



The International Network for Acid Prevention

An organization of international mining companies that seeks the prevention of acid rock drainage (ARD) and metal leaching in support of responsible mineral development.

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INAP had an exciting second half of 2009. The completed GARD Guide™ was successfully rolled out at the 8th ICARD in Skelleftea, Sweden at the end of June. During the ensuing months, several informational and training workshops on the GARD Guide were presented at various global locations. INAP also sponsored a 2-day water treatment workshop with Freeport MacMoRan during October in Thatcher, Arizona. The global reach of INAP may expand further as two more mining companies have requested INAP membership. Also, organizations in Brazil, China and Indonesia have been admitted into the Global Alliance (GA).

1. GARD Guide

The GARD Guide™ roll out was a success. The Guide was officially presented to the mining community at a plenary session of the 8th ICARD in Skelleftea, Sweden on June 23, 2009. Overviews on the GARD Guide were presented at the conference.

The GARD Guide was completed on time and within budget. It required over 2500 man-hours with 30 key contributors throughout the global mining community. Since it was placed on the Wiki there have been over 10,000 hits on the Guide. The feed-back has been mostly positive (“pro-active” and “sincere”).

There are a number of frequently asked questions regarding the GARD Guide:

- **Is there a hard copy?** No. (The GARD Guide is a fluid document and thus will be continually updated. The format allows the GARD Guide to link to outside relevant documents and references.)
- **Do you really look at our comments?** Yes
- **We would like more case studies.** INAP is compiling more and will include them in future updates.
- **Is the GARD Guide available in Spanish? Other Languages?** Not at present. INAP is anticipating a Spanish translation within the coming year. We will then proceed to other languages.

Since the roll out there have been several global activities which have included the GARD Guide. A discussion workshop in Perth, Australia was facilitated by Dave Salmon and others from Golder Associates and ACMER. Nico Bezuidenhout and Meiring du Plessis worked with others in South Africa to present a training workshop in Pretoria, South Africa during the International Mine Water Conference. Jim Gusek participated in the Lake Superior “Webinar”. Mike O’Kane presented a paper at the BC MEND Workshop in Vancouver in December 2009 addressing the waste cover issues presented in the GARD Guide. Also in the last 6 months, two articles on the GARD Guide have been published in professional journals. “The Global Acid Rock Drainage Guide (GARD Guide)” was published in the December 2009 issue of Mine Water and the Environment and “The GARD Guide is available to review online” was published in the June 2009 issue of

Mining Engineering. More articles are slated for other publications during 2010.

Many interactive educational presentations on the GARD Guide are planned. The next presentation scheduled is a one-day short course on the use of the GARD Guide at the SME Annual Meeting in Phoenix, AZ on February 28, 2010. This short course is being taught by Drs. Tom Wildeman, CSM; Dirk van Zyl, UBC; Rens Verburg, Golder Associates and Terrence Chatwin, INAP. It will use a case study approach with a hypothetical model mine. INAP is planning to use this short course as a format for future training workshops and short courses. INAP and Global Alliance members will find this short course very valuable, so register with the SME before the early registration discount expires.

Jim Robertson, Tom Claridge and Terry Chatwin made presentations on the GARD Guide during a visit to Washington D.C. in early January of 2010. They met with several key stakeholders including the International Finance Corporation (IFC), the US Office of Surface Mining (OSM), the Environmental Protection Agency (US EPA), the National Mining Association (NMA) and the US Army Corps of Engineers (USACE). Responses were positive from all of the groups.

2. ICARD

Two groups, ASMR and MEND, presented bids to host the 9th ICARD during the closing session of the 8th ICARD. After thoughtful consideration, INAP membership voted to award the bid to MEND. It will host the 9th ICARD in Ottawa, Ontario, Canada in late May of 2012 at the Westin Hotel.

In early December 2009, Gilles Tremblay updated INAP's OpCom and Global Alliance members on the planning progress at their meetings in Vancouver, BC. Gilles informed INAP that MEND has a committee partially in place and planning for the ICARD has begun. MEND is planning a "stand alone" conference. Groups and associations are already requesting to be sponsors of this event. INAP has affirmed its support to Gilles Tremblay, MEND and the 9th ICARD Committee. They will determine how INAP can best be of assistance.

3. Water Treatment Workshop

Tom Claridge (Freeport McMoRan) hosted the Water Treatment Workshop held in Thatcher, Arizona, in October, 2009, which has sponsored by INAP. Thatcher is in the heart of the Arizona mining industry. It was well received with approximately 70 people attending the 2-day event. Six of INAP's nine member companies were represented as well as international attendees from Canada, Peru and South Africa. Many of the presentations (60-70%) were given by representatives from INAP companies. The papers covered a wide range of topics. About 10% of the papers addressed innovative water treatment technologies. Dave Riesman from US EPA gave an excellent presentation on actions EPA is taking to team with the mining industry to

address ARD. We thank Tom Claridge (Freeport McMoRan) and his committee, Hoe Teh (Barrick), Rich Borden (Rio Tinto), Linda Broughton, BHP Billiton and Terry Chatwin (INAP) for their efforts.

Lisa Lanteigne (Vale Inco) has agreed to host the next workshop in the fall of 2010 in Sudbury, Ontario, Canada. The following workshop will be held in Elko, NV in 2011.

4. Global Alliance

INAP has extended invitations to Brazilian, Chinese and Indonesian groups to join the Global Alliance. Flavio Vasconcelos from Brazil attended the Global Alliance meeting in Vancouver, B.C. in December of 2009. INAP's profile is growing internationally and the Global Alliance is an important part of this growth.

The Global Alliance is key to having the GARD Guide promoted in their areas of the world. The success of the GARD Guide is dependent on it being used on the local level.

Global Alliance efforts to facilitate the GARD Guide:

- MEND – Gilles Tremblay
 - Promoted the GARD Guide in all MEND newsletters
 - Gave a 20 minute presentation at a MEND workshop
 - Recommended that the GARD Guide presented at the Mine Water conference in Santiago, Chile. May, 2010
 - 9th ICARD - Short Course. Ottawa, Canada. May 2012

- ADTI – Charles Bucknam
 - ARD presentation and GARD Guide Short Course at SME in Phoenix, AZ. Feb 2010
 - Tom Wildeman, Rens Verberg, Dirk Van Zyl and Terry Chatwin are planning a “hands-on” session using the GARD Guide to develop a model mine site
 - Promoting the GARD Guide to educators
 - Use membership to review GARD Guide comments posted on the web

- IMWA – Christian Wolkersdorfer
 - GARD Guide Short Course at the Sydney, N.S. workshop. April 2010
 - GARD Guide article published in the Journal of International Mine Water
 - Slot for GARD Guide presentation at the IMWA Symposium in Sydney, NS. September, 2010
 - Article on the GARD Guide in IMWA newsletter (circulation 13,000)
 - IMWA and WISA are working on a joint effort to create a “Water Expert” Certification.

- Sustainable Minerals Institute Knowledge Transfer - SMIKT (formerly ACMER) – Bruce Barrie
 - Over 10 Workshops and Short Courses promoting the GARD Guide are planned in 2010 at various locations throughout Australia.
 - SMIKT continues its willingness to participate with organized outreach with the Chinese and Indonesian networks.

Global Alliance Activity Reports

- MEND
 - Forming committees in preparation for the 9th ICARD
 - Prediction Manual by Bill Price is nearly ready for publication

- ADTI
 - Sponsored several GARD Guide workshops
 - Pit Lakes Workbook has been published
 - Finalizing Prediction Workbook
 - Finished work on the Molycorp Project – hoping to submit a paper on ADTI efforts on this project
 - Coal Mining Sector active in coal issues in the eastern United States

- PADRE
 - Adam Jarvis is the new chair. They will have a reorganization meeting in June of 2010
 - Organizing a GARD Guide workshop in Europe

- WRC
 - Jo Burgess is the new contact since Meiring du Plessis has retired
 - Teaming with Anglo America, they are planning a GARD Guide workshop for African regulators

- SMIKT (ACMER)
 - Sponsored several GARD Guide short courses and workshops prior to the GARD Guide roll out in June of 2009
 - Participated in the Perth informational workshop on the GARD Guide – September 2009

5. Operatering Committee Chair Report – Jim Robrtson (Barrick)

Highlights of the year:

- GARD Guide completed on time and within budget
- INAP personnel supported, attended and presented at ICARD 8
- Successful GARD Guide roll-out at ICARD 8
- Ottawa, Canada selected as site of ICARD 9, May of 2012
- Papers and workshops on INAP and the GARD Guide presented at several conferences to promote the GARD Guide
- Water Treatment Workshops were held in Pretoria, South Africa and Thatcher, Arizona during October 2009.

- Applications from Brazil, China and Indonesia to join the Global Alliance were reviewed and approved
- INAP has received enquiries for two new memberships from Goldcorp and Antofagasta Minerals

Three main objectives of 2009:

- Complete the GARD Guide with a rollout plan for the next two years
- Raise the profile of INAP through presentations, brochures and new membership enrollment of companies and associations
- Continue support of collaborative research projects

Four top priorities for 2010 identified from the 2008 strategic plan:

- Improve INAP website significantly to allow for the management of large volumes of information for an expanding and demanding viewing audience
- Continue the program to roll out the GARD Guide
- Hold the 2nd annual INAP Water Treatment Workshop in Sudbury, Ontario
- Development of a plan for new research projects. Plan one new project with defined resources, and a schedule and budget for implementation. Try to attract more money by leveraging with government participation.

6. INAP Technical Manager's Report – Terrence Chatwin

Priorities for 2009

- Completion of the GARD Guide on time and within budget thanks to GARD Guide Champion Keith Ferguson and the Golder team.
- GARD Guide roll out at ICARD 8 in Skelleftea, Sweden – June 2009
- Path forward for the GARD Guide
 - Presentations, workshops and short courses
 - Annual updates and improvements
- Support relevant collaborative research and technology transfer activities
- Expand Global Alliance and strengthen INAP's relationship with its Global Alliance partners
- Expand INAP member companies

Activities during 2009

- Nine presentations on INAP and the GARD Guide in Canada, Europe, South Africa and the United States
- Five workshops to vet and promote the GARD Guide in Australia, Europe, South Africa and the United States
- Five papers or articles published on the GARD Guide

Research projects supported during 2009

- Store and Release Covers – ACMER, U of Queensland, U of Western Australia and U of Technology - Sydney
- Pit Lake and Modeling Workbooks – ADTI

- Prediction Manual – MEND

7. Change in INAP's Leadership

Robin Batterham (Rio Tinto, retired) who was instrumental in forming INAP more than a decade ago, resigned as the Chairman of the INAP Board in 2009. Bruce Kelley (Rio Tinto) has been acting Chair during the interim.

The INAP Board formally elected Bruce Kelley as the INAP Board Chair at their meeting in Vancouver, December 2009. INAP applauds and thanks Robin Batterham for his efforts to support INAP from its inception.

Jim Robertson (Barrick) has completed his term as Chairman of INAP's Operating Committee. He has done an outstanding job of leading INAP during the past two years. His focus and determination during his 4 year tenure as chair and vice chair were instrumental in bringing the GARD Guide to fruition. INAP congratulates and thanks Jim Robertson for a job well done.

Tom Claridge (Freeport McMoRan) has stepped up from his position as Vice Chair to assume the Chairmanship of INAP's Operating Committee.



Terrence and Andrea Chatwin, Tom Claridge, and Jim Robertson
OpCom Meeting, December, 2009. Vancouver, B.C.

8. Up-Coming Events

Don't miss the following upcoming meetings that relate to acid drainage:

- **Geoenvironmental Modeling of Ore Deposits**
 - **Environmental Issues in Mining and Mineral Exploration** February 13 & 14 (Sat-Sun)
 - **Geoenvironmental Models of Ore Deposits** February 15 & 16 (Mon-Tue)
 - **Environmental Mineralogy** February 17 & 18 (Wed-Thur)
 - **Hydrogeology and Hydrogeochemistry in Mining and Mineral Exploration** February 19 & 20 (Fri-Sat)
 - February 13-20, 2010. Ottawa, Canada. Contact: icsr@uottawa.ca [Course Description](#)
- **SMIKT Workshop: Improving Environmental Management for the Resources Sector** - February 22-24, 2010. Brisbane, Australia. [Information and Registration Form.](#)
- **SME Annual Meeting and Exhibit** - February 28-March 3, 2010. Phoenix Expo Center, Phoenix, Arizona. www.smenet.org
- **SMIKT Short Course: Practical Monitoring For Improved Environmental Performance** - March 2010. Brisbane, Australia.
- **SMIKT Workshop: Life of Mine Planning** - April 2010. Perth, Australia.
- **2010 Ground Water Summit and 2010 Ground Water Protection Council Spring Meeting** - April 11-15, 2010. Denver, CO. www.ngwa.org/summit2010
- **SMIKT Short Course: Water Management and Accounting** - May 2010. Brisbane, Australia.
- **13th International Seminar on Paste & Thickened Tailings** - May 3-6, 2010. Toronto, Ontario, Canada. www.paste2010.com
- **12th International Symposium on Environmental Issues and Waste Management in Energy and Mining Production (SWEMP)** May 24-26, 2010. Prague, Czech Republic. www.swemp2010.czu.cz
- **SMIKT Workshop: Reducing Environmental Risks in Mining** June 2010. Central Queensland, Australia.
- **ASMR 27th Annual Meeting** - June 5-12, 2010. Pittsburgh, PA. <http://www.pghminingreclamationconf.com/>
- **Water in Mining: 2nd International Congress on Water Management in the Mining Industry** - June 9-11, 2010. Santiago, Chile. www.wim2010.com

- **A&WMA 2010 Air and Waste Management** - June 22-25, 2010. Calgary, Alberta, Canada. www.awma.org/ACE2010/
- **SMIKT Short Course: Introduction to Sustainable Development**
July 2010. Brisbane, Australia.
- **SMIKT Field Workshop: Practical Risk Assessment in Mining**
August 2010. Central Queensland, Australia.
- **SMIKT Short Course: Practical Monitoring for Improved Environmental Performance** - August 2010. Perth, Australia.
- **International Mine Water Association (IMWA) 2010** - September 5-9, 2010. Sydney, Nova Scotia, Canada. www.imwa2010.info
- **Mine Waste 2010** - September 6-10, 2010. Sheraton Perth Hotel, Western Australia. www.minewaste2010.com
- **14th International Conference International Water Association: Diffuse Pollution and Eutrophication** - September 12-17, 2010. Quebec, Canada. www.dipcon2010.org
- **Abandoned Mines Workshop in Association with The Sustainable Development 2010 Conference** - October 14, 2010. Mandurah, Western Australia.
- **SMIKT Course: Understanding Cover Limitations** - November, 2010. Brisbane, Australia.
- **SMIKT Course: Introduction to Geometallurgy** - November, 2010. Brisbane, Australia.
- **Second Annual INAP Workshop** - Fall 2010. Sudbury, Ontario, Canada. (More Information forthcoming).
- **ASMR 28th Annual Meeting** - June 12-16, 2011. Bismarck, ND