



Regulatory Program Update

April 16, 2012

Progress Report

Inside this Issue...

Page 2

-Investigating Bat Habitat in WV
-Learning the Ropes at WV DEP

Page 3

-Reviewing Reports in IL
-Impoundment Spill is Learning Opportunity
-Attending Public Hearings in TX

Page 4

-Sampling for Low-level Mercury in VA

Page 5

-AML Inventories in VA
-ARRI Tree Plantings in KY and VA



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Building State Regulatory Agency's Efficiency and Effectiveness with Graphics

OSM/AmeriCorps Member Julia Goins serves in a slightly different capacity for her state regulatory agency than most OSM/AmeriCorps Members. Julia is a graphic designer and journalist. Most of Julia's work so far has been on visual projects and recently in developing applications.

This quarter, Julia designed an overhaul of part of the WV DEP's website for the Technical Applications and GIS Unit (TAGIS team), which includes a more user-friendly database. Julia has designed various icons and graphics for applications for her team. One graphic,



displayed above, has been given preliminary approval to be used on smart tablets and phones for an application designed for the GeoMine Appalachian Pilot Project. Additionally, Julia worked on a Flash animation movie that software users can use to guide them through West Virginia's Mining Explorer application. The movie

describes the capabilities and tools of the software and how it can be most effectively used.

Julia's duties as an OSM/AmeriCorps Member have begun creating applications, websites, and more that can be used and understood by audiences from a variety of backgrounds. Julia's design and journalism background have been beneficial in defining appropriate designs that cater to many different users, agencies, and institutions. Be on the lookout for more artful designs, articles, and applications from Julia!

Members Team up on GeoMine

This spring, **Blake Eickmeyer**, an OSM/AmeriCorps Regulatory Program Member located with the Denver Field Office, spent a week visiting the OSM Knoxville Field Office. During this time, Blake worked closely with OSM/AmeriCorps Regulatory Program member **Glenn Galloway**. As part of this visit, Blake shared information about the GeoMine project, while Glenn shared differences between Appalachian mining and Western mining. Together, Blake and Glenn evaluated historical mine permits and also gave a



Blake Eickmeyer (L) and Glenn Galloway (R) pause as they work during Blake's visit to the OSM Knoxville Field Office.

demonstration of GeoMine to a visiting State Director from the Bureau of Land Management. Glenn says, "On the surface, investigating old permits isn't a very glamorous task. But for me, this is more than

determining status codes and attributing data. I'm telling the story of the landscape: what happened at these locations, where mistakes were made, how OSM has strengthened the protection of natural environment."

Resuming Investigation of Bat Habitat in West Virginia

As **Andrew Roberts** returns for a second year as an OSM/AmeriCorps Member, he resumes his work with Indiana bats, an endangered species, and mining impacts on their habitat. Andrew has been using ArcGIS to map Indiana bat habitat, maternity roosts, or hibernacula, and evaluate the proximity to proposed mines and permits. The maps Andrew creates are available to the whole department and show coal companies exactly how close their operations are located to an endangered species population.

DID YOU KNOW?

The USFWS requires that if there are endangered species within a potential mining area, a company must take certain actions to not cause significant harm to the population. Certain avoidance measures mining companies must comply with include tree clearing restrictions, buffering caves and abandoned underground mines, riparian buffer protection zones, and the minimization of disturbed area. Providing roosting habitat may also be required when girdling trees.

Learning the Ropes at WV DEP

For **Dianna Robinson** and **Madeline Harper** this quarter, two Members serving with West Virginia Department of Environmental Protection, learning about the processes used in collecting hydrologic data from mine sites and entering the data into the Department's database taught more than just entry skills.

Dianna mentioned relearning old GIS skills she had learned in college to convert data from AutoCAD, a engineering software, to ArcGIS, a mapping software used in the regulatory mining business to map mine features and natural features of land. Once the information was entered into ArcGIS, it can then be analyzed for compliance issues among other things. Dianna has been assisting fellow OSM/AmeriCorps Members with the GeoMine project, a pilot cooperative project among several Appalachian states to map abandoned mine lands and features for multi-agency use.

Both Dianna and Madeline have been entering Discharge Monitoring Reports into the water quality database used at WV DEP and fulfilling Freedom of Information Act requests as they are submitted.

"In the time I have been with the program, I have experienced way more than I initially expected. My mentor, despite having numerous responsibilities, has continued to provide an abundance of opportunities and has provided mentorship needed for me to succeed."

Barry Gibbs on the OSM/AmeriCorps Regulatory Program and Supervisor
Judith Stoute



Members Attend Public Hearing on Mine Permit

This quarter, OSM/AmeriCorps Regulatory Members **Alex Resovsky** and **Allen Kumassah**, serving with the Railroad Commission of Texas both participated in a public hearing regarding a new mine permit that was being challenged by concerned citizens. "It was interesting to learn about all of the concerns in opening a new area to surface coal mining and to see firsthand how environmental regulations are interpreted to ensure that the land is protected," said Alex. Attending the hearing gave Allen and Alex a perspective of the important role state regulatory agencies play in ensuring the safety of mining operations and as well as the responsible use of natural resources.



OSM/AmeriCorps Member **Allen Kumassah** touring the Kosse Mine in Texas.

Member Hired by Agency

In February, **Lauren Lunsford** was offered a position with her agency, the Kentucky Department of Natural Resources. Lauren is now an Environmental Engineering Assistant 1 with the Division of Air Quality in the permits section. Lauren says her time with the OSM/AmeriCorps Regulatory program was very valuable and helped her land this new position. Congratulations and good luck, Lauren!

Reviewing Reports for Illinois Mines

Serving with the Illinois Office of Mines & Minerals, OSM/AmeriCorps Member **Tammy Yasar** participated in several mid-term and completeness reviews this quarter. Using inspection notes, groundwater data, drill logs, well construction diagrams, boring logs, and more, Tammy wrote compliance reviews for several active mine sites.

Tammy also participated in research to determine if groundwater conditions around mine sites were worsened and, if so, whether conditions were due to the coal mining. Tammy determined

the screen length and the total depth of the wells, analyzed drill logs showing the drill cores of an active pit, and looked at coal seams within a drill core and their depth.



Tammy posing in front of a coal processing plant and stockpile.

Story from the Field:

Impoundment Spill Creates Unique Opportunity

This quarter, OSM/AmeriCorps Member **Curtis Gregg** had a unique opportunity to observe an unusual process. Curtis explains: "One highlight this quarter was being able to witness and assist TDEC [Tennessee Department of Environment and Conservation] staff during the entire enforcement process of the Premium Coal slurry impoundment spill into [the] New River. . . This spill was caused by a discharge from a slurry impoundment owned by Premium Coal Corporation. Premium Coal operates both the coal wash plant with the slurry impoundment as means of disposing the plant's coal waste. On top of the impoundment dam, the slurry lake is designed to be the first source treatment of the pumped wash water. After particles are settled, rain events may allow the water to travel through a decant pipe into a series of wetlands for further treatment. After the wetland, the water then travels down a rock channel before reaching the receiving stream. TDEC and OSM inspectors traveled to the site after various reports of black water being spotted in the New River. Further analysis showed that there were too many solids and not enough water below the decant pipe in the slurry

lake. Without allowing time to settle during a high volume rain event, polluted water travelled through the decant pipe discharging polluted water through whole system. The operation was forced to shut down by OSM in order to fix the system and until the discharged water met water quality standards. . . It was valuable to learn the multiple steps each agency and organization needed to conduct in order to achieve a productive outcome. In the end the environment did suffer, but it was great to see how through hard work and communication these projects can become successful."



Curtis stands in front of the Premium Coal slurry impoundment.

Member Assists with Low-Level Mercury Sampling



Nathan (left) and Chip sample for mercury in the Clinch Watershed

Nathan Grinstead, with the Virginia Department of Environmental Quality sees his implementation of a low-level mercury sampling as his most significant accomplishment this quarter. Nathan worked on this study in cooperation with Dominion Virginia Power, as part of a clean metals special study in the Clinch River watershed. For this project, Nathan learned how to gather water samples in the field and how to filter the samples for further analysis, skills he can use in future jobs. Nathan explains that the method he used to collect the samples was created by EPA and is called “Clean Hands, Dirty

Hands” (EPA Method 1669). “This procedure requires two people to maintain clean samples. The equipment used is a peristaltic pump, C-flex tubing, Teflon tubing, and sterile 40 mL sample vials. Since the testing equipment used for these samples is very sensitive, it is extremely important to take all measures necessary to maintain clean samples.” Each piece of equipment is double-bagged and one person, dubbed “dirty hands”, opens the outer bag for each piece of equipment. The other person, “clean hands”, opens the inner bag and removes the equipment, thus insuring it is not contaminated.

Touring an Underground Mine

OSM/AmeriCorps Regulatory Program Members **Rafael Villanueva** and **Ricky Higginbotham** with the Alabama Surface Mining Commission got to tour an underground coal mine this quarter. Of his experience, Rafael notes, “We went a few hundred feet underground and rode a mine cart a few miles in order to see the main mining areas. It was very cold, dark and dusty and we learned much about underground mine safety.”

Ricky adds, “Our office deals primarily in surface mines and to the best of my knowledge there are very few active underground mines left in the state of Alabama. This was a very interesting trip and it was amazing to see how large this mine was.”



Rafael Villanueva (left) and Ricky Higginbotham (right) prepare for their tour of an underground coal mine.



“I am impressed with how Nathan is catching on with the low-level mercury filtering procedures; I feel Nathan will have no problem implementing this project by himself the next go around.”
- Chip, Field Biologist with VA DEQ

Building GPS Skills through AML Inventories

OSM/AmeriCorps Regulatory members **Nathaniel Baker** and **Andrew Hensley**, with the Virginia Department of Mines, Minerals, and Energy, have assisted with the development two Abandoned Mine Lands (AML) projects. These projects are located in Dickenson and Scott counties, and the inventories performed by Andrew and Nathaniel will assist department staff as they plan and prioritize reclamation. Andrew and Nathaniel assisted in locating, photographing, and marking each feature with a GPS waypoint. Open portals, gob piles, vents, and abandoned operations equipment are common AML features they have inventoried. Nathaniel and Andrew have honed their GPS skills and familiarity with ArcPad software as part of this project. Nathaniel appreciates being able to add GPS usage to his skill set. Andrew adds, "Finding the features can be difficult because they are sometimes hard to



This AML feature, photographed in Dickenson County as part of an AML inventory, shows an open portal with a weight gate to allow water out, preventing a mine blow-out. The water is backed up due to a nearby beaver dam.

see or notice if you're not use to looking for these kinds of things. I have had the privilege of accompanying four different employees that have experience in identifying AML features and they have shown me a lot and what to look for both on the maps and in the field." As part of this process, Andrew and

Nathaniel occasionally interact with landowners whose property is near the AML features being surveyed. Landowners are often pleased and relieved to learn that VA DMME is interested in reclaiming the leftover mining features.

Members Participate in ARRI Tree Plantings

This spring, **Muriah Beeson-Kesler**, serving with OSM in Big Stone Gap, VA and **Todd Ulery**, serving with the Kentucky Department of Natural Resources, each participated in a tree planting with the Appalachian Regional Reforestation Initiative (ARRI). Muriah volunteered with high school students on the tree planting of a five-acre reclaimed mine site. She answered questions about reclamation and forestry, and taught the students how to plant seeds and seedlings. The students and Muriah planted American chestnuts and several native hardwood species. Muriah has also is working with the Virginia Division of Mined Land Reclamation (DMLR), the Department of Forestry, ARRI, and others to help organize an event for Arbor Day in southwest Virginia. Her responsibilities include finding a sound system,



Todd, above in foreground, and Muriah, below on right



securing prize donations, and contacting Buchanan County schools to encourage their participation. Working on these projects has enhanced her event coordination and volunteer management skills. Muriah sees the Arbor Day event as a great way for students to learn about and help with reforestation on reclaimed mine lands.

Todd worked with ARRI and approximately 20 volunteers in Harlan County, Kentucky to reforest a mine site with an interesting history. Todd says, "The site was left abandoned by its owner who decided to jump ship before reclamation on the site. The State had to take responsibility to do so, and that is where the tree planting comes in." Todd and other volunteers walked in 8'x8' grids to plant 1,500 trees on three acres of grassland.