

De Sale Phase 2 Passive Treatment System
SRI O&M TAG Project #22 Request #3
OSM PTS ID: PA-114

Requesting Organization: Slippery Rock Watershed Coalition
Receiving Stream: Unnamed Tributary to Seaton Creek
Watershed: Slippery Rock Creek
Municipality/County: Venango Twp., Butler Co.
Latitude/Longitude: 41° 8' 39.9984" N / 79° 49' 54.9984" W

The De Sale Phase II Passive Treatment System was constructed in 2000 to treat an entire unnamed tributary, which is impacted by mine drainage from an abandoned surface mine in the headwaters of Seaton Creek in Venango Township, Butler County, PA. The current system was designed by BioMost, Inc., (BMI) and consists of a dam and intake pipe to capture the stream, Forebay, two parallel Vertical Flow Ponds (VFPs), a settling pond, a wetland and a Horizontal Flow Limestone Bed (HFLB). Routine system maintenance and sampling has been conducted by the Slippery Rock Watershed Coalition (SRWC) since system construction. Previous system rehabilitation activities have included recovery of manganese oxide from the HFLB.

Previous O&M assistance had been provided under O&M TAG 1 and 2. A new request for maintenance was received by the SRWC in July 2015. The SRWC had discovered that the wetland and settling pond outlets had been dammed by beavers, causing water to overtop the berm of the wetland. Attempts were made to lower the dam and install a pipe to keep the water level down. Multiple visits and attempts were made. In September 2015, a nearby landowner contacted the SRWC to inform them that water was now flowing along the access road.

In December 2015, BioMost returned to the site. To fix this issue, the beaver dam was removed to allow flow to enter the HFLB and lower the water elevation in the wetland. As a more permanent solution to the problem, two 12" culvert pipes were installed with inlets and outlets under water to reduce the sound of running water. The pipes were installed parallel to the designed spillway. Normal flow operation was restored. While equipment was on site, the system forebay inlet and outlet pipes were inspected and cleared of sediment.

BMI would like to thank the SRWC for their support and assistance with this project, and the PA DEP Growing Greener program for providing funding to make this much needed maintenance activity possible.



At the De Sale Phase 2 passive system, beaver built dams within the spillways (top left) of the wetland and settling pond. Multiple attempts were made to lower the dam and/or install small corrugated piping (top right). Unfortunately, the beaver kept raising the dam until it began to overflow the wetland and down the access road (bottom left). In December 2015, Biomost, removed the dam completely (bottom right) and installed 2 large 12" culvert pipes with both the inlets and outlets submerged underwater to eliminate sound.