Eastern PA Coalition for Abandoned Mine Reclamation

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December 2013 Progress Report

Highlights:

- Continued processing maps and tweaking our method for the MSI Mine Map Processing Grant
- Received word that the OFBH Act 13 grant was given to a competitor; Met with SMS for update
- Downloaded, produced a flow dataset and reset a transducer in the **Lackawanna Valley**
- EPCAMR hosted the first holiday get together for staff, volunteers and interns
- Continued work on Mine Pools in the **Northern and Southern Coal Fields**, conducted 2 mine map investigations in **Schuylkill and Montour Cos.**, and researched sampling equipment for an effort in the **Nescopeck Creek Watershed**
- Updated www.epcamr.org, www.treatminewater.com and administered the EPCAMR facebook and Google Apps for Nonprofits accounts.

Education and Outreach:

- Added "EcoOrnaments" to the EPCAMR Online Store in time for holiday ordering of these unique recycled glass bulbs containing shredded office paper and iron oxide. Figured out shipping weight costs in the ShopperPress store for the first time, all previous sales simply included shipping in the overall price.
- Added a list of board members and their affiliations to the EPCAMR Board page on www.epcamr.org at the request of the members at the last board meeting. EPCAMR ByLaws prohibit the sharing of contact lists outside the organization unless specifically granted by the board. Since these bylaws were made before information sharing on websites became so advanced, this may be a moot point that Board Members are not so concerned about anymore, but potential conflict was averted by only listing affiliation and a link to that organization's website. In the near future they were asking for biographical pages of members (who give consent) on the EPCAMR site. Also updated and posted employee policy as per recommendations by the board. Notified the board via MailChimp of these changes.
- EPCAMR staff attended a meeting at the Duryea Borough Building with Susquehanna River Basin Commission (SRBC) and the Lackawanna River Corridor Association (LRCA) staff to find out information on the Act 13 grant awarded to Susquehanna Mining Solutions (SMS) to develop a treatment system for the Old Forge Borehole. This grant application was in direct competition with a grant submitted by the Lackawanna Valley Conservancy (LVC), but was awarded instead.
- Spoke with Wayne Lehman, Schuylkill Conservation District, about participating in a meeting on the future of the Audenreid Treatment System. Since a year after the system was installed, there have been small problems that have grown into bigger problems. This meeting will evaluate those problems, rank them and look for solutions and or funding sources to fix them.
- Researched and followed up on an e-mail from the Friends of the Nescopeck Treasurer, Tim Ference, who was asking about Vernier Sampling Equipment. The Friends are coordinating

with Hazleton Area School District STEM School to sample flow and chemistry in the Nescopeck Creek Watershed and specifically the Jeddo Mine Tunnel AMD Discharge. I had never heard of the brand, but they look to be "educational quality" water quality monitoring meters and probes. Their Data Lab 2 Package looks to be a cost effective alternative to lab grade field equipment ($850 as opposed to $3,000). EPCAMR will watch this project to see if this grade equipment would be acceptable for our education programs and maybe even treatment system monitoring.

- Created EPCAMR Program Manager monthly report for the previous months, gathered other staff reports, posted them to www.epcamr.org and sent to PA Department of Environmental Protection (DEP) 319 Nonpoint source (NPS) program staff.
- Setup a WordPress website at 2014.treatminewater.com for the 2014 AMR Conference. Setup a barebones site with a “Save the Date” post explaining the chosen dates, place and theme of the conference, an “About the Conference” page and web links to previous conferences. As the conference committee solidifies more details, I will post more to the site and develop more content.
- EPCAMR staff and Bernie McGurl from the LRCA met with Tom Reiley, and Charlie Medico from Susquehanna Mining Solutions to discuss involvement in their recently awarded Old Forge Treatment System Development Grant from the Commonwealth Finance Authority (CFA). EPCAMR staff showcased the mine pool work that was recently completed and Bernie discussed the Watershed Restoration Action Plan that was recently completed for the Lower Lackawanna.
- EPCAMR hosted a Christmas Party for staff, interns and volunteers to come and celebrate the accomplishments, share stories of collaboration over the last year and exchange “secret Santa” gifts. This marks the first year that EPCAMR has had enough staff to make it worthwhile to host a holiday get together.
- Worked with EPCAMR Executive Director and Bookkeeper to create and update sales orders and invoices in QuickBooks from grants and reimbursement paperwork to create a Treasurers Report for the upcoming board meeting.

Technical Assistance:

- In preparation for invoice 3, finished reconciling number of images on the network drive (later transferred to the external drive for delivery to DEP) vs. the number of scans on the inventory control sheets for the Mine Subsidence Insurance (MSI) Mine Map Processing Program. Also, new this month, sorted images on the drive between Underground Mine Maps (UMM) folder and the “Other” folder. This will identify to DEP the scans that need to be processed as SID files for later georeferencing and digitized as opposed to other files (i.e. cross sections and borehole logs) that cannot be georeferenced [MSI].
- Picked dropped off and picked up maps, 2 times this month, from the PA DEP Bureau of Abandoned Mine Reclamation (BAMR) Wilkes-Barre Office. Also searched through some previously scanned map to find specific maps that needed to be rescanned due to imperfections in the scans (i.e. lines) that were recognized by staff at the PA DEP California District Mining Office (DMO) who quality check them [MSI].
- Reconciled georeferencing work and completed Invoice 3 for the MSI Program. Sent the hard drive to the PA DEP California DMO [MSI].
- EPCAMR staff created reimbursements for work completed in October and November for the PA DEP 319 Program.
- Ascertained the Subsidence Potential of the York Farms neighborhood of Pottsville over the York Farm Colliery and In the Danville Area by looking at mine maps and cross sections from several sources including the Office of Surface Mining (OSM) Folios, OSM National Mine Map Repository (NMMR) aperture cards and U.S. Geologic Survey (USGS) Miscellaneous Investigation (aka I-Series) reports. It seems that along the Sharp Mountain, several seams of

coal that were steeply pitching were left intact due to the problems that arose in other areas from mining in such situations. Therefore the ground under the York Farms neighborhood was stable and no voids exist due to underground coal mining that could cause subsidence. No maps were found for the Danville Area and I recommended test drill holes to be assured that underground mines (of any minerals) did not exist below.

- EPCAMR staff had a concern of a black substance on some of the maps that were recently picked up from the PA DEP BAMR Wilkes-Barre Office. Because of the health concerns with some types of mold, EPCAMR purchased mold testing kits from Lowes Home Improvement Store and ran the tests in the map scanning area and a control outside of the area. The test kits did not show any mold presence. The black substance was assumed to be dirt or coal dust which is harmless to breathe in, but can scratch the scanner. Going forward, any maps that are "dirty" are placed in a document carrier (mylar envelope) to minimize scratching damage to the scanner [MSI].
- Completed 2nd and 3rd quarter 2013 reimbursement for work completed for the SRBC Mine Pool Mapping Initiative. The grant is almost complete, but some work still remains to finish a 3D model for the Wyoming Valley and to produce the final report with data that is formatted to view in ArcGIS [SRBC].
- Georeferenced an "all veins" map of the Glendower Colliery - Heckscherville Valley, and a 1972 Wyoming Valley Mine Pools map to see what additional information could be taken from those maps to update the mine pool for the respective areas. Digitized mine pool flow direction lines from the Wyoming Valley map to update the lines that were digitized from the 1950's Bureau of Mines Maps (aka the Ash Maps). Created 50 and 100 foot structure contours of the Buck Mountain Vein from the 3D model of the Heckscherville Valley [SRBC].
- Met with Jim Charowski, PA DEP BAMR in Harrisburg, to accept a roll of mylar that was being given to make our own mylar envelope document carriers for scanning heavily soiled or torn maps [MSI].
- Spoke with PA DEP California DMO staff regarding georeferencing work for the MSI Mine Map Processing work. PA DEP staff were concerned with the amount of control points being used to georeference a map. Their feeling is that 4 points in each corner of the map are sufficient and any more than that are a waste of time. This few points simply puts the map in the general vicinity and concentrates the possibility that a control point could be incorrectly placed. EPCAMR staff have been using an average of 10 to 20 control points scattered throughout the map (depending on size, scale and coverage area) in areas where it is obvious that surveying was used to draw features on a map. Due to the age of the maps, a majority of the collection from the Wilkes-Barre Office are hand drawn and accuracy varies in different areas of the maps (typically less accuracy toward the edges), therefore 4 points at the edges are not enough. Ten points evenly distributed throughout the mined area distribute the probability of error over a greater number of points and therefore should produce a more accurately georeferenced map. First order polynomial (affine) transformations are used to orient the map but not warp it [MSI].
- Attempted to georeference 3 maps that were presented to me by EPCAMR GIS Specialist who deemed them too difficult to georeference. After spending an hour combined on the 3 maps trying to find meaningful reference points, I concluded that the maps were not able to be georeferenced [MSI].
- Traveled to the Old Forge Borehole Discharge to download transducer data and clear the memory by restarting the log. Traveled to the LRCA office afterward to have our EPCAMR President sign checks and look over the check book register, a check and balance performed by EPCAMR officers.
- Worked with Second PA Geologic Survey cross sections for the Wyoming Valley (aka. Ashburner Series) data to define thickness of the coal veins using the U.S. Bureau of Mines Report on Barrier Pillars in the Wyoming Valley using an excel spreadsheet, which will later be translated into thicknesses across the cross sections. Converting the Barrier Pillars Roman numeral identification to English numbers allowed me to better sort the shapefile that was

created from this report. Once again, like in the Lackawanna Valley, matching up the names of the veins in each colliery to a common name for the basin was difficult since each colliery tended to have a different name for the same actual vein. This can be easier solved by looking at the scattered data in the EarthVision 3D Viewer [SRBC].

- Zack Bell, PA DEP California DMO staff, stopped in at the EPCAMR Office on a surprise inspection of the Mine Map Processing setup and availed himself to answer any questions we had. EPCAMR GIS Technicians were able to go through specific questions on the Pennsylvania Historic Underground Mine Map Inventory System (PHUMMIS) database. Also received the Hard Drive on return from the DMO office in the mail and started to review the return files and which ones were in need of rescanning (which were much less this time) [MSI].
- Edited the Coal Seam Names excel sheet based on Office of Surface Mining / BAMR Wilkes-Barre Office Vein Nomenclature charts and verification by 3D mapping. The correlation of local coal company name to formal Anthracite Region-wide name was cumbersome in the PHUMMIS database and this spreadsheet was the basis for that information in the database. Several local to formal coal vein correlations were incorrect because they were repeats of another local being compared to a different formal name. If these were to stay, they would need to be appended with the coal company or locality in which the anomaly exists, otherwise it causes a duplicate in the database. Basically it boils down to the fact that it is very difficult to correlate coal vein names in the Northern Anthracite Coal Field to their counterparts in the Southern, Western Middle and Eastern Middle Coal Fields. Therefore, I suggested that we break out a Northern Field dataset and keep the other fields together. The suggestion was not well received and was met with another conflicting database from the Pottsville DMO Deep Mine Safety Office. Any "decoding" done after that underground mining ceased is secondary knowledge (hearsay). Therefore reports trying to correlate veins in the 1960s and later reports such as Wood et. al. 1969 & 1986, ACOE Northeast Flood Study 1970, USGS I-Series 1973 & 1976 are secondary information, aside from the fact that they are all in conflict in varying degrees. In my opinion, the Northern Field vein nomenclature was confused for proprietary reasons and decoding that confusion was done by the U.S. Bureau of Mines in the 1950s when coal companies were still heavily deep mining the field. This institutional knowledge was kept and passed down to the OSM and then to the BAMR office in Wilkes-Barre and then to EPCAMR. This information, I believe to be the most consistent as I build and view the data in 3D model format [MSI].
- Analyzed Old Forge Borehole Transducer data at the request of the LRCA and SRBC to ascertain a median flow from 2013. From February 14th to December 19th, 2013 the Old Forge Discharged 79 CFS on average, with a max flow of 305 CFS and a minimum of 65 CFS. The maximum flow should probably be disregarded since that matches up with a high flow event when the river water probably inundated the stilling well. This event sets a limit on the flow monitoring setup, and modifications may need to be done to the stilling well to prevent high river levels from corrupting the remote data sensing environment. In the Lower Lackawanna WRAP we wrote that the Old Forge Discharged 94 CFS on average, with a max flow of 120 CFS and a minimum of 77 CFS. That was for some period in 2012, I am unsure of the actual dates. It probably states it somewhere in the report.
- Removed drum from the Gestetner Copier and emptied the toner that was building up again causing black lines to show up on printouts. This type of quarterly maintenance seems to stem off the lines for another few months. There is a waste toner bottle somewhere inside the copier, but it continues to elude my blank stares at the internal guts of the machine. EPCAMR cannot afford another copier machine and I am always up for a challenge as long as I am not wasting too much time.

[ ] - Denotes funding source where applicable.