

## Progress Report on New Laboratory Building

Work on the new building for the National Water Quality Laboratory is proceeding on schedule with an estimated completion date of March 1996. The site is at the Denver Federal Center.

The new Laboratory is being designed by CRSS Architects of Houston; through the General Services Administration, they have been working closely with NWQL personnel to develop a facility that is both functional and aesthetically pleasing. As planned at present, the new Laboratory employs a two-story design, with separate wings to facilitate materials flow and interaction among the programs.



**CRSS Architects of Houston** developed this sketch of the proposed new building for the National Water Quality Laboratory. Completion date is slated for March 1996 at the Denver Federal Center. Estimated cost is \$22.5 million. Staffers are excited about the prospects of moving out of a renovated warehouse and consolidating analytical operations in a modern facility.

To promote flexibility and allow for expansion, the new building is based on a modular design that will allow for laboratories to be expanded or altered as needs of the Water Resources Division may dictate. The NWQL will have the flexibility to change and provide new or different analytical services.

Thanks to an ambitious grounds and services improvement program under-way at the Denver Federal Center, it is likely that the new Laboratory will have easy access to an entrance gate and will be set in pleasant and well-maintained surroundings. GSA has been in constant contact with USGS personnel to ensure that the Survey's needs and requirements are satisfied in the new facility.

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## Maloney QMG Acting Chief

Tom Maloney started a 3-month detail June 21 as acting chief of the NWQL's Quality Management Group while Nancy Driver is on extended leave. Maloney directs the blind sample project for the Branch of Quality Assurance.

# Dirty Fingers

## Exploring the Roots of Contaminated Water Samples

Samples may be contaminated more easily than one can imagine. An informal study of this potential problem was conducted by the NWQL. It included six elements that were analyzed by graphite furnace atomic absorption spectrophotometry.

Sample contamination is simulated in the following story. An accompanying table of results lists various examples of sample contamination as well as an uncontaminated control sample.

Once upon a time in a land not so far away lived a person named "Homer," who worked for a busy water district. He collected many water samples from rivers, streams, underground sources, and storm drains. Homer was an extremely busy man and often had to eat on the run. Being busy meant money in his pocket.

One day he collected water from a drinking-water source with strict low-level regulations for heavy metal contaminants. It was one of many sites to sample. On the way to the site, his vehicle broke down, and he had to work on the engine. With time passing, Homer, aware that he had a deadline to meet, decided to eat his lunch (consisting of an Italian sandwich and potato chips) while driving.

Finally, he arrived at the first site and began the sample-collection process. As he poured the collected samples into their appropriate sample bottles, his hand slipped and was caught under the flow. Oops, no big deal. The day passed and he completed the rest of his many collections.

The collected samples were delivered quickly to a laboratory for analysis. "Bart," also a busy person, analyzed samples at the laboratory using graphite furnace atomic absorption spectrophotometry. He also had strict quotas to meet. His analyses included six elements in which low-detection limits were achieved.

As Bart was pouring the samples into small 2-mL vials, he brushed his pinkie on the edge of the sample. Oops, no big deal.

As lunchtime approached, he quickly ate his sandwich and decided to purchase some chips; he pulled some change from his pocket and made the purchase. After his quick lunch, he had to change the argon tank before he could analyze the samples. He then poured the standard solutions and quality-control checks while accidentally brushing against another sample. Oops, no big deal, or was it?

Results of Homer's and Bart's mishaps are listed in the accompanying table. The NWQL found that water collected by Homer and analyzed by Bart most likely would not meet strict U.S. Environmental Protection Agency regulations. Oops, some big deal!

Water-sample collection results—An informal study  
(Results reported in micrograms per liter; mL, milliliters; <, less than)

Description*	Ag	Ni	Co	Cd	Pb	Cu
Uncontaminated control sample	< 0.1	0.4	< 0.1	< 0.1	< 0.1	0.1
Field contamination (clean hand contact to sample flow into 200-mL flask)	< 0.1	0.2	< 0.1	0.2	0.8	1.7
Field contamination (same as above except after eating and handling metal objects)	< 0.1	2.0	0.6	0.3	2.1	9.3
Finger contact to rim and spout of sample bottle	< 0.1	0.8	< 0.1	< 0.1	< 0.1	6.1
Laboratory contamination (fingertip contacts sample meniscus of 2-mL vial)						
Clean hands	< 0.1	3.6	0.2	0.6	1.4	3.5
After eating	< 0.1	19.8	0.2	2.6	10.6	30.1
Coins in pocket	< 0.1	17.8	0.1	0.7	13.0	298.0
Tank / regulator change	< 0.1	10.7	0.1	4.8	32.4	178.0

\* Standard Reference Water Samples also were analyzed and were well within their ranges.

Haste makes waste: wasted time, wasted studies, and wasted money. Remember, ignorance or carelessness is the root of all contamination.



by Sandra Jones

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## LABNEWS Is Good News

A new continuum named LABNEWS has been established by the Laboratory on QVARSA, the Prime network hub in Reston. The continuum contains information related to interactions between the NWQL and the Districts. Examples of topics include corrections to the NWQL Services Catalog, announcements of new schedules, and sample-result delays because of problems with sample analysis.

LABNEWS is designed to help improve communication between the NWQL and WRD personnel. If our readers have comments concerning LABNEWS or topics for discussion in LABNEWS, contact Bob Williams (EDOC BOBWILL), assistant chief, NWQL, with your ideas.

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## Seminar Speakers Listed

Dr. Youry Sadovnikova, Russian Ministry of Agriculture, "Reclamation of Agricultural Soils Adjacent To Chernobyl," July 15; Drs. Ludmila Sadovnikova and Yona Ammosova, Moscow State University, "Heavy Metal Concentrations in Soils Related To Local and Global Pollution and Humic Substances Studies in Russia," July 14; Ed Furlong, Methods Research and Development Program, NWQL, "Mass Spectrometry of Chlorophyll Degradation Products from Lacustrine Sediments," June 23; Jamie Norvell, Oklahoma District, "Mobilization of Arsenic and Uranium in the Central Oklahoma Aquifer," June 15; Eric DeCarlo, University of Hawaii and USGS, "Analysis of Trace Elements in Estuarine Sediments, Hawaii, as a Result of Nonpoint Source Pollution," June 4; and Frank Wells, Texas District, "NPDES Sampling Equipment and Interpretation of NWQL Data," May 19.

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## New Staffers Join Administration

Two experts in budget matters have joined the Administrative Services Group. Merilee Bennett, budget analyst, comes to the Laboratory from the Western Regional Office; Kiera Wood, budget assistant, is from the Idaho District.

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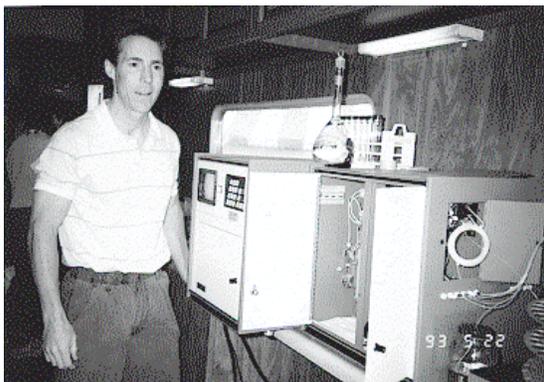
## 14 Detailees Assisting NWQL

Personnel from several District offices are working at the NWQL this summer for 2- to 3-week periods until the end of the fiscal year. The following detailees are assisting various groups and programs throughout the Laboratory: Perry Draper, Scott Prinos, and Steve Tarte, Illinois; Clydeen Logan, Pat Rassmussen, and Deneise Schneider, Kansas; Aimee Haliday, Kentucky; Todd Dewitt and Jeff Walters, Michigan; Alex Breitmietz, Minnesota; Armando Robledo, Nevada; Kathryn Kariouk, New Jersey; LeAnn Alf and Bob Goemaat, Oklahoma.

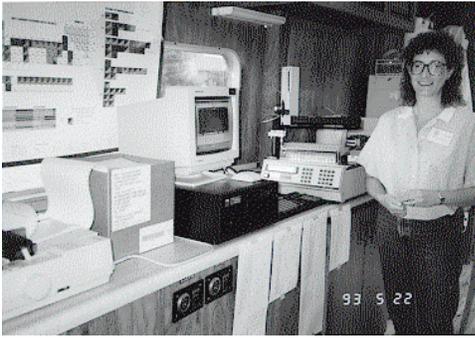
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## Lab Provides Speakers, Exhibits for USGS Open House

Several thousand visitors, including middle and high school students, the general public, and Federal employees, attended the USGS Open House, May 21-23, at the Denver Federal Center. Various exhibits and presentations served to explain the USGS mission and the Survey's involvement in the scientific community. Some of the NWQL participants are shown in the following photographs.



**Dissolved Organic Carbon Analyzer** – Mark Woodworth, physical science technician in the Carbon Unit, demonstrates the use of an ultraviolet light that helps to oxidize carbon to carbon dioxide. The instrument is used to determine organic carbon in filtered water samples. The exhibit was part of the NWQL display at the recent USGS Open House.



***Ion Chromatography*** – Pat Alex, physical science technician in the Majors Unit, explains the use of ion chromatography, which is used to determine fluoride, chloride, and sulfate in water samples. The NWQL exhibit was one of several representing the Inorganic Program at the USGS Open House.

## Wheels Always Turning for Multifaceted Chief

Pete Rogerson is a man whose cerebral and bicycle wheels are always turning. He describes himself as a professional scientist, specifically a chemist, and it is to this quality that he attributes his ability to head the Branch of Analytical Services. Yet even the casual observer will notice that other qualities make up his composition, qualities such as leadership, cordiality, and vision.

As a scientist, Pete has been listed in *Who's Who* (or, as he drolly refers to it, "Who Cares?"). He came to Colorado 6-1/2 years ago from the East Coast where he was a chemist with the U.S. Environmental Protection Agency. He says his scientific background enables him to solve Laboratory problems in context. Yet he admits being chief of the National Water Quality Laboratory with a scientific bent has one drawback--he never gets to use the wonderful high-tech equipment he orders. "Is he all science?" you may be asking. "What does one so ensconced in a scientific self-image read?" Why, science fiction, of course!

Pete's professionalism is not all that propelled him into the chief's chair. Since childhood, he has been encouraged to lead, and he likes it. Even while bicycling for health and recreation, his co-enthusiasts report that Pete prefers to lead and sets a swift pace. He came directly into the Laboratory as head and sole member of the Methods Research and Development Program. He soon built a compatible team of professionals. And though he didn't plan for his career to drift in such a direction, he was made assistant chief and then chief of BAS. Folks seem to have a great deal of confidence in him.

And why not? The laws of nature dictate that you get back what you put in, and Pete's style is to trust people. He expects much from his staff because he is confident they are capable of much. He promotes equal opportunities for all employees; his technicians as well as his supervisors have access to his office to present concerns or suggestions. Pete recognizes and respects the complexity and uniqueness of the individual. On his office walls hang a painting by his grandfather and a hand-stitched quilt by Bonnie, Pete's wife and commensurable half. Both artists are professionals in other fields but exhibit many talents.

Pete carries the recognition of diversity into the Lab. Knowing that all work and no play render a work force brain dead, he advocates an occasional day of R&R and participates with his crew. His persistent contribution to the potlucks is Ben & Jerry's ice cream; he chipped in munificently and devoured his share of pizza for the East Lab Open House; he lustily cheered the Colorado Rockies during our afternoon game outing; he wore his fireman's equipage (he's a volunteer with the Lookout Mountain District) to the Halloween party. What will he think of next?

As a visionary, Pete dreams of heading a National Water Quality Laboratory to rival Hewlett-Packard's Lab of the Year. He thinks we can do that by 1997, after the new Laboratory is finished at the Federal Center. In his immediate personal future, he will spend vacations in Canada in the cabin that he and Bonnie are constructing at this printing. They will also ride several cross-country bike trips, probably visiting their three grown daughters on the way. And "one of my life goals is to get sick of skiing," says Pete, so we may rest assured he will be working on that goal in his "spare" time. Whatever the activity, Pete will head it with gusto.



Pete Rogerson



Karlin Allen

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## Majors Unit Studies Ion Chromatography Methods

Gary Cottrell and Pat Alex of the Majors Unit, in cooperation with Charles Patton of the Methods Research and Development Program, are evaluating various analytical methods for the detection of fluoride, chloride, and sulfate. The current ion chromatography (IC) method, which tests for fluoride, chloride, and sulfate, is being compared to a different IC method that would analyze for chloride and sulfate. In addition, chloride is being run colorimetrically, and fluoride is being tested by ion selective electrode.

At the conclusion of this evaluation, all data for each method will be compared for speed, durability, accuracy, precision, detection limits, and other criteria to determine the best method or methods that suit our customers' needs. The NWQL is trying to increase the quality of analytical data while keeping costs and turnaround time to a minimum. For related information on this subject, see NWQL Technical Memorandum 93.03 (Change in Method for the Determination of Chloride in Water Due To Data-Quality Problems).

### Newsletter Staff

Jon Raese, Editor

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