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## Wydoski Sent To Atoll To Assist in Cleanup

### Spill assessed on Diego Garcia

The U.S. Geological Survey is assisting the U.S. Navy Public Works Department in assessing a fuel spill on Diego Garcia, a small atoll in the Indian Ocean south- southwest of the tip of India. The Survey is studying the fuel spill and will advise the Public Works Department on the most effective cleanup techniques.

As part of the cleanup effort, the National Water Quality Laboratory, at the request of the Hawaii District, sent Duane Wydoski to Diego Garcia to help with chemical analysis using a field gas chromatograph (GC) equipped with a photo-ionization detector (PID). The on-site GC/PID is used for real-time determination of volatile organic compounds in water samples.

The first phase consisted of collecting field data between January 18 and February 23, 1993. Wydoski plans another trip this summer following completion of three recovery wells.

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## Barbash Lauds Results of EPA Evaluation of Lab

### Thanks for a job well done!

Jack E. Barbash, a member of the National Synthesis Team for Pesticides, has congratulated the NWQL after reviewing results from the latest U.S. Environmental Protection Agency (USEPA) performance evaluations (WP 029 and WS 031). Barbash, a USGS chemist in Menlo Park, California, says he was "impressed with how well the NWQL did during the evaluations."

In a note to Nancy Driver, chief of the Quality Management Group, he said the Laboratory staff should be pleased with the high proportion of acceptable results and "the apparent success with which you managed to identify the problems that gave rise to the relatively small number of unacceptable results." Said Barbash: "I know from the results of our own USEPA performance evaluations at the commercial analytical laboratory where I used to work that neither of these outcomes is easy to achieve."

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## Liaison Work Group at Water-Quality Specialists' Meeting Defines Goals

Co-chairs Bob Williams and Rick Iwatsubo are leading efforts to enhance communication between the NWQL and its customers. Williams, assistant chief of the Laboratory, and Iwatsubo, hydrologist in the California District, are spearheading an effort to define and recommend specific objectives for improving liaison.

One suggestion would bring each District water-quality specialist to the NWQL for one week to work with Laboratory personnel and learn about issues of mutual interest. Another suggestion promotes seminars by District personnel at the Laboratory (see article titled "Seminars Launched,"). Likewise, NWQL personnel would visit Districts to make presentations.

In addition, NWQL staffers would assist Districts for a day or two to help on projects. Longer term commitments could be used to help co-author reports with District personnel. The idea is to promote interaction and problem-solving, said Williams.

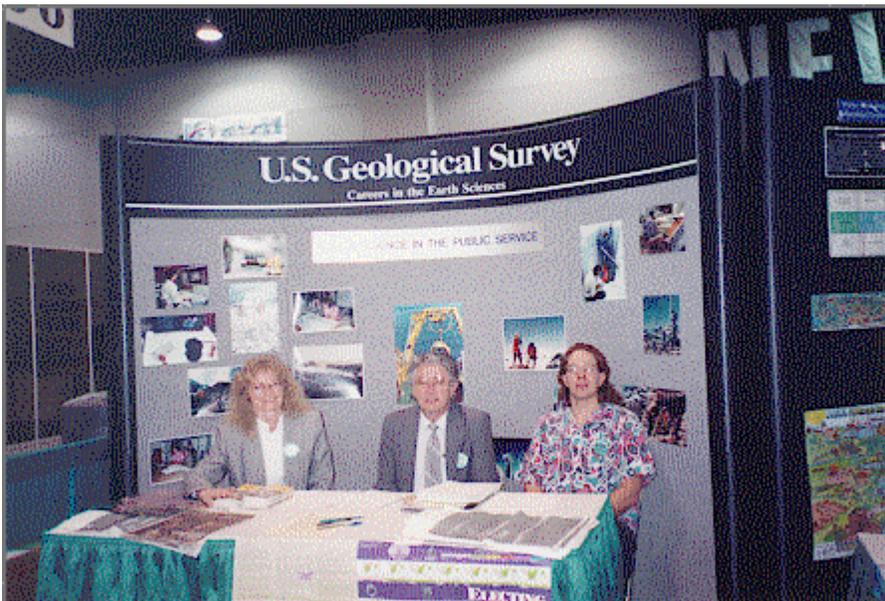
Moreover, the NWQL is setting up a new continuum called LABNEWS. The continuum will contain information to assist the Districts when using NWQL services. For example, changes in the Laboratory Services Catalog will be noted in the continuum. Also in production is an analytical services manual by Linda Pratt designed to supplement the recently published 1993 NWQL Services Catalog.

## News4 Education Expo--Making the Choice

Seven staffers from the Laboratory assisted Mary Krupa of the Administrative Division in representing USGS at the KCNC-TV Channel 4 Education Expo, March 19-21, at the Colorado Convention Center in Denver.

Helping out with the Survey's exhibit were Bruce Anderson, Allen Bumgartner, Ron Brenton, Jacqueline Farrar, Suranne Horodyski, Sharon Johnson, and Tammy Thompson. They explained the mission of USGS, promoted education in science, and reviewed coop programs in the Survey.

The News4 Education Expo brings together the education and business communities with parents and students to share ideas on what is working in education. Hundreds of exhibits, along with workshops and entertainment, represented an array of cultures and diversity and involved all areas of education from preschool to lifelong learning.



**Promoting Science –** Karen Rominger (Administrative Division, Central Region), Ron Brenton (Organic Chemistry Program, NWQL), and Alan Bumgartner (Liquid Chromatography, NWQL) recently promoted science in education and explained the mission of USGS at the Education Expo in Denver.



**Education Expo –** Mary Krupa (left) and Karen Rominger, Administrative Division, Central Region, share a brief respite while representing USGS at the Colorado Convention Center.

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## Seminars Launched

A series of impromptu seminars is underway at the Laboratory. Recent speakers include the following: Carl Harris, Jeff Litteral, and Donna Milne, Low Ionic Strength Unit, NWQL, made a presentation March 1 titled, "The Determination of Trace Elements by Inductively Coupled Argon Plasma Spectrometry with an Improved Ultrasonic Nebulizer." Doyle Stephens, hydrologist, Utah District, spoke March 10 on "Selenium in the Green River Drainage."

Charles J. Patton, chemist with the Methods Research and Development Program, NWQL, spoke March 26 on "Improved Kjeldahl Digestion Methods To Determine Nitrogen and Phosphorus in Natural-Water Samples." Dr. Janusz Pawliszyn, associate professor, University of Waterloo, presented a seminar April 2 titled, "Theoretical and Practical Aspects of Solid Phase Micro-extraction with Thermal Desorption Using Coated Fused Silica Fibers"; and Mike Land, San Diego Sub-district, May 11, "Description of the San Diego Geochemistry Laboratory."

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## QMG Chief Nancy Driver Accepts New Position with NAWQA Program

Nancy Driver, chief of the Quality Management Group (QMG), has been selected project chief of the Upper Colorado River study for the National Water-Quality Assessment (NAWQA) program. Colorado District Chief David J. Lystrom, who made the announcement March 15, said Driver will report officially about October 1.

Lystrom said he was pleased to welcome "Nancy back to the Colorado District." She had served as a hydrologist in Colorado for 9 years. Prior to heading up QMG at the National Water Quality Laboratory in 1991, Driver served as Investigative Studies chief for the Wyoming District and worked for the National Park Service.

Driver says NAWQA represents an exciting challenge. The long-term goals of the NAWQA program are to describe the status and trends in the quality of a large, representative part of the Nation's surface- and ground-water resources. In addition, the program is expected to provide a sound, scientific understanding of the primary natural and human factors affecting the quality of these resources. In meeting these goals, Driver said the program will produce a wealth of water-quality information that will be useful to policymakers and managers at the national, state, and local levels.

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## Quality Control in the Inorganic Program

Ed Zayhowski, supervisor of the Plasma Unit, recently attended the 19th Annual Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies. Zayhowski presented a paper he co-authored with Tom Bushly, the Inorganic Program's computer engineer, and with Chris Gable, entitled "Quality Control Procedures for Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES) at the National Water Quality Laboratory."

Zayhowski said that in 1991, the NWQL performed several levels of quality control in analyzing about 14,000 natural-water samples for more than 130,000 analytes by ICP-OES. Advances in computer technology have helped to improve productivity and incorporate quality-control procedures with fully automated sample analysis without sacrificing the quality of data. On-line quality control for the Inorganic Program consists of calibration check standards, blanks, and Standard Reference Water Samples from the USGS Branch of Quality Assurance (BQA) and the National Institute of Standards and Technology.

In addition, the analytical results are run through an ionic check program by the Quality Management Group (QMG) before release to the customer. The on-line quality-control data are reviewed periodically by all sections to identify trends and evaluate potential inconsistencies in reference materials. The QMG and the BQA independently submit blind samples to sections of the Inorganic Program to monitor quality control and to ensure that analytical results are of the highest quality.

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## Profile: Deborah Treseder

The new administrative officer for the NWQL is Debi Treseder. Debi started her career with the USGS/WRD in Anchorage, Alaska, in 1984. She transferred to Boise, Idaho, in 1988. She served as administrative officer in both Districts.

Prior to USGS, Debi worked as an administrative officer for 6 years with the U.S. Fish and Wildlife Service in Anchorage and in Ann Arbor, Michigan. She also worked in several support areas in Washington, D.C. and in southwestern Virginia.

Debi is an avid skier and enjoys traveling, but has little time to do either with job and family requirements. She is married to Keith and has one son, Benjamin, 4. Debi says she enjoys working for USGS and hopes to have a fulfilling career with the Division and the NWQL.



*Treseder*

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## In-house Rerun Program

The Quality Management Group (QMG) at the NWQL is currently making use of the new distributed information system by providing reports on the day-to-day processing of samples and by developing an automated system for processing District rerun requests.

When a first-time sample fails a quality-control check and QMG determines that a rerun is necessary, a rerun of the sample is ordered to see if the value for the first analysis can be repeated or if a logical reason can be determined for the value obtained. The QMG established a computer-tracking system to allow its data review personnel to produce reports on the processing of rerun samples. The system tracks the samples from time of request to time of completion of the analysis.

The QMG personnel can now directly import reports on the current state of in-house rerun samples in the laboratory. This procedure saves time because data residing on the Laboratory Information Management System can be directly imported into the data base on a personal computer without manual data entry.

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## New Systems for the Administrative Office

Four new systems, including a Data General Aviiion 530 server and three DG Aviiion 300 workstations, have been configured and installed by Ken Price in the NWQL Administrative Office. The 530 was installed as the server for AIS, the new Administrative Information System replacing the Administrative Financial Management System. These additions bring the total number of DG systems in the Administrative Office to five.

Price, a computer specialist with the Laboratory Data Systems Development Team, says these new systems will run the AIS software, as well as FrameMaker for word processing. They will also run several network communication packages so that Administrative personnel can continue to access Prime and the Amdahl system in Reston.

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## Trace Metals Unit Adds New Instrument

The Trace Metals Unit recently added a transverse heated graphite atomizer (THGA) atomic absorption spectro-meter, according to Sandra Jones. The newly developed furnace differs from the heated graphite atomizer (HGA) furnace in that the graphite tube is heated transversely, the tube design is changed, and inverse longitudinal Zeeman (ILZ) effect is applied.



**Mirror Image** – Analyst Sandra Jones, Metals Unit, uses mirrors to view a water sample that is being injected into the graphite tube of a new atomic absorption spectrometer. The new furnace features a transverse heated graphite atomizer that produces a highly stable environment for atomizing various elements.

The transverse heating and accommodating tube design used in the THGA instrument provides a uniform temperature distribution over the entire tube length, thus producing a more stable environment for optimum atomization of various elements. The design also results in lower atomization temperatures, improving efficiency. Elements such as chromium,

nickel, and cobalt, which require high atomization temperatures (about 2,400-2,600°C by the HGA), are reduced by 300 to 500°C. The ILZ effect offers an alternative method of background correction and results in low signal-to-noise ratios and detection limits.

Because of these new features and the numerous elements determined by THGA atomic absorption spectrometry, Al Driscoll, supervisory chemist, says the Trace Metals Unit developed new furnace methods for the instrument. Comparison studies were carried out between the THGA and the HGA, as well as precision and accuracy studies with Standard Reference Water Samples, samples, and spikes. Driscoll calls the new instrument a "welcome addition to the Laboratory."

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## Bar-Code Update

Several members of the Laboratory Data Systems Development Team, National Water Information System-II group, and the NWQL Log-in Unit have been setting up bar code standards and procedures for use with NWIS-II and the NWQL. The Water Resources Division will use bar codes to track samples from the field through the Laboratory. The plan calls for the Districts to produce and apply the bar code labels. Eventually, bar code labels will be applied to sample bottles by the NWQL before bottles are sent to the field.

Matching bar codes will appear on the bottle labels, the Analytical Services Request (ASR) form, and the electronic ASR. Tests have shown that WRD can use FrameMaker to print bar codes and use a hand-held scanner to read them. Testing is still underway.

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## Chemists Develop Course

Ralph White and Ron Brenton have met with teachers from Wheat Ridge and Jefferson High Schools to assist in the development of an environmental science course. Water is one of about eight subjects that the course would include. The two NWQL chemists are helping to gather reference materials on hydrology and water quality for teachers to use in the course. White says he and Brenton provided "enough information to make water the only subject for the year." Other plans under consideration include student tours of the NWQL and visits to a field site in the Colorado District.

Four area high schools will take part in the new environmental science program. The schools already have a cooperative agreement with Red Rocks Community College in Lakewood. White and Brenton are excited about helping the students and providing a supportive role on behalf of the U.S. Geological Survey.

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## QMG Automates QC Data

The future plans of QMG are to move the data base of the new and current systems to the Data General server. Ingres provides a uniform and easy access to all users in the NWQL. Plans include the automation of on-line QC data and known standards information to produce QC charts. Through automation, staff can be assigned to other projects.

### Newsletter Staff

Jon Raese, Editor

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