

MELD Meeting Minutes

2022 NADP Fall Meeting
Hybrid – Virtual and Knoxville, TN
November 14, 2022

Co-chairs: Richard Haeuber & Colleen Flanagan Pritz
Secretary (Interim): Katherine Ko

Key Takeaways

1. **Monitoring Networks** are holding steady. New tribal sites for MDN, and new Mexico City sites for AMNet.
2. **Passive Mercury Plan** is progressing, and study design has been improved upon since spring meeting. We have field and analytical SOPs modeled after ECCC. Intent to implement soon.
3. **Mercury Dry Dep Model:** Wyatt Sherlock and Mark Kuether (WSLH) are leading efforts for data organization, management, and maintenance, and application to NADP. They will be looking to MELD for guidance and a workgroup may be formed.
4. **Integrated Mercury Monitoring Review:** Goal to facilitate the development of cross-matrix Hg monitoring coordination by leveraging ongoing independent efforts. There is interest in planning a session at spring meeting to discuss the identification of comprehensive mercury monitoring sites, data gaps, opportunities for resource optimization, etc. Workgroup to form. Contact Rick Haeuber and David Schmeltz for more info.
5. **Minamata Science Group (OESG) to inform EE:** Contact Terry Keating if you are interested in being on the Roster of Experts for air, biota, human, or other matrices. Applications accepted on a continual basis; next meeting is Dec. 6th. Look out for monitoring and emission plans to go out for party review in Feb. 2023.
6. **Minamata EE Air Team:** subgroup met in October. Contact Sandy Steffen for more info.
7. **Litterfall:** Jim Renfro (GRSM) discussed new coniferous site in spruce-fir forest at the park and looks ahead to the field trip on Friday.

Meeting Agenda (November 14, 9:30am-12:30pm ET)

9:30am: Welcome and Introductions

9:45am: Hg Updates: NADP Program Office, and Status on the Intercomparison of Techniques for Mercury Measurements

10:15am: Updates: Mercury Dry Deposition Estimates for NADP

10:45am: Integrated Mercury Monitoring Review

11:30am: Next Steps: Minamata Convention on Mercury

11:45am: Perspectives from the Minamata EE Air Team

12:00pm: Round Robin

12:30pm: ADJOURN

Hg Program Office Report

David Gay, WSLH

Monitoring Networks

- **MDN:** Small rise in site number. Sites restarted: AK02 (Juneau), NE25 (Winnebago)
- **MDN/NTN**
 - Closed, but hoping to open again: WI08 (Brule River)
 - Pending: SC03 (Savannah River; pending restart for 12/1/22), WA04 (Umatilla, pending new site in 2023 Q1)
 - Annual Mercury Report still happening
 - Now using PETG bottles again
- **AMnet:** About to start MX01 and MX02 in Mexico City with Rodolfo Sosa for 1/1/23.
- **MLN:** Same number of sites (with addition of one year-round site at GRSM)

Passive Hg Plan

- Working out logistics to get a passive Hg measurement set up at Beltsville (MD98) in Dec/Jan
- We have basic field SOP and analytical SOP, based on ECCC, to go through review and QA
- May have Japan (and possibly Taiwan) working with Winston to participate

Intercomparison of Techniques for Hg Measurements

- Need simpler/lower-cost methods to measure GEM, GOM, PBM, and RM
- Preliminary data:
 - Good agreement in GEM between and among the Tekrans (though [Dunham-Cheatham et al. 2022](#) and [Gustin et al. 2013](#) suggest otherwise)
 - As expected, speciation system severely underpredicts RM
 - Two detectors for RM is more maintenance work, but is more precise than just one

Mercury Dry Deposition Estimates for NADP

Muge Yasar Kafadar, Wyatt Sherlock, and Mark Kuether, WSLH

Goal: get the model up and running. Actions are being taken towards organization and maintenance.

- Mark and Wyatt plan to reorganize model code for maintenance
- Model Integrity: managing changes within sites and model accuracy over time (managed by Mark, Wyatt and MELD; ETA April/May 2023)
- Define program requirements, i.e., data and model maintenance, and data products and documentation produced (Mark, Wyatt, and MELD)
- Establish internal resources, i.e., database tables, file server space, webpages (Mark; ETA August 2023)

S. Steffen: there is similar work going on from ECCC, especially in Arctic

K. Morris: consider forming working/feedback group as this work progresses in spring 2023

Integrated Hg Monitoring Review

Rick Haeuber and David Schmeltz, EPA

- Increasing harmony and utility across monitoring networks
- Identify sites valuable for multidisciplinary purposes – comprehensive Hg monitoring sites
- Can we identify and prioritize observational data gaps?

- What are opportunities for resource optimization?
- Interest in planning a Spring Meeting Workshop to discuss further – is there anyone we should bring into this conversation?

Discussion:

- Terry suggested that we try and align the effort with administration priorities, such as EJ. We now have the capability to map areas in relation to census data, so seeing if there is an EJ angle in relation to sites where there's comprehensive monitoring and data should be relatively easy and a good addition.
- Doug mentioned that, once further developed (e.g., post workshop), the OSTP group on air research might be interested in such an effort; he and Melissa have been calling in to that group's meetings.
- Jerome Proctor (Santee DEP/Sioux): a specific tribal angle, due to the prevalence of subsistence or cultural fishing, would be a good play for the workshop
- Ami Riscassi (UVA) said that there's been a lot of mercury work in SNP on water, sediment, and fish tissue, so that may be a new site that hadn't been on the list in 2008
- Jim Renfro is making the case that GRSM national park has a good collection of monitoring relevant to the comprehensive review

Discussion, from Zoom chat:

- S. Nelson: It could be good to pay attention to/loop in local climate sensors/monitoring efforts and USGS streamflow gauges as well. Maybe another dot in the circle?
- T. Keating: It might be good to have conversations with the EPA Tribal Science Council and tribal research program.
- A. Hathcoat: I agree with Terry.

Contact Rick, David Schmeltz, or Colleen if you are interested in participating in a working group to plan this Spring Workshop discussion.

Next Steps: Minamata Convention on Mercury

Terry Keating, EPA

- Open-Ended Science Group (OESG): Terry Keating (USA) and Dominique Bally Kpokro (Ivory Coast, Togo) were elected as co-chairs. 42 members nominated to date.
- Roster of Experts: 70 individuals nominated to date. ***If interested, please contact Terry (keating.terry@epa.gov). Next meeting Dec. 6th, 2022.***
- Goal to finish effectiveness evaluation (EE-1) by COP-6 in Nov. 2025.
- Feb 2023: Monitoring and emission plans go out for party review – look out for announcement from Terry, will have turnaround time of a couple weeks
- Goal: partial federation of data system for data management in the future
- Contacts: Terry Keating (keating.terry@epa.gov); Dominique Bally (ballynicus@hotmail.com); Manoela Miranda, with Secretariat, (maneola.miranda@un.org)

Perspectives from the Minamata EE Air Team

Sandy Steffen, ECCC

- Prioritizing data management (air monitoring data, metadata, ancillary data), assessing comparability, data analysis plan
- Met with small group on Oct. 31, 2022. **Contact Sandy if interested in meeting notes or participating in future meetings.**
- Next steps:
 - Decide on database for individual needs, and database for EE needs
 - Compile data info, send out draft 0 and get input
 - Host meeting with subgroup to discuss duties

Round Robin

- **Seth Lyman**, Utah State University: progress on calibrations with oxidized elemental Hg. Close to having an independent, automated field calibrator that can be used to verify atmospheric Hg measurements.
- **Dana Grabowski**, Wisconsin state lab: Hg litterfall network data review and reporting is currently manual (2021 dataset in process). There is coding proposed. **Contact Dana if interested in further details or discussion.**
- **Jim Renfro**, Great Smoky Mountains National Park: starting MLN study at conifer and deciduous sites in the park. TN11 (deciduous hardwood site) and new TN97 (pine-dominated conifer site) will offer two fall comparisons (2022 and 2023), and a full-year (14-month) comparison. Could help explain higher levels of Hg observed in smallmouth bass.
- **Huiting Mao** has PhD student presenting results at symposium on 1:30pm on Thursday
- **Sandy Steffen** doing intensive study on Hg in sea ice in spring 2023. **Contact if you'd like Sandy to collect any samples while she's there**
- **Winston Luke** recently completed first year of data collection at Barrow Observatory in Utqiaqvik, Alaska. Also, NTN collection will move from OK17 to MDN OK01 (McGee Creek).
- **Colleen Flanagan Pritz** chairing symposium Session 6: Mercury deposition and effects.