

**Coal Pit Run Upper & Lower Passive Treatment Systems**  
**SRI O&M TAG Project #37 Request #1**  
**OSM PTS ID: PA-126**

Requesting Organization: Blacklick Creek Watershed Association  
Receiving Stream: Coal Pit Run  
Watershed: Blacklick Creek  
Municipality/County: Blacklick Twp., Cambria Co.  
Latitude/Longitude: 40° 29' 56.0004" N/78°49'58.0008" W

The Coal Pit Run Upper (aka site A) and Lower (aka site B) Systems are located in Blacklick Township, Cambria County. The two passive treatment systems are located in close proximity to each other and treat two small abandoned mine discharges located along Coal Pit Run, which is a headwaters tributary of the South Branch Blacklick Creek. The systems were designed by Vapco Engineering and constructed in 2005. The Upper passive treatment system consists of a Vertical Flow Pond (VFP) that is reported to contain crushed limestone and manure and a settling pond. The Lower system consists of a single Vertical Flow Pond.

In January 2015, Missy Reckner of StreamTeam contacted Stream Restoration Incorporated (SRI) regarding problems at the site. She reported that water was overtopping the berm of the Upper system's Vertical Flow Pond. Decreased permeability of the treatment media or plugging of the underdrain was suspected. There was also a problem with the growth of vegetation and accumulation of sediment that was causing difficulties with sampling the Lower system.

On June 25, 2015, BioMost Inc. (BMI) mobilized to the site to evaluate the system and conduct maintenance. Upon arrival, water was observed flowing through the emergency spillway. The flush valve was opened to begin drawing down the VFP water level. The flush valve for the VFP was especially challenging to open due to unknown reasons. After opening the flush valve, the VFP began draining. The VFP took about 24 hours to drain through the flush pipe, providing further evidence that the media within the pond had reduced permeability. In order to access the VFP, a ramp was constructed in the corner. The pond media was then stirred to a depth of approximately 3 feet. Metal precipitates were visible within the treatment media. After the media was stirred, the VFP flush valve could not be closed even after multiple attempts. The corrugated 8" pipe, which allows access to the valve, was partially excavated to assess the issue. The pipe was bent in multiple places, probably due to settling of the backfill. After excavating the valve further, it was discovered that part of the valve mechanism had become stripped. Because of the issues associated with the flush valve, it was decided that the best option to keep the system functioning as designed was to abandon the old valve and install another using the same outlet pipe. The original valve was left in the open position and backfilled. To allow for easier access during maintenance, the new valve was installed outside of the berm. To address the sampling issue at the inlet to the Lower system, the vegetation and metal solids that had accumulated around the pipe were excavated and a small inlet pool was created to allow for easier water sampling. The system was returned to normal operation and water monitoring conducted by the StreamTeam indicates the system has been functioning well.

In May 2017, the landowner contacted SRI with a concern about the site. She reported that the water level within the VFP had dropped significantly. After inspection, the drain pipe for the VFP was found to be partially opened. The valve was closed to allow normal operation and restore the proper water level.

Stream Restoration Inc. and BioMost, Inc. would like to thank the Blacklick Creek Watershed Association and StreamTeam for their volunteer time and support in maintaining the Coal Pit Run passive treatment systems. Funding for technical assistance and maintenance was provided by the PA DEP's Growing Greener grant programs and in-kind services by project partners.



**Top Left:** The Vertical Flow Pond of the Upper System had become plugged and at times a large portion of the water was flowing through the emergency spillway.  
**Right:** During the site visit, the flush valve was opened with difficulty, but the VFP drained very slowly indicating that permeability of the treatment media had significantly decreased and likely the cause of the problem.  
**Bottom Left:** Once drained, the vertical flow pond was stirred to restore full flow through the system components.





**Top Left:** Due to the difficulty to close the flush valve, a new valve was installed.

**Top Right:** An excavator stirred the top 2-3 feet of treatment media in the Vertical Flow Pond to increase permeability and promote better utilization of the treatment media.

**Bottom Left:** The old flush valve was backfilled and abandoned because it could not be closed.

**Bottom Right:** The raw water inlet at the Lower System was cleared to allow for flow measurements and sampling.