

ABANDONED MINE DRAINAGE

On Tuesday, October 3rd, partners convened for a hybrid AMD meeting, which was subsequently followed by a tour of the Otto site. Special thanks to our hosts, Alexa Smith, Schuylkill Conservation District and Dan Koury PADEP, for their knowledgeable and warm welcome.

Nestled in Schuylkill County, the Otto site stands as a beacon of environmental innovation. In 2022, it underwent a significant retrofit to enhance its passive treatment capabilities. This upgrade represents a pivotal step in combating the long-standing issue of AMD, demonstrating a commitment to sustainable environmental practices.

Originally budgeted at approximately \$800,000, unforeseen inflation pushed the final project cost to \$1.1 million. Thanks to fundraising efforts of the Schuylkill Headwaters Association, our partners overcame the budget deficit and completed the project.



Sediment turns orange with iron precipitates settling out in the water.

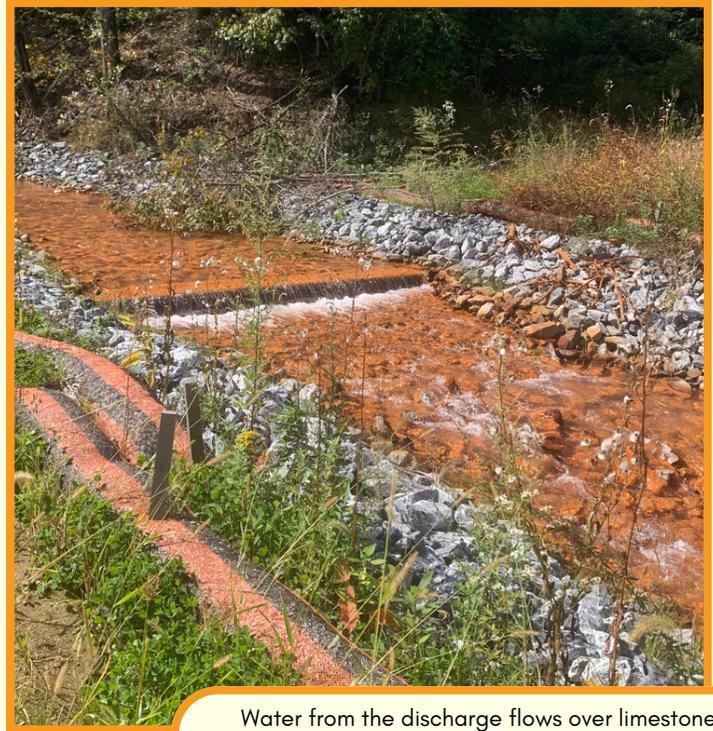


AMD Tour group gathers mid-tour for a group photo. Left to right: Erik Sildorff, Tali MacArthur, Robbie Fulton, Alexa Smith, Karl Russek, Kaitie Evers, Tom Clark, Dan Koury, Paul DiRenzo

Abandoned mine drainage often carries heavy metals and metals and contaminants, notably iron. When this iron-rich water is exposed to air, a fascinating chemical reaction occurs: the iron oxidizes and precipitates, forming the striking orange sediment in the channel bed.

The upgraded retrofit at Otto features several water bars, or level spreaders, which aerate the water as the water flows toward the settling pond (as shown right).

A key feature of the system is the cleverly designed channel, lined with high-purity limestone. The water, laden with contaminants, trickles down this channel at a subtle gradient. This slow journey ensures maximum exposure to the limestone, which plays a critical role in neutralizing acidity and increasing the speed of precipitating metals.



Water from the discharge flows over limestone rocks and across level spreaders.

The construction photo below displays the new drainage channel leading from the discharge to system intake, located at the top right. This, and all stone channels are lined with high purity limestone. The project also required all the existing settling ponds to be drained and dredged of their former sediment accumulation.

The Schuylkill Conservation District plays a crucial role, diligently monitoring and maintaining Otto (along with the other treatment systems in the area) to continue to ensure its long-term effectiveness.

