

Reitz #1 Passive Treatment System
SRI O&M TAG Project #9 Request #3
OSM PTS ID: PA-13

Requesting Organization: Shade Creek Watershed Association (SCWA)

Requesting Organization Representative: Jeff Sarver

Dates of work performed: 11/1/2023- 11/10/2023

Initial Request: Jeff Sarver of SCWA requested assistance with removal of sludge from the treatment system.

Work Completed: BioMost mobilized with a mini excavator and 6" shredder pump to pump sludge to an existing on site geotube. It was noted that flow is challenging to measure at this site, so a 45° elbow was installed with a stub of pipe to measure flow at the bioreactor outlet. Sludge was pumped from the settling ponds to the geotube which filled approximately two feet high after overnight dewatering. Test pits were dug in the bioreactor and the vertical flow pond to assess media condition. To better utilize media in the pond, a new riser was installed at the outlet of the designed southern VFP cell flush valve outlet. This should double the treatment capacity through the VFP media with water flowing through each of two separate underdrain cells. One of these cells was previously only utilized for flushing. Limestone beds separated the settling ponds previously but were removed when it was observed that they may be limiting flushing within the VFP. These beds were washed and re-established. Elevations of various system components were noted for possible redesign data.

Results

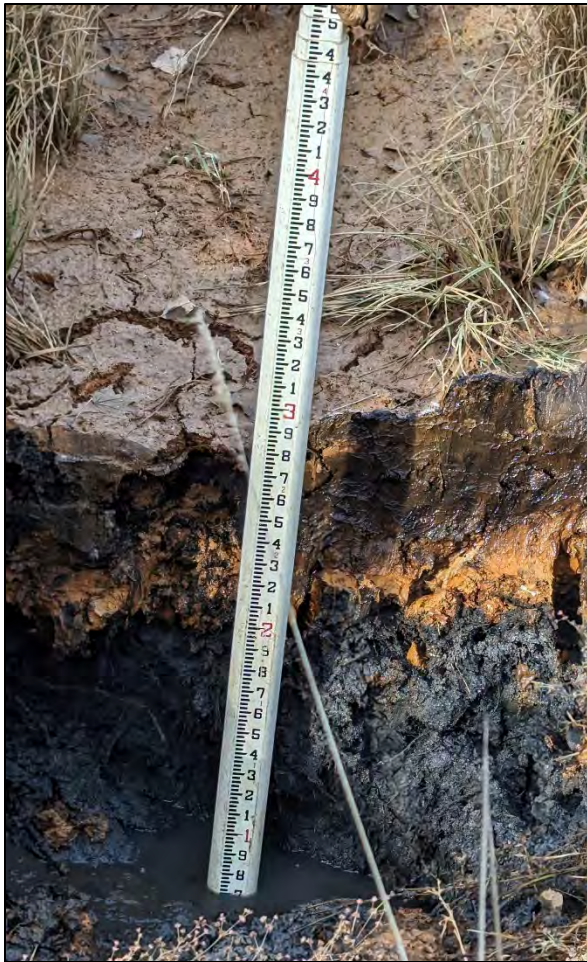
Water monitoring conducted during the 2025 Snapshot indicated the system was working well. The final effluent of the system had a 6.6 pH, alkalinity 84, hot acidity -70, iron 0.4 mg/l, aluminum 1.2 mg/l, and manganese 3.8 mg/L. At that pH, the aluminum was likely as suspended solids.

Recommendations & Future Considerations: On-going water monitoring and site inspections should continue. Multiple improvements using current technology could be utilized within the existing system footprint to improve water quality. If the treatment system is not performing adequately, funding should be obtained for system rehabilitation, provided that the proposed active treatment system is not built to treat this discharge.

Photo Log



Top Left: 45° elbow was installed with a stub of pipe to measure flow at the bioreactor outlet (11/3/23).
Top Right: Media within the bioreactor was observed to contain shredded wood and logs (11/3/23).
Bottom Left: Pumping to existing geotube from settling ponds (11/8/2023).
Bottom Right: Limestone beds re-established between settling ponds after washing (11/8/23).



Top Left: Test pit in bioreactor shows approximately 0.7 feet of material on top of the media (11/8/23).
Top Right: Test pit in VFP showing significant accumulation of metals within and above media (11/8/23).
Bottom: Newly installed secondary VFP outlet riser (11/8/23).