



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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1. Summary

INAP with the support of the Global Alliance has been actively involved in promoting the GARD Guide with short courses, presentations and workshops on the Guide during the past two years since the GARD Guide was “rolled out” at the 8th ICARD in Skelleftea, Sweden. Recently, INAP has focused its GARD Guide education on developing regions, such as South America, Africa and Asia.

This year, INAP’s main objective is to complete the GARD Guide’s first update which we anticipate will be finished by November of 2011. Following the update, INAP is planning to translate the GARD Guide into Spanish.

INAP’s spring 2011 OpCom and Global Alliance meetings were held in Sudbury, Ontario, Canada in conjunction with a GARD Guide Short Course that was organized by Lisa Lanteigne (Vale) with the assistance of Joe Fyfe (Xstrata Nickel). The short course was attended by more than 50 mining stakeholders including operators, consultants, regulators, NGO’s and academics.

INAP welcomes back Newmont Mining Corp. after a brief hiatus.

INAP wishes to thank Tom Claridge for his able contribution to INAP as OpCom Chair during 2010. INAP also expresses appreciation to Dan Ramey (Freeport McMoRan) for his willingness to fulfil the remainder of Tom’s term of office. We are looking forward to a fruitful 2011 leading up to the next ICARD.

2. GARD Guide Update

INAP is very pleased with the support of the Global Alliance (GA) in the promotion of the GARD Guide. During 2011 members of the GA have made/or planned over a dozen presentations or short courses on the GARD Guide. These activities have/or will take place throughout the globe including Australia, Canada, Chile, Germany, South Africa and the United States.

INAP and the GA members have prepared numerous different power point presentations on the GARD Guide. These include presentations on specific GARD Guide chapters that can be organized into short courses of varying topics. They are available for the use of INAP member companies and the Global Alliance members. INAP is planning to house these in the “Members’ Only” section of the INAP web site.

The first update of the GARD Guide is progressing. INAP is planning to have it available by Fall of 2011. The upgrade will focus on four chapters. The suggestions, comments and concerns directed toward these chapters have been collected by the GARD Guide Secretariat and submitted to outside consultants who will review and integrate the comments as appropriate. The existing GARD Guide team will work with the consultants to improve the content. Chapters being addressed include:

- Chapter 4 – Characterization
- Chapter 5 – Prediction
- Chapter 6 – Prevention and Mitigation
- Chapter 7 – Treatment

In addition to the upgrade of these chapters, we are expanding the number of mini-case studies throughout the GARD Guide. In this revision, a number of “tool boxes” will be included to make the GARD Guide more valuable to mining operators. These “tool boxes” include:

- Guidance for Exploration Geologists
- Early signs of ARD
- Prevention and Control Flow Sheet
- Cost information
- Guidance for ARD Management Plan
- Audit Protocols for Operating and Closed Mines
- Questions for Consultants

When the first update is completed, INAP will then work on a Spanish translation of the GARD Guide. The executive summary of the GARD Guide has already been translated into Spanish and French.

INAP is pleased with the response to the on-line GARD Guide course developed by EduMine. Approximately 40 people are enrolled. Many mining companies have a contract with EduMine, so their employees can have access to the course. EduMine is currently negotiating with the University of British Columbia to add the GARD Guide course to its mining certificate program.

3. 9th ICARD

The date for the 9th ICARD has been set. MEND will host the event in Ottawa, Ontario, Canada on May 21-26, 2012. Gilles Tremblay reported that the Westin Hotel has been secured as the venue. He also informed INAP that this coincides with the annual Tulip Festival in Ottawa so the area should be beautiful. Short Courses are scheduled for Sunday and Monday, May 20 and 21, 2012 with field trips available on Friday and Saturday, May 25 and 26, 2012. Abstracts have been submitted and the committee is in the selection process to assure an excellent program. INAP has affirmed its support to Gilles Tremblay, MEND and the 9th ICARD Committee. INAP is represented on the 9th ICARD Organizing Committee by Lisa Lanteigne (Vale).

4. Sudbury Short Course

Lisa Lanteigne (Vale) hosted the INAP workshop on May 17-18, 2011 in Sudbury, Ontario, Canada with Joe Fyfe (Xstrata Nickel) as co-host. Gilles Tremblay (MEND) helped facilitate the proceedings. They decided a short course on the GARD Guide would be valuable to practitioners in the Sudbury area. This decision was validated by the more than 50 people including operators, consultants, regulators, NGO's and academics who attended the short course. Pictures of the short course are shown in Figures 1 and 2.



Figure 1
Presenters at GARD Guide short course. Left, Ron Nicholson. Right, Jeff Martin



Figure 2
Attendees at short course working on hypothetical ARD mitigation project

Tours of two mining sites (the reclaimed Whistle waste rock site and the Podolsky mine near Sudbury) were arranged by Lisa Lanteigne and Ian Horne (Quadra FNX). Pictures of the mining tours are shown in Figures 3 and 4.



Figure 3
Brian Ayres discussing Vale Whistle waste rock cover with the tour



Figure 4
Ian Horne presenting information on the Quadra FNX Podolsky Mine

INAP appreciates the efforts of Lisa, Joe and their committee in organizing a very successful workshop in eastern Canada.

5. Global Alliance

INAP's profile continues to grow internationally. The Global Alliance (GA) is an important part of this growth. The GA is key to having the GARD Guide promoted in their areas of the world. INAP reiterates that the success of the GARD Guide is dependent on its being used on the local level. During the last two years, the GA has added 3 new members for a 60% increase of membership. Thanks to INAP and GA members who were instrumental in this growth.

Global Alliance Activity Reports (as reported at the November 2010 GA Meeting)

- **ADTI – Charles Bucknam**
 - Progress is being made on all of the Metal Mining Influence Water workbooks. They are published by the Society of Mining Engineers (SME) with support from INAP. ADTI is hopeful that the complete series will be available from SME in summer of 2012.
 - An additional volume on ASTM methods and standards applicable to ARD put together by Charles Bucknam and ASTM is available through ASTM on their publications website.
 - In addition to the Pit Lakes workbook volume, ADTI-MMS (metal mining sector) is involved with the Pit Lakes Database project being performed by SUNY Oneonta under the direction of Devin Castendyk with INAP funding.
 - ADTI/MMS has been helping where it is able to promote the GARD Guide and incorporate the Guide concepts partially or wholly into technical and trade meetings. Additional venues for short courses always are under review. The Spanish version of the Executive Summary also has been distributed to the ADTI/MMS membership list, which includes part of the ADTI-Coal Sector leadership.
 - ADTI sponsored a technical session at the 2011 SME Annual meeting.
- **MEND – Gilles Tremblay**
 - Preparing for the 9th ICARD
 - Prediction Manual by Bill Price is completed and is available
 - Participation in the INAP GARD Guide Short Course in May 2011 – Sudbury, ON
- **PADRE- Lars Ake Lindahl**
 - Most PADRE members are from the UK or Germany. An effort is being made to identify interested people and spread information about PADRE. To this end, a power point presentation has been created to be used to disseminate the PADRE initiative and its ongoing development.
 - An update of the former PADRE website is ongoing and should be finished before summer of 2011.
 - Study on Extractive Waste will soon be published focusing on characterization and includes European Standards
- **SANAP – Flavio Vasconcelos**
 - Creation of SANAP website: www.sanap.com.br/plus
 - Planning a meeting of SANAP executive members for the first semester of 2011.

- **SMIKT – Bruce Barrie**
 - 3 workshops during the first half of 2011
 - Brisbane – March 2011
 - Central Queensland – May 2011
 - Darwin – June 2011- including a GARD Guide short course
- **WRC – Jo Burgess**
 - 3 publications in first part of 2011
 - 2 GARD Guide presentations during 2010 – one specifically for regulators

6. **Operatering Committee Chair Report – Dan Ramey (FMI)**

- The GARD Guide continues to be the primary focus of INAP during the first half of 2011.
 - Dissemination worldwide of the GARD Guide and its information to stakeholders and interested parties.
 - Updating the GARD Guide in response to comments and suggestions collected since 2009. Upgrade should be completed and ready for redistribution by November 2011.
 - Translation of the GARD Guide into Spanish following the upgrade. The executive summary has already been translated into Spanish and French.
- 16 presentations, workshops and short courses were presented by INAP and Global Alliance personnel world-wide during the last half of 2010.
- INAP acknowledges and appreciates the time and energy voluntarily invested by GA members in this and other projects.
- INAP continues its support of current projects with additional monies earmarked for GARD Guide updates and improvements.
- INAP plans to fund future research projects which address gaps in the GARD Guide and which benefit member companies.
- A sub-committee from OpCom consisting of Bill Upton (Barrick), Dean Williams (Kinross), Juan Carlos Salas and Gustavo Possel (Antofagasta) was formed to develop and strengthen regional INAP activity. They will focus on Chile first because these companies all have mining properties there.

7. **INAP Technical Manager's Report – Terrence Chatwin**

- INAP's priority for 2011 is to complete the first upgrade of the GARD Guide
- 24 presentations or short courses were presented worldwide during 2010.
- INAP has entered into an agreement with EduMine to create an internet course on the GARD Guide.
- Planning for the 9th ICARD to be held in Ottawa in May of 2012 is progressing well. Elizabeth Gardiner is the event Chair.
- INAP is supporting the following projects:
 - **Store and Release Covers** – SMIKT – U of Queensland, U of Western Australia and U of Technology – Sydney.
 - **Modeling Workbook** – ADTI

- **Diavik Country Rock Instrumented Pile Monitoring** – U of Waterloo, U of Alberta, U of British Columbia, MEND
- **Pit Lake Data Base Development** – U of New York - Oneonta
- At the recommendation of ICMM, INAP was invited to present at the Global Mining Water Management Initiative 2011 in Las Vegas, Nevada in March

8. Up-Coming Events

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

[Sustainable Operations - Business Risks+Sustainable Development](#)

August 16, 2011. Adelaide, South Australia

[Australian Mine Rehabilitation 2011 Short Course and Workshop](#)

August 16-19, 2011. Adelaide, South Australia

[Sustainable Operations - Business Risks+Sustainable Development](#)

August 25, 2011. Geelong, Victoria, Australia

[Introduction to Metal Leaching and ARD \(Field School\)](#)

August 29 - September 2, 2011 Smithers, British Columbia

[IMWA](#)

September 4-11, 2011. Aachen, Germany.

[Mine Closure 2011 in association with the BC Technical and Research Committee on Reclamation](#)

September 17-22, 2011. Lake Louise, Alberta Canada.

[Leading Practice Environment Management: From Approval to Closure in the Resource Sector](#)

September 26-27, 2011. Perth, Western Australia

[World Gold 2011 - Conference of Metallurgists](#)

October 2-5, 2011. Montreal, Quebec, Canada.

[Practical Monitoring for Improved Environmental Performance for the Resource Sector](#)

October 17-21, 2011. Brisbane, Queensland, Australia

[Leading Practice Water Management](#)

November TBA, 2011. Perth Western Australia

[Tailings and Mine Waste](#)

November 6-9, 2011. Vancouver, British Columbia, Canada.

[SYMPOSIUM 2011 Mines and the Environment](#)

November 6-9, 2011. Rouyn-Noranda, Quebec

Enviromine 2011

November 23-25, 2011. Santiago, Chile

NWMA North West Mining Association Rocks to Riches 2011

November 28 - December 2, 2011. Sparks, Nevada, USA.

18th Annual British Columbia - MEND ML/ARD Workshop

November 30 - December 1, 2011. Vancouver, British Columbia, Canada.

SME Arizona Section

December 5, 2011. Tucson, Arizona, USA.

9th ICARD International Conference for Acid Prevention

May 20-26, 2012. Ottawa, Ontario, Canada.