

# Minnesota Ground Water Association

Volume 13, Number 3: October, 1994

## Ground Water and Sustainable Agriculture

— by Larry L. Johnson, Larry L. Johnson and Associates, Inc., Past-President of MGWA

Our society has learned some hard lessons about past waste disposal practices, especially relating to industrial activities. Most of the MGWA membership is involved in some aspect of investigating or remediating ground water contamination. We have learned that ground water cleanup can be costly, time consuming, and frustrating. Furthermore, in my experience, ground water contamination is usually predictable and preventable.

Until recently, agricultural activities have not been targeted for scrutiny regarding potential impacts to ground water. These issues have usually been put aside because of political and economic concerns. The misconception was that maximized production (with assumed profit) was of primary importance and that water issues were secondary, at best.

Now it is understood that profitable farming *and* clean water are possible. In fact, there is evidence that sustainable farming practices can have ecological, financial, and economic benefits for the farmer and for the community. To ground water professionals, this means an opportunity for **prevention** of ground contamination rather than the traditional pattern of cleanup after the fact.

Sustainable agriculture is a concept that is part biology and part philosophy. There are many different definitions and misconceptions about sustainable ag. Some of the terms that

—continued on page 2

## President's Column

Well, another fall field trip has come and gone, and it looks like summer's over. As the construction season seems to end on Halloween lately, best wishes for getting your field work done before it snows.

I want to point out several things in this issue I hope will interest you.

The first is the announcement of our fall conference on directions in ground water remediation in Minnesota. The goal of the conference is to bring together a diverse group of technical, regulatory, and planning professionals to learn about and share their experience and knowledge of the current state of ground water remediation in Minnesota, successful implementation of new technologies, and the regulatory and policy changes needed to allow further innovation and efficiency in remediation. We hope you can join us.

The second item is Rob Wahlstrom's discussion of the CEC Ad-Hoc Committee's efforts to develop state registration for earth scientists. Due to the diversity of our membership, the MGWA will not take of formal position on this issue, but hopes to play a role in communicating the Committee's activities and developments in this area to our members. We encourage you to use the enclosed survey form to let the Committee (and through them, the Legislature) know your thoughts on registration issues.

Third, the MGWA will need a new President-Elect and Treasurer in 1995. The positions offer an opportunity to meet and get to know a wide variety of people in the ground water field, and to be of service to the community and the resource. Please contact me or any of the current officers if you are interested in running for one of the offices. We'll be announcing the

nominations and distributing ballots in the next newsletter.

Finally, we are searching for a new newsletter editor. Jan Falteisek, our current editor, has done an outstanding job of coordinating both the editorial content and the advertising. Jan has graciously agreed to assist during the transition and act as assistant editor as time allows. If you enjoy being in the center of a vast amount of ground water related information and enjoy writing, this is the job for you. We feel that this position should also have a finite term, so make us your proposal — a year, two, until you retire, etc. We hope to hear from you.

— Doug Connell, President, MGWA



Happy Halloween!

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## New Director Chosen for Minnesota Geological Survey

David L. Southwick recently became the eighth Director of the Minnesota Geological Survey. He was selected to lead the Survey last July on the recommendation of a University of Minnesota search committee. He has served as Interim Director the previous year.

A native of Rochester, Minnesota, Dr. Southwick received his undergraduate education at Carleton College in Northfield. He received his Ph.D. in geology in 1962 from Johns Hopkins University, where he concentrated in the fields of petrology and structural geology. His professional career has included the U.S. Geological Survey, the University of Minnesota, Macalester College and the Minnesota Geological Survey.

Dr. Southwick assumes the leadership of the Survey at a time of great changes in the intellectual emphases of the earth sciences and in the expectations placed on earth-science institutions by the constituencies they serve. "It is no longer sufficient", Southwick says, "for the Minnesota Geological Survey to conduct its work and present its findings in ways of interest only to other geologists. People from diverse backgrounds and with diverse training and skills make decisions every day that would be better decisions if they incorporated the relevant geological information. People can't apply information they don't have or can't understand. Our job today, more than ever, is to make sure that the knowledge we gain about the geology of the state is conveyed to the public in a comprehensible form and in a timely manner."

### A Vision of Hydrogeology and the Survey

According to Dr. Southwick, the MGS has devoted a good share of its effort over the years to the study of water conditions. For example, Winchell's 19th-century reports on the geology and natural history of Minnesota contain valuable historical geohydrological information. Other efforts by the survey included the set of bulletins on the regional underground waters of Minnesota and Schwartz's and Theil's

'Minnesota's Rocks and Waters.' More recently, the Survey developed and extended the concept of the county geologic atlas as a planning tool for local decision-makers. The program has now evolved into a statewide effort involving the cooperation of state and local agencies. Since their inception in 1982, each atlas has included a major component of hydrogeology. As Dr. Southwick states, "Even though I ... have spent most of my Minnesota career working on Precambrian topics, I intend to develop and build on the Survey's historic strengths in water-related investigations."

Specifically, Dr. Southwick recognizes the fundamental need for better three-dimensional mapping of aquifer systems in all geological settings, particularly Quaternary settings, where systematic stratigraphic models are in their infancy. He also states that while refinements are needed in the better-understood Paleozoic rocks of southeastern Minnesota, knowledge of the hydrogeology of fractured crystalline rocks throughout Minnesota "is essentially nonexistent." To reach this goal of better three-dimensional mapping of aquifers, Dr. Southwick says studies must combine geologic mapping with geophysical and geochemical investigations, drilling and hydrogeochemical analysis, including isotopic dating. In conclusion, he states, "We will continue [with the county geologic atlas and regional hydrogeological assessment program], evolving and improving as we go."

—Jan Falteisek, Editor

### Sustainable Agriculture, cont.

are commonly associated with sustainable agriculture include agroecology, alternative agriculture, biodynamic agriculture, biological or ecological farming, biotechnology, integrated pest management, Kyusei nature farming, low input agriculture, organic farming, permaculture, and regenerative agriculture. However, even some of these concepts are not truly sustainable.

The Minnesota definition states that "sustainable agriculture represents the best aspects of traditional and modern agriculture by using a funda-

mental understanding of nature as well as the latest scientific advances to create integrated, self-reliant, resource conserving practices that enhance the enrichment of the environment and provide short- and long-term productive and economic agriculture" (Laws 1987, chapter 396, article 12, section 6).

The federal definition, which is more comprehensive, was included in the 1990 Farm Bill. Under that law, the term sustainable agriculture means "an integrated system of plant and animal production practices having a site-specific application that will, over the long term: a) satisfy human food and fiber needs; b) enhance environmental quality and the natural resource base upon which the agricultural economy depends; c) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; d) sustain the economic viability for farm operations; and e) enhance the quality of life for farmers and society as a whole."

Agriculture in the past 50 years has relied on increasing inputs of chemicals, energy, and technology. Adverse water quality impacts are evident in the form of pesticides and excessive nutrients in ground water and increased silt loading and decreased dissolved oxygen in surface waters. Farmers and their communities have also experienced increased stress and debt load, and decreased profits and quality of life.

Sustainable agriculture offers an opportunity to address the mutual goals of clean water and profitable farming. The approach is to work with the biophysical environment, rather than to try to overpower and control it. A significant body of experience and documentation already exists (and is growing) which shows the long-term mutual benefits of sustainable agricultural practices.

Sustainable agriculture is important to ground water professionals because it promotes prevention of adverse ground water impacts. Sustainable agriculture minimizes ground water

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## Wetlands Information Hotline

The EPA Wetlands Information Hotline (contractor operated) is a national toll-free telephone information service which responds to public inquiries about the values of wetlands, Federal wetlands regulations and public and private wetlands protection programs. The Hotline uses an extensive contact list of government agencies and non-profit organizations to direct callers to appropriate sources of information and assistance in their state.

The EPA Wetlands Information Hotline operates Monday through Friday, excluding Federal holidays, from 9:00 a.m. - 5:30 p.m., Eastern Standard Time. Callers within the United States may reach the Hotline at 1(800)832-7828.

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## Can't find the answer? Here's another hotline to call

What is the human toxicity of styrene? Who can provide expert testimony on the risks associated with mercury emissions from power plants and municipal incinerators? How can I find out if my faucet is leaching lead into my drinking water?

Beginning next month, anyone in the United States and Puerto Rico seeking information on these and other environmental health issues can call 1-800-NIEHS94 (643-4794) weekdays for answers or help in tracking down the best available data.

This toll-free hotline is a new service of the National Institute of Environmental Health Sciences in Research Triangle Park, N.C. The goal is to answer inquiries within two working days. Fax queries can be sent anytime to 1-919-361-9408. By next spring, it is anticipated that information requests could be sent via computer.

*Science News, September 17, 1994*

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## GEOFLUIDS Lectures at the U of MN Geology and Geophysics Department

Oct. 20 - Dr. Shemin Ge, Dept. of Geological Sciences, University of Colorado. Tectonically Induced Groundwater Flow in Basins.

Nov. 11 (10:30am, 121 Pillsbury) - Dr. R. Douglas Elmore, School of Geology and Geophysics, University of Oklahoma. Paleoplumbing in the Arbuckle Mountains, Southern Oklahoma.

*Seminars are presented at 3:30 pm in 110 Pillsbury Hall, unless otherwise noted, followed by refreshments in 121 Pillsbury Hall.*

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## Newsletter has Editorial Opportunity

After several years as the Newsletter editor, Jan Falteisek, DNR Waters, will be stepping down as editor following the next Newsletter.

Prospective editors should be interested in communications, professional development, and have a broad interest in anything related to Minnesota ground water. The MGWA Board of Directors asks the new editor to consider a two year appointment.

*—For more information, contact the Editor or any member of the Board.*

## Sustainable Agriculture, cont.

contamination by reducing or eliminating the use of chemicals, reducing soil erosion, and encourages more active management of soil and water resources. Additionally, farmers will be able to meet their financial goals, improve their quality of life, and pursue the common vision of healthy soil and water. This is an important win/win situation for everyone.

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## MGWA 1994 Fall Conference

Directions in Ground Water Remediation  
Monday, November 7, 1994  
Earle Brown Conference Center  
University of Minnesota, St. Paul Campus

### Outline of Agenda

- 12:30 Registration
- 1:00 Opening Remarks  
*Doug Connell, MGWA President, Barr Engineering Co.*
- 1:10 Applications and Limitations of Current Remediation Practices
- 1:40 Innovative Technologies I
- 2:10 Innovative Technologies II
- 2:40 Innovative Technologies III
- 3:10 Break
- 3:30 Panel Discussion on Clean-up Goals  
Representatives from:  
Minnesota Department of Health  
Minnesota Department of Agriculture  
MPCA Tanks, Landfills, Superfund/VIC, and RCRA
- 4:30 Policy Changes to Foster Innovative Approaches  
*Gretchen Sabel, Program Development Section,  
Ground Water and Solid Waste Division,  
Minnesota Pollution Control Agency*
- 5:00 Discussion/Wrap-Up
- Cost:**
- |                    |  |
|--------------------|--|
| <b>Advance</b>     | \$20 for MGWA members<br>\$25 for non-members<br>\$10 for students |
| <b>At the Door</b> | \$25 for MGWA members<br>\$30 for non-members<br>\$15 for students |

Advance registration must be received by **November 1**. Registration includes refreshments at the break.

Name: \_\_\_\_\_  
Affiliation: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

Mail copy of form and payment to:  
Rita O'Connell, MGWA, P.O. Box 65362, St. Paul, MN 55165-0362

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## Update on Minnesota Geologist Registration

The AIPG-CEC/M Ad Hoc Committee on Professional Practice for Geologists is gearing up for the reintroduction of the Professional Geologist Registration Bill in the upcoming 1995 legislative session. As many of you are aware, a Registration Bill was introduced by Senator Mondale during the last legislative session and as expected, was not acted upon. This was a short session and the intent of introducing the bill was not so much to get it passed, as it was to put legislators, agencies and the professional community on notice that a serious effort is in progress to pass a geologist registration bill. This dry run, as one might consider it, was also helpful in bringing to our attention certain details that must be attended to when ushering a bill through the legislature.

The Committee will be looking for active support from geologists to get the bill passed. To help support registration, geologists can start by completing the survey form included in this Newsletter and sending it to Robert Wahlstrom (AIPG). Other important ways geologists can participate will be to contact their state representatives and express their support. This can be done by either writing to them, contacting them by telephone, or both. The Committee has prepared a sample letter which is available on request that individuals can use to express their support to the legislators.

In addition to mobilizing legislative support on an individual basis, Committee members are continuing to meet with various agencies, colleges and professional organizations to both educate and update them on its activities. To date, Committee members have either met with the following agencies and organizations, or these agencies and organizations have participated on the Committee: Macalester College Geology Department, Department of Natural Resources, Mesabi Range Geological Society, Minnesota Department of Agriculture, Minnesota Department of Health, Minnesota Geological Survey,

—continued on next page

## Minnesota Registration, cont.

Minnesota Ground Water Association, Minnesota Pollution Control Agency, Minnesota Society of Professional Engineers, U.S. Bureau of Mines, U of M-Duluth Geology Department, U of M-Minneapolis Department of Geology and Geophysics.

Making contacts with the various agencies and professional organizations has been a slow and arduous process but one that Committee members realize must be pursued if geologist registration is going to happen.

The Committee, in concert with the lobbying and educational process, is also actively developing draft rules. This effort was initiated because of the generalized language in the proposed statute. Committee participants familiar with the current registration statutes for engineers, architects and surveyors suggested that the language in the statute remain as general as possible. The specifics of the regulations will be included in the rules. It is much easier and expedient to make changes and adjustments, if needed, to a rule than to a statute. Although the Committee is working hard to come up with the best regulation possible, we all know that over time, changes and new situations occur within a profession that sometimes necessitate change. We want geologists to be able react to these changes as quickly as possible. The Committee hopes to have the draft rules completed and available to the community by the end of October.

As always, the Committee is open to participation by any individual, agency or organization and welcomes as much participation as possible. For more information, contact Bob DeGroot at (612)559-1900, Terry Swor at (612)659-1305, or Robert Wahlstrom at (612)227-6500. If you are interested in participating in the development of the draft rules, contact Kevin Powers at (612)490-1405

Completed surveys can be sent to the attention of Robert Wahlstrom at DPRA Inc., E 1500 First National Bank Building, 332 Minnesota Street, St. Paul, MN 55101, Fax (612)-227-5522.

—Robert Wahlstrom, DPRA, Inc.

## 1994 MGWA-AIPG Fall Field Trip

The fall field trip this year focused on central Minnesota, including its mineral resources, Quaternary history and environmental concerns. Attended by over 70, the day's program began at Cold Spring Quarry the source of "Rockville White" a popular monument and building facing stone. Most people left with their pockets full of rock samples from a dump pile. Next stop was Meridian Aggregate which quarries a red granite and its diabase intrusions which are then crushed to size. According to our Meridian host-guide, "the quarry helps supply the 7 tons of rock per year per person required to maintain the infrastructure of the U.S."

### AUTHOR! AUTHOR!

Have you recently completed a special ground water project? Developed a particular expertise related to ground water? Been involved in ground water programs or planning at any level of government?

Authors are encouraged to submit short articles for publication in the MGWA Newsletter. Ideas for articles might include:

- surface-ground water interactions,
- modeling,
- new or revised field techniques,
- environmental isotopes,
- ground water ecology,
- new equipment applications,
- results of areal studies,
- ground water reclamation,
- innovative ground water protection programs.

Articles need not be focused on Minnesota ground water conditions or issues.

Use this opportunity to gain visibility for your work, to get in touch with others who are dealing with the same types of problems, and to round out that publications list!

—For more information, contact the Editor.

During lunch at Waite Park, environmental programs in Stearns County were discussed. Staff from Stearns County and the Soil and Water Conservation District described the ground water assessment and protection programs underway in the county.

After lunch, the status of two recent Superfund sites in Waite Park were reviewed. The operation of the Waite Park City Water Supply stripper tower and the water supply emergency that resulted in its installation were discussed. Many project staff, people who either had worked or were working on the project were in attendance to offer the "historical" perspective.

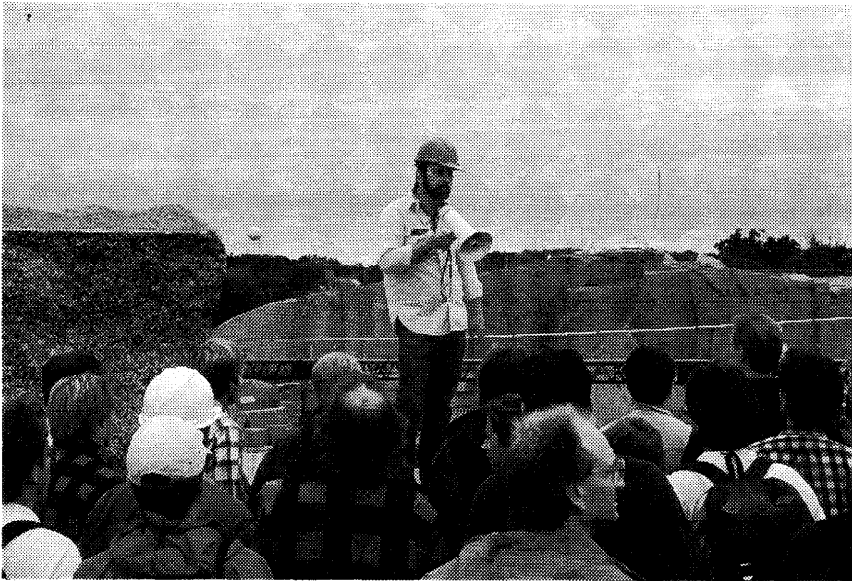
At the next stop, near Kimball, Quaternary geology was the topic. Two borrow pits next to the Powder Ridge Ski Area expose multiple Quaternary thrust blocks. The rotated thrust blocks document at least four separate glacial advances and include late Wisconsin Superior, pre-late Wisconsin-Labrador, pre-late Wisconsin-Kewatin, and several older tills. Cretaceous marine clays also appear to have been moved out of place.

The final stop of the day was the NSP Sherco power plant. This coal-powered plant has special environmental concerns related to the disposal of fly ash and stack scrubber sludge. After an introductory presentation and discussion inside the plant, the group had an opportunity to view the permanent on-site disposal areas and review the liner design on the newest fly ash landfill.

A happy hour cruise on the Mississippi River followed by a buffet dinner at Pirate's Cove closed the day of the latest informative and well-organized AIPG-MGWA field trip. Thanks to all who contributed to a successful trip.

A collection of photos of field trip activities and field trip scenery, taken by Sean Hunt, MGWA member, and Daniel Schreiber, a student from Ratingen West Germany, follows on the next two pages.

— Jan Falteisek, Editor



Quarrying operation at Cold Spring Quarry

Pit at Meridian Aggregate



Lunch at Waite Park.

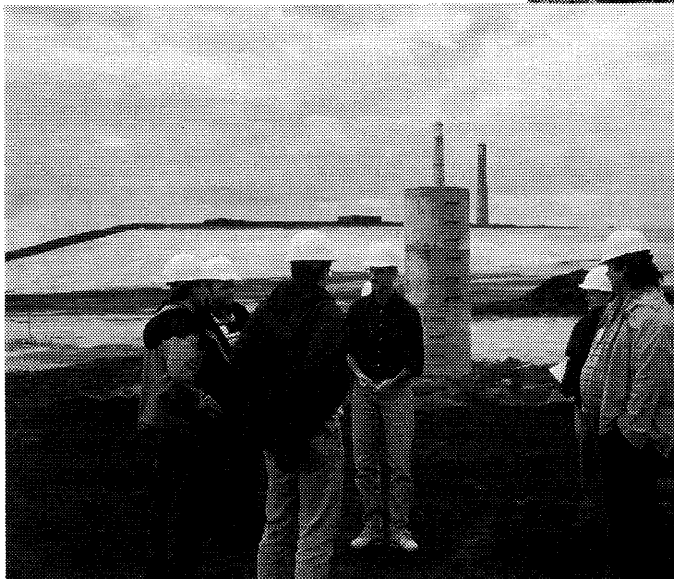


These geologists look like they've found something interesting on the way up Powder Ridge, but they're really just catching their breath.

Borrow pit below Powder Ridge shows glacial thrust blocks.



Flyash and scrubber sludge disposal areas at NSP's Sherco Power Plant



A relaxing ending to a day "in the field"



## Calendar

**October 11-13, 1994.** *1994 AIPG Annual Meeting.* Flagstaff, Arizona. FFI Mark Shellhorn 5080 N 40th St. Phoenix AZ 85018, ph. (602)840-3333.

**October 18-22, 1994.** *Principles and Application of MODFLOW and Accompanying Models,* in Golden, CO, FFI IGWMC.

**October 24-26, 1994.** *Principles of Ground Water Hydrology,* in Tuscon AZ, FFI NGWA.

**October 24-27, 1994.** *Introduction to Ground Water Geochemistry,* in Tuscon AZ, FFI NGWA.

**October 25-26, 1994.** *27th Annual Water Resources Conference,* University of Minnesota, St. Paul Campus. FFI Bev Ringsak, Professional Development and Conference Services, University of Minnesota, 206 Nolte Center, 315 Pillsbury Drive S.E., Minneapolis, MN 55455-0139, ph. (612)625-6689, fax (612)626-1632.

**November 2-4, 1994.** *Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Protection, Detection, and Remediation,* Houston, TX, FFI NGWA.

**November 7, 1994.** *MGWA Fall Conference: Directions in Ground Water Remediation,* Earle Brown Conference Center, 1:00 - 5:00. See Announcement in this issue.

**November 7 - 9, 1994.** *Effective Techniques for Contaminated Ground Water and Soil Treatment,* Madison, WI. FFI Jane Sauer, Department of Engineering Professional Development, The College of Engineering, University of Wisconsin-Madison, (608)262-8592.

**November 10, 1994.** *MGWA Lecture: New Paradigms of Global Interdependence in Hydrology.,* Andras Szollosi-Nagy, Director of the International Hydrologic Program of UNESCO in Paris. 2:30 pm, Room 210, CME, University of Minnesota, Minneapolis Campus. FFI Pat Brezonik, WRRRC, (612)624-9282.

**November 14 - 17, 1994.** *Hydrocarbons in Soils and Ground Water: Practical Tools for Assess-*

*ment and Remediation,* Reston, VA, FFI IGWMC.

**November 16-18, 1994.** *Fifth International Conference Envirossoft '94, Development and Application of Computer Techniques to Environmental Studies,* San Francisco, CA. FFI Sue Owen, Wessex Institute of Technology, Ashurst Lodge, Ashurst Southampton, SO4 2AA, UK.

**December 6 - 9, 1994.** *Groundwater Flow and Well Hydraulics,* Madison, WI. FFI Mary Meinholz, Department of Engineering Professional Development, The College of Engineering, University of Wisconsin-Madison, (608)262-5566.

**December 13 - 15, 1994.** *Modeling Fluid Flow and Heat Transfer in Hydrothermal Systems,* Steve Ingebritsen and Daniel Hayba, Lecturers. To be held at the Nolte Center, University of Minnesota. FFI Mark Person, Department of Geology and Geophysics, (612)625-7332.

**January 8-13, 1995.** *IBM PC Applications in Ground Water Pollution and Hydrology,* Orlando Marriott, Orlando, FL, FFI NGWA.

### More details available from:

AWRA, American Water Resources Association, 950 Herndon Parkway, Suite 300, Herndon, Virginia 22070, Bethesda, MD, 20814. (301)493-8600, fax (301)483-5844.

NGWA, The National Ground Water Association and the Association for Ground Water Scientists and Engineers, 6375 Riverside Drive, Dublin, OH 43017 (614)761-1711.

IGWMC, Institute for Ground Water Research and Education, Colorado School of Mines, Golden, Colorado 80401-1887. (303)273-3103, fax (303)273-3278.

## Inge Lehmann Scholarship

Inge Lehmann was a Danish seismologist who recently passed away. She headed Denmark's seismic agency in the 1920s and discovered the Lehmann Discontinuity. She provides an excellent example of what a woman can do, and what a woman has done, in the geosciences.

Women are under-represented in the earth sciences. The Association for Women Geoscientists (AWG) wants to provide support to an outstanding young geoscientist. Two of AWG's main goals are to encourage women geoscientists and enhance their geoscience careers. Because the grade point averages of those who choose difficult coursework or need to work while attending school may be lower than the grade point averages of those who choose an easier path, such students may not receive the financial aid they deserve. The scholarship will be awarded to an undergraduate student, because less aid is available for undergraduate students. There will be no restrictions on the use of the gift money.

The Minnesota Chapter of AWG will solicit nominations from all geoscience departments in the area served by this chapter: Minnesota, North Dakota, South Dakota, Iowa, and Wisconsin.

The Minnesota Chapter of AWG is currently soliciting donations for this scholarship. All donations should be made out to the AWG Foundation, with the memo "Inge Lehmann" written on the check. Donations are tax deductible and should be sent to the Minnesota chapter at 16526 W. 78th Street #161, Eden Prairie, MN 55346-4358.

For more information, contact Jennifer Baillie, AWG Minnesota Chapter vice-president and scholarship coordinator, Nova Environmental, (612) 440-9393.

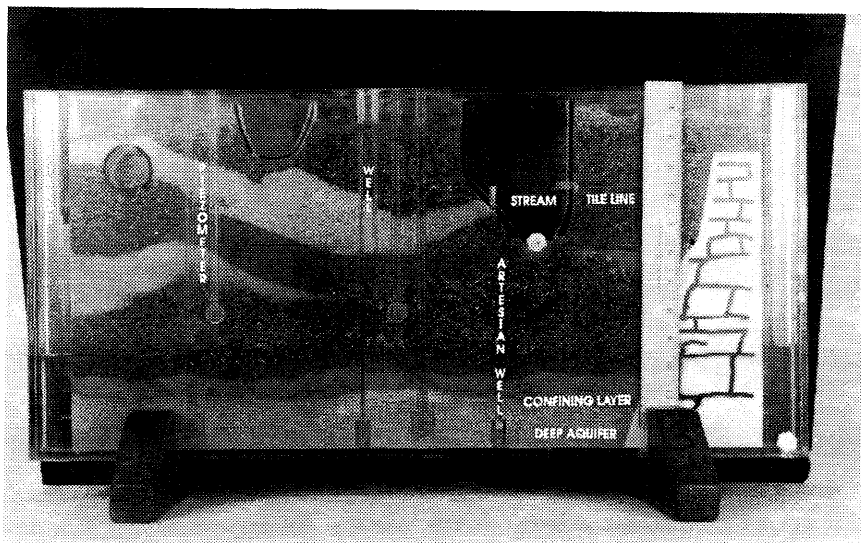


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## MGWA Purchases Ground Water Flow Models

The MGWA has ordered two physical ground water flow models to provide professionals better tools for teaching kids (and adults) about ground water flow. The models are used to demonstrate the basic concepts of ground water flow in porous media and karst environments. They come prepacked with a multi-aquifer system and feature elements that simulate surface water, septic systems and rainfall. Dyes are used to demonstrate the potential pathways of ground water contamination from various sources to wells. The models are the best excuse for playing with sand and water since kindergarten!

The models are the product of a student organization called the Soil and Water Conservation Society at Iowa State University. They will be provided to the Pollution Control Agency and the Department of Natural Resources for their education outreach programs. Call Rich Soule at 627-5054 for further information.



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## MGWA to Cosponsor International Lecturer

MGWA is cosponsoring a lecture by Andras Szollosi-Nagy, Director of the Division of Water Sciences for the International Hydrologic Program of UNESCO in Paris. Mr. Szollosi-Nagy will speak on "New Paradigms of Global Interdependence in Hydrology" at 2:30pm on Thursday, November 10. The lecture will be held in Room 210 of the Civil Engineering building on the University of Minnesota Minneapolis campus. Please contact Pat Brezonik of the University of Minnesota Water Resources Research Center at (612)624-9282 for more information.



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## Join the Minnesota Ground Water Association!

If you are reading this newsletter second-hand, we'd like to take this opportunity to invite you to become a member of MGWA for 1995. Annual dues are \$15 for professional members and \$10 for students. Additional donations toward the use of 100% recycled paper will be gratefully accepted.

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

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Name \_\_\_\_\_

Affiliation \_\_\_\_\_

Mailing Address \_\_\_\_\_

City, State, Zip Code \_\_\_\_\_

Work Telephone Number \_\_\_\_\_

Home Address (optional) \_\_\_\_\_

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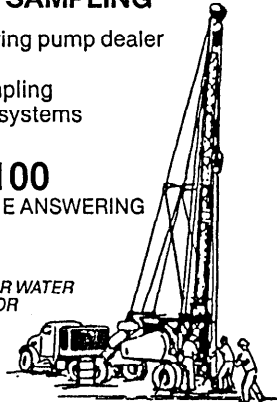
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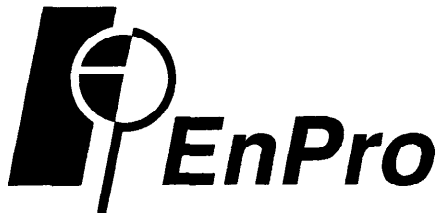
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**OVERLOADED? CONFLICT OF INTEREST?**

**Choosing an environmental consulting firm is much like choosing a business partner. A good partnership is built on shared goals, confidence in capabilities and mutual trust.**

**We know that being good at what we do is only part of our success. Working closely with our clients, keeping their objectives upfront, and offering the best counsel to meet their goals is what gives them the advantage, and us our reputation.**

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## Ground Water Guidebook Available

There are still copies of the Metropolitan Council report *Guidance for Local Ground Water Protection in Minnesota* available.

The Minnesota Ground Water Association printed special copies of the report so that it could be made available at the MGWA Fall Conference.

The remaining copies can be purchased for \$15 each, including postage (inside the U.S.).

Requests can be sent to: MGWA, c/o WRI, 4779 126th Street North, White Bear Lake, MN 55110-5910. Checks should be made out to MGWA.

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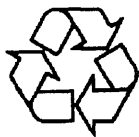
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