

# Reclaiming waterways



Joe Appel/Tribune-Review

Laura Spencer (right) and Bob Beran walk through a wetland contaminated with acid mine drainage in Venango Township. Spencer, a biologist, and Beran, an environmental consultant, are part of the public-private partnership working to clean up the 20-acre site along Seaton Creek.

## Group works to clean up Seaton Creek

By Lawrence Sanata  
TRIBUNE-REVIEW

Standing atop a towering gob pile, built more than a century ago from the waste of a booming coal mine field, Shaun Busler and John Stoops gazed over Seaton Creek, one of the dozens of waterways that flow through Butler County.

Unlike most of those other waterways, however, this creek is best known for its dark and murky water and its floating red and yellow scum — the result of acid runoff from nearby abandoned mines.

But with the help of more than \$800,000 in state Growing Greener funds, an environmental coalition working with a modern-day mining company hopes to reclaim a portion of the creek in Venango Township, near the Erico Bridge.

Stream Restoration Inc., a non-profit environmental coalition based in Cranberry Township, was awarded \$100,000 to remove gob piles — leftover material from mining, including shale, low-grade coal, iron and manganese — and build wetlands where Seaton Creek meets the bridge.

The coalition was awarded another \$716,000 to restore the area so it is environmentally productive again.

The expensive project will be worthwhile, said Stoops, environmental site foreman for Quality Aggregates, based on Neville Island. "... You get this (runoff) out of here, maybe in years to come, my kids or my grandkids will be fishing out of this stream," he said.



An existing wetlands will be enhanced as part of an effort by a public-private partnership to mitigate acid mine drainage polluting Seaton Creek in Venango Township. The creek is in the Slippery Rock Creek watershed.

Joe Appel/Tribune-Review

### Venango Township

Fred Brenner, a professor at nearby Grove City College in Mercer County, agrees.

"It's a lot of money, but what price do you put on an actual resource that has been degraded for the last hundred years?" he asked.

#### VOLUNTEERS ACTIVE

Working with dozens of volunteers, including some of Brenner's students, as well as Quality Aggregates, a mining company that is supplying equipment and equipment operators, Stream Restoration officials hope the

PLEASE SEE GROUP/N6

### About the project

A Venango Township reclamation project will remove 80,000 cubic yards of coal refuse, most of it in piles, from along the banks of Seaton Creek, near the Erico Bridge.

It will reduce acidity by 238,000 pounds a year, along with removing 96,000 pounds of iron and 47,000 pounds of manganese until the land is reclaimed.

Limestone aggregate — 21,000 tons — will be used to construct treatment systems along this section of Seaton Creek to filter acid mine runoff. The project will create 7 acres of wetlands.



Source: Stream Restoration Inc.

# Group working to clean up Seaton Creek in Venango Township

## GROUP FROM/13

creek will be healthier by next year.

"This is the most heavily impacted stream in the Slippery Rock headwaters," Margaret Dunn, president of Stream Restoration Inc. and one of its founding members, said explaining the state of the stream today.

Brenner, a biology professor, identified the yellow scum floating in the creek as iron precipitates. "The darker brown stuff is iron," he added. "We do think that we can restore this watershed back to a productive water life and fishery area."

An upstream section of the creek has been cleaned, with the help of an earlier Growing Greener grant, said Busler, a biologist involved with Stream Restoration. Busler, Brenner and a handful of

other volunteers had just completed a fish survey along a waterway already reclaimed by the group. They were pleased with the fish they found.

"The next logical step is to move down (from the reclaimed site)," Busler said. Brenner said that by cleaning up the newer area of the creek, "we stand a good chance of improving everything on downstream."

## FISH AFFECTED

Stoops has seen fish in Seaton Creek near the bridge, but they've been scrawny and not healthy-looking. But Busler said he saw no fish when he did a survey earlier this week. A passer-by in a pickup was quick to warn not to waste time fishing in the creek, because fish just don't live there anymore. At one time, the creek was teem-

ing with fish, and the valley around Seaton Creek was covered with homesteads, Stoops said. "This was a major, major mining area in the 1800s," he said. "They had their own post office."

But as the mines became less productive, people moved away, and the mines were abandoned, he said.

"This material is hot," Busler said from atop the gob pile, explaining that it is acid-forming. As creek water contacts the gob piles and as rain flows over them, acid enters the waterway, adding to its pollution.

Stoops said acid-laden water from abandoned deep mines to the south of the bridge also is entering the stream.

The plan, he said, "is to get rid of that (gob) pile and get rid of this pile, and then create a wetlands where the piles were." Runoff from

the deep mines also would be diverted into a single location and treated, he said.

Stoops said the timing for the project could not be better. Less than a mile away, Quality Aggregates is reclaiming a mine site.

More importantly, these areas can be successfully cleaned and made environmentally productive, Dunn said.

## TREATMENT HELPS

Not far away along the stream, volunteers installed a passive treatment system to clean the waterway.

"Within a six-month period, the stream had been improved ... from 4.5 pH to over 6 pH," Dunn said.

Typically, water with a pH level between 6 and 7 is considered healthy, according to scientists associated with Stream Restora-

tion Inc.

The level of pH, which measures the concentration of hydrogen ions in water, is used to express acidity and alkalinity.

Passive treatment consists of using limestone aggregate, mushroom compost or organic carbon to filter toxic material from water. Similar methods will be used along Seaton Creek, near the Erico Bridge.

Tim Danehy, secretary and treasurer of Stream Restoration, said people will be able to use the creek once it is reclaimed.

The funding provided to Stream Restoration for this project indicates the state's commitment to the environment, Dunn said.

Last month, Gov. Tom Ridge announced that more than 237 organizations in nearly every Pennsylvania county would share \$30 million in the third round of

Growing Greener grants for watershed restoration, protection and education. The Growing Greener law, signed in December 1999, earmarks \$650 million for such projects over five years.

"I think it's well accepted that Pennsylvania is leading the way in the passive treatment of abandoned mine lands," Dunn said. "The nation is looking at what we're doing."

Dunn said the treatment systems developed by Stream Restoration and used at sites in Butler County can be used by anyone, anywhere.

"Nothing we do is proprietary. Everything is for the public," Dunn said. "It's becoming a model."

Laurence Szanala can be reached at [lszanala@tribweb.com](mailto:lszanala@tribweb.com) or (724) 779-7109.

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## Growing Greener Project Gets Boost from Butler Co. Commissioners

The non-profit group Stream Restoration, Inc. announced it has secured additional funds for a watershed restoration project in Butler County that is being completed through Growing Greener. The project will reclaim abandoned mine lands and abate acid mine drainage at Erico Bridge.

The Butler County commissioners have unanimously approved the commitment of \$100,000 to the restoration of the abandoned mine site. This funding will be combined with the \$20,000 previously pledged by the commissioners to restore this high-profile site on Seaton Creek in the Slippery Rock Creek headwaters. In addition, the Western Pennsylvania Watershed Protection Program has provided \$9,000 in matching funds for this project. In July, DEP awarded \$816,000 in Growing Greener funds for this project as part of Gov. Ridge's announcement of \$30 million in grants.

"It's absolutely amazing and extremely gratifying to see how our partners are making the largest environmental investment in Pennsylvania's history even greater," DEP Secretary David E. Hess said. "This is exactly the type of partnership that Gov. Ridge and DEP envisioned when the Growing Greener initiative began."

The Erico Bridge project will consist of a three-celled anoxic limestone drain containing 12,000 tons of limestone aggregate and a seven-acre wetland designed to treat an acid mine discharge of more than 700 gallons-per-minute. Additionally, abandoned coal refuse, or gob, that lies within the stream will be substantially removed and replaced with two acres of naturally functioning wetlands for wildlife habitat. The project is expected to neutralize an estimated 238,000 lbs. of acidity and 96,000 pounds of iron annually and help improve more than three miles of Slippery Rock Creek.

While there is no requirement for matching funds with Growing Greener projects, grantees have so far more than doubled the Growing Greener monies they have received. Project sponsors have matched \$86.6 million of state money with \$127.1 dollars from other sources.

< > To see a picture of the Erico Bridge project site, visit DEP's website (directlink "scrapbook"). For more information on Stream Restoration Inc., visit <http://www.srwc.org>.

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# Water reclamation set to begin

## 3 miles of polluted stream to be restored

By **MARK HILLWIG**  
Eagle Staff Writer

VENANGO TWP — Partnering to make a better environment was the theme Wednesday when the Slippery Rock Watershed Coalition had a ceremony for its project near Erico Bridge.

State and local representatives turned out to kick off the \$1-million-plus project, which will transform about three miles of stream polluted by abandoned mine refuse into a thriving haven for nature.

The state gave the coalition \$966,000 and Butler County commissioners recently announced the county would contribute about \$100,000 from landfill closure fees toward the project. The Western Pennsylvania Watershed Protection Program, businesses and individuals also contributed to the project.

At the ceremony, Dave Hess, secretary of Pennsylvania's Department of Environmental Protection, lauded the cooperation between government, special interest and business groups.

"This is what watershed protection should be — partnership, not protesting, but working together," Hess said.

Seaton Creek, where much of the reclama-

tion project will take place, acts as part of the headwaters of the Slippery Rock watershed, an important water source for residents in Butler, Beaver and other counties. The water in Seaton Creek, however, has a high acidity level, said Margaret Dunn, the coalition's co-founder. That acid level is comparable to that of vinegar.

The stream is the largest contributor of iron to the watershed headwaters.

The water becomes acidic through the erosion of coal refuse left over from previous mining operations. The Erico Bridge project calls for the removal, neutralization and

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## Reclamation

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placement of more than 40,000 cubic yards of the coal refuse and the construction of 9.5 acres of diverse wetlands and a 12,000-ton anoxic limestone drain.

The limestone in the drain is used to neutralize the acid in the water.

The overall system, known as a passive treatment system, will require no chemicals or electricity to treat the water. It will require little maintenance and will treat about 170 million gallons of water and remove 380,000 pounds of acids and metals per year.

The anoxic limestone drain, when built, will be the largest one in Pennsylvania, and Dunn sees it as a model of sorts. She looks forward to sharing project information with other water reclamation groups.

Most of the reclamation work will be done by Quality Aggregates, Inc., a Pittsburgh-based mining firm with sites throughout the county. Quality Aggregates has become an active member of the coalition, performing similar work at a restoration site on Goff Station Road in Venango Township.

Joe Aloe, president of the company, is excited about the work his company will do based on the plans by the coalition and partner-company Aquascape.

"The wetlands these folks are building are the best ones in the world, perhaps," Aloe said. "These things sustain themselves. This will be a thriving wetlands environ-

ment."

Aloe and coalition members hope the project will have the same effect on the environment as the nearby Goff Station project. After being absent for over a century, fish returned to the streams when the area was cleaned up.

The efforts of Dunn were praised by more than one speaker, but Dunn, who has been involved in the Erico Bridge project since 1995, claims she does not do much more than others.

"I try to put together partnerships because it takes more than one group to clean up the water," Dunn said.

It is those partnerships that Hess praised, adding that by working together public groups and private industry have brought \$127 million state-wide to water reclamation projects.

That far exceeding the \$86 million given out in state Growing Greener grants.

Working together, the partnerships have reclaimed 29,252 acres of former mine lands in six years. Before the partnerships started, analysts were saying it would take more than 100 years to reclaim Pennsylvania's mine lands, but according to Hess, that time frame has been reduced to several decades.

"People are coming together in an amazing way to restore their environment, and it's amazing," Hess said. "We've finally realized the DEP isn't the only one who can do something out here."

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## Coalition Dedicates Growing Greener Project in Butler County

DEP Secretary David E. Hess joined Slippery Rock Watershed Coalition volunteers Oct. 2 to dedicate an abandoned mine reclamation project at Erico Bridge on Seaton Creek using a \$816,000 Growing Greener grant.

"We're celebrating the start of yet another success story in the Slippery Rock Watershed thanks to Growing Greener and the dedication of coalition volunteers," Secretary Hess said. "The coalition has successfully matched Growing Greener dollars with the resources of private industry to make great improvements in the watershed. This project at Erico Bridge now represents a bridge to a cleaner environment."

Hess presented an \$816,000 check to coalition member Stream Restoration Inc., the project sponsor, and helped project partners remove the first shovel-loads of old coal refuse from along the banks of Seaton Creek.

"Our success is additional proof that Pennsylvania is truly the leader in enabling community involvement in watershed restoration," said Margaret Dunn, president of Stream Restoration Inc. and member of the Slippery Rock Watershed Coalition. "The century-old Erico Bridge abandoned mine site is a great example of solving a large problem using all of the talents and resources available. Here, everyone is part of the solution, including government agencies, private foundations, academia, local industry and volunteers."

The project will reclaim abandoned mine lands and abate acid mine drainage. It consists of a limestone drain and a 7-acre wetland to treat an acid mine discharge of more than 700 gallons-per-minute. In addition, coal refuse that is impacting the stream will be removed and replaced with 2 acres of wetlands for wildlife habitat. The project is expected to neutralize an estimated 238,000 pounds of acidity annually and help improve more than three miles of stream.

In addition to the Growing Greener grant, the coalition has received contributions from other sources. The Western Pennsylvania Watershed Protection Program has provided \$9,000 in matching funds, and the Butler County Commissioners have committed \$120,000. Quality Aggregates is supplying 12,000 tons of limestone aggregate for the treatment system.

"Since our original grant announcement in July, Slippery Rock Coalition has attracted nearly \$130,000 more in partner funding," Hess said. "We thought one good turn deserves another, and I'm pleased to announce that DEP is adding another \$150,000 to support the completion of this project."

Hess also thanked Sen. Mary Jo White (R-Butler), Rep. Richard Stevenson (R-Butler) and the Butler County Commissioners for their support of the Growing Greener initiative.

The Slippery Rock Watershed Coalition was one of 25 organizations and individuals to receive the first-ever Governor's Award for Watershed Stewardship. The Governor's Award for Environmental Stewardship honors organizations and individuals for improving Pennsylvania's environment.

Twenty-two Growing Greener grants awarded by DEP in Butler County amount to more than \$3 million. Stream Restoration Inc. and the Slippery Rock Coalition have been awarded \$2.4 million, and the Butler County commissioners were awarded \$347,000 for agricultural best management practices projects.



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## WATERSHED SPOTLIGHT: "WEEKLY SPLASH"

### [Tour Group Visits Goff Station and Erico Bridge Abandoned Mine Restoration Areas](#)

On December 21, 2001, participants of the Slippery Rock Watershed Coalition hosted a tour of the Goff Station and Erico Bridge abandoned mine restoration areas in northern Butler County.

Goff Station, in its final project stage, is passively treating five abandoned coal mine discharges in an environmentally friendly manner (*allowing naturally occurring chemical and biological reactions to occur in the controlled environment of the treatment system and not in the receiving water body.*) In addition, this site is providing exceptional wildlife habitat including a bat hibernaculum and a naturally- functioning wetlands with numerous native species.

Erico Bridge is in the beginning construction stage. The first load of century-old coal waste material is being neutralized with alkaline coal ash and is then being used to reclaim a nearby abandoned coal mine strip pit. Along with the removal of coal waste material, a multicomponent passive system will be constructed that includes burying 12,000 tons of limestone aggregate (*gravel that is somewhat larger than used on driveways*) to treat abandoned mine drainage that averages over 300 gallons per minute. As mine water flows through the Anoxic Limestone Drain, the limestone dissolves (much like stomach antacid tablets), neutralizing the acidity and increasing the pH. Water with dissolved oxygen can cause iron sludge to form, clogging the drain and causing it to fail.

Both the Goff Station and the Erico Bridge abandoned mine restoration projects will include public outreach and environmental education programs.

Participating in the tour was Pennsylvania State Senator Tim Murphy (R-37th District), a supporter of environmental education and a practicing child psychologist. Senator Murphy has provided encouragement and insight to the adjudicated youth program and other youth "hands-on" environmental projects spearheaded by the Butler County Commissioners, Aquascape, Quality Aggregates and Jennings Environmental Education Center.

Special tour guests included Tracy Buckman, President of the Upper St. Clair Citizens for Land Stewardship and Roy Kraynyk, Executive Director of Allegheny Land Trust. Their comments, based on a long-term commitment to environmental programs, were greatly appreciated.

Keeping the tour moving, Joseph Aloe, President of Quality Aggregates Inc., discussed project construction and sustainability. In addition, Todd Lawton from the Scrubgrass Generating Plant explained the benefits achieved by using circulating, fluidized-bed coal ash to help restore over 100 acres of abandoned mine land in the headwaters.

These projects are examples of public-private partnerships that work. Funding was provided through DEP's Growing Greener Initiative, the Butler County Commissioners, the Western Pennsylvania Watershed Protection Program, Quality Aggregates Inc. and McClymonds Trucking. Other contributors include Butcherine's Beer Distributor, Aquascape, the Venango Township Supervisors, Jennings Environmental Education Center, B & LE Railroad, Grove City College, Urban Wetland Institute, Waste Management of PA, Working on Peoples Environmental Concerns (WOPEC), BioMost, Inc., Stream Restoration, Inc., the Butler County Planning Commission, as well as the Tiche, Hindman and Flick families and individuals from the Concordia Haven Retirement Center, the PA Game Commission, Scrubgrass Generating Plant and Girl Scout Troop 653.

For more information, contact Stream Restoration, Inc. at (724) 776-0161 or [sri@salsgiver.com](mailto:sri@salsgiver.com). Also visit the Web at [www.streamrestorationinc.org](http://www.streamrestorationinc.org).

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## Join the 5th Annual Great Backyard Bird Count



The 5th Annual Great Backyard Bird Count (GBBC) will be held on Feb 15 - 18, 2002. So, fill up your feeders, dust off your binoculars, find your bird guide and make plans to join the count! The Cornell Lab of Ornithology and Audubon are busy updating the state-of-the-art website they developed at <http://www.birdsource.org>, and are putting the final touches on the State/Province bird checklists. Over the last 5 years volunteers have submitted thousands of checklists from across the continent providing multiple years of workable data.

The real power of the GBBC lies with the tens of thousands of volunteers who participate and document their local stories. For instance, a participant in Grand Junction, Colorado sighted all three species of bluebird in his yard, which is something that relatively few people in the world can match. Other interesting stories are taking shape; such as, the range expansion of the Eurasian Collared-Dove (see the animated North American map for this species at <http://www.birdsource.com/gbbc/results.htm>), and the multi-year cycles of winter irruptions by winter finches (see story at <http://www.birdsource.com/gbbc/irruptions.html>.) There are countless other interesting tales just waiting to be told, and with each passing year the information entered by loyal volunteers becomes more valuable.

The count can also be a wonderful way to introduce volunteers to their local Audubon chapter. To continue fostering that relationship, GBBC brochures and posters are available to help promote the Count.

# Water cleaner, fish return

## Passive treatment of Butler streams yields positive result

By Scott Deacle  
Post-Gazette Staff Writer

It's not surprising fish haven't been seen for years in parts of Slippery Rock and Seaton creeks. The water has been as acidic as vinegar.

What is surprising is that in two years, a pair of treatment systems in Venango Township has made six miles of stream there clean enough for substantial numbers of fish to return.

Built under the leadership of the Cranberry-based Slippery Rock Watershed Coalition, the treatment systems are filtering metals and other pollutants that make it impossible for wildlife to survive in the upstream portions of the Slippery Rock watershed.

Fish populations have steadily risen from zero in parts of Slippery Rock Creek and its tributary Seaton Creek, which receive treated mine water, said Fred Brenner, Grove City College biology professor. This year and last, Brenner and assistants found shiner, blue gill, brook stickleback and johnny darter, a variety of perch.

Those fish are common in unpolluted waterways in that region, Brenner said. He and his helpers found them by sending electric currents through the water, temporarily stunning the fish so they could grab and identify them.

The researchers also found a variety of macroinvertebrates, such as snails and insects. Metal concentrations declined, as did the water's acidity, Brenner said.

"We are thrilled the water quality has changed from the same [acidity] as vinegar up to something around neutral," said Margaret Dunn, a founder of the coalition.

Though the lower Slippery Rock Creek is relatively clean, its upper reaches in northern Butler County are impaired by metals draining from land first mined more than a century ago. The metals include iron and aluminum.

The companies responsible for the damage can't be held accountable because until the 1970s, no laws required them to repair land they mined.

Though no one conducted formal studies for most of the 20th century, Dunn and others believe fish haven't lived in those parts of the stream since mining began. Local residents have long taken for granted that the streams don't have fish, she said.

Brenner studied the area before the treatment systems began operating in fall 2000 and found few creatures other than mosquito larvae.

The appearance of large numbers of macroinvertebrates is particularly notable, said Shaun Busler, who helped Brenner conduct the research.

Metal particles had fused to rocks in the stream bed, the places macroinvertebrates tend to live. But in two years, enough particles were flushed away to allow the creatures to come back.

The coalition is building a third treatment system in the area that will treat more water than the existing systems.

Other groups are studying the Slippery Rock Watershed Coalition's systems to help them address abandoned mine drainage, which the Pennsylvania Department of Environmental Protection considers the

leading cause of waterway impairment in the state.

State and federal officials often visit the coalition's treatment systems, and coalition members regularly present papers about the systems at scientific and professional conferences.

The coalition is using "passive" treatment systems, which cost about as much to build as chemical treatment systems, but they're far cheaper to maintain. Once they're built, they need only occasional testing and flushing.

The treatment systems in Venango Township cost about \$400,000 each to build, Dunn said.

To build a passive system, the coalition removes piles of unused coal, dirt and metals left near the mines. Then it builds ponds lined with limestone and pipes to filter polluted water. Microorganisms in artificial wetlands clean the water further. Cleansed by the pond and wetlands, the water drains into streams.

So far, the coalition has built its treatment systems with a combination of state grants and donations from mining companies.

How long the systems will clean mine drainage — or need to clean mine drainage — is uncertain. The



Bob Donaldson/Post-Gazette

Construction is under way on a third system to treat contaminated mine water in Venango Township. The site is along Seaton Creek, a tributary of Slippery Rock Creek.

### ISSUE AT A GLANCE

In two years, filtering systems have cleaned up parts of Slippery Rock and Seaton creeks in Butler County so that fish — which hadn't been seen in those waters for decades — have returned.

**THE PLAYERS:** Slippery Rock Watershed Coalition; 20th century mining operations; local residents; fishermen.

**THE SITUATION:** The Slippery Rock Watershed Coalition used state grants and donations from mining companies to build two treatment systems in Venango Township to cleanse the creeks of metals and other pollutants draining from mines.

**LIKELY OUTCOME:** The coalition plans to build a third treatment system, and government agencies and other groups are studying the systems in an effort to address mine drainage. If more such systems are built, it's likely we'll have cleaner water and more fish.

systems are designed to last 25 years.

But because they use a new technology, Dunn isn't sure how long they'll last. And she isn't sure how long polluted water will come from the mines.

Pollution remains high in other parts of the creek and its tributaries, Brenner said. In one area, metal concentrations were so high, they shorted a generator powering the electroshock apparatus used to identify

the fish.

Brenner hopes to see a more diverse set of fish species. And he hopes locals will feel safe fishing in the stream, too.

"That's our objective, to have that stream fish-able," Brenner said. "Only time will tell."

Scott Deacle can be reached at [sdeacle@post-gazette.com](mailto:sdeacle@post-gazette.com) or 724-772-0184.





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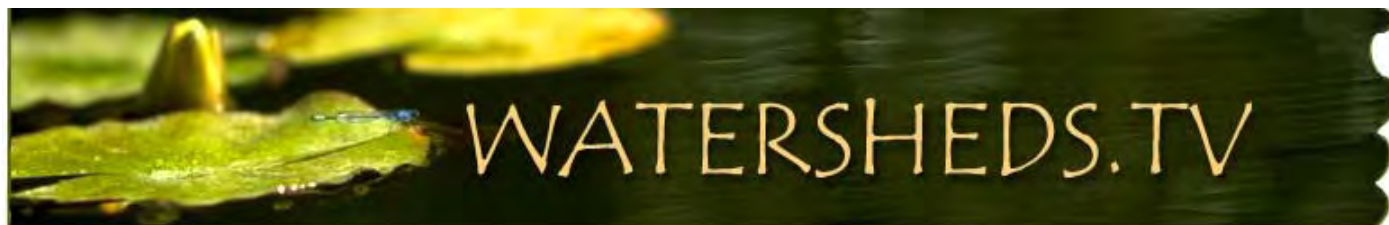
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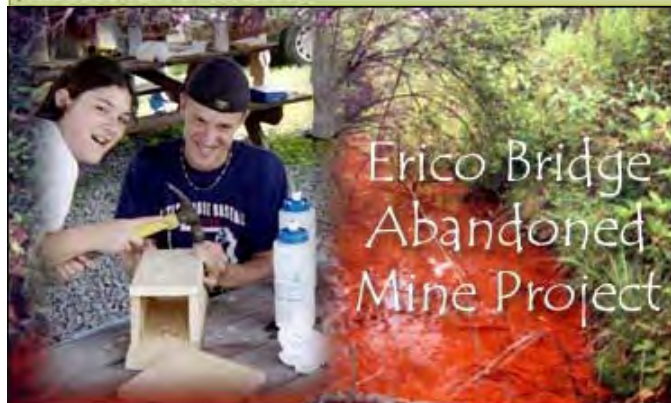
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Additional information on this topic provided below.

### Erico Bridge Abandoned Mine Project

By Anna McAninch and Maggie Allio of Aquascape Environmental

Saturday, July 26th began early for 120 participants in the Youth Conference sponsored by the Pittsburgh North Stake of the Church of Jesus Christ of Latter-day Saints. Each summer, as part of their annual Youth Conference, the Youth Council selects a service site. This year, the Slippery Rock Watershed Coalition was overjoyed to learn that the participants of the Youth Conference would be helping out with a wetland planting in their watershed.

Representatives of the Slippery Rock Watershed Coalition, and employees of Aquascape Wetland and Environmental Services were awaiting their arrival at the Erico Bridge restoration site.

Bob Beran, director of Aquascape, commented "For the request to come the summer we were planting the three acres of wetlands at Erico Bridge was a Godsend, no pun intended. Three acres is a lot of wetland and it will take a tremendous effort to plant it all. The work of so many enthusiastic youth will go a long way toward our goal of having the wetland well vegetated by fall."



*Click on the photo to enlarge it.*

The Erico Bridge Abandoned Mine Restoration Project is one of many Growing Greener funded projects the Slippery Rock Watershed Coalition has been instrumental in completing. Abandoned Mine Drainage (AMD) heavily impacts the headwaters of the Slippery Rock Creek, but the efforts of the Coalition are changing that. In fact, for the first time in 25 years, fish were recently spotted in Seaton Creek, a small tributary in Venango Township, Butler County, PA. Until recently, Seaton Creek had been receiving polluted discharge from the mine seeps and gob piles that were the focus of the Erico Bridge restoration. The first step of the project, completed last year, was the removal of an estimated 24,100 yd<sup>3</sup> of coal refuse which formed two large piles near the old mine. This summer, a passive treatment system was installed at a former coal-mining site, abandoned since World War II.

The passive treatment system consists of a collection system for five different mine discharges, with total average flows of 300 gallons per minute. The collected discharges pass through the largest known anoxic limestone drain in Pennsylvania before entering a settling pond/wetland complex. The limestone drain increases the pH of the water; and the settling pond/wetland complex gives the iron a place to precipitate. Flows are then sent through a horizontal flow limestone bed,

which again raises the pH, adds alkalinity and removes manganese from the water, before discharging back into Seaton Creek.



*Click on the photo to enlarge it.*

While Aquascape employees made one last trip to collect plants from a nearby wetland, Bob Beran met the volunteers to escort them to the project area. "We were sure we had an exceptional group of planters when we heard numerous excited exclamations and looked up to see members of the youth group running for the water as quickly as they could," stated Cody Salmon. "The subsequent splashes as the young men jumped into the deeper areas of the treatment system confirmed our suspicions."

In the few hours the volunteers were there, hundreds of plants were added to the Erico Bridge passive treatment system's wetlands, in addition to a few lost tennis shoes and lots of laughter (which is guaranteed to make the plants grow more quickly).

Provisions had been made for the few members of the group who were less than thrilled by the prospect of being wet and muddy from head to toe. Darrell Daubenspeck, the Butler County Coordinator of the Bluebird Society of Pennsylvania, and Holly Martinchek, one of Aquascape's summer interns from Slippery Rock University, had kits for constructing Bluebird houses ready to go. The houses will be installed around the treatment system, as the combined availability of open water, grassland, and forest provides excellent habitat for these birds.



*Click on the photo to enlarge it.*

Says Holly "We all had an excellent time. The youth worked hard, and we were able to construct about twelve Bluebird boxes, which, if utilized, could mean 24 broods of Eastern Bluebirds each summer – quite a help for a species with a declining population."

Maggie Allio, in her second summer of working at Aquascape, summed the day up this way: "We all worked hard, had fun, and can be proud of what we have done for the environment."

The Erico Bridge Abandoned Mine Restoration Project has been funded by a PADEP Growing Greener grant with partnership funding from the Butler County Commissioners and the Western Pennsylvania Watershed Program. Both public and private groups, including the Slippery Rock Creek Watershed Coalition, Stream Restoration Inc., BioMost, Quality Aggregates and Aquascape Wetland and Environmental Services, have implemented the project.



*Click on the photo to enlarge it.*

For more information, visit these sites:

- ▶ [Slippery Rock Watershed Coalition](#)
- ▶ [Aquascape](#)



Contact Producer of Watersheds.tv,  
Kelly Meinhart.



Bob Donaldson/Post-Gazette photos

Acid mine water turns orange as it is exposed to air entering one of the limestone drains, the first of several retention ponds built in 2002 by the Slippery Rock Watershed Coalition at the abandoned mine reclamation project at Erico Bridge on Seaton Creek in Venango Township.

# Acid free. crystal clear

Volunteer  
coalition  
honored  
for cleaning  
tainted  
streams

By Philip A. Stephenson  
Pittsburgh Post-Gazette

If you ask Tim Danehy to name his most gratifying experience with the Slippery Rock Watershed Coalition, you might expect to hear about his recent trip to Washington, D.C., where he accepted an award from the U.S. Department of the Interior.

Instead, he'll tell you about a routine monthly coalition meeting roughly two years ago at Jennings Environmental Education Center in Butler County.

"At this meeting, this older gentleman came in and he seemed familiar. We went around and introduced ourselves and then he introduced himself and then we asked if there was anything we could do for him. He said he'd just come to say thanks. He said, 'I've been walking up and down these creeks all my life and for the first time, I'm able to see fish, I'm able to see it improving.'"

"Just to have someone who lives in the area, who knows, taking the opportunity to come down to one of our meetings ... it kinda just blew us away," Danehy said.

The coalition was founded in 1994 by Margaret Dunn, Ferenc Szachis and Tim VanDyke — a mining consultant, a Slippery Rock University professor and a state Department of Environmental Protection inspector supervisor, respectively.

The group is dedicated to abandoned mine reclamation in the Slippery Rock Watershed. The headwaters of Slippery Rock Creek had, through decades of coal mining, been ravaged by heavy metal and acid contamination. The coalition employs passive treatment systems which, using limestone, wetlands and ponds, cleanse the waters over time.

Danehy, who joined the group in 1996, became involved after hearing about the coalition's efforts while earning his degree in environmental science at Slippery Rock University.



Orange-colored acid mine water filters through the vegetation in one of the retention ponds at the Erico Bridge abandoned mine reclamation project in Venango Township.

When he isn't volunteering with the coalition, he's working to restore creeks, streams and wetlands damaged by mining and industry through his job with Stream Restoration Inc., a nonprofit watershed restoration organization in Cranberry.

While both environmental organizations focus on education, reclamation and the treatment of mine drainage, the Slippery Rock Watershed Coalition concentrates on building diverse partnerships focused on common goals.

"It's just a group of people from different organizations that work together for a common cause," he said of the coalition's many contributors and volunteers.

Organizations that have worked with the coalition include Grove City College, the Moniteau School District, Slippery Rock University, Quality Aggregates, Amerikohl Mining, Butler County, Allegheny Mineral, Roran Environmental Services,

local chapters of the Girl Scouts and adjudicated youth in the Butler County Juvenile Court Services. The coalition also teamed up with a local environmental educator to publish a book addressing issues related to abandoned mine drainage.

The diverse set of contributors allows the group to accomplish much more than the self-admitted "bunch of scientists" could alone, Danehy said. "We pull together the people who know what to do."

Volunteers from schools and communities provide elbow grease and initiative, local government officials lend their support, and "the mining companies have been dealing with mine drainage for years," Danehy said. Last year, 500 volunteers from 63 organizations contributed about 2,000 hours to the coalition.

It was this comprehensive bridge-building that led the Department of

# Crystal clear now

**MINE**, FROM PAGE N-1

the Interior to honor the organization with a Take Pride in America Award in September. The award, given in the public/private partnership division, was accepted by Danehy and other representatives of the coalition on the rooftop of the main Interior Building in Washington, D. C. Secretary of the Interior Gale Norton presented the award.

"I feel very privileged to have taken part in something like that," Danehy said.

The recent accolades are a far cry from what the group initially experienced when it formed 10 years ago. "The Butler County commissioners at first didn't think we'd get it done," Danehy said.

"When I first heard about them, about nine years ago," said county Commissioner Glenn Anderson, "to be very honest, I thought this is nothing more than a dream and this will never happen."

At the time, Anderson said, "you could actually reach into the streams and get a handful of sediment out. It was orange."

Anderson said he changed his mind "when I started to see the streams change from the orange to nice clear water."

David Johnston, planning director for Butler County, has helped the coalition apply for money through the state's Growing Greener legislation. The program takes money collected from landfills and polluting industries and redistributes it for environmental and beautification programs.

"They are well organized and seem very efficient," he said of the coalition. "They've targeted the problems that are going to create the best result."

A member of the coalition now has a seat on the county's environmental advisory committee. But the biggest compliment to the organization, Johnston said, or "proof in the pudding" is "when we go up to streams in north Butler [County] that have been running red for years and now we've got fish and aquatic life."

Local volunteer Janice Belgredan was originally attracted to the organiza-



Bob Donaldson/Post-Gazette photos

**ABOVE:** Orange-colored acid mine waste cakes the edge of one of the retention ponds at the abandoned mine reclamation project at Erico Bridge on Seaton Creek in Venango Township.

**RIGHT:** Treated acid mine water is clear and clean as it enters the marshland of Seaton Creek at 700 gallons per minute after being filtered through the vegetation and limestone of the retention ponds.



tion because of its work with Big Run, which flows, she said, "right in back of my house."

"They find a way to integrate a lot of groups," Belgredan said. "They're thinking a lot about the community and how to get [people] involved. It lets everyone become aware of the problem."

In the next few months, as it cele-

brates its 10th anniversary, the coalition will begin work on its 16th project—a soil acid treatment effort in the De Sale area in Venango Township.

"We'll hopefully have that cleaned up by late this spring or early next summer," Danehy said.

The coalition also has just begun to expand its focus to areas outside of the

Slippery Rock watershed.

"Sometimes you get so busy, you don't take a step back," Danehy said. "But basically, we're accomplishing the goals we set out to."

Philip A. Stephenson can be reached at 412-263-1419 or [pstephenson@post-gazette.com](mailto:pstephenson@post-gazette.com)

# THE CATALYST

## SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday September 13 @ 7:00 PM, Jennings Environmental Education Center, Pizza and Pop will be provided!! 7/14/01 meeting attendance: C. Denholm, C. Cooper, J. Belgredan, F. Brenner, V. Kefeli, L. Spencer, W. Taylor, S. Busler, M. Busler, M. Dunn, T. Danehy, J. Reidenbaugh, T. Kennedy

### Flushing at De Sale Phase I

On August 10, flushing of a vertical flow pond at the De Sale Phase I site was conducted by **Chris Treter**, OSM intern at Stream Restoration Incorporated, and **Jamie Stilley**, volunteer. The vertical flow pond was designed with two layers of pipe, with each layer being divided into quadrants. The flushing of the vertical flow pond involved a quadrant on the upper layer of pipe and a quadrant on the lower layer of pipe and lasted for over *5 and 1/2 hours!* The valves for each pipe were opened at the same time and several sludge and water samples were taken throughout the flushing. Flow measurements were conducted using the "4 inch drop-off" technique.

This preliminary attempt at extended flushing was conducted to observe the movement of solids through the compost and limestone layers of the vertical flow pond. The information collected from this test will help improve passive treatment technology. *Thanks to Jamie and Chris for conducting the flushing and collecting the samples!*



### SITE MAINTENANCE IN THE SLIPPERY ROCK WATERSHED

Last month, **Jamie Stilley**, volunteer, and **Chris Treter**, OSM Intern at Stream Restoration Inc. traveled in the Slippery Rock Watershed and conducted maintenance on several of the passive treatment systems. The sites included **De Sale Phase I**, which is entering its second year of operation, and **SR 114** (also known as **Argentine**) which is entering its sixth year of operation. The maintenance at SR 114 involved the removal of iron precipitate from a trash rack that protects the drain to the wetland. It was a challenging job because the precipitate was extremely soft and had worked its way into every possible crack and crevice. By cleaning the trash rack, flow into the wetland drastically increased from its previous trickle and overflowing the settling pond was avoided! Maintenance at De Sale Phase I involved the cleaning of a pipe that was partially clogged with iron precipitate. Maintenance of these sites took less than three hours to complete! **Thanks to Jamie and Chris for the maintenance effort!**

### SHAMOKIN WATERSHED TOURS SLIPPERY ROCK WATERSHED

Recently, the **Shamokin Watershed Group** toured several sites in the Slippery Rock Watershed. The tours were conducted by **Will Taylor** (Jennings Environmental Education Center), with help from **Dr. Fred Brenner** (Grove City College) and **Bob Beran** (Aquascape). Fred Brenner assisted in the morning at **Jennings Environmental Education Center** and Bob Beran assisted at **Goff Station**. The tour concluded at **De Sale**. Thank you, Shamokin Watershed Group for praising our efforts!! We can not tell you how much this means to us.

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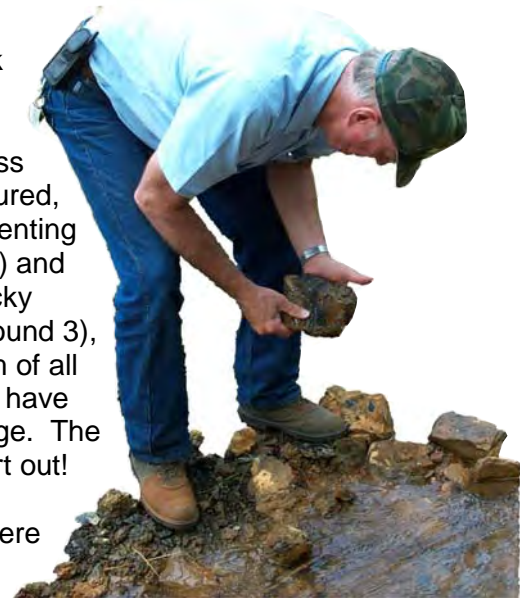


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Dr. Fred Brenner of Grove City College and Shaun Busler of Stream Restoration Incorporated busy themselves with electro-fishing as Nick Morgan and John Lawrence look on.

## FISH GET BUZZED ON ELECTRICAL CURRENT

Monday, August 6th, an electro-fishing survey was conducted in Seaton Creek by **Dr. Fred Brenner**, **Nick Morgan** (Grove City College), **John Lawrence** (Slippery Rock Watershed resident) **Shaun Busler**, **Cliff Denholm**, and **Chris Treter** (Stream Restoration Incorporated). Electro-fishing is a harmless process that involves stunning fish with a mild electrical current so the fish can be captured, identified, and released back into the stream. The fish survey involved documenting the absence of fish at the raw flow at **De Sale Phase II** (before any restoration) and shocking at **McJunkin Road** downstream of the De Sale systems and Chernicky reclamation), **Erico Bridge** (future restoration area under Growing Greener Round 3), **Murrin Run** (at the Goff Station system), and **Goff Station Road** (downstream of all restoration areas). The water tested prior to entering De Sale Phase II did not have any fish, due to the poor water quality and no fish were observed at Erico Bridge. The iron content in the water at Erico Bridge was so high, the generator would short out! When the survey was completed, 4 five-spine stickleback, 1 pumpkinseed, 2 johnny darter, 1 bullhead, 3 crayfish, 3 green frogs, and 13 common shiners were found. *Special thanks to everyone involved in the testing and thanks to Grove City College for making this possible!*





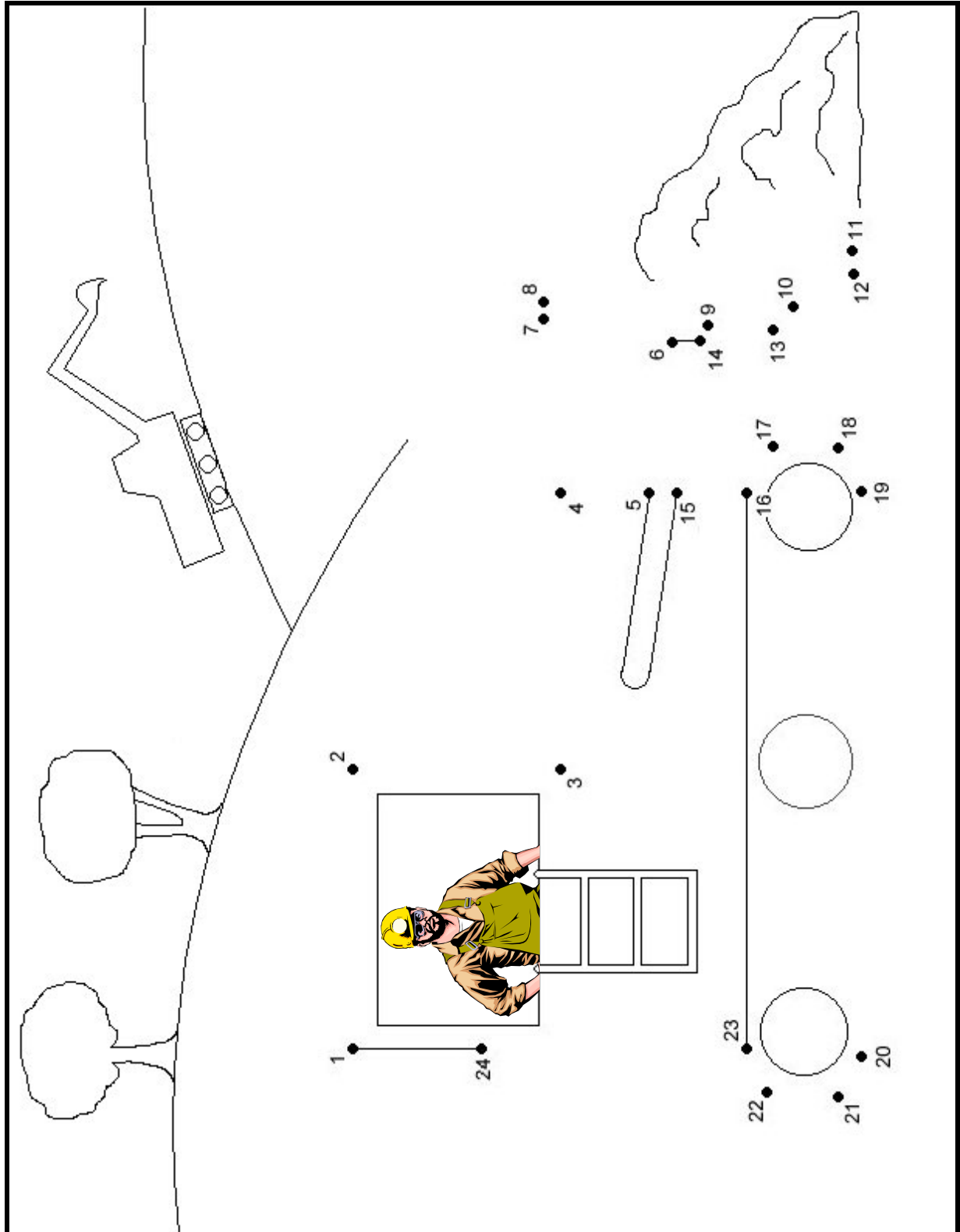
# The *KJDS* Catalyst

## SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITIES

### CONNECT THE DOTS

Connect the dots to see what the picture is. When you are done connecting the dots, color the picture. And don't forget to send the colored picture to the Slippery Rock Watershed Coalition for a **GIFT CERTIFICATE TO A LOCAL RESTAURANT!**

Completed by: \_\_\_\_\_ Age: \_\_\_\_\_ School: \_\_\_\_\_  
 Address: \_\_\_\_\_



Construction equipment, like this bulldozer, is important for the construction of passive treatment systems.

# ARRIPA TOUR

On 7/20/01, participants of the Slippery Rock Watershed Coalition had the privilege to attend a tour of reclamation sites in Indiana and Cambria Counties with the Association of Independent Power Producers in the Anthracite and Bituminous Regions of Pennsylvania (ARIPPA). First stop on the tour was the Ernest site where **John Stilley** of Amerikohl Mining, Inc. discussed a current re-mining operation that will reclaim a previously barren coal waste pile situated between a church and a stream. Amerikohl's project in addition to a major reclamation effort being made by the Cambria Reclamation Corporation, discussed by **Dave Young**, Cambria CoGen, will reduce pollution in the stream, improve the drinking water supply for the town of Ernest, reclaim and revegetate about 250 acres and create about 14 acres of wetlands!! The learning kept moving along as **Barry Scheetz**, PSU & **Roger Hornberger**, PADEP discussed geology, mining, reclamation and coal ash whilst traveling between sites. Next stop was the Colver Power Project where presentations on coal ash utilization were given by **Dennis Noll**, Earthtech, Inc., **Mike Menghini**, PADEP, **Dr. Art Rose**, Prof. Emer. PSU, **Dennis Simmers**, **Jeff Zick**, and **John Hall**, Colver Power Project. The award winning Colver project utilizes waste coal as fuel and produces alkaline coal ash used in the successful reclamation of the site! Last but not least was a trip to Nanty Glo and Revloc where **Gary Anderson**, General Manager Ebensburg Power Company presented the problems and solutions being applied in the field!! Special thanks goes to **Todd Lawton**, Scrubgrass Generating, for the invite and **Bille Ramsey**, ARIPPA for the hospitality!!!! *It is truly exciting to see reclamation in action!*

## FUTURE ARTICLES

- Jennings Environmental Education Center hosts Watershed Workshops
- Jack Dam construction at De Sale Phase II

Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). September Distribution: 743 copies



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## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday October 11 @ 7:00 PM, Jennings Environmental Education Center, Pizza and Pop will be provided!! 9/13/01 meeting attendance: C. Denholm, C. Cooper, J. Belgredan, F. Brenner, V. Kefeli, W. Taylor, M. Dunn, T. Danehy, D. Johnson, D. DeNicola

## **Butler County Commissioners Donate \$180,000 to Slippery Rock Watershed Restoration Projects!!!!!!**



The **Butler County Commissioners** have generously donated an amazing \$180,000 to two SRWC restoration projects located in Venango Twp., Butler County!!! They gave \$120,000 to the Erico Bridge Restoration Project, which will include the removal of gob piles, some of which are situated in Seaton Creek, and the installation of the largest known Anoxic Limestone Drain within PA!!! In addition, large wetlands will also be created at the Erico Bridge site. The County Commissioners also gave \$60,000 to the De Sale Phase III project which is planned to be an innovative system to treat abandoned mine drainage with a high metals concentration!!! This funding is in addition to the Growing

Greener Funding provided by the PA DEP and the in-kind contributions among the project partners.

To **James Kennedy, Glen Anderson, and Joan Chew** we would all like to say:

**THANK YOU, THANK YOU, THANK YOU  
FOR YOUR SUPPORT AND MAKING THIS PROJECT HAPPEN!!!!!!**

### **Jack Dams at De Sale**

On August 17th, **Shaun Busler** of **Stream Restoration Inc.**, and **Nick Morgan** (see photos below) of **Grove City College** under the direction of **Dr. Fred Brenner**, professor at Grove City College, constructed jacks dams of various sized limestone donated by **Quality Aggregates' Boyers Quarry**. The jack dams were strategically placed in unnamed tributaries of Seaton Creek, with the hope of reducing acidity and increasing alkalinity. Monitoring these jack dams has been and will continue to be conducted by Grove City College students. Monitoring has already indicated a decrease in acidity.



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## **Saving Slider Turtle!!!**

On September 6th, **Paula Langsdale**, a Cranberry Township resident and Mohawk Elementary Special Education teacher, happened to notice while driving home on the PA Turnpike a little turtle trying to cross the road amongst rush hour traffic. Paula, pulled off the side of the road, made a literal mad dash across the two lanes of speeding east bound traffic, picked up the turtle and ran back hoping not to get hit herself. She contacted **Stream Restoration Incorporated** who told her to bring it on in. Stream Restoration in turn handed it over to **Bob Beran** of **Aquascape**, who with the help of his son **Matt** (pictured above holding the turtle) released it into the final polishing wetland of the **Goff Station Restoration Area** on September 9th. **Bob Beran** identified the turtle as being a Pond Slider Turtle. Pond Slider Turtles are typically found from Virginia to Florida and West to New Mexico as well as down into South America; however, they are also very popular as pets and probably had just been dropped off at some convenient location. But thanks to Paula and members of the Slippery Rock Watershed Coalition the turtle has a new home where he should be quite happy. Pond Slider Turtles prefer calm waters, with soft bottoms, and dense vegetation which makes the final wetland an ideal habitat.

## **SRWC in the Pittsburgh Tribune**

We hope you saw **Laura Spencer** and **Bob Beran** of **Aquascape** wading in the iron sludge at the Erico Bridge Restoration Area in a wonderful article written by **Larry Sonata** of the **Pittsburgh Tribune-Review**. The excellent photos were taken by **Joe Appel** also of the Tribune Review. If you missed it, the article appeared in the Butler County section on August 9, 2001. The article can be found at [www. Triblive.com/search/](http://www.Triblive.com/search/). Then under the search enter : Seaton Creek.

## **SRWC's Dr. Valentine Kefeli Teaches Soils Lab Course**

**Dr. Valentine Kefeli** of the **Slippery Rock Watershed Coalition** has teamed up with **Professor Bruno Borsari** of **Slippery Rock University** to teach a lab course entitled "Soils as a Resource" at the Macoskey Center, Slippery Rock University, for the Fall 2001 Semester. The course will include a wide variety of topics ranging from soil as an ecosystem to Carbon/Nitrogen Ratios to chemical and physical parameters of soil to polluted soils. Dr. Valentine will also include in this course aspects of his work involving fabricated soils for landscape reclamation.

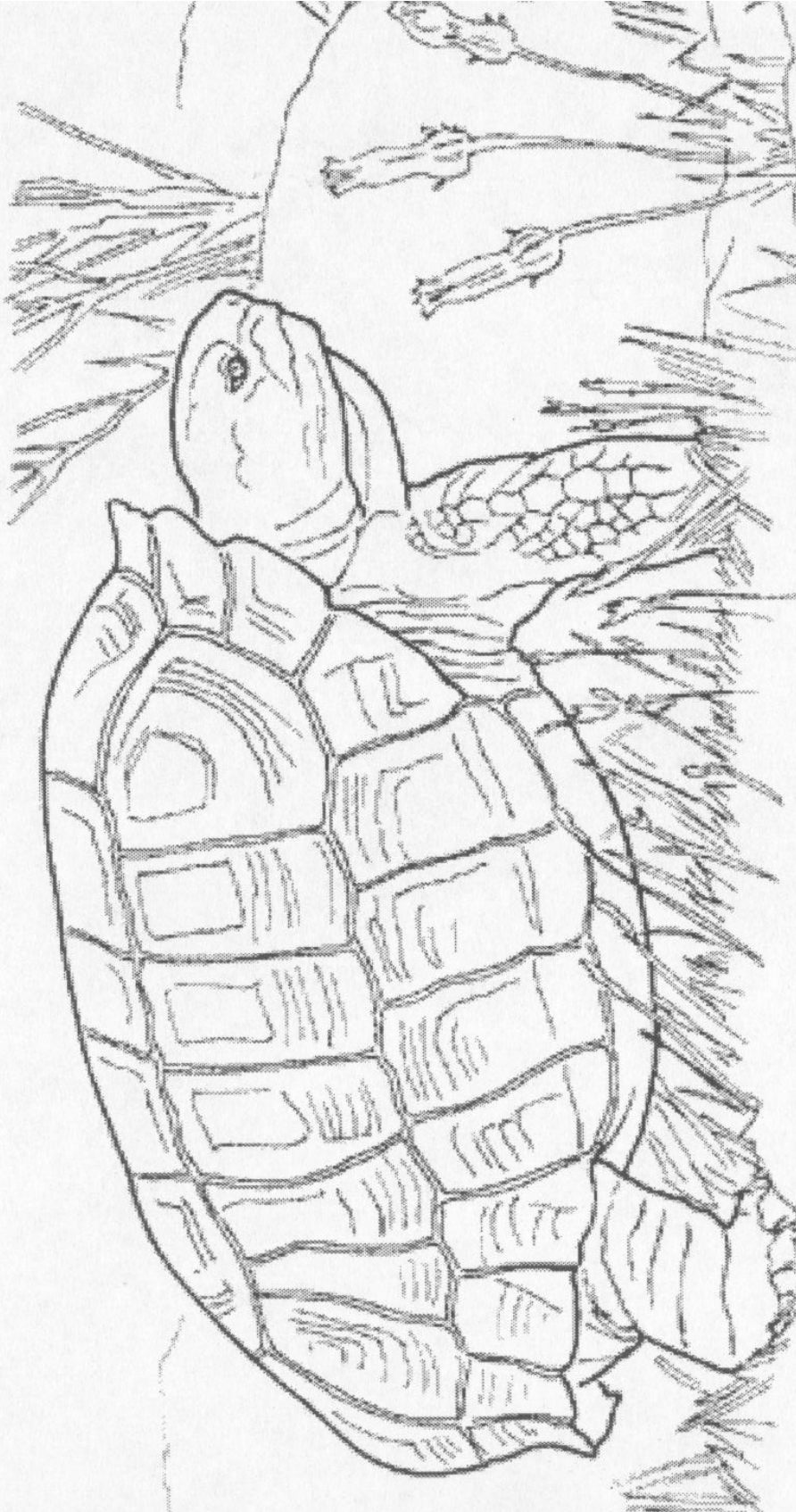


# The *KIDS* Catalyst

## SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITIES

### Turtle Color Page

Color the picture and send it into the Slippery Rock Watershed Coalition to get a free gift certificate.



Turtles are reptiles that have outer shells and lay eggs. There are over 250 different kinds of turtles. Different kinds of turtles live in different kinds of places. Some live in hot dry deserts, while others live in cool mountains. Some live in forests while others live in the oceans. Many like to live in ponds and wetlands. Wetlands are also known as marshes, bogs, and swamps. Check out the article about the pond slider turtle on the opposite page.

The largest turtle is the Leatherback Sea Turtle which lives in the ocean and can be 6-8 feet long and weigh between 1,200 and 1,500 lbs. The smallest turtle is the Bog Turtle which is only 3-4 inches long. Different turtles also eat different things. Most turtles eat plants, insects, or small fish. Turtles can live to be about 30-40 years old, but some live to be over 100 years old. The large tortoise that lives on the Galapagos Islands can live to be 200 years old.

Name \_\_\_\_\_ Age \_\_\_\_\_ School \_\_\_\_\_

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## Going Batty...Mist Netting at Goff Station

On a warm summer night in late August, a group of about 25 people representing various organizations and government agencies including members of the **PA Game Commission, PA DCNR, Slippery Rock Watershed Coalition, and students from Slippery Rock University** came together to answer a question: Are there bats at Goff Station and will they use or are they using the bat boxes and hibernaculum? A tour of Goff Station was conducted by **Bob Beran of Aquascape** for those unfamiliar with the site. Inspections of the bat boxes revealed a bat was using one of the boxes. As dusk approached, two nets were set up and then we waited. We saw lots and lots of bats.....flying around, but no bats were actually caught in the net so we could not identify what type or types of bats were there. The important thing is bats were there and we were very excited about it despite not catching any, besides we all had a great time!!! There are plans to do it again one more time in the next couple of weeks with **Dr. Fred Brenner of Grove City College, Will Taylor of the PA DCNR's Jennings Environmental Education Center, and Bob Beran.**



On a related note **Cal Butchkowski, of the PA Game Commission** has installed remote sensing equipment so that we can monitor conditions within the bat hibernaculum such as temperature. This information can then be used to try to maintain optimal conditions for wintering bats.

Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). October Distribution: 774 copies



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# THE CATALYST

## SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday November 8 @ 7:00 PM, Jennings Environmental Education Center, Pizza and Pop will be provided!! 10/11/01 meeting attendance: C. Cooper, F. Brenner, V. Kefeli, M. Dunn, T. Danehy, T. Rucosky, C. Treter, D. Funkhouser, S. Busler

### Erico Bridge Groundbreaking!!!!

On October 3, a ceremonial groundbreaking was held to celebrate the kick off of the Erico Bridge Restoration Project, which will include the removal, neutralization, and placement of 25,500 cubic yards of coal refuse piles situated along/in Seaton Creek into an abandoned Brookville coal pit, a neighboring reclamation project. The project will also consist of a passive treatment system that will include the largest Anoxic Limestone Drain to date (that we know of anyway) and the creation of about 10 acres of wetlands. **PA DEP Secretary David Hess** was on hand to take part in the celebration and present two Growing Greener checks to **Margaret Dunn** of **Stream Restoration Inc.** One of the checks was actually an additional surprise check of \$150,000 to make up the difference in funding needed to complete the project!!!!



**Thank you David Hess and everybody at PA DEP for helping us make this happen!!!!**

Also thanks to project partners **Quality Aggregates, Inc., AquaScape, PA DEP Knox DMO, Butler County Commissioners, Ted Kopas of PA DEP, Venango Township Supervisors, Scrubgrass Generating Plant, Grove City College, BioMost, Inc, Stream Restoration Inc., Senator Mary Jo White's office, and Representative Dick Stevenson's office.**



### Butler County Environmental Quality Board Tours SRWC Sites

On September 26, members of the **Butler County Environmental Quality Board** toured De Sale Phase I, Goff Station, and the Flick gob pile at Erico Bridge with members of AquaScape and Stream Restoration, Inc. Those who participated include from front left going clockwise: **Cheryl Kelly, Butler County Recycling Coordinator; Bob Shurtleff, DCNR Bureau of Forestry; Dave Lamperski, Butler County Conservation District; Bob Beran, AquaScape, Doniele Beck, Butler County Planning Commission; Margaret Dunn, Stream Restoration Inc.;** not pictured **Shaun Busler, Stream Restoration Inc.**



From left to right at the Erico Bridge Groundbreaking ceremony, symbolically removing the gob piles are: John Wells, Venango Twp. Supervisor; Todd Lawton, Scrubgrass Generating; David Hess, Secretary PA DEP; Margaret Dunn, Stream Restoration Inc; Jim Shaffer, Venango Twp. Supervisors; Glenn Anderson, Butler County Commissioner; Robin Lutz, Senator Mary Jo White's office; Joe Aloe, President Quality Aggregates; Joan Chew, Butler County Commissioner; Jane Rath, Rep. Dick Stevenson's office;

### Grove City College Students... Where Are They Now?

Since the beginning, **Grove City College** students, under the direction of **Dr. Fred Brenner** have been actively involved and an important asset to the Slippery Rock Watershed Coalition. These students participated in studies at Jennings Environmental Education Center and/or Seaton Creek, the most heavily impacted tributary of Slippery Rock Creek. So what has happened to these students? Where are they now? What are they doing with their lives? Read on...

**Shaun Busler**, 2000, Biologist for Stream Restoration Inc.

**Daniel Dougherty**, 2001, Currently Student Teaching

**Mike Enright**, 1999, Wildlife Biologist for Dayton Ohio Metro Park System

**Corrie Gardner**, 2000, Graduate School- Ohio State University- Agricultural Pest Management MS program

**Kim Kosick**, 2000, Graduate School- Aquatic Toxicity - Ph.D. Program

**Elizabeth Mountz**, 1999, Congressional Fellow - U.S. House of Representatives

**Peter Sharpe**, 1997, Garnett-Fleming Consulting Firm, Harrisburg, PA

And others...

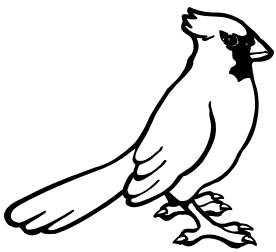
### Butler County Juvenile Program and Goff Station in the News!!!

We hope you saw **Angela Lamberto** of **Butler County's Working Opportunities to Repay the Community Program (WORC)** in the article entitled "Hands-on rehabilitation" in the 10/11/01 issue of the **Pittsburgh Tribune-Review**. Once again **Larry Sanata** has written an excellent article.

The WORC program is designed to help first-time, non-violent, juvenile offenders meet the community service penalties required by the juvenile court. The community service program strives to get the young people back on their feet, develop a sense of pride/self-respect, and improve the communities they live in while teaching them new skills and fostering new interests.

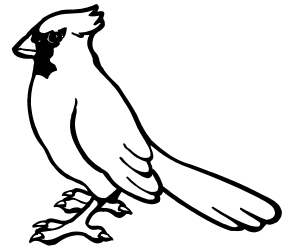
One of the projects that the youth worked on was at the **Goff Station Restoration Area** where under the guidance of **Bob Beran, Jeff Reidenbaugh, and Laura Spencer** of **Aquascape**, they planted wetlands throughout the summer. Several of the youth were very interested in the work and wanted to know how they could do this for a living.

Check it out at [www.Triblive.com/search](http://www.Triblive.com/search) :  
Search using: WORC



# The *KJDS* Catalyst

## SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITIES



### Cedar Waxwing Activity Page

Read the Cedar Waxwings article and then complete the word search. If you send it into the Slippery Rock Watershed Coalition you'll get a free gift certificate.

#### **Cedar Waxwings Visit Goff Station**

Just six months after building the wetlands at Goff Station, a flock of cedar waxwings were heard hunting for insects. Because they travel in large flocks, their buzzy calls could be heard a long way off.

Wetland habitat, like Goff Station's, provide food and a resting place for many migrating birds. While cedar waxwings won't be flying south for the winter, they are always on the move looking for food. Besides insects, waxwings love to eat fruits, and berries.

It is easy to tell if a bird is a cedar waxwing. They look like gray cardinals and like to travel with a large group of relatives and friends. Waxwings have a crest on their heads, a black mask over their eyes and cool red tips on the ends of their wing feathers. Their drab color is a great adaptation to help them blend in. Often you will only hear them talking to each other, and not see them at all. Like your own relatives at a picnic, waxwings are great at sharing and can often be seen passing berries to each other.



#### **Cedar Waxwing Word Search**

R	M	N	A	D	Y	L	R	M	C	N	G	O	E	F
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P	N	J	F	E	A	T	H	E	R	A	X	T	M	G

- Cedar Waxwing**
- Adaptation**
- Berry**
- Habitat**
- Migrate**
- Family**
- Cardinal**
- Beak**
- Insect**
- Wetland**
- Feather**

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Name \_\_\_\_\_

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Address \_\_\_\_\_

## “Sense of Place” Workshop at JEEC

The **Jennings Environmental Education Center** held a workshop from September 25th through September 28th entitled “Sense of Place.” The workshop was for the **Department of Conservation and Natural Resource’s Environmental Education staff**. The week long workshop focused on the use of a regional approach to teach environmental education as well as addressing the Pennsylvania state academic standards for environment and ecology. On September 27th, participants in the workshop toured various sites within the watershed. The first stop was **Quality Aggregates’ Limestone quarry** located in **Boyers, PA** where they learned from **Jeff Ankrom** about how overburden and limestone are drilled, blasted, removed, and processed. From there they traveled to **Goff Station** where members of **Aquascape** and **Stream Restoration Inc.** led a tour of the passive treatment system and discussed how the successful public-private partnership has reclaimed this once abandoned mine site.



## PASDA Visits SRWC

In conjunction with the “Sense of Place” tour, **Maurie Kelly, PASDA Coordinator**, and **Mike Kulakowski, Watershed Coordinator** of **PA Spatial Data Access (PASDA)** pictured below, visited and toured several reclamation sites within the Slippery Rock Watershed with **Shaun Busler of SRI**, including the Jennings Environmental Education Center demonstration site, Sunbeam Tipple, Goff Station, and Erico Bridge.

Thanks to PASDA for coming all the way out from State College and for all the help that they have given us!!!



Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). November Distribution: 792 copies



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Cranberry Twp., PA 16066

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# THE CATALYST

## SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** March 14 @ 7:00 PM, Jennings Environmental Education Center, Pizza and Pop will be provided!! 2/14/02 meeting attendance: C. Cooper, D. Johnson, T. Danehy, V. Kefeli, M. Dunn, W. Taylor, S. Busler, L. Spencer, J. Reidenbaugh, & S. Carlin

### Erico Bridge—Gob Getting' Gone!!!



Construction activities are well underway at the Erico Bridge Restoration Area. The photo to the left shows Quality Aggregates personnel removing the acidic coal refuse (gob) from a pile located within Seaton Creek. A naturally functioning wetland specifically designed to maximize wildlife potential as well as provide water treatment will be constructed in the foot-print of the barren gob pile.

The photo to the right shows McKay & Gould Drilling operating an air-rotary drill as Margaret Dunn, PG keeps a record of the geology of the site. This is the first step in completing the Passive Treatment System Design.

Thanks to all, especially Mike Hollabaugh and Jim Ruscoe from McKay & Gould, who are braving the February weather to get this project rolling!!! Keep up the good work and keep warm!!!



### Cliff Denholm Spoke At MS3 Sustainable Systems Seminar Series



On Wednesday February 13th Cliff Denholm, Stream Restoration Inc., traveled to Slippery Rock University to participate in their MS3 Sustainable Systems Seminar Series. This series is designed to assist Slippery Rock University graduate students in the field of Sustainable Systems.

Cliff's topic was: "Toward Local Restoration and Health: Sustaining Community Supported Coalitions Through Public-Private Partnership Efforts." He covered what Acid Mine Drainage is as well as explaining Passive Treatment Systems. He also spoke about those involved in the Slippery Rock Watershed Coalition as well as giving examples of successful public/private partnerships efforts. Cliff reportedly illustrated the impact of the restoration efforts very well. Here is one illustration: Over 8 tons of aluminum no longer enter Slippery Rock Creek every year, this is enough aluminum to make 273,333 soda cans!!!

The audience appeared very interested in the accomplishments of the Slippery Rock Watershed Coalition. Great Job Cliff!!! Much thanks to **Dr. Steven Doherty** for giving us the opportunity to talk about our watershed restoration effort that means so much to us.

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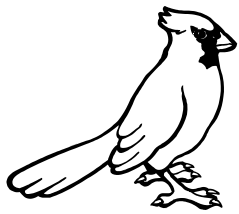
Original artwork sent to us by Michael Kay of Harrisville, PA.  
Thank you Michael for sharing your talents with us!!!!

### **Quality Aggregates Inc. Donated Much Needed Fire Truck to Slippery Rock Township Volunteer Fire Department**

On Friday December 21st many of the Quality Aggregates employees were on hand for the donation of a 2,200-gallon tanker truck to the Slippery Rock Township Volunteer Fire Department. Making the presentation, prior to the Fire Department's Christmas party, was Craig Myers, superintendent of Quality Aggregates and Jeff Ankrom, Vice President. Fire Chief Phil Dean accepted the truck on behalf of the department. In addition to the truck, Quality Aggregates donated limestone for the department's parking lot.

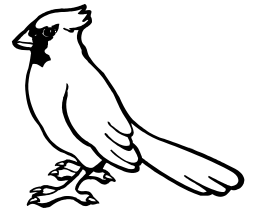
### **On an Educational Note...**

Work completed by Slippery Rock Watershed Coalition participants that studied the use of biosolids as a safe, economical and effective organic alternative medium for the standard spent mushroom compost to be used for the passive treatment of abandoned mine drainage has been incorporated into the curriculum at Jennings Environmental Education Center. This was made possible by a grant funded through the PA DEP Watershed Restoration and Protection (WRAP) grant 1998-1999. Thanks to **DEP and Jennings Environmental Education Center PA DCNR**, and all the hard-working coalition participants that made this possible!!!



# The KIDS Catalyst

## SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



### Spring Is On It's Way

When winter starts to fade the first sign of spring is the chirping of birds! The birds are beginning to chirp again and that means that spring and warm weather is on its way!

Connect the dots below to find your own chirping bird! When you are done color it and send it in to us to receive a gift certificate! And remember we will be displaying these pictures at the symposium in April!!!



Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_

## The 7th Annual SRWC Symposium

### Sunday April 7th at 2 pm

Community Watershed Tour: Participate in a virtual tour of the Slippery Rock Creek Watershed and see the onsite passive treatment system for acid mine drainage remediation.

### Thursday April 11th from 6 pm to 9 pm

*Building Partnerships for the Future: An Evening Symposium to Connect Students and Professionals*

Student research presentations will be the focus of a networking evening designed to connect students and professionals interested in the fields of watershed research, soil science, ecosystem recovery, environmental education and acid mine drainage remediation.

### Friday April 12th from 8:30 am to 3:30 pm

7th Annual Symposium: learn how partnerships work to successfully design and implement passive treatment systems for abandoned mine drainage remediation and create wetlands and wildlife habitat. Join us for a field tour in the Slippery Rock Creek headwaters. Lunch is provided.

Pre-registration is preferred, but not required for Friday's program. The first 50 people to pre-register will receive a **free t-shirt**. To register for Friday please call Deanna Funkhouser at 724-776-0161 or e-mail [sri@salsgiver.com](mailto:sri@salsgiver.com). Remember to visit our web site at [www.srwc.org](http://www.srwc.org)! We hope to see you all there come April!!!!!!!

### SRWC Donated Book To Butler County

A copy of *Accepting the Challenge* was donated for the "Basket of Butler" which was a door prize at the Office of Mental Retardation Conference in Hershey, PA. The basket served to showcase the diversity in the community. Jennings Environmental Center donated a soup mug to the basket. It is always nice to help our community in any way possible!!!

### GIS Database Under Construction

Joelle Kerr is currently creating a GIS Database that will incorporate all of the Slippery Rock University data on the watershed restoration activities since 1995 into an easy to access format. With this database, she will be able to spatially analyze the data. Thank you Joelle for creating such a valuable resource!!!

Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). March Distribution: 840 copies



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## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** May 9 @ 7:00 PM, Jennings Environmental Education Center, Pizza and Pop will be provided!! Due To The Symposium Last Month's Meeting Was Canceled.



### Come On Down To The SRWC Annual Get-Together!!!

Yes, it is time once again, for the Slippery Rock Watershed Coalition's Annual Get-Together, which will take place on May 1, 2002 from 6 PM to 8 PM. The fun-filled event will be held again this year at the Epiphany Catholic Church, located off of Forestville Road and State Route 308 in Boyers, PA.

We will be having door prizes and last year's favorite...piñatas for the kids. We will also be displaying a variety of the Kids Catalyst Colorings that we have received over the past year. So bring out the entire family for good food and good times. For more information and/or directions call Deanna Funkhouser at (724) 776-0161. Bring the whole family for an evening featuring: **FREE FOOD; DOOR PRIZES and MORE!!!**

### 7th Annual Slippery Rock Watershed Coalition Symposium — Yet Another Success

Just when you thought that the Symposium couldn't get any better, it did!! When compared to the very first Symposium in 1996, although some things have stayed the same, many things have grown and improved. This year's symposium, which consisted of three days, definitely was the best so far (!!!), a wonderful tribute to the organizing and planning skills of **Janice Belgraden, Deanna Funkhouser, and Will Taylor!!!**

On Friday April 12th, the last of the three-day event took place with **Dave Hess, Secretary of the PA DEP**, giving a very warm Key Note Address specifically recalling accomplishments of the SRWC. **Margaret Dunn** gave her traditional "State of the Watershed" address before presenting **Dave Hess** with this year's **Slippery Rock Watershed Coalition's Appreciation Award!!!** Secretary Hess is certainly deserving of this award for his tireless effort, dedication, and support of not only the Slippery Rock Watershed Coalition, but of all watershed groups throughout Pennsylvania. Secretary Hess's dedication can be easily seen through the **Secretary's Scrapbook** on the PA DEP website which chronicles his constant trek throughout the 67 counties of the Commonwealth. And yes, within his first year as Secretary of the DEP he visited at least one if not several Growing Greener watershed projects in every single county.



Following the Appreciation Award, two in-depth presentations were given to chronicle how the Coalition completes complex multi-faceted projects utilizing the public-private partnership effort model from concept through construction to outgrowth projects, education/outreach activities and operation and maintenance. The two projects used to demonstrate these concepts were the **De Sale** and the **Goff Station** Restoration Areas.

After lunch, a field tour was provided to showcase and demonstrate three projects which are in different stages of development. The first stop was Goff Station, a very unique project that has been completed. The second stop was Erico Bridge, a project under construction. The last stop was SR81, a site before construction.

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Those attending the Symposium on April 12th, posing with Secretary Hess!!!

### PA CleanWays Earth Day Cleanup!

On April 27, PA CleanWays of Butler County will be removing trash from Big Run, a tributary to Slippery Rock Creek, this stream also flows through Jennings Environmental Education Center. Volunteers will meet in the unpaved parking lot near the Country Corner Store on Rt. 8 at the intersection of Staff and Hall Roads in Brady Twp. between 8:30 and 8:45am. Be sure to wear appropriate clothing! Food will be provided. For more information call Sheryl at 724-284-5305.

### Wetland Plantings Are A Great Way To Get Involved!

On May 11th, there will be a wetland planting at DeSale! Wetlands are important for the animals who live in the area and they also remove pollutants from the water. We need all sorts of people and groups to help. Those of you who would like to get involved and help can call Shaun Busler at 724-776-0161 or e-mail him at sri@salsgiver.com A brief tour of the site and explanation of the project will be given.

### Bob Beran At MS3 Seminar Series

On Wednesday April 3rd, **Bob Beran** from Aquascape Inc., spoke on *Incorporating Biodiversity into Treatment/Constructed Wetlands* at the MS3 Sustainable Systems Seminar Series. This series is being sponsored by Slippery Rock University. The seminars take place on Wednesdays from 1-2:15 in room 304 in the Physical Therapy Building. The last seminar will take place on May 1st. MaryAnn Frazier, Entomology PSU, will speak on *Honey Bee Biology and the Role of Honey Bees in Agro-Ecosystems*.

### SRWC Has Adopted—A—Highway!!!

The Slippery Rock Watershed Coalition now has a portion of I-79 to keep clean. **Chris Treter**, OSM Intern, applied for the program last year and the signs were recently erected between mile markers 100 & 101 heading both North and South on I-79!! Be sure to look for them next time you drive I-79!!! We will need to clean the area four times a year so watch for opportunities to help us keep our watershed clean!!!!

**More about...**

### **The 2002 SME Convention**

Everything started to happen thanks to **Mike Leon, a Senior Engineer at Harding ESE, Inc. and the Environmental Division Program Planning Chair for SME.** An article was published in the December 2001 issue of "**Mining Engineering**" (16,000 subscribers) about our presentations at the 2/25/02 convention. As previously noted in "The Catalyst" (April 2002), there were two sessions (10 papers!!) focusing on "Conquering AML Issues with Public-Private Partnerships".

**Abstracts** were provided in the conference program with the **papers on disk** which were given to each of the over 3000 attendees. The papers included

**PA Department of Environmental Protection's Growing Greener Program - A Public-Private Partnership**  
by **David Hogeman**, PG, Director, PA DEP Bureau of Environmental Sustainability

**A Public-Private Partnership Success Story: Treating AMD at Jennings Env. Ed Center**  
by **Will Taylor**, Env. Ed. Program Coordinator & **Dave Johnson**, Center Mgr, Jennings Env. Ed. Center; **Margaret H. Dunn**, PG, SRI.; **Janice Belgraden**, Educational Consultant

**Fabricated Soils: An example for Scientific Contributions by a Public-Private Partnership Effort**  
by **Valentin Kefeli**, PhD, Soil Scientist, BioMost, Inc.

**Federal Cooperation to Protect Watersheds Degraded by Coal Mine Drainage from AML**  
by **Bernie Sarnoski**, Coal Mine Drainage Initiative Coordinator, US EPA

**Slippery Rock Watershed Coalition: A Public-Private Partnership for Stream Restoration and Education**  
by **Fred Brenner**, PhD, Biology Dept., Grove City College

**Slippery Rock Watershed Public-Private Partnering: A Means to Restore AML in Western PA**  
by **Margaret H. Dunn**, **Tim Danehy**, **Shaun Busler**, & **Cliff Denholm**, Stream Restoration Inc.

**Effectiveness of PA's Remining Program in Abating AMD: Part I - Water Quality Impacts**  
by **Michael Smith**, Dist. Mining Mgr., **Keith B. C. Brady**, PG, Bureau of Mining & Rec., PA DEP

**Effectiveness of PA's Remining Program in Abating AMD: Part II - Efficacy of BMPs**  
by **Jay Hawkins**, US Dept. of Interior, OSM; **Ken Miller**, Statistician & **Joan Cuddeback**, Sr. Env. Eng., DynCorp; **Keith B. C. Brady**, PG, PA DEP Bureau of Mining and Rec.

**Office of Surface Mining and National Endowment for the Arts Coal Country Initiative**  
by **T. Allen Comp**, US Dept. of Interior, Office of Surface Mining

**The Dark Shade Brownfields Project: Abandoned Coalfields as Brownfields**  
by **D. C. Ciotti**, AMD & ART, Inc.

**Because of these presentations, the AML efforts in Pennsylvania are being acknowledged not only na-  
tionally but also internationally.** Next month, sharing the vision of public-private partnering with visi-  
tors from Peru!! Thanks to Mike Leon and everyone at SME for giving us this opportunity!!!

### ***The Kids Catalyst***

For this month's Kid's Catalyst, take a picture of a stream near you! Label the picture and tell us the stream's name and where it is! Send us your photo and we will send you a Gift Certificate! Or if you would rather draw us an original picture that would work as well!!! A lot of your pictures were on display at the Symposium, and everyone loved them!!!!!! Look for your pictures to be displayed at the Get Together! Great job and keep sharing your talents with us!!!

## THE SRWC SYMPOSIUM 2002 Cont.

### “Building Partnerships for the Future”



On Thursday, April 11, student presenters, their professors, and environmental professionals met at the Wolf Creek School Café for dinner and discussion, a great networking opportunity. Thank you, John Stilley and Amerikohl Mining for sponsoring the dinner and believing in this evening as much as we do!!!

After dinner, we continued to Jennings Environmental Education Center to hear the students excellent presentations. In addition, **Cliff Denholm**, SRI, gave an overview of SRWC activities and **Joan Clippinger**, DCNR, discussed some of PA's great natural resources. **Shaun Busler**, SRI, spoke about his journey from student to professional working with the Coalition. The students who spoke were: **Susan LaRue** and **Jamie Skoloda** from GCC with **Dr. Brenner**; **Michele Gauger** and **Theresa Reustle** from SRU with **Dr. Borsari** and **Dr. Kefeli**; **Joelle Kerr** from SRU with **Dr. DeNicola** (see above); **Todd C. Crouch** from SRU with **Dr. Staple-**

**ton**; **Timothy Elder** from SRU with Dr. Borsari; **Spencer Welton** from SRU with Dr. Borsari; as well as **Craig Fisher**, **Jose-lynn Hohenwarter**, **Rachel Orwan** and **Kirk Sander** from SRU with **Dr. Stapleton**. A **HUGE THANK YOU** goes out to ALL THE HARDWORKING AND DEDICATED students who have played an essential role in documenting the amazing improvements we have seen in the watershed AND who are helping to develop the technology needed to make it happen!!! A Thank You also needs to go out to their professors!! Without their guidance and knowledge none of this would be possible!!!! More about the students in the next issue...

### Sunday's Community Watershed Tour

On Sunday April 7th, about 50 people assembled at Jennings Environmental Education Center to hear **Will Taylor** speak about the Slippery Rock Creek Watershed. Will covered everything from the time before the dinosaurs to problems we face today. To be able to understand the future we must always look towards the past and Will was able to show those in attendance just how we came to face the problems we do today.

Following the presentation we toured the onsite passive treatment system at Jennings and got to see first hand what mine discharges do to our water. Will continued to educate us as those in attendance asked questions and wanted to learn more.

A poster on *Accepting the Challenge* illustrated where the book has traveled so far (see photo to the right). And everyone was invited to take a copy with them. Thank you to those who came and participated! And thank you Will for being such an excellent guide through our watershed!!!



Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). May Distribution: 869 copies



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# THE CATALYST

## SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Due to scheduling conflicts, this month's meeting has been canceled.

**5/09/02 meeting attendance:** C. Cooper, T. Danehy, V. Kefeli, M. Dunn, J. Reidenbaugh, D. Funkhouser, C. Treter, S. Busler, F. Brenner, & C. Denholm

### SRWC Get-Together - A Hit

Once again the SRWC Annual Get-Together was a smash hit... literally! Good people, good food, and good times!!! What more could you ask for? Door prizes? Yep, there were lots of wonderful door prizes given away. Thanks to **Quality Aggregates** for donating the Pirate tickets!... Piñatas? You Bet!!! The piñatas were once again the highlight of the event with children laughing and smiling while swinging at paper mache animals full of goodies. It is always great to see everyone getting together to relax and have a good time. I think it makes us all wish we could have a Monthly Get-Together instead of only once a year. Thanks to **Gloria Dematteis** and the **Epiphany Catholic Church** for allowing us to use their facilities and putting up with us! Thanks to all who came out! We can't wait to do it all again next year!!!



### The Peruvian Connection

As previously reported in recent issues of *The Catalyst*, members of the Slippery Rock Watershed Coalition traveled to Phoenix, Arizona this past February to participate in the Society for Mining, Metallurgy, and Exploration (SME) annual meeting where we held two sessions entitled "Conquering AML issues with Public-Private Partnerships". **Steven Botts**, Chairman of the Environmental Division of SME and Vice President of **Compañía Minera Antamina**, a large mining company in Peru, attended our sessions. Afterwards he expressed that he was inspired by the partnering spirit of the Coalition and our accomplishments and that he was doing something similar in Peru. Several weeks later he contacted us to send two people from Peru to visit our projects and share experiences.



Our first visitor was **Lorenzo de la Puente** an environmental lawyer with Estudio Grau Environmental Group. Lorenzo flew into Pittsburgh on April 3 and was immediately whisked away on a whirlwind tour of the Slippery Rock Watershed that included stops at Grove City College, Jennings Environmental Education Center, and Goff Station and Erico Bridge Reclamation Areas. It was a short visit but enjoyable to all involved. See **Lorenzo** (far left) pictured with **Laura Spencer**, Aquascape, **Margaret Dunn**, Stream Restoration, along with **Kevin Stiner**, **John Stoops**, and **Mike Colosimo** of Quality Aggregates at Erico Bridge.

Our second visitor was **Rosa Ocaña** who is part of Antamina's environmental, safety, and health division. She arrived in Pittsburgh on

April 11 just to attend our Symposium!!! Rosa was able to stay a few days and had the opportunity to talk to many people including **PA DEP Secretary David Hess** and **Margaret Dunn, Stream Restoration** (pictured below with Rosa on the far right). On Friday evening after the Symposium, we had the opportunity to take Rosa to Pittsburgh to ride the incline to Mt. Washington that overlooks the city and the Three Rivers and just happened to see the fireworks that followed a Pirate's baseball game!

It was very exciting and a true honor for us that Lorenzo and Rosa would take time out from their busy schedules to visit and learn more about our watershed activities. Thanks to **Larry Sanata** for sharing our excitement with readers of the Pittsburgh Tribune-Review in the April 21st article entitled "Peruvian company gets local advice."



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The "Spring Into Action" Volunteer Crew at Jennings Environmental Education Center

### ***Accepting the Challenge Update***

***Accepting the Challenge*** was recently included in an educational package put together by the Butler County Historical Society that is being distributed to 5th grade classrooms throughout Butler County. In addition to the 90 classrooms, the boxes full of educational materials that focus on Butler County history will be sent to libraries throughout the county and made accessible to home-school students and others who are interested. The Slippery Rock Watershed Coalition is very excited about the wonderful opportunity to reach out to students and inform them about the mining history, AMD, and passive treatment systems that exist in their communities and have donated 100 copies of the book for this excellent educational purpose.

### **Adjudicated Youth & the SRWC Update**

The Butler County Adjudicated Youth Program and the Slippery Rock Watershed Coalition were recently featured in an article of the **Pennsylvania Juvenile Justice** newsletter. The article discussed the program and their involvement with the SRWC, especially with the Goff Station Restoration Area. The article also mentioned **Aquascape** and **Quality Aggregates** who were extremely active in working with the youth on this project. The SRWC looks forward to working with them more this summer at the Erico Bridge and De Sale Phase II site.



### **Erico Bridge Wetland Planting!!!**

Work on the Erico Bridge Wetlands has begun!!!!. Slippery Rock Watershed Coalition Volunteers and local resident and AmeriCorp volunteer **Annie Norman** came out for a wetland planting on Saturday May 11th. The constructed naturally functioning wetland is being built in the "footprint" of a coal refuse pile that was removed through a Growing Greener Grant. These are the same piles featured in the Nov. 2001 issue. If you would like to participate in future plantings contact us at 724-776-0161.

## Kid's Day at College

On Saturday April 27<sup>th</sup>, about 150 4<sup>th</sup> grade students from around the region got to attend college for a day at Slippery Rock University's "Kid's Day at College". The program sponsored by the **Institute for Community Learning** had a variety of classes for the kids to attend such as science, art, dance, & ROTC. Afterwards they had lunch, a graduation ceremony and attended a Slippery Rock University baseball game.

Not only did the kids have their day at college, but so did the parents. **Cliff Denholm, Stream Restoration**, taught two classes for parents on abandoned mine drainage and passive treatment systems. He covered how mine drainage forms, the difference between past mining methods and present day mining methods, and what are passive systems and how they work. He also discussed the Slippery Rock Watershed Coalition, focusing on the De Sale and Goff Station Restoration Areas, as well as presented an overview of our accomplishments.

## "Spring into Action" at Jennings!

April 27<sup>th</sup> was a busy day this year for participants of the Slippery Rock Watershed Coalition. While Cliff was at Slippery Rock for Kid's Day at College, **Deanna Funkhouser, Chris Treter, Janice Belgraden, Valentine Kefeli, Charlie Cooper, and Shaun Busler** participated in the Jennings Environmental Education Center's annual "Spring into Action" Day. About 100 volunteers from surrounding communities helped to spruce up the Center by completing various tasks and projects such as fixing walkways, building steps, and working on **Dr. Valentine Kefeli's** fabricated soil project (See left photo below). All volunteers received a free T-shirt and lunch.

We always try to help out our generous and gracious friends and partners at Jennings whenever we can. We'd like to give a big THANK YOU to all the folks who showed up, worked hard, and got dirty to help make Jennings an even better place!!!

## Butler County Chapter of PA Cleanways Cleans up Big Run!

Indeed April 27<sup>th</sup> was a busy day this year. Before going to "Spring into Action", **Shaun Busler, Stream Restoration**, participated with the **Butler County Chapter of PA Cleanways** and the **Butler County Adjudicated Youth** program (See right below photo) to pick up garbage along a tributary to Big Run, which flows through the Jennings Environmental Education Center. This was the first cleanup for this newly formed Chapter. About 20 volunteers helped with the cleanup removing about two dump truck loads of garbage. Thanks to **Brady Township** for providing the trucks and the **Northwest Sanitary Landfill** for taking the garbage free of charge. For more information about how to get involved with the Butler County Chapter of PA Cleanways contact Sheryl Kelly at 724-284-5305.



## The KIDS Catalyst Challenge

The Kids Catalyst that we all know and love will return next month, but until then will you accept The Kids Catalyst Challenge? Create your own Kid's Catalyst activity focusing on watersheds, mining, or the environment and send it to us. The best one will be featured in a future Catalyst issue. All entries will receive a gift certificate.

## More about...

### The Symposium

We are still so excited about how well this year's Symposium went, we just had to talk about it a little bit more!!! We are particularly excited about the student presentations on Thursday night's events. Not only were they all excellent, but there was also quite a variety of interesting topics. The presentations followed a special dinner for the students to connect with a variety of professionals in related fields. The presentations included:

**The Impact of Acid Mine Drainage on the Seaton Creek Watershed** by Susan Larue & Jamie Skolada, Grove City College, Supervising Faculty: Dr. Fred Brenner

**Plant Biotests for Soil and Water** by Michele Gauger & Theresa Reustle, Slippery Rock University, Supervising Faculty: Dr. Bruno Borsari and Dr. Valentine Kefeli

**Exploring the Spatial Relationships between Benthic Communities and Acid Mine Drainage in Slippery Rock Creek, using Geographic Information Systems** by Joelle Kerr, Slippery Rock University, Supervising Faculty: Dr. Dean DeNicola

**Treatment Performance of the Vertical Flow System at the Jennings Environmental Education center, 1999-2002** by Todd Crouch, Slippery Rock University, Supervising Faculty: Dr. Michael Stapleton

**A Feasibility Study for the Implementation of Rotational Grazing in Western Pennsylvania** by Timothy Elder, Slippery Rock University, Supervising Faculty: Dr. Bruno Borsari

**The Challenges of Greywater Treatment: A Unique Tool for the Study of Small Flows Remediation at Slippery Rock University** by Spencer Welton, Slippery Rock University, Supervising Faculty: Dr. Bruno Borsari

**Preliminary Report on the Core Sampling of the Vertical Flow System at the Jennings Environmental Education Center, 2-21-02** by Craig Fisher, Joselyn Hohenwarter, Rachel Orwan, & Kirk Sander, Slippery Rock University, Supervising Faculty: Dr. Michael Stapleton

Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). June Distribution: 888 copies



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## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday July 11th at 7pm Jennings Environmental Education Center, pizza and pop will be provided.

### Dr. Robert Nairn Visits from Oklahoma with Some of His Students!!!



On Friday June 14, **Dr. Robert Nairn** and students from the University of Oklahoma toured the Slippery Rock Creek headwaters specifically to see the passive treatment systems. The graduate students included: **De-nae Athay, Jennifer Coffey, Russell Garrett, Jessica Brumley, and Aisling O'Sullivan**. They were escorted on their tour by **Tim Danehy, Margaret Dunn, Cliff Denholm, and Shaun Busler** from Stream Restoration Inc., **Bob Beran** from Aquascape, **Dr. Fred Brenner** from Grove City College, and **Jeff Ankrom** from Quality Aggregates later joined the group and provided a wonderful outdoor picnic.

They toured the Sunbeam Tipple Site, SR 96 (where construction activities were described by **Jerry Jesteadt** of Jesteadt Excavating), SR 81, Erico Bridge, and Goff Station. The different components at each site were explained as well as the water quality data and construction issues. Thank you for making the long trip out here and taking an interest in our watershed reclamation efforts, your enthusiasm and interest were inspiring!!! Bob Nairn is an extra-special visitor, as he provided guidance on passive systems installed at Jennings.

### SRWC Participant Receives Reclamationist of the Year Award

During the national meeting of **The American Society of Mining and Reclamation**, **Margaret Dunn** was presented with the 2002 Reclamationist of the Year Award. In the June 21st, DEP Update an article titled, "PA's Margaret Dunn Receives National Award," DEP Secretary **David Hess** is quoted as saying, "This national recognition for Margaret's work to build partnerships to clean up her watershed is well deserved." The article highlights both Margaret and the SRWC. Margaret feels this award further recognizes Pennsylvania's leadership nationally in abandoned mine restoration. **Joe Galetovic** from the Office of Surface Mining (OSM), was on the selection committee for the award. Pictured to the right are **Joe Galetovic** and **Margaret Dunn** with the award in front of the SRWC display at the conference. The conference was held in Lexington, KY from June 9th through the 12th. Good Job Margaret, We Are All Proud of You!!!!



### Construction Begins at SR96



Construction of the 700 ton limestone drain recently began at the SR 96 site. On May 30th and 31st, OSM intern **Steve Short** (a biology student at Grove City College) staked 100 hay bales at the site for E&S Control. June 10th brought the actual construction of the drain. **Jerry and Jason Jesteadt** of **Jesteadt Excavating**, **Steve Short**, and SRI intern **Chris Treter** placed liners, spread limestone, and assembled the piping system. Thanks to Jerry and Jason Jesteadt for helping to build this system!!!!

On Friday June 21st, Steve and Chris placed 300 more hay bales as part of the wetland reconfiguration and during the week of June 24th they will be seeding, mulching, fertilizing, and more. Thank you Steve and Chris for all the back breaking work you both are doing!!!!

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The Butler County Juvenile Court System helps out with a wetland planting! Thanks!!!

## The Butler County Juvenile Court System Plans to Help All Summer

This summer, the Butler County Juvenile Court System, will continue to provide extra help for wetland planting. Each Tuesday, from June 11 to August 27 they will work with Stream Restoration Inc., AquaScape, and Quality Aggregates, planting wetlands and helping with local Growing Greener projects. The Keystone Interventional Program (KIP), Community Intensive Supervised Probation (CISP) Program, and two local judges also plan to help with the planting activities. This is a unique opportunity for the participants to learn and enhance their own lives while assisting with environmental restoration.

## Karns City Earth Day

On April 29<sup>th</sup>, **Bob Beran** and **Laura Spencer** of **Aquascape** participated in the **Karns City Elementary School Earth Day Activities**. Bob and Laura spent the day speaking to Kindergarten through 6<sup>th</sup> graders on insect biodiversity. The program, put together by staff at Jennings Environmental Education Center, provided the students with many laughs, interesting facts and information to fulfill educational curriculum needs. **Many thanks to: Jennings Environmental Education Center** for providing the power point program, as well as other learning tools, **PA DEP**, especially **Ms. Sherry Carlin**, for providing posters, book-marks, and magnets for the students, and to **Mrs. Marion Hall** of **Karns City Elementary School** for inviting us to participate in their earth day activities!!

## 4th Annual AMD/AMR Conference

On June 14th and 15th, the 4th Annual AMD/AMR Statewide Conference took place at the Penn-Stater Convention Center in State College, PA. **Deanna Treter**, **Steve Short**, and **Chris Treter** represented the SRWC, introducing conference attendees to the reclamation work in our watershed and our recent publication, "Accepting the Challenge." Seminars introduced conference goers to a variety of new treatment technologies and different forms of Operation and Maintenance for existing treatment systems. The highlight of the conference was a speech by PA DEP Secretary David Hess on Growing Greener and AMR Partnerships. Thanks to all those who attended and came over to learn more about the SRWC!!!!

## Pennsylvania River Sweep

On Saturday June 15th, about 30 participants joined the statewide effort to clean our rivers. The participants, including **Shaun Busler**, **Melissa Busler**, and **Tim Danehy** of the SRWC, removed trash from the Blacks Creek Restoration Area located along Porters Rd., in Marion Twp. Those who were involved in this project include: **Marion Twp. Environmental Advisory Council**, **SRWC**, **PA Cleanways of Butler County**, and **Americorps**. A great time was had by all even though they got a little wet. Thanks to **Sheryl Kelly** and **Deb Bailey** for planning this extremely worthwhile project!!!





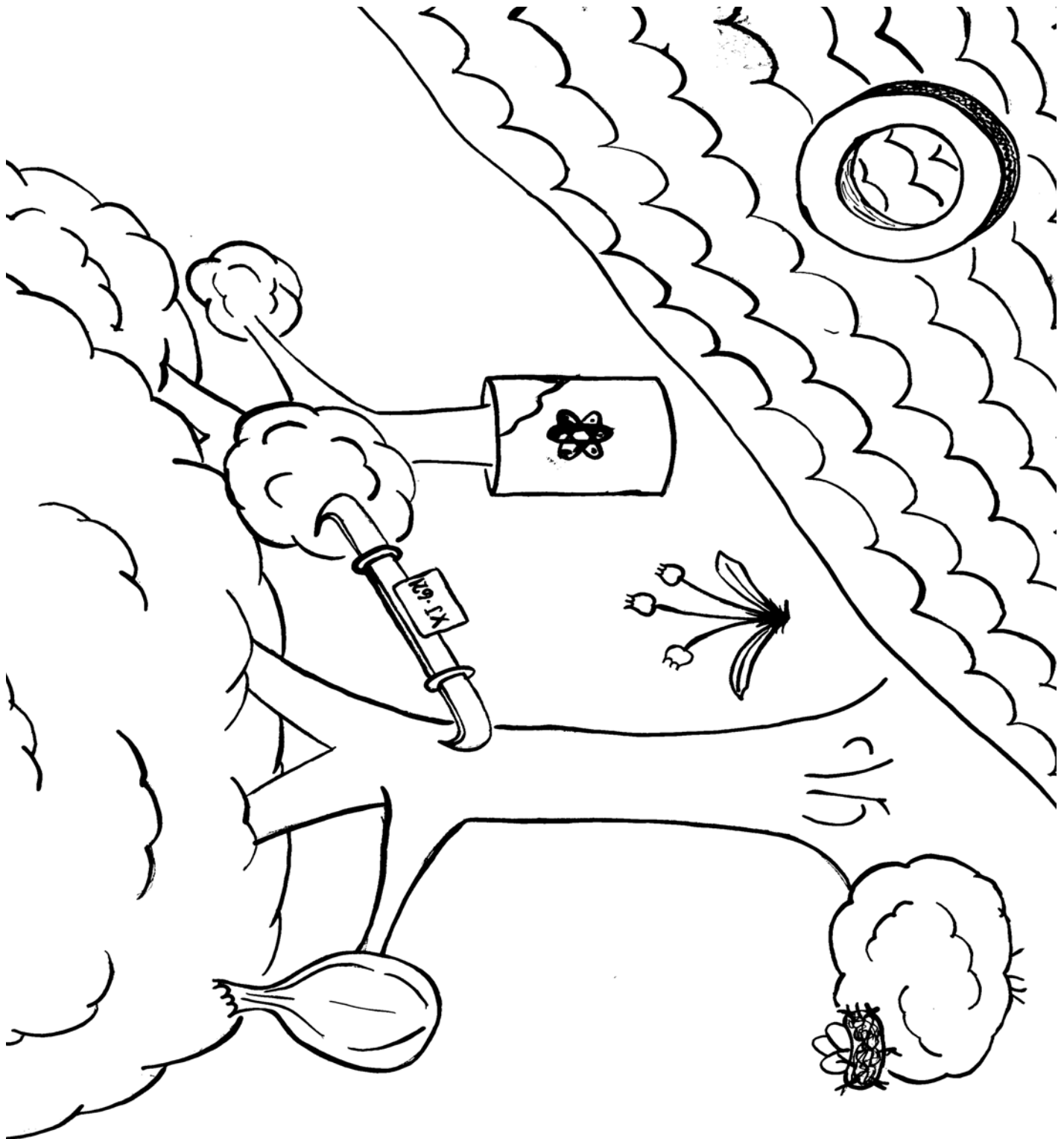
# The KIDS Catalyst

## SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



### River Seek and Find

Keeping our rivers clean is very important. When we do not properly dispose of our trash in a trash can it can harm some of the animals that call the river home. There are some things in this picture that don't belong. See if you can find them all, there are four of them. When you are done, color the picture and send it back to us for a free gift certificate. Good Luck, and remember to put your trash in the right place!



Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_

## The Watershed Academy Visits Our Watershed



On Thursday June 13th, the Watershed Academy visited our treatment systems at Goff Station and Erico Bridge. What is the Watershed Academy? Well, it is a program organized by the PA DEP and offers information about what watersheds are and some of the problems and issues impacting them. This year the program was held at **Jennings Environmental Education Center** in Slippery Rock. While at the sites, participants were given a tour and the different elements of the system were explained.

We have been asked to participate in the past and are pleased to once more be a part of such an informative day. Some of those providing the tour were: **Margaret Dunn** from **Stream Restoration Incorporated** as well as **Bob Beran** and **Maggie Al-**

**lio** from **Aquascape**. In the picture to the left, Bob Beran is explaining restoration techniques to the group at Goff Station. Thanks to all those who attended! And a special thanks to those who helped make this such an informative trip!!!

## Thank You Waste Management!

If you have ever witnessed or participated in a wetland planting, you may have noticed the way the plants are transported. Wetland plants are harvested and transported in recycling buckets donated by **Waste Management**. The buckets are sturdy enough to handle the rigors of containing heavy plant material while people carry them to and from the wetland. They provide convenience for wetland plantings as the plants can be grouped according to species and subsequently placed at appropriate water levels for the volunteers to plant. Without these buckets, harvesting and planting would be more difficult and definitely more costly (and probably less fun!!). We would like to give a very special thanks to **Jim David** and **Keith Bowser** of **Waste Management- Northwest Sanitary Landfill** for their very generous donation of buckets!



Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). July Distribution: 906 copies



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# THE CATALYST

## SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday August 8th at 7pm Jennings Environmental Education Center, pizza and pop will be provided. **07/11/02 Meeting Attendance:** Tim Danehy, Cliff Denholm, Valentine Kefeli, Melissa Busler, Shaun Busler, Fred Brenner, Steve Short, Charles Cooper, Laura Spencer, Deanna Treter, Chris Treter, Steve Smith, Janice Belgraden, Margaret Dunn



## Remember 2001! A Year Full of Great Success!!



The year started out with some great changes in the Catalyst. In January the Catalyst went from a one page newsletter to a four page undertaking! We also began the Kids Catalyst, a section where kids could learn about issues in the watershed while getting the opportunity to win gift certificates. And now here is a list of all that the SRWC was able to accomplish and do during the past year!

### Conferences

- **Growing Smarter: Land Use in PA Conference:** Hershey, PA 3/18-3/20
- **West Virginia Symposium:** Morgantown, WV 4/2-4/4
- **GIS Conference:** State College, PA 5/23-5/24
- **AMD/AML Conference:** State College, PA 6/1-6/2
- **ASSMR Conference:** Albuquerque, NM 6/3-6/7
- **Disturbed Lands Conference:** 6/12-6/13
- **Intro. to AVGWLF Conference:** State College, PA 9/13
- **PA Watershed Conference:** Poconos, PA 10/5
- **CMU Energy Conference:** 10/15

### Recognition

- **2001 Governor's Award for Watershed Stewardship**
- **Watershed Weekly's Watershed Hero for the Month of November:** Margaret Dunn

### Groups Who Did Projects To Help

- **Girl Scouts Bluebird Boxes:** Installed at Goff Station 3/3
- **Girl Scouts Wetland Planting:** Goff Station 5/19
- **Butler County Youth Wetland Planting:** Goff Station 6/26
- **Concordia Haven Workshop:** Built Bat Boxes for Goff Station in July
- **Butler County Youth Wetland Planting:** Goff Station 7/17

### Construction

**Goff Station:** Second Half Completed 8/21

### Outreach/Educational Activities

- **Army Corp of Engineers Tour:** 1/31
- **Jennings Environmental Education Center Teacher Workshop:** 3/24
- **6<sup>th</sup> Annual SRWC Symposium:** Slippery Rock, PA 4/5-4/6
- **Slippery Rock University's Earth Day Celebration:** 4/19
- **Spring Into Action:** Jennings Env. Ed. Center Slippery Rock, PA 4/21
- **Get Together:** Boyers, PA 5/9
- **Helicopter Tour:** DeSale Restoration Area 5/17
- **North Country Trail Day:** 6/2
- **USDOE Flushing of DeSale Phase II:** 6/20
- **Harrisville Community Day:** 7/4
- **DEP Watershed Academy:** 7/18-7/20
- **ARRIPA Tour:** 7/20
- **Shamokin Watershed Group Tour:** Through the Watershed in August
- **Mist Netting:** Conducted at Goff Station in August
- **Electro-Fishing Survey:** 8/6
- **Flushing of DeSale Phase I:** 8/10
- **Jack Dams Installation:** Unnamed Tributaries to Seaton Creek 8/17
- **Watershed Workshop:** University of Pitt. Greensburg 9/22
- **Sense of Place Workshop:** Slippery Rock, PA 9/25-9/28
- **Big Run Assessment:** 10/1-10/2
- **Erico Bridge Groundbreaking:** 10/3
- **Accepting the Challenge:** First Copies Available in October
- **Western Pennsylvania Watershed Protection Program Reception:** Pitt. Hilton 11/14
- **Knox AMD Workshop:** 11/16
- **Senator Tim Murphy Tour:** 12/21



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Original artwork sent to us by Mikie Kay of Harrisville, PA.  
Thank you Mikie for sharing your talents with us!!!!!!

### More on the ASMR Conference in Lexington, KY

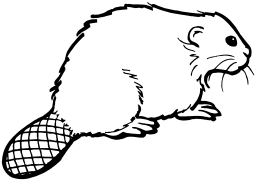
The American Society of Mining and Reclamation's (ASMR) 19th Annual National Conference was held in conjunction with the International Affiliation of Land Reclamation's (IALR) 6th International Conference at Lexington, Kentucky June 9-13. Seven representatives from the Slippery Rock Watershed Coalition participated in the conference including **Margaret Dunn**, **Tim Danehy**, **Shaun Busler**, and **Cliff Denholm** of Stream Restoration; **Bob Beran** of Aquascape; **Fred Brenner** of Grove City College; and **Melissa Busler** representing the Jennings Environmental Education Center.

The conference was wonderful as always with an opportunity to talk with old friends, make new ones, and listen to the latest research on passive treatment technology and reclamation activities that are happening throughout the world. The Coalition was busy as usual at the conference! Tim Danehy, Shaun Busler, and Fred Brenner each presented papers in addition to the four poster papers and three exhibits that members of the Coalition presented.

As if that was not enough, the SRWC crew presented a four-hour afternoon workshop attended by experts in the field of passive treatment entitled **Passive Treatment of Mine Drainage Part II: Practical Application & Lessons Learned**. The workshop focused on many of the issues relating to the actual implementation and construction of passive treatment systems such as: Public-Private Partnerships; Permitting; Construction and Installation Considerations; Operation, Maintenance, and Replacement; Wildlife Habitat; and Education/Outreach. This was a follow up to the extremely informative morning workshop **Passive Treatment of Mine Drainage Part I** presented by **George Watzlaf**, **Karl Schroeder** and **Robert Kleinmann** of the US DOE National Energy Technology Laboratory Pittsburgh Office and **Dr. Robert Nairn** of the University of Oklahoma. Thank you to those of you who attended the workshop!!

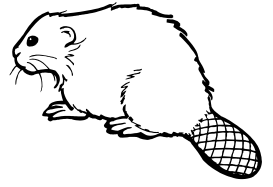
### SRWC In The News!!!

Some of you may have noticed the article on the front page of the Butler County section in the Tribune Review on Sunday, June 30th. The article titled, "Environmental Cuts Loom: Growing Greener May Lose Funding, Impact" was written by **Larry Sanata**. Thank you Larry for the wonderful article. The article can be found by searching the Tribune Review web site ([triblive.com](http://triblive.com)).



# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY

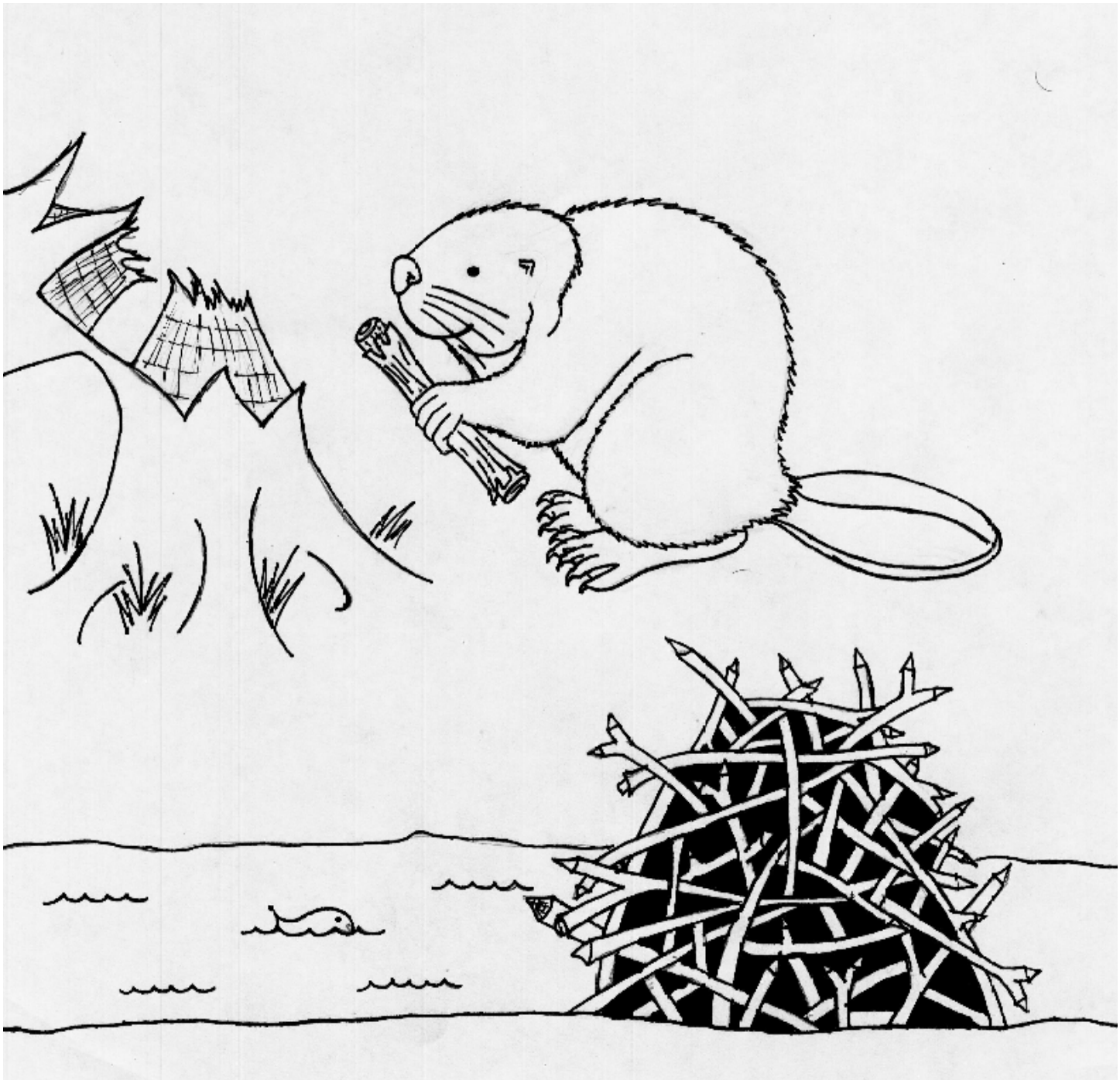


## A Beaver's Life

Beavers are dark brown rodents that have a flat paddle shaped tail that is used as a rudder while swimming. Beavers like to live in streams, swamps, and lakes, and can be found all over the Slippery Rock Watershed! A beaver likes to build its house, called a hut, in the water. Beavers will also build a dam on a stream so they can have deep water to built their huts! Beavers also have long sharp teeth that they use to chew through wood to build their huts and dams! While beavers look cute and cuddly, they are still a wild animal and should not be played with.

Special thanks to Mikie Kay for the idea for this month's Kids Catalyst. Check out Mikie's original art as the photo of the month!!!!

When you have colored the picture, send it back to us for a free gift certificate!



Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_

## SR81 Wetland Planting

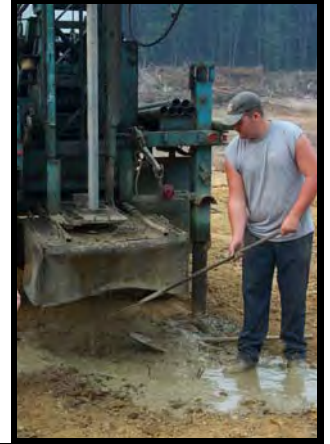
On July 17th, there was a wetland planting at SR81. The SRI OSM intern **Steve Short** was there along with Laura Spencer from Aquascape and Alex Cashman an intern from Quality Aggregates. The planting went very well. Thanks to those who participated.

Remember we do numerous wetland plantings every year. Be sure to keep an eye out for opportunities to get involved. We will list sites and dates for plantings in future Catalysts. If you want to know more about how your group can get involved please call Shaun Busler at 724-776-0161. Thank you for helping us improve the animal habitat at our sites!!

## Erico Bridge Drilling

On Thursday July 18th and Friday July 19th drilling and piezometer installation was conducted at the Erico Bridge site. SRWC participants in attendance included: **Margaret Dunn**, Stream Restoration Inc.(SRI); **Chris Treter**, Intern; and **Steve Short**, SRI's OSM Intern.

We would like to send out a special thank you to the drillers who worked through blazing sun and rain over the two days. Thank you Jon Ruscoe and Mike Hollabaugh of McKay & Gould. See the photo of Jon doing his thing! Thanks again!



## I-79 Cleanup Scheduled for August 16th at Noon

As you all know, the SRWC has adopted a portion of I-79. On Friday August 16th we will be doing the first of four cleanups scheduled for this year. We will meet at the "park and ride" off of I-79 exit 99. When you get off go towards New Castle and it will be on your right. We will meet at noon and will carpool to the site from there. Our portion of I-79 is between mile markers 100 and 101 on both sides of the highway. We are very excited about keeping our highways beautiful and hope that many of you will volunteer to help. If you plan to attend please call Deanna Treter at 724-776-0161 by Friday August 9th. It is important to call in order for us to have the correct number of vest, gloves, etc. Last minute helpers are welcome! Remember to wear long pants and long sleeve shirts. We hope to see you there!!!!



Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsgiver.com](mailto:sri@salsgiver.com), [www.srwc.org](http://www.srwc.org). August Distribution: 911 copies



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# THE CATALYST

## SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday October 10th at 7pm Jennings Environmental Education Center, pizza and pop will be provided. 09/12/02 Meeting Attendance: T. Danehy, M. Dunn, D. Johnson, C. Cooper, V. Kefeli, W. Taylor, C. Denholm, D. Treter, C. Treter, J. Belgraden, S. Smith, J. Reidenbaugh, M. Busler, M. Shreggler, E. Best, M. Crostley, M. Stapleton

### 1st Annual Riverboat Cruise *Celebrating the Ohio River Watershed*

On Thursday September 19th, approximately 275 people boarded the Gateway Clipper Partyliner for 3 informative and fun filled hours on the Monongahela River. The day began at 1:30 with a press conference where representatives from over 50 partners and 15 sponsors posed for photographs. In addition, a mock-up road sign was unveiled. The sign, pending Penn DOT approval, will be posted to inform travelers that they have entered the Ohio River Watershed! Special thanks to **Deb Simko** for all her hard work in this endeavor. Boarding of the



boat began at 2:15. All those attending were given a "goodie bag" filled with many different items including a Resource Binder with information collected from partners. A visiting priest from India spontaneously joined the diverse group and the SRWC was well represented with over 25 attending and wearing SRWC name tags! The **Washington County Envirothon** winning class greeted guests with leis on land, while on the boat people were treated to the world champion Ragtime Piano Player, **Dan Mouyard**. The ship set sail at 2:30 with a blessing from **Rev. Huett Fleming** from the Church of the Good Shepherd in Hazelwood PA. Shortly af-

ter, the narrative began explaining some of the history of what we were seeing as we floated along. For those enjoying conversation, a Guidebook was provided so they could pick up and follow along. Special thanks to those who narrated: **Maggie Hall, Mike Koryak, Jim Volanski, Bruce Engelhardt, John Harper, Bruce Green, and Davitt Woodwell**. A yummy spread of fruit, cheese and crackers was enjoyed as well. The highlight of the cruise was our visit to the increasingly popular Braddock Lock and Dam. The **US Army Corps of Engineers** was very generous and granted the boat priority locking so we could experience this wonder of engineering. As we returned from Braddock, a wonderful array of door prizes were



handed out. Special thanks to those who donated items too numerous to mention. Following the prizes, we were once more entertained by **Dan Mouyard** with his talented piano playing. When we finished our ride on the Monongahela we had some time to travel up the Allegheny. It was exciting to see the new stadiums from a different perspective. Prior to docking, guests were surprised to receive a briefcase provided by the **Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**. Thank you Pittsburgh Conference for your generous donation. As we docked it was apparent that everyone had enjoyed their trip "Celebrating the Ohio River Watershed" and talk of next years voyage

had already begun. Some funding has already been received. Thank you to all those who attended and we hope to see you again next year!!!!

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**Matt Beran** resting after his big day at the capital for the Governor's Award.

## SRWC Receives Governor's Award for Environmental Excellence!!!

On Wednesday September 25<sup>th</sup>, members of the Slippery Rock Watershed Coalition traveled to Harrisburg to receive the Governor's Award for Environmental Excellence in the category of Environmental Education/



Outreach. **Bob Beran** of Aquascape and **Cliff Denholm** of Stream Restoration accepted the award on behalf of the Coalition. Education and Outreach has always been an important element of the SRWC's restoration effort. Through over a dozen tours and workshops every year; *The Catalyst* which is distributed monthly to nearly 1000 people all over the world including Canada, Mexico, Peru, Germany, Australia, and Saudi Arabia; our website [www.srwc.org](http://www.srwc.org); our publications **Accepting the Challenge** and the recently unveiled **ABC's of Our Watershed** coloring book; we seek to provide educational opportunities to everyone who is interested in learning about abandoned mine drainage, passive treatment systems, wetlands,

wildlife habitat, public-private partnerships and watershed restoration. Thanks to **Governor Schwieker**, **Secretary Hess**, and **Deputy Secretary Thumma** who were on hand for the ceremony as well as the DEP for their recognition of our efforts! The SRWC also received an official Congratulations from State Senator **Jane Ori**e and a Citation from State Representative **Daryl Metcalfe**. These mean so much to us!!!

## SRWC Attends the PA Watershed Conference

The annual Pennsylvania Watershed Conference was held at the Four Points Hotel in Greensburg, PA on September 20<sup>th</sup> and 21<sup>st</sup>. The conference brings watershed groups, governmental agencies, non-profits, and private industry together to discuss watershed issues and celebrate successes. About 10 SRWC participants attended the conference. **Bob Beran**, Aquascape, discussed incorporating biodiversity into constructed naturally-functioning treatment wetlands. **Will Taylor**, Jennings Environmental Education Center, presented the new DCNR State Parks watershed education program. **Dr. Fred Brenner**, Grove City College and **Margaret Dunn**, Stream Restoration, discussed the importance and value of partnering with colleges and universities. **Tim Danehy**, BioMost Inc., co-moderated the Ohio River Basin Networking session while **Deanna Treter**, Stream Restoration, moderated the Wetlands session. **Shaun Busler**, **Cliff Denholm**, and **Chris Treter**, were also on hand to take part in the conference activities with two posters.



# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## Crossword Puzzle

See if you can finish this crossword puzzle. The words are at the bottom if you need help! Remember to send in your completed crossword puzzle, because the first 50 we receive will get a gift certificate!

The SRWC has just released a coloring book called, "The ABCs of Our Watershed" if you would like a copy please call 724-776-0161 or write to 3016 Unionville Rd. Cranberry Twp., PA 16066. We are asking for a \$4 donation to help offset printing costs.

<p>1 A large stream</p> <p>2 A way to get across a river</p> <p>3 A type of boat that is on a river</p> <p>4 How water levels are controlled on a river</p> <p>5 The name of a river in Pittsburgh</p> <p>6 The name of the era 100 years ago</p> <p>7 A metal that Pittsburgh is famous for</p> <p>8 A place where things are made</p> <p>9 A black rock that is found in Pennsylvania</p> <p>10 A type of boat used to haul things on the river</p>	
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### WORDBANK

- |        |            |             |       |
|--------|------------|-------------|-------|
| RIVER  | RIVER-BOAT | FACTORY     | COAL  |
| BRIDGE | DAM        | BARGE       | STEEL |
|        | RAGTIME    | MONONGAHELA |       |

Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_

### Save This Date... Adopt-A-Highway Cleanup

It is time once again to clean up our mile of Interstate 79 (mile marker 100-101) as part of the Adopt-A-Highway program. We will once again meet at the "park and ride" along 422 just west of the interchange with I-79 at noon on Friday November 1st. Everyone is welcome! Food, drink, and materials will be provided. To participate, please contact us at 724-776-0161.

## SRWC Participant Presents at Energy Conference

On Monday, September 23rd **Margaret Dunn**, was a panelist at the Pennsylvania Energy Conference held at the Radisson in Greentree. Margaret spoke about environmental sustainability with regards to energy sources. Other SRWC participants in attendance were: **Tim Danehy, Shaun Busler, Deanna Treter and Chris Treter**. Other topics discussed during the conference include; new energy sources, sustainable energy sources, and cost effective energy technologies. Thank you to the Pennsylvania Energy Conference for inviting us to speak, it is always nice to share our knowledge and experience with others!!

## Home-School Students Tour SRWC Sites



On September 6<sup>th</sup>, a group of home-school students accompanied by their mothers/teachers participated in a tour of two SRWC projects. **Bob Beran** of Aquascape and **Cliff Denholm** and **Shaun Busler** of Stream Restoration led the tour. The students and teachers were given an overview of abandoned mine drainage, passive treatment systems, wetlands, and wildlife habitat. The tour began at Erico Bridge in order to see the passive treatment system that is currently being constructed by **Quality Aggregates**. We then moseyed on over to Goff Station where they could see a completed restoration project full of unique passive treatment innovations, exceptionally diverse naturally-functioning constructed wetlands, and other

wildlife habitat improvements. The highlight of the tour for the students seemed to be the final effluent emanating from the polishing wetland that was built in the footprint of a former gob pile where they splashed in water of excellent quality (pH ~ 6.5 and virtually no metals) and found several crayfish living in the riprapp spillway. They also had an opportunity to examine a variety of beautiful wetland plants some of which were flowering. Afterwards we ate lunch and talked. Everyone had a great time! The students have already made plans to come back to help plant the 7 acres of wetlands at Erico Bridge. Thanks to the **Beeching, Bonnetti, and Fike** families for coming out and spending a beautiful Friday with us in the field!



Thanks to The William & Frances Aloe Charitable Foundation, Amerikohl Mining, Inc., Quality Aggregates Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippy Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@salsqiver.com](mailto:sri@salsqiver.com), [www.srwc.org](http://www.srwc.org). October Distribution: 948 copies



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## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday March 13th at 7pm Jennings Environmental Education Center, pizza and pop will be provided. 2/13/03 Meeting Attendance: D. Johnson, C. Cooper, V. Kefeli, C. Denholm, W. Taylor, S. Busler, T. Danehy, M. Dunn, F. Brenner, J. Hartzell, S. Kelly, C. Treter, and D. Treter

## SRWC 8th Annual Symposium Is Next Month!!!

### ***Thursday April 10th from 6 pm to 9 pm*** **College Night at Grove City College**

This evening program is designed to give college students the opportunity to present their research and also network with professionals. The students submit a summary of their research and are chosen to present. This year these presentations will be held in the new academic building at Grove City College. **Everyone** is welcome to attend.

### ***Friday April 11th from 8:30 am to 3:30 pm*** **The 8th Annual SRWC Symposium at Jennings Environmental Education Center**

This years program will take a practical approach to building a passive treatment system. In order to emphasize this, we will be using a "hands on simulation" to help those in attendance truly understand all that goes into a passive system. Following lunch, which is provided, we will go on a field tour of some of the Slippery Rock Watershed Coalition's sites in the area (appropriate field attire recommended). Pre-registration is preferred but not required. Those who pre-register will receive a **free t-shirt!** (See below for registration information.)

### ***Sunday April 13th at 2 pm*** **Community Day at Jennings Environmental Education Center** **"Richard Pawlings 'History Alive' Fire in the Hole!"**

Coal was the fuel of America's Industrial Revolution and no one knows the dangers of "life below ground" better than Irish miner, Frank Kehoe. Learn of life in the "patch," the company store, the progression from breaker boy to "miner with papers," the Mollie Maguires and the United Mine Workers Strike of 1902 through the talents of Pennsylvania's national award-winning, living-history performer Rich Pawling. Be sure to join us for this wonderful experience.

### ***For More Information:***

If you have questions about any of the events listed above or would like to pre-register for Friday April 11th, please call Deanna Treter at 724-776-0161 or e-mail [sri@salsgiver.com](mailto:sri@salsgiver.com). Remember to visit our web site at [www.srwc.org](http://www.srwc.org)! Hope to see you in April!!!!

### **SRWC Participants Attend PAEP Program** **The Growing Greener Program:** **A Pennsylvania Success Story**

On Thursday January 9th, **Margaret Dunn** and **Timothy Danehy** attended the Pennsylvania Association of Environmental Professionals (PAEP) program at the Crowne Plaza in Coraopolis. The special guest was then PA DEP Secretary **Dave Hess**. Tim Danehy gave an enthusiastic presentation titled, "Environmental Professionals: The Key to Watershed Restoration." A wonderful time was had by all those in attendance. (see photo) Thank you **John Burglund** and the PAEP for inviting us to participate in such a wonderful event!!!



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John Firth and Fran Toohill listen to John Stoops and Margaret Dunn explain the passive treatment system at the Erico Bridge Mine Restoration Project. (Penny Kaercher, Kevin Stiner, and Shaun Busler, not pictured.)

### Dominion Tour of Slippery Rock Creek Watershed

**John Frith, Fran Toohill, and Penny Kaercher**, representatives from **Dominion Peoples**, were GREAT SPORTS as they braved the cold and blustery weather on February 11 to take a whirlwind tour of the Slippery Rock Watershed! After a brief overview of the Coalition's activities at the office of **Stream Restoration**, John, Fran and Penny where whisked away to **Jennings Environmental Education Center**. At Jennings, **Will Taylor**, Program Coordinator, gave a superb tour of the passive treatment system and discussed the on-going educational aspects of the Coalition's efforts. Thanks Will!!! The Dominion Trio them moved to the Erico Bridge Mine Restoration Project currently under construction in the headwaters of Slippery Rock Creek. **John Stoops**, Foreman, and **Kevin Stiner**, Excavator Operator, of **Quality Aggregates** took time out of their busy day building the system to explain the project. Thanks to **John Stoops** and **Kevin Stiner** for doing a great job helping with the tour!!! By this time, the tour group was just about frozen and most certainly hungry. So off to the **Family Tradition** in Harrisville to eat vast quantities of great food!

A THOUSAND THANKS goes out to **Dominion Peoples** for partnering with us and for allowing **John Firth, Fran Toohill** and **Penny Kaercher** to visit our watershed!!! We look forward to having you back in the spring!

### Save These Dates

#### **Jennings Spring Into Action April 26th!**

At 9:30 am Saturday, April 26th, Jennings staff and volunteers will gather to celebrate Earth Week! Working together they will prepare the park for spring. Attending this event will be a wonderful way to give something back to the community. As a special thank-you, lunch will be provided and each participant will receive a tee-shirt commemorating the event. The popular raffle will also be held! Participants must be age 12 or older and must register for the program by contacting Jennings at 724-794-6011 no later than April 18! We hope to see you there!

#### **I-79 Trash Pick Up March 28th!**

On Friday March 28th, we will meet once again to clean up the SRWC's section on I-79 (between miles 100 and 101). As usual at noon we will assemble at the "park 'n ride" off exit 99 (west on US 422) for a quick lunch. Following lunch we will head out together to help keep our highways beautiful. We will provide the safety vests and gloves. If you are planning to join us certainly dress appropriately. If you have any questions, please call Deanna Treter at 724-776-0161. We hope to see a lot of you out there helping to beautify our highway!

# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY

## Word Search

With spring on its way, it is time to think about volunteering. There are some great ways you can help on the page before! Find all the words from different articles in this Catalyst and send it back to us for a free gift certificate!!

We would like to send a special thank you to Savannah Cofer for her wonderful glow in the dark coloring of a Kids Catalyst! We really enjoyed it and keep up the good work!!!!!!!!!!

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### WORD BANK

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## Highlighting Other Partnership Efforts (HOPE!)

### Partnering with South Fayette Conservation Group

Bob Beran, of Aquascape Wetland and Environmental Services, had another chance to showcase his public speaking ability on Thursday, February 13, 2003, at the South Fayette Conservation Group's monthly meeting. He had been requested to speak as a result of a cooperative effort between South Fayette Conservation Group (SFCG), Stream Restoration Inc., and Aquascape on a Growing Greener Grant for the Coal Run Watershed. The project began when SFCG members contacted Bob and Margaret about a possible AMD-related project in South Fayette Township. After many twists, turns, unexpected developments, and hours of brainstorming, the partners agreed to focus on the Coal Run Watershed and create a project that would demonstrate the procedure for developing a community-driven watershed restoration/protection plan. With this in mind, Aquascape began writing the grant.

In the end, the Coal Run Watershed Restoration/Protection Plan Development grant developed three major focuses: (1) to educate members of the community in the importance and practice of watershed management, (2) to develop a restoration/protection plan for Coal Run, and (3) to document the entire process and create an audio-visual guide that will be useful to others interested in developing restoration and/or protection plans for their watersheds. With an unusual show of support, members of South Fayette Township pledged an enormous amount in-kind contributions including time and supplies.

Due to the diversity of the audience, mostly members of the newly formed and very enthusiastic SFCG, Bob began his presentation with an introduction to watersheds in general, their importance, possible pollution problems, and solutions. He then focused on the grant itself. The audience was intrigued by the information provided and made use of the opportunity given by Bob to ask questions during the presentation. When it was over, all in attendance agreed it was well worth having seen. The project partners are anxiously awaiting the July awarding of Growing Greener funds to see if others recognize the merit of the proposed project.

***We are all in this together!*** The Groups Involved in This Endeavor: South Fayette Conservation Group, Aquascape, Stream Restoration Inc., Quality Aggregates, Inc. and Environmentally Innovative Solutions, LLC.

## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday May 8th at 7pm Jennings Environmental Education Center, pizza and pop will be provided. Due to the Symposium last month's meeting was canceled.

### Come On And Join Us For The SRWC Annual Get-Together!



It is time for the Slippery Rock Watershed Coalition's Annual Get-Together! Come and join us on Friday May 2nd from 6 pm to 8 pm at the Epiphany Catholic Church. It is located off of Forestville Rd. and State Route 308 in Boyers, PA.

We will have door prizes, pinatas, and displays about our restoration projects. So bring the whole family for good food and good times. For more information and/or directions call Deanna Treter at (724) 776-0161. Don't miss out on the FREE FOOD, DOOR PRIZES, AND MUCH MORE!!!!!!

### 8th Annual SRWC Symposium Has Largest Attendance Yet!!!

On Thursday April 10th, we assembled at Grove City College for, "Investigating Watershed Issues: Supporting Student Research Through Public/Private Partnerships." At 5:30pm, we all met and had cookies and punch while we mingled. At 6pm, our session moderator, **Steve Short**, a Junior Biology Major at Grove City College, started things off for a wonderful evening of information and networking. Special guest, **Eric Thumma**, Deputy Secretary for the PA DEP, came to hear the interesting research by the students. We had approximately 50 people attend!! Thank you **Grove City College** and **Dr. Fred Brenner**.



On Friday April 11th the Slippery Rock Watershed Coalition welcomed over 110 people to Jennings Environmental Education Center for the 8th Annual Symposium. The moderator for the program was **Deanna Treter**. Our key note speaker, PA DEP Deputy Secretary **Eric Thumma** (seen in the photo to the left) gave us some very inspiring words to start off our day of fun and learning. This year's SRWC Appreciation Award was presented to **John Foreman** for his pioneering work in watershed restoration. SRWC Internet Intern **Matt Bramble** also spoke.

Stream Restoration Inc. gave a presentation to prepare everyone for the interactive simulation. The presenters were; **Tim Danehy, Shaun Busler, Cliff Denholm**, and **Deanna Treter**. A tour of the Jennings facility was led by **Will Taylor** and **Dave Johnson**, then off to Erico Bridge to see on-going construction by Quality Aggregates. Thanks **John Stoops** and **Bob Beran** for helping with the tour!! Everyone had a good time and the preview of the SRWC video was a big hit! Special thanks to **Brian Staszal** who was on hand to videotape!



On Sunday April 13th **Richard Pawling** presented "History Alive, Fire in the Hole!" at Jennings Environmental Education Center. His presentation about the history of mining was wonderful and had those in attendance submersed in the rich mining history of Pennsylvania. Approximately 95 people were there for this very special experience.

We hope you were able to attend at least some portion of this year's symposium and that you were able to learn something new!!!

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**PJ Shah**, PA DEP, and **John Foreman**, Recipient of the 2003 SRWC Appreciation Award, working on the “Construct Your Own Passive Treatment System” simulation at the 8th Annual SRWC Symposium!

### **We’re Batting A Thousand!!!!!! “The Catalyst” Distribution Reaches Four Digits!**

In October of 1996 “The Catalyst” began with a small distribution of about a dozen. In 1999, the distribution of the one page Catalyst had reached 400. In January of 2001 the Catalyst grew to the format you know today. It became 4 pages and the Kids Catalyst section was started. This first large issue was sent to 590 people. One year later the distribution had swelled to 817 of “The Catalyst.”

Last months April 2003 Catalyst had a distribution of 1,000!!!! The lucky number 1,000 was **Kristine Nowak** of New York City. This month the distribution is even higher at 1,015! It is sent to 6 continents around the world. Anyone know of anybody in Antartica?? It is amazing how such a small idea can grow into something truly amazing. We hope that you enjoy receiving your copy of “The Catalyst” and you can rest assured we won’t stop at 1,000!

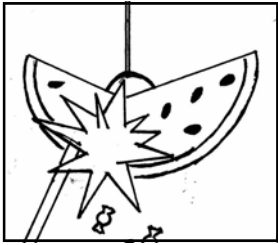
### **SRWC Out and About in Pittsburgh!!**

#### **PEC Environmental Partners Breakfast**

On Wednesday March 19, **Margaret Dunn** and **Tim Danehy** attended the Pennsylvania Environmental Council (PEC) breakfast with **Don Welsh**, Regional Administration for US EPA Region III. The breakfast was held at the Engineers’ Society of Western PA’s main dining room. Thank you **Andrew McElwaine**, President and CEO of PEC, for inviting us!!

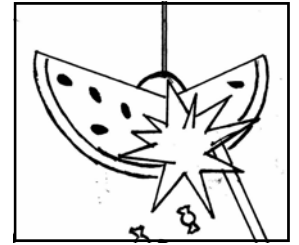
#### **City Farmers of Pittsburgh!**

On Wednesday March 26, **Margaret Dunn** and **Shaun Busler** gave a presentation titled, “Abandoned Mine Drainage, Impacts, and Solutions” at the City Farmers of Pittsburgh monthly lunch at the Brackenridge Heights Country Club in Natrona Heights. Thank you to **Dean Helfter** for inviting us to attend and speak at this function!!! We hope you all enjoyed our presentation!



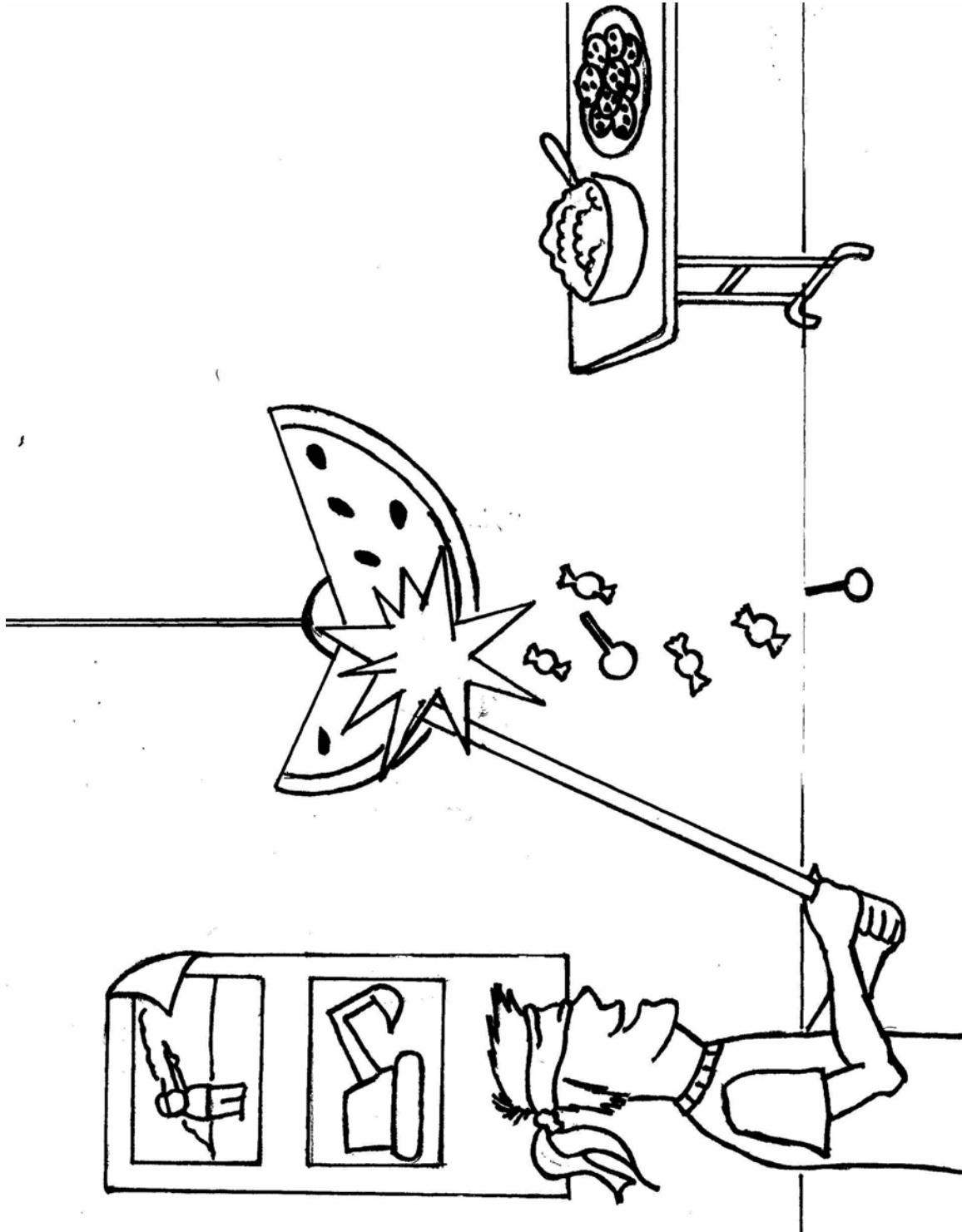
# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## SRWC Get-Together!!!!

As you read on the front of this months Catalyst, we will be having the Get-Together on Friday May 2nd at the Epiphany Catholic Church in Boyers. We hope that you will be able to join us for food, door prizes, and of course the piñatas! Color in the picture below of a kid breaking the watermelon piñata at the Get-Together. When you are done send it back to us for a free gift certificate. And don't forget to come and try breaking one of the piñatas filled with candy at the Get-Together!! See you there.



Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_



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## Highlighting Other Partnership Efforts (HOPE!)

### Camp Lutherlyn in Connoquenessing Township

Lutherlyn received a PA DEP Growing Greener Grant, Western PA Watershed Program, and a Butler County Environmental Mini-Grant to build a passive wetland treatment system capable of annually removing more than a ton of coal-mine drainage pollution from the Semiconon Run, which is a tributary of the Connoquenessing Creek. The Butler County Mini-Grant will be used to install educational signage at the treatment site.

The groundbreaking for their passive treatment system will take place during Lutherlyn's Annual Earth Day Celebration and Open House on Sunday, May 4th from 12:30pm—4:30pm. They will have a lot of really fun and interesting activities. Some of the things planned include: Barn Tour, Hay Rides, Kid's Egg Hunt, Campfire, Camp Tour, Crafts, Pony Rides, Pancake Festival and much much more.



The dedication of the passive treatment system will take place at 3:30pm in the Environmental Education Center Pavilion. Lutherlyn will be displaying and dedicating the educational signage that will be installed on the site. In addition they will break ground at the AMD Clean-Up Site. Local and state officials, as well as representatives from the DEP and other environmental organizations, have been invited to attend.

Camp Lutherlyn is located in Connoquenessing Township, just off of Route 422, seven miles west of the city of Butler. If you need more information please contact Heath Gamache or Todd Garcia-Bish at the Lutherlyn Environmental Education Program Office for more details: (724) 865-9079.

***We are all in this together!*** The Groups Involved in This Endeavor: S.D. Graff Professional Surveying, Hedin Environmental, Connoquenessing Watershed Alliance, ECOZ, WPCAMR, Butler County Conservation District, Butler County Commissioners, Butler County Planning Commission, Thrivent Care Abounds Group, Robert Cichra, Aquascape Wetland and Environmental Services, Quality Aggregates, BioMost, Inc., Stream Restoration Inc., PA DEP Knox District Mining Office, Western Pennsylvania Watershed Program, Jackson Graphics.



## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday June 12th at 7pm Jennings Environmental Education Center, pizza and pop will be provided. 5/08/03 Attendance: K. Lanich, J. Reidenbaugh, S. Busler, C. Cooper, M. Dunn, T. Danehy, D. Johnson, V. Kefeli, and C. Denholm

### It's I-79 Trash Pick Up Time Again!!!

On Friday June 27th we will once again pick up trash along our stretch of I-79 (between mile marker 100 and 101) We will meet at the "park 'n ride" off exit 99 (west on US 422) at noon for a free quick lunch. Then we will head out to make our little stretch of highway as clean as it can be! We hope you will come out and join us. Don't forget to dress appropriately and we will provide the safety vests and gloves. If you would like more information please call Deanna Treter at 724-776-0161.



### Washington Elementary Students Help Plant SR-81

Although April 29<sup>th</sup> began with a hard rain, the weather cleared early, and the sun was shining by the time the second grade classes of **Washington Elementary School** (see photo to the right) arrived at the SR-



81 passive treatment system. They were there to help **Dale Hockenberry** (PA Game Commission) (See photo on left), **Bob Beran** (Aquascape Wetland and Environmental Services), and **Kim Lanich** (also of Aquascape) plant seedlings in the riparian and upland areas surrounding the system. The approximately 55 students were from the classes of **Amy Criley, Jen Fleeger, and Amy Tokar**, who, along with student teachers from Slippery Rock University (**Stacy Reed, Kelly Sewchok, and Tomi Swift**) and several of the students' parents (**Pat Beran, Kelli Kimmey, Cindy Lott,**



**Norma Uber, and Lisa Ulrich**), chaperoned the event. The afternoon began with Bob giving a brief ecological lesson and basic planting instructions (roots DOWN, of course!). The adults created planting holes and the students followed behind, placing a seedling in the created hole. The students worked hard and, in less than three hours, managed to plant over **1000 seedlings of 13 different species!!!** Although more than one pair of shoes (and pants, for that matter) was well mud-died, the students enjoyed their chance to learn in the great outdoors. Our thanks to all who helped plan and conduct the planting, with a special thank you going to the **Butler County Conservation District** and **Ron Fodor** for donating the left-over seedlings from their annual sale. The SR-81 passive treatment system was funded through a Growing Greener grant.

### SRWC Get-Together Was Great Fun!!!

On Friday May 2nd we met at the Epiphany Catholic Church in Boyers, PA for the SRWC's Annual Get-Together. We had good food while having good fun. Thanks to **Quality Aggregates** for donating pirates tickets!! The tickets were just some of the great door prizes given out. And of course we had piñatas. The kids enjoyed breaking them open and gathering up all the candy! Thanks to **Gloria Dematteis** and the **Epiphany Catholic Church** for allowing us to use their facilities and putting up with us. Thanks also to those who came out!!



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The participants of the Jennings Environmental Education Center Spring Into Action on April 26th!!

## Jennings Environmental Education Center “Spring Into Action” Is A Huge Success

On Saturday April 26th, 110 participants joined forces to get the Jennings Environmental Education Center in Slippery Rock, PA ready for Spring! Some of the projects completed included: general trail work; removal of invasive species from the lower treatment ponds; staining of bridges, feeders, and fences; and placement of stream gauge/monitoring equipment in Big Run by Old Mill Bridge. A group of students from **VisionQuest** in Franklin did some cosmetic work (seeding, etc.) at the passive treatment system (PTS) site, and a group from **George Junior Republic** in Grove City also worked near the PTS site constructing a fence by the school house. An **Explorers** group cleaned up a section of Big Run, removing fallen trees, log jams, and trash. After completing all this hard work the participants were treated to a free lunch, free t-shirts, and a raffle of outdoor related products. Thanks to all those who went out to help!! (The photo above shows the whole wonderful group of participants after their hard work!)

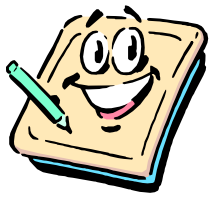
## Watershed Academy Visits SRWC Sites

On Tuesday May 6th, the Watershed Academy for Local Government was held at the **McKee Environmental Education Center** in Sandy Lake, PA. **Tim Danehy** gave a presentation titled, “Partnering with Municipalities: A Watershed Association Perspectives on the Advantages.” **Sherry Carlin** from the Knox District Mining Office gave a presentation titled, “Watershed Impacts: Mining Activities.” Sherry also presented posters on Growing Greener that included SRWC Headwaters activities including Goff Station and DeSale Phase III. After the presentations, over 50 people, including township officials, mayors, and DEP personnel, went on a tour of Erico Bridge.

## SRWC Participates in Evans City Earth Day Celebration

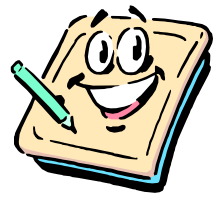


On Saturday May 3rd, Evans City celebrated Earth Day at the ECDO Park. The celebration included food, face painting, demonstrations, posters, and more. **Deanna Treter** and **Chris Treter** manned the SRWC poster and met lots of interesting people. Hundreds of people attended the festivities and took advantage of the beautiful May weather. The day’s activities were geared towards educating the public about a variety of environmental issues. Thanks to **Theresa Vaneman** of **Callery Chemicals** for inviting us to participate. We had a wonderful time and look forward to being a part of next year’s celebration!!



# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## WORD SEEK AND FIND

All the words below can be found in articles from this months Catalyst. Find the words, circle them, and then send this back to us for a free gift certificate! Good Luck!

WORDBANK				
TRASH	STUDENTS	CONNECTIONS	PINATA	SPRING
ACADEMY	EARTH DAY	WETLAND	HIGHWAY	GET-TOGETHER

A	W	E	R	T	Y	U	I	O	P	A	S	D	F	G	H	J	K	L	Z
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Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated  
A PA Non-Profit Organization  
3016 Unionville Road  
Cranberry Twp., PA 16066

NONPROFIT  
ORGANIZATION  
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Thanks to The William & Frances Aloe Charitable Foundation, Environmentally Innovative Solutions, LLC, Dominion Peoples, Amerikohl Mining, Inc., Quality Aggregates Inc., Bio-Most, Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@streamrestorationinc.org](mailto:sri@streamrestorationinc.org), [www.srwc.org](http://www.srwc.org). June Distribution: 1053 copies

## Highlighting Other Partnership Efforts (HOPE!)

### Pittsburgh Area Creek Connections Student Research Symposium

On April 9, 2003, the second **Pittsburgh Area Creek Connections Student Research Symposium** was held at **Camp Kon-O-Kwee** along the banks of Connoquenessing Creek near Zelienople, PA. Over 300 people participated in the event including students, teachers, and environmental organizations. **Cliff Denholm**, from Stream Restoration Inc., was on-hand with a poster and to teach a group activity on abandoned mine drainage and passive treatment. The symposium kicked off with a welcoming by representatives of the **Connoquenessing Watershed Alliance**. The **Creek Freaks** from Seneca Valley School District informed the audience about the problems facing the Connoquenessing Creek watershed and the positive steps that have been taken to address those issues. Afterwards the day consisted of student presentations and poster sessions for students to interact with other students and environmental organizations. Some of the environmental organizations present included the **Pittsburgh National Aviary**, the **Carnegie Science Center**, **Carnegie Museum of Natural History**, **Pittsburgh Voyager**, and the **Butler County Conservation District**. After lunch students had the opportunity to partake in a variety of focus activities that ranged from sewage treatment to GPS to aquatic organisms.

Creek Connections is a program sponsored through **Allegheny College** that facilitates the involvement of public schools in western Pennsylvania and New York in natural science education through hands-on field and laboratory experiences. Classes participate in research projects and stream monitoring. An on-line database allows the students to share the data that they have collected. Then in April all participating schools and students gather together to share their research with each other at the annual Student Research Symposium. Students presented and displayed their water data and independent research projects allowing them to compare data and research projects that had been conducted in a wide variety of watersheds. Creek Connections now involves over 40 different schools and over 50 different classes. The large involvement has resulted in two separate symposiums. One at Allegheny College for northwestern Pennsylvania and New York region as well as one for the Pittsburgh region.

For more information about the Creek Connections program check out their website at <http://creekconnections.allegheny.edu>.

## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday September 11th at 7pm Jennings Environmental Education Center, pizza and pop will be provided. 8/14/03 Attendance: J. Belgredan, F. Brenner, C. Cooper, C. Denholm, M. Dunn, V. Kefeli, B. MacDonald, W. Taylor, J. Uytendogaart

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#### Fun in the Mud!

A special thank you to this sizable group of teenagers and chaperones who volunteered at the Erico Bridge treatment wetlands on July 26 as part of a Youth Conference for the North State of the Pittsburgh Ward of The Church of Jesus Christ of Latter Day Saints (SEE ARTICLE BELOW)

### What's New at Erico Bridge

Things are looking a lot greener at the **Erico Bridge Restoration Project**, due to the planting efforts of two special groups. One of these groups, **Butler County Juvenile Court Services (BCJCS)**, has been teaming with the SRWC for three years now, while the other, **The Church of Jesus Christ of Latter Day Saints**, is new to the planting game. Each Tuesday throughout the summer, **BCJCS officers Sue McConnell, Bridgette Gigliotti, Mike Deal, Brenda Alter, Jody Mersher**, and as many as ten youth fulfilling their required community service hours have been at the project to help **Maggie Allio, Holly Martinchek, and Greg Holloway from Aquascape Wetland and Environmental Services** vegetate the treatment wet-



lands. It is a great community service project because it teaches the youth about the environment, and it is bettering watershed. Many of the students live near or along the Slippery Rock Creek and thus appreciate the connection to bettering the water quality near their homes. BCJCS recognized Aquascape's commitment to community service and presented them with the **William DiLuccio Award**.

Despite all of the excellent work of the BCJCS, the Erico Bridge treatment wetlands were still looking more brown than green until Saturday, July 26. On this day, as part of a Youth Conference of the Church of Jesus Christ of Latter Day Saints, approximately 125 enthusiastic teenagers and their chaperones descended on the project and transformed

the wetland in a flurry of planting activity. In addition to losing shoes and getting stuck in the mud, they planted about 200 buckets of Pickerel weed and Softstem bulrush, 15 buckets of rice-cut grass, live cuttings from 10 willow wattles, and over 50 buckets of local transplants from the adjacent wetland. Some avoided the water and mud by helping install bluebird boxes in the area. Most ended up very muddy, and all seemed to have fun planting in the wetlands! To volunteer for wetland plantings or bluebird box monitoring (important for the success of nesting birds), contact Aquascape at (724) 458-6610.

## Teacher Workshops at Jennings Environmental Education Center

What was it like to be a coal miner in the early 1900's? How is coal extracted today? How does abandoned mine drainage form and why is it such a problem? On March 29, May 3, and May 24, 2003, twenty-two teachers from area school districts discovered the answers to these questions and much more by participating in an educational workshop designed by the **Jennings Environmental Education Center**.

Through innovative hands-on activities, interpretive presentations, and field trips, teachers were not only introduced to a wealth of information, they also discovered how to incorporate this information into their classrooms and address the PA Dept. of Education's academic standards for Environment and Ecology. Some of the activities enjoyed by the teachers included "Cookie Mining" where the financial complications of operating a coal mine are introduced by way of Chips Ahoy; "Mystery Minerals" where mystery samples of minerals were identified during an introduction to geology; and "Construct Your Own Passive Treatment System", an activity developed by **Stream Restoration, Inc.** that provides participants the opportunity to design and construct a simulated passive treatment system.

There were field trips to the **Quality Aggregates Limestone Quarry, Tour-Ed Mine & Museum, and Erico Bridge Restoration Project**. Partial funding of this program was through the **DEP Environmental Education Grants Program**. Special thanks to **Tim Danehy** and **Chris and Deanna Treter** from **Stream Restoration** for helping instructors **Will Taylor, Mary Jo Shreffler, Miranda Crotsley, and Eric Best**.



Hooray for herps! On August 6 and 7, Jennings hosted a very popular teacher workshop focusing on reptiles and amphibians. There were twenty-five participants in all: 19 teachers, 4 state park employees, and 2 volunteers from the PA Fish and Boat Commission. Thanks to instructors **Will Taylor** of **Jennings** and **Keith Edwards** and **Laurel Garlicki** of the **Fish and Boat Commission** for leading this interesting and fun workshop!

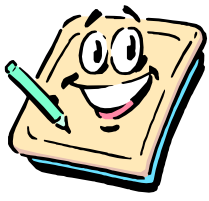
Through enjoyable hands-on indoor and outdoor activities, participants learned about herp habitats and range, how to identify area reptiles and amphibians, snake locomotion, and much more. No doubt the highlight of the two-day workshop was going on an outdoor "Herp Hunt" to search for reptiles and amphibians! Species which were found include the ring neck snake, garter snake, American toad, wood frog, spring peeper, red back salamander, and Jefferson's salamander! And thanks to Jennings' very own "crocodile hunter", **Dave Johnson**, participants were able to see up-close a venomous snake that is also an endangered species: the



Massasauga rattlesnake! The snake was a four-year old pregnant female. Dave gave a very enlightening talk on the three venomous snakes native to PA (E. massasauga, N. copperhead, and timber rattler). It was interesting to learn the female massasauga caught by Dave doesn't eat while pregnant (varying slightly from the normal behavior of the typical pregnant human!)

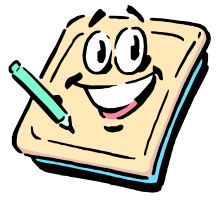
### He's the "Trash Man"

**Cliff Denholm** of the **SRWC** was a one-man trash-picking machine on Friday August 15th! We applaud his solo effort in 90-degree heat and high humidity as he dutifully picked up trash along our stretch of I-79 (between mile marker 100 and 101) At least he had all of the sandwiches to himself! Our next trash pick-up day is scheduled for October 17 and we hope you can come out and join us in our effort to make our little stretch of highway as clean as it can be. We will meet at the "park 'n ride" off exit 99 (west on US 422) at noon for a free quick lunch. Safety vests and gloves will be provided. If you would like more information please call Melissa Busler at 724-776-0161.



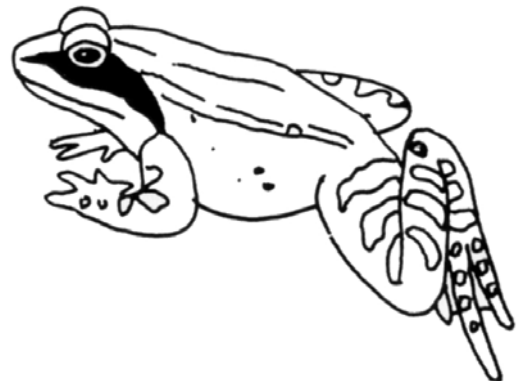
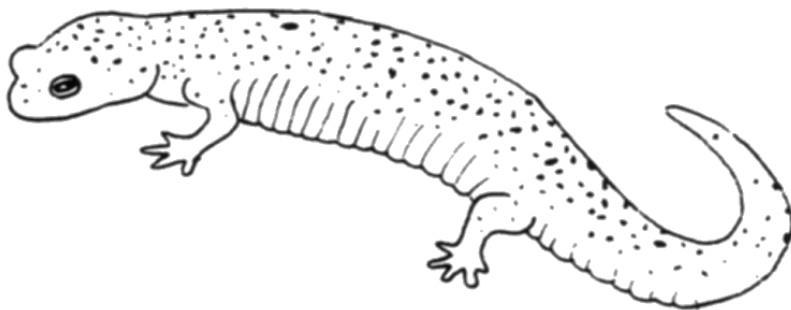
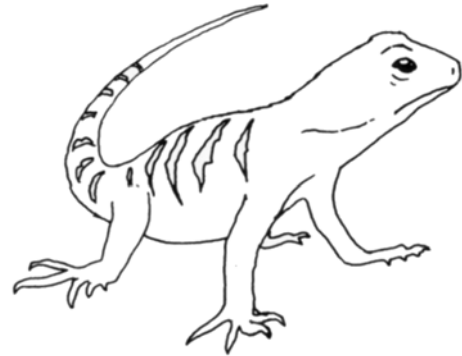
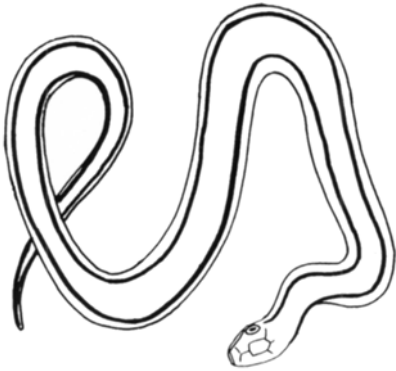
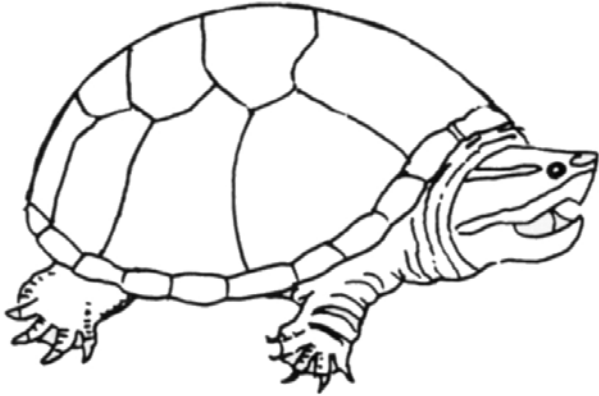
# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## Herp Coloring Activity

The word "herp" refers to reptiles and amphibians, and includes creatures like snakes, lizards, turtles, salamanders, frogs, and toads. Below is a picture of each of these types of herps. Write the name of the herp kind in each box, color in the picture, and return your coloring to us for a free gift certificate!



Name \_\_\_\_\_ Age \_\_\_\_\_

Address \_\_\_\_\_



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated  
A PA Non-Profit Organization  
3016 Unionville Road  
Cranberry Twp., PA 16066

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## Highlighting Other Partnership Efforts (HOPE!)

### Mercer County Conservation District



This month we pay tribute to our neighbors, the good folks of the **Mercer County Conservation District (MCCD)**. In 1999, the **MCCD** was awarded grant money which was used to sponsor the **Fox Run Watershed AMD Survey** in Mercer County. This project, which has been successfully completed, involved a survey of the Fox Run Watershed to identify the impact of historic mining activities on the water quality. Discharges existing on previously mined land were located and inventoried, with their physical and chemical attributes and effects quantified. Based on this initial assessment, **Stream Restoration, Inc.** is partnering with the MCCD to address one of the major discharges on Fox Run. Located along Route 62, the site is clearly visible from the road. Participants in this part-

nership are hoping for community support and involvement with the project. **Dr. Fred Brenner**, board member of the district and professor at **Grove City College**, and several students from **Grove City College** are already involved in the work, and educational outreach events are being planned. We are enjoying working with the MCCD on this project, and would like to acknowledge the good work of **Jim Mondock, District Manager, Shawn Hedgelin, Nutrient Manager Specialist, Jill Shankel, Watershed Specialist, and Bob McDonald, Technician**. If you would like to get involved with us in this project, please contact Shaun Busler at (724) 776-0161.

### The 2nd Annual Ohio River Watershed Cruise

We hope you have registered and will be joining us in our celebration of the Ohio River Watershed for the 2nd Annual Riverboat Cruise! Remember to come early on Sept. 17 to enjoy the pre-cruise activities which begin at 10:00 a.m. Thank you to all of the cruise partners and sponsors to date; we will be acknowledging all partners and sponsors in a comprehensive list in next month's issue of The Catalyst.



## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Thursday January 8th at 7pm Jennings Environmental Education Center, pizza and pop will be provided. 12/11/03 Meeting Attendance: J. Belgradan, C. Cooper, C. Denholm, T. Danehy, M. Dunn, D. Johnson, V. Kefeli, A. Pavlick, S. Smith, W. Taylor

### Scout Pack Assists Restoration Efforts at Erico Bridge



Front Row: Matt, Steven, Tim, Jacob, John, Tyler, Alex, Evan, Chris, Ian, Jacob  
 Second Row: Adam, Parker, Lyle, Steven, Andy, Michael, Brandon, Zach, Adam  
 Back Row: Bob, Den Chief and Mr. Hovis, Webelos Leader

On November 11<sup>th</sup>, the members of **Grove City Cub Scout Pack 76**, under scout leaders **Mr. Sestak** and **Mr. Hovis**, constructed wood duck nesting boxes to be installed at the Erico Bridge Restoration Project in Butler County, PA. The members participated in this activity as part of various cub scout requirements including working with tools, Craftsman, Naturalist, Wildlife Conservation Belt Loop & Pin activities, and the World Conservation Award. The scouts will help to install the boxes prior to the spring 2004 nesting season. On November 18<sup>th</sup>, **Dale Hockenberry**, from the Pennsylvania Game Commission, discussed the natural history relating to wood ducks and hosted a question and answer session about the construction of artificial nesting structures and their role in wildlife conservation.

### Learn What the Experts Know (and don't know) About Passive Treatment

Mark your 2004 calendar for the **American Society of Mining and Reclamation's** 21st Annual Meeting!! ASMR and the West Virginia Surface Mine Drainage Task Force are holding a joint conference in Morgantown, WV, April 18-22, 2004. The last time there was such an excellent opportunity to have so many passive treatment system experts gathered together in this region was a decade ago!!! If you are involved in a watershed group, you should take advantage of this conference!!! Displays from watershed groups are welcome!

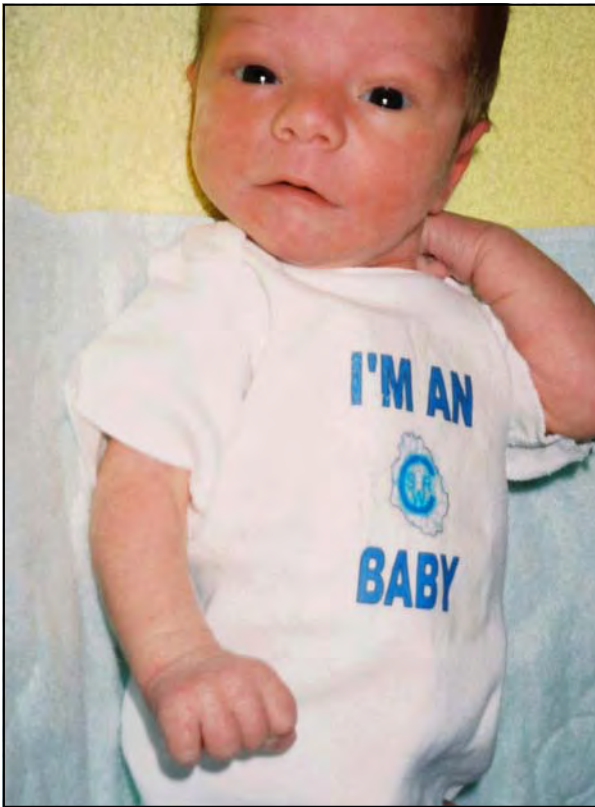
Expected attendees who are passive treatment experts include: Bob Nairn, University of Oklahoma; Carl Zipper, Virginia Tech, Paul Younger, United Kingdom; Art Rose, Professor Emeritus, Pennsylvania State University; Paul Egar, Minnesota; Carl Kirby, Bucknell University; Bob Kleinmann and George Watzlaff, US Department of Energy; Chuck Cravotta, US Geological Survey; Brent Means, US Office of Surface Mining; "BT" Thomas, and many more.

A pre-conference, two-day fieldtrip will be held in conjunction with the annual **Slippery Rock Watershed Coalition Symposium** on April 16 and 17. Participants will tour the **Jennings Environmental Education Center's** nationally recognized treatment systems and several passive treatment complexes in the Slippery Rock Creek headwaters on April 16. On April 17 participants will tour the over 20-component passive complex at **Ohioyle State Park**.

Don't miss this valuable chance to build partnerships and learn from the experts! There are two options to choose from:

- 1) For those attending the **ASMR** conference, a fee of \$175 will include round-trip busing from Morgantown, WV, lodging, and meals. Registration is through ASMR. Contact Jeff Skousen at (304) 293-6256 for more information.
- 2) The **Slippery Rock Watershed Coalition Symposium** is free of charge. This trip will include the tour of the Jennings system and selected systems in the headwaters of Slippery Rock Creek (no transportation provided). Registration will be online (more information next month).

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Here is the newest member of the Slippery Rock Watershed Coalition! **Isaac Lee Busler** was born on December 6 and is the first child of **Stream Restoration Incorporated's Shaun and Melissa Busler**. Isaac may be too young to enjoy the pizza and soda at the monthly SRWC meetings, but he does make a good model for the SRWC t-shirt, created by **Deanna Treter**.

**WHERE ARE THEY NOW?**

***Investigating Maintenance, Performance, And Continuous Treatment (IMPACT)***

This month's featured system is **Jennings Environmental Education Center (JEEC)**. Way back in September 1997, the full scale Vertical Flow System was placed on-line at the Jennings Environmental Education Center in Brady Township, Butler County. Jennings, as many people know, has been used for research and is internationally recognized for passive treatment technology. Once again, as it was in 1994, this site will be included as part of the **American Society of Mining and Reclamation's** annual conference this year (see article on front page). For over 6 years, this full-scale passive treatment system has been neutralizing the highly acidic water that issues from an abandoned deep mine. In fact, this system neutralizes about **14 tons of acidity each and every year: 88 tons of acidity to date!!!** In addition, the system has prevented over **17 tons of iron** and about **6 tons of aluminum** from entering Big Run, a tributary to Slippery Rock Creek. That's a lot of pickup trucks & pop cans!!!

As expected, no success comes without challenges. Maintenance issues over the years have included a plugged outlet pipe that was replaced and a channel wetland that grew so well that the vegetation restricted the flow with the effluent overtopped a low berm, creating a sloped wetland (something wetland experts say is a difficult thing to do!) Because this system is incorporated into the Jennings Environmental Education Program, maintenance has been conducted as part of the on-going research efforts. The PEOPLE IMPACT has been amazing! An estimated **4000 students** have participated in the educational programs about this system! And it has been included as a highlight on numerous tours given to guests from as far away as Korea, Australia, Peru, and even OHIO!!!

Representative Water Quality

<u>Point</u>	<u>pH</u> (s.u.)	<u>Acidity</u> (mg/l)	<u>Alkalinity</u> (mg/l)	<u>Iron</u> (mg/l)	<u>Manganese</u> (mg/l)	<u>Aluminum</u> (mg/l)
Raw	3.3	284	0	56	15	19
Treated	6.8	0	172	1	12	0

Total metals concentrations

Before Construction



After Construction





# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## WINTER WORD SCRAMBLE

Winter has arrived! We don't see as many animals outside during the winter time as we do during warmer weather, but there are some creatures who stick around Pennsylvania and are very common to see. The names of six of these animals are shown below, but the letters of their names are scrambled! Your job is to unscramble the letters, write the name of each animal on the lines provided, and then draw a picture of each animal in the box. If you can do all this, send us in your paper and we will mail you a gift certificate!

\_\_\_\_\_ EDER

\_\_\_\_\_ RANLACDI

\_\_\_\_\_ YKRTUE

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\_\_\_\_\_ IBABRT

\_\_\_\_\_ OCOCRNA

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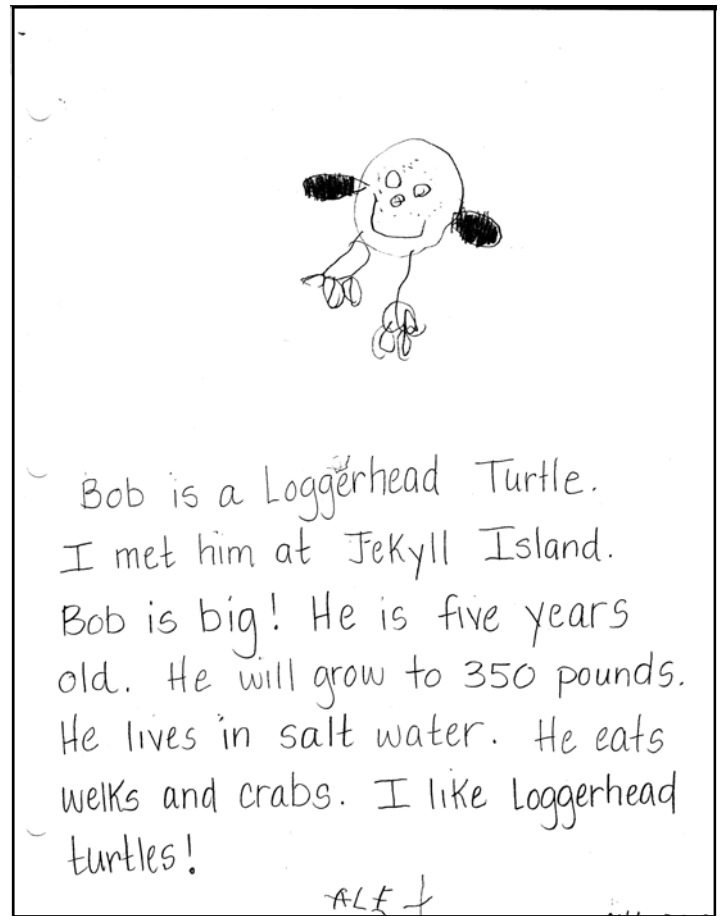
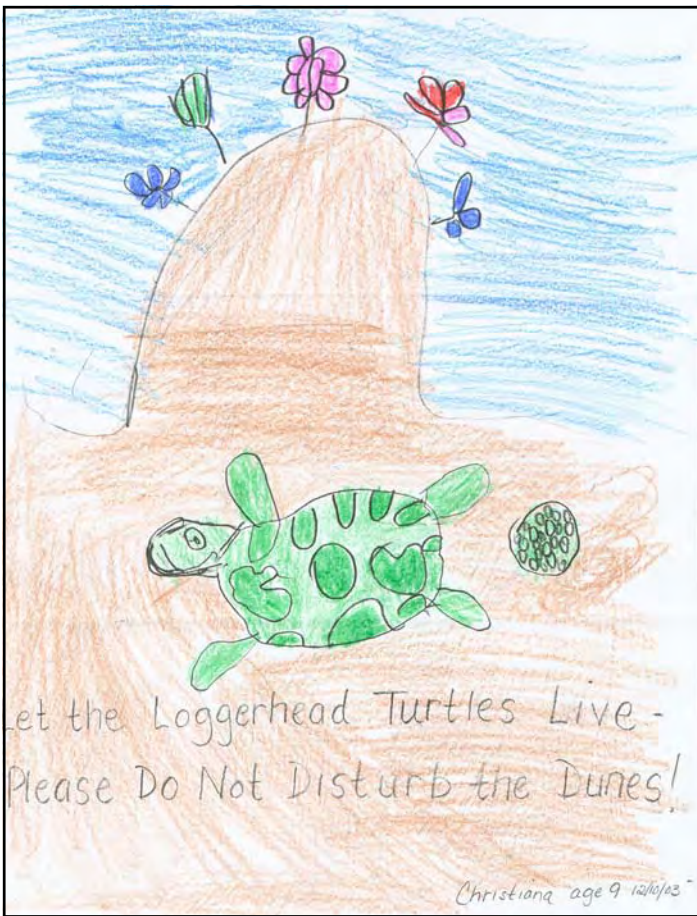
ADDRESS: \_\_\_\_\_



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 CRANBERRY, PA

Thanks to The William & Frances Aloe Charitable Foundation, Environmentally Innovative Solutions, LLC, Dominion Peoples, Amerikohl Mining, Inc., Quality Aggregates Inc., BioMost, Inc., Allegheny Mineral Corporation and PA DEP for their support. For more information contact: Slippery Rock Watershed Coalition, c/o Stream Restoration Incorporated (PA non-profit), 3016 Unionville Road, Cranberry Twp., PA 16066, (724)776-0161, fax (724)776-0166, [sri@streamrestorationinc.org](mailto:sri@streamrestorationinc.org), [www.srwc.org](http://www.srwc.org). Jan. Distribution: 1193 copies



Thank you Christiana and Alex for your great pictures and information about the loggerhead sea turtle! Loggerheads can be seen laying their eggs in nests in sand dunes in early summer along the Carolina coast. The holes they dig are often partitioned off with wooden posts and tape so people know to stay away. The baby turtles hatch and make their way to the ocean by moonlight in late summer. Here in the Slippery Rock Creek watershed in Pennsylvania, instead of the loggerhead, common turtles include box turtles, wood turtles, painted turtles, and spotted turtles. The bog turtle, an endangered species, is a rare sighting, but its range does occur in this watershed.

# THE CATALYST

## SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** Due to the symposium there will be no meeting this month. We hope to see you at the symposium! 3/11/04 Meeting Attendance: S. Busler, C. Cooper, T. Danehy, C. Denholm, M. Dunn, D. Johnson, V. Kefeli, W. Taylor

## 9<sup>TH</sup> ANNUAL SLIPPERY ROCK WATERSHED COALITION SYMPOSIUM

The Slippery Rock Watershed Coalition will hold the 9<sup>th</sup> Annual Slippery Rock Watershed Coalition Symposium on April 14 and 16. This year, the Slippery Rock Watershed Coalition is proud to be able to offer their annual symposium as a pre-conference field trip for participants attending the American Society of Mining and Reclamation Meeting. All Symposium events are free of charge, open to the public and can be attended individually. Registration is appreciated for those events scheduled for April 16, and can be made online at [www.streamrestorationinc.org/rsvp/](http://www.streamrestorationinc.org/rsvp/). Lunch will be provided on Friday, April 16.

### **Wednesday April 14th from 6 pm to 9 pm** **College Night at Slippery Rock University**

This evening program, "Investigating Watershed Issues: Supporting Student Research Through Public/Private Partnerships," will showcase projects of local college and university students in the fields of soil science, water quality and ecosystem recovery. Participants can support these dedicated and hardworking students by attending their presentations in the Bailey Library on the Slippery Rock University campus. Everyone is welcome to attend.

### **Friday April 16th from 8:30 am to 5:00 pm** **The 9th Annual SRWC Symposium at Jennings Environmental Ed. Center**

Among a gathering of professionals, agencies, academia and community members on Friday, April 16, from 8:30 a.m. to 5 p.m. at the Jennings Environmental Education Center, participants will discover "who's who" in the science of abandoned mine drainage, as well as what is in store for the future of passive treatment. Field trip participants will visit the Jennings Research and Demonstration Site and various reclamation projects within the Slippery Rock Creek Watershed including the new Erico Bridge Passive Treatment Complex with an 8,300-ton Anoxic Limestone Drain and 9,000-ton Horizontal Flow Limestone Bed, wetlands, and other components. This is a unique opportunity for Pennsylvania watershed organizations, agencies and citizens to meet national and international scientists and professionals in the fields of land and water reclamation.



## ASMR Annual Meeting

### **Saturday April 17**

A special fieldtrip to Ohio State Park highlights today's activities. A 20-component passive treatment complex will be toured with hosts Margaret Dunn and Timothy Danehy of the SRWC.

### **Sunday April 18— Thursday April 22**

A National meeting is held annually where information, research, and ideas are exchanged between academic professionals, those who are implementing reclamation activities in the field, students, and all other interested persons. Each year the location is rotated within eastern and western North America to provide opportunities for its members and guests to become familiar with diverse reclamation challenges and accomplishments. This year, the 21st National Meeting is being held in Morgantown, WV in conjunction with the 25th West Virginia Surface Mine Drainage Task Force Symposium.

For more information or to register, contact Stream Restoration Incorporated at (724) 776-0161 or [sri@streamrestorationinc.org](mailto:sri@streamrestorationinc.org). For more information about the American Society of Mining and Reclamation Meeting, visit [www.wvu.edu/~agexten/landrec/2004TFS/PreProgram.pdf](http://www.wvu.edu/~agexten/landrec/2004TFS/PreProgram.pdf).

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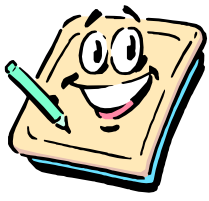
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A future “Tim the Toolman Taylor”? These scouts were working on Wood Duck boxes to be placed at Erico Bridge (see article below)

### Helpful Cub Scouts Volunteer at Erico Bridge

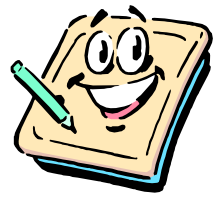
An early morning snowfall did not deter the Bear Cubs and Webelos of the Grove City Cub Scout Pack from trekking to the Erico Bridge passive treatment system on Saturday, March 13<sup>th</sup>. The trek had actually begun late last year, when the scouts built the site’s nesting boxes from materials donated by the employees of Beran Environmental, Inc. The visit began in typical young boy fashion – with the 14 scouts throwing limestone rocks into the settling pond. The adults soon put an end to that version of the fun and the learning began. Bob Beran, President of Beran Environmental, Inc., gave a basic introduction to the problem of AMD (Abandoned Mine Drainage) and the solution of passive treatment systems. The Wood Duck boxes were then unloaded and the final construction completed – mounting hardware cloth below the entrance/exit to give the ducklings the toe-hold they will need to exit. After this, the scouts distributed the boxes and necessary installation supplies along the berms of the treatment wetlands. It was then a simple matter of driving the poles, mounting the boxes, placing several inches of wood chips in them, and securing the access panel (which allows for human entrance to clean the boxes) from accidental opening by the wood ducks or purposeful opening by predators. Once all six boxes were placed, filled, and locked, Bob showed the scouts the E&S (erosion and sediment) controls in evidence around the treatment system. These included silt fences, grass, and other vegetation (defining “vegetation” as “plants” smoothed a number of wrinkled brows). Bob Beran followed this lesson by one on soils. It consisted of his digging a soil pit and removing a soil profile to show the scouts the different layers (officially termed horizons) and how they differ – color, texture, structure, etc. He also discussed how soils form and how much one can tell about an area through the soils that exist there. The field trip was then over for the scouts and their chaperones ... well, after a snack provided by pack leader John Sestak. The boxes themselves still need one more thing before they can be considered complete – the installation of predator guards, which Bob Beran has scheduled to complete prior to the end of March.





# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## WORD SEEK AND FIND

### SPRING HAS SPRUNG!

Spring officially arrived on Saturday, March 20. Though it was a cold and snowy day in the Slippery Rock watershed in Western PA, we know sunshine and warmer weather are on their way! Do you know how the first official day of Spring is determined? The *vernal equinox* is the date when spring begins. The vernal equinox is the day in March when day and night are of equal length. The days will grow longer until the summer solstice, the first official day of summer. The other date during the year when day and night are of equal length is the autumnal equinox, a day in September which marks the first day of Fall. Listed in the Word Bank below are ten words which have to do with Spring! See if you can find all of the words, and circle them. Then mail your paper in to us for a free gift certificate! Good luck!

WORD BANK				
APRIL	MAY	SPRING	RAIN	ROBINS
EASTER	SUNSHINE	FLOWERS	GREEN	GARDEN

T	E	L	A	M	S	R	N	B	G	A	E	X	B	U	M	I	D	C	E	W	O	D	C
G	A	R	D	E	N	A	P	C	V	Z	Q	I	O	K	N	E	V	O	L	W	M	U	P
E	P	A	V	M	N	G	F	C	E	L	H	P	L	M	I	O	R	E	A	V	S	A	G
H	J	I	G	A	R	S	U	W	R	A	S	M	A	F	P	I	T	E	M	B	N	K	P
D	U	N	C	K	R	D	J	G	F	Y	P	D	C	V	B	N	K	H	D	U	L	J	I
O	W	T	C	S	X	B	Q	G	J	K	B	R	M	B	O	I	L	J	P	O	K	M	B
A	P	H	C	R	M	A	S	B	C	U	O	P	I	L	J	B	A	S	D	C	E	P	L
M	N	B	I	J	U	V	R	D	S	O	S	M	I	L	E	U	Y	N	G	N	B	V	O
S	F	T	B	C	U	E	K	L	P	D	E	G	R	A	L	W	O	R	I	S	F	O	P
S	U	M	N	H	T	I	E	N	S	I	G	E	R	N	N	E	E	H	R	O	N	B	I
G	A	P	T	S	L	S	E	N	M	L	S	R	P	R	G	N	S	A	I	N	R	M	Y
A	R	F	A	L	O	N	C	P	S	I	N	G	S	X	E	N	Z	P	O	M	K	G	K
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B	U	J	V	X	C	T	J	I	K	M	N	J	U	I	P	O	R	W	M	B	L	P	V
S	X	B	R	E	X	E	S	A	F	D	O	M	B	U	T	G	V	C	R	F	C	H	J
M	N	P	L	O	A	E	J	N	R	G	V	I	M	O	F	L	O	W	E	R	S	P	U
O	N	U	H	Y	Y	B	C	Z	O	M	K	K	F	H	I	O	S	E	A	M	L	O	P
B	M	J	H	U	G	R	V	D	I	L	P	I	M	T	J	U	G	V	R	E	C	S	A

Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated  
 A PA Non-Profit Organization  
 3016 Unionville Road  
 Cranberry Twp., PA 16066

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## Annual “Get-Together” and Assessment Meeting

The Get-Together is tentatively scheduled May 13 at a location to be determined in Boyers, PA. Bring the whole family for free food, door prizes, and PINATAS!!

This year, staff from Beran Environmental, Inc. will be giving a summary of the work that has been completed on the Slippery Rock Watershed Assessment. The presentation will include preliminary information on the year-long water quality monitoring program, GIS data layers that are being developed for the assessment, and the results of the fisheries survey that was conducted last summer. A question and answer session will follow the presentation.

More information next month!



## **Jennings Spring Into Action April 24th!**

Celebrate Earth Week by pitching in at the park. The Jennings staff is looking for interested groups and individuals willing to spend a spring day helping with park improvement projects on our annual Spring Into Action day. Attending this event will be a wonderful way to give something back to the community. As a special thank-you, lunch will be provided and each participant will receive a tee-shirt commemorating the event. The popular raffle will also be held, giving participants the opportunity to win great environmental prizes. Participants must be age 12 or older and must register for the program by contacting the Center at 724-794-6011 no later than April 16.



## THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

**THIS MONTH'S MEETING:** The Get-Together will be held on May 13 at the Boyers Sportsmen Club from 6 PM to 8 PM. April meeting was cancelled due to Slippery Rock Watershed Coalition's Annual Symposium at Jennings Environmental Education Center.

### 9th Annual SRWC Symposium an International Flare!

On Friday, April 16 approximately 50 folks took part in our 9th (Can you believe that its been almost a decade since we started?!) annual Symposium at Jennings Environmental Education Center. Visitors came from as far away as **Korea, Brazil, and Venezuela!!!** As usual, **Janice Belgraden** did a wonderful job moderating this event!!



**Wendy Beeching** and **Jerry Macurak** started off the Symposium with a presentation on the oil and gas well plugging project being conducted in the headwaters area of South Branch Slippery Rock Creek. **Shaun Busler** gave a brief description and live demonstration of **Datashed**, an online, GIS database, and how it can assist in the Operation and Maintenance of passive treatment systems. **Cliff Denholm** described the interrelationships among JEEC, the SRWC, and ASMR, relating to technology transfer. Cliff stressed how ASMR strives to encourage communication among researchers, private industry, and government agencies.

**Tim Danehy** summarized the environmental improvements being made in the watershed, resulting from the installation of 15 passive treatment systems, which include 14 vertical flow ponds, 7 anoxic limestone drains, 3 horizontal flow limestone beds, and 12 constructed wetlands covering over 10 acres!!! These systems remove >200 tons of iron and 8 tons of aluminum annually!

Symposium participants took a walking tour of the passive treatment systems at **Jennings** after a brief overview of local mining and restoration history. Everyone then traveled to the headwaters of Slippery Rock Creek to tour the **Erico Bridge Restoration Area**, which has the largest known ALD in PA, and the **De Sale Restoration Area - Phase III**. The day ended with a delicious buffet dinner at Quaker Steak and Lube in Cranberry Township. **(A special thanks to Environmentally Innovative Solutions, LLC and Quality Aggregates Inc. for their generosity!!!!)**

Symposium attendees journeyed to beautiful **Ohiopyle State Park** on Saturday, April 17 to tour the multi-faceted Harbison Walker passive treatment complex, featuring over 20 components. What an appropriate setting to present **John Dawes, Western PA Watershed Program**, with the **2004 SRWC Appreciation Award!!!** (See back page.)

Thanks **Bruce Golden, Western PA Coalition of Abandoned Mine Reclamation**, for the wonderful photos of the event including the panorama below of a portion of the treatment complex at Ohiopyle State Park!



### SRWC Student Symposium

The Student Symposium, showcasing student research in water quality, biology, ecosystem recovery, and soil science, was held on Wednesday, April 14 at Slippery Rock University. Following a time of networking, students from **Slippery Rock University, Westminster College, and Grove City College** gave 15-minute audiovisual presentations of their research to professors, organizations, professionals, watershed volunteers, and their peers. It was clear to the 36 attendees how crucial partnerships are to the success of any project. Thanks **Slippery Rock University** and **Dr. Valentine Kefeli** and **Dr. Bruno Borsari** for making this possible! **A special thanks to Malcolm Crittenden, PA DEP, Cambria Office for sharing outstanding outreach efforts by the Wells Creek watershed group.**



SRWC Symposium field tour of Erico Bridge, Venango Twp., Butler Co. What a beautiful day to be in the field!!! But, look at the flow!!! This is the highest flow, est. >1000 gpm, observed from the ALD (8,300 tons limestone).

## ASMR 2004—Wonderful West Virginia!

The American Society of Mining and Reclamation held its 21st Annual Meeting on April 18-22 in Morgantown, WV in conjunction with the 25th Annual West Virginia Surface Mine Drainage Task Force Symposium. Held at a facility overlooking the Monongahela River, the conference gave attendees important opportunities to network and get up-to-date on the latest research and discoveries in the fields of AMD passive treatment, active treatment, revegetation, forestry, remining, overburden, wildlife, hydrology, minesoils, tailings, and watershed restoration. Experts in reclamation shared their knowledge, watershed groups interacted and learned from each other, and all benefited from the dozens of poster presentations and displays available.

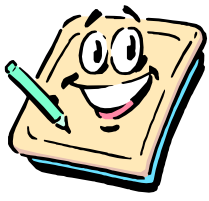
Seven fieldtrips were offered to conference-goers, including trips led by the SRWC to Ohiopyle State Park and to the Jennings Environmental Education Center to join the 9th Annual Slippery Rock Watershed Coalition Symposium. **(See page 1.)**

As part of the conference, Cliff Denholm presented on Operation and Maintenance considerations for the Ohiopyle State Park passive treatment complex. Dr. Fred Brenner, SRWC and Grove City College, with co-authors Shaun Busler, SRI, and Scott Alexander, DEP, gave a presentation on the passive treatment work at Fox Run in Mercer County, PA. Posters and displays from participants in the SRWC included : **Environmentally Innovative Solutions, LLC, Jennings Environmental Education Center, Stream Restoration Inc., and SRWC.** And, we were even on **television(!!!)** with Margaret Dunn describing the value of partnership efforts and watershed restoration.

Margaret Dunn of the SRWC and Stream Restoration Inc. was sworn in as the new President of ASMR! Congratulations, Margaret!! She replaces Jeff Skousen of West Virginia University, who did a tremendous job in organizing this year's conference.

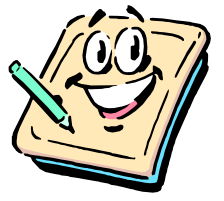
The 2005 Annual Meeting of ASMR will take place June 19-24 at beautiful Beaver Run Resort and Conference Center in Breckenridge, Colorado. We hope you will make plans to "raise reclamation to new heights" by being a part of ASMR 2005! **Because of the presence and interest of watershed groups at the 2004 conference, the ASMR National Executive Committee voted unanimously to offer a \$1000 scholarship to a watershed group in order to send a representative(s) to give a presentation at the 2005 ASMR conference in Breckenridge!!! (Information regarding the application will be provided when available.)**

**Thank you Jeff Skousen, Dick Barnhisel, and all the other organizers for making this such a worthwhile experience "to learn from the best".**



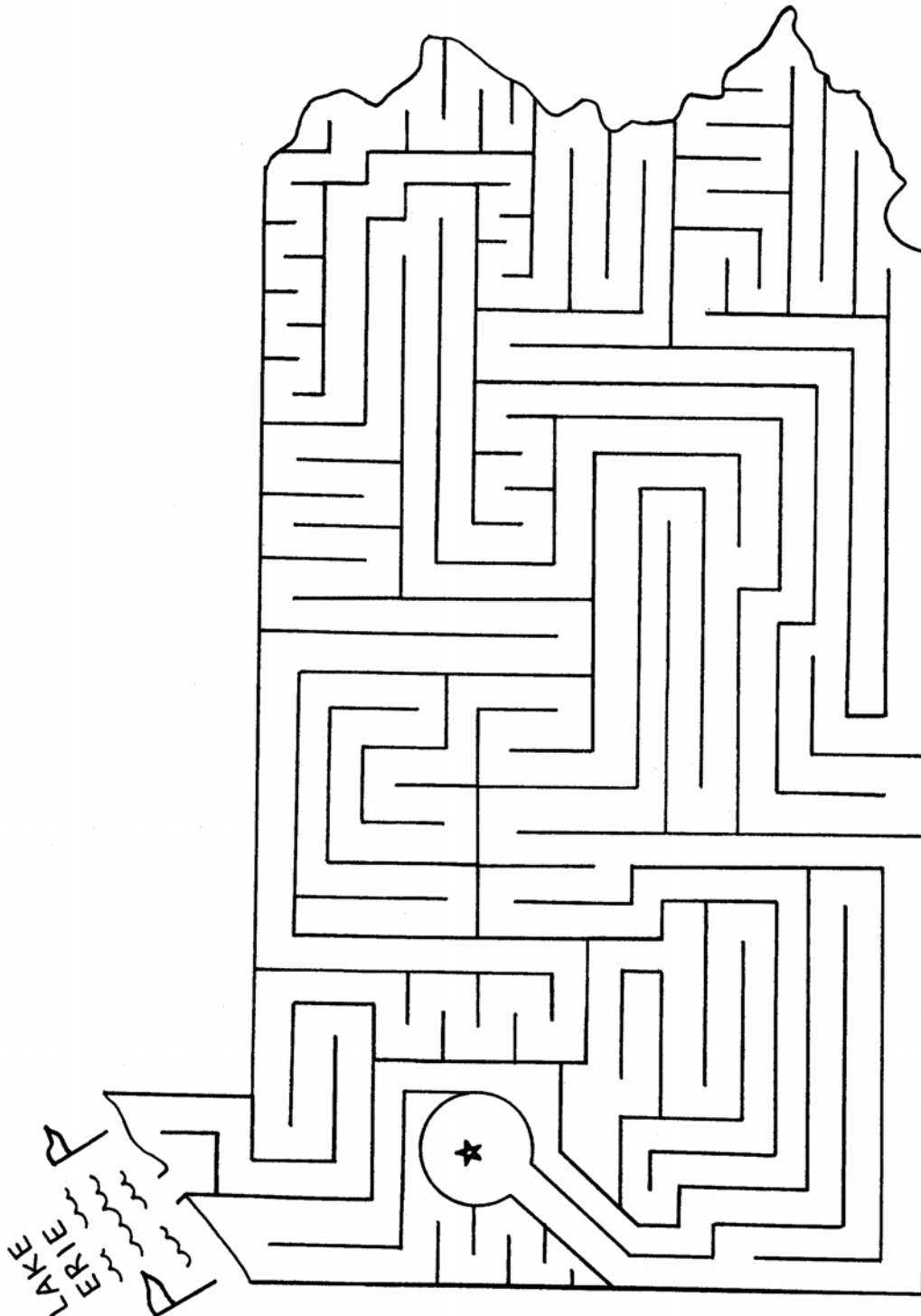
# The KIDS Catalyst

SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



## MARVELOUS MAZE MADNESS

Have you ever wondered where in the world IS the Slippery Rock Creek Watershed? We are located where the star is shown in this drawing of Pennsylvania. In our streams, you are likely to find fish like bluegill, brown trout, rock bass, white sucker, mottled sculpin, blacknose dace, johnny darter, common shiner, bluntnose minnow, and creek chub. In this maze, your job is to find your way across Pennsylvania from the Slippery Rock Creek Watershed to Lake Erie, where fish like the lake trout, brown trout, carp, longnose sucker, walleye, yellow perch, and smallmouth bass are found. After you finish the maze, you can mail your paper to us for a free gift certificate!



Name \_\_\_\_\_ Age \_\_\_\_\_ Address \_\_\_\_\_



Slippery Rock Watershed Coalition c/o Stream Restoration Incorporated  
A PA Non-Profit Organization  
3016 Unionville Road  
Cranberry Twp., PA 16066

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## John Dawes, Western Pennsylvania Watershed Program Accepts 2004 SRWC Appreciation Award

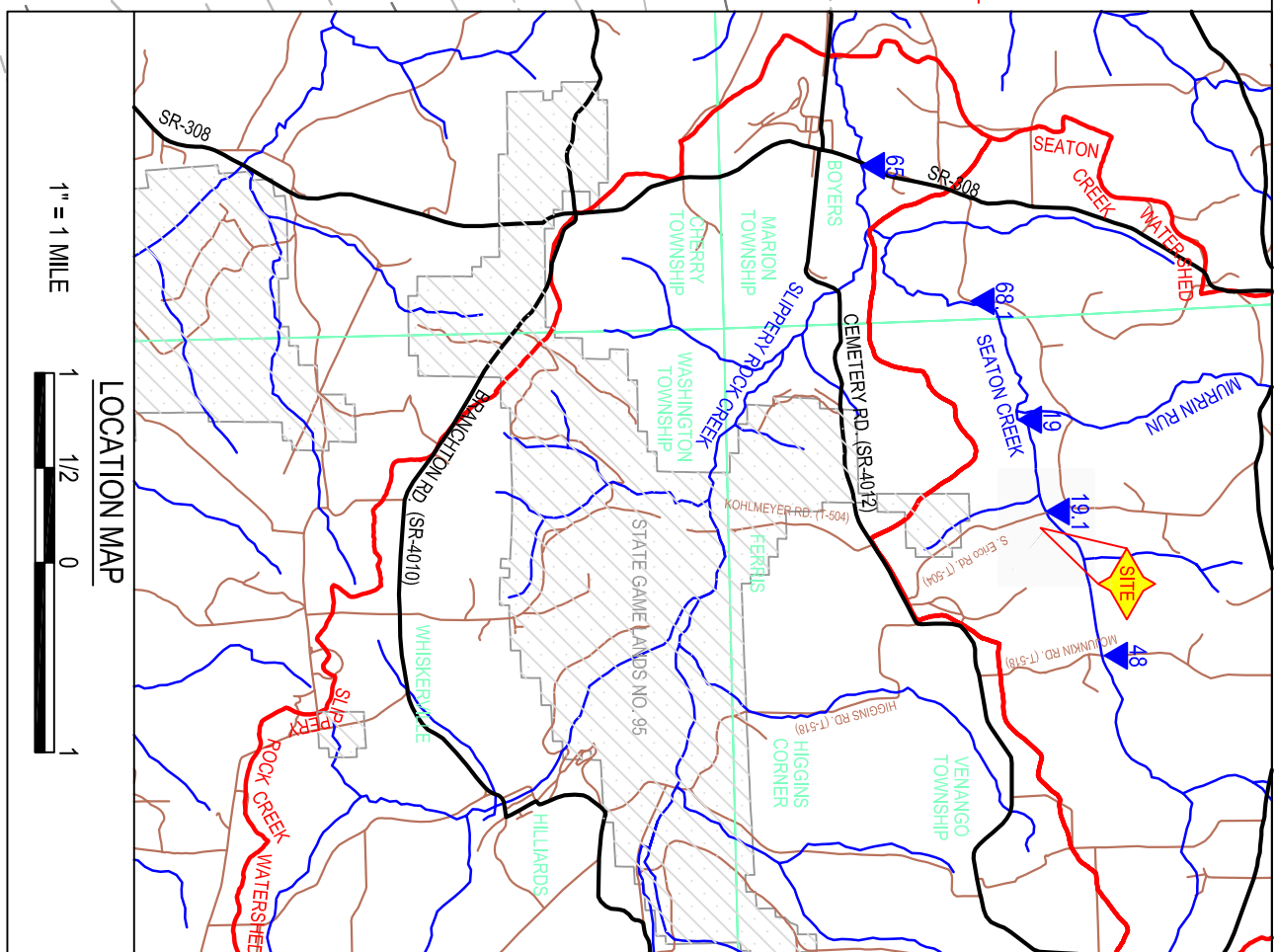
The WPWP continues to mean so much to so many!!! Thousands of people have been able to implement efforts that restore and sustain the quality of our water resources through support from this program!!! Thank you!!!

## SRWC Annual Get-Together

We hope you will join us on May 13 for our annual get-together! Anyone is welcome to take part in the fun! The festivities will be from 6PM to 8PM at the Boyers Sportsman Club in Boyers, PA. We'll be enjoying delicious food and deserts, fabulous door prizes, good company, and there will be lots to do for the children (including the always-popular piñata!) We will also have displays about our restoration projects and a presentation updating the status of the watershed assessment - learn something about the water problems and solutions happening in your own backyard! So don't miss out! Bring the whole family for FREE food, door prizes, and much more! For additional information on this event, call Shaun Busler of Stream Restoration Inc. at 724-776-0161.

## SRWC Adopt-a-Highway Clean-up

Aaaaah, springtime! The birds are singing, the flowers are blooming, the sun is shining... and trash has been piling up along I-79! The SRWC will hold their first trash pick-up day of 2004 on Friday, May 21 beginning at noon. Come help us in our effort to keep the 1-mile stretch of interstate between mile markers 100 and 101 clean and green. Who knows what interesting artifacts of garbage have accumulated during those long winter months? If you'd like to help us take up a collection for Oscar the Grouch, meet us at the unofficial Park-n-Ride at the intersection near I-79 and US-422 (off exit 99). We'll provide gloves, safety vests, bags, and a free lunch! Call Cliff Denholm at 724-776-0161 if you have any questions. We would appreciate your help. Anyone is welcome!



### LEGEND

- CONTOUR - INDEX
- CONTOUR - INTERMEDIATE
- CONTOUR - INTERMEDIATE (OBSOURED)
- PASSIVE TREATMENT COMPONENT (BURIED)
- PASSIVE TREATMENT COMPONENT (EMERGED)
- BATHYMETRIC SURFACE (SUBMERGED)
- BATHYMETRIC SURFACE (EMERGED)
- Z-PILING
- 8" SOLID SDR 35 PVC PIPE
- 8" PERFORATED SDR 35 PVC PIPE
- 10" SOLID SDR 35 PVC PIPE
- 10" PERFORATED SDR 35 PVC PIPE
- 12" SOLID SDR 35 PVC PIPE
- 12" PERFORATED SDR 35 PVC PIPE
- 15" SOLID SDR 35 PVC PIPE
- 15" PERFORATED SDR 35 PVC PIPE
- ABANDONED UNDERGROUND PIPE
- NINE SEALS (APPROX. LOCATION)
- PROPERTY LINE (APPROX. LOCATION)
- UNDERGROUND GAS LINE (APPROX. LOCATION)
- UTILITY POLE
- UTILITY LINE (E-ELECTRIC)
- UTILITY LINE (E-WATER)
- DIRT/GRAVEL ROAD
- WATER
- WETLAND
- COB PILE REMOVAL WETLAND
- PLANTED UP-LAND AREA
- R4 LIMESTONE RIP-RAP
- ASH/TO #1 LIMESTONE AGGREGATE (90% COE)
- BRUSH PILES
- NON-CALCAREOUS RIVER GRAVEL
- TREELINE
- DIVERSION DITCH
- CULVERT
- BUILDING (SHADED) PAVEMENTING
- NATURAL POLE W/INVESTING PLATFORM
- 8" VALVE
- MONITORING WELL
- MINE DISCHARGE
- WATER SAMPLE POINT
- AS-BUILT CROSS SECTION

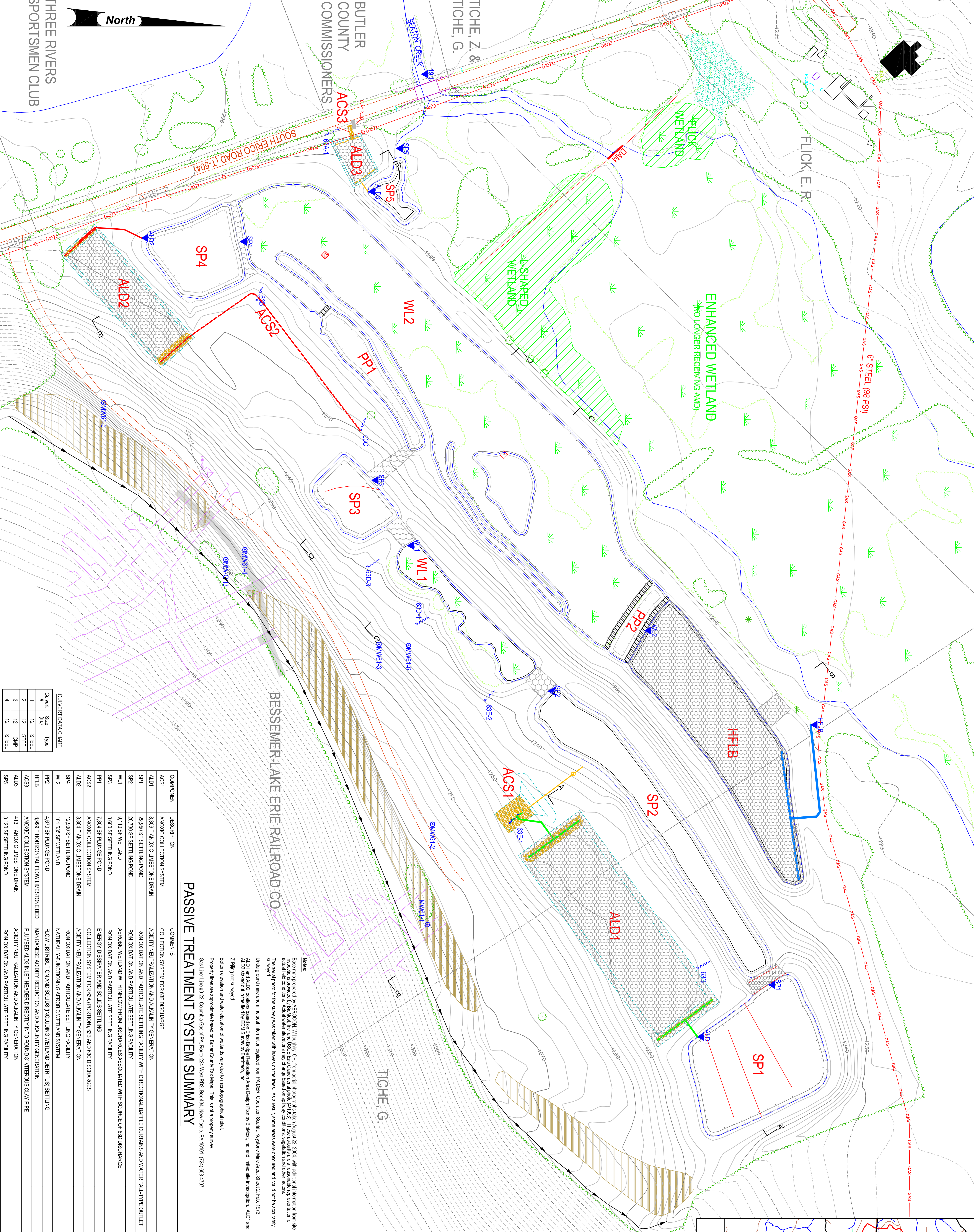
## PASSIVE TREATMENT SYSTEM SUMMARY

COMPONENT	DESCRIPTION	COMMENTS
ACS1	ANONIC COLLECTION SYSTEM	COLLECTION SYSTEM FOR 60E DISCHARGE
ALD1	8,309 T ANONIC LIMESTONE DRAIN	ACIDITY NEUTRALIZATION AND ALKALINITY GENERATION
SP1	29,800 SF SETTLING POND	IRON OXIDATION AND PARTICULATE SETTLING FACILITY WITH DIRECTIONAL, BAFLE CURTAINS AND WATER-FALL-TYPE OUTLET
SP2	26,730 SF SETTLING POND	IRON OXIDATION AND PARTICULATE SETTLING FACILITY
WL1	9,110 SF WETLAND	AEROBIC WETLAND WITH IN-LOW FLOW DISCHARGES ASSOCIATED WITH SOURCE OF 60D DISCHARGE
PP1	8,600 SF PLUNGE POND	IRON OXIDATION AND PARTICULATE SETTLING FACILITY
ACS2	ANONIC COLLECTION SYSTEM	COLLECTION SYSTEM FOR 60A PORTION, 60B AND 60C DISCHARGES
ALD2	3,304 T ANONIC LIMESTONE DRAIN	ACIDITY NEUTRALIZATION AND ALKALINITY GENERATION
SP4	12,900 SF SETTLING POND	IRON OXIDATION AND PARTICULATE SETTLING FACILITY
WL2	10,535 SF WETLAND	NATURALLY-FUNCTIONING AEROBIC WETLAND SYSTEM
PP2	4,670 SF PLUNGE POND	FLOW DISTRIBUTION AND SOLIDS INCLUDING WETLAND DEFURIOUS) SETTLING
HFLB	8,999 T HORIZONTAL FLOW LIMESTONE BED	MANAGENSE ACIDITY REDUCTION AND ALKALINITY GENERATION
ACS3	ANONIC COLLECTION SYSTEM	PLUMBED ALD3 INLET HEADER DIRECTLY INTO FOUNDRY VITREOUS CLAY PIPE
ALD3	413 T ANONIC LIMESTONE DRAIN	ACIDITY NEUTRALIZATION AND ALKALINITY GENERATION
SP5	3,720 SF SETTLING POND	IRON OXIDATION AND PARTICULATE SETTLING FACILITY

### CULVERT DATA CHART

Culvert #	Size (in)	Type
1	12	STEEL
2	12	STEEL
3	12	CMP
4	12	STEEL

## BESSEMER-LAKE ERIE RAILROAD CO



North

BUTLER COUNTY COMMISSIONERS

TICHE, Z & TICHE, G.

FLICK E.R.

ENHANCED WETLAND (NO LONGER RECEIVING AMD)

SHAPED WETLAND

FLICK WETLAND

6" STEEL (98 PSI)

PP1

WL2

SP4

ALD2

ACS2

SP3

WL1

PP2

HFLB

ALD1

SP1

ACS1

SP2

SEATON CREEK

THREE RIVERS SPORTSMEN CLUB

SHEET 1 OF 3 - PLAN VIEW

SLIPPERY ROCK WATERSHED COALITION

AS-BUILT DRAWING

ERICO BRIDGE RESTORATION AREA

STREAM RESTORATION INCORPORATED

SEATON CREEK SUBWATERSHED

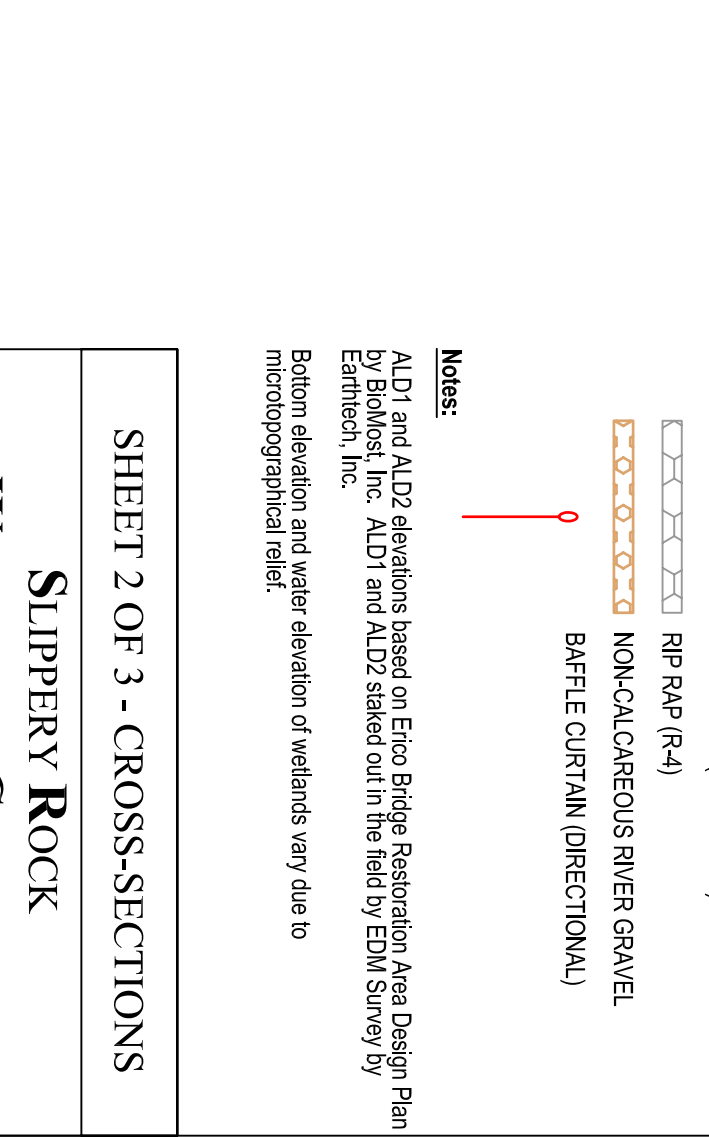
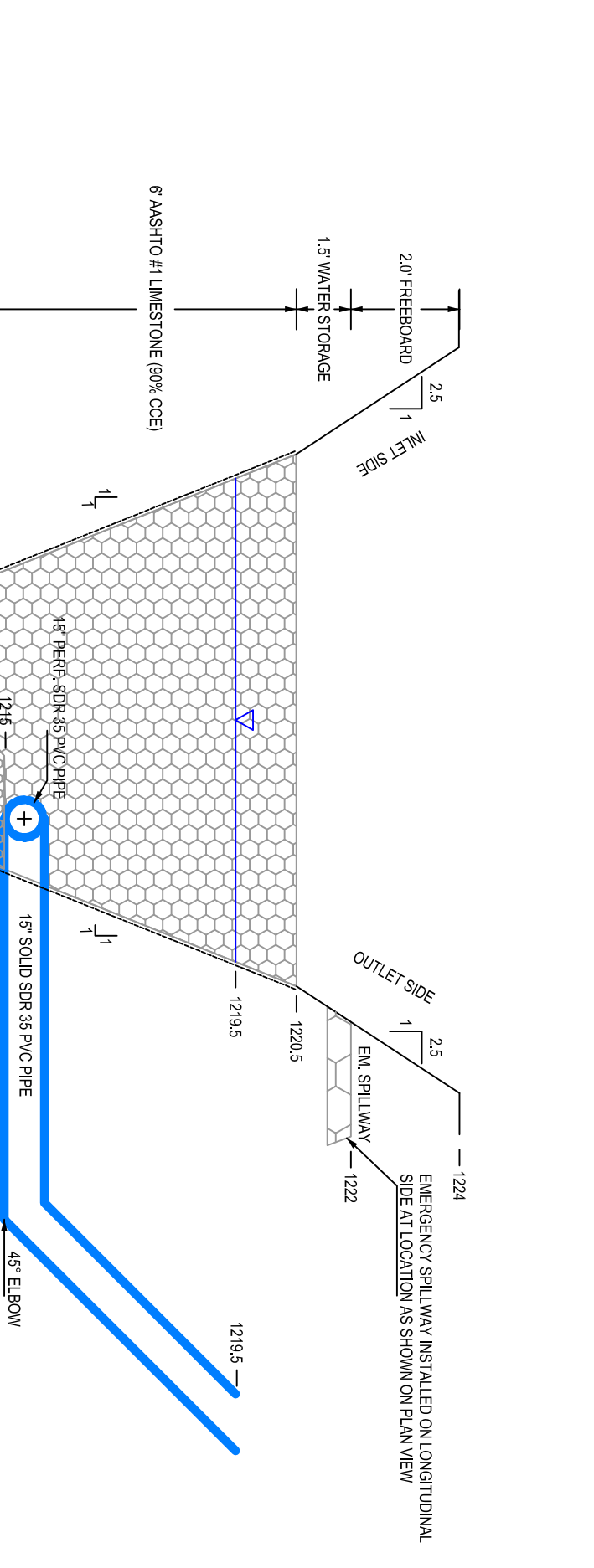
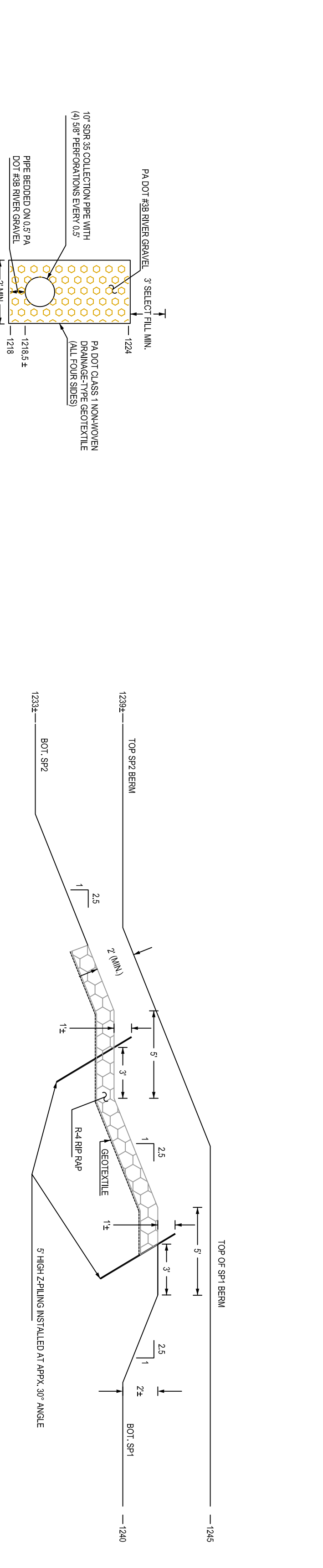
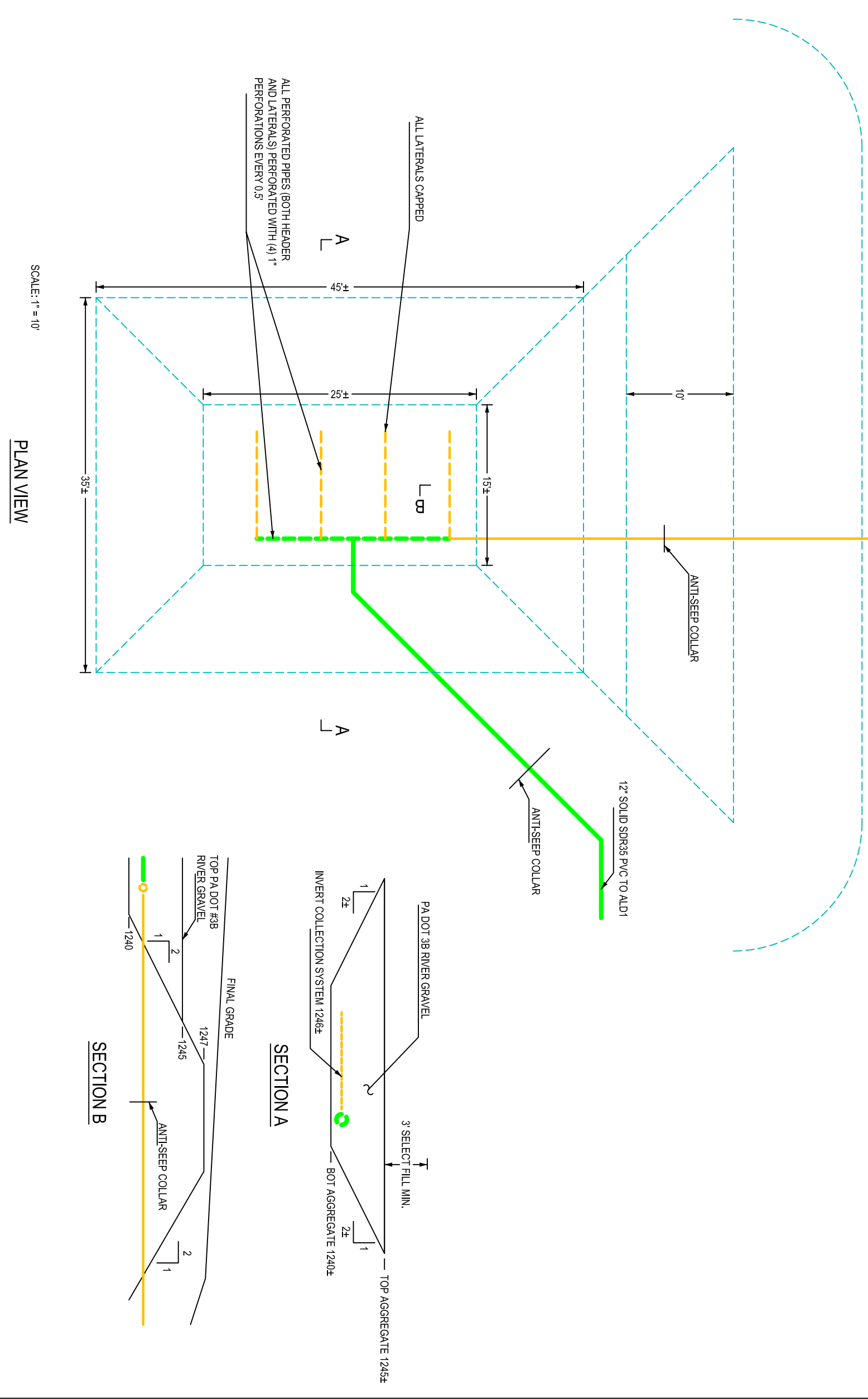
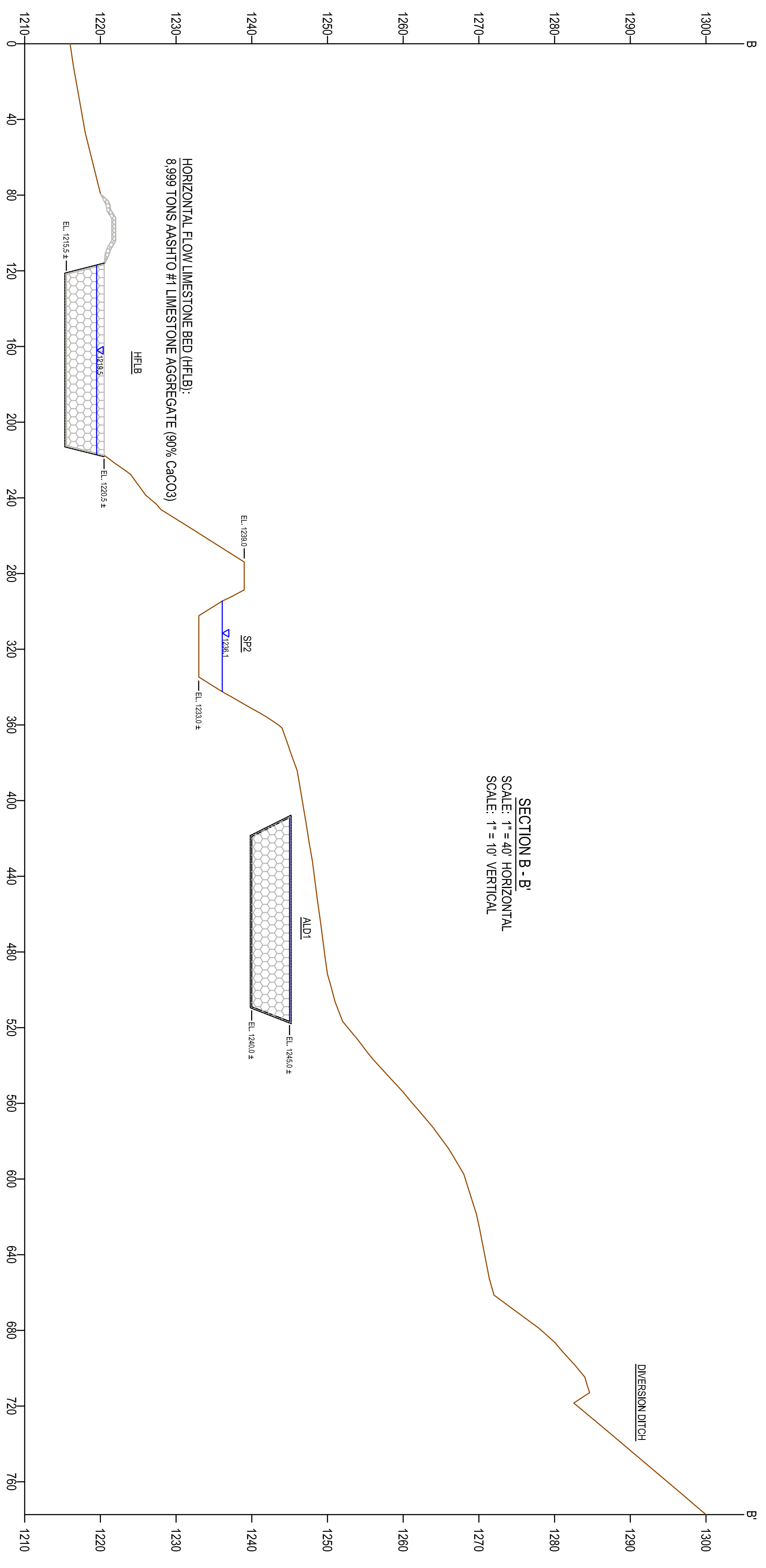
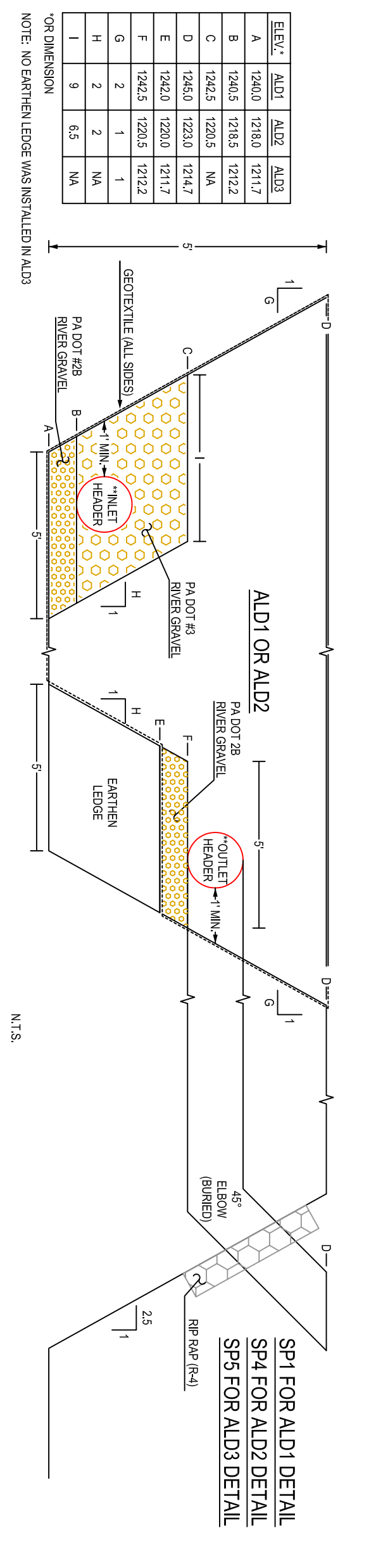
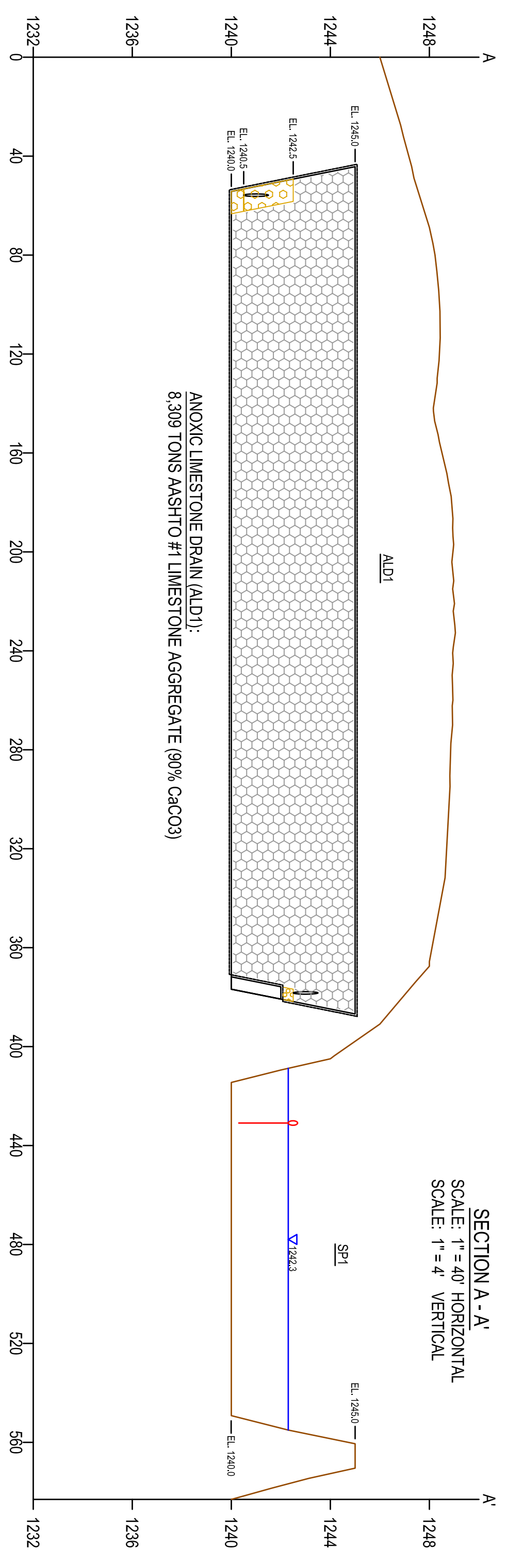
VENANGO TWP., BUTLER CO., PA

Scale: 1" = 60'

December 2014

Biomost, Inc., Cranberry Township, Pennsylvania

Mining and Reclamation Services

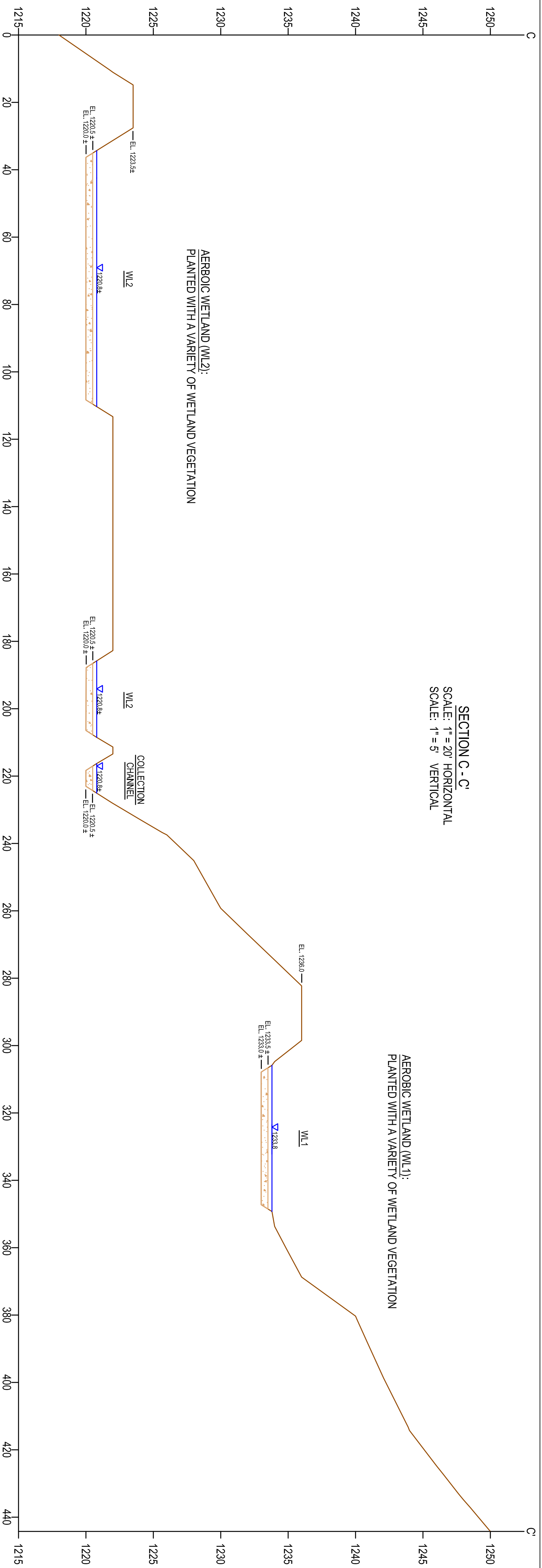


**LEGEND**

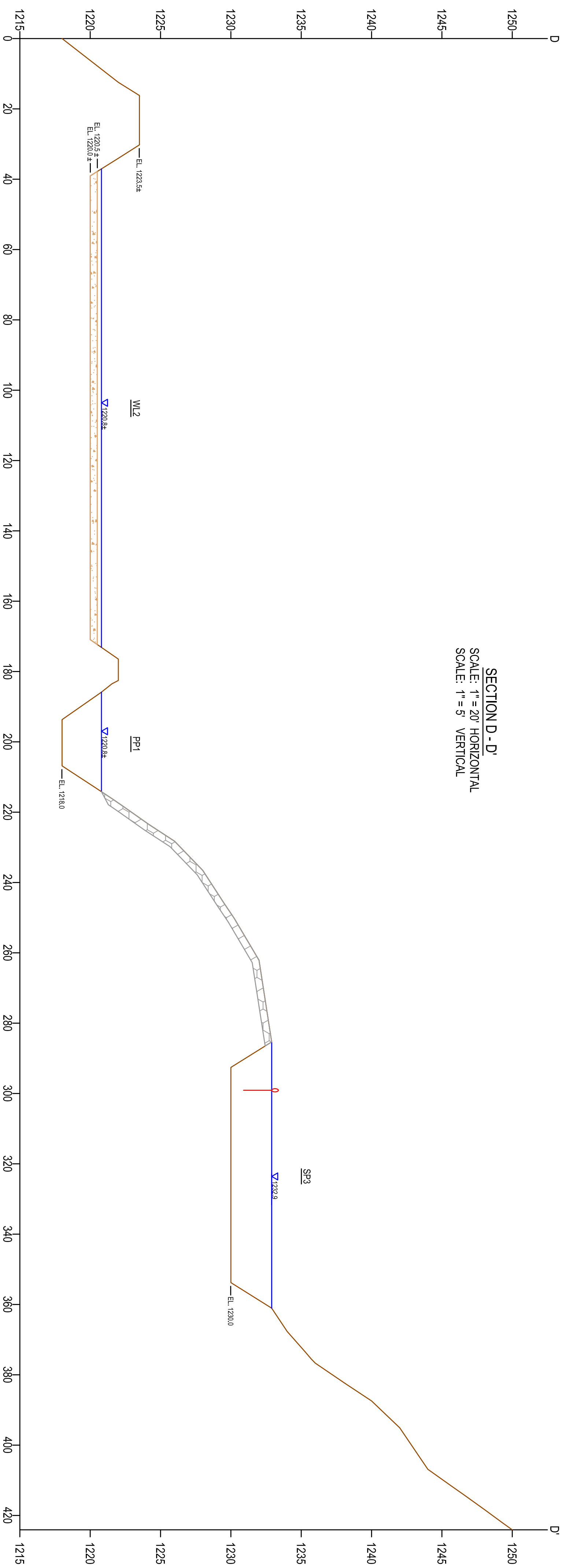
- 6" SOLID SDR 35 PVC PIPE
- 6" PERFORATED SDR 35 PVC PIPE
- 12" SOLID SDR 35 PVC PIPE
- 12" PERFORATED SDR 35 PVC PIPE
- 15" SOLID SDR 35 PVC PIPE
- 15" PERFORATED SDR 35 PVC PIPE
- GROUND SURFACE
- GEOTEXTILE
- WATER
- LIMESTONE (#1)
- RIP RAP (R-4)
- NON-CALCAREOUS RIVER GRAVEL
- BAFFLE CURTAIN (DIRECTIONAL)

**Notes:**  
 ALD1 and ALD2 elevations based on Erics Bridge Restoration Area Design Plan by Brookrest Inc. ALD1 and ALD2 staked out in the field by EDM Survey by Earthlink, Inc.  
 Bottom elevation and water elevation of wetlands vary due to microtopographical relief.

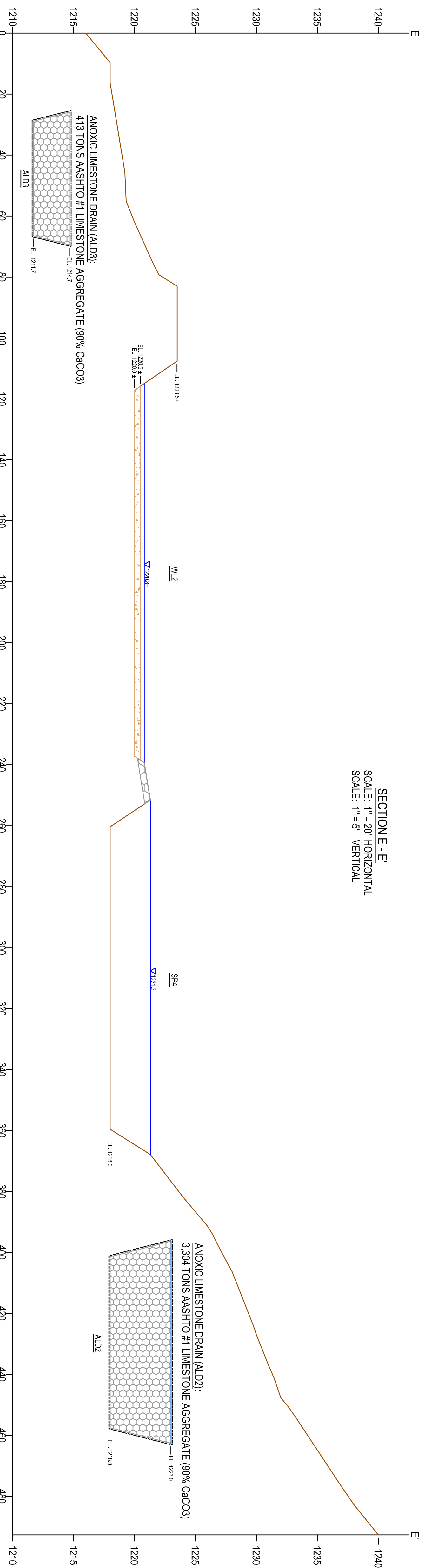
**SECTION C - C'**  
SCALE: 1" = 20' HORIZONTAL  
SCALE: 1" = 5' VERTICAL



**SECTION D - D'**  
SCALE: 1" = 20' HORIZONTAL  
SCALE: 1" = 5' VERTICAL



**SECTION E - E'**  
SCALE: 1" = 20' HORIZONTAL  
SCALE: 1" = 5' VERTICAL



**LEGEND**

	GROUND SURFACE
	GEOTEXTILE
	WATER
	LIMESTONE (AASHTO #1)
	RIP RAP (R-4)
	WETLAND SUBSTRATE
	BAFFLE CURTAIN (DIRECTIONAL)

**Notes:**  
ALD1 and ALD2 elevations based on Erico Bridge Restoration Area Design Plan  
Elevation, Inc. ALD1 and ALD2 staked out in the field by EDM Survey by  
Elevation, Inc. ALD3 staked out in the field by EDM Survey by  
Elevation, Inc. ALD3 elevations based on laser level measurements conducted by Bolker, Inc.  
Bottom elevation and water elevation of wetlands vary due to microtopographical  
relief.

**SHEET 3 OF 3 - CROSS-SECTIONS**

**SLEEPY ROCK  
WATERSHED COALITION  
AS-BUILT DRAWING  
ERICO BRIDGE RESTORATION AREA  
STREAM RESTORATION INCORPORATED**  
SEATON CREEK SUBWATERSHED  
VENANGO TWP., BUTLER CO., PA  
Scale: As Shown December 2004  
**Bolker, Inc., Canberry Township, Pennsylvania**  
Mud and Reclamation Services