

# ABANDONED MINE DRAINAGE

## *Pine Knot Tunnel Study*

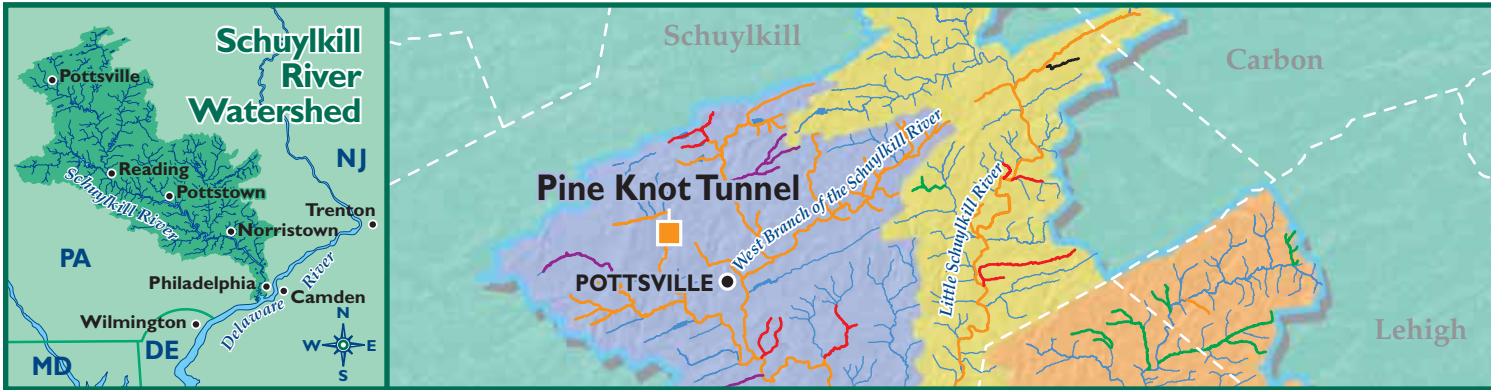


The focus of the Pine Knot Tunnel project is a large land-study area of approximately 20 square miles. Underlying this area, a huge network of tunnels spills 35-million gallons of Abandoned Mine Drainage (AMD) daily into the Schuylkill River headwaters. Much of this spillage originates from stormwater seeping into the mine system through fractures in the surface above.

Keeping water out of the tunnels is a key focus of the Pine Knot Tunnel Study. Pits in the ground surface that drain to the underground mine system have been located and mapped. Filling these pits and diverting stream flow away from them will keep a significant amount of fresh surface water from entering the system and becoming contaminated with AMD. The challenge is being able to fill enough surface pits to significantly reduce the discharge from the Pine Knot Tunnel system. The collaborative study resulting from this project serves as a valuable tool in determining which sites provide project opportunities that will yield the best possible outcomes.

During the course of the Pine Knot Tunnel Study, the United States Geological Survey (USGS) discovered through its monitoring that another nearby AMD source, Oak Hill, was contributing higher metal outputs at lower flow rates than the Pine Knot system, making it a better treatment site. Combined, the Pine Knot and Oak Hill discharges contribute 30% of all metals from approximately 100 AMD sources in the Schuylkill River Watershed.





Utilizing funds from the Schuylkill Watershed Initiative Grant, the Pine Knot Tunnel project provides a conceptual design and feasibility study for remediation and mitigation of water pollution attributed to AMD at a collection of sites. Potential project areas have been identified, and some treatment and diversion project designs have already been completed. As part of the study, the USGS has been monitoring flow and hydrology to provide critical insight about how the Pine Knot Tunnel system actually drains. This monitoring will continue beyond the study period.



*The Schuylkill Watershed Initiative Grant is a targeted watershed grant awarded by the U.S. Environmental Protection Agency for the completion of a suite of water quality improvement demonstration projects in the Schuylkill River Watershed. The Pine Knot Tunnel Study project is one of more than 40 projects that received funding from this source, in addition to other funds and/or support. The grant is administered by the Partnership for the Delaware Estuary and the Philadelphia Water Department.*