# International Association of Hydrogeologists
## U.S. National Chapter
## Newsletter

**Vol. 40, no. 1: April, 2011**

**Editor: Dave Kreamer, University of Nevada, Las Vegas**

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## IAH/US NATIONAL CHAPTER: EXECUTIVE COMMITTEE 2009-20012

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| **Chairman:** | **Michael Wireman**<br>**wireman.mike@epa.gov** | **U.S. Enivronmental Protection Agency**<br>**(303) 312-6719** |
| **Vice President, North America:** | **lkonikow@usgs.gov** | **Leonard F. Konikow U.S. Geological Survey** |
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| **Director:** | **William Alley** | **U.S. Geological Survey** |
| **Director:** | **Vicki Kretsinger Grabert** | **Luhdorff & Scalmanini, Consulting Engineers** |
| **Director:** | **Jim Lamoreaux** | **PE LaMoreaux & Associates, Inc.** |

# A NOTE FROM THE CHAIR

**Greetings to all USNC members and thanks for your continued support. The US National Chapter of IAH continues to be strong – as of December 2010 the USNC has 289 members. Thanks to Vic Heilweil, the USNC treasurer for doing a great job with the membership. A meeting of the Executive Committee was held on November 2, 2010 during the GSA meeting in Denver. All of the Executive Committee members participated in the meeting. In addition the board meeting was attended by Joe Gurrieri (USFS), Geoff Delin, Lois Ongley and Rick Gerber (representing the Canadian Chapter of IAH).We continue to work with Steve Holysh, Grant Ferguson and Ken Howard to coordinate activities at the 2012 IAH Congress in Niagara Falls. The 2012 IAH Congress will be a great opportunity for USNC members to attend an IAH Congress. A number of USNC members have already agreed to participate by teaching shortcourses. If you plan to attend the Congress, please consider participating by agreeing to chair a session or give a talk. The USNC website (http://www.iah.org/usa/) continues to improve, and I hope everyone has checked out the information on the site. The next full Executive Committee meeting will be held on May 2, 2011 at the Ground Water Summit in Baltimore. All USNC members and guests are invited. A meeting agenda is included in this newsletter. As always feel free to contact me or any of the Board members with questions, suggestions, requests, etc.**

***Mike Wireman, Chair – IAH-USNC Executive Board***

## A Note from the Vice President for North America

**I am pleased to report that IAH remains on a sound financial footing, and that the very small increase in dues for 2011 will help it remain so. Membership numbers declined slightly in 2010 from the previous year, and I encourage everyone to renew their membership soon (if you have not already done so) and to persuade a colleague or two to join IAH.**

**I remind you that in accordance with recent Council actions, all existing IAH Commissions are to be dissolved on 30 June of this year and new ones will commence their operations from 1 July. Any IAH members are invited to propose establishing new commissions or networks—go to: http://www.iah.org/news_current_popup.asp?id=111 to see the call for proposals.**

**As another follow-up to the "Forward Look" discussions and meetings, I will be collaborating with Antonio Chambel (IAH Vice President for Finance and Membership) to create a planning document to submit to the IAH Council about the future of the annual IAH Congress. The challenge is to recommend approaches to improving the overall technical and logistical quality of Congresses without adversely affecting the participation of members from low-income countries. If anyone has specific suggestions, I would greatly appreciate it if you could send those ideas to me in the near future. Thanks.**

***Lenny Konikow***

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# NEWS FROM THE IAH SECRETARIAT

## Update on the IAH Forward Look

**Thanks to Mike Wireman for inviting the IAH Secretariat to contribute to the USNC newsletter. Firstly, let me bring you up to date with what has been happening in recent months with respect to the IAH Forward Look. A draft report on the meeting at Reading University was presented to Council in Krakow, revised to take account of comments received from meeting participants and those who completed the questionnaire and subsequently submitted for the approval of Council. The final report is now available on the IAH website.**

**In the meantime, IAH Secretary General Shammy Puri has produced a draft action plan for 2010-2020 based on this report. This ranks the ideas and proposals laid out in the Forward Look report according to their priority for IAH, characterises them for short, medium or long term action and provides some preliminary estimates of their likely resource requirements. The activities to be pursued with highest priority in the short term will be:**

**i) improving the IAH website and the services, benefits, resources and communications to members provided by the website;**

**ii) improvements to IAH congresses and conferences;**

**iii) strengthening the profile of IAH's national chapters and improving communications with and between chapters and the support provided to them;**

**The first two of these are likely to require significant investment of time and funds by IAH. Both will commence with a review of the current services and benefits provided to members and modes of operation, and both are likely to require the establishment of working groups to carry out these reviews and make recommendations. For the website, an on-line survey has already been set up and you are encouraged to go to http://www.iah.org/news_current_popup.asp?id=114 to complete the survey.**

## IAH Executive meeting in Paris

**As has now become the custom, the IAH Executive met at UNESCO in Paris on 10-12 February. Amongst a very long list of agenda items, the financial performance of the Association for 2010 was reviewed. Overall membership was down about 150 from the previous year, membership income was slightly down, investment income was almost nothing in the present financial climate, royalty income from Springer was higher than expected, and there was an unexpected return to IAH at the beginning of 2010 of a €17,000 share of the operating surplus of the Hyderabad joint convention held in September 2009. Routine recurrent administrative expenditure on salaries, travel and printing was much as budgeted, as was the cost of the Forward Look meeting in Reading.**

**As a result, the preliminary end-of-year account shows a small operating deficit of €2000 which is smaller than that set in the budget for 2010. This achieves our overall objective of ending the year with a modest operating deficit which reflects our efforts to increase expenditure on improving services to members, and helps us to slightly reduce our accumulated surplus of funds. We can and will be doing more in this direction during 2011.**

## Reform of the IAH Commissions

**Meanwhile the reform of the IAH commissions is proceeding as planned. An application form for new commissions and networks was prepared at the beginning of the year by Ken Howard. Proposals submitted by the March 31st deadline will be evaluated in April and May so that approved continuing or new groups can be established to become active from 1st July.**

## Journal Editors meet in Paris

**The Hydrogeology Journal Editorial team of Cliff Voss, Shemin Ge, Jimmy Jiao, Maria Schafmeister, retiring Philippe Renard and his replacement Vincent Post, Technical Editorial Advisor Sue Duncan, Journal Administrator Suzanne Schemannn and IAH Executive Manager John Chilton met in Paris in early December 2010. Two full days were devoted to detailed discussions of matters relating to the journal. The photo shows the group shivering in the unusual snowy conditions which prevailed even at the Sorbonne in the centre of Paris.**

**The number of submitted papers remains above 300 each year, with about 150 of them being accepted for publication. The total number of around 1900 printed pages in eight issues per year was agreed to be a suitable overall size for the journal. The SCI impact factor had risen since 2000-2002, dropped a little to around 1.1 in 2007 and 2008, rising again to 1.42 in 2009. Achieving a balance between the desire for a high impact factor and the wish to maintain a broad geographical spread of content and authors is a challenge, but it was agreed to be an important consideration. It is highly desirable to maintain the impact factor above 1.0 and in the same range as comparable journals. The length of time to publication has decreased and the SCI rating has risen since the May 2009 editorial meeting, and the Association is fortunate to have Cliff and his team to maintain the high quality of our scientific journal.**

**Overall, the Secretariat is as busy as ever. Coming up with initiatives and ideas of course in the end means more work, but the outcome is, we hope, a better service to our members.**

***John Chilton, IAH Secretariat***

# ARTICLES, REPORTS, NOTICES, AND ANNOUNCEMENTS

## IAH USNC Executive Board Meeting at Ground Water Summit in Baltimore Open to All Members

**The U.S. National Chapter of the International Association of Hydrogeologists will meet at the Joint Meeting of the National Ground Water Association and Ground Water Protection Council (Ground Water Summit) on Monday, May 2, 2011 at 4:00 pm in the Executive Board Room at the Hyatt Regency Baltimore. All are welcome. Dave Kreamer, USNC Secretary, will chair the meeting. The tenative agenda is:**

**Welcome**
**Secretary's report**
**Treasurer's Report**
**Endowment Fund**
**2012 IAH Congress**
**GSA – Minneapolis**
**Update on USNC Website**
**Possible collaboration with NWRI (National Water Research Institute)**
**New Business**

**The Floor plan for Hyatt Regency Baltimore – Inner Harbor can be found at:**
http://baltimore.hyatt.com/hyatt/images/hotels/bwirb/floorplan.pdf

# IAH USNC Decision to Explore Possible Establishment of an Endowment Fund

**At the November 2, 2010 IAH USNC Executive Board Meeting a decision was taken to explore the establishment of an endowment fund. On Dec 21, 2011 the Finance Committee (Jack Sharp, Vic Heilweil, Mike Wireman ) met to discuss this possibility. Pursuant to that meeting a draft mission statement for such an endowment has been developed. The proposal is to start the Fund by depositing $2275.00 we have received in donations during the past 2 years. The Finance Committee suggested that an initial balance be established and then an agreed upon percentage of the Fund monies will be invested. Decisions regarding this proposal will be addressed at the May 2, 2011 USNC Executive Board Meeting. A Draft Mission Statement follows:**

## Draft Mission Statement, IAH USNC Endowment Fund
## April 6, 2011

**The Executive Board of the US National Chapter of the International Association of Hydrogeologists proposes to establish an Endowment Fund. The Endowment Fund will be managed as a separate fund and a portion of earnings from this fund would be available for various uses related to promoting the mission of IAH and the USNC. As of April 6, 2011 the USNC has a sum of $2275.00 in donations that can be used to start the Endowment Fund. Fund donations will be allowed to accumulate until a minimum balance is achieved and then an amount approved by the Board would be invested to generate income. The Endowment Fund will be managed by the USNC Treasurer. Donations to the Endowment Fund will be encouraged from the USNC members.**

**Monies from the Endowment Fund could be used to for a number of purposes. These include: (1) sponsor international members, (2) sponsor student members, (3) provide travel grants to students, (4) fund activities / efforts related to water development and management in developing countries, and (5) support local chapters in developing countries and, (6) other uses not currently anticipated. The use of Endowment Fund monies for any given purpose / activity will require approval by the USNC Executive Committee.**

## National Ground Water Association Announces Top 100 Hydrogeology Higher Educational Programs in North America

**In January 2011 the National Ground Water Association (the largest groundwater association in the world) selected the 100 top hydrogeology programs in North America. More than 400 programs were considered by NGWA including international programs and, in the end, 100 selected. In selecting the top programs, the goal of NGWA is to give prospective groundwater students a list of strong options and a jumping-off point for their search. There were a number of factors considered in the selection process, centering on the length and strength of the program, as well as its faculty. Within the 100 selected top programs, none were individually ranked against each other. The list of all programs is available at the NGWA Web site.**

## Hydraulic Fracturing

**The AGI Government Affairs Program monthly newsletter for February 2011 reports that Representatives Edward Markey (D-MA) and Rush Holt (D-NJ), who serve on the House Natural Resources Committee, sent a letter to Interior Secretary Ken Salazar on February 28, 2011, asking for more information about hydraulic fracturing on public lands. Their letter reacts to a detailed New York Times story on possible human health effects of hydraulic fracturing and other recent stories and debates.**

**Hydraulic fracturing is used to extract natural gas from rock formations, primarily shale-based formations, by pumping in water and fluids that fracture the rock and allows the gas to migrate to extraction sites. The news story discusses high levels of radioactivity and other potential toxic substances that concentrate in the waste waters and may not be properly disposed of. Given the significant increase in the use of hydraulic fracturing throughout the U.S., there is growing concern about a significant increase in harmful waste water potentially contaminating drinking water and rivers.**

***Source: American Geological Institute***

## AGI Guide to Human Resources in the Geosciences

**This online resource is especially useful for geoscience students. It includes the "Guide to Geoscience Careers & Employers" and the "Guide to Geoscience Departments." Environmental consulting is one of the specialized categories under careers and employers. The resource is available from the American Geological Institute's web site at: http://guide.agiweb.org/**

## Former IAH President Receives Honorary Degree

**John E. Moore, Ph.D.** received an Honorary Doctor of Science Degree on Oct. 5, 2010 from Ohio Wesleyan University. The award was presented for Dr. Moore's outstanding scientific contributions as a hydrologist and researcher with the U.S. Geological Survey, American Institute of Hydrology, Geological Society of America, U.S. Congress and the International Association of Hydrogeologists (IAH). He is currently a consulting hydrologist in Denver, Colorado and has more than 50 years of experience as a hydrologist. He is known throughout the world for his water expertise. He has conducted technical short courses at IAH meetings in Argentina, Canada, Australia, China, Germany, Mexico, Portugal, South Africa, Botswana, Croatia, Colombia, and Slovenia. After the award presentation by Ohio Wesleyan President Rock Jones he talked about his experiences as a hydrologist.

## Dr. Noel Calvin Krothe Has Passed Away

**Dr. Noel Calvin Krothe, 72, died Friday, October 8, 2010, after a brief illness. Noel graduated from Bloomsburg State College with a bachelor's degree in 1961. He received a MAT through an NSF Fellowship for Earth Science Teachers from Indiana University in 1968. Noel taught earth science in the public school system in Baltimore, Md., before completing his education at the Pennsylvania State University, where he received an M.S. degree in 1973, and his Ph.D. in 1976. He began his collegiate teaching career at Indiana University in 1976, retiring in 2003 as Professor Emeritus. During his tenure, Noel served as an advisor to 52 MS and 12 Ph.D. students. He authored 75 published papers and 125 abstracts. Noel received the Sagamore of the Wabash Award from Gov. Frank O'Bannon on the occasion of his retirement. After retiring from the university, he founded Hydrogeology Inc., an environmental consulting firm, with his son Jason. Noel traveled to the University of Rome in 1984, delivered a speaking tour throughout China in 1992, and visited the University of Auckland, New Zealand, in 2000. Noel's expertise in karst hydrogeology took him to many other international destinations, including Japan, Russia, Slovenia, Australia, Great Britain, Scotland, Sardinia, Mexico, the Bahamas, Germany and the Czech Republic. Noel served as a Director of the IAH U.S. National Chapter. In lieu of flowers , the family requests donations to the Indiana University Foundation for the Noel C. Krothe Hydrogeology Graduate Student Fund.**

## Water Security in Africa

**The Global Water Partnership (GWP) has recently announced a new report "Water Security for Development: Insights from African Partnerships in Action" which outlines the lessons of a five-year program to develop Integrated Water Resources Management (IWRM) plans in 13 African countries. Information about the report, which is in English and French, is available on the GWP website at:** http://www.gwp.org/gwp-in-action/News-and-Activities/Report-Urges-a-Better-Way-to-do-Development1/ ***From IUGS E-Bulletin no. 56***

## US Department of Interior Groundwater Committee Report

**In 2007, the US Department of Interior Advisory Council on Water Information (ACWI) established a Subcommittee on Ground Water (SOGW) to develop and facilitate implementation of a nationwide, long-term groundwater quantity and quality monitoring framework. The SOGW is an outstanding collaboration of scientists from private industry, non-governmental organizations, federal, State, and local governments, and academia. In 2009 the SOGW released the "National Ground Water Monitoring Network" (NGWMN) and five volunteer pilot projects began in January 2010 to test the proposed network design and implementation concepts. The five state (aquifer-based) pilots included Montana, Texas, Minnesota, Illinois-Indiana, and New Jersey. The five pilot reports were completed in early 2011. A synthesis report, summarizing key aspects of the pilot projects will be completed by the SOGW by May 2011.**

**Pilot states selected wells developed in Principal (as defined by the USGS) and major aquifers in their pilot area that met the overall design criteria of the NGWMN. Key elements of this design include the spatial distribution of sites, measurement/sampling frequency, field methods, and data management procedures. A major step for the pilots was selecting representative monitoring points considering the three dimensional groundwater flow system and time. Each pilot state reviewed all of the wells or springs in their state monitoring program to meet this objective, and using the NGWMN's purpose-driven classification system, classified each monitoring point, thus providing supplemental hydrogeologic information that cannot be determined from the data alone. A NGWMN pilot data portal was developed using state-of-the-art informatics processes to unify data provided from nine disparate data systems. Site data and measurements from NGWMN sites are unified and available through the network data portal, in many cases on-the-fly using web services.**

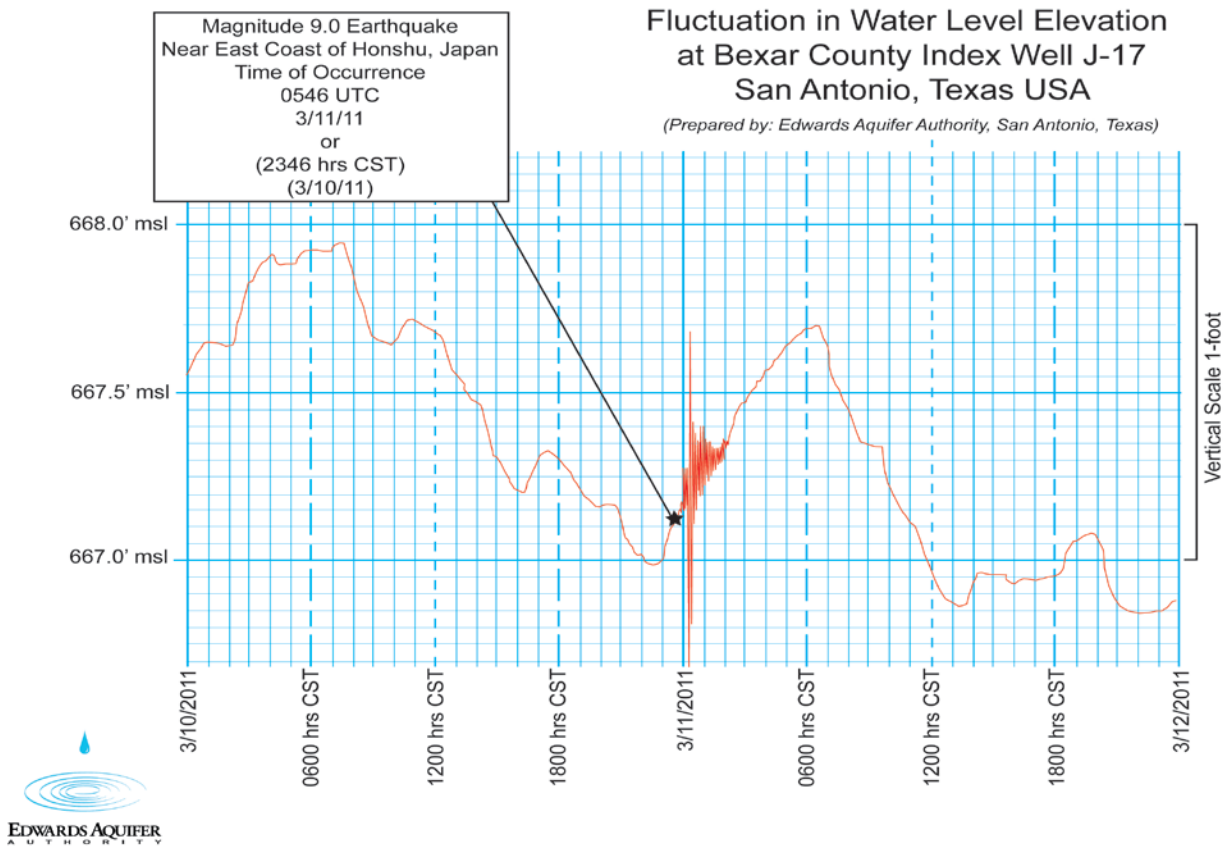
**Individual pilot reports and the SOGW's pilot synthesis report will be provided to ACWI in July 2011 and available to the public soon thereafter at http://acwi.gov/sogw. The pilot process successfully demonstrated the feasibility of a collaborative national groundwater monitoring network that would provide information necessary for the planning, management, and development of groundwater supplies to meet current and future water needs. The SOGW hopes to enter the implementation phase of the NGWMN in 2012.**

***Mike Wireman***

## AQUASTAT

**The Food and Agricultural Organization (FAO) of the United Nations offers an on-line global information system (called AQUASTAT) of water and agriculture information about countries around the world. The objective of AQUASTAT is to collect, analyze, and disseminate information on water resources, water uses, and agricultural water management, with an emphasis on countries in Africa, Asia, Latin America, and the Caribbean. This allows interested users to find comprehensive and regularly updated information at global, regional, and national levels. Available information includes country profiles, fact sheets, and water balance sheets. The web site can be accessed at: [http://www.fao.org/nr/water/aquastat/main/index.stm](http://www.fao.org/nr/water/aquastat/main/index.stm)**

## Japan Earthquake Affects Groundwater Worldwide




**This hydrograph clearly shows that the March 11 earthquake off the east coast of Japan affected groundwater levels around the world. Contributed by Gareth Davies, Oakridge, Tennessee.**

# PELA HYDROGEOLOGIST PARTICIPATES IN LAOS EXPEDITION

Submitted by Jim LaMoreaux

Gheorghe Ponta, a member of IAH and a hydrogeologist specializing in karst or limestone terrain, with PELA GeoEnvironmental Inc., formerly PE LaMoreaux & Associates, Inc., participated in an expedition in Khammouane Province, in the central part of Laos. The expedition explored the karst terrain, springs, and caves of the area. The "Geokarst Adventure" Association, under the auspices of the French Speleological Federation through its Commission for International Relations and Expeditions and the Romanian Speleological Association through its Commission for Exploration, organized the expedition.

Eighty (80) percent of the country of Laos is covered by limestone; therefore, development and proper management of water resources in karst areas are critical issues in the country. Local authorities' specifically requested the expedition to focus their work in the field of karst hydrogeology, identifying main springs and their areas of recharge as potential sources of water supply.

The difficulties of such an expedition are diverse, including climate, jungle environment, exo-karstic morphology, and distance. Participation requires knowledge of caving, climbing, and cave-diving techniques.

The team, composed of five French cave divers and seven Romanian cavers and cave divers, continued the humanitarian work started in years past. Mr. Ponta is a naturalized US citizen from Romania; he was recruited by PELA as a karst specialist to come to the United States to work for the company. This year the team identified possible micro-projects to aid the isolated communities of those karstic regions they plan to explore.

Other sponsors of the hydrogeological investigation are PELA GeoEnvironmental, University of Alabama, University of Minnesota, and University of South Florida. PELA Geo Environmental is an international consulting firm providing services in hydrogeology, geology, environmental sciences, engineering and archaeology.

# Romania Mine Closure, Environmental and Socio-economic Regeneration Project

***Mike Wireman, National Groundwater Expert, US EPA***

**One of the many environmental legacies of the former Soviet Union is the abandonment (or greatly reduced production) of thousands of coal and hardrock mines across Eastern Europe. In Romania there were hundreds of mines operating during Soviet times. After independence in 1989 and the dam failure at the Baia Mare gold mine in northwest Romania in January 2000, the Romanian government realized the need to close or modernize mining operations that presented significant environmental threats. Using loan funds from the World Bank, the Romanian Ministry of Economy has been overseeing the closure of more than 20 high risk Soviet era mines across Romania. In addition to the 20 sites to be closed under the World Bank Project, the Government of Romania plans to close an additional 120 sites using its own funds and benefiting from the experience of the Mine Closure, Environmental and Socio-economic Regeneration Project (MCESER) Project. A key objective of the Project is to strengthen the Government's ability to undertake mining sector reform by building capacity for closing uneconomic, complex mines and ancillary enterprises in an environmentally sustainable manner. The overall MCESER project also has a component that is focused on economic / social regeneration for mining communities affected by the mine closures. The closures are part of the implementation of the Governments Mining Sector Strategy which is aimed, in part, on reducing the financial burden on the State related to operating subsidies and site maintenance costs and ultimately open Romania's mineral resources to modern day development by established mining companies.**

**Bodos Coal Mine**

**Rosia Poieni Copper Mine**

**Mines to be closed are primarily former coal mines as well as a number of poly-metallic hardrock mines. Technical support is being provided to the Project by advisors from the US EPA as well as environmental auditors from Western Europe. Advisors from the US EPA are providing assistance on environmental characterization of mine sites (including the role of groundwater in the hydrology), water resource monitoring related to characterization, performance and compliance and remedial technologies for contaminated water. The technical auditors review and comment on the mine closure designs and conduct site visits, providing valuable advice to the Project Management team on best practice in mine closure. Capacity for mine closure is being transferred to Government agencies and other stakeholders through the creation and dissemination of best practice methods and knowledge on mine closure and rehabilitation. The Project has provided training on mine closure to mine closure contractors, site engineers, mine closure designers, the Ministry of Economy and Finance, and Conversmin (the national mining agency). A number of environmental guidance documents have been produced and some are now required for state owned mines.**

**Consultation with local communities is a critical part of the mine closure process since the communities will be the end beneficiary of the closure works and were most affected during the operation of the mine. Accordingly the project conducts stakeholder consultations during the design and execution of the mine closure. Community concerns are addressed where possible and technical solutions modified to meet the community needs and land use requirements. Former mine site land is being revitalized for new economic activity and the natural environment is being improved. The rehabilitation of the former mine site releases the land for alternative uses and dramatically improves the natural environment. For example: in Bodos 80 hectares of land will be returned to agricultural use and 15 hectares will be reforested; in Budoi 60 hectares will be returned to agriculture and 20 hectares will be used for other economic activities; in Racos 20 hectares will be returned to agriculture and fish farming and in the Jiu Valley, where land is scarce, over 80 hectares will be used for new business development on former mine sites.**

**The mine closure works also provide significant social benefits through infrastructure improvements and short term employment and income generation. For example in Bodos the village road and drainage system is being rehabilitated, the bridge reconstructed and the river banks strengthened to reduce flood risk; in Valea de Brazi utilities are maintained for new business development and 2.5km of the local road will be rebuilt. Approximately 90% of contractor employees are locally hired, often former mines workers, and 25% of construction materials are procured locally, providing economic benefits to the local community during the 2-3 years of closure works. The local environment is improved through removing sources of pollution and reducing environmental risks. For example the once black Jiu River now runs clear and at-risk tailing dams at Borsa and Baia de Aries will be stabilized and closed. At each site the majority of buildings are removed, the land reshaped and revegetated based on the desired future land use. In Aninoasa the community requested a mining museum as part of its local economic development plan, and one will be established at the former Aninoasa mine in the Jiu Valley.**

**The project has also conducted training sessions on salt and uranium mine closure, with the National Salt and National Uranium Mines Operators, engineers, technical experts and regulatory authorities including Ministry of Environment and Waters, the Ministry of Economy and Finance, and Conversmin. As a result of the training, key stakeholders are now incorporating best international practice into everyday activities in mine closure and environmental management. This project is a good example of a cooperative effort between the World Bank and the Romanian government that has been successful in dealing with environmental /social impacts of legacy mines within the former Soviet Union.**

**Baia de Aries Mine**

**Baia de Aries Mill**

**The Picturesque Willunga Basin, South Australia.**

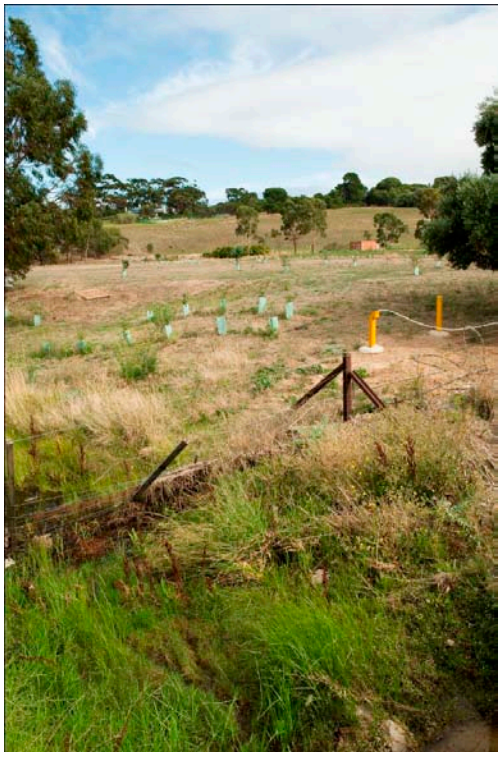
# Australian National Centre for Groundwater Research and Training

**Submitted by Randy Hunt, Kay Brown and Dara Boucher**

**The Australian National Centre for Groundwater Research and Training (NCGRT) was established in 2009 and is designed to build research capacity and technology transfer for groundwater studies. A goal of the NCGRT is to facilitate sustainable development of groundwater resources by increasing the understanding of its interaction with other natural systems, and its relation to societal and economic decision-making. It is also designed to train a next generation of researchers and professionals in groundwater related fields, filling a significant gap in Australia's current resource management capabilities.**

**The establishment of the NCGRT creates a framework for the development of programs to meet the 21st Century need for knowledge about groundwater. With 20 partners, 5 geographically dispersed research programs, 35 Chief Investigators, and a charge to recruit and train 150 new research students and staff over 5 years, the Centre has been funded by the Australian government to accelerate research and research capacity in groundwater. Currently the Centre includes 35**

**primary researchers in groundwater, 23 Post-doctoral students, and 33 PhD students, creating an unprecedented window of opportunity for collaboration and capacity building across the country.**



**An NCGRT bore site in the Willunga Basin, South Australia.**

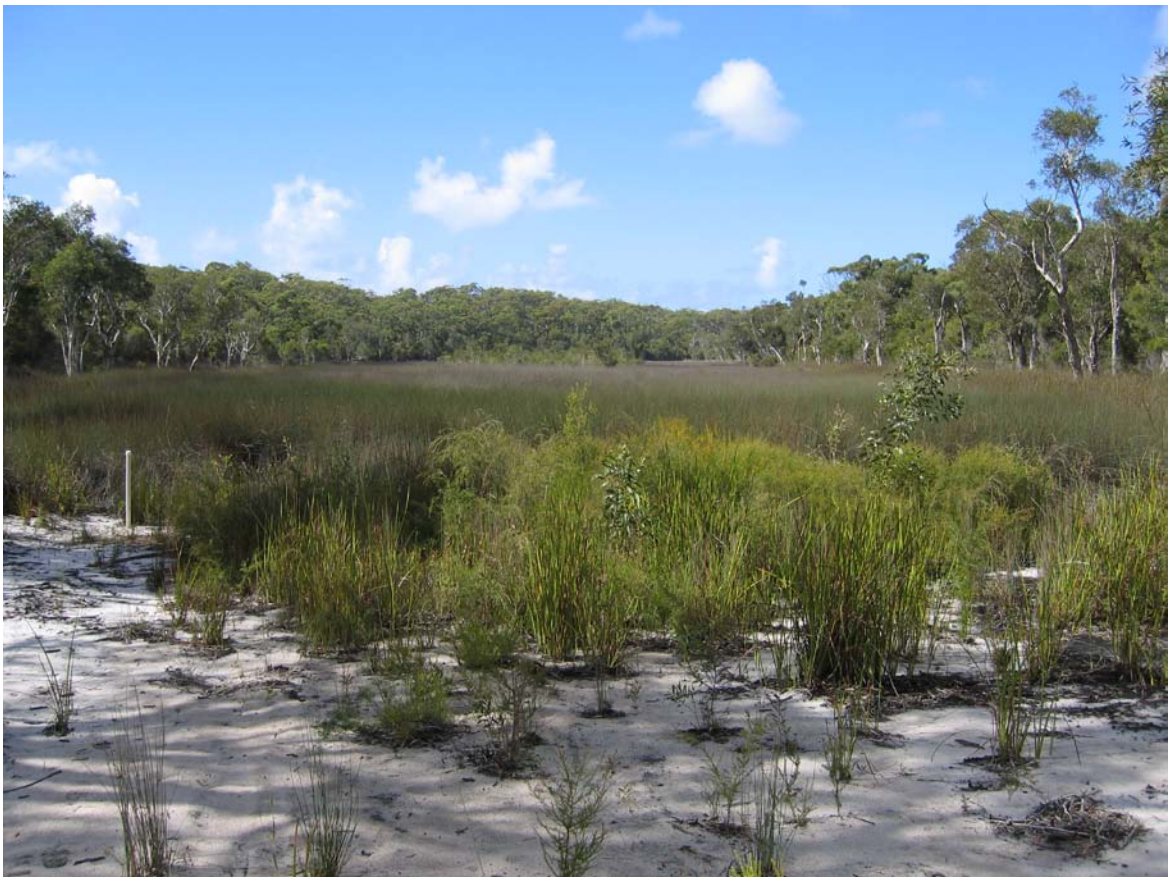
**L-R NCGRT Research Fellow Eddie Banks, Minister for Water, Hon Paul Caica MP, NCGRT Director, Professor Craig Simmons operating bore water monitoring equipment at the Willunga SuperScience site launch in March, 2011.**

**For the first time, a Centre has been developed from the ground-up to pool the expertise of researchers and professionals from many disciplines to focus on five major research programs that enhance our understanding of subsurface water systems:**

- **Program 1: Innovative Characterization of Aquifers and Aquitards**
- **Program 2: Hydrodynamics and Modelling of Complex Groundwater Systems**
- **Program 3: Surface Water - Groundwater Interactions**
- **Program 4: Groundwater-Vegetation-Atmosphere Interactions**
- **Program 5: Integrating Socioeconomics, Policy and Decision Support**

**These programs reflect extensive consultations with state governments and industry - those who manage water resources and the technologies and systems that are required to deliver it to users. They explore key questions from the basic understanding of groundwater origins and processes, through groundwater interactions with surface water, vegetation, and the environment, to the decisions that are being made about the management of this resource. The NCGRT coordinates the efforts of nearly 200 Australian and international researchers – many of whom are internationally recognized as leaders in their fields.**

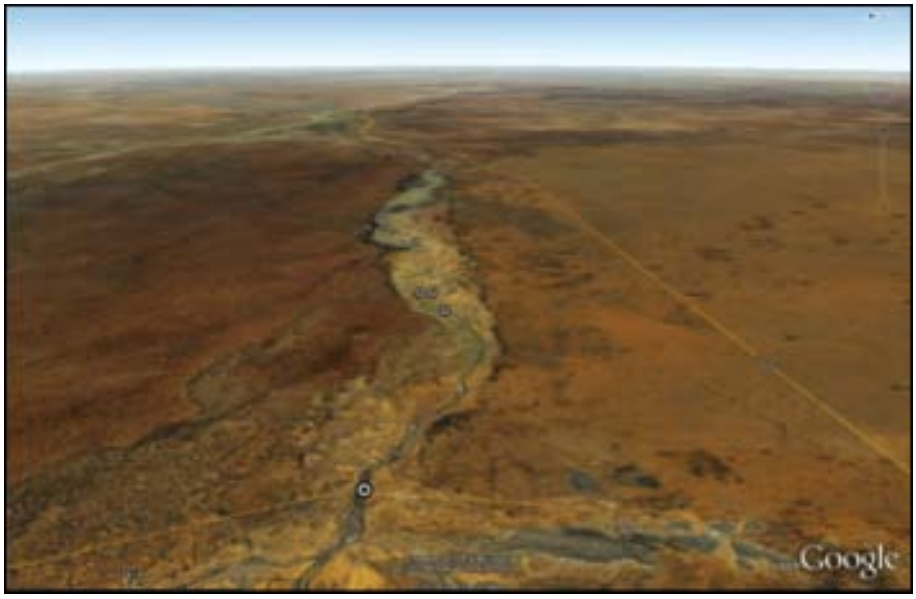
**In addition to its base funding and in-kind contributions of $60 million AUD over five years, the NCGRT has also received $15 million AUD funding from the Education Investment Fund, through the Australian Super Science Initiative, to be spent on field infrastructure at five focused-research sites in Australia: Wellington (NSW), Namoi (NSW), Ti Tree (NT), Willunga (SA), and North Stradbroke Island (QLD). This will provide research sites characterized by a high density of data. These data, along with advanced quantitative modelling, will target current societal issues such as groundwater flow and solute transport processes; interactions between groundwater and river systems; and between groundwater, vegetation and climate over the next few decades. The Centre's approach is also designed for the real world: these advancements in understanding, and uncertainties in that understanding, are fully integrated into the societal decision-making process, where other stakeholders' concerns are considered along with groundwater science. It is anticipated that research findings from these sites will provide knowledge and methodologies that can be applied in, and have application beyond, Australia. Finally, recognizing that the need for technology transfer to practitioners is critical for Australia's future water security, NCGRT explicitly includes an Industry Training Program. This Program is designed to deliver high-quality non-research courses and professional training programs that allow practical application of the Centre's work beyond the academic arena.**



**Monitored coastal groundwater dependant ecosystem on North Stradbroke Island, Australia.**

**The NCGRT actively recruits the best post-doctoral and Ph.D. candidates within and beyond Australia. The next call for applications is August 2011, with an expected closing date of September 2011. More information about the Centre, its objectives, and its approaches, can be found at** http://www.flinders.edu.au/ncgrt/. **Inquiries about the Centre and its work are welcome, and can be directed to enquiries@groundwater.com.au**

**Water-level logger in the Woodforde River within the Ti Tree Basin, Northern Territory, Australia.**

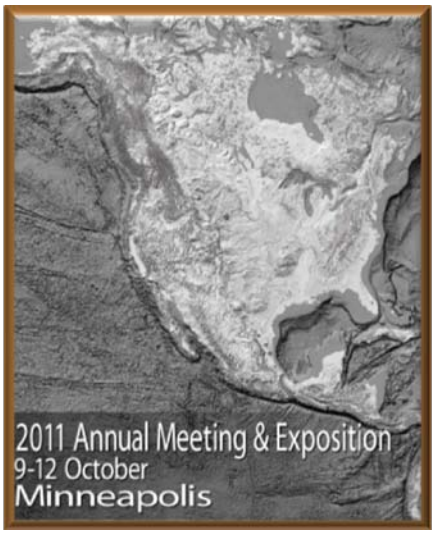



**Aerial view of the Ti Tree Basin, Northern Territory, Australia.**

# CONFERENCES AND ASSOCIATED SOCIETIES

## 2011 Geological Society of America (GSA) Annual Meeting

Minneapolis, MN; October 9-12, 2011




**ARCHEAN TO ANTHROPOCENE:**

***THE PAST IS THE KEY TO THE FUTURE***

**ABSTRACTS DEADLINE**
**JULY 26, 2011**

The United States National Chapter (USNC) of the International Association of Hydrogeologists (IAH), as an Associated Society of the Geological Society of America (GSA), is pleased to co-sponsor a session at the 2011 GSA Annual Meeting and Exhibition in Minneapolis, MN on October 9-12, 2011. For more information see web site at: http://www.geosociety.org/meetings/2011/. This year's overall conference theme is "Archean to Anthropocene: the Past is the Key to the Future." The USNC will meet at the conference; look for more information in the Fall 2011 IAH USNC newsletter for the day and time of that meeting.

**SESSION T99. Hydrogeology of Glaciated Terrain: Linking Glacial Geology, Quaternary History, and Groundwater Research**

This session in being co-convened by Bill Simpkins at Iowa State University and Rick Gerber at the Oak Ridges Moraine Hydrogeology Program in Ontario, Canada. Session co-sponsors include IAH; GSA Hydrogeology Division; GSA Quaternary Geology and Geomorphology Division; National Ground Water Association; and the GSA Engineering Geology Division. This session will discuss how aquifers and aquitards of glacial origin present a unique challenge for hydrogeologists. Papers that link glacial geology and Quaternary history with studies of groundwater recharge, hydraulics, age dating, hydrogeochemistry, fracture flow, and modeling are encouraged.

The IAH USNC will hold an executive board meeting at the conference. All members are welcome to attend!

# IAH 39th Congress

## Confronting Global Change

**The Canadian National Chapter of IAH would like to celebrate its 40th Anniversary by welcoming you to the 2012 IAH Congress in Niagara Falls!**

## Join Us! September 16 – 23, 2012

**The 39th IAH Congress in September 2012 will be an exciting conference and gathering of people interested in hydrogeology from around the world.**

**2012 Congress will allow the presentation of a wide variety of new and evolving hydrogeological issues and opportunities that include:**

- **Energy and Climate Change**
- **Groundwater Resource Management**
- **Groundwater / Surface Water Interaction**
- **Groundwater Resource Analysis**
- **Groundwater Quality**
- **General Hydrogeology**

**Sub-themes are outlined in the Science Program**
**http://www.iah2012.org/index.php?option=com_content&view=article&id=51&Itemid=57 .**
**The conference organizers will be seeking abstracts and papers that fall under these themes.**

**A variety of field trips will be available to participants both on the mid-week field trip day as well as post conference.**

**To be added to our Congress Updates via email or for more information contact: Steve Holysh or Ken Howard at: info@iah2012.org**

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# Karst Symposium at the IAH Congress

**With full support of the organizers and IAH, Karst Commission of the IAH is organizing a Karst Symposium with 5 topics as part of the 2012 IAH Niagara Falls Congress. We will be organizing karst field trips as well (Derek Ford is leading that). We have selected co-chairs for the sessions and are about to announce it all and solicit abstracts on our web site: http://www.iah.org/karst/**

**The sessions are as follows:**
**1. Karst Aquifers, Environmental Problems and Global Change**
**2. Characterization and Management of Karst Aquifers**
**3. Restoration (Remediation) of Karst Aquifers**
**4. Numeric and Time Series Models**
**5. Topics in General Karst Hydrogeology**

**We will award our traditional Young Karst Researcher award at the Congress as well. Finally, we will have selected karst-related papers published in a book as agreed with the organizers and IAH.**

***Neven Kresic, Co-chair, IAH Karst Commission***

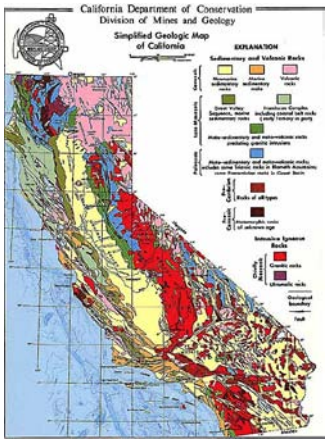
## President Wireman to Attend GSA Leadership Meeting

**USNC President Mike Wireman will be attending the annual Geological Society of America Spring Leadership meeting which will be held in Boulder, CO on April 30-May 1, 2011. The agenda is shown below. The USNC of IAH has long been an affiliated member of GSA.**

**Please contact Mike at 303-312-6719 (wireman.mike@epa.gov) if you have any input for this meeting.**

THE GEOLOGICAL SOCIETY OF AMERICA®

**GSA Spring Leadership Meeting**
30 April – 1 May 2011




## Groundwater Resources Association of California (GRA)
*An Associated Society of the Geological Society of America*

### 2011 Events
**by Vicki Kretsinger**

The IAH USNC has been a cooperating organization for a number of Groundwater Resources Association of California (GRA) events. As members of a cooperating organization, IAH members enjoy GRA member rates to attend these events.

IAH members are welcome to express their interest in assisting with the planning of 2011/2012 events or participating as a session organizer or presenter by contacting GRA. Learn more about GRA, or the programs in which IAH is participating with GRA as a cooperator, on the GRA web site at http://www.grac.org , or by telephone, 916-446-3626.

## Upcoming GRA Conferences

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### The Continuing Evolution of Remediation Hydrogeology
### GRA-Cast – 90 Minute Webinar

**Thursday, May 26, 2011 from 12:00 pm – 1:30 pm PST**
**Dr. Fred C. Payne, Vice President and Technical Director, ARCADIS U.S., Novi. Michigan**
**Web Site**: http://www.grac.org/gracast.asp

**Remediation hydrogeology** is in the midst of a transition from large-scale averaging analyses that smooth out data variability and extract a few simplified site descriptor variables, to a finer-scale, data-dependent analysis that often yields relatively complicated site descriptions. As the base of experience in finer-scale analysis has accumulated, some important patterns are emerging. Most important among these is the observation that groundwater flow and contaminant mass transport tend to be concentrated in a relatively small fraction of the aquifer matrix.

To document this behavior, we may need to increase the level of effort from what we typically expend in site characterization. The increased cost for site characterization can be offset by even larger reductions in the cost of site restoration when the improved site characterization is used to focus the scope of remedial actions on the zones of contaminant mass transport. Experience is building with more detailed site characterization (both hydrogeology and contaminant distribution), along with natural gradient tracer studies, transient hydraulic analysis and other high-resolution testing. Several important findings are emerging from these more detailed site characterizations.

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### Groundwater – Surface Water Interaction: California's Legal and Scientific Disconnect

**June 14, 2011**
**Sheraton Grand Hotel, Sacramento, CA**
**Web Site:** http://www.grac.org/interaction.asp

#### Main Topics

- Groundwater - surface water technical, environmental and legal basics
- Technical approaches to identifying and quantifying groundwater-surface water interaction
- Legal framework in several states
- Bringing together the legal, technical, environmental and policy challenges

Following the sessions, there will be a reception and Poster Session.

This symposium will provide the forum for local, state and federal public and private sector technical and legal professionals to meet and debate the appropriate and acceptable approaches and methods for evaluating the interaction between groundwater and surface water, and debate the legal system and policies in this and other states.

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## 28th Biennial Groundwater Conference &
## 20th Groundwater Resources Association Annual Meeting
## *California's Water Future Goes Underground*

**October 5-6, 2011**
**Radisson Hotel, Sacramento, CA**
**Web Site:** http://www.grac.org/

### Call for Oral and Poster Presentations – Due June 1, 2011

The two-day Conference features a plenary session, concurrent sessions with policy and technical presentation, and a final general assembly. The session topics include:

- Groundwater remediation – successful approaches, lessons learned, regional significance
- Green remediation – application of sustainable technologies and approaches
- Groundwater quality and protection – programmatic, regulatory and regional issues (such as groundwater salinity, irrigated lands regulatory program, Groundwater Ambient Monitoring and Assessment (GAMA), California Department of Public Health Drinking Water Source Assessment Program update (DWSAP), National Water Quality Assessment Program (NAWQA), or related), including assessment, monitoring and trends
- Nitrate in groundwater – current and future status and implications, approaches to improve source control, monitoring and assessment, policy changes
- Groundwater management – local and regional approaches, planning and implementation; dealing with climate change; regulatory and policy changes
- Managed aquifer recharge – spreading basins and aquifer storage recovery approaches, evolving from imported water to recycled water and stormwater for recharge sources
- Local success stories – case studies on groundwater management, recycled water recharge, supply augmentation
- Remote sensing – technologies and applications, including surface water/groundwater interaction, subsidence, groundwater level and storage change
- Groundwater monitoring – network design and function, addressing new California Statewide Groundwater Elevation Monitoring program (CASGEM)
- Managing data – tools and methods for organization, visualization, assessment, and reporting
- Groundwater modeling – latest approaches and tools; case studies of enhanced regional physical conceptualization and updated model structure, calibration and results

### Collegiate Groundwater Colloquium:

GRA seeks to increase participation by university and college faculty and students in its programming. The **Collegiate Groundwater Colloquium** presents students who are conducting highly relevant research in the general area of the conference theme. The Colloquium and reception provide students with an excellent opportunity to showcase their research and attendees an opportunity to learn from the frontier of groundwater science.

**Abstracts Due June 1, 2011:** GRA is inviting abstract submissions for oral and poster presentations on the above conference topics. GRA is also encouraging abstract submissions for poster presentations on groundwater management case studies.

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### GRA Events Being Planned or Considered for 2011/2012

Check the web site at www.grac.org for more information.

- GRACasts, approximately quarterly Webinars
- All About Wells, Joint GRA and California Groundwater Association event
- Diagnostic Tools and Techniques for Diagnosing Well Performance Problems
- Subsidence Due to Groundwater Withdrawal
- Groundwater Modeling, Fall 2011
- Field Class Training – Monitoring Well Sampling, Fall/Winter 2011
- Submarine Groundwater Discharge
- Introduction to Groundwater and Watersheds Short Course

# Job Opportunities

## FAST FORWARD TO YOUR NEXT MISSION

**Integrity, confidence, discipline and commitment define your career in Battelle's. Battelle was built on a firm foundation of honesty, integrity, and outstanding service and the work we do in national security impacts lives around the world; whether we're creating armor for military applications, testing a life-saving vaccine, or developing a more efficient hydrogen fuel cell. At Battelle, we reward the best work with more responsibility, positions to grow and develop, and the opportunity to make a positive impact on the world.**

### Position Summary

**Provide on-site support for investigation and/or remediation activities at field sites in the Western US. Prepare required field documentation.**

### Position Responsibilities

**·Prepare field logs for soil borings and well installations.**
**·Work with a team of geologists, engineers, and scientists by executing field aspects of remediation projects.**
**·Contribute to projects related to environmental site investigation, groundwater/soil/sediment remediation, water/wastewater treatment, and water infrastructure condition assessment and rehabilitation.**
**·Conduct assigned technical work and produce quality results in a timely manner.**
**·Support preparation of technical reports and PowerPoint presentations.**
**·Support logistics coordination for environmental restoration projects.**

### Minimum Qualifications

**· Bachelors Degree in Hydrogeology, Geology or Engineering and two years related work experience.**
**· Solid understanding of the geology/hydrogeology of the Western US.**
**· Ability to demonstrate strong analytical and problem solving skills.**
**· Strong technical writing skills.**
**·Excellent communication and interpersonal skills especially in the area of organizing and overseeing field activities.**
**·Ability to work well in a team.**
**·Willingness to travel frequently for extended periods, and primary base of operations to at various field sites.**

### Preferred Qualifications

**·Applicable work experience if a field setting is preferred.**

Missy Sidick , Sidick Meyer Group, LLC
614-323-7210 (mobile), 614-885-7210 (office)

## Summary Calendar of Upcoming Events and Deadlines (see above for more information)

# 2011

**1-5 May 2011**
**Baltimore, MD, USA. Ground Water Summit. Joint Meeting of the National Ground Water Association and Ground Water Protection Council.**
**INFO: Web: http://www.ngwa.org/summit2011/**

**26 May 2011**
**GRA-Cast – 90 Minute Webinar The Continuing Evolution of Remediation Hydrogeology**
**INFO: Web Site: http://www.grac.org/gracast.asp**

9-12 Jun 2011
Zloty Potok, POLAND. The Impact of Human Activities on Groundwater. II International Field Workshop for Young Hydrogeologists. Organised by Student's Association of Hydrogeologists "AQUA", University of Silesia, Sosnowiec, Poland.
INFO: Email: awitkows@us.edu.pl
Further details to follow..

**14 June, 2011**
**Sacramento, CA, USA. Groundwater – Surface Water Interaction: California's Legal and Scientific Disconnect**
**Web Site: http://www.grac.org/interaction.asp**

15-17 Jun 2011
Toledo, SPAIN. 2011 International SWAT Conference.
INFO: Email: gerencia@fcihs.org Web: http://www.fcihs.org

19-25 Jun 2011
Albena, BULGARIA. 11th International Multidisciplinary Scientific Geo-Conference and Expo - SGEM 2011.
INFO: Email: sgem@sgem.org Web: http://www.sgem.org

11-14 Jul 2011
Lisbon, PORTUGAL. Global Conference on Global Warming.
INFO: Email: info@gcgw.org Web:
http://www.gcgw.org/gcgw11/index.php?conference=gcgw&schedConf=gcgw11

22-24 Jul 2011
Zhengzhou, CHINA. International Conference on Water Resources Management and Engineering (ICWRME2011). Sponsored by IAMSET (International Association of Management and Engineering Technology) et al.
INFO: Web: http://www.icwrme.org/

8-9 Aug 2011
Los Angeles, USA. Groundwater: Cities, Suburbs, and Growth Areas (#5026). Organised by NGWA.
INFO: Web: http://info.ngwa.org/events/5026aug11.cfm

21-27 Aug 2011
Stockholm, SWEDEN. Stockholm World Water Week.
INFO: Web: http://www.worldwaterweek.org/

1-3 Sep 2011
Besançon, FRANCE. H2Karst, the 9th Conference on Limestone Hydrogeology. Organised by Universities of Franche-Comté (France) and Neuchâtel (Switzerland).
INFO: Email: h2karst.besancon@gmail.com
Further information and website to follow.

4-11 Sep 2011
Aachen, GERMANY. 11th International Mine Water Association Congress. Organised by IMWA.
INFO: Web: http://www.IMWA2011.info

14-17 Sep 2011
Zaragoza, SPAIN. Iberian Congress on Groundwater: Management challenges for the 21st Century. Organised by IAH Spanish Chapter, Zaragoza University, Ibercaja, Ebro River Basin, Aragon Water Institute, Spanish Geological Institute, WASA-GN, IAH Portuguese and French chapters, and FCIHS.
INFO: Email: javier.lamban@igme.es Web: http://www.aih-ge.org
Abstract deadline 28 February.

15-17 Sep 2011
Tomar, PORTUGAL. International Conference on Ecohydrology and Climate Changes – EcoHCC'11.
INFO: Email: Ecohcc11@ipt.pt Web: http://www.ecohcc11.ipt.pt

19-22 Sep 2011
Leipzig, GERMANY. ModelCare 2011, The 8th International Conference on Calibration and Reliability in Groundwater Modelling. Organised by Helmholtz Centre for Environmental Research.
INFO: Email: modelcare2011@fu-confirm.de

19-21 Sep 2011
Pretoria, SOUTH AFRICA. Groundwater: our source of security in an uncertain future. GSSA/IAH Conference. Organised by Groundwater Division of GSSA and IAH.
INFO: Email: confplan@iafrica.com Web: http://www.gwd.org.za

20-25 Sep 2011
Bari, ITALY. GEOMED 2011 - 4th International Conference on Medical Geology. Organised by IMGA (International Medical Geology Association).
INFO: Web: http://www.geomed2011.it/

21-23 Sep 2011
Sao Paulo, BRAZIL. The Management of the Guarani Aquifer System - An Example of Cooperation.
INFO: Email: f.sindico@surrey.ac.uk or cepas@usp.br

25-29 Sep 2011
Porto de Galinhas, BRAZIL. XIVth IWRA World Water Congress. Organised by International Water Resources Association.
INFO: Web: http://www.iwrahome.org

26-27 Sep 2011
Burlington, USA. NGWA Focus Conference on Fractured Rock and Eastern Groundwater Regional Issues (#5017). Organised by NGWA.
INFO: Web: http://info.ngwa.org/events/5017sep11.cfm

27-30 Sep 2011
Madurai, INDIA. The Impact of Climate Change on Groundwater Resources with special reference to Hard rock Terrain. IGWC 2011 - 4th International Groundwater Conference.
INFO: Email: navaraj2k1@yahoo.co.uk or mthangarajan@hotmail.com

5-7 Oct 2011
Kalavrita, GREECE. 9th International Hydrogeological Congress of Hellas. Organised by Hellenic Committee of Hydrogeology (Hellenic Chapter of IAH) and Association of Geologists & Mining Engineers of Cyprus.
INFO: Email: nlambrakis@upatras.gr Web: http://www.hydrogeocongress.gr

18-21 Oct 2011
Salta, ARGENTINA. 7th Argentine Congress of Hydrogeology & the 5th Spanish-LatinAmerican Seminar of Modern Groundwater Hydrology Topics. Organised by IAH Argentine Chapter and Dept. of Hydrogeology of Salta University. Sponsored by Sponsored by ALHSUD and IAH Spanish Chapter.
INFO: Email: viiconahi@gmail.com

**5-6 October, 2011**
**Sacramento, CA, USA. 28th Biennial Groundwater Conference & 20th Groundwater Resources Association Annual Meeting *California's Water Future Goes Underground***
**Call for Oral and Poster Presentations – Due June 1, 2011**
**Web Site: http://www.grac.org/**

**9-12 October 2011**
**Minneapolis, MN, USA. Annual Meeting of the Geological Society of America. IAH USNC Board Meeting.**
**Abstract Deadline July 26, 2011**
**INFO: Web: http://www.geosociety.org/meetings/2011/**

29 Nov - 2 Dec 2011
Las Vegas, USA. 2011 NGWA Ground Water Expo and Annual Meeting (#6010). Organised by NGWA.
INFO: Web: http://www.ngwa.org/expo

29 Nov - 5 Dec 2011
Bamako, MALI. 3rd African Conference on Irrigation and Drainage along with 3rd Africa Show on Irrigation and Drainage (SAFID). Organised by ICID.
INFO: Web: http://www.amid-mali.org

# 2012

14-17 Mar 2012
Hannover, GERMANY. Hydrogeology of Arid Environments.
INFO: Email: kerstin.krueger@bgr.de

21-24 May 2012
Prague, CZECH REPUBLIC. GwFR 2012 - International Conference on Groundwater in Fractured Rocks.
Organised by IAH Czech Chapter, IAH HyRoC, ICGW of IAHS.
INFO: Email: Zbynek_Hrkal@vuv.cz or Karel.Kovar@pbl.nlWeb: http://web.natur.cuni.cz/gwfr2012/

**16-23 Sep 2012**
**Niagara Falls, CANADA. Confronting Global Change. 39th IAH Congress. Organised by IAH Canada.**
**INFO: Email: info@iah2012.org Web: http://www.iah2012.org/**

27-29 Sep 2012
Katowice, POLAND. Calcium and magnesium in groundwater - distribution and significance. International Seminar.
Organised by Polish Geological Institute.
INFO: Lidia Razowska-Jaworek. Email: Lidia.Razowska-Jaworek@pgi.gov.pl