

# Raccoon Creek Watershed - Lake Milton

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Project Status: Complete: 9/5/2006 ODNR Project Number: Jk-MI-113

## Pre-construction



Lake Milton - 25 acre acidic lake, Photo by Ben McCament

Lake Milton is located in Section 28 of Milton Township in Jackson County and lies within the 12-digit HUC unit #050901010403. 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. The project discharge was measured at the outlet from Hothouse Lake. Lake Milton is part of a manmade drainage system that was used during mining operations for coal washing by the Broken Aro mine. Lake Milton is adjacent to the Flint Run East site and is a 15 acre lake with a small watershed area. AMD originates in spoil areas near Upper Lake Milton (separated by railroad embankment) before flowing into Lake Milton. Additional AMD is generated after Lake Milton discharges into coal slurry waste in the valley downstream of the lake dam. Lake Milton drains into Hothouse Lake before entering into Flint Run. 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 funding sources for this project were ODNR-MRM, EPA-319 and OSM ACSI for both the design and construction. Pre-treatment acid and metal loadings at site FR0120 are shown in Figure 1.

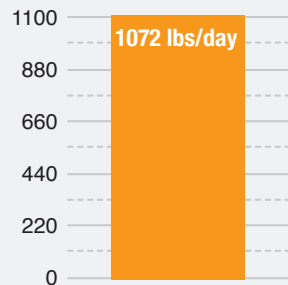
## Post-construction



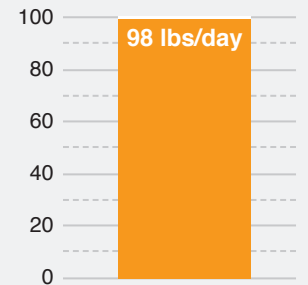
Steel slag bed downstream Lake Milton, Photo by Ian Hughes

## SITE: FR0120

### Pre treatment acid load



### Pre treatment metal load



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

Figure 1. Estimated acid and metal loadings prior to treatment

Treatment Installed	Quantity & Units
Water Treatment in Lake Milton	50 million gallons
Open Limestone Channel	2,300 linear feet
Steel Slag Leach Bed	74,000 square feet
Successive Alkaline Producing Systems (SAPS)	16,000 square feet
Repair Dam with Slurry Wall	75,000 square feet