Joint Subcommittees Minutes
2018 NADP Fall Meeting Albany, New York
Tuesday, November 6, 2018

1. **Welcome, PO and group introductions, logistics** - David Schmeltz

2. **Approval of Spring 2018 Joint minutes (Madison, WI) -** David Schmeltz
   Motion: Greg Wetherbee Second: Tom Butler

3. **State of the NADP** – Mike Olson

Acknowledgements to be part of such an important environmental monitoring network

Network Transition updates

- Sept 2017 Request for Statement of Interest and Qualification
- Late Nov 2017 WSLH identified as new host
- Mar 1, 2018 PO in operation
- Jun 1, 2018 CAL began operations

- All anticipated funds from UI have been allocated to WSLH and required reporting complete
- Majority of equipment/supplies transferred to WSLH
- Detailed laboratory verification was conducted, and no major problems identified
- Sample archive planned to be transferred on Nov 16 (IL11 samples will not be transferred at that time)
- No major stops in service
    - US F&WS stopped all activities until contract in place
    - IL11 continued sampling through support from EPA, LADCO and UI_ISWS continue NTN, MDN, AMNet and AMoN

Provided a summary of the WSLH setup, including the move, facilities, equipment.

PO Initiatives and Outreach

- Local (WI) interaction; WDNR Air Monitoring Section; Water@UW (umbrella organization that connects water scholars across the UW-Madison campus) Large Lakes Observatory; Lake Superior National Estuarine Research Reserve Alliance for Great Lakes
- National/International; National Tribal Forum of Air Quality; EPA National Ambient Air Monitoring Conference; International Aerosol Conference; AGU- CAS; IMPROVE and CSN; NEON; Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI)
- Goal is to leverage existing users research and connections to expand NADP awareness and data application
- Initiate feedback from users to determine data needs, identify gaps, and understand future applications of data and networks
- Increase awareness of all networks and encourage expansion of these resources
- Develop connections with next generation of researchers

- Great response from all – especially Tribal community and NEON
- Developed an official announcement from NADP Executive Committee to announce transition of NADP operations to a global list of stakeholders

Madison Supersite Plans
- UW Arboretum – outreach site moving forward
- Research location identified (Eagle Height Site)
- Diverse stakeholders UW Limnology, UW AOS, WDNT, Madison Water Utility, UW Geology

Sites in Jeopardy
- NTN KS97, FL32, NC17, CO97

Sites closed in 2018
- NTN 6 – 11CO, PA98, FL32, TX21, MI98, AG01
- MDN 6 – AB33, TX21, PA37, CA20, AK02, MN98
- AMNet 1 – UT97

Network in Jeopardy
- AIRMoN network cost and prices were reviewed; Dwindling number of sites, Fixed cost associated with network
- Lead to significant anticipated price increases in the near future
- Network in jeopardy
- Unlikely to open new sites in near future
- AIRMoN offers significant scientific value
- UW Supersite event sampling planned

New or Resolved Operation Sites
- IN21 AMNet
- NY67 NTN
- NC98, AK96, WI01 AMON
- MN08 MDN
- AMoN show most potential to expand
- MDN/NTN priority to prevent additional losses
- Opportunities for collaboration: NEON, Tribes, IMPROVE

Publications
- 2017 213 publications
- 25 doctoral dissertations
- 7 agency reports
- 1 article in Nature
- 1 article in Science

2019 Spring Meeting in Madison, WI
- Lab tours
- Poster session

- Strategic planning

4. **CAL Report –** Chris Worley
   - Thank you to NADP for the vote of confidence in the CAL
   - CAL structure at WSLH reviewed
   - 12 staff members

NADP instrumentation
- 2 Lachat – AMoN, NTN/AIRMON
- 2 Dionex IC-NTN/AIRMoN
- 1 Agilent ICP-OES NTN/AIRMoN
- 2 Mettler pH/conductivity
- 1 TitrEC
- WSLH – instrument redundancy – 5 Lachat's, 6 IC's and 3 ICP-OES instruments

Cross Training/Backup
- Plan is to rotate on an annual basis to provide all NADP chemists the opportunity to become proficient with each analytical platform
- Rotate in March
- Additional 12 WSLH chemists with ICP, IC, FIA experience

Data Review and Management
Priorities
- Improving understanding of the specifics of each network and how they operate
- Understanding types of equipment, data collected and site specific details
- Integrate field data, sample data, precipitation data and chemistry to improve data review process

Efficiency
- Review/assess/streamline data flagging protocols
- Increased communication and collaboration between PO and CAL
- Streamline overall process
- Examining multiple stages of data review

Focus
- Attention to detail and completeness
- Data quality and integrity
- Quality results and excellent service

What's been accomplished?
- Results of RVP are being submitted at the meeting
- Chemists trained and passed initial demonstration of capability and will complete annually
- Smooth transition with site supplies
- CAL was ready to receive NADP samples on June 1

- As of 10/30/18, the CAL has analyzed: NTN-5259; AMoN-1041 +208 travel blanks; AIRMoN-257
- Released June and July (2018) NTN data results
- Released June, 2018 AMoN and AIRMoN
- Data turnaround from month of sample receipt: NTN 90 days and 120 for AMoN/AIRMoN
- QA/QC protocols are in place
- SOPs and QAP are in draft form – will be completed, reviewed and signed off by end of year

Items we are currently working on
- NADP Sample archive
- Improve sensitivity with larger flow cell for FIA
- IC sensitivity-concentrator column
- Bromide – are you there?
- AMoN - Reduction in body breakage
- Improve AMoN sampler cartridge extraction process
- AMoN shipping cost reduction – Faraday cages
- New bottles washed vs non-washed
- Bringing TitrEC online
- Expanding ICP-OES element menu (determine detection limits)

5. CAL Readiness Verification and On-Site CAL/PO Review – Greg Wetherbee
- What is changing laboratories going to do?
- Scope

1. Accuracy and variability compared to other labs
2. Bias of WSLH CAL (WCAL) relative to ISWS CAL (ICAL)
3. Precision of WCAL analyses
4. Cleanliness of supplies
5. AMoN operations preparedness and bias relative to ICAL
6. Ability to analyze low volume samples

Single Blind Sample Studies
- 1 PCQA monthly interlaboratory-comparison – 11 labs
- 30 natural matrix spike samples plus blanks– 6 labs
- 75 NTN split samples (ICAL and WCAL only)
- 15 replicate samples for precision (WCAL only)
- 60 low volume (<69mL) samples (WCAL only)
- NTN and AMoN supply quality control samples – WCAL only
- AMoN collocated sampler study ICAL and WCAL 11 sites only

Conclusion: Results indicate WCAL is ready to produce high quality data

Results:
- Cations in general positive bias for WCAL, doubtful that it will impart any shift in trends

- Anions – negative bias for WCAL
- Ammonium NH4+ – more variability at the high end above 0.5 mg/L
- Nitrate – negative bias for WCAL
- pH – more variability than ICAL and WCAL expected
- Natural matrix spikes: WCAL Ca and Cl had a little more variability than overall
- PCQA interlaboratory samples: less than overall except for pH

60 low-volume samples, results are complicated – see report
- Median absolute % differences < 10 percent for most sample volumes and analytes
- Median absolute % differences >10 percent for selected sample volumes for Mg, NH_4, K, NO_3, Br, PO_4

Clean Supply Rinseate Samples, results are very extensive. See the report.
- Results indicate that CAL is preparing clean supplies for field
- Some cation concentrations might have been due to construction and transition operations that are now completed. Will continue to monitor blanks and for any positive bias in intercomparison samples.

AMoN Collocated Samples
- Results are almost identical between the two labs

Onsite PO/CAL review
Team Members: Greg Wetherbee (USGS), Mark Nilles (USGS), Cheryl Sue (ECCC), Micheal Kvitrud (WDNR)

Findings
- PO technical support findings
    - Loading dock not secure?
    - SOPs for Site Liaison needed
    - Trouble Ticket reporting needed
    - NED supply inventory database needs to be more detailed

No findings for CAL or CAL IT
- 9 recommendations for CAL, 5 recommendations for CAL IT

6. Transfer of the NADP Archive – Mark Olson
NTN
- 5 year archive of all sites
- Kept all samples for NH02, NE15, IL11
- 1 in 100 (random) kept indefinitely

AIRMoN and AMoN
- 2 year archive of all samples

Archive Status
- Samples still in Champaign, IL
- First attempt in Oct 2018, paperwork was not complete
- Second attempt will be on Nov 15, 2018

- All samples ready to go except IL11

Status of IL11
- One of 3 sites from long term archive
- ISWS wants to keep the IL11 samples
- They feel the IL11 samples are I-CAL property

Do we pursue IL11 samples?
- Discussion, on why we keep the samples, what the samples are used for, etc.
- Moved to Executive Committee for more discussion

Future of the Archive
- NOS – Martin Shafer – Long Term Archive
- Freeze all samples
- WI site will be added to long term archive
- 1:100 will focus on geographic regions
- AIRMoN changed from 2 to 3 years
- AMoN changed from 2 to 5 years

7. HAL Report – Ryan Nelson
- Staff update – Monica Garcia Strickland – new lab director role

Data delivery
- 90 days after close of the month
- Report to operators in 60 days, PO in 90 days

Site Liaison Activity in 2018
- Emails=183
- Toll free calls=73

Equipment Modernization Update
- Still 4 Belfort gages in use, 89 e-gages
- ACM collectors: 47 /NCON collectors: 46

Annual QA Report
- 2016 available on website
- 2017 submitted in July 2017, outside review pending (10/18)

PETG bottles
- Some hiccups since implementation in July 2018
- Last glass bottle came in September 2018

Pros
- Trace clean
- Break/Freeze proof
- Eliminated bottle blank correction

- Less leakage to and from sites of pre-charge and sample

- NCON bottle jacks didn't have enough reach- sent out 11 wooden inserts
- One bottle melted to the NCON heater

2015 HAL Review
- Most findings have been closed
- 12/19 Findings closed, 7 open findings in progress are related to database
- 19/47 recommendations addressed

MDN Database to Element LIMS Transition
- Pros/cons of old database

Why use Element LIMS
- Secured and validated front end
- Used for all sample receipts
- Automation for uploading instrument data
- Automation for reports and electronic data to clients
- Ability to send sample receipt notifications at the time of login
- Export data can be customized
- Email results to site contacts

Where we are?
- Element updated to include all current MDN sites
- Staff training completed in October
- Preliminary templates created for entering MOF data as well as final reports

What tasks are left?
- Identify representative number of samples to log into Element for comparison with MDN database
- Log in samples
- Upload datasets into Element
- Compare the output data
- Develop final reports and export for site contacts and PO

MDN site closures/jeopardy
- Lost in 2017 – GA33, PQ17, SK28, NE25
- In jeopardy – CA20, PA37, AK02
- New sites pending – MO46, OH, OK
- MDN Outreach focus in LA, OR

Passive RGM Pilot Study – HAL
- 2017-19 NM, CO, OK
- Collocated with MDN sites
- No power required

8. Preview of CLAD, EROS, NOS agendas

9. **Subcommittee Reports** (refer to individual committee minutes)
   NOS – Richard Tanabe
   TDEP – Greg Beachley
   CLAD – Mike Bell
   EROS – Pam Padgett
   AMSC – Andy Johnson

10. **Critical Loads Online Tools** – Chris Clark
- An update to the Critical Loads Mapper Tool version 2.0
- Intended to bring critical loads and Nitrogen & Sulfur deposition information to decision makers, and aid in specific decision making processes
- Reviewed the basic features of the tool, deposition, critical loads, exceedances
- Introduced key additions – Profile Reports
    - Summary reports for all Class I, Wilderness, and USFS Administrative Areas in the lower 48 states
    - Describe past, current, and future risk to N and S deposition on CLs
    - Specifically developed with USFS needs in mind but with input from EPA and NPS
- Provided other updates from version 1.3 to 2.0
- Provided a demonstration of the live CL Mapper Tool
- Outlined improvements that are planned for version 3.0

11. **Nomination and Appointment of Next Secretary of Executive Committee** - Tamara Blett
Nomination: Greg Wetherbee Motion: Approved

12. **Spring 2019 Meeting Update**- Richard Tanabe
- Madison, WI (IV)
- May 13-16, 2019
- Madison Concourse Hotel
- Planned activities include Lab tours, poster session, farm dinner and networking event

13. **Fall 2019 Meeting and Science Symposium Update** - David Schmeltz
- Boulder, CO likely November 4-7, 2019
- Theme: *Expanding the Boundaries of NADP - Innovations in Atmospheric Deposition and Effects Research and Monitoring*
- Continued growth of the Program catalyzed by a collaborative stakeholder base and extended monitoring coverage, global in reach, and innovations in research and monitoring
- Expanding spatial boundaries
- New analytes, parameters, and novel air quality and atmospheric deposition measurement technologies
- New data analyses and analytical techniques to improve estimates of wet/dry/total deposition; source/receptor relations
- Expanding organizational boundaries
- Possible sessions: International, Satellites, Emerging problems

Adjourn at 14:30