

PREVENTING AND MANAGING ACID AND METALLIFEROUS DRAINAGE IN THE AUSTRALIAN MINERALS INDUSTRY

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NATURE OF THE AUSTRALIAN MINERALS INDUSTRY

- Country is mineral-rich with great diversity of mineral deposits
- Among world's top 6 producers of aluminium, bauxite, black coal, copper, diamonds, gold, mineral sands, iron ore, lead, manganese, nickel, silver, uranium and zinc
- Minerals industry is a major contributor to the Australian economy with exports of A\$99.6 billion in 2007/2008 representing 42% of country's total merchandise exports



DOCUMENTATION OF THE EXTENT OF AMD IN AUSTRALIA

- 1970s-1980s – AMD first identified as major environmental issue at large metalliferous mines
- 1992 – First national AMD workshop (Tasmania)
- 1994 – Forerunner of Minerals Council of Australia identifies AMD as one of the major industry's strategic environmental issues
- 1996 – First national survey of AMD (Australian Government, ACMER and ANSTO)
- Regular updates at national AMD workshops and ICARDs



RESEARCH AND DEVELOPMENT

- Prediction of AMD potential
- Management of AMD
- Treatment of AMD

For more details

- Refer 8th ICARD proceedings



TECHNOLOGY TRANSFER

- ACMER
 - A unit within Sustainable Minerals Institute, Univ of Queensland
 - (www.acmer.uq.edu.au)
 - Charter is to assist minerals industry meet the environmental and social challenges of sustainable development through delivery of a Technology Transfer Program
- State and Australian Government Departments initiatives
 - ACMER provides support including in house training



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ACMER SHORT COURSES AND WORKSHOPS

- Over 150 conducted since 1994 with many specifically or indirectly addressing AMD
- National AMD Workshops (1995, 1997, 2000, 2005, 2008)
- 6th International Conference on Acid Rock Drainage (ICARD) (2003) (with AusIMM) held in Cairns, Australia



ACMER AMD-RELATED COURSES AND WORKSHOPS TO DATE IN 2009

- Life of Mine Planning – Technical Aspects of Operation and Closure Workshop (Perth) (February)
- Fundamentals of Acid and Metalliferous Drainage Short Course (Brisbane) (March)
- Introduction to Global Acid Rock Drainage (GARD) Guide Workshop (Brisbane) (March) (for INAP)
- Cyanide Management in the Gold Industry Workshop (Perth) (May)
- Practical Monitoring for Improved Environmental Performance Short Course (Brisbane) (June)



GOVERNMENT TECHNOLOGY TRANSFER

Leading Practice Sustainable Development for the
Mining Industry Program

- Administered by Australian Government
Department of Resources, Energy and Tourism
(2005-2009) (www.ret.gov.au/sdmining)
- 15 handbooks in series with a number related to
AMD issues including “Managing Acid and
Metalliferous Drainage”
- Many handbooks available in Bahasa Indonesian,
Chinese, Japanese, Korean, Spanish and
Vietnamese



MANAGEMENT OF AMD ON ABANDONED MINES

- Many mines developed in past 100 years when little understanding of processes and environmental impacts of AMD
- State and Territory Governments have established programs to remediate those abandoned sites of high priority
- National Abandoned Mines Working Group established
 - Consists of representatives of Australian and State Governments, MCA and ACMER
 - Document produced to promote national approach to abandoned mines (2009)



ACMER AND INAP GLOBAL ALLIANCE

- ACMER has been an active member of the INAP Global Alliance since the Alliance's inception in 2003
- Represented on the INAP Steering Committee which helped guide the development of the INAP Global Acid Rock Drainage (GARD) Guide
- ACMER is assisting in development of the Chinese Network for Acid Mine Drainage (CNAMD) and the Indonesian Acid Drainage Network (IADN) which are applying to join the INAP Global Alliance



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CONCLUSIONS

- AMD is a significant issue for the Australian minerals industry
- Industry – sponsored research and technology transfer activities by government, ACMER and other organisations are focussed on preventing AMD in new mines and remediating existing AMD
- ACMER is an active member of the INAP Global Alliance
- AMD management by industry will continue to be assisted by the linkage of Australia to the INAP Global Alliance



THE END



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