STATE ROUTE 124 SEEPS

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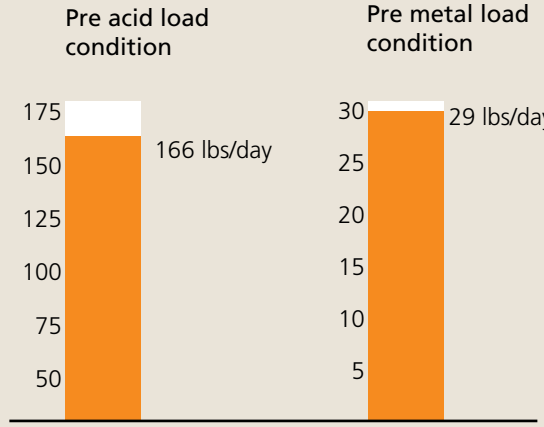
Project Status: Complete 6/18/2001 ODNR Project Number: JK-Ml-47

Pre-construction

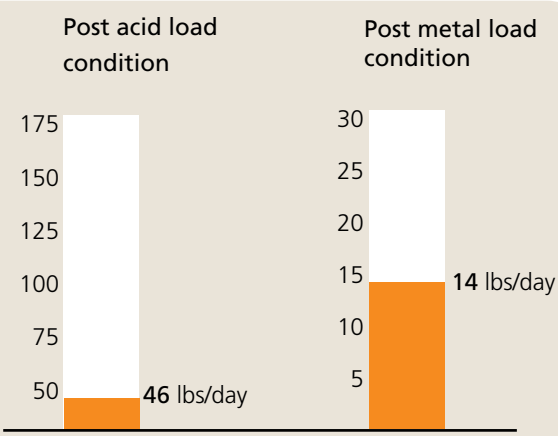
Between pond and seep
Photo by Brent Miller



Data derived using the Mean Annual Load Method (Stoertz, 2004).

Post-construction

Sr 124 hillside limestone channel
Photo by Chip Rice



Data derived using the Mean Annual Load Method (Stoertz, 2004).

State Route (SR) 124 Seeps Project is located in Section 15 of Milton Township in Jackson County and lies within the 14-digit HUC unit #05090101050030. The site is 7 acres and is located in the Little Raccoon Creek subwatershed. The design was completed by ATC Associates Inc. for $80,000. The treatment approach for this site was to install several open limestone channels and conduct basic reclamation. The major consideration for this design was to establish positive drainage, remove several highwall impoundments, cover toxic materials, establish vegetations, and add alkalinity through the limestone channels. The goal of the design was to remove acidity from entering into Little Raccoon Creek. The project goal was met by100 percent. Construction was complete June 18, 2001, by Oldtown Coal Company for a cost of $315,490. The major responsibility of the construction company was to complete all reclamation activities described in the project design. The funding source, for the project design and construction were ODNR-DMRM and Ohio EPA. Figures 3 and 4 (shown on page 3) estimate approximately 116 lbs/day of acid and 15 lbs/day of metals were reduced from entering into Little Raccoon Creek as a result of this AMD reclamation project.

Water quality report

Water quality data was collected at the project discharge as well as multiple stations pre- and post- construction. The graphs below show changes in pH (Figure 1) and acidity (Figure 2) along the mainstem of the receiving stream upstream and downstream of the project discharge as a result of the AMD reclamation project.

Figure 1. Pre and Post pH

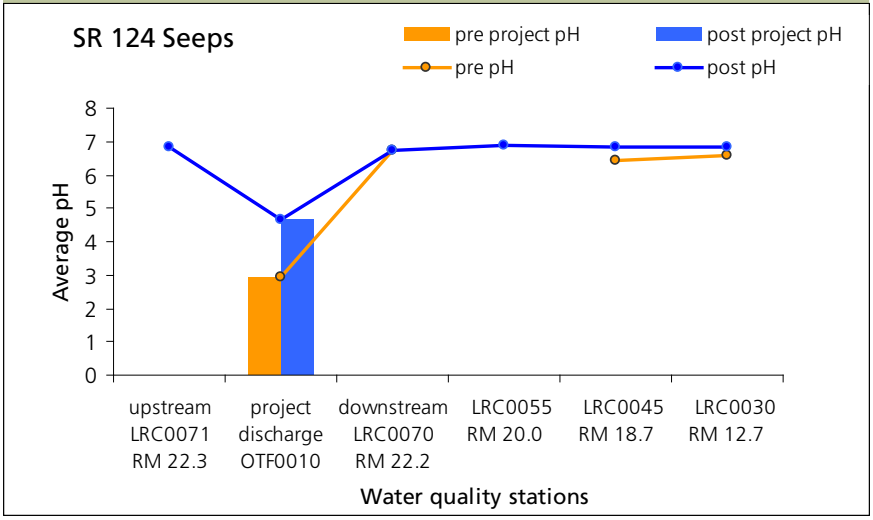
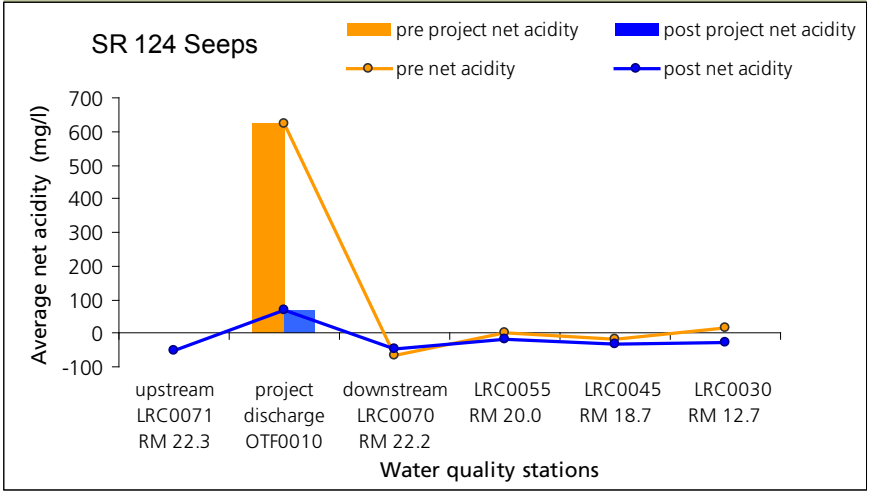


Figure 2. Pre and Post Acidity



As a result of the SR 124 Seeps project, the pH and net acidity has improved downstream of the reclamation site for 9.5 miles. Pre-construction data showed pH in the range of 2.9 – 6.7 downstream of the project. However, after installation of the SR 124 Seeps project, post-construction data shows pH in the range of 4.6 – 6.8 downstream of the project discharge. The net acidity concentrations decreased 89 percent at the discharge showing net alkaline conditions continuing for 9.5 miles downstream to station LRC0030.

Water Quality – load reductions

Using the Mean Annual Load Method (Stoertz, 2004) acid and metal load reduction occurring at this project were plotted and shown in Figure 3 and 4. Acidity, iron, aluminum and discharge were measured pre- and post-construction at the project discharge from 2/1/1997 to 11/27/2000 for pre-construction and from 6/19/2001 to 8/1/2007 for post-construction.

Figure 3. Acid Load Reduction

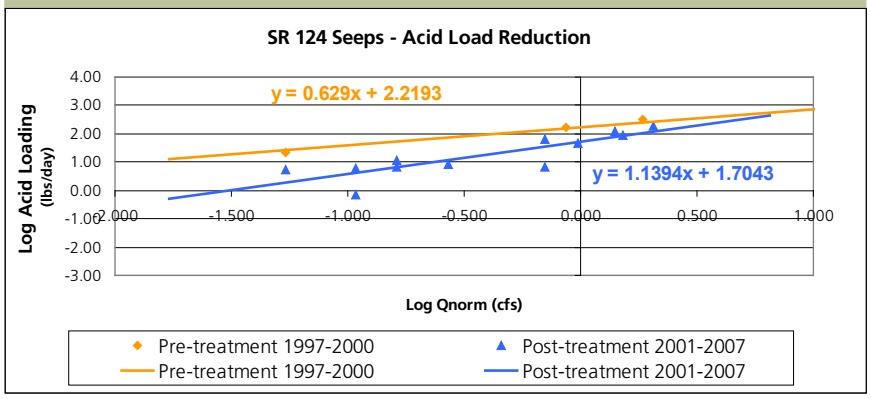
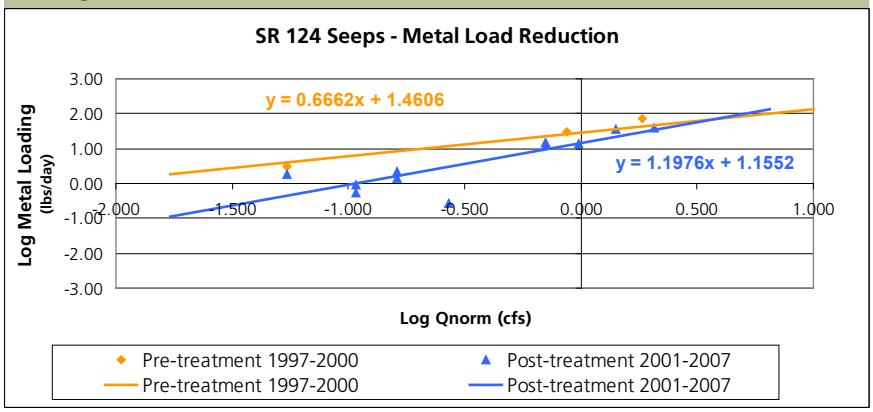


Figure 4. Metal Load Reduction



Stoertz, Mary W. and Douglas H. Green, 2004. Mean Annual Acidity Load: A Performance Measure to Evaluate Acid Mine Drainage Remediation. Ohio Department of Natural Resources Conservation and Restoration Innovations 2004 Applied Research Conference at Ohio University.