

NADP QAAG Meeting Minutes
Wednesday April 29, 2020
12:30 PM CST
(10:30 AM PST, 11:30AM MST, 1:30 PM EST)

1) Housekeeping Business (CGD)

a) Roll Call

Camille Danielson, Martin Shafer, Mark Olson, Chris Worley, David Gay, Melissa Puchalski, Richard Tanabe, Marcus Stewart, Amy Mager, Zac Najacht, Eric Hebert, Maria Jones, Winston Luke, Cheryl Sue, Tim Sharac, Bob Larson, Greg Wetherbee (minutes)

2) Routine Business

a) Site Survey Status EH, MJ

The COVID pandemic upset the EE&MS field schedule. Only a few sites have been visited so far this year. Transfer of data from the field has been a problem. The process of archiving field data fell through the cracks in the move from IL to WI, and now there is a need to move data from NADP folder as it is full (Tim Sharac's Box account – Bob and Richard have access). The amount of data is 365GB. Eric asked if Tim could move the data to a server at EPA. Amy Mager offered to meet with WSLH IT people to come up with a solution as soon as possible. Greg recommended getting a Terabyte HD. **Eric will update everyone when site surveys resume.**

b) Site Operations Update MO

Mark Olson reported that split shift operations have been going well. With the spring season, the demands for instrument repairs are down. On average, about 10% of sites across the networks are down. Overall, PO and NED are operating pretty well.

3) Items for Discussion

a) HAL/CAL QAP – CGD – Document sent for review

Merged HAL into same QAP with CAL because many systems for both labs are essentially the same. The document has been circulated to QAAG with a request for review comments by May 8. **Camille intends to do approval by Survey Monkey vote**

b) CAL/HAL QARs – CGD

Mark Olson is working on HAL QAR and Camille is working on CAL QAR for 2019. Reports should be available for review prior to the spring meeting. There was no 2018 CAL QAR, so Camille will incorporate 2018 information into the 2019 report. **Will be posted on the website once final.**

c) External Audits – CAL/HAL/PO – ALL

A brief, initial lab review was done by a team before WSLH took over CAL operations. Since then, formal CAL or HAL reviews have been talked about. Greg: Combined CAL

and HAL reviews are a good idea, but PO review requires different skill set, preferably reviewers from the Budget Committee. Mark Olson indicated that he would like a HAL review as soon as possible. David suggested punting until next year and focus on the HAL. Winston indicated that the consensus in Boulder was to review both labs simultaneously but waiting until next summer is probably wise. Greg suggested a prequel PO meeting this summer after Budget committee, either in person or over the phone (more likely). There was a suggestion to combine PO reviews with Budget Committee meetings in the summers. This discussion may continue at the spring meeting. **Action Item for Fall: Wait until the fall to see what is going on with COVID-19 to make a plan for the review.**

d) General QA Updates – CGD

- Internal Audit of CAL and HAL was completed in December 2019.
- SOPs are up-to-date, and TOC .pdf soon to be posted on web site and available upon request to ensure communication between labs and groups wanting SOPs and to ensure that the most current SOPs are transmitted.
- MDLs 2020 – Based on samples that undergo the entire process. Switched from buckets to bags to prepare for bag sampling. However, losses in nitrate, ammonium, and phosphate complicated that process. NTN and MDN MDLs have been validated for 2020 and are the same as 2019. AMoN MDLs are slightly lower than last year and will be updated.

e) HAL Updates – Mark O/MS

Keeping up with supplies and shipping. Recently hired HAL Chemist, Kirstin Widmayer, who is awesome! As of last night, MDN data through August of 2019 have been posted to the web site. Reporting preliminary data to sites and to the web is a priority moving forward. Received comments on RVP report last night and this morning, and it is being updated and finalized. Tim Sharac will be sending some comments as well. Greg then whipped up the discussion of the USGS-implemented study in the report versus the field study that compared the HAL and EFGS data. It was recommended by Greg to remove the USGS-implemented study from the RVP because the results were not generated with the same instrument(s) or analytical method as current HAL operations. Mark Olson commented on problems with shipping and implementation of the study by the site operators. Camille indicated that the whole report was very challenging from working with EFGS to field implementation to data analysis. Mark Olson will take Greg's input into consideration in the revision. **The group decided to move forward, revise the report, and then have the QAAG approve it.**

f) Bag analyte loss study update – CW

Chris gave the report on the PowerPoint presentation that was sent to QAAG members in advance for the bag sampling study. Simple solutions provide 100% recovery of ammonium, nitrate, and phosphate, but complex solutions show large loss of these analytes for solutions at concentrations near the MDLs. The Canadian bags showed more consistent and robust conservation of these analytes. Motion to continue with Canadian mylar type bags was proposed. Greg then resurrected the 2014 bag-bucket study data and tried to make the case that what the CAL was exploring was noise on the signal. Winston suggested that if a better bag (Canadian mylar) is available, why not use it? David Gay chimed in that Executive Committee will consider the costs, and that a motion to start bag sampling will be made that uses the current polyethylene bags if the mylar bags cannot be procured / shipped in a reasonable time.

g) Data/LIMS Updates – AM

Amy indicated that the CAL is working back toward 90-day data turnaround despite many challenges. Currently, CAL output is 120-day turnaround time for NTN and AMoN; MDN 180-210 days. Delay in MDN because of transfer of LIMs to WSLH. Everything is going pretty well with the COVID workforce changes. Curve balls with government shutdowns and worldwide pandemics have slowed reviews. Zac is working from home and making up time. Zac indicated that data review will take a little longer after Covid 19 data is coming in, but due to the previous government shutdown experience, the CAL has learned to adapt to perturbations to keep processes flowing.

h) pH Bias studies – CGD

- Slight low pH bias noted in several PT studies for lower pH samples.
- Multiple studies have been implemented to address the issue.
- Assessment of pH results from multiple PT studies – bias on lower pH samples and especially spike blanks (inherently lower pH samples)
- Inter-comparison with ECCC – sent 50 samples mix of NTN samples, ECCC PTs and a few pH standards – they ran on same day using their standard method
 - ✓ 5+ treatments with different probes and calibration buffers and stirring
 - ✓ Showed updated WSLH method about 0.05 low bias on average compared to ECCC except when stirring much improved
 - ✓ Determined low ionic strength buffers, stirring with Mettler probe best overall accuracy and precision

✓ **Calibration issue found!**

- Calibration Issue Investigated
Tested 19 QC/PT standards plus ~ 55 NTN samples measured both ways with old incorrect and new correct Calibration. Difference in result range from 0 to +/- 0.2 SU. Most 0.05 to 0.15 negative bias on samples below pH 5.6. Some positive bias on higher pH samples.
- May mean historical (prior to 2/4/2020) WCAL data biased low on the low end due to incorrect calibration parameters ~ 0.05 to 0.15 units and not stirring may also cause a bias – not stirred at ICAL when using Titrec instrument, but they may have “bobbed” probe when in manual mode.
- Further explored how the calibration error can be quantified
Series of pH standards from 4 – 8 with 0.5 pH increments tested both ways – this could be done but consensus was to move on from this problem.
- Greg and David suggested to just make a statement in the data notes on the web site and move on. NADP has never adjusted chemical data. Mark Olson agreed not to adjust data. **No motions were made, but this issue will be presented in NOS at the spring meeting.**

i) Eagle Heights Site Update – MO

- 2-3 electronic rain gages, the ETI, Ott and space for a test one.
- NTN samplers, Aerochem, New model Aerochem (New star is the distributor - \$7000, can get it out of Douglasville GA for \$5300 directly from the guy building them), N-CON, CAPMoN (doesn't include the sensor so will need to add This sensor)
- MDN samplers, Aerochem and N-CON. Based on data provided by Guey-Rong Sheu, another evaporation study on the N-CON will be implemented. QA at Arboretum – dual chimney NCON doing duplicates. Acidity study – have samples been acidified enough to keep Hg in solution.
- Tekran possible for installation at the site as well as
- AMoN samplers
- Moving forward with field QA!

j) AMoN Shelter “Audit” – CGD

- Richard has a shelter audit package ready to go and should be deployed in May.

k) AMoN Network QC due to COVID - CGD

- Radiello is in Italy with known COVID epidemic. It was unknown whether Radiello was going to be able to continue to supply AMoN. However, CAL is currently overstocked with Radiello supplies! Therefore, the CAL is now going back to

normal field QA/QC protocols for duplicates, blanks, etc. with first June deployment.

- l) Other COVID updates/concerns
 - None expressed by the group.
- m) Spring Meeting attendance?
 - Melissa indicated that there isn't a QA report out on the web for reading prior to the meeting. Therefore, QAAG is encouraged to submit a report (perhaps these minutes) to provide information to spring meeting attendees in advance of the sessions.
- n) Other Topics?
 - Eric wished Maria a Happy Birthday! She endured a 2-hour QAAG meeting with no gift!
 - Not presented in meeting: Although USGS External QA Project is normally on the QAAG agenda it was overlooked – it will be on the Fall agenda and was covered at the Spring Meeting. Interlaboratory comparison samples, field audit samples, and system blank samples are not being shipped until the USGS resumes routine operations. The delayed interlab samples will be shipped later to catch up in one large shipment. The 2017-18 External QA Report is in editing with an undetermined publication date due to numerous setbacks by the USGS Denver Publication Services Center. An online data release containing all of the 2017-18 Precipitation Chemistry QA Project data was approved last week and will be disseminated soon.
 - Camille adjourned the meeting at 2:40 CDLST.

April 2020 Minutes Approved 6/24/2020 Via Online Survey Monkey Vote – 100% approval