

EPCAMR



2006 Year in Review for the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation Program

The Luzerne Conservation District partners with EPCAMR to provide 2 full time employees through their AMR Program: an AML Program Manager, Robert Hughes and a Watershed Outreach Coordinator, Michael Hewitt. In 2006, the program housed 4 additional staff including:

- a full-time Municipal GIS Outreach Technician, funded under a National Fish & Wildlife Foundation Grant
- a full-time Office of Surface Mining / AmeriCorps VISTA Watershed Development Coordinator, funded in part by the Office of Surface Mining and the Corporation for National Service, EPCAMR, and the Pocono NE RC & DC,
- a part-time Environmental Education Intern, supported by EPCAMR and PPL funds
- a part-time Anthracite Art Intern funded in part by the Office of Surface Mining.



The EPCAMR Program Staff are centrally located in the EPCAMR Region, housed at the Luzerne Conservation District, our local Sponsoring Organization, which administers and supports our base level grant funding from the PA DEP Section 319 Program. The EPCAMR Program Staff are always available to answer any questions or concerns and to provide ideas and technical assistance on issues related to Abandoned Mine Drainage or Mine Land (AMD/AML) in Northeastern PA. The EPCAMR Organization is an extremely extensive network of volunteers, supporting agencies, at the County, State, Local, and Federal levels, versed in reclaiming abandoned mine lands and restoring our watersheds impacted by AMD. We have also developed an exhaustive set of technical, educational, and financial tools and resources that are continually updated on our website, located at www.OrangeWaterNetwork.org. (Make note of the hyperlinks underlined in blue throughout this document, which will take you to more information about the topic).

2006 Initiatives:

[Lykens Water Level Tunnel AMD Treatment Project-Wiconisco Creek Watershed](#): The EPCAMR Program Staff in cooperation with the Dauphin Conservation District, Hedin Environmental, the USGS, Medco Corporation, PA Game Commission, and Skelly & Loy Engineering, Inc. began the construction of the system in November of 2006. When finished, the Lykens Water Level Tunnel discharge will be diverted into a fore bay basin to begin to precipitate the iron, then a vertical flow wetland (VFW), and then to a final settling basin prior to discharging into Bear Creek. EPCAMR received a grant in the amount of approximately \$70,000 to acquire the land for the treatment system, monitor the project's construction, and finally transfer the property over to the PA Game Commission to

allow for perpetual treatment of the mine discharge. Other grants have been obtained for design and construction making the total estimated cost for Phase 1 about \$354,000. Future plans include expanding the treatment area in a Phase 2 project to treat additional mine drainage that enters below the current project site.

[AMD Education Curriculum Development:](#) EPCAMR Environmental Education Intern and VISTA Volunteer collaborated together to develop, an education module for local schools aptly named “What’s in Your Water?: Abandoned Mine Drainage in Local Watersheds”. This module meets the Pennsylvania Department of Education Curriculum Standards and the Virginia Standards of Learning with a goal to understand the effects of abandoned mine drainage (AMD) on water chemistry, aquatic life, and human consumption by discussing it in relation to non-point source pollution. EPCAMR is also a partner in the statewide Abandoned Mine Drainage Education Coalition (AMDEC) which has just recently produced a prototype AMD Curriculum “Nature Interrupted” for grades K-12. This trial document also meets the Pennsylvania Department of Education Curriculum Standards.



[Iron Oxide Resource Recovery Initiative for NE PA:](#)

EPCAMR has been the leader in Northeastern Pennsylvania to pioneer the idea of economical recovery of various metal oxides from AMD discharges, and or from AMD Passive Treatment Systems in Eastern PA. Armed with a baseline analysis of 25 large mine discharge metallurgical analysis and loading calculations completed in 2004 with the help of Hedin Environmental, EPCAMR Anthracite Art Intern began collecting iron oxides from several discharges. These samples were dried, ground into a pigment and distributed to approximately 40 local artists. This endeavor resulted in the first

multimedia [“Anthrascapes” Gallery Showing](#) in which all of the 80 separate art pieces used the iron pigment. We plan to continue these galley showings in 2007 in cooperation with Keystone College and Lackawanna College, both in Lackawanna County. EPCAMR has been working with EcoTech LLC to begin collecting iron precipitate from the largest discharge (based on flow) in Pennsylvania, Old Forge Borehole. Future plans for iron recovery also include the Scott Ridge Discharge (Site 19) to the Shamokin Creek in cooperation with the Northumberland County Conservation District and Dietz and Gourley LLC.

[Geographic Information Systems AML Mapping Support Program for Local Governments:](#)

Lead by EPCAMR Municipal GIS Outreach Technician, Rob Lavelle, the EPCAMR Program Staff continued a very successful community outreach program for AMD/AML impacted municipalities called "AMD in Your Community" originally developed by WPCAMR and adapted by EPCAMR. The program was geared towards providing planning tools to local governments in the Northeastern part of PA and in the Northern Tier Region. The program funded under a National Fish & Wildlife Foundation Grant, provided 3 FREE GIS Maps to municipalities that attend one of the series of 2-hour workshops that were held throughout the EPCAMR Region. A brand new 42” wide color plotter was acquired by



EPCAMR and was heavily used during the course of the project for producing professionally colored maps for local governments showing various layers of land use, abandoned mine land acreage, stream miles impacted by abandoned mine drainage (AMD), watershed boundaries, aerial photos, and other thematic areas of interest to the local municipalities. The Abandoned Mine Land Inventory System (AMLIS) Geographic Information Systems (GIS) Mapping Program, as it was referred to, was presented to a total of 25 workshops that reached over 40 municipalities in 2005 and 2006.

Wyoming Valley Watershed Outreach Program:

In 2006, the EPCAMR Program continued to work with Valerie Taylor, as our OSM/VISTA Watershed Development Coordinator, originally from Winchester, VA to work with EPCAMR and the Luzerne Conservation District on providing opportunities, programs, and educational events, as well as community development and historical preservation programs, in partnership with local governments, community groups, watershed organizations, conservation organizations, and youth from the Wyoming Valley School Districts. An industrial arts commemorative plaque and 2 community gardens were completed along Avondale Hill, Plymouth Township, in partnership with the Wilkes-Barre Vo-Tech School, St. David's Society, Plymouth Historical Society, the Anthracite Living History Group in honor of the 110 miners and boys who lost their lives to a fire in the mine on September 6, 1869, at the Avondale Mine Disaster.



An industrial arts commemorative plaque and 2 community gardens were completed along Avondale Hill, Plymouth Township, in partnership with the Wilkes-Barre Vo-Tech School, St. David's Society, Plymouth Historical Society, the Anthracite Living History Group in honor of the 110 miners and boys who lost their lives to a fire in the mine on September 6, 1869, at the Avondale Mine Disaster.

Stream Side and Abandoned Mine Land Clean Ups: The EPCAMR Program coordinated 10 separate cleanups in 2006 most in cooperation with DEP's new Clean Our Anthracite Lands and Streams (COALS) initiative; including 3 in low income and abandoned mine impacted sites in Nanticoke and in Wilkes-Barre, the Historical Avondale Mine Disaster Site, along Sickler Run, along Hicks Creek, along Harveys Creek, along Drakes Creek, along Gardner Creek and around the PPL Riverlands near Mocanaqua.



Technical Assistance Summary: The EPCAMR Program Staff continue to provide mapping assistance and gather statistics for various partners using GIS technologies. One tool that is being provided and updates is RAMLIS GIS Tool, which shows abandoned mine land and reclamation GIS Layers using ArcView (>8.x) or ArcReader Software all contained on a CD. This was originally developed in 2005 with the help of a Memorandum of Understanding with the Office of Surface Mining's Appalachian Region Technology Transfer Team. Their continued support and the additional support of the Western PA Watershed Programs and the Community Foundation for the Alleghenies allow

our staff to use ESRI's ArcInfo Software and several useful extensions to further develop the tool. RAMLIS (Reclaimed Abandoned Mine Land Inventory System) combines the PA DEP Bureau of Abandoned Mine Reclamation (BAMR) Database with the Abandoned Mine Land Information System (AMLIS) Database to create both a state wide and a case-by-case view of the current status of Abandoned Mine Reclamation by PA DEP BAMR. EPCAMR, DEP District Mining Offices, WPCAMR

and the Western PA Watershed Program will be collecting more information to include reclamation done by other entities, Growing Greener, other funding sources, active mining operations, and other historical mining information. EPCAMR staff continue to develop GIS layers of mine drainage tunnel locations, mine pool basin boundaries and infiltration points to learn about the underground effects of mining and potential for water storage in the Anthracite Region. EPCAMR also produced approximate 20 maps for partners (aside from the maps produced through the Municipal Outreach Program).

Operation and Maintenance Matters: [Flooding events in 2006](#) took a toll on treatment systems and stream projects statewide, which preempted the DEP to authorize a \$450,000 Quick Response Emergency Repair Fund through Growing Greener, a collaborative idea between WPCAMR and EPCAMR. In Catawissa Creek alone, since the construction of the Audenreid Mine Tunnel Discharge Passive Treatment System in December 2005, there have been 2 substantial high water events that had severely impaired the system and its ability to treat all of the 8,000 gallons per minute it was designed to treat. Another Treatment System on the Oneida #1 Discharge had also seen its fair share of plugging and destruction. Locally these 2 systems became the focus of a combined effort of the Catawissa Creek Restoration Association, the Schuylkill Conservation District, the Columbia County Conservation District, the EPCAMR Program staff, Rettew Associates, Hedin Environmental and other partners to begin brainstorming how to and finding funding for the repair of these systems. Several sources were tapped including the Federal Emergency Management Agency (FEMA), their state counterpart (PEMA), the PA's Quick Response Emergency Repair Fund (through WPCAMR), the Western PA Watershed Program and other local partners. Once repaired, these systems will again collectively treat over 10,000 gallons per minute of mine drainage that flows into the Headwaters of the Catawissa Creek. In the Loyalsock Creek Watershed, the "B Tunnel" Treatment System, which was damaged by flooding, is being repaired by the PA DEP and there are plans to double its treatment area. Finally in the Shamokin Creek Watershed, the Carbon Run Discharge (Site 42) Anaerobic Wetland Treatment System has been revamped with the addition of 1.5 tons of mushroom compost and seems to be working much better.

Keeping Track of the Numbers – New Mine Drainage Treatment Projects: The Corbin Mine Drift Discharge (Site 15) was completed in September 2006 in the Shamokin Creek Watershed and producing tremendous water quality. Several treatment systems began construction in the EPCAMR Region in 2006, including Bernice Mine Discharge to the Loyalsock Creek, the Ayeslworth Creek Discharge to the Lackawanna River, the Lykens Water Level Tunnel Discharge to a tributary to the Wiconisco Creek. Several treatment systems are also being designed, including the systems to treat the Neumister discharge in the Schuylkill River Headwaters and the Oneida #3 in the Catawissa Creek Headwaters.

Policy Development: The EPCAMR Program Staff provided technical comments to several planning sources; including the PA AML Campaign, who were successful in gaining the support of federal legislators and aided in the Reauthorization of the Surface Mining Control and Reclamation Act (December 2006), PA DEP Non-Point Source Liaison Workgroup's Resource Extraction Subcommittee, the Mining Reclamation Advisory Board, and the Pocono NE RC & DC's Stormwater Focus Group who developed a [Stormwater Handbook for Municipalities](#). Comments were recently incorporated in the new Pennsylvania Stormwater Best Management Practices Manual from the DEP. These comments address concerns that the EPCAMR Program has related to allowing stormwater to be directed toward abandoned mine land areas that have been disturbed, where open abandoned stripping pits, subsidence prone areas or dry siltation basins exist. The EPCAMR Program is encouraging Conservation Districts, PA DEP, local governments, and developers to consider alternative stormwater Best Management Practices in the abandoned mine land areas and not to encourage infiltration that might otherwise contribute to the underground mine pool complexes and have the potential to produce even more abandoned mine drainage.

Outreach Summary: The EPCAMR Program Staff continued our Environmental Education Program with the help of Pam Kattner, our Environmental Education Intern. Two “Fossil Days” were hosted at the LCD Office for Hanover Area School District with the help of a PPL Project Earth Grant. Over 1,000 students attended our Earth Day 2006 Program which was hosted at Freeland Elementary School and approximately 800 students were educated at Mt. Carmel Elementary School's Field Days. EPCAMR Program Staff also spoke to ecology and chemistry classes at [Tamaqua Area High School](#) about local AMD/AML Problems within their watershed. EPCAMR also partnered with West Side Vo-Tech School to have their machine shop design an AMD Chalk Mold out of an aluminum block, which consistently produces orange chalk for use in classrooms. A list of programs are available on the [Environmental Education Pages](#) of our website, www.OrangeWaterNetwork.org.



[2006 PA Statewide Conference on Abandoned Mine Reclamation:](#) EPCAMR Program Staff co-hosted the conference with WPCAMR, the Office of Surface Mining and the rest of the AMD Conference Planning Committee. The Conference was held in State College, PA from August 24th-26th at the Atherton Hotel. The conference brought together 200 people from seven states to provide workshops related to outreach, policy, science, and watershed planning. There were over 35 presentations. Highlights include: SMCRA Title 4 Reauthorization, Passive Treatment Operations and Maintenance, AMD Chemistry, Identifying Funding Resources, Water Monitoring Results & Databases, Geology of Coal Regions and Developing Community Partnerships.

[West Branch Susquehanna River Symposium II:](#) The EPCAMR Program Staff co-hosted a second symposium with Trout Unlimited, WPCAMR and the rest of the West Branch Task Force in State College, PA on May 12th. Set up the EPCAMR Exhibit, Co-sponsored the event, served as moderators and facilitators for some of the breakout sessions, and assisted with the setting up of the displays

[2006 Bloomsburg Fair:](#) The EPCAMR Program Staff set up an exhibit that highlighted our Iron Oxide Resource Recovery efforts across the EPCAMR Region. The exhibit included several art pieces from the “Anthrascapes Art Show”, examples of wood stains, recycled colored mulch, dried iron oxide in a bag, bandanas, and sample jars of the wet iron hydroxide sediments commonly found in AMD impacted streams. EPCAMR’s “Got AMD?” Tie Dye T-shirts and AMD Avengers Coloring Books were also available as a fundraiser. Nearly 60,000 people walked through the EPCAMR Exhibit in the County & State Building during the week and several people were encouraged to join local watershed groups.

EPCAMR also conducted over 20 informative presentations on AMD/AML Issues to Schools and Colleges met with 3 separate industry representatives interested in culm pile reclamation and approximately 10 AMD/AML focused watershed tours reaching thousands of students in 2006.

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