

Broad Top AMD “Superheroes”



EPA and PADEP recently met with Broad Top Township officials and toured numerous abandoned mine drainage (AMD) treatment projects in the Township.

From Right: Broad Top Township Secretary Ernest Fuller, Chris Young, BTT Intern, Don Hedge, BTT Supervisor, Bernie Hoffnar, Six Mile Run Area Watershed Committee.



Broad Top Township, a community of less than 2,000 people located in Bedford County, in south central Pennsylvania, is a model for local government in addressing water quality issues.



Extensive underground mining began in the 1800's. This and surface mining in the early 1900's occurred before the advent of environmental laws and resulted in a scarred landscape of waste rock piles and a honeycombed subsurface.



The drainage from disturbed land and deep mines that filled with water resulted in acidic discharges that polluted streams with iron, aluminum manganese and smothering sediment. Without hope, the stream became dumping grounds for trash and sewage.



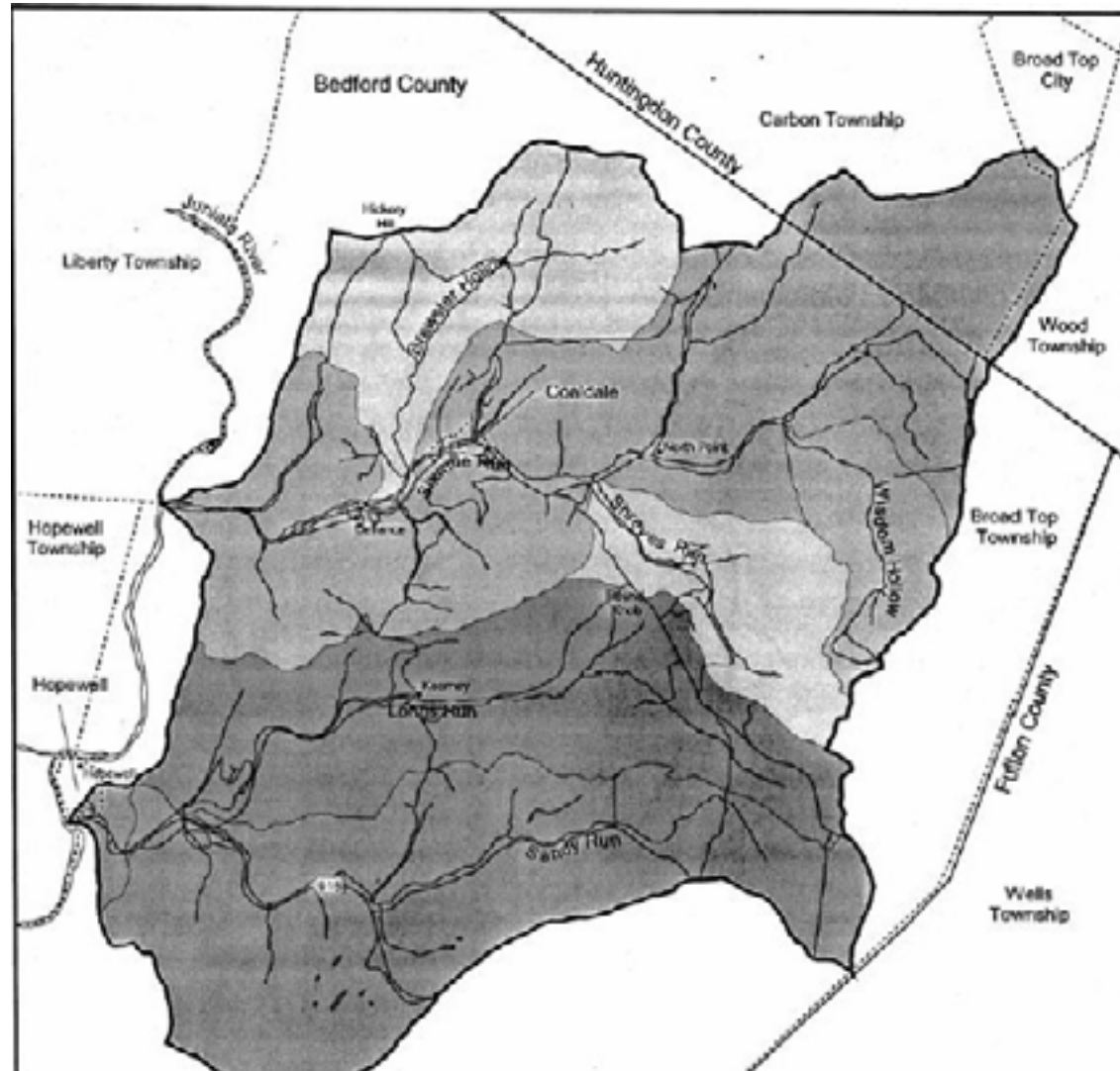
Broad Top Township attacked trash and illegal dumping first in the 1980s, followed by construction of 3 sewage treatment plants in the 1990s and are now tackling AMD. The cleanup has changed perceptions, fostered appreciation of natural resources and raised expectations.

Treatment Ponds for AMD Discharge SX0-D4 on Six Mile Run



Broad Top
Township
obtained funding
from state and
federal sources,
including over
\$900,000 from
Section 319, to
address soil
erosion and
water pollution.

Broad Top Township Watersheds: Six Mile Run and Sandy/Longs Run



Longs Run Tributary to Sandy Run

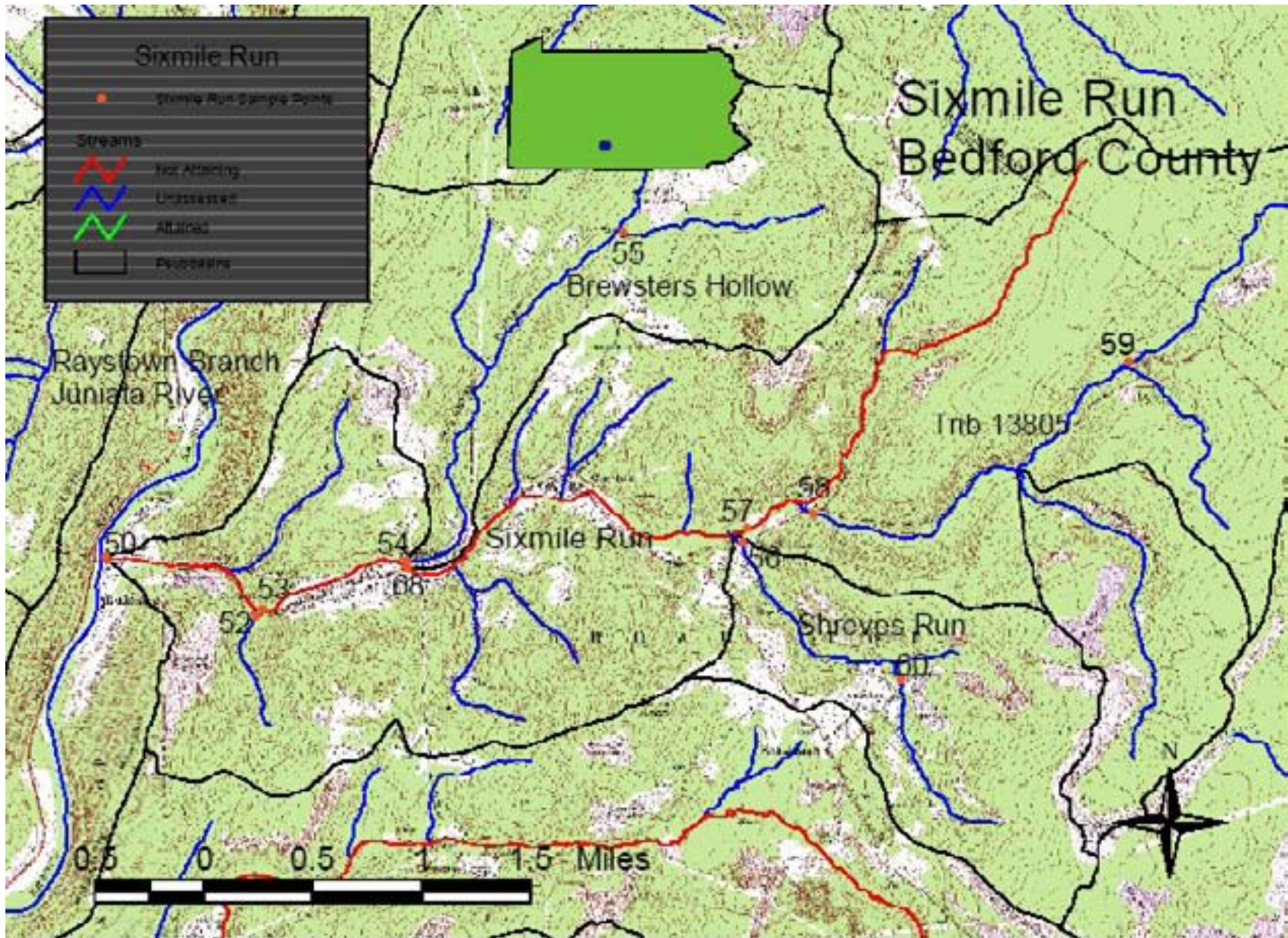


12 of 14 systems called for in the Watershed Plan have been constructed.

Fish Return to Longs Run



Improved water quality has resulted in the return of aquatic insects and fish to Longs Run.



Treatment Ponds for AMD Discharge SX3-D2 on Shreve Run in Six Mile Run Watershed



On Six Mile Run 8 of 10 treatment systems called for in the 2005 Watershed Plan have been implemented with the remaining 2 projects currently in design.

Township Track Hoe Constructing Pond to Treat SX2-D5 Discharge



The Township has used their own employees and equipment to cost effectively construct a total of over 28 AMD passive treatment systems in the Six Mile Run, and Sandy/Longs Run Watersheds.

Township Employees Laying Geotextile in SX2-D5 Pond



This in-house training, experience and flexibility allows for use of an observational design method based on a conceptual plan that can be adjusted as site conditions are literally uncovered in the field.

Seep LR0-D13 a Deep Mine Opening Tapped for Treatment



Rock and overburden was carefully removed from a collapsed deep mine opening so a structure could be constructed to tap the flow and control it for treatment.

Township Employees Maintain What They Build



Broad Top builds with an eye to the future knowing that they will also be operating and maintaining these systems. Employees and equipment are available for routine and other service.

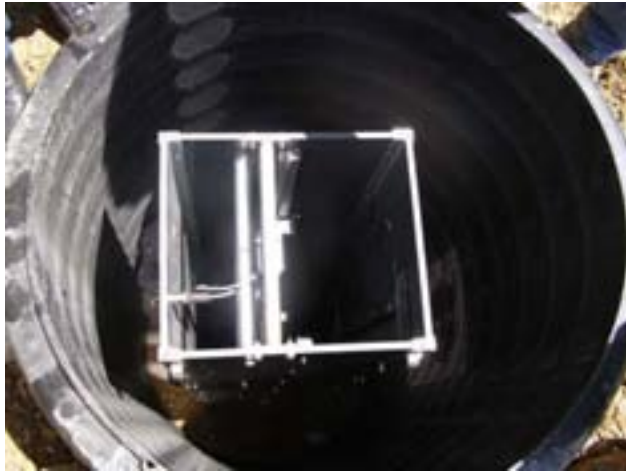
Innovative and Low Maintenance Solutions to Problems



A solar powered back flush valve was installed for the pond treating seep LR0-D10.



Innovative and Low Maintenance Solutions to Problems



An agricultural product used for irrigation and drainage was adapted for use in the control of treatment pond/wetland water levels, flow rates and back flushing.



Challenges



The treatment system for the LR0-D14-seep on Longs Run is in a tight valley with the stream on one side and an embankment on the other. Access and having the footprint needed for treatment is a challenge at many of the remaining seeps.

Results: Acidic streams that ran red with iron for generations now support aquatic life.



Partners/Acknowledgement

Broad Top Township

Six Mile Run Area Watershed Association

EPA Region 3 Non-Point Source Program and
Section 319 Grant Funds

PADEP Bureau of Watershed Management and
Growing Greener Grant Funds

PADEP Cambria District Mine Office

PADEP Bureau of Abandoned Mine Reclamation
Office of Surface Mining and Abandoned Mine
Land Funds

Skelly and Loy Engineers