

NADP Joint Sub-Committee Meeting Minutes

Memphis, TN

April 20, 2010

1. Call to Order, Chris Rogers

- Room introductions

2. Approval of Minutes from Fall 2009 Meeting, Chris Rogers

Greg Wetherbee moved to approve

Maggie Kirchner seconded

Motion Carried

3. State of the NADP Address, David Gay

- Program Office Report:

Site numbers are stable, so income is generally as planned.

Budget looks good

Some instability in State Funding

MDN growing slightly growing (119 sites) expect some losses soon

NTN/AIRMoN holding (247 sites, net -1)

New NTN site in Argentina, AG01

AMNet at 21 sites (one new one)

- Data up through Aug 09 on the web:

Revised website is up and running

50 site years of data on web for AMNet

- Contracts with U of I are simpler

- First cost increase with CAL since 2002: \$91 per sample

- Proposals to Great Lakes Restoration Initiative:

Mercury Wet Dep at IADN sites

AMNet at sites around Great Lakes

Monitoring Great Lakes for Nutrient Loading from Wet Deposition

Mercury Measurements in Litterfall

AMNet site in Chicago

- Data Completion:

Data was delayed last year: problems with digital gauges

Goal to finalize 2009 data by June 1, 2010, post data from Labs within 90 days of sample collection

- NED has spare parts for ETI and NCON
- Made a base for OTT2 for installation
- All sites must have digital gauge by January 1, 2012:
140 sites with e-gauges
Ott Pluvio 2 costs \$8100
- 147 journal articles used NADP data in 2009
- Training session in flux, may try a new regional training
- QA Reviews: Next one is for PO
- Ammonia Monitoring: 19 sites, 2 new
- Travel: 2009 Hg Science and Policy Conference, EPA Briefing
- New Goals: Data to Web faster, continue to work on Website

4. CAL Report, Chris Lehmann

- Jane Rothert is retiring on April 30, 2009. Tracy Dombek is Jane's replacement as QA Chemist and AIRMoN site liaison
- Analytical Operations: CAL Detection Limit Study was distributed (trend in pH is suggesting data is slightly more variable)
- 5178 Archived samples were sent out to 9 research groups
- CAL Document Server site was shown
- Total Nitrogen measurements: EPA funded study for CY 2009
54 sites, 6 sites filtered vs. unfiltered
NTN vs. AIRMoN vs. refrigerated collector
Two publications in the works
As ambient temperature decreased, numbers got closer
- New NTN/AIRMoN analytes to be evaluated:
Bromide measured by IC
Total phosphorous by lachat method (begin measurements this summer)
- Site supplies:
All but 10 sites are 6-packs
CAL provides 10 sets of supplies to sites

Pink inventory tag is being added

- Dry Sample Return Envelope:
 - Don't ship bottle, just field form
 - 600 sets sent back
 - Bucket supply getting low
 - Sites discarding low volume samples is a problem
- Supplies Tracking:
 - Bottles are bar-coded for identification and chain of custody
 - Tamper proof bags are available
- Future of NADP Calendar:
 - Last produced for 2009
 - Future is unknown
 - Online version is available in the interim
- Naturally Illinois Expo:
 - Outreach by CAL and PO did showcase exhibit
 - Set up mock NADP site
 - Put together a field book for the expo
- Wind Turbine installed at IL11:
 - Installed by Matt, Jeff, Chris
 - 6 golf cart batteries provide 400 amp hours, powering MDN, AIRMoN, and NTN.
 - Possible solar panel to be installed this summer
- Removal of Carbonaceous Aerosols by Wet Deposition:
 - Piggy back on total nitrogen
 - TOC analysis on filtered rain samples

5. HAL Report, Bob Brunette

- New sites added almost equals closures:
 - HAL PO meeting addressed finding new outreach methods to add more sites (possible industry backing)
 - 2 bills (one house, one senate) could possibly replace Clean Air Hg Rule
- Equipment updates:
 - 94 ACMs, 21 NCONs, 58 Belforts, 57 e-gauges
- Co-located site at WA18:
 - Dual chimney collector was tested from Aug 09 to Feb 10
- HAL Lab Review:
 - 9/15 – 17 of 2009, November 2010 Official Report

HAL response on 4/19/09
8 Findings in Data Management
2 findings in Site Liaison/Field Support

- No changes in staffing since 2006
- Number of samples through lab are increasing
- Percentage of C coded samples increased from 2007 to 2008
- MDN Data deliverables are on time
- MDN Trace Metals Analysis validation completed July 2008:
Submission of 12 step process at Fall 2010 Meeting
- Throughfall samples are still being performed in PR. Publication pending June 2010
- EPA Region 6 Passive Hg Monitoring for 2 years
- HAL is NELAP and ISO/IEC 17025 Accredited.
- Frontier was awarded 2009 Small Business of the Year by Oakridge National Laboratory
- Name change to Frontier Global Sciences

6. QA Status Report, Mark Rhodes

- 2008 QA reports for both HAL and CAL are posted, 2009 pending, 2010 QAP for CAL in progress, PO review in 2010
- Site Systems and Performance Surveys:
 - 2 AIRMON
 - 20 MDN
 - 45 NTN
 - 9 collocated sites (since 06/09)
- Documents for Review available on web:
 - Web site is http://nadp.isws.illinois.edu/dl/QAAG/For_Review
 - Guidelines for Evaluation and Approval of Equipment for the NADP Wet Deposition Networks
 - Guidelines for Processing Precipitation Data for the NADP Wet Deposition Networks
- Pending Documents:
 - NTN, MDN, AirMON Operations Manuals
 - Training videos
 - Program Office SOPS

- Other Documents:
 - Passive ammonia SOPs are well documented
 - Siting criteria and site installation for passive ammonia and AMNet are pending, AMNet QA documents are pending, SOPs not available online
- Record Archives:
 - Field Forms and rain gauge charts have started to be scanned by students
- Data quality objective/Data Quality Indices:
 - Group formed (Andy Johnson, Mark Rhodes, Marcus Stewart, Greg Wetherbee)
 - Focusing on Field, lab, overall system, data products
- NTN Site Operator questionnaire:
 - Asking site operators what areas they need help with.
 - Top ten responses showed that troubleshooting equipment was most needed
 - Other items included equipment maintenance, what happens to sample, history of NADP
 - Suggestions: educational outreach materials, poster story of each site, iphone app for e-gauges
- Special studies:
 - Bottle leaks
 - MDN sample loss
 - Belfort/e-gage
 - Dual chimney MDN
 - NCON bucket collector
 - Bushings

7. Ammonia Monitoring Network, Melissa Rury

- Need Ammonia Monitoring in US because:
 - NTN data showing increase over the past 15 years
 - No baseline
 - Emissions expected to increase
 - Modelers need the data
- About 20 sites, two new coming soon
- 16 sites have 2 years of data
- SOPs available on CAL website
- Database is updated regularly
- Blue Bodies (Radiello) have been ordered and deployed

- Several researchers have requested data
- Field Operations:
 - Site installation kit is available
- Laboratory Operations:
 - CAL ships, preps, and analyzes samples
- Data Management:
 - Data is updated monthly
 - Data is password protected
- Goals: Outreach (expand network, create website)
- AMoN Budget: Cost goes down in second year, and with more sites in network
- 12 point plan is ready:
 - QAP is pending
 - Audit survey checklist for site operators pending
- Recommendations for NADP:
 - Deploy single radiello (not triplicate)
 - Triplicate at 5% of sites
 - 1 travel blank every 4 sample periods
 - Using recommendations saves \$2000 per sites per year

8. AMNet Action Items Update, Eric Prestbo

- New site in CA
- 50 Site years of data on web:
 - Web access is password protected
 - Nearly ready to go public
 - New data sharing agreement is drafted
 - Data management SOP is being revised
 - Data is available in tabular and graphical form
 - 2 hour GEM, GOM, and PBM, 1 hour GEM
 - Data page would allow you to pick time range
- QA Documents:
 - Data management SOP pending
 - Field Observer Form is completed
 - Siting criteria is under review
 - Field SOP v3 is nearly complete
- AMNet Site Liaison:

Currently Mark Olson
All activities are being documented
Liaison works with operators, developer, and AMNet advocates.
Back-up is Tim Sharac (EPA-CAMD)
Technical expertise is maintained by those who participate in AMNet.

- AMNet Measurement Precision and Accuracy Plan:
Site liaison audit of internal calibration source and flow
Co-located measurement data and report at fall meeting
AMNet vs. RMDQ (CA data management program) comparison

9. CALENDAR Survey Results, Pam Padgette

- Survey to site operators about calendar change (wall calendar to logbook style):
Was it useful?
Additional comments?
- Results: 189 responses (110 yes, 69 no, 10 yes but I can live without)
- Some comments from the responses:
Calendar useful because it fit in an air quality lab
Weekly reminders were helpful
Makes operators feel like they are in a community
Some found the booklet version helpful for field notes
It's nice to show off that they are a NADP site
- EROS will take up findings at this meeting, and debate the value vs. the cost,
- General consensus was that they preferred the wall calendar
- It was noted that a lot of operators requested the CALENDAR on field forms
- It was noted that only an electronic calendar was produced for 2010.
- The IMPROVE calendar was noted to be a great calendar.
- It was noted that some people don't have good internet access and couldn't access the electronic calendar.

10. Co-located Sampler Programs Results, Mark Rhodes & Greg Wetherbee

- Aerochem Ice problem for NTN collectors:
Pivot points freeze for lid arms
Tested 6 fabrics for coverings, several were potential sources for contamination
Then tested new bushing materials, with and without grease

Sent off 25 packets to sites for field testing
Most were not installed until after winter (11 have been installed as of 4/15/09)
Results will be available spring 2011

- Dual chimney collector:

Collocated at WA18 where it can be compared to 3 ACM collectors
Equipment modifications were given to NCON systems (similar to the single chimney)
Snow roof was made to prevent bounce from collector lid into bottle.
Chemistry compared well with each of the 3 ACMs.
Dual chimney testing met the majority of the items in the draft new equipment document.
Testing was done without the snow roof.
More testing and statistical analysis was requested comparing the single chimney NCON vs. the dual-chimney NCON.
David Gay proposed to have the state of PA buy the dual-chimney and perform the testing.
It was determined that the issue should be taken up in NOS.

- NCON Bucket Collector:

Tested at collocated sites VT99 (as 99VT) and IL11 (as 96IL)
Problem at VT99 was that ACM collector was down
IL11 had a more complete record
Site operator at VT99 loves collector
NCON collects a little more volume, likely sensor related
NCON concentrations were typically higher for each analyte
NCON showed to be less sensitive to precipitation intensity
NCON showed to have higher concentrations during the winter months
NCON showed to have higher concentrations when precipitation volume was lower
NCON collector showed significant more cycles, wet exposure, and dry exposure during water year 09

- Precipitation gauges:

Collocated OTTs were deployed at IN26.
Data tracked pretty well between the two gages
VT99/99VT had collocated NOAA IVs
Median difference was better than seen with Belforts
Rain gauge data was discussed.
It was shown that the NOAA IV cumulatively adds up precip records of less than 0.01"

11. Previews of the subcommittee agendas were presented

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12. Reports for the DMAS, EROS, NOS, and CLAD sub-committees were presented.

13. CLAD – EROS Mapping Project, Suzanne Fisher, Mark Rhodes, and Greg Wetherbee

- Starting with 2009 annual report, CLAD/EROS would like to see new maps that, for Nitrogen and Sulfur map products, include the lower bins to improve resolution at the lower end.
- Current maps show large areas of undifferentiated concentrations.
- Graphical display and colors used are being discussed, in an effort to make it easier on the eye.
- Also, CLAD/EROS would like to see an N+S map to be created.
- A discussion to switch to the PRISM model was tabled until the fall meeting.
- It was questioned whether having resolution at the low end resulted in a practical use for anyone.
- A response noted that resolution at the low end would be valuable tool for those monitoring N deposition.
- It was noted that uncertainty was compounded from both analytical uncertainty and interpolation uncertainty, and that it could be misleading to move to more resolution.
- It was noted that further discussion will take place in the Executive Committee Meeting.

14. HAL/US EPA Region 6 - Passive Hg Dry Deposition Program, Bob Brunette

- Concept: Estimate Hg Dry Deposition at a low cost per site
- Supplement Existing AMNet Network

- Uses a specialized membrane that captures RGM (GOM) only
- Field and Lab SOPs have been created.
- 2 week sampling period
- Similar to a previous study performed with University of Alberta
- Current study is in EPA region 6 (four corners region):
Collocated with MDN sites
One with a Tekran.
- Field Duplicates and blanks - 2 times per month
- Quality Assurance Project Plan is already in place.
- Method Detection Limit study is coming soon.
- Results are showing that dry deposition is significant portion of total deposition of many of the samples.
- It was noted that the estimates from this project could be high due to the complicated nature of dry deposition, and possible contamination from particulate Hg.
- It was noted that a better designation that this is an estimation of ambient concentration.

15. CASTNET Workshop Report, Gary Lear

- Purpose of workshop:
Review the state of CASTNET monitoring and how to improve it
Attempt to eliminate limitations of methods
- CASTNET is the only network assessing trends in dry deposition.
- Current Method: Use a filter pack to capture gaseous components
- Recommendations:
Adopt a tiered approach to monitoring (most sites follow current protocols, a few sites with enhanced measurements)
Improve measurements of N species to better address the atmospheric N budget.
Develop multi-pollutant instruments that measure gases and aerosols

Add instrumentation for direct dry deposition measurement for verifying the CASTNET estimates.

Do not add CO measurements or sponsor NCore sites at this time

Discontinue meteorological measurements at sites with more than 5 years data

Continue meteorological measurements at any site where chemical concentrations are measured continuously (hourly)

Replace wind instruments with 3D sonic anemometers to measure turbulence.

Reduce the number of sites to around 50-70 (remove sites in densest area, NE)

CASTNET should advocate for increased resources

CASTNET should hold regular meetings similar to NADP

- Should NADP bring in CASTNET? Is this a diversion or compliment to NADP?
- It was noted that AMNet has an interest in CASTNET meteorological data when the sites are collocated, and it would be a detriment to AMNet if CASTNET stopped taking the measurements.
- It was noted that the history and original intentions of NADP were to attempt to include dry deposition and the types of measurements that CASTNET makes.
- It was noted that there might be some issues with trying to role another network into the current structure of the NADP committees and meetings.
- It was noted that the states are required to have three rural ozone monitoring sites. CASTNET can help fill the states requirements.

16. Status of Subcommittees, Chris Rogers

- It was questioned whether the current subcommittee structure might be outdated:
Emergence of CLAAD
NOS and DMAS meeting together a lot lately
- It was noted that there is often presentations in sub-committees that are applicable to everyone.
- A suggestion was to have all presentations in joint, then allow the committees to breakout and discuss afterward.
- It was noted that the schedule being set early is important so that the spaces can be reserved.
- It was asked if people would be open to a three day format
- It was noted that it would be important to make sure that there are sufficient presentations to fill out the agenda.

- It was noted that those who break off into NOS/DMAS might get bored with EROS/CLAAD agenda, and vice versa.
- The discussion was tabled until the fall meeting.

17. Fall 2010 Annual Meeting and Science Symposium, Lake Tahoe, Pam Padgett

- Pam Padgett presented the different sessions of the Technical Symposium, and their chairs, for the Fall Meeting.
- There will be a kick-off speaker for each of the sessions followed by presentations.
- There will be a poster session.
- Field Trip will be to Lake Tahoe Research Center
- Keynote speaker will be from NEON
- The call for abstracts will go out soon.
- The main idea of the meeting will be to get different networks talking to each other.
- Logistics:
 - Fly in to Reno.
 - There are shuttle services from Reno to the Ritz-Carleton (less than an hour away).
 - The hotel is a little isolated, however, it's attached to North Star by Gondola, which has more bars/restaurants.

18. Suggested Spring 2011 Meeting Location, Gary Conley and Kathy Douglas

- Candidates (# of votes in parentheses):
 - Albuquerque, NM (14)
 - Pittsburgh, PA (5)
 - Columbus, OH (2)
 - Pensacola, FL (14)
- Run-off winner: Pensacola over Albuquerque (21 to 16)

Meeting was Adjourned at 4:30 pm on 4/21/10