

**The National Atmospheric Deposition Program (NRSP-3)
Technical Committee Meeting**
September 27-30, 2005, Jackson, Wyoming

General Business Meeting Minutes

Wednesday, September 28, 2005

National Atmospheric Deposition Program (NADP) Chair , Cari Furiness called the 29th NADP Technical Committee Meeting to order. She welcomed participants and invited them to introduce themselves and state their affiliation. Participants in the business meeting and scientific symposium are listed at the end of these minutes.

Action - Approve Meeting Minutes: Approve the minutes of the 2004 NADP Technical Committee meeting on September 22, 2004, in Halifax, Nova Scotia, Canada.
Moved, Seconded, Carried.

Reports (part 1) —

Joint Subcommittees - Karen Harlin, Network Operations Subcommittee (NOS) Chair, Illinois State Water Survey

On behalf of the NOS, Data Management and Analysis Subcommittee (DMAS), and Environmental Effects Subcommittee (EES), which met in joint session, Karen presented the following summary:

- Accepted without change the reports of the April 2005 subcommittee meetings in Savannah, Georgia.
- An ad hoc committee was tasked with reducing differences among the NTN, MDN, and AIRMoN field forms in preparation for developing a Network Electronic Reporting Form.
- Recommended approval of the (ETI Instrument Systems, Inc.) NOAH-IV and (Hach Environmental) OTT-Pluvio precipitation gages as replacements for the Belfort (B-5-780) recording gage, if the gage can communicate with a Campbell, or equivalent, user-programmable, data logger.
- Recommended cooperating with Environment Canada in the *Southern Ontario Ammonia Passive Sampler Survey*, a project to measure airborne ammonia concentrations at selected sites in southern Ontario Province, as well as the northeastern United States. The objective is to improve our understanding of the sources, transport, and fate of atmospheric ammonia. Plans are to conduct this study at NADP/NTN sites in Michigan (MI51 & MI52), New York (NY08, NY10, NY22, and NY52), and Ohio (OH15& OH71).
- Recommended approval of a time-line and guidelines for planning NADP committee and subcommittee meetings.
- Accepted a proposal for estimating precipitation amounts for samples with both missing gage and sample volume measurements. This proposal, prepared by Program Office staff members, identifies procedures for using substitute on-site measurements or off-site measurements from National Weather Service Stations or Cooperative Weather Observers. These procedures will be included in Standard Operational Procedures followed during the final data review at the Program Office.

Network Operations Subcommittee - Karen Harlin, NOS Chair, Illinois State Water Survey

Karen reported on NOS activities and NOS-approved recommendations:

- Reviewed and approved a recommendation from the Quality Assurance Advisory Group (QAAG) for the NOS chair and vice-chair and the NADP Quality Assurance Manager to approve/disapprove proposed NADP sites that do not meet NADP siting criteria and guidelines.
- Recommended that the Program Office continue testing and refinement of the NADP wet-only sampler, redesigned by Loda Electronics, Inc., and report progress at the Spring 2006 subcommittee meetings.
- Recommended that the QA Manager issue annual reports summarizing *Site Systems and Performance Survey* results and actions taken to reduce or eliminate non-compliance issues identified in these surveys. Reports would go to Budget Advisory Committee members (including representatives of any agency providing 2 percent or more of the total annual NADP budget) with the goal of keeping sponsors informed of siting violations and progress toward mitigating these violations.
- Granted the go-ahead for the Central Analytical Laboratory to use the Dionex ICS-2000 ion chromatograph for routine NTN and AIRMoN sample analyses.
- Recommended that the Executive and Budget Advisory Committees support a multi-site field trial of the (Yankee Environmental Systems, Inc.) TPC-3000 wet-only deposition collector.
- Reported that Hach Environmental had agreed to work with the NADP to accommodate 13 modifications in the Ott-Pluvio gage (see NOS minutes).
- Reported on a data analysis project in which Greg Wetherbee examined quality assurance data in order to identify minimum reporting limits for each analyte reported by the program.
- Reported that Matt Layden had been hired as the CAL site liaison, replacing Scott Dossett, who retires on 30 September 2005.
- Reported that Eric Prestbo had presented a description of an MDN “dry deposition” network that was in the planning stages.
- Reported that the Web site for the USGS Quality Assurance Program had been updated substantially, including a new interface.
- Reported that action on a motion to adopt new NADP Siting Criteria had been tabled. NADP Quality Assurance Manager Chris Lehman had prepared a document describing the new criteria. Plans are to discuss this matter more fully at the Spring 2006 subcommittee meetings.
- Reported that Greg Wetherbee of the USGS had been elected NOS Secretary. Other 2005/06 officers are: Mike Kolian - Chair, U.S. Environmental Protection Agency; and Marty Risch - Vice Chair, USGS.

Data Management Advisory Subcommittee - Bob Larson, DMAS Chair, Illinois State Water Survey

Bob reported on DMAS activities:

- Reported that DMAS discussed issues related to reporting methyl mercury measurements on the NADP Web site. While the MDN Analytical Laboratory (HAL) measures the total un-specified mercury content of every MDN sample, the HAL only measures methyl mercury for sponsors that pay an extra fee for

these measurements. Among the issues DMAS discussed was how to report measurements below the method detection limit. The committee decided to report only measurements above the instrumental detection limit and censor values at or below this limit, by reporting the instrumental detection limit with a less than symbol. The HAL will provide data on their instrumental detection limits for 2002 - 2004, so that the methyl mercury results can be posted for on-line access before the Spring 2006 meeting.

- Reported that the HAL had measured the dimensions of 200 funnels used in the MDN collector and settled on an average funnel area of 120 cm². This area will be used in calculating sample depths and catch efficiencies.
- Summarized DMAS discussions on the method used by the NADP CAL and the Canadian National Atmospheric Chemistry Database and Analysis System for identifying outliers. The DMAS named an ad hoc committee (John Ingrum, CAL, Van Bowersox, NADP Coordinator, and Chris Lehmann, NADP QA Manager) to review CAL procedures and consider improvements. Current methods utilize the entire valid sample record for identifying outliers. Long-term trends affecting this record are not addressed by the current method and the DMAS would like the ad hoc committee to investigate replacing the entire record with the most recent 5-year record in order to better reflect long-term trends in the data.
- Summarized discussions on Web-site mapping procedures. NADP isopleth maps are the most-accessed feature on the Web site. The DMAS supports expanding the on-line maps to include:
 - 1 - seasonal maps in addition to the annual maps now available,
 - 2 - maps in which users opt to exclude urban or coastal sites,
 - 3 - maps in GIS (shape file) format.
- Reported that the DMAS had met jointly with the EES on network design issues.
- Reported that John Ingrum of the NADP Central Analytical Laboratory was elected the new DMAS secretary. Chris Rogers of MACTEC, Inc. is the 2005/06 DMAS Chair.

Environmental Effects Subcommittee - Pam Padgett, EES Chair, USDA - Forest Service

Pam reported on EES activities and a recommendation to change the subcommittee name and charge:

- Summarized the discussions about the EES mission, focus, and membership. With interest in broadening participation in its activities, the EES recommends a change in its title and charges. The new name is Ecological Responses and Outreach Subcommittee (EROS). Pam described the reasons for changing the subcommittee's name and focus. The NADP Quality Management Plan will be updated to reflect these changes.
- Reported that a new mercury brochure had been developed, largely through the efforts of David Gay. This new MDN marketing tool will be available on-line and in printed form.
- Briefly described another outreach effort to prepare a brochure that describes the NADP, how it works, and how to get involved.
- Megan Vogt of the NADP HAL at Frontier Geosciences, Inc., will be the new Subcommittee Secretary. Pam Padgett of the Riverside Fire Lab will remain the 2005/06 Chair.

Quality Assurance and Advisory Group (QAAG) - Chris Lehmann, QAAG Chair, Illinois State Water Survey

Chris summarized the QAAG activities:

- Described QAAG membership with the QA Manager as Chair and representatives from the HAL, CAL, USGS, and U.S. Environmental Protection Agency. The QAAG addresses nuts-and-bolts issues of NADP quality assurance, including procedures, lab reviews, and documentation.
- Reported on follow-up items from the 2003 HAL review. (1) The QAAG recommends that the HAL select one sample per analysis batch for later reanalysis. Results would be examined to look for changes, perhaps owing to sample instability. (2) The QAAG made no recommendation that MDN maintain a sample archive similar to the one required for NTN and AIRMoN samples.
- Recommended that the team that conducts Site Systems and Performance Surveys stress the importance of the USGS external quality assurance programs and ensure that site personnel participate when they receive QA samples.
- Briefly discussed two USGS quality assurance programs: (1) MDN blind audit pilot program, just begun (6 samples to date), and (2) planned NTN double-blind audit program.
- Discussed the QAAG efforts to develop data quality objectives, including setting confidence intervals on data quality indicators such as bias, precision, representativeness, etc. The goal is to complete the data quality objectives for final approval at the Spring 2006 Subcommittee meetings.

Action - Approve Subcommittee Reports: Approve Subcommittee and QAAG recommendations in the joint subcommittee, NOS, DMAS, EES, and QAAG reports.
Moved, Seconded, Carried.

Executive Committee - Cari Furiness, NADP Chair, North Carolina State University.

Cari summarized Executive Committee actions from its June and September meetings:

- Approved the fy06 (Oct 2005 - Sep 2006) Program Office budget, which includes a stepwise reduction of NRSP-3 support. Stepwise reductions in off-the-top support also will occur in fy07 and fy08, as part of a multi-year reduction in State Agricultural Experiment Station support of the NRSP-3.
- Reported on an effort to try to estimate the cost of field site operations, which are funded directly by operating agencies. Field operations often involve in-kind contributions of effort without a transfer of monies. The Budget Advisory Committee will attempt to estimate these costs over the next year, so that the total cost of NADP operations can be determined.
- Approved a timeline for the replacement of the Belfort recording precipitation gages currently used at all NADP sites: (1) As of January 2006, new sites would select either the Ott-Pluvio or ETI-NOAH IV gages approved by the joint subcommittees. (2) All sites must replace their Belfort gages with one of the approved electronic gages by the end of 2009.
- Approved a field comparison of the MDN-Aerochem and N-CON collectors at a site in Vermont and a site in Wisconsin. The HAL also will compare these collectors at their site in Washington.

- Endorsed an initiative to add measurements of gas-phase elemental mercury, reactive gaseous mercury, and particulate mercury to the NADP in order to assess air concentrations and infer dry deposition of these species.
- Reported on an effort to review the current committee structure to evaluate whether it optimally serves the NADP or should be changed.

Action - Approve Committee Report: Approve Executive Committee report.
Moved, Seconded, Carried.

New Business —

Presentation of Site Operator Awards - Cari Furiness, NADP Chair, North Carolina State University

Awards

Site	Operator	Sponsoring Agency
10-Year (5x7 plaque)		
CO21	Steve Tapia	USDA - Forest Service
MD15	Francis "Hoss" Parks	NOAA-Air Resources Lab
NM07	Kay Beeley	DOE/Los Alamos National Lab
OK00	Rodger Hill	U.S. Geological Survey
SD99	Frank Amundson	U.S. Geological Survey
TX04	John Forsythe	National Park Service-ARD
TX22	John Cwiklik	U.S. Geological Survey
15-Year (8x10 plaque)		
CA88	Mike Mata	U.S. Geological Survey
IN22	Angie Thompson	U.S. Geological Survey
MT05	Lindy Key	National Park Service-ARD
NC03	Margaret Pierce	North Carolina State University
NM01	Daniel Galindo	New Mexico ED-AQB
SD08	Ron Haigh	NOAA-ARL
20-Year (lucite trophy)		
IA23	Jim Secor	U.S. Geological Survey
WI25	James Trochta	Wisconsin DNR
WY98	Terry Pollard	USFS - Bridger-Teton National Forest
25-Year (glass trophy)		
FL03	Larry Korhnak	St Johns River Water Management Dis
ME02	Peter Lowell	U.S. EPA/Maine DEP
OR10	John Moreau	U.S. Forest Service

Nomination Committee (Past NADP Chair - Gary Lear, Rick Artz, Dennis Lamb)

Action - Nomination of 2005/06 NADP Secretary: Gary Lear reported that the nominating committee recommends Tom Butler, Institute of Ecosystem Studies and Cornell University, as 2005/2006 NADP Secretary. Tom has been the site scientist at the New York Atmospheric Integrated Research Monitoring Network site (NY65) since

the site joined the NADP in 1992. Cari Furiness, NADP Chair, asked for nominations from the floor. Nominations were closed.

Moved, Seconded, Carried. One nay vote.

2006 Spring Subcommittee Meetings - Mike Kolian, 2005/06 NOS Chair, U.S. Environmental Protection Agency

Mike Kolian announced that the spring subcommittee meetings are scheduled for the Mission Inn, Riverside, California, Tuesday and Wednesday, 2-3 May 2006. A visit to the nearby Interagency Monitoring of PROtected Visual Environment (IMPROVE) site at Converse Flats is being considered.

2006 Technical Committee Meeting - Maggie Kerchner, NADP V. Chair, National Oceanic and Atmospheric Administration

Maggie Kerchner, 2006 technical program chair, announced that the next Technical Committee meeting is planned for October 2006 in Norfolk, Virginia. The focus of the meeting will be coastal deposition issues.

Reports (part 2) —

Mercury Deposition Network - David Gay, Assistant Coordinator for Toxics, Illinois State Water Survey

David Summarized the status and progress of MDN activities:

- There are 90 active MDN sites as of this date. Twenty MDN sites have opted to add methyl mercury measurements to the basic un-speciated total mercury measurements. For five sites, the HAL measures methyl mercury for weekly samples; and for the other 15 sites, the HAL measures methyl mercury in composite four-weekly samples, or 13 measurements per year.
- Reported on sites that initiated operations and those that terminated operations in the last year, as well as prospective site locations and sponsoring agencies.
- Reported briefly on activities underway or near completion:
 - 1 - the procedural problems that have delayed posting methyl mercury data on the Web site are nearly solved and the data should be available on-line in the next several months;
 - 2 - a new MDN field site operation manual is in preparation;
 - 3 - a HAL MDN quality assurance plan is being finalized;
 - 4 - a one-year study is underway to compare samples from the MDN-Aerochem and NCON collectors at VT99, WI36, and WA18;
 - 5 - the 2nd annual site operators' training course will be held in October in Seattle in October 2005;
 - 6 - annual Program Office fees decrease from \$3,000 per site-year to \$2700 per site-year effective 1 October 2005; and
 - 7 - data from the HAL to the Program Office remains on schedule;
- Discussed goals for the next 6 to 12 months including preparation of updated standard operational procedures and changes in the MDN Web site.

Program Office, Van Bowersox, NADP Coordinator

Van Bowersox gave a report on the "State of NADP - 2005."

- Acknowledged active site operators attending the meeting, Kristi Morris for

- organizing the technical program addressing resource management issues, and Kyle Goetzelmann of Wheeling, IL, whose photograph of the Grand Tetons appears on the cover of the meeting proceedings (see acknowledgment in proceedings at <http://nadp.sws.uiuc.edu/lib/proceedings/NADPpro2005.pdf>).
- Described several highlights featured in the *NADP 2004 Annual Summary* (<http://nadp.sws.uiuc.edu/lib/data/2004as.pdf>), including
 - 1 - the cover, showing a 5-year-average inorganic-nitrogen deposition map for which NADP data completeness criteria were relaxed so data from high-elevation Rocky Mountain sites, generally receiving over half of their precipitation as snow, could be included;
 - 2 - color isopleth maps that now specially display urban sites (400 or more people per square kilometer within a 15-kilometer radius);
 - 3 - maps of annual concentrations and depositions calculated by applying a new procedure that allows precipitation estimates to be used when both the gage and sample depths are missing; and
 - 4 - plots that show the evolving behavior of sulfate and ammonium in samples over the 12-year AIRMoN data record.
 - Presented a map showing the locations of the 253 active NTN sites, the 7 sites that terminated operations and the one site that initiated operations in 2005, and the 42 co-located MDN/NTN sites.
 - Presented slides from a paper presented at the 7th International Symposium on Acid Precipitation, held in Prague, Czech Republic, in June 2005. The slides showed spatially widespread sulfate decreases and ammonium increases and the implication of these changes on our chemical climate was discussed.
 - Showed pictures of the Ott-Pluvio and ETI-NOAH IV gages approved for use in the NADP.
 - Discussed Asian Soybean Rust (SBR), a fungal disease of soybean and other legumes, the life cycle and transmission of the disease, and a study underway to look for SBR spores in rain samples. The study, funded by the Agricultural Research Service, involves collecting the filters from rain samples at 124 eastern U.S. NTN sites. Each week, the CAL saves and dries the sample filters from these sites and sends them to the Cereal Disease Laboratory in St. Paul, MN, where microbiologists look for traces of SBR DNA. Maps showing the spread of the infection in 2005 and the sites where SBR DNA was found in NTN samples were shown. Also presented were back-trajectories for a sample from the LBJ Grasslands NTN site in north-central Texas.
 - A presentation recognizing Scott Dossett on his retirement from the NADP and for his service to the program concluded the presentation. Other Technical Committee members, notably Kristi Morris, Kathy Tonnesson, and Ellen Porter of the National Park Service and Joel Frisch of the USGS, joined the tribute.

Closing Remarks —

Cari Furiness announced a special reception for Scott Dossett on Thursday evening and entertained a motion to adjourn the business meeting.

Meeting adjourned.

**National Atmospheric Deposition Program
2005 Technical Committee Meeting & Scientific Symposium
Participant List**

<u>Attendee</u>	<u>Affiliation</u>
Michael Abbott	Idaho National Laboratory
Paul Abood	University of Colorado
John Ackermann	US Environmental Protection Agency, Region 4
Viney Aneja	North Carolina State University
Gerald Arkin	University of Georgia
Richard Artz	NOAA - Air Resources Laboratory
Margaret Aston	US Environmental Protection Agency
Wayne Banwart	University of Illinois
Neil Bettez	Cornell University
Rona Birnbaum	US Environmental Protection Agency
Tamara Blett	National Park Service
Van C. Bowersox	Illinois State Water Survey - NADP Program Office
Bob Brunette	Frontier Geosciences, Inc. - HAL
Thomas J. Butler	Cornell University
Donald Campbell	US Geological Survey
Silvina Carou	Environment Canada
Ann Chalmers	US Geological Survey
Richard G. Cline	USDA Forest Service
David Clow	US Geological Survey
Jeffrey Collett	Colorado State University
Walter Conrad	Rocky Mountain National Park
Russell Day	National Institute of Standards & Technology
Doug Disney	Frontier Geosciences, Inc. - HAL
Scotty R. Dossett	Illinois State Water Survey - NADP Program Office
Kathy Douglas	Illinois State Water Survey - NADP Program Office
John Drese	Dynamac Corporation
Amy Elliott	Institute of Ecosystem Studies
Emily Elliott	US Geological Survey
Mark Fenn	USDA Forest Service
Richard Fisher	USDA Forest Service
Suzanne Fisher	Tennessee Valley Authority
Joel Frisch	US Geological Survey
Mark Fulkerson	University of Central Florida
Cari Sasser Furiness	North Carolina State University
David Gay	Illinois State Water Survey - NADP Program Office
Richard Grant	Purdue University
Richard Haeuber	US Environmental Protection Agency
Karen Harlin	Illinois State Water Survey - NADP Program Office, CAL
Justin Hayes	Idaho Conservation League
Kemp Howell	MACTEC, Inc.
Thomas Huntington	US Geological Survey
George Ingersoll	US Geological Survey
John Ingrum	Illinois State Water Survey, CAL
Selma Isil	MACTEC, Inc.
Andrew Jackson	Texas Tech University
Dan Jaffe	University of Washington, Bothell
Dan Johnson	Western States Air Resources Council
John Johnston	USEPA/ORD/NERL
Tom Jones	Advanced Technology Systems, Inc
Margaret Kerchner	National Oceanic and Atmospheric Administration
Raymond E. Knighton	USDA-CSREES-Natural Resources and Environment
Richard Kobe	Michigan State University

Cathy Kohnen	Illinois State Water Survey, CAL
Michael Kolian	US Environment Protection Agency - Clean Air Markets Division
John Korfmacher	USDA Forest Service
Gail Lacy	US Environment Protection Agency
Dennis Lamb	Penn State University
Robert Larson	Illinois State Water Survey - NADP Program Office
Natalie Latysh	US Geological Survey
Gregory B. Lawrence	US Geological Survey
Gary Lear	US Environment Protection Agency - Clean Air Markets Division
Christopher Lehmann	Illinois State Water Survey - NADP Program Office
Leonard Levin	Electric Power Research Institute
Jeong-Hee Lim	University of California, Los Angeles
Esmail Malek	Utah State University
Tonnie Maniero	National Park Service
Robert P. Mason	University of Maryland
M. Alisa Mast	US Geological Survey
Lee Maull	Dynamac Corporation
Mark Mesarch	University of Nebraska - Lincoln
Eric K. Miller	Ecosystems Research Group, Ltd
Latoya Miller	US Environment Protection Agency , Region 4
Derek Milner	US Forest Service
Kristi Morris	National Park Service - AIR
Leora Nanus	US Geological Service
Sarah Nelson	University of Maine
Nicole Niemeyer	South Florida Water Management District
Mark Nilles	US Geological Survey
Pamela Padgett	USDA Forest Service
Ellen Porter	National Park Service - AIR
Eric M. Prestbo	Frontier Geosciences, Inc.
John D. Ray	National Park Service - ARD
Martin Risch	US Geological Survey
Chul-Un Ro	Environment Canada
Bruce Rodger	Wisconsin Department of Natural Resources
Christopher Rogers	MACTEC, Inc.
Jane Rothert	Illinois State Water Survey - CAL
Jeff Salt	Great Salt Lakekeeper
Steve Sando	US Geological Survey
Terry Schertz	US Geological Survey
David Schmeltz	US Environment Protection Agency - Clean Air Markets Division
Janea Scott	Environmental Defense
Chris Shaver	National Park Service
John Sherwell	Maryland - Department of Natural Resources
Jeffrey Stehr	University of Maryland
Gary Stensland	Dakota Science
Leland Tarney	National Park Service
Kerri Timoffee	Environment Canada
Kathy Tonnessen	NPS/RM-CESU
Robert Tordon	Environment Canada
Christel Valentine	Hach Environmental, Inc.
Alan Van Arsdale	US Environment Protection Agency
Gerard Van der Jagt	Frontier Geosciences, Inc. - HAL
Robert Vet	Environment Canada
Krish Vijayaraghaven	AER
Megan Vogt	Frontier Geosciences, Inc. - HAL
Randy Waite	US Environment Protection Agency
John Walker	US Environment Protection Agency
Kathleen Weathers	Institute of Ecosystem Studies
Jeffrey Welker	University of Alaska, Anchorage

Greg Wetherbee
Mark Williams
Steve Williams
Anand Yegnan
Suzanne Young
Angela Zahniser

US Geological Survey
University of Colorado
University of Wyoming
Environmental Resources Management
US Environment Protection Agency
USDA - Bureau of Land Management