Shamokin Creek Site 48 Treatment System
SRI O&M TAG Project #5 Request #2
OSM PTS ID: PA-36

Requesting Organization:	Shamokin Creek Watershed Association & Northumberland CCD
Receiving Stream:	Unnamed tributary to Shamokin Creek
Watershed:	Shamokin Creek
Municipality/County:	Coal Twp., Northumberland Co.
Latitude/ Longitude:	40° 46' 40.152" N / 76° 34' 39.558" W

The Shamokin Creek Site 48 Passive Treatment System was constructed in 2003 to treat an acidic, metal-bearing discharge in Coal Township, Northumberland County, PA. The system treats a portion of an AMD-impacted stream by diverting water into a passive system via a small dam and intake pipe. During storm events and high-flow periods, erosion with sediment transport takes place, resulting in a large quantity of sediment including gravel-sized material being deposited in the area above the intake, as well as within the first settling pond. At times, the accumulation of sediment has redirected and prevented the stream from entering the treatment system. In other words, the passive treatment system is bypassed with the degraded stream remaining untreated. A screen at the intake also accumulated leaves and debris.

Under O&M TAG 1 (Project 5-1), the Shamokin Creek Restoration Alliance (SCRA) requested help to reduce system maintenance needs. In June 2013, BioMost, Inc. performed site work which included multiple updates to the inlet structure for the treatment system. Previously, watershed volunteers had lined the stream channel near the system with sand bags to stabilize the banks. During high flow events, these efforts were not sufficient to control erosion. To remediate this issue, BioMost Inc. placed riprap along the stream banks and improved existing erosion control measures. During high flow events, a significant amount of water would circumvent the treatment system. Ecology blocks, precast 2'x6'x2' tongue and groove concrete blocks, were positioned within the stream channel to divert a large portion of water to the treatment system. An Agri Drain guard was installed to prevent objects from entering the system inlet pipe. A settling pool upstream of the system was improved to help reduce sediment load entering the system.

In February 2015, SRI was contacted by the SCRA seeking additional assistance. SCRA reported that since the work performed by BioMost, Inc in 2013, the stream intake pool had been dredged a couple of times due to the filling with sediment. Since erosion and sedimentation was going to be an on-going issue, during the phone call, a decision was made to investigate whether the discharge could be collected and conveyed directly to the passive system.

The site was revisited on 6/18/15 with Jim Koharski of SCRA who had previously cleared a path to access the discharge point. Water sampling was conducted at the discharge and flow was measured to assess the amount of water taken into the system. Based on available data, a conceptual plan and cost estimate (see attached) has been developed, which includes an underground collection system and ~600 foot pipe that will convey the discharge directly into the system. As the discharge is the primary source of AMD and flow to this section of the stream, once the suggested design improvements in the

plan are implemented, the need for a stream intake should be eliminated and only AMD should be entering the treatment system. In addition, high flow events should decrease, which should have an added benefit of less erosion and sedimentation in the stream.

Additional Recommendations & Considerations:

- Funding will need to be acquired for permitting, materials, and construction.
- It may be possible to coordinate with PENNDOT or local municipality to allow the conveyance pipe to run through the large roadway culvert.

Funding from the PA DEP Growing Greener Passive Treatment O&M Technical Assistance Program and support of the SCRA made this project possible.

Meeting with Jim Koharski from SCRA during a site visit (left) to locate the mine discharge. The discharge (right) was located approximately 650 feet upstream from the current PTS intake. Above the elevation of the discharge, the only flow that occurs is from storm water during precipitation events.