National Atmospheric Deposition Program
Spring Meeting
Point Reyes, CA
March 23-24, 2004

Minutes of the Joint Session of the NADP Subcommittees
Submitted by Mike Kolian, NOS Secretary

Joint Committee
Agenda Items
8:00am-12:00 Tuesday, March 23

1) Welcome and Introductions - NOS chair, Natalie Latysh.
Quick review of the joint committee agenda, role of the joint committee and ground rules: 35 in attendance, plus two by phone. For the list of participants see attachment 1 (participant list.xls).

2) Program Office Highlights - Van Bowersox
Van provided program office highlights/updates including approval on studies and program funding thru 2008.
Two brand new sites this year; 255 sites in NTN currently which includes two collocated sites (07NM and 22TX). NADP program office wants to stress and encourage monitoring network partnerships/collaboration and collocation: Currently there are: 37 NTN/MDN sites collocated; 58 CASTNET sites collocated with NADP sites (within 10 km); try to partner all 44 sites with IMPROVE; 21 NDAMN (dioxin); uvb 18 sites collocated with NADP; CRN consists of 20 sites 9 of which are collocated with NADP, CRN is building toward a network of 120 sites or more. CRN uses satellite rain gage technology. Lastly, 11 NADP sites are classified as Long Term Ecological Research (LTER) stations. Van illustrated the importance and benefits in collocating with other long-term monitoring programs and collaborating as much as possible. Presentations are available from the October Ammonia Workshop 2003 and a corresponding website has been created by Bob Larson summarizing the sessions/events complete with presentations. Van presented animated annual isopleth maps for wet deposition of Ammonium ion. He also presented the relatively new NADP bibliography site which can be accessed on the NADP website as well as other projects going on with the program office. NED (network equipment depot) spike in annual part replacements since 2002. NED expenditures continue to ramp up over the years to rather non-sustainable levels for the Program Office - its having to use program office money to absorb costs associated with NED. An update was provided on the Tower sampling occurring in Florida -precipitation is greater on the ground than at 80 feet above the ground. Many new factors to consider when samplers are so high off the ground as clearly this is much higher than any platform employed at other sights for the purposes of clearing snow pack. For more information on these topics see attachment 2 (ProgramHighlights04.ppt).

3) Deposition Listserv - John Sherwell

John discussed a venue for deposition work utilizing a client based listserv software to facilitate discussions and informal research among stakeholders, data users, and researchers. The web based listserv software would be used for discussions, introducing and inquiring about topics of research, automatic mailings. It would be query based and geared to several audiences including data users and site operators. Is the group in favor of something like this? Everyone present was in favor of the idea. Use the registry from the data user page on the NADP site. The Environmental Effects committee will work on the details and move forward.

4) QA Manager's Report, Chris Lehmann
Chris announced that the NADP QA Plan 2003-01 (Quality Management Plan) has been signed and finalized - he provided a few hard copies to the joint committee. The finalized quality management plan (QMP) was made official in December 2003 upon approval by Program Chair. The QMP was approved at the Fall 2003 technical meeting in DC. It is available on the website under publications. In 2004, a Network Quality Management Plan (QMP) to include all three networks (NTN, AIRMoN, MDN) will be initiated - the outline was presented to the QAAG at October 2003 meeting. It will merge all three existing network (NTN/MDN/AIRMoN) QAPs. A draft is scheduled for the fall 2004 meeting. Chris called for HAL closure on the review report- need a motion to approve by the subcommittees.
Chris Lehmann makes a motion: To approve the finalized HAL review report outlining recommendations to the HAL, John Sherwell seconds... no discussion. Motion passes.
There are several follow-up issues the NOS and DMAS will be addressing regarding the recommendations of the review report.

NADP Quality Systems and Program Office Data Management Review - external review every three years as outlined in the QMP; need participants for the team - recommended for persons outside the program to participate. This will be appointed by the Program Chair. First systems review due in 2004.

Site survey update - remedial action plan due 6 months after survey information is posted on the website. Chris L. elicits comments on the survey reports from the joint committee members. Of the 139 reports issued from the Program Office (Chris Lehmann) 110 (80%) result in no acknowledgment or response from the site personnel. 12 sites responded that they received it. (NOTE: Site personnel are not required to respond and aren't specifically asked to.) Site Survey information: need to show updates and that the sites have taken action. For instance, IA23 fixed violation but site shows they still have violations on the website. Perhaps create an interactive mechanism for site personnel to provide updates regarding corrective actions- posting to the website. For example, clicking on a link to update your site real-time when corrective action is taken. The Siting Criteria ad hoc committee should address these issues in more detail. Sites with an exception or exemption are not really flagged in the database. Ad hoc committee will be tasked with more than just the creation of the revised siting criteria document. Joint committee members discussed the current site survey process and components (from the exit report to the web postings) and agreed that it was quite useful. Remedial actions were discussed and the siting criteria ad hoc group will be continuing to work through the issues.
For more information on the quality assurance manager's report see attachment 3 (QA_report_Mar04.ppt).

5) Field Chemistry Discussion, Chris Lehmann, Natalie Latysh, Cari Furiness
Recommendations for field chemistry were presented. In May 2002, a motion was made in NOS to eliminate field pH and specific conductance measurements which did not pass. Consequently, an ad hoc committee was assigned to further explore the idea of eliminating field chemistry and measurements of pH and specific conductance. In July 2002, the Executive Committee passed recommendation to the technical committees that field measurements be discontinued January 2003. In 2002 Seattle Fall meeting the issue was again brought up and met with mixed review. So the ad hoc committee continued to gather information on the topic. Currently, site operators perform field chemistry at or nearby the site and the program stems back to when - the o-ring from pre 1994 samples were being contaminated with several analytes and thus the shipping protocol was changed to decant the sample to a separate bottle for shipping to the CAL. Site surveys suggest that 80% of sites are using the correct technique for conductivity; however, with pH , 75% of sites were NOT following the correct protocol/technique for this measurement. The USGS inter-site quality assurance study suggests site operator performance of the pH measurement is the reverse; where 90% of sites met pH and conductivity targets in 2001. On June 21st 2002 a survey was sent to 2000+ data users and 230 (11.5%) responded concerning which chemistry data they use: Lab, field, or both. The majority (45%) said they use both. Most committee members agreed there is more than one way to skin a cat and that just because the technique was not followed to the letter the pH measurement was still good. There is value in continuing the measurements however, there is a strong case for eliminating field chemistry measurements- frees up resources for other needs, etc. Discussion: Do we completely end measurements, reduce the number of sites doing measurements, or take no action? Which sites do we chose if we decide to eliminate sites that consistently perform the measurements well? Choose sites by hydrologic region? Do we distribute remaining sites based on hydrologic region? It was noted that protocol at AIRMoN sites would remain status quo. Ad hoc group recommendation: NTN should at least maintain a core of 25-30 sites with full support of field chemistry measurements. Should we allow field chemistry to be voluntary for site operators as of January 2005? The technical committee has to weigh in on these issues, and the Executive and Budget Advisory Committee members should decide if CAL will continue support for voluntary sites as it has budgetary implications. More discussion: there are questions whether or not field measurements are indeed valid. USGS says last 10 years has been good. Cost is ~220K/yr for the entire program (costs for CAL and site personnel) and we should revisit whether we want to continue this redundant measurement. For information on cost estimates to date provided by the ad hoc committee, see slide 8 in attachment 4 (Field_Chem_March04_rev.ppt). How scientifically defensible is this measurement? If the method is rugged, then it could still be a good measurement despite following exact protocol as ATS site surveys indicate. Many site operators have indicated they would drop the measurements if it was an option. Probes for pH are replaced every 1 to 2 years which is expensive.

Gary Lear makes a motion: For a cost analysis of eliminating field chemistry from all sites and from eliminating the measurements from all but the core sub group of sites as recommended or as suggested by the adhoc committee. Preston Lewis seconds the motion...
Vote: Everyone said yeh and Scott Dossett, Mark Nilles say nay, possibly one other. Motion

passes! **Discussion:** Executive committee should make these decisions and the NOS and other subcommittees recommend actions, only the executive and technical committees can decide on actions. The recommendation of the NOS will go to the executive and budget advisory committees for a decision. The executive committee could vote to terminate field chemistry measurements. This decision could subsequently be overruled by the technical committee in Halifax; however, if the technical committee takes no further action, the executive decision stands as final.

Wednesday (3-24-04) More Disussion....
It is now pointed out that the executive and budget advisory committee will have to make the decision regarding cost savings to the network (Van Bowersox). Resources at the NED is such that they are in crisis mode and this would be one way to redirect CAL funds. CAL could then come up with what they would use resources for if they eliminated the field measurements. The NADP Quality Management Plan indicates that executive committee will tell the technical committee to decide where they would make the necessary cost savings with a reduced budget. What are the consequences of eliminating the field chemistry? CAL would no longer provide electrodes, solutions, field form would change, site operators would not report anything to Program Office and the information would end. AIRMoN sites. USGS would drop the intersite QA program. Can the site operators voluntarily continue the field chemistry?
Gary Lear makes an amendment to motion on sub-sampling protocols - then it is withdrawn.
It becomes evident to the committee that a passed motion is still being discussed. The original motion was then rescinded by Gary Lear. Seconded by Scott. No discussion.

Mark Nilles makes a motion: To discontinue the field chemistry measurements January 1st of 2005 for NTN only and for new sites. Scott seconds the motion. Discussion.....

Chris Lehmann provided a friendly amendment: For NTN sites coming on line starting in April 2004, field chemistry would not be supported; the joint subcommittes group recommends that this is to be taken up by the executive committee.

Mark Nilles accepts the friendly amendment by Chris Lehmann.
VOTE: motion passes unanimously as amended!
Final motion as amended and recorded by NOS secretary: Starting January 1, 2005 field chemistry measurements for NTN sites will be eliminated for all sites; and starting in April 2004, field chemistry measurements for new sites will not be supported. The joint subcommittee members recommend that this motion be taken up by the Spring 2004 Executive Committee meeting in Washington, DC.

Action item: Ad hoc committee to chose core group, to standardize (or improve) equipment and procedures, and produce a brochure for site personnel concerning protocol changes.
For more information in the field chemistry report see attachment 4 (Field_Chem_March04_rev.ppt).

6) Use of stable isotopes for tracing sources of atmospheric nitrate to aquatic ecosystems, Carol Kendall, Emily Elliot, USGS Menlo Park, CA

Carol presented their project on where does atmospheric nitrate come from? Source receptor relationship using delta ratios of nitrate to better understand the main sources of nitrate at NADP sites (e.g. power plants, vehicle exhaust, natural, agricultural). There is good separation between atmospheric and mircobial sources when using delta isotopes. Stream water examples indicate <50% of nitrate comes from snow pack melts - more microbial. Urban streams studied (Austin) indicate majority of nitrate is from atmospheric sources. Watershed examples, oddly in the Mississippi River watershed results are showing high deposition of nitrate rather than microbial sources such as de-nitrification. Major sources of nitrate are utility emissions and vehicle exhaust delta 18 and delta 15, respectively. There are significant seasonal variations and shifts in terrestrial vs atmospheric nitrate evident in this type of analysis as well. 2000 archive samples were picked from ~ 150 sites. Reanalysis of nitrate concentrations from when they were taken to now were the same (0.9995). Carol presented the findings and status of the NY study as well. Most of the money is coming from NYSERDA for the NY study. Isotopes colloborative project. They intend to install ogawa passive samplers for additional studies. Ammonium is no longer present in archived samples - if frozen you would have maintained the ammonium concentration. For more detail see the attached presentation. They are interested in doing similar studies using a select group of CASTNET samples for 2004-2005.
Discussion: After her talk, Scott Dossett asked Carol what changes or suggestions she had on how NADP collects samples. In essence, how can we serve her (and broader research committee) better. For example, what about sampling frequency, collection materials, (etc.)? Carol indicated "freeze the samples" this would preserve the constituents in the sample for later use whether for research, verification, whatever. For more information on isotopes and related investigations see attachment 5 (Kendall NADP talk 5.ppt).

Joint Committee
1:00-5:00 Wednesday, March 24
Agenda Items
Began session with continued discussion of the motion that was presented yesterday by Gary which was tabled by Van Bowersox (see item 4 above).

7) Rain gage Discussion
Update on the Modernization Plan, Mark Nilles
Modernization work group (Mark Nilles, Van Bowersox, Rona Birnbaum, Rick Artz, Eric Prestbo) was established for addressing the needs of the network into the future considering the limitations of current network equipment. Network equipment is not adaptable for emerging studies and problems. Galvanized pail with calibrated spring and lock was based on a design from the 19th century (1893). The goal is to move to electronic data transfer with the option of telemetry as mandatory for all NADP sites. Another goal is to have a 24 month upgrade window for existing sites. Equipment testing of potential replacement collectors and rain gages is currently underway and involves three phases. After testing the next step will be consideration and approval by subcommittees, budget advisory, technical, and executive committees. This would also involve purchase, implementation-switch out, protocol revisions, possible reconfiguration of sites, etc.. We should not preclude going with more than one rain gage rather, consider others and not limit the network to one supplier and/or supporter. What is the potential time-line? It was hoped that the work group would have presented to the spring 2004 joint

committee for consideration and vote however, there remains some issues with the potential replacement rain gages. The makers of the Ott Pluvio still need to provide updates and agreed upon changes to their current design in order to move forward on whether to go with it or not. Specifically, improvements to data transfer and false positive readings have been promised from the manufacturer. There are concerns with false positives as reported by Mary Tumbusch, USGS during phase II testing. In addition, reports from ISWS indicate false positives over 132 paired events. The collector is much further away from primetime, according to Scott Dossett's update. How does the Geonor T-200 of CRN compare to NTN? There are several questions to be addressed however, NADP is getting closer to a replacement rain gage. For more details on the progress and next steps on modernization of the network see attachment 6 (renewal.ppt).

8) Rain Gage Update - Backyard Studies, Van Bowersox
The ultimate goal is to maintain an efficient measurement system. Van reported the Belfort B-5-780 consistently recorded lower precipitation amounts while the OTT I, II and stick gage were quite close in the 2-year backyard comparison. The Belfort reported ~12% lower than the stick gage. CRN is currently collocated with 9 NTN sites and deploy the Genor T-200 rain gage. Van presented more results based on ISWS backyard studies. Specifically, Van presented the results and findings of OTT and ETI gages versus the performance requirements that the modernization workgroup established. The network gages currently have a sensitivity of 0.01 inches, or 0.02 cm, and maintains accuracy for large amounts of quick rainfall. The OTT has performed extremely well in terms of accuracy in this regard. OTT has completed phase III testing but needs some adjustments based on signals and sensors - it has associated false positives. The final tally comparing OTT and ETI were dead even in final scores. Similar to Mark Nilles's comment, ISWS would have liked to have a vote on the rain gage criteria and which gage to proceed with for the future during one of the meetings in 2004. We will receive another update at the Fall 2004 Technical meeting in Halifax. For additional details on backyard raingage studies see attachment 7 (gages03.004.ppt).

9) USGS Experimental Collection Sites, Natalie Latysh
Field Study @ Arvada, CO - GS01, GS02. This is a pilot study to identify logisitical and technical issues associated with running modernized collector equipment. Designed to compare variabiltiy in chemical data obtained from the ACM and NCON samplers. Not intended to duplicate efforts at ISWS backyard. GS01 has ACM with a belfort and GS02 has NCON with an OTT rain gage and operated as standard NTN sites. Comments on the OTT - fragile caution when shipping, repair center is moving from Germany to Loveland, CO. Can download the data from the OTT in 30 seconds with laptop. The OTT requires special programing and there is no elegant way to automatically transform the Ott data record into a format that is suitable for the NADP database. A program will have to be created to do that for site operators. They are planning for upgrades including: software, satellite telemetry, an algorithm to eliminate false positives, and a channel of logging collector events. NCON took four months to deliver their instrument and it was not new. The event recorder had to be rewired. Bucket seal is questionable, and latch pulls bucket askew. USGS will have a preliminary poster for the 2004 fall meeting. For more details regarding these studies see attachment 8 (SPRING_04_ArvadaSite_Presentation.ppt).

10) MDN Update, Clyde Sweet
2003 data will be ready to post on the web by the end of this month (March 2004). Lost 3 MDN sites however, there were 6 new sites established in 2003. Every two years there is an international Hg meeting in Solvenia - Eric Prestbo will be presenting MDN network information. The two Mexico sites want to be official NADP sites - will require NOS approval etc...
Clyde announced that David Gay will be taking over the MDN coordination duties and that he is the one to contact concerning issues with MDN from the conclusion of this meeting forward.

11) General Discussion and Wrap Up - Call attention to the Executive and Budget Committees which will meet in Washington, DC - June 9-10, 2004; and the 2004 Fall Technical Meeting will be held in Halifax, Nova Scotia Canada September 21-24.

12) Announcement from Greg Weatherbee who received an email regarding the establishment of a passive sampling program for pesticides. The email will be distributed to the Joint Committee for consideration.

DMAS - Chris Rogers gave an update on the their meeting's discussion.
Wet deposition analysis on the eastern US using NATCHEM
Effects committee created a Hg information/sales brochure for MDN monitoring, discussed the outreach DVD based on NADP David Gay and Nicholas McMillan were slated to work on this effort, dry deposition of Hg John Sherwell will report on this in the Fall 2004, Total phosphorus analysis with Karen was discussed. Get update from Pam?

Hailafax meeting in the Fall. Encouraging presentations, posters, and the like. Get the skinny from Cari Furiness. The announcement, dates and location will be posted on the NADP website.

13) Karen Harlin announced the ideas for 2005 NADP Spring Business meeting locations:

List of locations and vote totals:
Sequoia NP - 10
Mt Hood, WA - 5
Olympic Pennesula, WA - 10
Santa Fe, NM - 15
Missoula, MT - 0
Lincoln Lide Lodge, NE - 0
Key West, FL - 20
Glenwood Springs, CO - 3
Tucson, AZ - 0
Shepardstown, WV - 1
Brown county, IN - 0

Results:
1) Key West, Florida - 20 votes
2) Santa Fe, NM - 15 votes

3) Olympic Peninsula NP, WA and; Sequoia, NP, CA -10 votes

Scott Dossett moved to adjourn and conclude the meeting, second by Maggie Kerchner. Natalie Latysh, NOS Chair called the 2004 Spring meeting adjourned.