

Remining

The Division recognizes that remining can result in a significant contribution to the restoration of watersheds impacted by acid mine drainage. In watersheds targeted for restoration, the DMRM will examine the potential for remining and will offer incentives to encourage remining if technologically and economically feasible. The objectives of using remining incentives will be the same as the overall AMD program – the restoration of streams biologically impaired by drainage from abandoned mines.



Raccoon Creek - Mulga Run project includes a passive wetland treatment system composed of limestone berms and steel slag leach beds.

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Acid Mine Drainage Abatement Program

Ohio Department of Natural Resources
Division of Mineral Resources Management

Raccoon Creek - Middleton Run project's pit impoundments and toxic mine spoil piles generate acid mine drainage during periods of high flow.



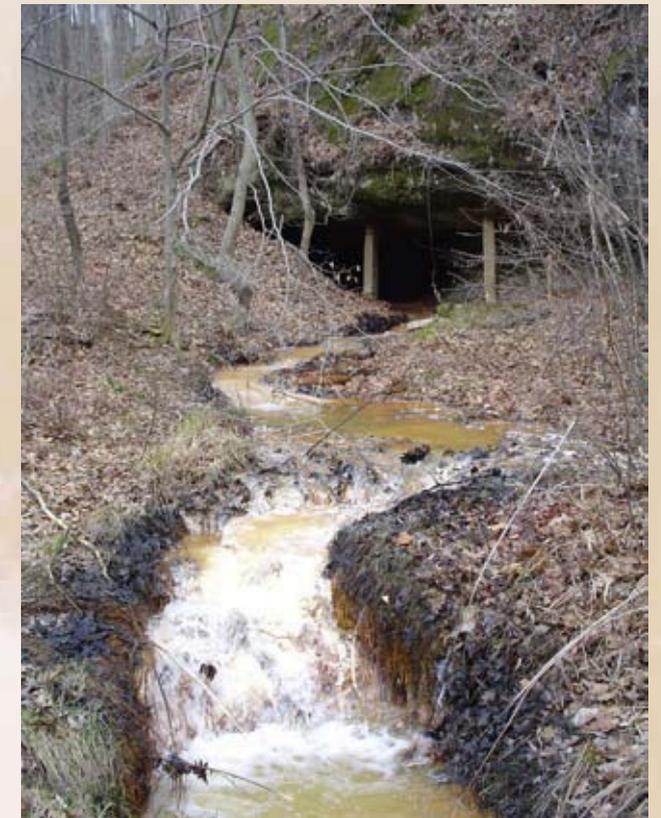
A deep mine discharges into Sunday Creek in the Village of Corning. The contaminated waterway is polluted for several miles downstream.

The Division of Mineral Resources Management recognizes that the role of government is to assist the public in its desire to restore the quality of water resources in local communities impacted by acid mine drainage (AMD). Each of these program areas can be used by the Division, in partnership with other agencies and organizations, to address Ohio's mine drainage problems impacting streams and water supplies. Collectively the program will provide for numerous opportunities to mitigate mine drainage problems in a holistic manner, in addition to continuing the abatement of other abandoned mine land problems causing adverse impacts to the public.

Partnerships

The Division of Mineral Resources Management (DMRM) is committed to developing partnerships with local community watershed groups, and other governmental agencies in order to pool resources and leverage funds. It is the objective of the Division in developing such partnerships to support and assist local efforts aimed at restoring streams to their pre-mining ecological condition and to construct acid mine drainage (AMD) remediation projects that demonstrate cost-effective environmental benefits.

Partnerships that presently exist in the AMD program include numerous local watershed groups such as the **Monday Creek Restoration Project**, the **Raccoon Creek Partnership**, the **Huff Run Watershed Partnership**, the **Sunday Creek Watershed Group**, as well as numerous government agencies and private industry including the US Army Corps of Engineers, the US Geological Survey, the Ohio Environmental Protection Agency, the US EPA, the US Office of Surface Mining, the US Forest Service, the Division of Wildlife, the Division of Soil and Water Conservation, Ohio University, Mount Union College, as well as local watershed conservation districts. The list of participants in this effort continues to expand as partnering and networking efforts multiply across the state.



Monday Creek - Essex deep mine discharge is contaminated with high levels of iron and aluminum.

AMD Set-Aside Program

The Ohio legislature established the Acid Mine Drainage Abatement and Treatment (AMDAT) fund in March 1995. The Division transfers up to 30% of the annual federal Abandoned Mine Land (AML) grant into the AMDAT fund. Based upon projected AML grant levels the Division will transfer an average of \$4.2 million into the fund annually through 2017. Grant moneys placed into the AMDAT fund, pursuant to ORC 1513.37 (E) are utilized to abate mine drainage problems within watersheds that have been approved as hydrologic units. Priority will be given to the expenditure of AMDAT funds whenever other sources of funding can be leveraged through the expenditure of AMDAT moneys (the AMDAT funds are considered “state money” and can therefore be used to match federal funds from other programs). It is the purpose of the AMDAT fund to provide for the long-term clean up of watersheds impacted by AMD in accordance with the criteria established in ORC 1513.37 (E) for hydrologic units.

Local community watershed groups, and other governmental agencies may request assistance from the Division in developing watershed abatement plans, such that AMDAT funds can be expended for AMD



Monday Creek – Lost Run project includes constructed limestone leach beds that add alkalinity to neutralize acid mine drainage.



Huff Run – Linden bioremediation wetland employs micro-organisms that aid in the removal of acid mine drainage contaminants.

abatement. The DMRM can provide assistance in the form of subsurface drilling, development of watershed monitoring plans, laboratory analysis of water samples, matching funding for water monitoring, hydrology and engineering technical assistance, construction contract administration, and construction oversight. Once watershed restoration plans are developed for a hydrologic unit or for a subwatershed within a hydrologic unit, the Division may also provide matching funding for the purpose of construction of an abatement project. Individual projects are eligible to receive matching funds through AMDAT if such projects are within an approved hydrologic unit and the project has been demonstrated to be a priority component of a watershed restoration plan.

State-funded Abandoned Mine Land Program

The mission of the state-funded AML program is to address environmental problems associated with abandoned mines affected prior to April 10, 1972. The program is funded through a state severance tax on coal and other minerals which generates revenue for use in the state AML program. Funds from this program are matched with outside resources in order to leverage additional total dollars for a specific project. The DMRM may also fund AMD abatement projects, monitoring, site assessment and subsurface investigative work on a case-by-case basis.

Acid Mine Drainage Abatement Program

Grants to Watershed Groups

In March 1999 the Ohio DMRM gained the authority to grant money from the AMDAT fund directly to watershed groups in accordance with the following criteria:

- The watershed group meets the criteria for a charitable organization as defined in ORC 1716.01.
- The watershed group provides matching funding, including in-kind services, for 50% of the cost of the proposed project.
- The funds may be used for the following:
 - > data collection and analysis necessary to qualify a watershed as a hydrologic unit;
 - > monitoring of water quality changes resulting from an abatement project;
 - > engineering design and construction costs for a priority reclamation project in the qualified hydrologic unit.

numerous participants and sponsors have joined these agencies through the signing of the “Statement of Mutual Intent” over the past several years. The DMRM is one such agency. OSM provides seed money to watershed groups and other non-profit organizations in the form of challenge grants. ACSI project selection criteria include:

- The presence of partnerships that will provide significant local support in the form of leveraged funding or in-kind services;
- The use of proven or innovative technology with a high probability of success;
- Projects with quantifiable environmental benefits resulting in restored stream miles, fisheries, or aquatic life uses.

Appalachian Clean Streams Initiative

The Appalachian Clean Streams Initiative (ACSI) is a broad-based program to eliminate acid drainage from coal mines. The mission of the ACSI is to facilitate and coordinate citizen groups, university researchers, the coal industry, corporations, the environmental community, and local, state, and federal government agencies that are involved in cleaning up streams polluted by acid drainage. The program was initiated by the US Office of Surface Mining (OSM) and the US EPA Region 3;



Huff Run - Thomas project is composed of barren spoils that produce acidic, metals contaminated runoff.