

Acid mine drainage as art

In an unexpected partnership, Ohio U. assistant professor of civil engineering, Dr. Guy Riefler and assistant professor of painting, Matthew Friday have teamed up on a project that could restore local watersheds and diversify the economic and educational opportunities of southeast Ohio.

The coal industry, once a boon to the region but now a fading trade, has left the landscape scarred from the pollution of acid mine drainage (AMD). AMD has contaminated local streams to the extent that many are orange, smelly, and void of life. Sunday Creek is one such stream running through Truetown, 20 minutes north of Athens. Its highly acidic and iron rich water has been rendered lifeless for seven miles downstream.

Dr. Riefler, along with his students, has developed a system to restore the polluted creek, where the rapid flow rate, location of the site, and extreme acidity in the water have prevented traditional remediation practices from being implemented. The process involves treating the water with limestone and hydrogen peroxide to neutralize the pH and solidify the iron into sludge, an orange by-product containing iron hydroxide.

Along comes Matthew Friday, who has been using the resultant material as a pigment to make paints and working with MFA student Bryce Brisco to create glazes for ceramics. With more research and proper processing, the iron hydroxide could be converted into powder fine enough for a variety of commercial paint applications, according to Friday. He hopes that the eco-pigment not only

be sold to support the facility, but that partnerships will be forged between schools, watershed groups, and area development organizations, such as Rural Action and Little Cities of Black Diamonds, that will provide for educational field trips. By turning the industrial waste of AMD into a useful and sustainable product, this pigment could become a “link to the economic infrastructure of southeast Ohio,” says Friday.



Grant proposals have been written to fund a pilot facility in Truetown that would process the water and produce the pigment from the iron by-product.

With support, a full scale facility would be built that could process 4,000 lbs. of pigment a week. According to Dr.

Riefler, the market for brown pigment used in things like house paint is strong enough to pay off the facility in ten years and support

the management and maintenance of the site. If successful, the plan could be replicated in other mined regions of Appalachia stricken with AMD pollution.

By Lori Gromen

Pictured: Lidded jar with AMD glaze by Bryce Brisco.

FROM THE COORDINATOR: You care, what can you do?

At least a few times a week, I get an email from a student, staff or faculty member along these lines: “I care -- What can I do?”

The answer: You have the power to change the world.

“But how?” Ah, yes. You want specifics. Here are a few ideas:

- Eschew all forms of motorized transportation on campus.
- Treat your friends and yourself to food from our unique Athens eating establishments, especially those that serve local food.
- Pull usable and recyclable items out of the trash.
- Make a promise to yourself never to buy bottled water again.
- Be a manic light turn off-er. Same goes for computers and tv’s.
- Get together with other residents on your hall and centralize all your food in one microfridge. Unplug all the others.
- Host a Save Rave in your common area, and party in the dark.
- Learn a bird call. Call a bird.

“I’ve completed the above. Now I want more.” Great. Join the Green Network and be a member of a campus-wide coalition of sustainability supporters. Get weekly emails on jobs, events and other opportunities for people like you: the carers and the doers. Visit ohio.edu/GreenNetwork to learn more.