

Virtual NADP Fall 2025 Business Meeting

NOS Minutes

Tuesday, December 2, 2025, 11:00 AM – 4:15 PM CST

Attendees (76): Abby Carr, Alexander Nyhus, Alyssa Sheets, Amanda Cole, Amelia Jiménez, Ana Luisa Alarcón Jiménez, Anthony Ward, Cami Ritoria, Casey Lanham, Cheryl Sue, Chris Bauknecht, Christa Dahman, Christopher Rogers, Colleen Flanagan Pritz, Connor Olson, Dana Grabowski, Daniel Lee, David Gay, Ella Osby, Emmi Felker-Quinn, Greg Beachley, Hazel Cathcart, Jason O'Brien, Jayde Alderman, Jean Steele, Jeff Collett, Jeremy Ash, Jim Renfro, John Offenberg, José Alberto Rivas (Amelia Jiménez), Kat McKinnon, Katie Blaydes, Katrina Macsween, Ken Brice, Kevin Mishoe, Kristi Morris, Kristopher Novak, Liam TrinhNguyen, Marcus Stewart, Marilyn Wurth, Mark Kuether, Mark Olson, Martin Shafer, Maya Giordano, Melissa Puchalski, Michael McHale, Michael Randall, Mike Bell, Na Zhang, Naomi Tam, Nate Topie, Nichole Miller, Noel Deyette, Olivia Burch, Pablo Reyes, Pablo Sanchea Alvarez, Paige Huhta, Rebecca Dalton, Richard Tanabe, Rodolfo Sosa Echeverría, Royce Riessen, Ryan McCammon, Sarah Benish, Sean Stephenson, Selma Isil, Stacy Knapp, Sydney Schultz, Thomas Butler, Timothy Sharac, Tracy Dombek, Vid Grande, Yasi Hassanzadeh, Yayne Aklilu, Yuan You, Zac Najacht

Motions

1. Starting in January 2026, change minimum sample volume for MDN analysis from 1.5mL to 1.7mL. Change 'v' notes code criteria to a sample volume <1.7mL.

97% yes, motion passed.

2. Retain the Passive Mercury Network as a pilot network through 2026.

97% yes, motion passed.

11:00 Welcome, Logistics, and Introductions (Noel Deyette)

Noel welcomed everyone and had each person introduce themselves.

11:10 Recap of Network Optimization, Procedural changes decisions

Noel highlighted motions from the spring meeting:

1. Option for sites to transition to 2-week Mercury Deposition Network (MDN) collection starting January 13, 2026. Any interested non-seasonal sites must have notified the Program Office (PO) by September 30, 2025 and committed to the full calendar year. Effects of this transition on data quality are being evaluated. It may be offered in subsequent years. PO will continue to pursue options for bag sampling.
2. The Atmospheric Mercury Network (AMNet) will discontinue speciation measurements by the end of current site contracts.
3. Removal of methylmercury as an analyte of the mercury litterfall network (MLN), effective for the 2024-2025 litterfall season.

11:20-12:20 Network Updates including Optimization Efforts

11:20 MLN/MDN (Christa Dahman)

- Staffing improvements: internal transitions (including Walter Ballesteros going to mercury full-time) increased mercury analysis capacity, which was needed for the growth of MLN and Passive Mercury Pilot Network (MerPAS). Christa's role changed to oversee both the trace element lab and PFAS Research Center.
- There is a minimal backlog; network review process cross-training is underway with Ella Osby which should reduce the reporting backlog.
- 2025–26 MLN samples continue to be received and dried; compositing and grinding begins early spring 2026.
- Analysis of passive mercury samples for 2025 Q3 are complete, pending review; preparing for 2026.
- Special efforts:
 - MerPAS is up to 10 sites and should take on an additional 5 ECCC sites in 2026. The hope is to continue the pilot through 2026.
 - Testing has been performed on for sampling bags and Teflon bottles.
 - There was an evaluation of background metals in National Trends Network (NTN) samples to determine what could possibly be analyzed for NTN.
- QC summary:
 - No major changes or nonconformance events.
 - No QC flags for 2024–25 MLN.

- 1 QC flag for 2025 MDN.
- 26 QC flags in passive mercury (out of 96 samples).
- **Motion by Christa Dahman, seconded by Zac Najacht: Starting in January 2026, change minimum sample volume for MDN analysis from 1.5mL to 1.7mL. Change 'v' notes code criteria to a sample volume <1.7mL.**
 - Proposed to match the resolution of the rain gauges due to sample volume conversions.
 - There were only approximately 40 1.5–1.6mL samples since 2019.
 - Discussion: Martin Schafer questioned evaporations impact and whether the change is necessary, but he wasn't going to push back on it. Christa noted that testing showed a loss of 0.8mL due to evaporation.
 - **Vote:** 97% yes (motion passed).

11:40 AMNet (Vid Grande)

- Speciation monitoring support was discontinued. Three remaining speciation sites were converted to elemental-only.
- There are currently sites in OH, NY, and NJ. One NY site is having difficulty finding funding and may be done at the end of the year.
- A site at UNAM in Mexico City is currently down with a pump issue that should be resolved in early 2026.
- Vid audited NY and NJ sites this summer; they were in reasonable shape.
- Old speciation equipment is available for redistribution, let Vid know if interested.

11:50 NTN/Ammonia Monitoring Network (AMoN) (Katie Blaydes)

- Staffing updates, QA improvements, new equipment installations.
- Intern contributions highlighted.
- QA/QC summary:
 - NTN exceedances <1% (238 out of 31685 QC samples).
 - AMoN exceedances 2% (24 out of 1191).
- Proficiency Testing (PT) Results:
 - Environment and Climate Change Canada (ECCC) PT Study RN126: conductivity, NO₃, K, and Na had weak bias. One NO₃ value exceeded the action threshold due to an incorrectly integrated peak (for which a corrective action plan was created). The lab overall received a rating of "Good."

- USGS SRS recoveries were good for all samples except for SO₄ (79%), which will be watched.
- WMO/GAW study 71 had marginal results for pH, which will be investigated. The lab comparison study ceased operation and there is a question of whether an alternative will be found.
- Due to ending support from Hach for the flow injection analysis (FIA) instrument, a SEAL AA500 analyzer was installed in September; validation expected Q1 2026 and eventual replacement for Hach and AMoN FIA.
- SNiPiT TN and TP testing was done at WI06 and is on hold due to background contamination.
- The AMoN colocation study with ALPHA samplers has concluded.

12:05 Alpha AMoN study update (Katie Blaydes)

- A 9-month colocation study (10 sites) of duplicate ALPHA and Radiello samplers occurred in 2024-25.
- Travel blanks (TB) of each sampler type were included. They performed well with most below the MDL and neither above TB criteria.
- 3 sites continued through the end of the year: a high concentration site (CA83), low concentration (CO98), and local site (WI06). Some site-specific biases were noted (CA83 slightly higher bias for ALPHA, CO98 slightly lower bias) but overall the samplers had strong comparability across all sites included in the study. Some discrepancies were noted due to equipment/field issues and those data were excluded.
- Duplicate sample precision was high for both RAD and ALPHA, with ALPHA performing better (19% exceedance for Radiello, 6% exceedance for ALPHA).
- A scatter plot comparing the samplers shows a correlation coefficient of 0.96, including an outlier where the bag was open upon receipt.
- Motion previously passed (Aug 4, 2025): switch AMoN to ALPHA samplers beginning Jan. 2026. The lab has all the necessary supplies to make the change. A training session for site operators will be held 12/25/25, and training videos and SOPS will be available on the website.
- Significant long-term cost savings are expected (>\$60,000 annually starting year 2) due to the body of the ALPHA sampler being reusable.
- Discussion: David Gay and Martin Shafer are impressed by the comparison. Amanda Cole asked whether duplicate samplers would continue to be used routinely. About 15% of sites will get duplicates, so each site may get one 4 to 5 times per year. Melissa Puchalski noted that the higher MDL could be due to seasonality and warmer months. Nichole Miller noted that the MDL will be reassessed annually.

12:20 Network/Laboratory QA Report (Nichole Miller)

- External audit responses were finalized for 2024. The QAR is in progress.

- New SOPs including lid changeout protocol were completed.
- The ECCC PT report also had a high recovery for mercury, but overall there were no concerns. The report is available on NADP's website.
- A few nonconformances were noted, but nothing concerning (increased AMoN body usage from 5 to 8 cycles due to supply issues, AMoN freezer temperature out of range due to electrical issue, water leak in lab over instrument, ECCC RN126 failure, using second source conductivity/pH standards due to backorders).
- Increased AMoN body usage from 5 to 8 cycles.

12:35 Lid Change Procedure Update & Implementation (Nichole Miller)

- The new lid changeout process begins in January 2026 for NTN. There will be an updated protocol, forms, SOPs, field forms (FORF), etc. The steps and pictures will be updated (for initial weight with lid). A blank spot will be left on the FORF for lid weight in case is needed for certain sites. Some field tests were already completed for select sites with positive feedback.
- Zac Najacht noted that the forms may not be ready for the start of January but should be shortly after the new year.
- Noel Deyette suggested a Q&A session might be a good idea, as well as a discussion about the blank space on the FORF where the lid weight would previously go (gray-out instead?).
- Jim Renfro asked why the precipitation section is being removed on the FORF and had concerns about the site operator one step further from the instrument/data. Zac noted that data will be available online and the total rain gauge for the week will still be on the form for comparison.

12:45 Break

1:00 Site Liaison Report (Richard Tanabe)

- A new site support specialist was hired in mid-July (Ella Osby).
- Richard created a new internal website for support resources (internal SOPs, software guidance, etc.).
- The 2026 calendar is available and was completed using only photos submitted by operators.
- The government shutdown closed 31 sites of the 76 sites operated by federal employees. There were sample shipping delays from sites that use return shipping labels provided by federal agencies. Supply shipments were held back to closed sites/addresses. At the 3-week mark, the PO reached out to sites with return shipping labels. MDN sites were more challenging due to 1 in 1 out of supplies for shipping. The true impact of number of samples missed and invalidations won't be known for months.
 - Improvements:
 - Try to have PO communicate to site operators sooner.

- Work with CASTNET where they are collocated with NADP sites to try to stay on the same page and get quicker updates. Include CASTNET as a network on the pre-shutdown survey to operators.
- The NADP status hub and sample risk tracking system is a “network gas gauge” used to see when/what samples are received. It highlights/flags missing samples and where there might be a gap in the map based on criteria percentages. It expands communication and redefines how we utilize lag reports.
- The PO created an online Federal Partners Portal as a resource for funding and operating representatives.
- Sample Archives: AMoN extracts will no longer be archived or offered beginning in 2026 due to lack of requests. No change in NTN archive procedure.
- The Office of Information Systems (OIS) has been working with the lab and PO to improve communication between software programs used. OIS is expected to go through every process and then decide where things go or change. Some software may stay the same, be written in new language, etc. Creating a blueprint first and may rearrange or rebuild.

1:20 CASTNET Update (Melissa Puchalski)

- CASTNET moved organizationally within EPA to the Office of State Air Partnerships in the Air Quality Assessment Division (AQAD) within the Office of Air and Radiation (OAR). Still determining what that means for CASTNET and other programs.
- Lost some sites, including BLM, but gained new tribal partnerships and locations.
- The CASTNET budget supports NADP sites: 23 NTN and 48 AMoN. Also additional support for the two-week versus one-week MDN sampling.
- Modernization and continued efforts for 2025-2027:
 - Prioritizing equipment upgrades for most sites (shelter repairs, replacing on-site ozone analyzers and transfer standards).
 - Reverification for 2023 TAD guidance and updated cross sections.
 - Replacing precipitation collectors to allow for PFAS analysis.
 - Decommissioning select sites mothballed in 2022; considering a partner site and input.
 - Filter pack data through 2024 now in AQS.
 - A new site in Choctaw Nation, OK will be opening soon, and there is a new site in Martin County, FL (MAR013).
 - Sensor deployment to enhance multipollutant data availability:
 - Particulate matter (PM) being measured with PurpleAir sensors at all EPA sites.

- QuantaAQ MODULAIR also deployed (more robust, looking at precision).
 - Some sites without additional testing have gases included in MODULAIR.
 - Collaborated with La Posta and Campo in CA to assess precision and accuracy with regulatory monitors.
 - Tempest meteorological sensors were deployed at select sites.
 - The EPA restructure affected review of sensor data.
- Special projects:
 - Wildfire impacts on air quality were researched with IMPROVE and CASTNET data.
 - Water soluble organic nitrogen research evaluated sources and data gaps in total nitrogen budgets and critical loads. Relationships between PM_{2.5} and measured pollutants during smoke and non-smoke events can be tied to National Ambient Air Quality standards.
 - Ongoing Pandora spectrometer deployment at five sites addresses high priority data gaps in TEMPO satellite measurements in rural and agricultural regions.

1:35 CAPMoN Update (Jason O'Brien)

- Currently 23 sites measuring wet only precipitation either daily or weekly, also 16 sites measuring dry deposition, ground level ozone at 16 sites, PM at 1 site, mercury in precipitation at 5 sites, total gaseous mercury at 3 sites, passive ammonia at 3 sites, and continuous nitrogen and sulfur at 1 site. Collocated with 3 AMoN and 5 MDN sites. Looking for another NTN site for overlapping precipitation data.
- Funding pressures: CAPMON conducted network review to continue operations under anticipated budget reductions and ensure long-term sustainability and integrity of data while meeting policies in place.
 - Redundancies in the network were looked at including impacts from leave-one-out when removing a site in deposition maps and changes in models.
 - Consolidation from 36 to ~24–26 sites (including closure of suspended sites) while prioritizing national coverage, reducing site resolution in southern Ontario.
 - Looking at changing sampling frequency from daily to weekly for half the sites.
- Particulate matter (PM_{2.5}) testing was added to several sites, at seven sites by end of year.
- Lab updates: Current lab backlog for precipitation samples is caught up. Air filter samples should be caught up by 2027-28. There is ongoing method evaluation of Whatman 41 filters as well as a transition to new instruments and software/data storage (e.g., electronic sample history form).

- Field updates: Continued upgrades to the D400 precipitation collector. Started receiving new N400 ozone analyzers, currently developing SOPs and will begin deploying to sites in January 2026.

1:55 USGS External Precipitation Chemistry QA Project / Co-located Update (Noel Deyette)

- Precipitation chemistry quality assurance (PCQA) program: Both the NTN and the MDN programs are now quarterly. For 2025, only three quarters of samples were sent out for the MDN program.
- 21 samples in the last year out of 26 valid with precipitation.
- 100 Field Audit (FA) samples were sent out and all MDN sites received System Blank (SB) samples. So far, 42 FA and SB samples have been processed, and 7 samples were analyzed for both programs. Jess Trevino will join to assist with data release and preparation of samples will be assisted by Ezra Grey.
- Efforts to continue the co-located program continue at NY20 where the comparability of the 1-week 2-week study enters its second year.
- Cell modem telemetry continues to expand.
- The USGS NADP General Information Product (GIP) was released in 2025 and the NADP Fact sheet will be released soon. These will both be available through the USGS NADP website

2:20 Break

2:40 EEMS Field Survey Status (Eric Hebert)

Presenter absent; no updates.

3:00 Sample Receiving & Data Validation Update (Zac Najacht and Mark Kuether)

- Staffing update: down one member due to lab transition.
- Active sites per year dropped from 256 to 231, about 1540 samples received per month. AMoN on track for preliminary report turnaround goal, with NTN and MDN a little behind but not bad.
- Data review updates: All data reviews and control done within a data review program. Streamlined (parallel, multi-reviewer) data review and legacy (serial, single reviewer) were compared.
 - Legacy is slow and difficult to maintain with detailed review of all samples; it is easy to have setbacks with one person reviewing.
 - Streamlined process uses multiple eyes with detailed review of specific cases/samples; faster branched/stacked approach keeps up with the lab.
 - Do QR code and Note frequencies agree between processes? Current results match up with historical results well. The team used the streamlined process, Zac did legacy in a test environment, and then Mark compared to original data and each other.

- Looked at individual differences initially. Focused on any samples with QR code and notes changes, looking for any patterns.
- Only 0.7% difference (980/131130 data points). 18/846 samples with differences between QR/Validity.
- Improved consistency in comments and QC applications.
- Next steps: finalize documentation and SOP revisions.

3:15 MDN Bag Sampling (David Gay)

- Test Teflon bags received in August 2025 had issues with leaks and contamination. There was a proposed idea of trying polypropylene bags, which would be cheaper and easier to manufacture, but there is also a concern of permeability and contamination. There is a third idea of using old Teflon bottles from metals analysis rather than glassware, with consensus from NOS that this is worth pursuing. Overall, a change could save close to 50-60% of shipping costs.
- Testing of Teflon bags received from the manufacturer (IMPAK) in August revealed three issues:
 1. Microholes (which may be due to them being prototypes)
 2. High blanks for mercury (which may change once moved to a cleaner production room)
 3. Difficult handling
- Polypropylene (PP) bags proposed as alternative; cheaper and easier to manufacture, but concerns about permeability and Hg contamination as well as accessibility of small samples of precipitation.
- Reuse of Teflon bottles from metals analysis considered as another alternative.

Discussion: Christa Dahman stated that they've had some Teflon bottles last since the 1980s and probably generate one extra per month. Listservs can be reached out to for additional since they are expensive to buy. Can talk down the line about washing procedures (dishwasher?). Richard Tanabe thinks bottles would be better for operators. Others agree that Teflon bottles might be the best option to pursue.

- Overall, a change from glassware could save close to 50-60% of shipping costs.

3:25 Passive Mercury Pilot Network (MerPAS) (Katrina MacSween)

- Pilot program started January 2025 with 10 sites (4 individual samplers and 1 blank) to complement existing mercury networks; finishing in Q4, 12/31/25. Q3 needs QC finalized, values for Q1 and Q2 look good (10% difference Q1, 4% Q2). Blanks also look good.
- Ongoing work on MerPAS sampler materials (chlorinated carbon?) and reusability (so far 4 breakages in field).

- **Motion made by Katrina MacSween, seconded by Christa Dahman: Retain Passive Hg Pilot through 2026.**
Passed: 97% yes.
- Second motion suggested to reduce number of samplers sent out:
 - Change from 3 Tekran MerPAS and 1 WSLH-prepared samplers and 1 Tekran MerPAS and 1 WSLH-prepared trip blanks to 1 Tekran MerPAS and 2 WSLH-prepared samplers and 1 WSLH-prepared trip blank.
 - WSLH-prepared samplers are performing/comparing well, and the change would reduce costs from \$4000/yr to \$2000/yr per site.
 - Discussion: Connor Olson questions motion since data have not yet been reviewed by MELD. It may be wiser to have more robust sampling and then address potential changes later. Mike Bell asks if things look the same in spring and MELD has reviewed, if it would make sense to change the sampler mix in the second half of 2026 to review for in the fall meeting. Chrise Dahman suggests rebalancing to 2 WSLH and 2 Tekran samplers instead of 3 vs 2. Martin Schafer asks if there are lab prepared blanks, which there are. David Gay suggests seeing what MELD thinks as written and delay implementation, or change to 2 and 2.
 - **Tabled** pending MELD review. The Executive Committee may discuss/approve in January monthly meeting.

3:45 Focused discussion of future Network Optimization, possible alternative proposals (network-focused, interagency collaboration for site prioritization)

- High-level discussion on:
 - Maintaining spatial coverage while reducing cost and maintaining data integrity (Network Optimization Team). Create space in the NAL workflow.
 - Allowing 1- or 2-week MDN sampling after adequate evaluation (currently 3-site comparison).
 - No 2-week NTN sampling until more data are available.
 - Updated interpolation approach to identify high-impact site losses with leave-one-out analysis. A map was created to see where there are gaps and show where minimum requirements are made or not made.
 - Goal: seek new site sponsors in under-represented (i.e., low data/density, high impact) regions.

4:15 Adjourn

Motion to adjourn by Noel Deyette; seconded by Mike Bell. Meeting concluded.