Little Mill Creek - AMD Abatement Project

Project Background:
Project Name: Little Mill Creek
Project Number: AMD 16(1175)101.1
Problem Area: 1175
Municipality: Clarion Township
County: Clarion
Topographic Map: Corsica
Latitude/Longitude: 41° 11’ 48” N, 79° 13’ 54” W
Receiving Stream: Little Mill Creek

Project Goals:
The goal of this project was to abate the water pollution from two separate discharges known as the Kotchey Discharge and the Hanlon Discharge. The Kotchey discharge stems from an unsuccessfully plugged gas well in the woodlands near an unnamed tributary to Little Mill Creek. This discharge contains a high amount of ferrous Iron. The Hanlon discharge emanates from an abandoned surface mine and also flows into the same unnamed tributary. Very high levels of acid and Aluminum were found in the untreated stream. The hopes of this project were to reduce the levels of acidity and metals in the stream to help improve the quality of aquatic life in the Mill Creek Watershed.

Project Information:
The issue of pollution due to Acid Mine Drainage in the Mill Creek Watershed first came to light in the mid-1990s with the inception of the Mill Creek Coalition, a group of local sportsmen and landowners who wished to rid the problem of AMD from their area. With the assistance of the DEP's Bureau of Abandoned Mine Reclamation, and the federal funds at their disposal, the Little Mill Creek Project was able to move forward. Construction began in the summer of 2002 and was wrapped up later that year at a cost of about $400,000.

Project Design Information:
At the site of the Kotchey discharge, it was determined that the best course of action to treat the AMD was an anoxic limestone drain (ALD) with a settling pond. Since the Kotchey site has relatively little change in elevation, it lent itself more to an ALD than a vertical flow pond. The Hanlon discharge was treated by using successive alkalinity producing systems (SAPS) to attempt to abate the very high acid content in this flow. Also, due to the heavy amounts of Aluminum found in this stream, flushing capabilities in the SAP cells were a necessity. Various changes in elevation around this site lend nicely to the performance of its vertical flow system.

Project Description:
Two sites of polluted discharge are found in this problem area, one on the Kotchey property and one on the Hanlon property. These discharges flow into an unnamed tributary to Little Mill Creek, which eventually leads into Little Mill Creek before going into Mill Creek. This watershed had undergone years of pollution and damage before action was taken to abate the pollution and to restore normal aquatic life and activities to the creek. With the use of an ALD and SAPS respectively at the two sites, it was the hope of both the DEP and the Mill Creek Coalition that pH levels in the creek would rise and Iron and Aluminum content would be reduced to a minimal amount.

Property Owner Information:
The site of the Kotchey discharge is owned by Michael A. and Charles T. Kotchey of Pittsburgh. The adjacent property, owned by Marvin D. and Judy L. Hanlon of Corsica, houses the Hanlon discharge. Both sets of property owners were very cooperative and happy to see this project move forward.

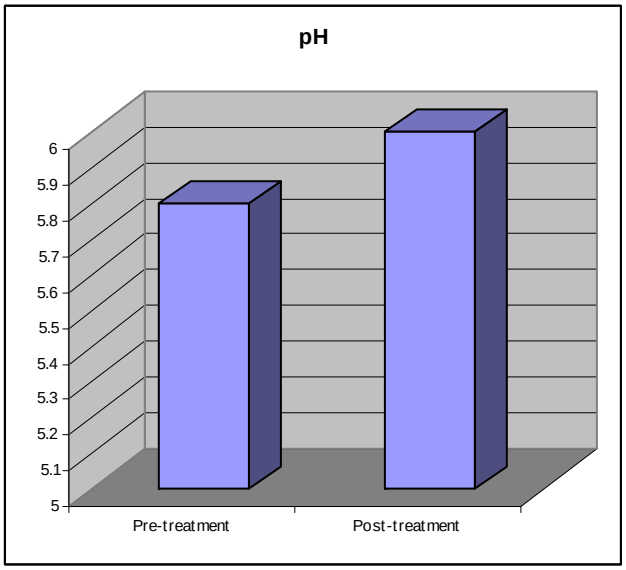
Directions to Site:

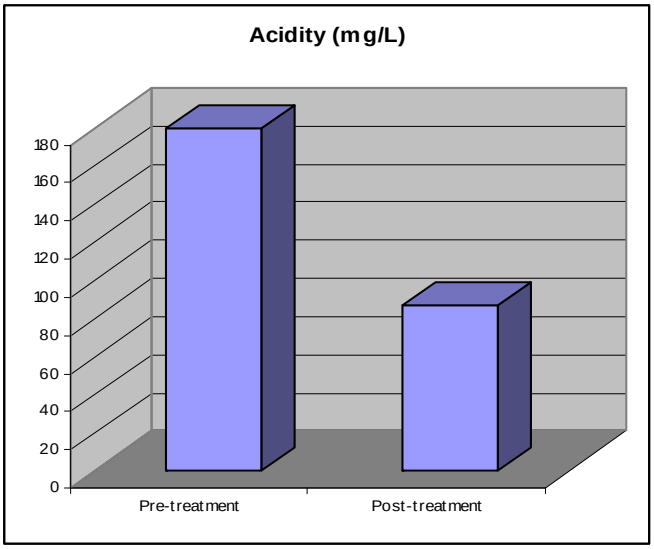
Start – 286 Industrial Park Rd, Ebensburg, PA

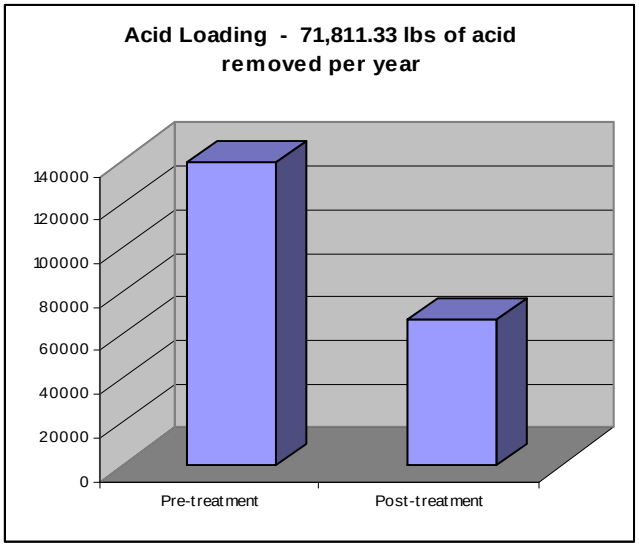
- Turn **left** at Mini Mall Road	0.3 mi
- Turn **left** at US-22	0.1 mi
- Take the **ramp** onto US-219 N	1.8 mi
- Take the US-219 Bus **exit** toward Ebensburg	0.4 mi
- Turn **left** at US-422	49.5 mi
- Take the PA-28 N **ramp** to New Bethlehem	0.6 mi
- **Merge** onto PA-28 N	30.9 mi
- Turn **left** at Summerville Corsica Rd	1.7 mi
- Turn **right** to stay on Summerville Corsica Rd	0.3 mi
- Slight **right** at Knapp Dr	1.9 mi
- Turn **left** at US-322	2.4 mi
- Turn **right** at PA-558/Potter Rd/T-558	0.6 mi
- Turn **right** at Asbury Rd/TR-561	0.2 mi

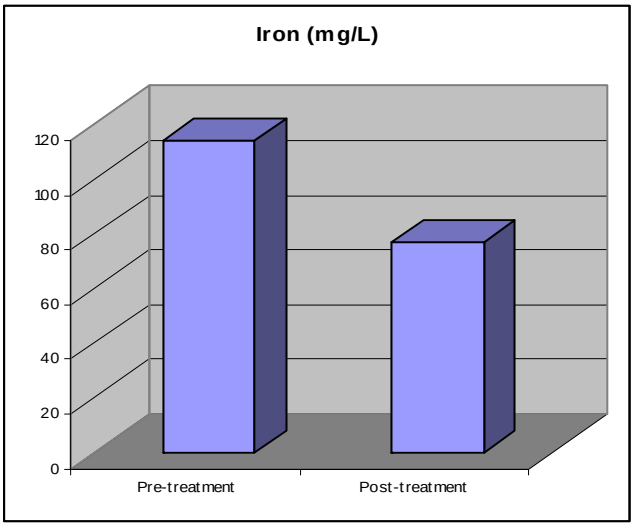
Turn left at an unnamed dirt road; the site is about a half mile up this road.

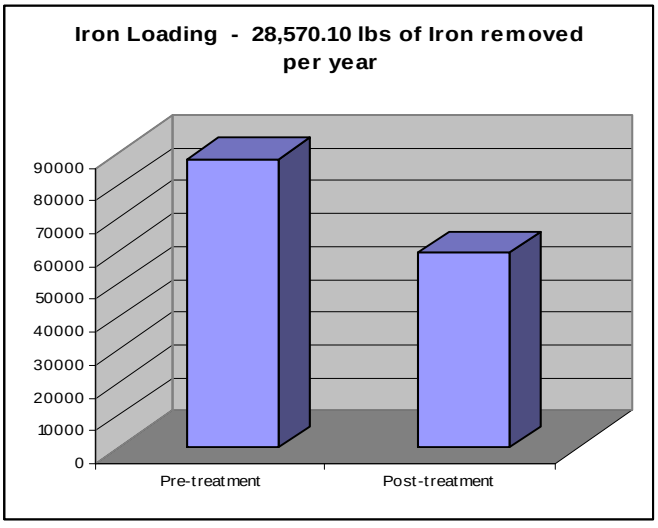
Kotchey Discharge Data: (Not shown: Al – negligible amounts, Mn – levels stay the same)



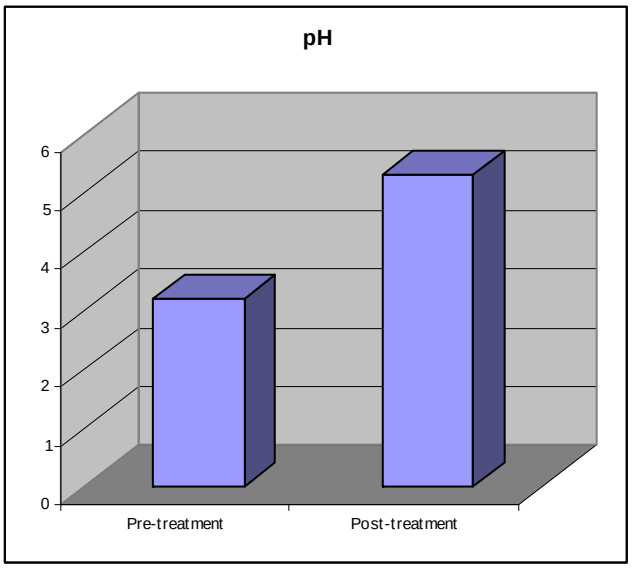


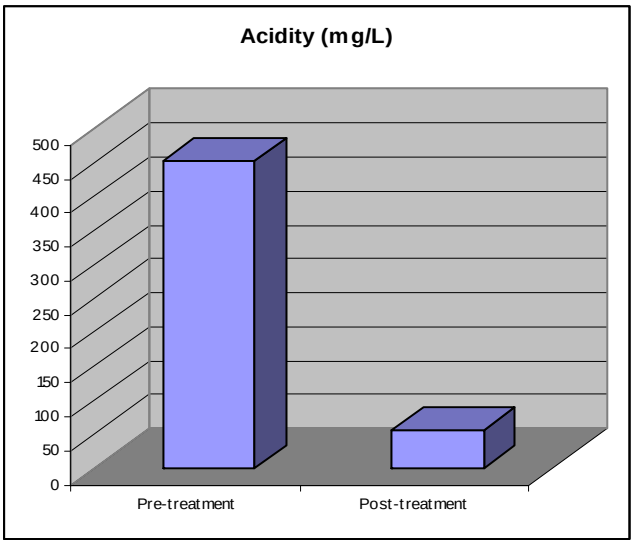


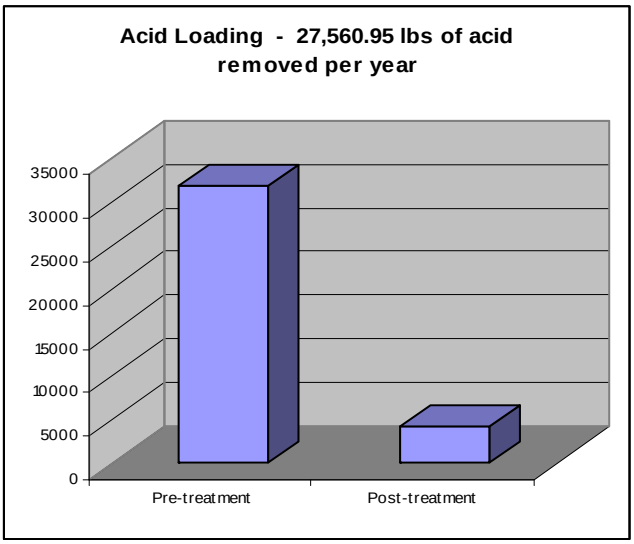


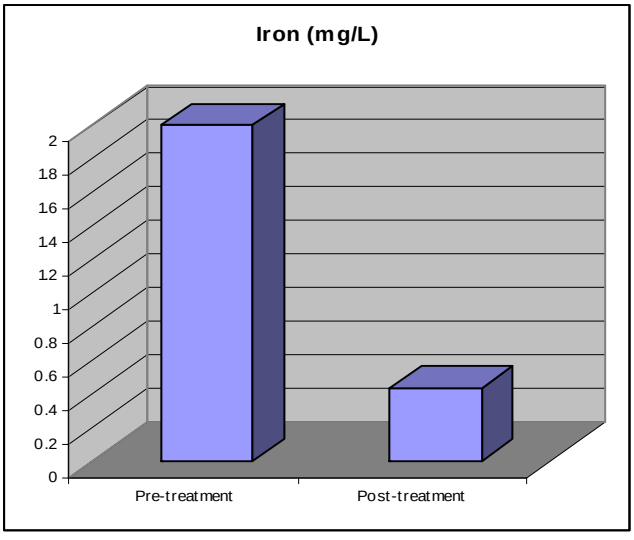


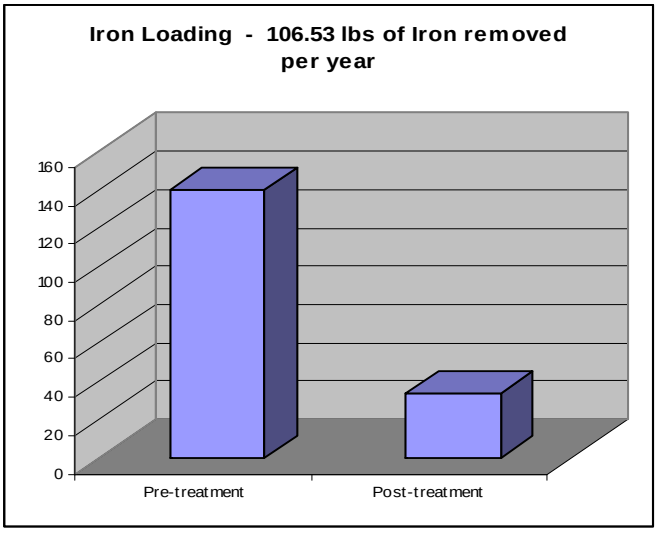
Hanlon Discharge Data:

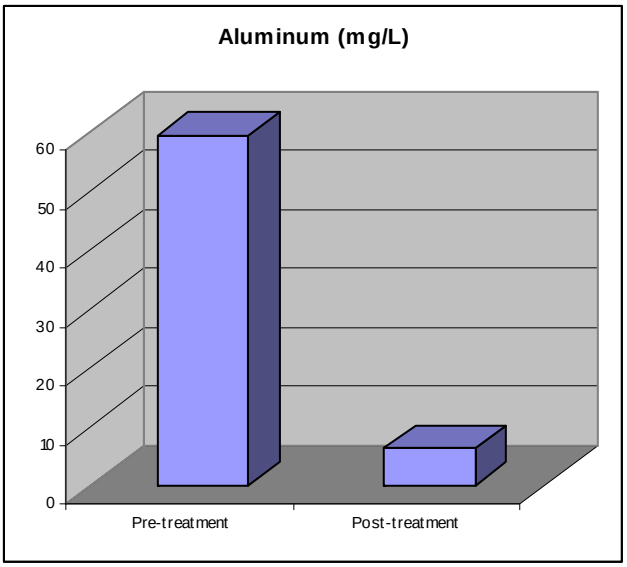


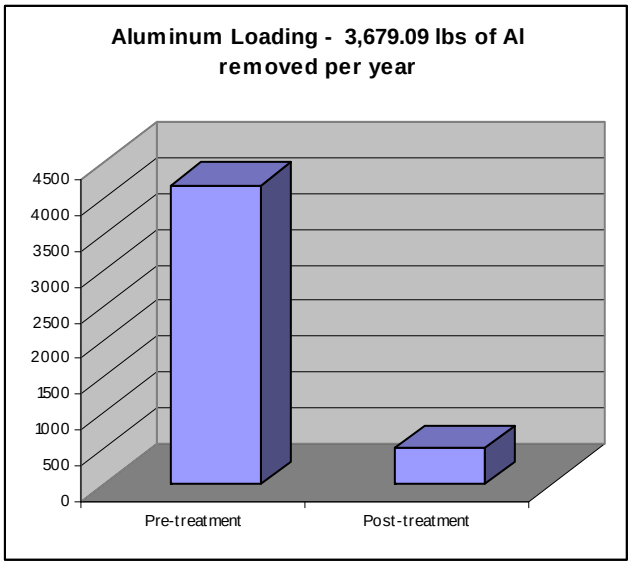


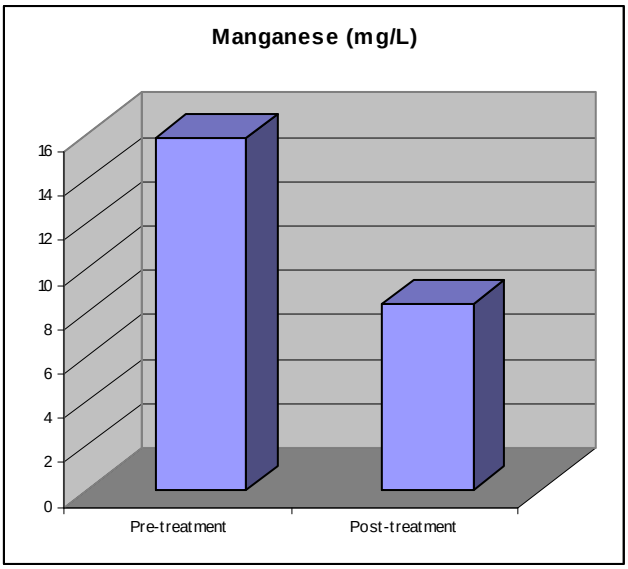


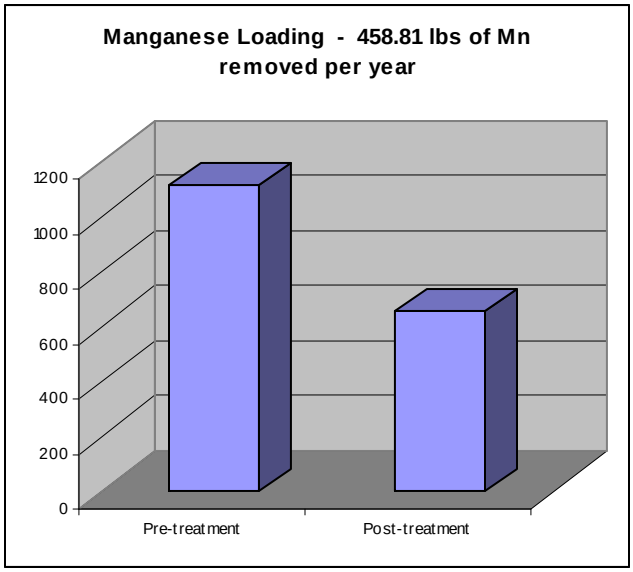





Aluminum (mg/L)
60
50
40
30
20
10
0
Pre-treatment
Post-treatment


Aluminum Loading - 3,679.09 lbs of Al removed per year
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Pre-treatment
Post-treatment


Manganese (mg/L)
16
14
12
10
8
6
4
2
0
Pre-treatment
Post-treatment


Manganese Loading - 458.81 lbs of Mn removed per year
1200
1000
800
600
400
200
0
Pre-treatment
Post-treatment