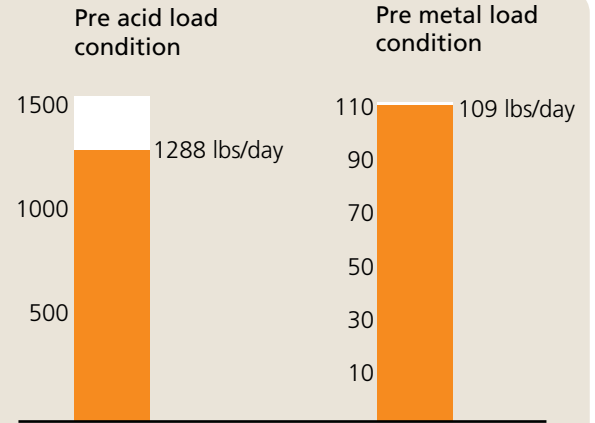


Pre-construction



Lake Milton - 25 acre acidic lake  
Photo by Ben McCament

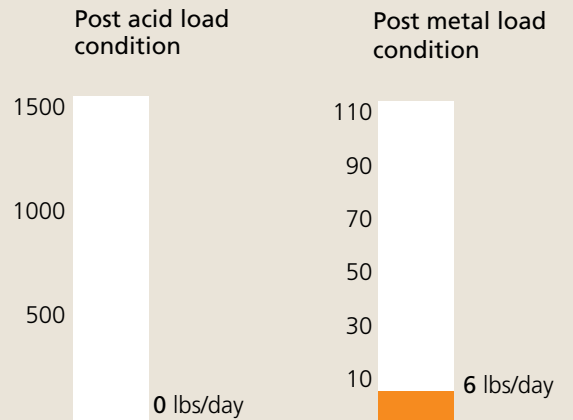


Data derived using the Mean Annual Load Method (Stoertz, 2004).

Post-construction



Steel slag bed downstream Lake Milton  
Photo by Ian Hughes



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

Lake Milton is located in Section 28 of Milton Township in Jackson County and lies within the 14-digit HUC unit #05090101050030. The project site is 155 acres and is located in Little Raccoon Creek next to the Flint Run East Project. The Lake Milton Project is Phase II of the Flint Run Reclamation Project, Flint Run East was Phase I. The project discharge was measured at the outlet from hothouse lake. The design was completed by Bergmann Associates and GAI Consultants Inc. for a cost of \$416,000. The treatment approach for this site was to repair the Lake Milton dam and to install a Successive Alkaline Producing System (SAPS) and a steel slag leach bed. The major consideration during the design process was the crucial need to treat the acid mine drainage in Upper Lake Milton to drain to Lake Milton before running into

the steel slag bed downstream of Lake Milton. The goal of the design is to reduce 600 lbs/day of acid loading. Problems occurred with the valves in 2007, therefore this project only worked intermittently until Sept. 2007. Construction was complete September 5, 2006 by Stockmeister Enterprises Inc. for a cost of \$961,536. The major responsibility of the construction company was to complete the reclamation and install passive treatment systems. The funding sources for this project were ODNR-MRM, EPA-319 and OSM ACSI for both the design and construction. Figures 3 to 4 (shown on page 3) estimate approximately 1288 lbs/day of acid and 103 lbs/day of metals were reduced from entering into Little Raccoon Creek while the system was operating properly. Further evaluation will be completed next year.

### Water quality report

Water quality data was collected at the project discharge as well as multiple stations pre-construction. The graphs below show pH (Figure 1) and acidity (Figure 2) along the mainstem of the receiving stream downstream of the project discharge. Post-construction data are currently being collected and will be evaluated next year to show pH, acidity and acid and metal load reductions.

Figure 1. Pre and Post pH

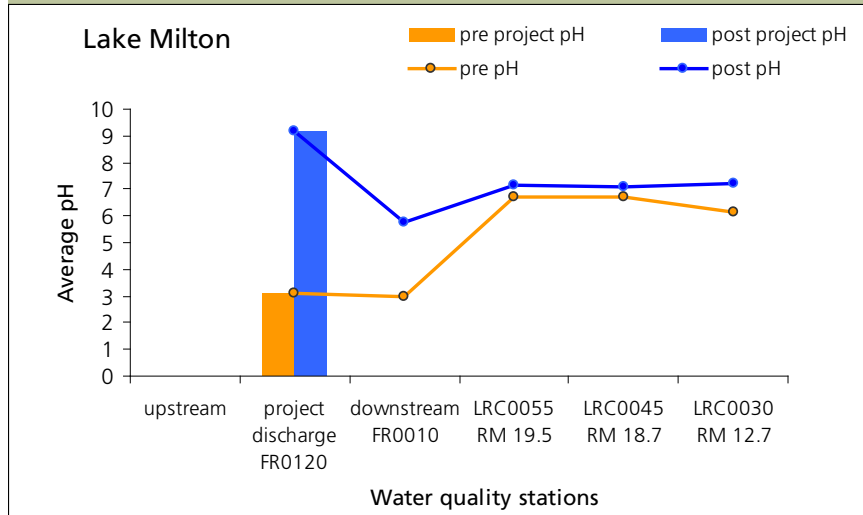
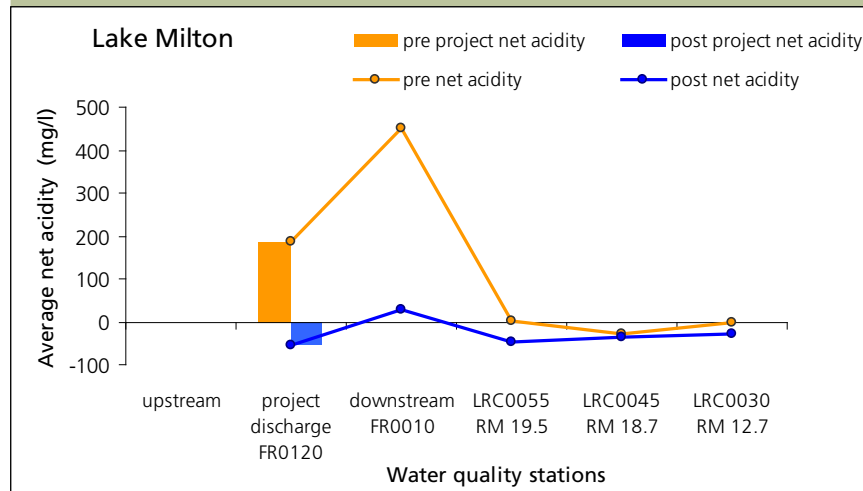


Figure 2. Pre and Post Acidity



As a result of the Lake Milton project the pH and net acidity has improved downstream of the reclamation site for 7.0 miles. Pre-construction data shows pH in the range of 3.0–6.7 downstream of the project. However, after installation of the Lake Milton Project, post-construction data shows pH in the range of 5.8–9.2 downstream of the project discharge. The net acidity concentrations decreased, showing net alkaline concentration for 7.0 miles downstream to station LRC0030.

Figure 3. Acid Load Reduction

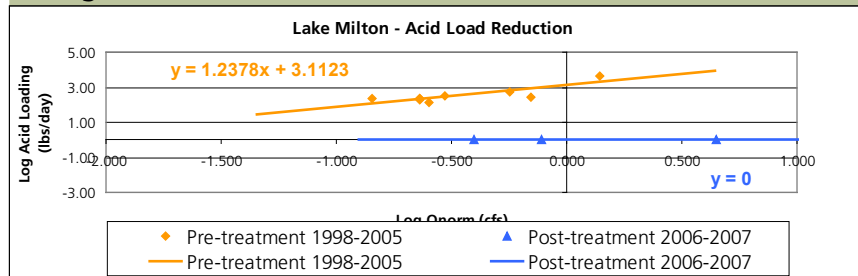
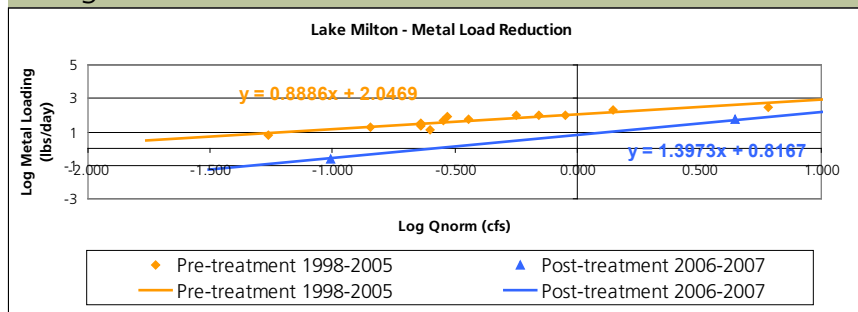


Figure 4. Metal Load Reduction



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.