



NWQMC
NATIONAL WATER QUALITY
MONITORING COUNCIL

Working Together for Clean Water

Methods and Data Comparability Board

Across the Board

A Newsletter of the Methods and Data Comparability Board

Vol. 2, No. 1
Spring/Summer 2004

The Methods and Data Comparability Board is a partnership of water quality experts from federal agencies, tribes, states, municipalities, industry, and private organizations. The Board, and its parent organization, the National Water Quality Monitoring Council (NWQMC) are sub-groups of the President's Advisory Committee on Water Information (ACWI). ACWI was chartered in 1997 under the Federal Advisory Committee Act (FACA). The National Council and the Methods Board are multi-agency groups charged with developing a voluntary, integrated, and nationwide water quality monitoring strategy. The Board's goal is to identify, examine, and recommend water quality monitoring approaches that facilitate collaboration among all data-gathering organizations and yield comparable data and assessment results.

STORMWATER INTERCALIBRATION EXERCISE FOR METALS AND NUTRIENTS

Study conducted by Southern California Coastal Water Research Project (SCCWRP)

by **Andrew D. Eaton, Montgomery Watson Laboratories**

One goal of the Southern California Stormwater Monitoring Coalition (SMC) is to compile monitoring data from separate programs to make region-wide assessments. This task has been difficult thus far because the various monitoring programs have different project goals and objectives, mandates from regulatory agencies, sampling designs, and laboratory analytical methods. To address the issue of comparability in results, SCCWRP conducted a multi-phased intercalibration study among 11 laboratories conducting routine stormwater monitoring in Southern California to determine the variability among laboratories and to find ways to minimize it for metals and nutrients.

Initially, all participating labs met to discuss target analytes and agreed-upon reporting limits that would meet discharge limits. Following this step, a Proficiency Test (PT) sample was prepared and there were also simulated urban and rural runoff samples. Each sample was analyzed in triplicate by each lab to determine initial inter- and intralab variability. The initial round showed that for many of the constituents agreement was excellent (<20% Relative Percent Difference (RPD)), while for some of the metals and also for Total Kjeldahl Nitrogen (TKN) and Total Phosphorus (T-P) the variability was much worse (>100% RPD in the case of T-P) in the simulated runoff samples (though not in the PT sample). This was traced

mainly to issues of sample preparation techniques by the labs with the high solids samples, leading to inconsistent interlab results. Following another meeting to resolve these issues and develop guidance for consistent sample preparation, a second intercalibration round was conducted and in general results were improved. It was still clear that there were significant problems with consistency of results for T-P and to a lesser extent TKN. To help resolve these issues, samples were sent to Charlie Patton of the U.S. Geological Survey (USGS) as an outside referee lab. Patton's results were very precise, regardless of the analytical method he used, demonstrating that laboratories doing T-P and TKN analysis of stormwaters still need to spend further effort on standardization, and stormwater data reported for these constituents may be of limited value for modeling or other requirements for very precise and accurate data. Additional intercalibration exercises are planned for all labs doing stormwater monitoring in Southern California on behalf of members of the SMC.

Complete results of the study are available in a series of documents being prepared for the SMC. These include: Stormwater Monitoring Coalition Guidance Document (2004) and Intercalibration of Stormwater Analytical Laboratories Throughout the Southern California Region (2004), both available as draft manuals through SCCWRP.

Report from the November 2003 meeting of the Methods Board, Albany, NY

Focus on collaborations, new technologies, and workshops on method comparability and rapid warning using National Environmental Methods Index — Chemical, Biological, and Radiological (NEMI-CBR).

The Methods Board Fall 2003 meeting was held in Albany, the scenic capital of the Empire State. Albany is a convenient gathering place, located at a focal point of many ongoing monitoring efforts including protection of New York City's (NYC) water supply from threats from chemicals, pathogens, radionuclides, and terrorists; large scale statewide monitoring and collaborations, and the New York State Department of Health's Wadsworth Laboratories, a leader in public health research and investigation. The Board used the opportunity to draw together experts from various state and federal agencies and departments, academics, and monitoring groups to share information and experiences in fostering collaboration, and evaluation of the comparability of new technologies. The Board was pleased to host a morning of presentations at Wadsworth's Axelrod auditorium. Experts in various fields discussed early-response warning systems, statewide response analytical capabilities, genomic forensics, and comparability. Afternoon workshops at the nearby New York Department of Environmental Conservation offices provided a forum for discussion of the NEMI-CBR project and the NYC Watershed Phosphorus Comparability Study.

The success of this format — combining the Board's meeting with outreach and workshops geared towards the needs of regional and local monitoring communities — could help foster collaboration in your area. If you are interested in having the Board meet in your area, contact the Board's Outreach Workgroup Chair, Larry Bailey, at (518) 402-8167 or by email at ltbailey@gw.dec.state.ny.us.

New Web Site On-line with Enhanced Features and Tools

The Methods Board's eye-catching new Web site has sprung to life with additional features and useful tools as well as improved navigational elements and added links. Among the new tools available is a repository of method and data comparability links or reprints of studies in various media that focus on interlaboratory and field method comparability. If comparing data from various sources is giving you headaches, you may want to incorporate one or more of the approaches that others have used to hone in on scientifically valid approaches to getting comparable data. Just go to the "Tools" link on the Board Web site and click on "Comparability Studies." Access the Methods Board site at <http://wi.water.usgs.gov/methods/>.

NEMI INNOVATIONS

Field Activities Committee (FAC) – Additional Assistance Sought

The FAC is working on the addition of field-based methods into the NEMI and needs your help! Representatives from Environmental Protection Agency (EPA), USGS, National Oceanic and Atmospheric Agency (NOAA), other federal and state agencies, and the volunteer monitoring community are working to test the NEMI database architecture for its suitability to provide field activity information. The information will include in situ water-quality measurement techniques, biological community sampling protocols, toxicity testing methods, and eventually other field-related activities such as sample preparation and processing.

Submit Methods On-line Now!

Do you have a method that belongs in NEMI? Using the new online forms, anyone with a method that meets the submittal requirements (see "Method Submission" at www.nemi.gov for details) can enter, check, and submit their methods for review and inclusion in NEMI. Contact the NEMI database manager at (608) 821-3869 or send email to nemi@usgs.gov for more details if you have methods or collection protocols, including methods from other countries, that you would like to have added to the database.

The Activity Barometer Keeps Rising!

To date, over 76,000 hits have been recorded on NEMI, your free online source for water methods. Additional methods continue to be added to NEMI. Included are NOAA marine methods as well as methods provided by USGS, EPA, and other organizations. If you have something to say — positive or negative — about NEMI, just click on the "contact us" link at www.nemi.gov. We need to hear from you!

For more information on the Methods Board and to let us know what's going on with you...

For more information about becoming a part of the Board, contact us at: mdcbinfo@tetrattech-ffx.com or contact Larry Bailey: ltbailey@gw.dec.state.ny.us

We'd also like to hear from you about upcoming meetings, conferences, or articles that would be of interest to our Across the Board readers. We are particularly interested in articles from state water monitoring councils and other collaborative projects. Contact the Methods Board at:

mdcbinfo@tetrattech-ffx.com

National Monitoring Conference - Chattanooga

The Methods Board will be actively involved in the **fourth National Monitoring Conference to be held in Chattanooga, TN, May 17-20, 2004**. We are sponsoring two workshops, one on the *Application of Water Quality Data Elements* with emphasis on biological data elements. The second workshop focuses on *Bioassessment Performance and Comparability*. Members of the Board are also organizing and leading two platform sessions on “*What is Comparability and How Do We Ensure It?*”, and four conference platform sessions focusing on New and Emerging Technologies. If you would like more information, you can find it online at www.nwqmc.org.

FEM Shakes Out Positions on Priority Issues

EPA’s Forum on Environmental Measurements (FEM) is continuing to enhance EPA’s measurement programs. A policy was approved by the FEM, and adopted by EPA’s Science Policy Council, that mandates accreditation of all Agency laboratories as well as contract laboratories operating at EPA facilities. This policy is consistent with the recommendation made previously by the Methods Board, and approved by the President’s Advisory Committee on Water Information (ACWI), that a recognized accrediting authority should accredit all federal laboratories. Additionally, the FEM is currently considering adopting the National Environmental Methods Index (NEMI) as EPA’s methods database that would include methods used in media in addition to water.

CURMUDGEON’S CORNER

WELCOME TO THE

Someone Stole the “M” – or – Dial M for Missing

Federal and state agencies survive using a plethora of acronyms during the course of their daily duties. Webster defines an acronym as, “a word formed from the initial letter or letters of each of the **successive** parts or **major** parts of a compound term” (emphasis ours). When originally developed, the acronym for Performance Based Method (and/or Measurement) Systems — “PBMS” — was one that (to our minds), was clear, simple, and straightforward.

Searching the web using PBMS brought us directly to Performance Based Methods (and/or Measurement) Systems. Yes, the universe was orderly, life was good but no, the bureaucrats were Miffed and had to Muddle things up.

Yes, tragedy hit! The “M” in PBMS mysteriously vanished — leaving us with Performance Based Systems, or (you guessed it) PBS — and introducing even more chaos into the universe. Would you care to know how many web searches for PBS resulted in performance based systems? NONE ... ZERO ... ZIPPO!

So, what if we went with PBA (performance based approach) instead. Well, searching on “PBA” results in an abundance of sites dedicated to people who delight in throwing heavy spherical objects at formations of wooden enameled objects and sites about law enforcement officers protecting property and citizens.

In an effort to streamline the structures within which we work, we sometimes add layers of difficulty and confusion. In this case, the “M” is an important and defining component of performance based methods (and/or measurement) systems and should be reinstated. After all, where do data come from? Are there such things as **M**ethods? **M**easurements? Do they really exist or are they **M**ythical? Do we solve problems by this kind of streamlining? Is the problem solving process (PSP) a virtual or reality-based concept?

PBS should remain an acronym for Public Broadcasting System from which we all learn to be creative, even in developing laboratory methods. Bring back the “M” we say and “pthfthpthfthph” on the bureaucrats!

Curmudgeonly yours,

Cliff Annis, Jr., American Chemistry Council
Ed Santoro, DE River Basin Commission

Meet the Board

CLIFF ANNIS PITCHES IN FOR COMPARABILITY

Clifford G. (Cliff) Annis, Jr. brings a refreshing and practical perspective to the Methods Board. Since 1998, Cliff has ably represented the broad-based interests of the American Chemistry Council (ACC), as well as his employer, Merck & Co., to the Board. Cliff spearheaded discussions which led to creation of the Board's originally-named Performance-Based Measurement Systems (PBMS) workgroup, now called the Performance-Based Systems (PBS), which he currently chairs (see this issue's Curmudgeon's Corner where he and his co-curmudgeon lament the loss of the "M").

After earning a B.S. in Chemistry from Roger Williams University and an M.S. in Environmental Sciences at Florida Institute of Technology, Cliff joined G.E. Plastics as a methods development chemist. Cliff later joined Merck in 1988, where he was responsible for the wastewater testing laboratory at the Flint River Plant. In over 15 years at Merck, Cliff has had responsibilities in Quality Operations, Safety & the Environment, and Worldwide Quality Assurance. In 1998, Cliff moved to Merck's Manufacturing Division's Quality Assurance group where he is currently the Manager of the Data Quality Assurance (DQA) group of Worldwide Auditing where he is responsible for the data and information auditing program.

With his ability to "think out of the box" while bringing to the table insights from private sector/regulated community's perspective, Cliff helps focus and balance the Board's discussions and activities. His enthusiasm as chair of the PBS workgroup motivated the complex planning, organizing, and implementing the multi-organizational Chemical Oxygen

Demand (COD) PBS pilot projects for the Board. The resulting real-world example of PBS method evaluation provides a valuable tool for moving PBS into the mainstream for both ambient and compliance monitoring. Acutely aware of the need to evaluate all aspects of new approaches, Cliff estimates that



using this new COD method could save hundreds of thousands of dollars per year in waste disposal costs alone for companies like Merck that analyze COD in their effluents, besides being inherently safer.

Cliff's ability to utilize teamwork to find common workable solutions to complex problems is legendary to Board members. As he sums his philosophy "in order to solve problems, you have to have all the players involved". It is essential that representatives

of industry are among the players active in identifying methods that are effective, efficient, and performance based. As he is fond of saying, "methods are not one size fits all" and if we "put good science in, we get good methods out."

When not traveling the globe for Merck, Cliff's life is rounded out by Dana, his wife of 15 years, and their children, upcoming soccer stars Megan and Matthew. Cliff's favorite game is baseball, and upcoming pitchers on the Quakertown High School team — where he is an assistant coach — gain knowledge from his experience in the game. Cliff threw a blistering 95 MPH fastball as a pitcher in high school and college, and an offer from the Milwaukee Brewers was only lost to a career ending shoulder injury. Cliff also volunteers with the Heritage Conservancy's Quakertown, PA, Swamp Lasting Landscapes Leadership Team; the Florida Tech Alumni Association; and the Quakertown Soccer Club's U9 boys travel team.

Below are the names and email addresses of the Board's workgroup chairs and co-chairs. Please direct workgroup-specific questions to the appropriate people.

Name	Workgroup	Email
Herb Brass	Methods Board co-chair	brass.herb@epa.gov
Charlie Peters (<i>term ends 5/30/04</i>)	Methods Board co-chair	capeters@usgs.gov
Merle Shockey	Accreditation co-chair	mshockey@usgs.gov
(<i>vacant</i>)	Accreditation co-chair	
Dan Sullivan	NEMI co-chair	djsulliv@usgs.gov
Cary Jackson	NEMI co-chair	cjackson@hach.com
Larry Bailey	Outreach chair	ltbailey@gw.dec.state.ny.us
Clifford Annis	PBS chair	Clifford_annis@merck.com
LeAnne Astin	WQDE co-chair	lastin@potomac-commission.org
Chuck Job	WQDE co-chair	job.charles@epa.gov
Katherine Alben	Biology co-chair, New Technologies chair	alben@wadsworth.org
LeAnne Astin	Biology co-chair	lastin@icprb.org
Ron Jones	Nutrients co-chair	jonesrd@pdx.edu
Edward Santoro	Nutrients co-chair	esantoro@drbc.state.nj.us

Out with the old, in with the new

The excellent and enthusiastic Outreach chair and editor of this newsletter, Dennis McChesney of EPA, is taking a new position in the agency, forcing him to cut back on his involvement with the Board. Thanks Dennis for all your great work over the years and welcome Larry Bailey of New York DEC, the new Outreach Chair and Across the Board editor!

For a complete list of Board and Council members, log on to the Methods Board and NWQMC Web sites.

Methods Board Web site: <http://wi.water.usgs.gov/methods/>

NWQMC Web site: <http://water.usgs.gov/wicp/acwi/monitoring/>

