flow rate applications in mine water treatment
- Ensuring environmental compliance with mine water discharges

Gary Smith, Senior Project Manager & Senior Principal Engineer, **URS Corp**

Water Management & Environmental Reporting Solutions Showcase

14:30 **This session will highlight innovative water management applications**

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15:00 **Case Study: Developing a Managed Aquifer Recharge (MAR) System**

- Developing and implementing a state-of-the-art managed aquifer system
- Managing brackish and hyper saline groundwater interaction in environmentally sensitive areas
- Dewatering overburden while conserving brackish water for future mine supply
- Achieving zero surface discharge – Lessons learned

15:30 Afternoon refreshments and networking break

16:00 **Managing pit lakes – Keeping it simple**

- Zooming in on the hydrological processes which control pit lake conditions
- How hydrology determines the impact of pit lakes on the environment

Jon Hall, Technical Director – Mine Water Management, **RPS**

Mine Water Treatment Solutions

16:30 **Examining new approaches and techniques for mine water treatment**

- How are mine water treatment needs and available solutions evolving
- Zooming in on the use of osmosis, distillation, membranes and ion exchanges
- How to select the best possible combination of treatments to achieve your water quality goals

17:00 Chairman's closing remarks and end of conference

Post-Conference Workshop

Thursday 18 September 2014

08:30 Registration and morning coffee

09:00 – 12:00 Workshop:

Using hydro-modelling and monitoring systems for effective water management in mining

- Examining mine site water balance modelling
- Exploring stream channel restoration and landscape evolution modelling
- Exploring flood modelling, dam break modelling and water quality modelling to assist with environmental management decisions
- Modflow-USG applications in numerical modelling for dewatering scenarios
- Environmental flows and aquatic habitat modelling
- Hydrological and hydraulic modelling for effective water management
- Looking at hydrologic monitoring for effective waste management including calibrations, regulatory compliance and hydrologic monitoring systems

12:00 Close of workshop

Who should attend:

- Hydrogeologists
- Hydrologists
- Water Managers
- Geotechnical Engineers
- Environmental Managers, Superintendents & Approvals Managers
- Mine Site Managers
- Sustainability Managers
- Community Managers
- Government Regulators and Policy Makers
- Industry Consultants and Solution Providers

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Official Event Publication

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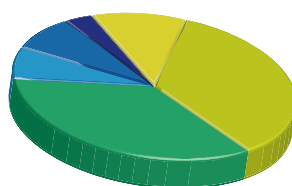
Maximise your exposure at this Summit by becoming a **sponsor** or **exhibitor**

Would you like to showcase your water management services and solutions to a highly targeted audience of decision makers and stakeholders? Then participate as an exhibitor or sponsor!

Over 250 senior executives attended our previous Water in Mining events in Perth and Brisbane.

To find out more about the various sponsorship and exhibition opportunities available at this event, contact Shahid Shaikh today at shahid.shaikh@beaconevents.com or +852 2531 6218.

Attendance of previous Water in Mining Summit

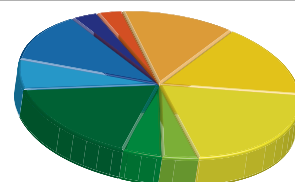


By Business Nature

- Government / Regulator 11.1%
- Mining Companies 35.0%
- Service Providers 34.5%
- Consultant 7.3%
- Equipment 8.7%
- Others 3.40%

By Job Function

- C-level 3.3%
- Business Development / Sales & Marketing 12.6%
- Water 15.3%
- Environment 21.8%
- Consultant 4.3%
- Engineer 4.3%
- Hydrogeologist / Hydrologist 16.6%



- Operation / Project Management 6.6%
- General Management 12.3%
- Others 3.1%

Companies that have attended recent **Resourceful Events' Mine Water** and **Environmental Management** events, include:

- | | | | |
|-----------------------------------|---|---|------------------------|
| • Alcoa | • Department of Agriculture & Food | • Gloucester Basin | • Office of Water |
| • Anglo American | • Department of Environment & Conservation | • Harmony Gold Southeast Asia | • Pacific Silica |
| • Anglogold Ashanti | • Department of Environment & Heritage Protection | • IMX Resources | • Palaris Mining |
| • Atlas Iron | • Department of Land Resource Management | • Incitec Pivot | • Peabody Energy |
| • Bandanna Energy | • Department of Mines & Energy | • Isaac Plains Coal & Aquila Coal | • Phoenix Gold |
| • Barrow Resources | • Department of Mines & Petroleum | • Karara Mining | • Queensland Alumina |
| • BC Iron | • Department of National Resources & Mines | • Kimberley Diamond | • Regis Resources |
| • BHP Billiton | • Department of Primary Industries | • Koniombo Nickel | • Rex Minerals |
| • BMT WBM | • Department of Sustainability Environment Water Population & Communities | • Lake Eyre Basin | • Rio Tinto |
| • Brockman Mining | • Department of Water | • Lynas | • Robust Resources |
| • Caledon Coal | • EMU Nickel | • Mine Completion Department of Manufacturing Innovation Trade Resource | • Roy Hill |
| • Cameco | • Environmental Protection Authority | • Ministry of Industry | • Sandfire Resources |
| • Cape Alumina | • Evolution Mining | • Moly Mines | • Saracen Mineral |
| • Catchment Management Authority | • Fortescue Metals Group | • Mount Gibson Iron - Koolan Iron Ore | • Sibelco |
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| • Coal Face Resources | • Global Advanced Metals | • Nautilus Minerals | • SunWater |
| • Cockatoo Coal | | • New Hope Coal | • Teck |
| • Copper Mines of Tasmania | | • Newmont Boddington Gold Mine | • Vale |
| • Cristal Australia | | • Northern Star Resources | • Waratah Coal |
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| • CSIRO | | | • Whitehaven Coal |
| • CST Minerals Lady Annie | | | • Yancoal |
| • Curtain Bros PNG Proprietary | | | |
| • Dalrymple Bay Coal Terminal | | | |
| • Dams Safety Committee | | | |

For sponsorship, speaking and exhibiting opportunities at the Water in Mining Summit contact Shahid Shaikh today at shahid.shaikh@beaconevents.com or +852 2531 6218

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Venue Information

Four Points by Sheraton Perth

707 Wellington Street

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Register & Pay by 18 July 2014				Register & Pay by 22 August 2014			Thereafter		
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2-Day Conference Only	AU\$2,395 SAVE AU\$400	AU\$239.5	AU\$2,634.5	AU\$2,595 SAVE AU\$200	AU\$259.5	AU\$2,854.5	AU\$2,795	AU\$279.5	AU\$3,074.5
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Print Name

Signature