

# Raccoon Creek Watershed - Salem Road/Middleton Run

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Project Status: Complete: 2005 ODNR Project Number: JK-MI-51

## Pre-construction



Exposed mine pit floor, Photo by Brett Laverty

## Post-construction

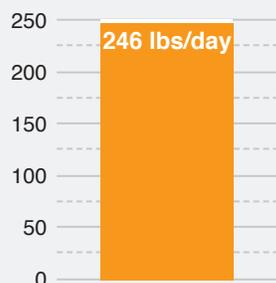


Middleton Run limestone channels, Photo by Ian Hughes

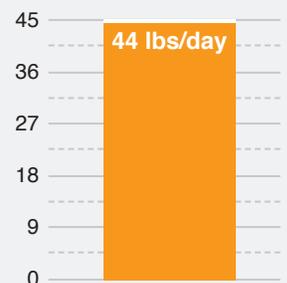
Salem Road/Middleton Run Project is located in Section 15 of Milton Township in Jackson County and lies within the 12-digit HUC unit #050901010403. The site totals 60 acres and is located in the Little Raccoon Creek subwatershed. This large area has been affected by deep mines, strip mine lands, and un-reclaimed mine spoil that was part of the Broken Aro mine. Abandoned surface mines affect about 63% of this watershed while abandoned subsurface mines affect about 5%. The main valley on the site was exposed pit floor with high amounts of clay and acidic spoil. Additionally, acidic lakes were present as well as a discharging underground mine. This project has three different drainages, all tributaries to Middleton Run. The design was completed by GAI Consultants Inc. and Bergmann Associates for \$193,283. The treatment approach for this site was to install 3 separate treatment components consisting of: open limestone channels, steel slag channels, reclamation, J-trenches, and a limestone leach bed (Figure 2.). The major consideration for this design was to eliminate all water storage, create contours for positive drainage, cover toxic materials, and generate alkalinity. The goal of the design was to reduce 100 percent of the acidity loading discharging into Little Raccoon Creek. Construction was complete November 15, 2005, by Stockmeister Enterprises Inc. for a cost of \$687,913. The funding source, for the project design and construction were ODNR-DMRM and Ohio EPA. Each of the three treatment components, MiR0021, MiR0032, MiR0090 were evaluated in 2008 and 2009 but this analysis was discontinued in 2010 because monitoring in 2008 to 2009 showed site MiR0021 as the only treatment functioning and providing alkalinity for Middleton Run. The other two treatment sites (MiR0032 and MiR0090) have failed due to clogging. No data collected in 2011. Salem Road/Middleton Run remains an active site and will be evaluated in 2012. Pre-treatment acid and metal loadings at site MiR0021 are shown in Figure 1.

## SITE: MiR0021

### 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

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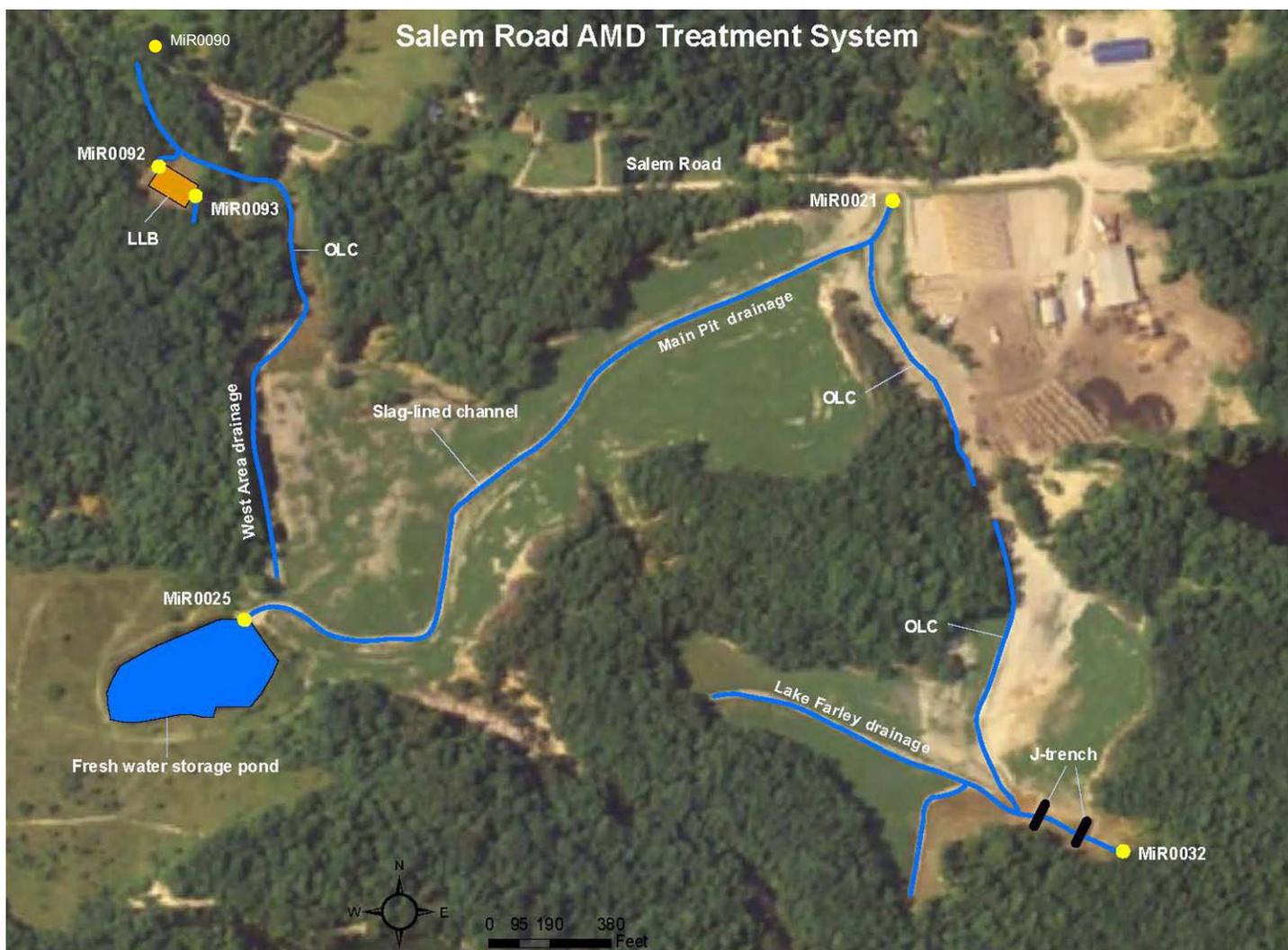


Figure 2. Map of Salem Road AMD treatment system and sites

Sample site ID	Description of the sampling station
MiR0090	Tributary draining limestone leach bed treatment, site is at crossing with Salem Road.
MiR0032	Sample site located directly below the dam at MiR0031. Two limestone J-trenches with steel slag cores (experimental). Reclamation of mine spoil and removal of acidic strip pit.
MiR0021	The site represents discharge across the former mine pit floor that was reclaimed. Sample site is at the Salem Road culvert (fresh water pond draining into a limestone and steel slag channel).