

Minnesota Ground Water Association

www.mgwa.org

Volume 21, Number 4: December, 2002

MGWA Fall Conference

Municipalities and Ground Water Issues

This year's fall conference focused on ground water issues facing small communities, many of whom rely on ground water as a source of supply for their water distribution system. About 200 people gathered November 12, 2002 at the Earle Brown Center on the St. Paul campus of the University of Minnesota. Ground-water professionals comprised the many familiar faces, which were augmented by representatives from local government.

David Hanson of Design Water Technologies gave the keynote presentation (photo below) on understanding and addressing well water quality



problems. Much of his talk, peppered with interesting anecdotal experiences from his work in the water well industry for over 30 years, dealt with solving performance issues with water wells. Dave reminded us that velocity and pressure changes in ground water near pumping wells lead to chemical changes in the water that often create problems in the well, such as precipitation of scale and growth of bacteria. He emphasized that one key piece of information useful to the diagnosis of yield-related well problems is the periodic measurement of specific capacity and encouraged all water operators to measure it regularly. Changes in a well's specific capacity is the one of the best indicators of a potential well problem.

Several speakers spoke under the general topic of designing community ground-water supply and treatment systems. Craig Kurtz, from SEH, Inc., talked about issues related to siting a new municipal well. Planning of new wells should consider hydrogeologic issues (available aquifers, interference, and ground-water quality), engineering issues (location of existing infrastructure, plans for additional water supply infrastructure, costs, etc.), identifying potential contaminant sources, and regulatory issues. Jay Whitaker, an engineer with SEH, Inc., discussed community supply needs and well design and permitting. Key to planning for growth and change in a water-supply system is a set of standards known as the Ten States Standards, which set broad operational guidelines for community systems. Greg Johnson, another SEH, Inc. engineer, addressed water treatment issues faced by small water-supply systems. He gave an overview of treatment techniques used to manage iron, manganese,

— continued on page 3

President's Column

What a great year we had on this our 20th Anniversary. My term as president of this fantastic organization is about over. This will be my last column. Marty Bonnell will assume the duties of president in January. I'm confident that the organization is being left in good hands. I've had an exceptional group of people to work with throughout the year and I need to thank them for their commitment to MGWA. This includes Marty Bonnell, Eric Hansen, Jon Pollock, Jim Stark, Gordie Hess, Jeanette Leete, Norm Mofjeld, Sean Hunt, and many others. Jim Stark has served for the past three years as president-elect, president, and past-president. He will be missed next year.

We just had a super Fall Conference with about 200 people in attendance. The conference focused on Municipalities and Ground Water Supply Issues. I would like to thank the conference committee for their hard work in organizing this event. I would also like to thank the conference speakers and everyone who donated to the Foundation Silent Auction. Thank you for making a difference in the lives of

— continued on page 2

Table of Contents

<i>Fall Conference</i>	1
<i>President's Column</i>	1
<i>Capillary Fringe</i>	2
<i>Foundation Update</i>	5
<i>Thanks to Jim Lundy</i>	6
<i>Last Paper Newsletter</i>	6
<i>MGWA Outstanding Service Award Nominations</i>	7

MGWA Newsletter Contacts

Editor-In-Chief

Norm Mofjeld
Minnesota Department of Health
(651)215-0823
norman.mofjeld@health.state.mn.us

Newsletter Team

Tom Clark
tom.p.clark@pca.state.mn.us

Steve Robertson
steve.robertson@health.state.mn.us

Jan Falteisek
jan.falteisek@dnr.state.mn.us

Jon Pollock
frontline@uscorp.net

Aaron Fredrikson
aarmatfre@yahoo.com

Advertising Manager

Jim Aiken
McCain Associates
(952)470-0983
jaiken@mccainassociates.com

MGWA Management & Publications

Dr. Jeanette Leete
Watershed Research, Inc.
(651)276-8208
Office@MGWA.org

MGWA Web Page

Visit www.mgwa.org for
MGWA information between
newsletters and to conduct
membership and conference or
field trip business transactions.

© **Minnesota Ground Water
Association. ISSN: 1098-0504**
Material in this publication may be
reprinted if appropriate credit is
given. Views expressed in this
publication do not reflect official
MGWA policy unless expressly
stated as such.

Capillary Fringe

The MGWA newsletter team wants to hear from you!

Our newsletter strives to disseminate scientific and policy information about ground water to you, our members. However, there is no reason that dissemination of information can't flow two ways. Soon you will be able to interact with the MGWA newsletter team with a click of your mouse button. Our newsletter can be a forum for every member to voice his or her opinion. The new electronic distribution of the newsletter (beginning in 2003) will make "two way" communication more efficient than ever. Members will be able to comment on posted questions, articles, and membership news. It will be a great way for our Association to stay connected.

Beginning with the next issue, our newsletter will be distributed electronically via the MGWA web site (www.mgwa.org). The electronic version will continue to have its familiar appearance, but there will be some small (but important) additions. There will be three different types of interactive pages where members can provide their input and responses. These additions will be in the form of interactive web page links. These web page links have an area where comments can be typed. Clicking on the "submit" button will forward the comments to the newsletter team.

One type of input members can provide will be commenting on the "Question of the Quarter." The "Question of the Quarter" will be a new section in each newsletter issue. A question will be posed and the membership will be invited to respond. Selected responses will appear in the next newsletter.

Another type of input members can contribute will be "Article Comments." Members will be able to express their delight, disgust, or apathy about an article. Basically, when a reader would like to comment, s/he can click on the "comments" link and a web page will appear. Selected responses will appear in the next newsletter.

The final type of input members are invited to share will be "Membership News." Members will be able to indicate information or news about

themselves or their organization. This could be an update about a work project or a description of something experienced or witnessed. The responses will be published in the next newsletter. Also in this section, members will be able to indicate change of address information; this portion will be used for MGWA records only and will not be published.

In addition to disseminating information, our newsletter can be a forum to keep members "in touch" and connected to the whole ground water community. This is an exciting addition to our newsletter and we look forward to your input. The interactive pages will be available in the next electronic newsletter (March 2003). Please let us know if you have comments about these changes at office@mgwa.org

— *By Aaron Fredrikson, Newsletter
Team Member*

President's Letter, cont.

others. You make the world a better place to live.

Unfortunately we had to cancel the Fall Field Trip this year. We had very few people signed up one week prior to the event. Canceling cost us some money; but it would have cost us much more if we went ahead and didn't have enough people. We learned a lot from this and hope it will not happen in future years. The Wisconsin Ground Water Association had their Fall Field trip the same weekend and I attended. It was a great opportunity to talk to our neighbors to the east. We went to a proposed Zinc Mine in Crandon, WI and inside of an underground Caledonia Copper Mine in Mass City, Michigan. They put together a very good trip. Thank you to WGWA President Boyd Possin for the invitation. I made many new friends and think we should consider doing field trips together in the future; but not on the same weekend.

— *continued on next page*



— If Gail Haglund and Terry Bovee of MDH were eating the food, the kitchen must have passed inspection!

Fall Conference, cont.

arsenic, and radium. Secondary standards apply to iron and manganese, but these two parameters constitute the most common treatment targets for aesthetic and maintenance reasons. Arsenic and radium are regulated by primary public health standards (which will be changing for arsenic) and will be a chief treatment objective for the communities that exceed the standard. Doug Klamerus, SEH, Inc., wrapped up this session by informing the conference attendees about the role of storage and the distribution system in a municipal supply system. Storage is used to equilibrate system pressures, to balance system operations, and to help meet short-term emergency needs. The location and size of storage influences its effectiveness. Distribution system design needs to provide adequate flow and pressure and satisfy the

needs of the users in a manner that balances these needs with installation and operation costs as well as residence time of the water.

Chris Elvrum, Metropolitan Council, provided a good overview of the water supply issues in the Twin Cities Metropolitan Area. Ground water is used as the source of supply for most of the water supply systems in the Twin Cities Area outside of St. Paul and Minneapolis, and this source of supply has generally been adequate, owing largely to geologic serendipity. However, as growth continues in the area, it is not certain that ground water can be taken for granted in the way it has been up to now. As evidence, he cited conflicts between ground water appropriations and expected effects on protected surface water resources that have arisen separately in both Scott and Washington counties. In addition, some areas experiencing growth lack the prolific bedrock aquifers used in other parts of the metro area, and it is unknown if the available resources will be able to meet their needs over

— continued on page 4

President's Letter, cont.

At the last board meeting on November 7, 2002 we had a guest from the Minnesota Well Water Association. They would like to work with us in the future on different issues such as education. We will be talking more in the future. This could be a great step for both organizations.

We are fortunate to have Chris Elvrum and Jeff Stoner running for President-elect. Also, Eric Hansen, Treasurer, has decided to run again for that position. Please send in your votes. They all count!

The Spring Conference is coming soon and we need people to help get everything set up. Please contact Marty Bonnell at 651-227-6500 ext. 3140 or mbonnell@dpra.com. We need you to get involved so we can continue to grow this great organization. We can impact the world in so many positive ways. **STEP UP - CHOOSE TO GET INVOLVED!**

Thanks again for a great year!

— Rob Caho, MGWA President

2002 Board of Directors

Past President

Jim Stark
U.S. Geological Survey
(763)783-3230
FAX (763)783-3103
stark@usgs.gov

President

Robert Caho
Bergerson-Caswell
(763)479-3121
FAX (763)479-2183
rwc_bc@yahoo.com

President-Elect

Marty Bonnell
DPRA
(651)227-6500
FAX (651)227-5522
mbonnell@dpra.com

Secretary/Membership

Jon Pollock
Frontline Environmental
(952)892-0367
FAX (952)892-0401
frontline@uscorp.net

Treasurer

Eric Hansen
Pinnacle Engineering
(763)315-4501
FAX (763)315-4507
ehansen@pineng.com

The primary objectives of the MGWA are:

- Promote and encourage scientific and public policy aspects of ground water as an information provider;
- Protect public health and safety through continuing education for ground water professionals;
- Establish a common forum for scientists, engineers, planners, educators, attorneys, and other persons concerned with ground water;
- Educate the general public regarding ground water resources; and
- Disseminate information on ground water.

Fall Conference, cont.

the long term. Finally, the effects of increased impervious surfaces of developed areas relative to undeveloped areas may reduce the recharge available to aquifers.

Pat Lynch, Minnesota DNR, gave a summary of the water appropriations permit process. Pat began with an overview of the history of the appropriations permitting process, which dates back to 1937 legislation. Revisions to the process have been made by the legislature in 1973, 1989, 1990, and 1993. Pat identified future water supply challenges including: 1) increased competition among users, 2) meeting demands of additional growth, 3) ground water quality, 4) fostering a water conservation ethic, 5) managing ground water/surface water interactions, 6) MUSA expansions, and 7) sustainability of aquifer resources. Pat suggested that working early in the process to coordinate regulatory agency involvement, implementing conservation measures, working on wellhead protection planning, and education of customers all contribute to streamline future planning.

Two speakers covered the general issue of water supply protection. Bruce Olsen, Minnesota Department of Health, covered background public health issues that led to regulation of water supply systems and described the various public health programs that pertain to ground water. The most important of these are regulating health risk limits (HRLs), wells, and public water supplies (public water supply program and wellhead protection program); mapping probability of nitrate in ground water; monitoring old dumps; and maintaining the water well record database (formerly known as CWI). On the horizon are changes in the water quality standard for arsenic and promulgation of the ground water rule and the unregulated contaminants rule by EPA. John Henrich, of Bergerson Caswell, talked about security for small drinking water systems, a topic of increased concern since last year's terrorist attacks. His presentation included an exercise on water system security in which he posed a scenario and

This Newsletter brought to you by:

<i>Norm Mofjeld, Editor-In-Chief</i>	<i>norman.mofjeld@health.state.mn.us</i>
<i>Tom Clark</i>	<i>tom.p.clark@pca.state.mn.us</i>
<i>Steve Robertson</i>	<i>steve.robertson@health.state.mn.us</i>
<i>Jan Falteisek, Issue Editor</i>	<i>jan.falteisek@dnr.state.mn.us</i>
<i>Jon Pollock</i>	<i>frontline@uscorp.net</i>
<i>Aaron Fredrikson</i>	<i>aarmatfre@yahoo.com</i>

MGWA Newsletter Deadlines for 2003

Issue	To Editor	To Publisher
March 2003 (Vol. 22 No. 1)	2/07/2003	2/14/2003
June 2003 (Vol. 22 No. 2)	5/09/2003	5/16/2003
September 2003 (Vol. 22 No. 3)	8/08/2003	8/15/2003
December 2003 (Vol. 22 No.4)	11/07/2003	11/14/2003

required the audience to evaluate possible responses.

Mark Wettlaufer, of the Minnesota Rural Water Association, provided background on the goals and mission of national and state rural water associations. Such associations provide technical assistance on a variety of topics intended to facilitate members' operation of water supply and wastewater systems. Members include approximately 575 rural communities, 6 rural water systems, and 185 private industries.

The conference wrapped up with two case studies. Jill Trescott, Dakota County, gave a summary of the Hastings Area Nitrate Study (HANS). This study was funded in part by a Clean Water Partnership grant in 1999. The scope of the study was fairly broad, and Jill talked mainly about the results of the water quality sampling and ground water elevation measurements. Actions for improving water quality in the future will include building partnerships with local landowners, protecting the Vermillion River, establishing and protecting natural areas, educating the public, regulating septic systems, and continuing to regulate wells.

Steve Thompson, Minnesota Pollution Control Agency, discussed the ground water contamination problem that affects the eastern Washington County community of Lakeland. This problem rendered dozens of private

water supply wells unusable and ultimately led to the establishment of a municipal water supply for the city of Lakeland. Other corrective actions implemented at the site were soil vapor extraction (1994-1996) and free product recovery (shut down in 1996).

Katherine Carlson, Minnesota Pollution Control Agency, discussed her experience with the Lakeland contamination problem from the perspective of the public communication and involvement process. She noted the communications issues that she initially had to contend with, including community outrage, unknown sources, accidental discovery, slow definition of the contamination plume, limited public funding, multiple contaminants, multiple jurisdictions, separate regulations for different classes of contaminants, and on and on. Out of all this, Katherine noted that today the city has a safe water supply. Her key conclusions from the Lakeland site included 1) a calm community leader is needed, but can come from anywhere, 2) pick the best communicators for the project team, 3) the Lakeland problem got press coverage that was fair, 4) the project must be someone's mission, 5) the right decision is never obvious until years later, 6) knowledge and power belong to those who show up, 7) good science without good

— continued on next page

Fall Conference, cont.

communication is not enough, 8) good communication without good science is dangerous.

E. Craig Morris, City of Lakeland, closed the day's presentations by reviewing his personal experience with the city and the water contamination problem. His calm and articulate manner clearly showed the skills he used to weather a major city problem and achieve a good public outcome for his city. His presentation, including newscast clips from the height of the investigation, provided personal insight on the impacts of discovery in his community, the long process the city and its residents went through considering various treatment options, and the negotiations necessary to assemble funding for the new municipal wells and distribution system what was the choice of the community. In his closing remarks, Mayor Morris said that proactive well protection is essential.

In addition to the technical presentations, Gordie Hess provided an update on the MGWA Foundation. A silent auction raised more than \$750 for the Foundation's endowment.

— contributed by Steve Robertson, MDH, photos by Jim Lundy



— Eric Mohring views auction items

National Caves Association Holds Annual Convention in Minnesota

The National Caves Association held its annual convention in Minnesota for the first time during the first week in October, 2002. Over 100 owners and managers of show caves across the country met at the St. James Hotel in Red Wing to discuss the cave tourism business. Attendees also toured Mystery Cave and Niagara Cave in southeast Minnesota, as well as Crystal Cave in west-central Wisconsin. The Association was

organized in 1965 to oppose a proposal by former first lady Lady Bird Johnson to abolish highway billboards promoting caves, a major threat to a business dependent on tourists. Recently, the Association has been active in protecting the environmental resources that caves represent, including the ground water that is their lifeline. University of Minnesota geology professor and MGWA member Dr. Calvin Alexander was one of the leaders of the cave tours, discussing the geologic history and development of the Paleozoic caves of southeast Minnesota and western Wisconsin.

Foundation Update

Thanks to the great success and support of the MGWA membership and all attendees at MGWA functions, the Foundation Board is pleased to announce that the endowment portion of the fund has grown to \$24,906. Fundraising efforts at the Fall Conference raised \$767. Grants have been approved for the Metro Children's Water Festival and support of educational training for teachers in Project WET. Project WET is a national organization providing educators with tools for teaching about water. The Foundation is pleased to be providing training for seven educators to attend Project WET training.

The Foundation works closely with the MGWA Ground Water Education

Committee to identify and evaluate possible funding opportunities in support of ground water education. Advancing the state of awareness and knowledge of water/ground water concerns is the goal we are pursuing.

The Foundation Board is eager to hear your ideas on fund raising activities, funding recipients, maximizing impact and effectiveness of funding dollars, and all means to extend the reach of the foundation to our members and to the public to further advance the Foundation goals of education on water and ground water resources. Your input and ideas are highly desired and please do not hesitate to contact Gordie Hess via phone (612-339-9434) or e-mail (ghess@arcadis-us.com). The Foundation Board looks forward to hearing from you!

Project WET Ground-Water Workshop

DNR's MN Project WET program and the MGWA Education Committee are teaming up to hold a Project WET educator's workshop focused on ground-water resources. Unlike typical Project WET workshops this workshop will focus exclusively on ground-water concepts and issues. Project WET (Water Education for Teachers) is a nationally acclaimed program used by thousands of K-12 educators in all states. The program includes an educator's guide filled

with over 90 interdisciplinary, hands-on activities for formal and non-formal K-12 educators, an interactive workshop to help educators incorporate the activities into their curriculum, and on-going support through Minnesota Project WET. The workshop will be held on Saturday, April 5, 2003, in the Twin Cities Metro Area (location to be announced).

See <http://www.dnr.state.mn.us/projectwet/index.html> for more information about Project WET or contact Mike Trojan at 651-297-5219 or mike.trojan@pca.state.mn.us to register or get further information about this workshop.

Last Paper MGWA Newsletter

Norm Mofjeld, editor-in-chief

This is the last paper issue of the MGWA Newsletter that you will receive unless you request it when you renew your membership for 2003. Beginning with the first newsletter issue for 2003 (March), you will be able to access the newsletter on-line from the MGWA website with a password. The password will be provided to you next year when you renew your membership. Members will be notified by e-mail when the next issue is available on the web site.

The newsletter will be in an enhanced PDF format and you will need Adobe Acrobat Reader to download the newsletter. The software is available on-line at no cost and can be downloaded from the MGWA website when you go to the newsletter section. With the enhanced PDF format you can either print the entire newsletter or browse through the newsletter on screen. There will be bookmarks that give you the option of moving around from article to article within the newsletter and hyperlinks in some articles that are linked via the internet to other related articles at other web sites. The format of the newsletter has not changed and has the familiar three-column look and overall organization. The September 2002 issue of the MGWA newsletter is available for you to review at the MGWA website in the enhanced PDF format.

If you would like to continue receiving paper issues in the mail next year, you can do so by requesting that on your membership renewal form. There will be an additional cost of \$10 for this option to cover the costs of paper, printing services and postage. There will be no charge to members for accessing the newsletter on-line from the MGWA website.

Fall Field Trip to Southeastern Minnesota Cancelled

Unfortunately, the fall field trip "Mississippi River Valley and Karst of Southeastern Minnesota" scheduled for September 27 and 28 was cancelled. Twelve people signed up to go on the trip prior to the deadline; however, typically 30 to 40 people are needed to break even. As many of you are aware, the MGWA and the American Institute of Professional Geologists (AIPG) jointly plan the fall field trips with the lead planning role alternating between each organization on an annual basis. This year's trip was planned by the MGWA.

Arranging such a trip, including choosing the area of the state and the topic, identifying stops and speakers, putting together a schedule and guide book, as well as arranging for printing, transportation, meals, and lodging requires a significant amount of time and effort by the Field Trip Committee members. Thank you to all those involved in planning the trip, including Marty Bonnell and Barb Christensen with DPR, Rob Caho with Bergerson-Caswell, Inc., Jennie Leete, Sean Hunt, and Jeff Green with the DNR, and Jeff Broberg with McGhie & Betts.

Thank you also to Terry Lee of Olmstead County, Jeff Broberg with McGhie & Betts, Jeremy Pavlish and Jeff Green with the DNR, Calvin Alexander with the U of M, Tony Runkel and Gary Meyer with the Minnesota Geological Survey who were scheduled to speak at the various stops.

Since this year's trip was cancelled, MGWA President Rob Caho, elected to attend the Wisconsin Ground Water Association's (WGWA) fall field trip, which was held on the same weekend (see the President's column in this issue for more information on the WGWA trip). Rob reported that the WGWA has expressed interest in working with the MGWA in coordinating future Fall Field Trips. The MGWA Board of Directors is exploring options for working with the WGWA on future fall field trips.

Newsletter Team Recognizes Jim Lundy for Seven Years of Service

After seven years of faithful service, Jim Lundy, a Senior Hydrologist with the Minnesota Pollution Control Agency has decided to step down from the newsletter editorial team. We'll miss not only his editorial skills, but his humor and "can-do" attitude that he brought to all our meetings. Jim's contributions to MGWA over the years are well-known to many members, including his stint as President-Elect, President and Past-President of the Association from 1999-2001 and his active involvement with the Ground Water Education Committee of MGWA, which he plans to continue. Even with this schedule, Jim found time to contribute several technical articles on his professional work at MPCA to the newsletter over the years. Jim may be best remembered among members of the newsletter team for founding the "Capillary Fringe" column which debuted in the December 1997 issue and continues to be part of the newsletter as an opinion piece for all things hydrogeologic. It's even sparked a spirited debate or two along the way. So Jim, thanks again for your many years of service and we'll miss you!

MGWA Welcomes New Members in 2002

We are pleased to welcome the new members who have joined (or, in a few cases, rejoined) the Association over the past year. Thank you to all our members, new and old, for supporting the Minnesota ground water community.

- John Ahlbrecht, AC Water Analysis
- David W. Anderson, Bonestroo, Rosene and Anderlik
- Marley Ayres, Pinnacle Engineering Inc



New Members, cont.

- Dave Bokelman, Preferred Pump
- Martin D. Bonnell, DPRA Inc
- Dennis Born, Born Well Drilling
- Rodney Born, Born Well Drilling
- William A. Braun, Environmental Resource Group, LLC
- Gregory S. Browne, Braun Intertec Corp
- Stephen J. Chesla, Greener Pastures Development Corp
- Don Christianson, Minnesota Rural Water Association
- James M. Cooper, Environmental Strategies Corporation
- Cindy Demers, Epoch Environmental
- Julett R. P. Denton, US Army Corps of Engineers
- Costa Dimitracopoulos, WSB and Associates Inc
- Karla M. Eidem, ARCADIS
- Matthew P. Erickson, PEER Environmental and Eng Res Inc
- Bernie Esselman, TestAmerica Inc
- Emmanuel Fahoury, EnviroServ Inc
- Andrew M. Fiskness, ARCADIS
- Aaron Fredrickson, Pace Analytical Services
- Ty Fuglseth, Widseth Smith Nolting
- Steven Geib
- Todd H. Giffrow, Epoch Environmental
- Mike Gilgosh
- Will Greeley, Thein Well Co. Inc.
- Lifeng Guo, MN Pollution Control Agency
- Bryan Hassig, Liesch Associates Inc
- John Hemming, Bonestroo & Associates
- Jeremy Hutson, Barr Engineering
- Laura Hysjulien, MPCA MD/SR
- Mark Janovec, Bonestroo and Associates
- David Jerde, Liesch Associates Inc

Nominations Sought for MGWA Outstanding Service Award

The Minnesota Ground Water Association (MGWA) has the following primary objectives:

Promote and encourage exchange of scientific information and public policy aspects of ground water; Protect public health and safety through continuing education for ground water professionals; Establish a common forum for scientists, engineers, planners, educators, attorneys, and other persons concerned with ground water; Educate the general public regarding ground water resources; and Disseminate information on ground water

The MGWA recognizes individuals who exemplify these objectives through the Outstanding Service Award, to be conferred annually, when deemed appropriate, upon any individual who has made an outstanding contribution to ground water in Minnesota, particularly as this relates to the MGWA primary objectives. This award was instituted in 2001, and Matt Walton was the first recipient of this award, presented at the 2002 Spring Conference.

The contribution may have been in the form of any undertaking that has furthered the cause of ground water in Minnesota as a vital resource. This includes, but is not limited to, technical or scientific achievements, efforts in disseminating information and education about ground water, and achievements in the public policy arena. Such an award would be particularly appropriate for individuals who demonstrate a cross-fertilization of leadership, sound science, education, and public policy. Nominations can be for specific accomplishments during the past year, or for continuing contributions to ground water in Minnesota over the course of the nominee's career.

— continued on page 9

- Greg F. Johnson, SEH, Inc
- Donald C. Johnston, STS Consultants
- J. Michael Kelberer, Student
- Tim Lenway, PEER Environmental and Eng Res Inc
- Stan W. Liszka III, Wenck Assoc. Inc
- Elise Marien, Liesch Associates Inc
- Carla McCarthy, TestAmerica Inc
- Dan Milewsky, TestAmerica Inc.
- Tim Modjeski, Bonestroo, Rosene and Anderlik
- Barbara Moeller, City of Lakeville
- Ashley Morris, TestAmerica Inc.
- Jared Nerison, Pinnacle Engineering Inc
- Dave Oakes, MPCA
- Donna M. Olson, Northeast Technical Services
- Joseph J. Peterson
- Greg S. Prom, GME Consultants
- Glen Rosenhamer, Pinnacle Engineering Inc
- George Schwint, Baumgartner Environics
- Marc Alan Severin, American Engineering Testing
- Steve Sletten
- Matt S. Stevens, Cirrus Environmental
- Stephanie Stolz, Liesch Associates Inc
- Ryan Swafford, Mankato State University Student
- Dan Taiber, TestAmerica Inc.
- Todd Terhaar, Baumgartner Environics Inc
- Dawn Tracy, Scott County Natural Resources
- Hong Thai Truong, HDR Engineering
- Jo Anne Verhasselt
- Amber Wallgren, Environmental Troubleshooters
- Mark Wallis, Bonestroo and Associates
- Chris Warneke, Interpoll Laboratories Inc

47th Midwest Ground Water Conference held October 2-4 in Fargo, ND

North Dakota was the cordial host for this year's Midwest Ground Water Conference held October 2-4, 2002, in Fargo. The somewhat lower than usual attendance reflected the geographical location as well as the economic times, with few representatives from east of the Mississippi. Nonetheless, it was a great opportunity to renew friendships and learn from each other. The half-day field trip to the Sheyenne National Grasslands held on October 2nd to kick off the conference provided a wonderful introduction to this unique landscape.

This year's committee, noting that the 50th conference is coming up, has been busy planning for future conferences. Next year, the 48th conference will be held October 1-3, 2003, at Western Michigan University. The following year, the 49th conference will be held in Indiana. In 2005, Illinois will be hosting the 50th conference, which happens to coincide with the 100th anniversary of the Illinois State Water Survey.

The Sheyenne National Grassland today covers much of the sediments of the Sheyenne delta, a positive feature on the landscape. Today, the grasslands (most of the time) hold the delta sands in place, but dune landforms indicate there were times when sand moved freely. The USDA Forest Service manages the national grassland for grazing and hay. The grassland is also home to the Western Prairie Fringed Orchid, a federally threatened species. In another part of the grasslands a natural tracer study is underway, mapping the movement of saline water released to the surface from an overflowing Dakota aquifer artesian well. Management of ground water in the thin Sheyenne delta sands for irrigation was also discussed. A sampling site for the USGS study of the Sheyenne delta for the Red River of the North NAWQA study was one of the trip stops. The delta area (but not including the National Grasslands) was paired with a site in Minnesota to evaluate the effect of agricultural landscapes on water quality. At the final stop, a gaging

station on the Sheyenne River, the importance of water discharging from the aquifer to the river and river flow was pointed out. For more information, the Geologic Explorer's Guide to the Sheyenne National Grassland, Educational Series No. 27, is available from the North Dakota Geological Survey.

The papers and posters presented offered a good cross section of work in denitrification studies, modeling, ground water – surface water interaction, contaminant hydrogeology, irrigation management, and wetlands. Iowa DNR reported on naturally occurring ammonia in ground water and how, under certain circumstances in water-supply distribution systems, the ammonia is converted to nitrite. A trio of presentations on the Madison aquifer in the Black Hills area closed out the conference program.

At the end of the first day of presentations, Professor Allan Ashworth, chair of the Dept. of Geosciences at NDSU, gave a very interesting after-dinner talk on the paleoecology of Antarctica.

Unfortunately, neither the field trip guide nor the program's abstracts are posted on the web. Contact Dave Ripley or Bob Shaver, North Dakota State Water Commission, 701-328-2754 for more information.

— *contributed by Jan Falteisek*

30th Anniversary of the Clean Water Act and National Water Monitoring Day

Mayor Randy Kelly of the City of St. Paul and Hennepin County Commissioner Peter McLaughlin welcomed a crowd of over 100 to the Harriet Island pavilion on the banks of the Mississippi River for the October 18, 2002 celebration of the 30th anniversary of the Clean Water Act. This landmark legislation has had a significant impact on improving both surface and ground water quality in Minnesota and throughout the nation. A coalition of organizations and agencies also organized a "hands-on" monitoring tour of the Mississippi aboard the Jonathan

Clean Water Act Anniversary, cont.

Padelford as a part of National Water Monitoring Day. It was fitting that the Mississippi River be the focus of the celebration as Minnesota contains its headwaters and the Twin Cities have more of its river miles flowing through them than any other metropolitan area along the river's course to the Gulf of Mexico.

Featured speakers for the Clean Water Act celebration included former United States Senator David Durenberger, who discussed the history and significance of the Clean Water Act during the 1970's and 80's. U. S. Representative Betty McCollum talked about current progress, status and goals of the Act. She said we have come a long way toward the goal of fishable, swimmable waters nationwide, but nearly 40 percent of our lakes and rivers still don't meet all safety standards. Our aging wastewater infrastructure from the 1960's and 70's currently suffers from a \$6 billion funding gap for needed improvements. Still, the construction grants program pumped \$61 billion in investments to address point source pollution up until 1990, and since then, nearly \$16 billion has been provided by the Act's revolving fund.

Amy Middleton, a nationally-known environmental specialist in watershed restoration and citizen involvement discussed the importance of citizen provisions of the Clean Water Act, including citizens as plaintiffs in helping to clean up water resources at the local level. She talked about several community-based water restoration projects she is involved with, including development of the Bruce Vento Nature Center near downtown St. Paul, which features the daylighting of a portion of Phalen Creek upstream from where it enters the Mississippi River. Environmental consultant Dr. Andrew Stoddard then provided a technical retrospective of the effects of the Clean Water Act on water resources nationwide. He stressed that monitoring data is crucial to documenting progress, as are

— *continued on next page*

Alaskan Earthquake Blackens Well Water

Waseca - An earthquake that rocked Alaska Nov. 3 sent shock waves to southeastern Minnesota, turning many residents' well water black. "The manganese is jarred loose. It turns the water just coal black," said Stanley Born of Born Well Drilling in Waseca, who has fielded about 100 phone calls since the earthquake. The black-water phenomenon is mostly one of inconvenience. Born advised people to leave their cold-water taps open until the problem cleared up. "Mine was black, but it cleared up in a day. Other people, it took two or three days before it cleared up," Born said. People also can disinfect their wells with bleach or chlorine.

Manganese is a naturally occurring element in the earth, and water containing lower levels of it isn't a health threat. But state health officials say residents should not drink water that is discolored, because high levels of manganese, or other elements that discolor water, could cause health problems for some. Livestock and pets, particularly young animals, also could have reactions if they drink the discolored water. Born said the problem of black water was inconsistent. In some areas, all the wells were affected, but a block away a well of the same depth was fine, he said.

The magnitude 7.9 Alaskan earthquake hit early in the morning, 2,500 miles from southern Minnesota. It was the strongest earthquake in the world this year. Such quakes can send tremors that can be detected across the world. The problem of black well water from the quake was most common in southeastern Minnesota, northeastern Iowa and southwestern Wisconsin. The earthquake shock waves follow certain underground patterns that cause more vibration in some parts of the country than others. The Midwest, in fact, appears to be most susceptible to effects from big Alaskan earthquakes, while major earthquakes in California generally don't send tremors this way. State officials said this is the first time wells have been affected by such an event since 1964, when another

major earthquake hit Alaska. "The one in '64 was real bad here," Born said. "Water was black all over, and there were wells that had never flowed before that started flowing, and other wells over by Owatonna were drying up. It just kind of shifts the tide of the water underground."

— by *Tim Krohn, Mankato Free Press, November 14, 2002.*
Reprinted with permission.

MPCA's Air, Water and Waste Conference February 25-27, 2003

The Minnesota Pollution Control Agency will host its annual Air, Water and Waste Conference at the Radisson Riverfront Hotel in St. Paul in February 2003. The conference is designed to appeal to a broad audience and will tackle cutting edge issues including media-specific topics, new legislation, and emerging environmental concerns. This year, an expanded Water Track includes seven sessions covering a broad range of water issues:

- Ground Water: Out-of-Sight, But Is It Alright?
- Impaired Waters and TMDLs: What's the Buzz?
- Stormwater Phase II: Overview and Applications
- Surface Water Quality: Emerging Trends and Innovative Solutions
- Municipal and Industrial Wastewater (Two Sessions)
- Cleaning Up the Minnesota River: Is the Water Getting Better or Worse?

In addition to the technical presentations, 80 exhibitors from the public and private sectors will showcase their environmental products and services in one of the largest such exhibits in Minnesota. The conference is designed to meet continuing education requirements of various professional certification and licensing programs. For details visit: <http://www.pca.state.mn.us/news/training/mawwconference/index.html>

— *contributed by Tom Clark*

Award Nomination, cont.

The awardee, or the person nominating, does not need to be a member of the association. The MGWA awards committee recommends a candidate to the board and the board determines the award.

Nominations may be mailed to: Minnesota Ground Water Association
c/o WRI Association Management
4779 126th St N
White Bear Lake MN 55110-5910
Nominations may also be e-mailed to Office@mgwa.org.

The nomination form is available from the MGWA website at .

All nominations must be received by **January 15, 2003** to be considered for the 2003 award. The award announcement will be made in the March 2003 newsletter, followed by presentation at the Spring 2003 conference.

Clean Water Act Anniversary, cont.

national databases such as STORET that support many state and local monitoring efforts. Although there has been a 35 percent increase in population served by wastewater treatment since the Act was passed, there has been a 23 percent decrease in municipal effluent load measured in the nation's surface waters. Dissolved oxygen is up significantly, while biological oxygen demand is down nationwide.

Following the presentations, there was time to socialize and view displays of the various sponsoring agencies and organizations set up in the pavilion. The Jonathan Padelford boat tour concluded the day with demonstrations on hydrology, water quality, aquatic biology, wastewater issues, navigation issues, and using the Mississippi corridor as an urban park. It was clear at the end of the day that water monitoring efforts are alive and well on the Mississippi River in the Twin Cities, and Minnesota has much to be proud of in its implementation of the Clean Water Act of 1972, but much to accomplish, as well.



Minnesota Ground Water Association

MGWA 2003 Officer Ballot

Candidates for President-Elect

Jeff Stoner

Jeff Stoner currently is Chief for U.S. Geological Survey (USGS) Water programs, Minnesota. He holds degrees in Geological Engineering from the University of Minnesota and Civil Engineering from Colorado State University. During his career as a USGS hydrologist, he has participated in numerous studies of ground water and water quality in Montana, Pennsylvania, Minnesota, and North Dakota. He has led hydrologic investigations in Minnesota and the Red River of the North National Water-Quality Assessment (NAWQA) Program. Most recently, he directed the nutrients synthesis project for the NAWQA Program in Denver, Colorado.

Vision for MGWA: To maintain our role as leaders in education, ethics, and information for the ground-water profession in Minnesota.

Chris Elvrum

Chris Elvrum has been an Environmental Planner in the area of Water Supply with the Metropolitan Council for the past 3½ years. His duties include the review of area communities' Water Supply and Wellhead Protection Plans, and Water Appropriation Permits; preparation of forecasts for water demand; groundwater modeling to compare forecasts to water availability; and Environmental Education Team Leader. Chris is also an active member of the Minnesota Ground Water Association's Ground Water Education Committee. Prior to his current position with the Metropolitan Council, Chris worked for Envirogen, Inc., Milwaukee, Wisconsin, as an environmental consultant for 4½ years. Chris earned a B.S. in Geology from the University of Wisconsin - Eau Claire and a M.S. in Geology from the University of Kentucky.

I would like to be the next Minnesota Ground Water Association President because I feel that groundwater is one of Minnesota's most important and least understood resources. A large portion of Minnesota's citizens use groundwater on a daily basis. However, very few really understand where their water comes from or how to ensure that future generations will be able to continue using Minnesota's ground water resources. As the state's population continues to grow, more pressure will be placed on this critical resource. Because it is difficult to see ground water, explaining these issues is one of the most challenging tasks ground water professionals face. As President, I will work to educate and promote communication between ground water professionals, decision and policy makers, and the general public to increase understanding of ground water issues and awareness of how decisions today can affect the long-term sustainability of Minnesota's ground water resources.

Write-In

Candidates for Treasurer

Eric Hansen, P.E.

My name is Eric Hansen and I am seeking re-election as treasurer of the MGWA for the two-year term beginning in 2003. I am currently Vice President of Environmental Engineering at Pinnacle Engineering, where I've worked for the past seven years. I am a geological engineer and hydrogeologist with bachelor degrees in Geo-Engineer and Geology from the University of Minnesota. I've worked in the Minneapolis/St. Paul consulting community for over 15 years. Past positions include L. Lehman & Associates and Twin City Engineering. My consulting experience has provided me a view of practical applications for ground water management and protection in Minnesota. Key areas of interest are the protection, conservation and remediation of ground water resources during redevelopment.

I am seeking this position to provide the organization with the continuing support it needs. I have seen the tremendous growth in the association over the past years and would like to be a part of sustaining that growth.

Write-In

Please copy the ballot, select one candidate for each position and send the ballot back by January 4th, 2003.

**Return to:
Minnesota Ground Water Association
c/o Watershed Research Inc
4779 126th St N
White Bear Lake, MN 55110-5910**

Ground Water Education Committee

September 5, 2002

Recent educational events include:

- State Fair presentation on September 1, and
- Ground water model demonstration August 16-20.

The Education Committee will submit a MGWA Foundation funding request to provide educational materials that can be distributed at educational events.

A spreadsheet documents educational activities for 2002, but contact information needs to be entered for many of the activities.

The Science Museum will put in a sand point in the outdoor science park. The well allows testing of contamination levels in an area where a ground water 'pump and treat' display would be located. PCA will drill some geoprobe borings this fall to determine if the proposal is feasible and to help planning for winter.

The web site is close to being in a final format. Sean has a summary of edits for the web page.

MGWA will be presenting at the Children's Water Festival on September 25. The presentation will be "What Water Would You Drink?".

There is a tentative date of March or April for a Project WET-Ground Water workshop. The Education Committee may submit a Foundation request for \$100 to fund five people to attend the workshop. Preference will be given to MGWA members and the opportunity will be announced in the next Newsletter. Any slots not filled by MGWA members will be offered to teachers.

The Education Committee is contemplating developing an educational CD for Middle School teachers. An abstract has been developed for the CD and will be distributed to appropriate audiences to see if there are similar projects on-going and if there is interest, particularly from teachers.

The Education Committee is evaluating whether or not to submit a request for funding from the Minnehaha Creek Watershed. There may be an opportunity to write a

proposal related to ground water, since ground water is important, has not been extensively studied in the watershed, and because there may be a lot of ground water information available.

The Education Committee is discussing the possibility of presenting at OEA's Brown Bag seminar series sometime in 2003. If the Education Committee did present, the presentation should be somewhat interactive to illustrate the types of activities the committee promotes when it visits schools.

September 25, 2002

Chris Elvrum and Mike Trojan participated in the Metro Area Children's Water Festival on September 25 at the State Fairgrounds. The Education Committee will try to get an MGWA display for next year.

MGWA and the MDNR will be conducting a Project WET workshop next March or April. A funding request for \$100, submitted to the MGWA Foundation, will allow five MGWA members to attend.

Science Museum update: Chris said progress continues to be made. Several probes will be drilled at the site to define the extent of contamination. Materials needed to complete this exploratory drilling are being donated by various companies/agencies.

Legislation: No major updates. Dan suggested looking at AIPG's process for commenting, and he will follow up on that.

Classroom CD: Mike has time dedicated to developing the CD. Don Berger of PCA distributed the CD proposal to an education listserver and will try to find 6 to 8 Middle School teachers to help us firm up the proposal. Mike will try to get information about the cost of developing and printing the CD.

Minnehaha Creek Watershed: A proposal was submitted by Mike on September 27. The proposed project would have high school students in the watershed work with MGWA staff to assess ground water resources of the Minnehaha Creek Watershed.

OEA Brown Bag presentation: MGWA will be presenting on April 16, 12:00-1:00.

MGWA Thanks its Corporate Members

Our list of corporate members includes:

Howard R. Green

Interpoll, Inc.

Environmental Strategies Corp

Liesch Associates, Inc

**Leggette Brashears and
Graham**

Soil Engineering Testing

TestAmerica, Inc.

October 31, 2002

A Project WET Workshop focusing on ground water will occur on April 5, 2003, 9 AM until 3 PM, location yet to be determined. The workshop will be a joint DNR-MGWA event.

Borings will be drilled in November at the Science Museum to help identify potential locations for installing a demonstration pump-and-treat system. The demonstration is part of an outdoor exhibit focused on water.

The Education Committee has drafted a process for commenting on proposed Legislation. The draft will be forwarded to the MGWA Board for their review.

The Education Committee, working with Don Berger from the MPCA, is in the process of identifying 3 to 6 teachers who will provide input on a Middle School education CD that focuses on ground water. By mid-December, the Education Committee hopes to begin constructing the CD.

The Education Committee submitted a proposal to the Minnehaha Creek Watershed. The proposal outlines a ground water study to be conducted by high school students in the watershed.

The Education Committee will make a presentation about its organization and activities at the OEA on April 16.

MGWA Board Meeting Minutes

August 1, 2002

Place: USGS WRD Office in Mounds View, Minnesota

Attending: Rob Caho, President; Marty Bonnell, President Elect; Jim Stark, Part President; Eric Hanson, Treasurer; Sean Hunt, WRI; Jennie Leete, WRI; Jon Pollock, Secretary; Mike Trojan, Education Committee; Gordie Hess, Foundation; Aaron Fredrikson, Newsletter Team.

Approval of Minutes: Rob called meeting to order at 0738. Minutes for the Regular Board Meeting held on July 11, 2002, were approved.

Newsletter: Discussion of electronic format of newsletter. September issue could go with electronic (enhanced pdf) format.

Education: Met last week. Next meeting will be same date of Board Meeting. Working with St. Paul School District as a pilot project. Links are on website and website will be part of pilot project. Next March or April will be working with DNR and WET (Water Education for Teachers) project presentation. Also working on a CD to distribute to schools.

Education committee interested in funding for various projects from Foundation. Jennie mentioned that the Foundation has forms to fill out for funding of projects. Sean will put Foundation form on website next month, but a paper version is available now.

Treasurer's Report: Eric has received authorization to move money market account to another institution, but has not yet moved the funds.

Membership: Need to meet again. Draft Directory is on website, final version will be out following corrections.

Web Page: New provider has been found. Electronic version of newsletter is on web page for Board to review. PDF archive has been developed. Minor updates to education web page.

Foundation: Gordie mentioned Dave Kill is traveling more and is not as available as in the past. Jennie

Corporate Membership Rates

Membership Levels	Annual Package Cost	Annual per Item Cost	Annual Savings	Percent Savings
Basic Level	\$350	\$369	\$19	5%
Standard Level	\$505	\$583	\$78	15%
Industry Leader	\$735	\$886	\$151	20%
Corporate Sponsor	\$1530	\$1986	\$456	30%

Corporate Membership Features:

- Basic Level: Business Card ad in newsletter and membership directory, "Lobby Copy" of membership directory, web page sidebar, Certificate of Membership, and up to 4 employee memberships
- Standard Level: Quarter page ad in newsletter and directory, "Lobby Copy" of membership directory, web page sidebar, Certificate of Membership, and up to 9 employee memberships
- Industry Leader: Half page ad in newsletter and directory, "Lobby Copy" of membership directory, web page sidebar, Certificate of Membership, and up to 14 employee memberships
- Corporate Sponsor: Full sponsor acknowledgement in MGWA conference publications, full page ad in newsletter and directory, "Lobby Copy" of membership directory, Certificate of Membership, web page sidebar and up to 20 employee memberships

Please make checks payable to "Minnesota Ground Water Association" or "MGWA." Direct your orders and questions concerning corporate memberships and policy to the Advertising Manager: Jim Aiken, MGWA Advertising Manager, c/o MGWA, 4779 126 St N, White Bear Lake MN 55110; Email jaiken@mccainassociates.com.

mentioned that she has authority to write checks if Dave is not available. Dave, Jim Stark, and Gordie could use more people on Foundation. Rob mentioned that Al Smith might be interested in helping.

Old Business:

Advertising Corporate Membership. Test America contacted MGWA about membership, but no check has been written yet. There was a discussion of Newsletter formats (HTML, PDF and paper) and advertising. Jennie thought that there would be three versions of the Newsletters HTML, PDF and paper and that the HTML version could be different than the PDF and paper versions. Some Board members expressed concern over newsletters with different content. Rob tabled the issue.

Fall Field Trip: Marty is arranging the trip and Jeff Green gave some potential stops and speakers for SE Minnesota. Marty has not been able to get hold of Calvin Alexander. Date will be Friday September 27th and Saturday September 28th. The next meeting will be August 6.

Fall Conference: The next meeting for Fall Conference Planning is scheduled for August 6th. Need more people to help with conference. Cost will be about \$85.00 per person.

September 5, 2002

Place: USGS WRD Office in Mounds View, Minnesota

Attending: Rob Caho, President; Eric Hanson, Treasurer; Sean Hunt, WRI; Jennie Leete, WRI; Jon Pollock, Secretary; Gordie Hess, Foundation; Norm Mofjeld.

Approval of Minutes: Rob called meeting to order at 0735. Minutes for the Regular Board Meeting held on August 1, 2002, were approved (Motion by Eric, approval by Rob).

Treasurer's Report: Eric is tracking down unpaid invoices from Spring Conference. Eric has received authorization to move money market

— continued on next page

Board Minutes, cont.

account to another institution, but has not yet moved the funds.

Membership: No future meeting has been scheduled, as the Committee members have been too busy to meet. In mid October those interested can go to Jennie and Sean's house to go through pictures to put on display board for Fall Conf. Eric will bring the display board to the October Board Meeting.

Web Page: Field Trip information is on web page. New service has shopping cart feature and Sean has this going. Foundation info has been updated and one form has been downloaded and sent in. The Newsletter page has been updated with HTML version of newsletter for Board Members to review.

Foundation: Gordie will have something for Fall Conference such as a silent auction. Gordie will say a few words about the Foundation at the Fall Conference.

Education: Education Committee has not yet met this month and there was no report.

Newsletter: Norm was interested in determining the direction of the format of the newsletter in the future (Paper, PDF, Enhanced PDF or HTML). Norm indicated that the Newsletter Team would prefer to have only one newsletter rather than two. Board approved WRI to spend up to \$200.00 to purchase the most recent version of Adobe Acrobat Writer. Sept. issue will be produced in both PDF and enhanced PDF. At the next Board Meeting the Board will decide if PDF or Enhanced PDF will be distributed electronically. HTML was shelved. Sean will have both PDFs available for review.

Old Business: Summer Picnic. There was a low turn out at the picnic, perhaps due to the poor weather. The picnic was a \$600.00 deficit. MGWA now owns two tents (10'x 10') and carrying cases.

Advertising Corporate Membership. Test America has taken out a

corporate ad. There was discussion about what to do when members join during the middle of the year. It was agreed that if a company joins before August 1 it would be considered a 2002 member and if a company joins after August 1 it would be a 2003 member.

Fall Field Trip: Three people have signed up. Marty is looking for a speaker for Saturday evening. Signup deadline is September 13. Additional charges will be applied to those signing up after the 13th.

Fall Conference: The next meeting for Fall Conference Planning is scheduled for September 10, 2002. Rob is lining up speakers. Conference will be "Municipalities and Water Supply Issues" and will be held on November 12, 2002.

October 3, 2002

Place: USGS WRD Office in Mounds View, Minnesota

— continued on next page

Minnesota Ground Water Association Newsletter Advertising Policy

Display ads:

Size	Inches Hor. x Vert.	Quarterly	2003 Membership
		Newsletter	Directory
		Annual Rate; 4 issues	Annual Rate; 1 issue
Business Card	3.5 x 2.3	\$66	\$50
Quarter Page	3.5 x 4.8	\$121	\$99
Half Page	7.5 x 4.8	\$225	\$190
Full Page	7.5 x 9.75	\$425	\$360
Inside Cover	7.5 x 9.75	not available	\$395

Classified ads: Classified ads in the newsletter are charged at the rate of \$3 per 45 characters (including spaces and punctuation) per newsletter issue.

E-mail notices: A one-time e-mailing to the membership costs \$10 for an individual (e.g., seeking a job), and \$50 for an organization (e.g., announcing a new product, job opening etc.). A 200 word limit is imposed. The advantage of e-mail is the speed of dissemination.

The Advertising Manager has final determination on the acceptance of materials submitted. There are no commissions on ads. Copy must be received by the publication deadlines: 14 February, 16 May, 15 August, or 14 November. Advertisers should submit their material as a digital file in TIFF, JPEG or PCX format at 300 to 600 dpi. A set-up charge will be applied to non-digital ad material.

Please make checks payable to "Minnesota Ground Water Association" or "MGWA." Direct your orders and questions concerning advertising rates and policy to the Advertising Manager: Jim Aiken, Advertising Manager, c/o MGWA, 4779 126th Street, White Bear Lake MN 55110-5910; Phone (952)470-0983 ; jaiken@mccainassociates.com

Attending: Rob Caho, President; Marty Bonnell, President Elect, Jim Stark; Past President, Eric Hansen, Treasurer; Sean Hunt, WRI; Jennie Leete, WRI; Jon Pollock, Secretary; Gordie Hess, Foundation; Norm Mofjeld; Mike Trojan, Education.

Approval of Minutes: Rob called meeting to order at 0735. Minutes for the Regular Board Meeting held on September 5, 2002, were approved by the Board.

Treasurer's Report: Eric is working on closing Wells Fargo Account. New account at Affinity Plus is ready. Approximately \$8,800.00 in assets.

Membership: Email for renewal notices have been approved. Will mail out renewal notices this month. Eric brought display Board for Jennie. Those interested can meet at Jennie's the evening of October 24th to select photos for the display board.

Web Page: Directory has been finalized and is on website – email indicating such has been sent to membership. Hard copies of directories have been mailed. Conference information is on web page.

Foundation: Received one application for funding; it has been reviewed and approved. A few corporate donations are coming in. Silent Auction winners will be able to pay for items with check or credit card. List of items will be on web page prior to conference.

Education: Mike Trojan provided the Board with Education Committee Meeting Minutes outlining several items they are working on. Education committee meeting minutes will be published in the newsletter.

Newsletter: Norm indicated that the enhanced PDF version will allow viewing and printing. Aaron will be working on making newsletter more personal by soliciting member responses to articles etc. Jan will be the lead

for the December issue. Board approved acceptance of newsletter teams recommendations to produce and distribute enhanced PDF version of newsletter.

Old Business:

Advertising Corporate Membership. Jennie needs to get hold of Jim Aiken concerning corporate membership renewals. Eric will also call Jim Aiken.

Fall Field Trip: Cancelled due to lack of participants. \$1284.00 was spent on printing and mailing brochures. Several possible factors contributing to the lack of participants were discussed including: not a good enough job explaining what trip was about, info not available soon enough, lack of state workers signed up due to a lack of funding for such activities by the state, CEUs for geoscientists were due this summer, scheduled time was during duck hunting season, AIPG was not particularly interested in helping. Jennie indicated that the fall field trip has always been on the edge with regard to finances. Jennie indicated that she thinks the Memorandum of Agreement between the MGWA and the AIPG says that we share in profits and losses and that the profits have always been shared. In the past the planning committee was made up of both MGWA and AIPG members, but not this time. Eric proposed that the AIPG be invoiced for half of the loss of for the Fall Field Trip since they have received half of the profits in the past. Board approved.

Fall Conference: Fall Conference is scheduled for November 12, 2002. Speakers have been lined up. Final version of brochure has been sent. Minnesota Rural

— concluded on page 16

Join the Minnesota Ground Water Association!

Annual dues are \$25 for professional members and \$15 for students. Members are entitled to subscribe to the paper version of the newsletter for \$10/yr, the electronic version is available on the website for members at no additional charge. Members are also entitled to purchase a paper copy of the annual membership directory for \$7; an electronic version is available on the website for paid members at no additional charge. Additional donations to the MGWA Foundation will be gratefully accepted. Dues paid to MGWA are **not** deductible as charitable contributions for federal income tax purposes. However, dues payments are deductible as ordinary and necessary business expenses to the extent allowed by law. The MGWA Foundation is a 501(c)3 non-profit and donations to it **are** deductible as charitable contributions.

Just complete the form below and mail to: MGWA, c/o WRI, 4779 126th St. N, White Bear Lake, MN 55110-5910.

Name _____ Full-Time Student? _____

Affiliation/Employer _____

Work Address _____

City, State, Zip Code _____

Work Telephone Number _____ E-mail _____

Fax Number _____

Home Address _____

City, State, Zip Code _____

Home Telephone Number _____

Which Telephone Number should we use for Directory Listing? _____

Please indicate if you want to have the Directory (\$7) _____ or Newsletter (\$10) mailed to you _____

uncomplicated.

Environmental Testing

We make
the complex world of
look easy..
even when
it's not.

CEDAR FALLS DIVISION
800.750.2401
www.testamericainc.com

Test America

INCORPORATED



Complete Environmental Services Including:

- Groundwater and Surfacewater Sampling
- Sampling and Analysis of Natural Attenuation Parameters
- Landfill Gas Monitoring: EPA 25C and VOC's
- Industrial Waste and Wastewater Compliance Monitoring
- Ambient Air and Meteorological Monitoring
- Source Testing
- Certified Full Service Laboratory

Interpoll Laboratories, Inc.
4500 Ball Road Ne
Circle Pines, Mn 55014-1819
Field@Interpoll-Labs.com

(763) 786-6020
FAX (763) 786-7854

Knowledge.
Commitment.
Service.



McCain
and Associates, Inc.

434 2nd Street
Excelsior, MN 55331
ph 952-470-1611
fx 952-470-0728

Civil Engineering
Solid Waste Permitting
Environmental Investigation
Groundwater Supply and Quality Improvement

THEIR WELL

Over 100 Years of Service



- Geo Probing
- Soil Borings
- Monitoring Well
- Remediation Wells
- Angle Drilling
- Rock Coring
- Well Televising
- Gamma/E-logging
- Test/Production Wells
- Pump Sales/Service
- Well Rehabilitation
- Well Abandonment

**Certified Master
Groundwater Contractor**



1-800-450-8000



SOIL ENGINEERING TESTING, INC.

MEMBER
ACIL

A Comprehensive Soil Mechanics Testing Laboratory

(952) 884-6833
Bloomington MN
www.soilengineeringtesting.com



Howard R. Green Company

Cedar Rapids
Creston
Des Moines
Iowa City
St. Paul
Sioux Falls

We help our clients capitalize on opportunities and minimize liabilities.

Aviation • Commercial/Institutional/Government • Industrial • Municipal and Transportation

4250 Glass Road NE, Cedar Rapids, Iowa 52402
319/395-7805 or 800/728-7805
www.hrgreen.com

Phone: (763) 427-6100 rerenner@ehrenner.com
 Fax: (763) 427-0533 www.ehrenner.com
 Mobile: (763) 286-9355 1-(800)-409-9355

ROGER E. RENNER
President
NGWA Certified Master Ground Water Contractor

E.H. Renner & Sons

INCORPORATED
WELL DRILLING FOR FIVE GENERATIONS
15688 Jarvis Street N.W.



Elk River, MN 55330



ENVIRONMENTAL STRATEGIES CORPORATION
A NATIONAL FIRM WITH FULL SERVICE CONSULTING INCLUDING:

- PHASE I SITE ASSESSMENT
- REGULATORY AUDITS/COMPLIANCE
- SITE INVESTIGATION/REMEDIATION
- LITIGATION SUPPORT/DUE DILIGENCE

612-343-0510
FAX: 612-343-0506

www.envstratcorp.com
123 North 3rd Street, Suite 706 Minneapolis 55401

Board Minutes, cont.

Water Association folks will be able to attend at member rate since they are a cosponsor.

Report on Wisconsin Ground Water Association: Rob attended their fall field trip held on the same weekend that the MGWA trip was planned. Rob thought there should be a reciprocity agreement between the WGWA and the MGWA, mentioning that the WGWA would like to work with the MGWA on planning fall field trips.

Minnesota Water Well Association: Would like to work with the MGWA and would like to attend the next MGWA Board Meeting. The MWWA meets quarterly and will attend our November Board Meeting.

Future Board Members: Jim will ask if Jeff Stoner would like to run for President of the MGWA. Eric has previously indicated that he will continue on as Treasurer.

Upcoming Conferences

Wisconsin Ground Water Conference & Trade Show: January 15-17, Green Bay, WI, Wisconsin Water Well Association. Ph. 608-251-2714

American Water Resources Association – Wisconsin Section: Annual Meeting “Gathering of the Waters” February 27 & 28, 2003. Lac du Flambeau, WI. <http://www.awra.org/state/wisconsin/index.html>

LEGGETTE, BRASHEARS & GRAHAM, INC. Environmental and Ground-Water Consultants

Providing Ground-Water Expertise Since 1944

- Remedial Design & Implementation
- Remedial Investigations/Feasibility Studies
- Environmental Site Assessments
- Water Supply
- Water Rights
- Computer Modeling
- Wellhead Protection Studies
- Agri-Chemical Contamination Investigations
- Soil & Water Sampling
- Soil & Gas Surveys
- Geophysics
- Dewatering & Depressurization
- Brownfields Redevelopment

Northpark Corporate Center
1210 W. County Road E - Suite 700
St. Paul, Minnesota 55112
(651) 490-1405

www.lbgweb.com

OFFICES LOCATED NATIONWIDE



LIESCH ASSOCIATES, INC.

A FULL SERVICE ENVIRONMENTAL CONSULTING FIRM

Please contact Jim de Lambert at 800-338-7914 concerning:

- Water Supply Exploration, Development and Protection
- Phase I & II Environmental Site Assessment Services
- Environmental Compliance Assessments
- Soil and Groundwater Remediation
- Underground Storage Tank Investigation and Remediation
- Asbestos Assessment and Management
- Industrial Hygiene Services



Hydrogeologists • Engineers • Environmental Scientists

13400 15th Avenue N
Minneapolis, MN 55441
(763) 489-3100

6000 Gisholt Dr, Suite 203
Madison, WI 53713
(608) 223-1532

4300 N Miller Rd, Suite 200
Scottsdale, AZ 85251
(480) 421-0853

Visit us on the web at www.liesch.com

www.historicalinfo.com
info@historicalinfo.com

Historical Information Gatherers, Inc.

529 South 7th Street, Suite 320
Minneapolis, MN 55415

612-349-9755 Metro
877-517-2186 Toll Free
612-349-9754 Fax

Unsurpassed Historical Property Use Research!

- Aerial Photography
- City Directories
- Maps
- Well Information
- Government Records
- Scanning Services
- Image Rectification
- Custom Work

Historical Information Gatherers, Inc. has been helping environmental consultants, engineers, attorneys, governmental agencies, and others improve the quality and efficiency of the information gathering process since 1997.

Minnesota Ground Water Association
4779 126th Street North
White Bear Lake, MN 55110-5910



Made from over 50% Recycled Fiber
including 20% Post-Consumer Waste

Address Service Requested

Ballot Enclosed
Return by January 4, 2003