

MINNESOTA GROUND WATER ASSOCIATION

NEWSLETTER

v.6 n.2 September 1987

PRESIDENT'S PAGE

Congratulations to Linda Lehman (L. Lehman) and Gordie Hess (Sunde Engineering) who were elected President and Secretary, respectively, of the Minnesota Ground Water Association (MGWA). Thanks to both of them and to Chuck Job (TCT) for allowing MGWA members to consider them at a time when the ground water business is bustling and demands on everyone's time are enormous.

Also may thanks to Jim Stark (USGS), the outgoing secretary. Jim has been the glue that has held everything together at the top. Without the involvement of people such as Jim, the MGWA would cease to function.

Thanks also to Mike Schoenberg (USGS) for his assistance in serving as program coordinator for the last program and to Fritz Ehler (Cray) and Dan Fagnan (Apollo) for their presentations. I think everyone came away with a better understanding of computer workstations and some of the capabilities of supercomputers. Everyone should also have come away with food, too. - there was plenty.

By the time this newsletter gets out, my tenure as President will have run its course. I appreciate the opportunity to have served as President of MGWA for the past year. It has given me the opportunity to meet and work with many of you locally and also with a number of folks from the National Water Well Association (NWWA) and ground water professionals from across the nation who were on various NWWA committees planning the Water Well Expo in Minneapolis September 14 - 16 and ASTM section meeting the 17th and 18th. Our thanks to NWWA and ASTM for including MGWA in the planning and programs.

As of this writing the meetings have yet to occur but both appear excellent and I hope by the time you read this you can look back on them as valuable opportunities to have learned more about what's going on nationally and meet some of the other professionals in the industry.

I encourage each of you to consider membership in the NWWA. The benefits are many and it also sends a message to NWWA about the level of local interest in their programs. This could help (or hurt) as NWWA considers locations for the various excellent training courses, seminars and

ing held here so I think we need to demonstrate our interest.

Speaking of interest, you should notice on your mailing label that there is an expiration date (for your membership, not you). If that date has passed, this is the last copy of the newsletter you will receive until you renew your membership. Considering how hard it is to find hydrogeologists these days I assume you're all working and can afford a paltry \$10.00. In general we have noted that membership dues and participation in MGWA activities is waning. It may be understandable given the current state of activity, however, we're concerned that it may be a lack of interest in MGWA specifically. We don't want to just be filler for your resume, so please let us know if you do not believe MGWA is fulfilling your professional needs for such an organization.

In considering topics for future meetings/programs, we've thought of the possibility that because there is an abundance of educational activity (which was not the case when MGWA began), perhaps we should change the focus of the organization to suit your needs. Please let Linda, Gordie, Jim, Pat Bloomgren or myself know what you think. Perhaps we want to or need to take a more proactive role in some of the issues such as registration/certification, public education, lobbying for ground water programs, etc.

Rick Johnston

PRESIDENT-ELECT'S PAGE

The first thing I wish to do as President-elect is thank all of you who selected me for this position. The vote of confidence is greatly appreciated. As a newly elected officer, I now have a steep learning curve to climb in order to understand the going's on of the organization. Thankfully, you have all shown a lot of willingness to help me in this regard.

As the new president-elect, I am looking forward to achieving several goals during my term of office. These are:

- 1) encourage more student participation
- 2) encourage more socializing after meetings
- 3) continue to provide nationally recognized experts as well as local experts as speakers for our quarterly meetings.

In my opinion, the first goal is crucial to the continued good health of our organization. This is simply because students are the main source of our "new blood". So I attempted to think of some way to generate more interest in MGWA on the part of the students. Remembering how poor I was as a student (you probably were, too), it occurred to me we would have a high likelihood of success by appealing to their pocketbooks - while at the same time offering a professionally stimulating environment. More often than not, students can't afford to attend professional functions which are convened outside their hometown. On the other hand, MGWA frequently has "out-of-town" functions, mainly to allow participation by students at other universities. While this is a good idea for those students, attendance would be a hardship on Twin Cities students. Naturally, it's vice-versa when functions are in Minneapolis. Therefore, what I propose is a Student Assistance Fund designed to sponsor student attendance at out-of-town functions. Obviously, the details remain to be worked out about how to make funds available, and eligibility criteria will need to be developed. But generally speaking, a student who might wish to attend a certain function would first contact his or her advisor. Through the advisor, MGWA would provide money to help offset travel expenses. You've probably already figured out that the source of funds would be through our own donations. (Naturally, I intend to make the first contribution to establish the fund.) Please think this one over. I'll try to come up with a more detailed proposal by the next meeting so we'll have something more than an idea to discuss.

My second goal follows the first. Students and professionals should be encouraged to meet and discuss ongoing work, projects, and fields of study within the hydrogeologic community. In a climate where open and informal discussion is encouraged, benefits will be gained by the hydrogeology professionals and students alike. For instance, the students will become aware of areas where their capabilities may be required upon graduation. This may help them focus on one research effort over another; and clearly will give them contacts in the community where they may look for future employment. The hydrogeologic community benefits by directing student's attention to areas where we see the greatest need. I think socializing after the MGWA meetings can be a good forum for these interactions.

My third goal of providing both nationally recognized and local experts to discuss their work at quarterly meetings is also a priority. Areas where hydrogeologic expertise is required are expanding rapidly. I hope we can continue to provide presentations on a broad spectrum of these areas to MGWA audiences during my term of office.

Well, those are my thoughts on the "things I'd like to see happen next year" department. If anyone has suggestions on implementing any of these goals, please feel free to call on me during work hours at 894-0357. Once again, thank you for the vote of confidence.

Linda Lehman

ELECTION RESULTS

The votes are in!!! Your new officers are:

President - elect: **Linda Lehman**. Linda is President of L. Lehman and Associates. Linda obtained her M.S. degree from the University of South Florida in Hydrogeology and is currently a PhD candidate at the University of Minnesota. She has had extensive professional experience in the field of nuclear and hazardous waste management, including three years with the U.S. Nuclear Regulatory Commission, and as a representative for the State of Minnesota at the National Governor's Association Task Force on High-Level Radioactive Waste Management.

Secretary: **Gordy Hess**. Gordy is a hydrologist with the firm of Jerry Sunde and Associates. He received his B.A. and M.S. degrees from the University of Minnesota and a PhD in Marine Geology from Stanford University. Prior to his current position, Gordy worked for the U.S.G.S. in Menlo Park, California, as a marine geologist.

MEETINGS! MEETINGS! MEETINGS!

There are so many important meetings already scheduled this fall that there is barely room to squeeze in another. In lieu of an MGWA fall meeting, we encourage your participation in both the NWWA meeting, September 15-16, in Minneapolis and the Midwest Ground Water Conference, October 28-30, in Madison. Because of these and other planned conferences, workshops, etc., MGWA has decided to delay our nitrate seminar until the winter. There was quite a bit of interest expressed - watch the winter newsletter for further information.

IMPRESSIVE SPRING MEETING

The MGWA spring meeting was held at the St. Paul VoTec on June 17th. Apollo Computer Inc., represented by Dan Fagnan, demonstrated a high-end workstation. The machine showed what lightning-fast workstations promise for the future - high-speed concurrent processing of tasks with simultaneous display of up to four of them at one time. A more typical current workstation setup was also on display. It was used to demonstrate a hydrogeologic applications program, HYDROPAL, developed by Watershed Research, Inc. The main speaker, Fritz Ehlers of Cray Research, Inc., discussed the manner in which supercomputers will interface with individual workstations to give hydrologists unprecedented number-crunching power.

THE TROUBLE WITH GROUND WATER

Several recent meetings at the MPCA have been related to the development, by an interagency task force, of a ground water protection strategy for the State of Minnesota. The EPA is strongly promoting the use of ground water classification and ground water vulnerability mapping as tools to help focus the implementation of state strategies. The Minnesota group is currently leaning toward some use of a ground water classification system (different than EPA's) based on vulnerability to contamination. A concurrent MPCA project, called Priority Ground Water Designation, is a seed effort, with limited funds, to:

1. determine what data is available for mapping vulnerability,
2. determine the adequacy of this data,
3. what influencing factors not yet digitized are most important,
4. develop and test a methodology for assessing ground water susceptibility to contamination.

Representatives of State agencies and USGS were sent a questionnaire for ranking the importance of physical/hydrogeologic and cultural parameters. Questionnaire results were tabulated, and the factors are listed below in order of importance:

1. Depth to water
2. Distance to any known or potential contamination sites
3. Hydraulic conductivity
4. Soil type
5. Aquifer material
6. Vadose zone material
7. Occurrence of low permeability units
8. Time of ground water travel
9. Net recharge
10. Hydraulic gradient
11. Land use
12. Depth to bedrock
13. Average rate of water withdrawal

On July 18, 1987, the "Priority Ground Water" Committee held another meeting. Physical land resource parameters were taken from this previously ranked list of parameters and ranked separately. The six physical resource parameters through to be the most important indicators of ground water vulnerability are:

Depth to water
Vadose zone material
Hydraulic conductivity
Net recharge
Soil type
Aquifer material

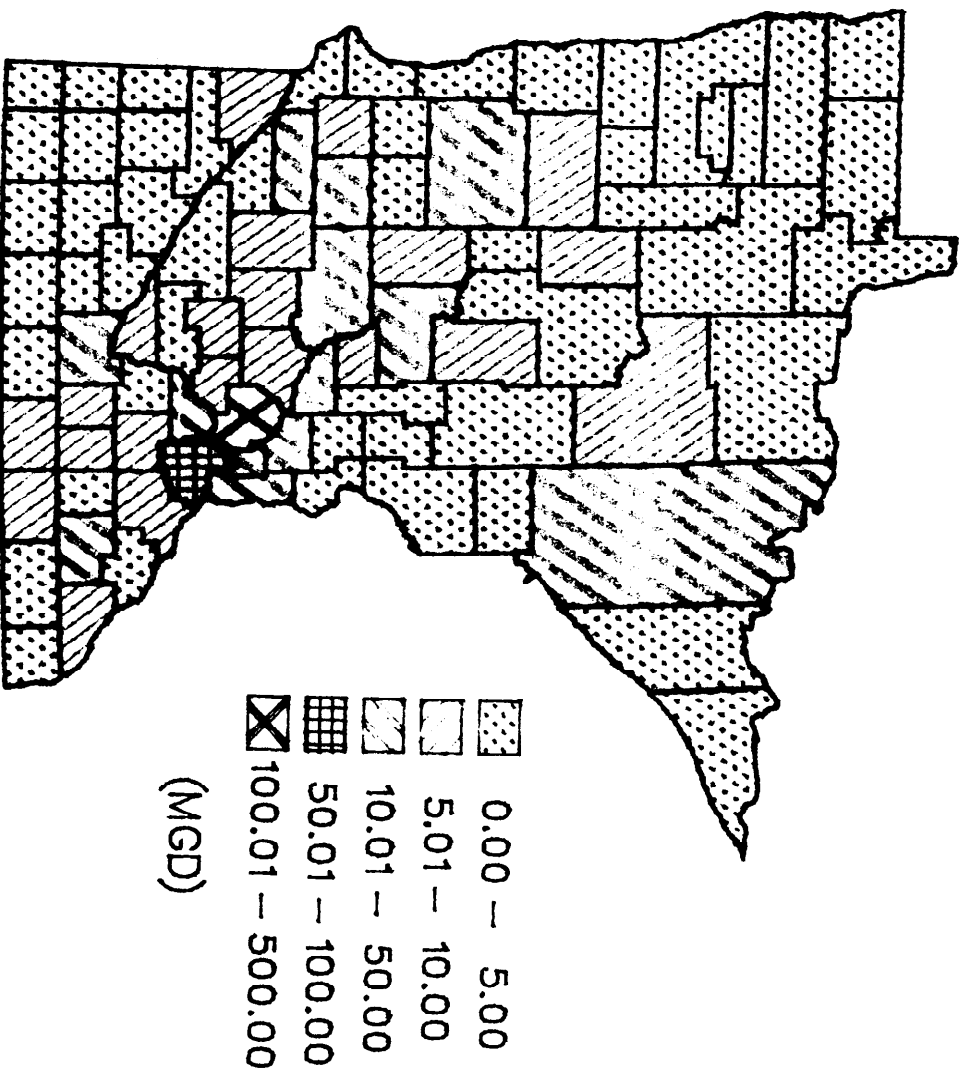
Although ranked highly, hydraulic conductivity was thought to be taken into consideration in some of the other parameters, and thus it was eliminated. Depth to water data is available from many different sources; however, the cost of compiling the data at a usable scale is prohibitive at this time. A net recharge map could be incorporated into this physical/hydrogeologic map if compilation can be funded. MPCA and LMIC will therefore use the ARC/INFO GIS to overlay the best available approximation of soil type, vadose zone material, and aquifer material in the production of a "first-cut" ground-water vulnerability map at 1:1,000,000 (possibly 1:500,000) scale. Cultural parameters may be addressed to some extent in the current project, but could also be expanded on later.

This newsletter invites your comments on these rankings. Comments should be directed to the attention of Lee Trotta (editor). If you prefer, you may contact the MPCA directly on this matter through Eric Porcher (296-7975).

The ground water industry may be affected by these developing policies in several ways. State regulatory priorities may be established based on the maps that will eventually result from this effort. The methods of vulnerability assessment may serve as a guide to local vulnerability and siting studies. It is in our best interest to make sure these methods are fair and scientifically correct.

By Lee Trotta (USGS) and Eric Porcher (PCA)

WATER-USE CORNER



TOTAL GW WITHDRAWAL
in million gallons per day
1985

prepared by Lee Trotta

from DNR/USGS Water Use Program data

CLEAN WATER PARTNERSHIP PROGRAM

Achievement of Minnesota's water quality goals will require a comprehensive water quality program implemented through a coordinated state and local partnership, which provides the flexibility to meet the variety and complexity of problems resulting from nonpoint sources of pollution.

PURPOSE

To protect and improve surface and ground water in Minnesota, through financial and technical assistance to local units of government to control water pollution associated with land use and land management activities.

CLEAN WATER PARTNERSHIP PROJECTS

- Diagnostic Study and Implementation Plans
 - define water quality goals and objective;
 - identify water quality problems and their causes;
 - identify the combination of education, incentives, official controls and best management practices necessary to solve problems, and
 - define project administration and coordination with existing and ongoing land-use programs, controls and activities of local units of government.
- Project Implementation
 - Implementation of activities identified in implementation plan.

A PROJECT

- must be led by a local unit of government with authority to:
 - raise funds,
 - enter into contracts with local, state and federal agencies and organizations, and
 - adopt official controls.
- Local Units of Government include:
 - municipalities
 - towns
 - counties
 - watershed districts
 - soil and water conservation districts (SWCD's do not currently have authority to raise funds or adopt official controls, but can be part of a project through joint powers or contract with other local units of government)
 - organizations formed for the joint exercise of powers under section 471.59, and
 - any other special purpose district or authority exercising authority in water and land resources management at the local level.

- To be eligible, local units of government must submit a project application and one of the following:
 - comprehensive water plan authorized under Chapter 1108;
 - surface water management plan required under section 473.878;
 - an overall plan required under Chapter 112; or until 1991,
 - other local plan that provides an inventory of existing hydrologic information on the area, general identification of water quality problems and goals, and demonstrates a commitment to water quality protection and improvement.

THE CLEAN WATER PARTNERSHIP PROGRAM administered by the MPCA:

- May provide grants for up to 50 percent of the eligible costs of a project, and
- May provide technical assistance with the development and implementation of projects
- The MPCA shall:
 - adopt rules to implement this program;
 - develop a state plan to control nonpoint source pollution in order to meet the requirements of the federal Clean Water Act; and
 - chair an interagency project coordination team.
- The program will be closely coordinated with state and federal programs.

CLEAN WATER PARTNERSHIP PROGRAM is included in the Governor's capital budget and follows the recommendations of the interagency NPS Issues Team Report.

SENATOR DURENBERGER ON STEWARDSHIP AND NATIONAL DEFICITS...

Extracts of a speech given to dedicate the Heritage Center of the Deep Portage Conservation Reserve, June 26, 1987.

The fact that we come together to celebrate this new part of the Deep Portage, ought to be the celebration of man's stewardship - woman's stewardship. It is an important responsibility that each of us takes on when we are placed here on earth. ...From the township supervisors to the county commissioners or the private investors or the public investors ...There is something extra special about the commitment that we make to stewardship.

The Senate is still in session.. we're voting on the Trade Bill because we can't come to grips with a larger problem which is the deficit. The deficit is the \$2.3 trillion gap between society's desire to have and our willingness to pay. There are other deficits.

There's a deficit... in our thinking about our responsibility towards our world around us. I have become sort of an expert at national health policy. I keep trying to explain to people that we're not for getting rid of doctors and hospitals and things like that. We're trying to get back to some basic values. Values like living within your means, taking responsibility for your actions. I am part of a generation which has grown up believing that it can smoke 3 packs of cigarettes a day and be entitled to an artificial heart or artificial lung. I am part of a generation that believes that it is entitled NOT to have to wear a seat belt or a helmet when driving a motorcycle. We BELIEVE that. The deficit is a problem in relation to what I have a right to do, and what I expect you to pick up as your share of the consequences of my actions.

Again, living within your means. I came back from Washington one day and I was bragging about what we had done, this was a couple of years ago. I was down in Rochester bragging what we had done on the budget...I think ..we were working on Gramm-Rudman Hollings. I was talking about the fact that we hadn't gotten rid of the deficit and so forth. I was also talking about the Flood Control Bill. A constituent put the connection between the two of them saying "Here you are back in Rochester bragging about bringing \$60 million in federal money into Rochester for the flood control project, did it ever occur to you Senator that since the first flood in Rochester, came malls, and all kinds of urban development and sidewalks and streets and alleys and asphalt and all that sort of thing"-- he said, "Senator, what about Stewardship?..."

I ask you to reach back and re-examine our mutual responsibility for restoring our values..and to think about what role you and I, .. as people, can do in getting us back to those old values: ...living within your means and taking responsibility for your actions. We'll carry on the fight to balance the budget. We'll carry on the fight to get toxins out of the air; and toxic carcinogens out of the ground water. We'll carry on those fights. But every time we do, something's going to cost money....

I am bound to be the first part of the first generation which will leave its children less well off than its parents. Leave them with burden. It is a burden...My children cannot afford housing. By the time my oldest son retires, the Social Security Payroll tax is going to have to be 31.2%. It's going to take 31.2% of the wages of every worker in this country to support us in retirement. That's the way we've set it up. Cost out acid rain. Cost out smoking and drinking and no seat belts and no helmets and all the rest of these things. Cost them out at \$500 a day in the hospital...at \$140,000 for a transplant.

We are NOT a nation of stewards. We've wasted so many valuable resources, human and otherwise, with the notion that I don't have to live within my means, and I do not have to take responsibility for my actions. Can our generation balance the national budget if it can't balance its own?"

ASK A FRIEND TO JOIN MGWA!

CALENDAR

September 14 - 19 *Hydrology of Wetlands with an Emphasis on Peatlands* contact Dr. Kenneth N. Brooks, Department of Forest Resources, University of Minnesota at (612) 624-2774.

September 15 - 16 *Annual Meeting of the Association of Ground Water Scientists and Engineers - Contaminant Hydrogeology.* Dr. John Cherry will Keynote the conference to be held in Minneapolis, Minnesota.

September 18 - 20 *Fluid flow in fractured media.* To be held in Atlanta, Georgia. Sponsored by the USGS, the Georgia Water Research Institute, and Georgia State University.

September 29 - October 1 *Agricultural Impacts on Ground Water.* To be held in Des Moines, Iowa by AGWSE (NWWA).

September 30 - October 3 *Key problems in Hydrology: Hazardous Waste.* To be held in Atlanta Georgia by AIH, 3416 University Ave. S.E., Suite 200, Minneapolis, MN 55414 (612/379-1030).

October 12 - 13 *Geologic and environmental characterization at hazardous waste facilities and Ground water protection and management strategies.* To be held in Atlanta, Georgia. Sponsored by the Association of Engineering Geologists, co-sponsored by the Georgia Ground Water Association.

October 12 - 14 *Info User's Group, Central Region.* To be held in Champaign Illinois, and to include a tour of the U of I's Supercomputing Center. Contact Sally Denhart, IL State Geological Survey, 615 Peabody Drive, Champaign IL, 61873 (217/333-5102).

October 13 - 15 *Ground Water and Geotechnical Problems Conference.* To be held in Chicago, Illinois by AGWSE (NWWA).

October 19 - 23 *United Nations International Symposium on Ground Water Economics.* To be held in Barcelona, Spain. Contact Curso Internacional de Hidrologia Subterranea, GWE-87, Beethoven 15 3 08021 Barcelona, Spain.

October 21 - 22. *Agricultural Chemicals and Ground Water Protection: Emerging Management and Policy.* To be held in St. Paul by the Freshwater Foundation. Contact Linda Schroeder, Freshwater Foundation, 2500 Shadywood Road, Box 90 Navarre, MN 55392 (612/472-8407)

October 26 - 29 *International Conference on Ground Water Contamination: Use of Models in Decision-Making.* To be held in Amsterdam, The Netherlands. Contact: TNO Corporate Communication Department, P.O. Box 297, 2501 BD The Hague, The Netherlands.

October 26 - 30 *Computer Modeling of Regional Ground Water Flow and Transport.* To be held in Minneapolis. Contact Rite Mendenhall, 500 Pillsbury Drive, S. E. #292, Minneapolis, MN 55455 (612/625-3804).

October 28 - 30 *32nd Annual Midwest Ground Water Conference.* To be held in Madison, Wisconsin. Contact: Alexander

Zaporozec, Wisconsin Geological and Natural History Survey, 3817 Mineral Point Road, Madison, Wisconsin 53705.

November *Ground Penetrating Radar Workshop.* To be held in Gainesville Florida. Contact: Gregg Schellentrager, 401 S. E. First Ave., Room 248, Gainesville, Florida 32601.

November 1 - 6 *23rd Annual AWRA Conference - Averting Water Crises and Symposium - Water Resources Problems Related to Mining and Energy: Preparing for the Future.* To be held in Salt Lake City, Utah. Contact: Dr. Alten B. Davis, Department of Political Science (1203), Weber State College, Ogden, Utah 84408.

November 4 - 6 *Petroleum Hydrocarbons and Organic Chemicals in Ground Water.* To be held in Houston, Texas by NWWA.

November 9 - 12 *NCGA's Mapping and Geographic Information Systems '87.* To be held in San Diego, California by the National Computer Graphics Association. Contact: NCGA, 2722 Merrilee Drive, Suite 200, Fairfax, Virginia 22031.

November 19 - 20 *20th Annual Water Resources Conference - Stormwater Management: Policy and Practice.* To be held at the University of Minnesota. Contact: Cheryl Jones, University of Minnesota, 315 Pillsbury Drive, S.E., Minneapolis, Minnesota 55455 or call 1-612-625-9516.

February 8 - 10, 1988 *Fluid flow in fractured media.* International conference in Atlanta sponsored by USGS, the Georgia Water Research Institute, and Georgia State University.

February 16 - 18, 1988 *Ground Water Geochemistry Conference.* To be held in Denver, Colorado by NWWA.

March 20 - 23, 1988 *AAPG Annual Convention.* Contact AAPG Convention Department, P.O. Box 979 Tulsa OK, 74101-0979.

June 21 - 24, 1988 *Canadian/American Conference on Hydrogeology: Fluid Flow, Heat Transfer and Mass Transport in Fractured Rocks.* To be held in Banff, Alberta, Canada, cosponsored by NWWA's AGWSE.

August 28 - 31, 1988 *Symposium on Water-Use Data for Water Resources Management.* To be held in Tucson, Arizona by AWRA.

For information about meetings and seminars to be held by the NWWA, contact NWWA at 6375 Riverside Drive, Dublin, Ohio 43017 (614) 761-1711, Telex 241302.

KEEPING UP WITH CHANGES

WILLET TO HEAD MPCA

State Senator, Gerald Willet, a Park Rapids DFLer, has been named as commissioner of the Minnesota Pollution Control Agency. Governor Perpich appointed Willet to replace Tom Kalitowski who has been named to the Minnesota Court of Appeals. The appointments are effective November 15, 1987.

Willet, chairman of the Senate Environment and Natural Resources Committee, is viewed as a strong environmentalist and proponent of laws which protect the state's environment. He has sponsored environmental laws including measures to control acid rain and water pollution, stem agricultural erosion and better manage state timber lands.

Willet will be the eighth person to hold the MPCA job. The agency celebrates its 20th anniversary this year.

NORTHERN ENGINEERING AND TESTING TEAMS WITH TWIN CITY TESTING

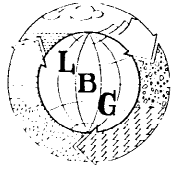
Twin City Testing Corporation announces the recent acquisition of Northern Engineering and Testing, Inc. (Northern) by Huntingdon International Holdings. Northern, which is headquartered in Boise, Idaho, was founded in 1958 and provides construction materials testing, quality control, geotechnical engineering, construction management, hydrogeology, and solid and hazardous waste consulting in five northwest states. Richard Kanemasu will continue in his position as President and Director, and no other changes in personnel or services are planned at this time.

The addition of Northern to the Huntingdon International Holdings Group gives national clients improved service and access to a broader range of technical expertise which is available across the northern half of the United States. The Huntingdon Group consists of Twin City Testing Corporation and its affiliates Lakehead Testing Laboratory, Duluth Minnesota and Nebraska Testing Laboratory, Omaha Nebraska; Huntingdon Analytical Services, Middleport, New York; and Northern.

JOB ANNOUNCEMENT

EXECUTIVE DIRECTOR, Zumbro/Root River Area Water Quality Task Force. This Task Force serves the nine counties in Southeast Minnesota. Requirements: degree in one of the following: planning, natural resources management (water-related), administration or related field, five years experience in one or more of the above areas, demonstrated environmental health perspective, experience in financial administration; demonstrated leadership in group settings; working knowledge of boards and committees; rural and city experience and perspective; experience in long range planning and research; excellent communication skills. Salary commensurate with experience. Submit application and resume, including salary history by September 15, 1987 to Search Committee, Zumbro-Root River Area Joint Powers Board, Winona County Planning Department, Winona County Courthouse, Winona, Minnesota 55987. An Equal Opportunity Employer.

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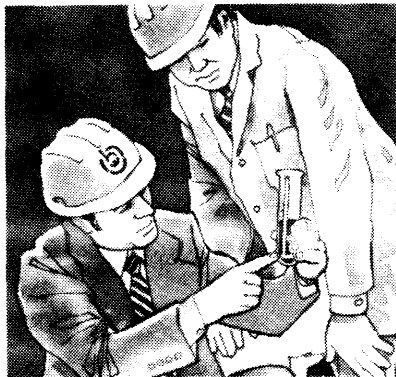
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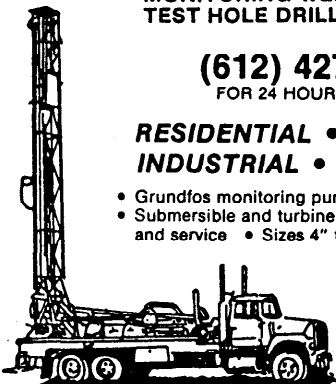
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