



# Schuylkill Action Network (SAN)

## Abandoned Mine Drainage 2016 Workplan

**Strategic Goal: Maximize reduction and/or treatment of abandoned mine drainage (AMD) discharges.**

Strategies / Actions	Timing	Lead
<p><b>Strategy 1:</b> Support implementation of projects that demonstrate successful AMD remediation in priority areas (with funding, information, expertise, collaborative problem solving, etc.)</p>		
<p><i>Strategic Plan alignment: Objectives 1, 2, 3, 4, 5, 6, 8 and Strategies</i></p>		
<p><u>Actions:</u></p>		
<ul style="list-style-type: none"> <li>• Explore and pursue ways to reduce inflow/filtration in order to reduce discharge from the Pine Knot Tunnel system.               <ul style="list-style-type: none"> <li>○ Secure funding for pit filling and stream diversion around pits overlying the Pine Knot pool.</li> </ul> </li> </ul>	2016	All
<ul style="list-style-type: none"> <li>○ Continue coordination/communication with U.S. Army Corps of Engineers (USACE) regarding Pine Knot feasibility study (<i>overlaps with Strategy 2 and 3 below.</i>)</li> <li>○ Investigate improving habitat and stream lining sections of the watershed.</li> </ul>	Multiyear	
<ul style="list-style-type: none"> <li>• Identify and pursue options for providing treatment of remaining Pine Knot Tunnel/ Oak Hill Borehole combined discharge (together 30% of metals from all AMD sources in watershed).               <ul style="list-style-type: none"> <li>○ Work with USACE and PADEP on follow-up to Pine Knot Watershed Study.</li> <li>○ Continue to advance efforts to explore the development of an active treatment system through the Abandoned Mine Land (AML) set-aside funding</li> </ul> </li> </ul>	Ongoing	All
<ul style="list-style-type: none"> <li>• Identify priority AMD sources within the Schuylkill Watershed and provide input and support for their successful remediation.               <ul style="list-style-type: none"> <li>○ Maintain/update list of priority AMD projects in need of funding or other action and explore opportunities: AML reauthorization, Dept of Interior, Army Corps of Engineers, and OSM, Growing Greener, and Exelon Fund.</li> </ul> </li> </ul>	Ongoing	All
<ul style="list-style-type: none"> <li>• Identify and seek funding to remediate priority coal silt abatement sites in the watershed, such as the main branch Schuylkill River, and Little Schuylkill River Watershed.</li> </ul>	Ongoing	All

<ul style="list-style-type: none"> <li>• Complete a Qualified Hydrologic Unit Plan (QHUP) for the Mill Creek and meet other requirements to be eligible for AMD set-aside funding. <ul style="list-style-type: none"> <li>○ Secure approval of completed plan approved by DEP BAMR</li> <li>○ Secure funding through the set-aside AMD abatement program for priority AMD remediation sites.</li> </ul> </li> </ul>	Ongoing	All
<ul style="list-style-type: none"> <li>• Work with Reading Anthracite, Blaschak Coal Inc., Premium Fine Coal, and other coal operators and/or large landowners to identify additional/future projects.</li> </ul>	Ongoing	All
<ul style="list-style-type: none"> <li>• Explore opportunities to work with mine operators to implement projects for the Appalachian Regional Reforestation Initiative (ARRI), a program with that returns mine lands to native hardwood forests as opposed to the common practice of heavily compacting the soil and planting grasses.</li> </ul>	Annually	SHA
<ul style="list-style-type: none"> <li>• Explore opportunities for working with Premium Fine Coal to trade acres for treatment and to relocate discharge.</li> </ul>	Ongoing	SHA/DEP
<ul style="list-style-type: none"> <li>• Support efforts to update the TMDL for the Little Schuylkill River and Panther Creek, which is a necessary first step for issuing a NPDES permit to relocate the Route 309 discharge. Relocation of the discharge will improve the ability to treat it while reducing flooding risks of the current location.</li> </ul>	Ongoing	DEP/EPA
<ul style="list-style-type: none"> <li>• Support the effort of the BAMR to stream line Slum Creek to Panther Creek and limit the amount of AMD from mine discharges to the Schuylkill.</li> </ul>	Ongoing	DEP/SHA
<ul style="list-style-type: none"> <li>• Explore/seize opportunities for using remediation sites for educational and habitat purposes (such as the Silver Creek treatment site). <ul style="list-style-type: none"> <li>○ Use signage, educational field trips, etc.</li> <li>○ Explore need/opportunities/practicality of planting trees and restoring streams and habitats at reclamation sites.</li> </ul> </li> </ul>	Ongoing	All

**Strategy 2:**  
Provide a forum for partner and agency communication and coordination around AMD projects and issues and the formulation of creative new ideas and approaches for solving AMD-related problems.

***Strategic Plan alignment: Strategy 9***

<p><u>Actions:</u></p> <ul style="list-style-type: none"> <li>• Convene quarterly meetings of the AMD workgroup, incorporating guest speakers and/or site-visit opportunities whenever appropriate and feasible. Continue to identify key partners and expand workgroup.</li> <li>• Develop an annual/final report of workgroup accomplishment (present at SAN annual workshop in fall) and create an annual work plan.</li> </ul>	<p>Quarterly</p> <p>Nov 2016</p>	<p>All</p> <p>All</p>
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<ul style="list-style-type: none"> <li>• Provide workgroup information for posting on SAN website and social media sites.</li> </ul>	Ongoing	All
<ul style="list-style-type: none"> <li>• Explore possibilities for encouraging/facilitating beneficial uses of AMD such as reclamation of metals and/or industrial uses (to minimize stream withdrawals).</li> </ul>	2016 and beyond	All
<ul style="list-style-type: none"> <li>• Continue to investigate opportunities to conduct a Brownfields/Site Assessment at a mining site in the watershed.</li> </ul>	Ongoing	All
<ul style="list-style-type: none"> <li>• Maintain coordination/communication with Army Corps of Engineers regarding Pine Knot feasibility study.</li> </ul>	Ongoing	All

**Strategy 3:**  
Promote AMD successes and understanding of AMD water quality issues and solutions to target audiences in the watershed.

***Strategic Plan alignment: Strategy 9***

<u>Actions:</u>		
<ul style="list-style-type: none"> <li>• Cultivate and take advantage of opportunities for press and other “free-media” coverage of AMD issues/problems/solutions.</li> </ul>	Ongoing	SHA/DEP
<ul style="list-style-type: none"> <li>• Coordinate the use of the SAN display to have a presence at local/regional events to promote awareness of AMD issues (Bear Creek Festival, Schuylkill Watershed Congress, etc.) and document/track use of display (# events, people, etc.).</li> </ul>	Ongoing	SHA, SAN Coordinator
<ul style="list-style-type: none"> <li>• Provide presentations and education to key stakeholder groups on effective AMD remediation.</li> </ul>	Ongoing	All
<ul style="list-style-type: none"> <li>• Share resources/links on AMD to watershed stakeholders through the SAN website.</li> </ul>	Ongoing	SHA/SAN Coordinator
<ul style="list-style-type: none"> <li>• Implement the Schuylkill Acts and Impacts class with downstream partners, providing education on AMD and Upper Schuylkill Watershed issues.</li> </ul>	July 2016	SHA

**Strategy 4:**  
Monitor the impacts of AMD projects on water quality and treatment system operation in the watershed.

***Strategic Plan alignment: Objective 9 and Strategies 7 and 9***

<u>Actions:</u>		
<ul style="list-style-type: none"> <li>• Continue to explore funding opportunities to keep moving forward with monitoring streams flows at continuous stations on the Upper Schuylkill River, which provides a benchmark and measurements of improvements resulting from the increase numbers of AMD projects.</li> </ul>	Ongoing	SCD/SHA

<ul style="list-style-type: none"> <li>• Work to generate support to continue to advance the conceptual model for the Pine Knot system, which was completed by the USGS and USACE to determine how flow would be affected if surface conditions were restored to pre-mining. Additional funding is needed to continue this work.</li> </ul>	2016	USGS
<ul style="list-style-type: none"> <li>• Routinely monitor completed AMD facilities to evaluate effectiveness and to assess any improvements needed. <ul style="list-style-type: none"> <li>○ Continue flow and water quality monitoring quarterly at Reevesdale, Pine Forest, Mary D, Bell Colliery, and Silver Creek discharges to evaluate AMD treatment systems.</li> <li>○ Develop a maintenance plan to include identification of project/sites in need of AMD pond cleanout.</li> </ul> </li> </ul>	Ongoing	SHA/SCD/PA DEP
<ul style="list-style-type: none"> <li>• Share and discuss monitoring results of USGS, AquaPA, PWD, Exelon, and/or others.</li> </ul>	Ongoing	SHA
<ul style="list-style-type: none"> <li>• Work with Retired Senior Volunteer Program (RSVP) to develop volunteer monitoring sites at priority areas throughout the watershed</li> </ul>	Ongoing	SHA
<ul style="list-style-type: none"> <li>• Work with Kutztown University on continued geophysical monitoring projects in the West Branch and West West Branch of the Schuylkill River</li> </ul>	2016/beyond	SHA/SCD
<ul style="list-style-type: none"> <li>• Identify needs, opportunities, and funding for innovative monitoring projects for constructed treatment systems to improve their function, track progress, and alleviate problems (e.g. Gallionella clogging at Pine Forest)</li> </ul>	Ongoing	All

***Objectives: How Will We Measure Success?***

Between 2016 and 2021:

- Reduce surface water infiltration into the Pine Knot mine-pool to lessen discharge.
- Reduce legacy coal silt from streams.
- Remove metals 92 tons iron, 6 tons manganese 7 tons aluminum annually from discharges and streams.
- Improve the pH of mine discharges/streams to pH 6.0 or above as needed to support fisheries and aquatic life.
- Increase partner participation so at least two or more partners are actively involved in every AMD project.

*Notes:*

- AMD – abandoned mine drainage
- AML – Abandoned Mine Land
- ARRI – Appalachian Regional Reforestation Initiative
- BAMR – Bureau of Abandoned Mine Reclamation
- EPA – Environmental Protection Agency
- NPDES – National Pollutant Discharge Elimination System
- OSM – Office of Surface Mining Reclamation
- PADEP – Pennsylvania Department of Environmental Protection
- PWD – Philadelphia Water Department
- QHUP – Qualified Hydrologic Unit Plan
- RSVP – Retired Senior Volunteer Program
- SHA – Schuylkill Headwaters Association
- TMDL – Total Maximum Daily Load
- USACE – U.S. Army Corps of Engineers
- USGS – U.S. Geological Survey