

## Proposal For EPA Sustainable Development Challenge Grant

### AMD&ART Acid Mine Drainage Remediation Parks Sustainable Development Challenge Grant EPA Region III

#### *Proposed Work Plan 1999-2001*

The Acid Mine Drainage and Art Project (AMD&ART) proposes a creative concept that is designed to change the way an entire industrial region contends with its worst environmental problem. In the Commonwealth of Pennsylvania alone, 3,430 miles of streams contaminated by acid mine drainage (AMD) flow devoid of life, their bright orange rocks a testament to the poisonous minerals within the water. This pollution robs the region of economic livelihood and sullies the legacy of a proud past. By combining new innovations in AMD remediation with the artful idea of creating useable, meaningful parks that *are* AMD treatment systems, the AMD&ART Project will transform environmental liabilities into community assets, achieving several goals at once.

AMD&ART currently targets three sites in Cambria and Somerset Counties, Pennsylvania. Located in the Kiski-Conemaugh River Basin, one of the worst AMD-impacted watersheds in the Commonwealth, the Project encompasses two individual-discharge sites in Vintondale and Portage, and the numerous discharges of Dark Shade Creek, a small watershed.

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|--|---|--|
| Vintondale<br>200 gallons per minute<br>2.9 pH | Hughes Bore Hole<br>2,000 gallons per minute<br>3.5pH | Dark Shade Creek<br>2 discharges over 2,000 gpm<br>17+ smaller discharges<br>pH range 3.0 to 3.5 |
|--|---|--|

#### Environmental Goals

Our environmental goals include raising pH to circumneutral levels and lowering metals counts to levels which will support healthy aquatic ecosystems. Using this measure of success, AMD&ART will remediate nearly one mile of the South Branch of Blacklick Creek, building upon the improvements that will soon be made upstream at the Webster Discharge. At the Hughes Bore Hole (Portage), where 8% of the Little Conemaugh pollution load enters the river, remediation will immediately save the three miles of river between Hughes and the next large discharge, and begin the process of top-down restoration. Our third project will tackle the twenty-two discharges that poison Dark Shade Creek, and subsequently the Stonycreek River; final completion will result in twelve miles of Dark Shade reclaimed, eleven miles of Shade Creek boosted beyond its current status as a “marginal” fishery, and twelve miles of the Stonycreek improved as it flows into Johnstown. Additionally, wetlands which conform to EPA standards will be constructed at each site, including nearly five acres at our pilot project.

### Intangible Goals

AMD&ART seeks to address problems beyond the environmental realm, however. We also work to foster civic participation in the Project, both now and long after the sites have been constructed. Thus we integrate AMD remediation with parks and trails designed through a partnership between residents and AMD&ART professionals. These parks will offer not only recreational amenities such as ball fields and bike trails, but also historical, scientific, and ecological educational opportunities through signage, outdoor classrooms, and remote monitoring via the Internet. Some goals are less tangible however. Over the past eighteen months, residents of Vintondale Borough have become excited about the future of the abandoned mine land behind their town and their abilities to overcome AMD, volunteering their ideas, land, time and labor to the effort. They have a new vision for their town, a goal which is at the very core of the mission of AMD&ART.

### The “art” in AMD&ART

“Art” is often construed as a tangible, constructed product such as a painting or a sculpture. AMD&ART, on the other hand, defines art in a broader context, where landscape is integrated into the scientific engineering of passive treatment. For example, at our first site, vegetation will be planted along the treatment system, with red- and orange-foliaged trees along the first ponds giving way to green and silver-leaved vegetation near the end of the system, symbolizing the healing of the water. At our second site, low boardwalks will transverse the iron deposits at the Hughes Bore Hole, their paths mirroring the layout of the deep-mine tunnels 350 feet below. These designs invite people to explore the treatment system and maintain it, rather than viewing the system as a foreign and unaesthetic space in their communities.

### Site Specifics

Due to the nature of the Project, sites will be completed chronologically, with some overlap of starting and ending dates. By 2001, we will have completed our first site, be in the construction phase of our second site, and be designing our third site. Because this is a demonstration model, AMD&ART has been carefully documented since its inception. Furthermore, the Center for Regional Analysis at George Mason University is conducting extensive economic and civic impact studies of the Project on site communities so that we have hard data with which to demonstrate the effect of AMD&ART on towns and townspeople.

Already in 1998, the discharge at Vintondale has been identified, the treatment engineered, and community meetings held which have resulted in a site design. The discharge will flow over limestone-lined vertical flow ponds and settling ponds into a system wetlands, where final filtration will occur. This neutralized water will then be released into a constructed wetland before it enters the Blacklick. Constructed concurrently will be a recreational park overlooking the system that will provide a community space to replace one lost to flood control measures decade ago. For further help with funding these components, AMD&ART is in negotiations with PA DEP, the Western Pennsylvania Watershed Protection Agency and PA DCNR.

At the Hughes Bore Hole, AMD&ART is working in partnership with several watershed and governmental organizations (see list below) to test new *Intensive Sulfate Reduction* technology with Advanced GeoServices, Inc. The notable advantage of this technology is the reduction of land necessary for treatment in comparison with traditional passive treatment, enabling

the treatment of large discharges in areas with limited acreage. Over the next two years, the site will be tested to determine the specifications of the full-scale project, which we plan to construct in 2001. This time will also be spent holding community meetings with local residents to determine site design and volunteer opportunities.

Finally, in Dark Shade, we will assemble a Comprehensive Watershed Restoration Plan to PA DEP specifications in cooperation with several partners and community residents over the next year and a half. With this information in hand, we will be able to prioritize discharge treatment order, engineer combined discharges, and determine the impact of remining on discharges. After two years, during which we will hold design charettes and public meetings, we will be able to construct 1-2 treatment systems and begin layout of a recreational trail system linking the sites.

FY 1999

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|---|--------|
| • Finalize engineering and design of treatment system/recreation park at Vintondale | Summer |
| • Begin Dark Shade Assessment   | Summer |
| • Begin Construction at Vintondale  | Fall   |
| • Begin Column Testing for Hughes   | Winter |
| • Begin Hughes Community Planning   | Spring |

FY 2000

|  |        |
|--|--------|
| • Complete Vintondale Treatment System | Spring |
| • Begin Dark Shade Design Phase        | Summer |
| • Construct Hughes Pilot-scale System  | Fall   |
| • Begin Dark Shade Community Design    | Winter |

FY 2001

|   |        |
|---|--------|
| • Complete Vintondale Recreational Park                     | Summer |
| • Complete Hughes Pilot-scale System                        | Fall   |
| • Finalize Hughes Full-scale Engineering/Design             | Winter |
| • Finalize Dark Shade System Engineering for 1-2 discharges | Winter |
| • Construct Hughes System and interpretive site/trail       | Spring |
| • Begin Construction of 1-2 Dark Shade systems              | Spring |

AMD&ART Partnering Organizations

|  |   |   |
|--|---|---|
| Advanced GeoServices, Inc.                           | The Heinz Endowments  | Office of State Senator John Wozniak, 35 <sup>th</sup> District         |
| Allegheny Ridge Heritage Coalition                   | Kiski-Conemaugh River Basin Alliance  | Office of Surface Mining, Department of the Interior                    |
| Art Institute of Pittsburgh                          | PA Department of Environmental Protection                                       | Office of U.S. Representative John P. Murtha, 12 <sup>th</sup> District |
| Blacklick Creek Watershed Association                | PA Mountain Service Corps, AmeriCorps   | Southern Alleghenies Conservancy  |
| Blacklick Valley High School                         | Portage Area Historical Society   | Southern Alleghenies Museum of Art                                      |
| Cambria County Conservation and Recreation Authority | PA Council on the Arts  | Stonycreek-Conemaugh River Improvement Project                          |
| Center for Rural Pennsylvania                        | Shade-Central City Historical Society   | STUDIO for Creative Inquiry at Carnegie Mellon University               |
| Central City Borough                                 | Shade Township  | Southwestern PA Heritage Preservation Commission                        |
| EarthTech, Inc.                                      | Office of State Representative Sara Steelman, District 62                       | U.S. Environmental Protection Agency                                    |
| George Mason University                              | Office of State Representative William R. Lloyd, Jr., 69 <sup>th</sup> District | Vintondale Borough  |
| Somerset Conservation District                       | Shade-Central City School District  | Vintondale Volunteer Fire Dept.   |

Part III, Section F  
Budget Detail 1999-2001

Personnel (Three years)

| <u>Position</u>                          | <u>Annual Salary</u> | <u>% Time on Project</u> | <u>Est. Costs</u>    | <u>Total</u>    |
|--|----------------------|--------------------------|----------------------|-----------------|
| Project Coordinator<br><i>AmeriCorps</i> | \$8000               | 100%                     | \$5000/yr <i>EPA</i> | \$15,000        |
| Project Associate<br><i>AmeriCorps</i>   | \$8000               | 100%                     | \$5000/yr <i>EPA</i> | <u>\$15,000</u> |

\$30,000

Fringe Benefits

N/A

0

Travel

@ .25/mile *EPA*

\$4000

Equipment

N/A

0

Supplies

Office Supplies

\$600

Contractual

Engineering Services for System Design—\$32,100

*\$26,000 EPA*

*\$6,100 Bob Deason (100 hours @ \$61/hr)*

Landscape and Interpretive Design for System/Parks—\$76,500 *EPA*

*\$24,000 EPA*

*\$52,500 7 AMD&ART Team Designers (100 hours @ \$75/hr)*

Audit--\$3000 *EPA*

\$111,600

Construction

Vintondale—\$56,200

*\$30,000 EPA*

*\$15,000 is in-kind land donation by Borough (Assessment pending)/*

*\$1200 volunteer labor (15 volunteers @ 8 hours @ \$10/hr)/*

*\$10,000 Western PA Watershed Protection Program grant (pending)*

Hughes Bore Hole—\$82,900 *EPA*

\$139,100

Other

Rent—\$6,000 *EPA*

Phone—\$3,000 *EPA*

Postage—\$1500 *EPA*

Publications and Documentation—\$10,000 *EPA*

Public Meetings—\$340 *EPA*

Site Visits—\$3,000 *EPA*

Museum Exhibit—\$500 *EPA*

Miscellaneous—\$160 *EPA*

\$24,500

TOTAL DIRECT COSTS

\$309,800

Indirect Costs @ 10% of \$250,000—\$25,000

\$25,000

**TOTAL**

**\$334,800**