National Atmospheric Deposition Program (NADP)
Quality Assurance Advisory Group (QAAG)
Agenda: April 22nd, 2025
Co-chairs: Nichole Miller, Martin Shafer

NADP QAAG Minutes
Tuesday, April 22nd, 2025
10:00 AM – 12:00 PM Central
Join via MS Teams

Attendance: Greg Beachley, Katie Blaydes, Christa Dahman, Noel Deyette, Dana Grabowski, Eric Hebert, Mark Kuether, Winston Luke, Nichole Miller, Zac Najacht, Jason O'Brien, Melissa Puchalski, Martin Shafer, Marcus Stewart, Tim Sharac, Cheryl Sue, Richard Tanabe, Greg Wetherbee

1. **Site Support Issues/Questions** – *EEMS/PO*
    a. Update on EEMS Site Audits – light spring due to an uptick in other work not NADP related. There is a new employee who has started a couple weeks ago. He has been to three NADP sites so far (NCONs and ETIs) and CASNET sites. On track to complete requirements by August 13th.
    b. AMNet Audits – Vid is on track with AMNet data.
2. **Site Operations** – *Richard*
    a. Overall Update – Completion rate for site issues is 97%-98%. Nathaniel Boerner is no longer with NADP as of April 11th. Looking to replace his position with a focus on site support.
3. **External Audit** – *Noel*
    a. Detailed update in Joint – More in-depth presentation in Joint. All findings and recommendations have been addressed with responses and are in progress or complete. Main take away points: cross training of staff, communication between software programs, additional QA staff, removal of MeHg in MLN, continue MerPAS work, API updates, scrapper tools and multi-data selection capabilities, preliminary data availability, 90-day TAT goal, update data availability statement, timeline for the transition to Horizon, dynamic web data for AMoN.
4. **PCQA Update** – *Noel*
    a. Current and potential future participants – Lost 3 NTN labs between 2024 and 2025, lost 2 MDN labs in 2025.
    b. Change NTN to quarterly – quarterly shipments started in 2025.
    c. FA/SB programs – No FA program in 2025.
    d. PCQA 2024 Data – **MDN Conclusions:** Weak positive analytical bias 5% indicated for NAL, NAL has low variability ~63% of overall among labs, Hg network max contamination increased to ~0.310 ng/sample. **NTN Conclusions:** Weak positive bias for Na and NO_3, strong bias for H^+, low variability for all analytes except NO_3, SO_4, and H^+, large increases in sample contamination for Na, Cl, and SO_4, strong increase in NO_3 loss, but reduced NH_4 and H^+ loss in NTN samples.
    e. PETG Hg Stability Study (2024-2025) – 3 labs involved in the study (NAL, USGS-WM, and UNR). 6 samples: blank, THg ranging 6-21 ng/L. Replicate samples in both glass and PETG. Samples analyzed immediately, ~2 weeks, and ~30 days hold times. **Conclusion:** Glass bottles - ~10% loss from initial analysis to 40 days, but a jump to ~50% loss between 60-100 days. Plastic bottles – (only analysis to 34 days) percent loss was generally less than 10%. Potential reasons for loss – absorbed to surfaces, resealing cap properly, losses to exposure to headspace?
    f. Other – No 2023-2024 Scientific Investigation Report. Data release containing the 2023—2024 data is planned. A dynamic data release containing all laboratory-comparison control charts is under development to replace the PCQA website (which is gone), but it is pending sufficient funds.

5. **Sampler Colocation Update** – *Noel*
    a. Two-week sampling period study – 1-week NY20 vs. 2-week 20NY comparison. **Conclusions so far:** the constituent concentrations are very similar (exception of 2 of 9 samples), there is higher variability among the 2-week data than for the 1-week data, additional data coming in the next 6 months.
6. **Network Optimization – QA Concerns?**
    a. Two-week NTN – will want to continue with doing some sort of 1-to-2-week comparison where and however feasible, would be ideal to encompass multiple climates. Other QA concerns to address would be refrigeration at site (provide mini fridge or cooler?), how compositing would work (on site or at NAL?), how would this change QR codes and data completeness for maps.
    Noel D.: Would there be sites that just aren't able to accomplish this procedural change and would require an exception to continue 1-week samples? Not seen as a reliable option as it would introduce too much variability.
    Richard T.: There are concerns that some sites will drop out the program if we switch to 2-week samples (Alberta Environment has expressed this) – how many would we lose doing this? Also the possibility that we would go back to 1-week if 2-week doesn't work out and now we have interrupted long term data sets.
    Greg W.: An option would be to have the co located sampler in a different climate region each year, if we can afford it.
    Winston L.: The concern of contaminated samples being composited with non-contaminated samples and losing data quality for two weeks now instead of one.
    Martin S.: An option, that was dismissed, would be to have the sites send back the two separate 1L samples and the lab would make the determination of compositing based on contamination among other factors. Doesn't save as much money though. Possible that the 30% reduction goes down to 25% reduction annually for the site by going this route.
    Tim S.: Suggestion to keep network operations as they are (1-week samples), but reduce maybe 25% of the network.
    WL: Two options – losing sites that will never come back or some of the data integrity to keep all sites operational. Would take a lot of cooperation and collaboration to potentially close sites with minimal impact to the overall network.
    GW: Need to make the decision on the scientific needs of the nation and the planet. Should we focus on trends for long term sites to see if potential regulation changes affect air quality and deposition and sacrifice our ability to do this spatially? What are the long-term objectives going to be in the face of scarcity?
    MS: (Brought up a concern later in the discussion) We will need to discuss in more detail about specific concerns with respect to PFAS if samples are held in an unrefrigerated manner. It would be problematic as both potential loss and contamination.
    b. Two-week MDN – we already have a data set on this proposed change. No major concerns with the validity of these samples since two-week samples are currently valid under our QA criteria. Will have to consider moving more sites to 2L collection bottles. If we also then move to bag sampling, this will bring quite a bit of cost savings to MDN.
    c. MeHg in Litterfall – no concerns with this option as well. It has been brought up in the past with no opposition. Right now, MeHg only accounts for 0.1-0.2% of the total Hg measured and there are a lot of issues with contamination and analysis.
    d. AMNet – GEM and TGM – will save time on reviewing the data. Some site sponsors may not like it so we will have to address that. Winston is currently working on a technique to improve the validity of the GOM

measurements and having success. Hoping to be able to finish the sampling and write something up to publish.

7. **Lab Investigation Projects (current and upcoming)**
    a. Hg Passive Samplers *(Christa/Martin)* – We have received 5 of the 8 pilot site samples and were planning to start analysis, but the instrument was misbehaving. Since there is only one chance to analyze these samples, didn't want to risk it by analyze them until troubleshooting was complete. Hope to have the data for the spring meeting week.
    b. TN/TP *(Katie)* – Halt on the lab work, but we are in a good position in terms of our methodologies. Produced good results from the FIA and started investigating TP on the ICP-OES. Hope to pick back up in the near future.
    c. AMoN Alpha Samplers *(Katie)* – Small scale regional study underway. 10 sites deploying duplicates and accompanied by travel blanks for both the ALPHAs and Radiellos. Have collected about 9 deployments of data and are in the process of assessing that data set. Will have more to share during NOS at the spring meeting. There have been some supply issues for the membrane filters and we are currently ordering from a German producer. Also, have sent out a survey to the sites involved in the study and feedback was mostly positive. The only note was that the small anti-static bags used to package the ALPHA samplers can be a bit hard to handle in the field.
    d. MDN Bag Testing – No firm updates. Last known updates were that a potential supplier was found and we were going to order a sample set of bags to test in the field and for QC to see if they meet our needs.
8. **Lab Updates** – *Nichole*
    a. Future of our FIA instrument – in the process with our purchasing department to buy a SEAL flow injection instrument to replace one of our Hach FIA instruments. Support for that instrument will end at the end of the year.
9. **PFAS** – *Martin*
    a. General update – a little over 30 sites at this point.
    b. Network Field QA – continue with the quarterly QC which includes a trip blank, field blank, and a bag blank. All QC metrics continue to be quite excellent. Operators are keeping things clean and there does not seem to be a consistent or substantive loss of PFAS to the bag. Talked with Greg and Noel about setting up an interlab comparison for PFAS measurements. A student is working on a manuscript to talk about work with compositing samples monthly for a total PFAS measurement. There are a few papers that are in the process of getting published (throughfall, cloud water, and tributary loading to Lake Superior)
10. **Data Review** – *Zac/Dana/Mark*
    a. Process Update – new branched approach has been implemented for NTN data and has helped get data reporting back to the goal TAT of 90 days. In the process of doing a direct comparison on the November data set of the "old" vs. "new" data review process. Hope to have that complete by the spring meeting to present. Looking to see if we can implement some of these same process changes to the MDN review, but will have to address so software differences.
11. **QA Documents** – *Nichole*
    a. NADP QAP – approval/suggestions – suggestions due by 4/30.
    b. 2024 QAR – in progress. Expected for external review in a few months.