Eastern PA Coalition for Abandoned Mine Reclamation

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November 2020 Progress Report

Highlights:

- EPCAMR staff scanned 15, georeferenced 2, mosaic & digitize mosaicked mine maps for the **PA DEP** MSI MMG program. QA/QC checked work.
- EPCAMR staff virtually hosted the **EPCAMR** board meeting, participated in a weekly **PA AML Campaign** call, a **PA AMR Conference** call, and a call with **Downstream Strategies**.
- Sampled Nanticoke Cr. for **EC**, **Loyalsock Cr.** for **LCWA** and **OFBH** for **Tetra Tech.**
- Updated www.treatminewater.com and www.epcamr.org; administered the EPCAMR Facebook and G Suite for Nonprofit accounts (for NAAMLP as well); maintained GobbaDaPile in-house domain server and workstation.

Education, Outreach and Admin.:

- Sampled Loyalsock Creek Downstream of treatment systems, both Connell B and C vein treatment systems in and out, and the Lewis Gutten Drift Treatment system in and out. Also, cut down trees on the berm, dug out the influent channel and attempted to fix the wier at Lewis Treatment System. [LCWA]
- Spoke with George Frederico of Thia LLC who we contacted for a quote to treat the Mocanaqua Tunnel AMD. He had several ideas for aeration, filtering and sludge dewatering. This time I was asking about options for the Connell B Vein AMD treatment system, the plugging issues and the inability to flush it properly without digging it up. He said typically backwashing the limestone is the way to remove considerable aluminum buildup, but if you are seeing brown sediment that is not likely the issue. It could be mud or iron or both. He thought we should test to be sure and it would help with a fix. He offered to take a look at some point.
- Cancelled the webinar feature of Zoom which hosted up to 500 participants for the AMR Conference. Starting this month, the total hosted participants will drop back down to 100 for each account. EPCAMR and WPCAMR each have an account which is paid until June 2021.
- John Levitsky, Luzerne Conservation District Watershed Specialist, sent around an email to local colleagues who sample AMD asking if they sample for nutrients or sediment. They have recently begun working on the Luzerne County Watershed Implementation Plan (WIP) as part of meeting the Chesapeake Bay initiative in reducing Nitrogen, and Phosphorus being discharged to the Susquehanna River watershed. He was making the case for adding these parameters to some AMD sampling because the data will support or deny that the AMD should receive further attention in the Chesapeake Bay restoration funding. I responded stating we measure flow and total dissolved solids (TDS) and recently added the measurement of turbidity to our samples and how that can be related to total suspended solids (TSS). Terry Ostrowski replied and asked us to add Nitrate and Phosphate to our monthly sampling of Askam AMD Treatment System.
- EPCAMR management staff participated in weekly PA AML Campaign call.
- Promoted the idea of signing up for the Whova Virtual Conference Platform post-conference via email to our email lists. Had one taker sign up and pay the registration fee.

- Exported spreadsheets from Whova to show PA AMR Conference attendee's activity. I took a snapshot on the night of the first day (10/28) and again the day after the conference (10/30) in case there was no way to tell if an attendee watched the live video feed or the recorded one. The one tab has the attendees listed by name and with total sessions attended and total minutes then it breaks it down by presentation. Created a fill-in PDF of the certificate so Anne Daymut could easily create certificates for each person that requested us to verify their Professional Development Hours (PDH).
- Added Laura Rinehimer as a manager on our EPCAMR YouTube channel so she could upload environmental education videos. Also added Anne Daymut as a manager so she could upload the recorded AMR Conference sessions there. I uploaded the ones I had so we could have a permanent record and not have to pay for it through Whova cloud. Found an easy way to trim the videos in the native Windows Photos app.
- Followed up with Eric Naguski, Dauphin Conservation District, to ask if they had heard anything from Representative Scott Perry's office regarding a tour of AML sites as requested in the spring. They were waiting to see what happens with COVID before making any plans.
- Took care of some administrative tasks that had been building up since the conference. Archived 2017-2019 timesheets in the safe. Wrote April 2020 Program Manager progress report. Updated EPCAMR Board Meeting page, formatted EPCAMR 2020-2025 Strategic Plan and posted to epcamr.org. Sent Bear Creek 319 Grant Landowner Agreements to be e-signed. Wrote October 2020 Program Manager progress report. Billed down multiple grants for work completed and sent invoices for reimbursement.
- Prepared Treasurer's report and minutes from last meeting in preparation for the Board Meeting.
- EPCAMR staff hosted the EPCAMR 4th Quarter Board Meeting virtually through Zoom.
- EPCAMR staff hosted a call with Downstream Strategies to talk about progress and next steps for the Solar on AML GIS tool.
- Packed up ISCO sampler to return it to Field Environmental Instruments. We didn't get a full inch of rain in the episodic sampling event, but it was enough to show a fluctuation in parameters. Tetra Tech decided this was good enough and were only charged one month rental. [OFBH]
- Back to working from home after the Thanksgiving holiday. Gathered office essentials and brought them back home.
- EPCAMR staff sampled the inflow/outflow of the Askam Treatment System, upstream and downstream (below Espy Confluence) on the Nanticoke Creek. Issue with the Swoffer flow meter number pad not working after it got wet. Recorded all data in spreadsheet, except the flow for downstream site until I can finish entering cross section data and calculate a flow. [EC]

Technical Assistance:

- Sampled the OFBH bi-weekly and sent samples to lab. Stabilized stilling well with a pipe strap. [OFBH]
- Received the ISCO automatic sampler at the office and looked into setting it up at the Old Forge Borehole (OFBH). Tetra Tech would now like us to sample for 48 hours now at 2 hour intervals starting when a 1" storm event is predicted to start. Waited and watched the weather for this window of opportunity. [OFBH]
- Steve discovered the X drive was hacked with the Mars Ransomware Virus, and hacker left ransom instructions to pay $300 in bitcoin to get a decrypted program. Attempted to figure out how the x drive was attacked, likely through a SSL port opened in April to allow us to access the NAS drives from home. Shut the ports down immediately. Began scans of all computers connected to the network. Did some research on the particular virus and looked for solutions. Purchased one program that said it would work, but did not (a scam). I contacted the Computer Shop to ask what to do. He asked if the backup was also corrupted. We stopped making a backup of the drive since the maps are sent to the state and is backed up on their servers, however there is other data and the maps we hadn't sent to the state were corrupted as well. The Computer Shop suggested that he has seen clients pay the ransom and get their files back because the hacker is out to make money.

- Setup the ISCO sampler on site to start on 11/11 at 10 am which is when the storm is predicted to start. Dumped the rain gauge start new and confirm we got an inch of rain. [OFBH]
- EPCAMR was off for Veteran's Day, but I spent the day figuring out how to pay the ransom in bitcoin to have the hacker send the decryption programs. Setup Windows Security to manage ransomware protection and started scans on all computers and NAS drives at the office before going home. I was surprised this wasn't default. Upon returning to the office, Windows Security discovered and quarantined 3 files in the recycling bin of the X Drive that were likely run to encrypt the files. So, this confirms that it was an active hacker that got into the drive remotely through HTTPS security and without an account, ran the programs and deleted them. He likely exploited a flaw in that particular NAS drive's security. Got the decryption program from the hacker and tested the program. It worked.
- Picked up ISCO sampler coordinated with Hawk Mountain Labs to pick up the samples. [OFBH]
- Setup the decryption program to run on the x drive. Success, all files are back to normal. Scanned and scanned more. No trace of the malware.
- Recorded OFBH data in EPCAMR Sampling Data spreadsheet and downloaded precipitation data from Weather Underground to compare with episodic sampling data. [OFBH]
- Worked with PayPal to get a refund for data recovery software that was suggested to remove the Mars Ransomware Virus. It didn't work and I was charged $80+ for it. Attempted to work with the makers of the software, but they continued to try to sell me fixes (more scams).
- Remembered another procedure that may have had something to do with allowing a hacker into our local network. Deleted our account on noip.com that I obtained in April to make changes to the router remotely and shut down remote access from web to router (but may have reset my password in the process). Learned that networking security is not a task for DIY amateurs.
- Digitize data from USGS "100 Greatest Anthracite Discharges" report into EPCAMR sampling database to establish background data for nutrients in AMD discharges for Lackawanna County. Showed that OFBH has had Nitrate levels above 1 mg/L in the past.
- Along with one of the bi-weekly samples of the OFBH we took along our YSI Photometer to test for Phosphates and Nitrates. Found that the OFBH has higher than expected nutrient levels at 0.9 mg/L NO3 and 1.1 mg/L PO4 at approximately 75 CFS that would be a substantial loading. We will have to sample again to confirm. Continued to digitized data from USGS report for Luzerne County, but didn't find anything else of consequence relative to nutrients. Corresponded with watershed specialists from Luzerne and Lackawanna County to share my findings as they work on their County Action Plans (CAP).
- Researched a way to test network speeds (not internet speeds) using IPERF command line software.
- Sampled OFBH for the 9th time and sent samples to lab. Processed transducer data to get flow data. Received a set of lab results from Hawk Mountain Labs and added data to our water quality sampling spreadsheet. Received word from TetraTech to hold work on the OFBH project effective close of business that day even though one sampling event was left to complete the project. The client had stopped communicating and paying for the project. [OFBH]
- Clipped Jeansville Basin from the geobasins shapefile to send to Pagnotti Enterprises as per their request related to a geothermal project. Cautioned that the file was digitized from the Scarlift Report and does not represent the actual mine pool boundary, but more like the underground mined out area. Offered to map the mine pool in the area as this basin has not been mapped yet.
- Called into Swoffer to ask about recently ordered parts that weren't shipped. Got to speak with the owner of the company, Bob Swoffer, by chance. Confirmed that I was calibrating it properly. Bob says the number of spins to go 10 feet should be closer to 190 rotations. It's 167 consistently. Bob sent a 2-inch and 3-inch propeller and instructed us to calibrate it after installing the new parts. Contacted Rickly Hydrological to get a cable for the AquaCalc Pro flow meter as a backup to a potentially failing Swoffer flow meter.

[ ] - Denotes funding source where applicable.