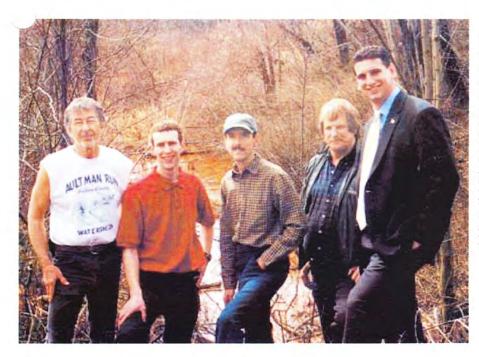
### Pittsburgh LME.com

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Posing in front of a mine drainage site along Route 286 are: John Somonick, founding member of AWARE; Shaun Buster, biologist with Stream Restoration Inc.; Malcolm Crittenden, Growing Greener program administrator; Fred Johnson, reclamation manager for AmeriKohl Mining; and State Rep. Dave Reed.

Photo Box

### Pittsburgh LIVE .com

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Iron pollution turns water orange before it flows into Aultman run.

Photo Box



### Watershed will scrub away Aultman Run iron

By Joyce Shannon TRIBUNE-REVIEW Sunday, March 30, 2003

Some have heard stories about children of yesteryear who splashed and played in Aultman's Run in Indiana County, remaining stained rust-orange for days afterward.

Not many people swim or play in the Center Township iron-choked stream anymore; those stories evoke the past. And the Aultman's Run Watershed Association for Restoring the Environment is hoping the stream's orange color will also become a memory.

A section of the stream, along Route 286, will soon be restored after AWARE volunteers and others build a wetland there. The workhorses behind the project also include Stream Restoration Inc., of Cranberry Township, and Amerikohl Mining Inc.

A \$93,000 Growing Greener grant is funding most of the project, with an additional \$7,000 from the Western Pennsylvania V rshed Protection Program.

Most of the iron will settle into a retention area, which will be dug out around the area where water rises up from an abandoned mine. After that, native plants like cattails, soft rush, silky dogwood and three-way sedge will filter out the rest so the water becomes clear downstream.

Transplanting native animals and insects isn't planned, but project manager Shaun Busler, a biologist with Stream Restoration, doesn't doubt the new habitat will soon be honed in by those species that live in wetlands. "It's kind of like one of those things where if you build it, they will come," Busler said.

The plants that will be installed by the groups will remove the 11,000 pounds of iron that enter the stream each year. Healthy streams are usually free of iron.

The property belongs to Amerikohl owner John Stilley. They're helping to remedy a problem unknowingly caused by their counterparts long ago.

When mines are abandoned, often they become filled with water. Old mines were typically designed to drain upward to the surface.

The practice of building wetlands, or a passive treatment system, to filter streams began about 20 years ago, Busler said. It's a far more efficient and inexpensive way to clean streams than an active treatment system, which involves adding chemicals to the water to remedy the problem.

"The value of a wetland for mine treatment is its low cost and maintenance," said AWARE President Brian Okey. Wetlands can also help reduce flooding because they slow the flow of water.







Watershed will scrub away Aultman Run iron - PittsburghLIVE.com

The stream is free of aluminum, which is toxic to wildlife.

"Iron is not really that toxic," Okey said. "It's kind of a physical nuisance rather than a toxic nuisance."

However, iron that gets into fishes' gills can choke them, which is the reason why Aultman's Run doesn't have that many fish. Some watershed members are hoping the stream can be restocked downstream after it gets cleaned up, Okey said.

Okey, a geography professor at Indiana University of Pennsylvania, is helping to coordinate volunteers for the project. He also helps with the annual cleanup in the watershed, to be held April 12. Those interested in volunteering can call 724-463-9636.

Okey sometimes brings students in his Freshwater Resources class to the site to see an example of how abandoned mines affect watersheds.

"It's a perfect laboratory," he said.

Joyce Shannon can be reached at jshannon@tribweb.com or (724) 463-8742.



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Brian Okey, president of the Aultman Watershed Association, looks at the site of proposed watershed. Ken Brooks/Tribune-Review

Photo Box



### "SR286 Passive Treatment System Constructed"

By Shaun Busler Stream Restoration Inc.



April 2, 2004

(Aultman, PA) - Through a public-private partnership effort, the first passive treatment system in the Aultmans Run Watershed has been constructed and is successfully treating an alkaline, iron-bearing mine discharge known as the SR 286 Discharge. For the first time in over 75 years, this abandoned mine discharge will no longer flow untreated into Aultmans Run.

To tackle this discharge, the Aultman Watershed Association for Restoring the Environment partnered with Stream Restoration Incorporated, a non-profit organization experienced in the implementation of mine reclamation projects. Together with a mining company and environmental firms, the team received a Growing Greener grant to design, permit, and install a passive treatment system.

The SR 286 Discharge emanates from a large underground mine outside the town of Aultman, PA. Early PENNDOT design plans from the 1930's indicate that the discharge was moved to its current location with the construction of State Route 286. cording to this plan, an 18" vitreous clay pipe conveys the water beneath State Route 286 from the mine into a trench that into Aultmans Run. Due to the impact of the discharge to Aultmans Run and the high visibility along heavily-traveled State Route 286, this discharge was chosen to be the first major restoration project.

Monitoring supplied by the Stream Team, AWARE, and BioMost, Inc., indicates that the discharge is net alkaline (67mg/L) with

a moderate iron concentration (17 mg/L) and a maximum flow of 200 gpm. During low-flow conditions, the discharge is the major source of water to the stream. Due to this pollution, aquatic organisms within Aultmans Run have been impacted. ^:Itmans Run is classified as a trout-stocked fishery. One of the main goals of AWARE is to improve the health of Aultmans n to become a viable fishery throughout its entire length.

Macroinvertebrates are important indicators of the health of streams. In a study conducted by the PA Department of Environmental Protection, Bureau of Mining and Reclamation in the summer of 2001, macroinvertebrates with low tolerance to pollution were found upstream of the discharge, while none were found downstream. Every year, over 11,000 pounds of iron enter Aultmans Run suffocating macroinvertebrates and destroying their habitat. As a result of the iron deposition, this primary food source for trout is no longer available.

Based on the available monitoring data and the accepted principles in passive treatment technology, a system consisting of a 730 SF forebay and a 25,000 SF aerobic wetland was designed to treat the discharge for an estimated 25 years. Construction began by Amerikohl Mining, Inc. on December 17, 2003 and was completed within one month.

The forebay collects the discharge and equally distributes the flow to the wetland. The wetland has a large surface area to maximize the oxidation, precipitation, and accumulation of iron. In order to provide a high wetland plant diversity to increase habitat value, the wetland has small elevation variations, known as microtopographical relief. The innovative design also incorporates a 4,000-SF existing, degraded wetland to provide additional treatment area.

Samples taken on April 2, 2004 indicate that the system is successfully removing about 10 mg/L of iron with a flow of over 175 gpm, nearly the maximum flow ever seen at the site! Below is a table of field analysis of the results:

Sampling Point	Lab pH	Alkalinity	Acidity	D. Fe	D. Mn	D. Al
Raw	6.7	79	-55	14	<1	<1
Constructed WL Effluent	7.3	71	-57	6	<1	<1
sisting WL Effluent	7.3	77	-65	4	<1	<1

Note: Lab pH measure in S.U.; alkalinity, acidity, D. Fe, D. Mn, and D. Al measured in mg/L; D- Dissolved

Not only is this wetland expected to remove 5.5 tons of iron from Aultmans Run every year, it also provides beneficial wildlife habitat. Later this spring, the wetland will be planted with a variety of native species with the help of Indiana University of Pennsylvania students and the local community. These plants will encourage oxidation and help filter the iron particulates from the water.

This SR286 Passive Treatment System has been a valuable project for the community and will be the model for future restoration efforts. If you would like to be involved in this project or become a member of AWARE, please contact Brian Okey at (724) 357-3766.

For General Information or to Contact the Webmaster: sri@streamrestorationinc.org

Website Developed and Maintained by Stream Restoration Incorporated

### THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

<u>THIS MONTH'S MEETING:</u> Due to the symposium there will be no meeting this month. We hope to see you at the symposium!!! 3/13/03 Meeting Attendance: D. Johnson, C. Cooper, V. Kefeli, C. Denholm, W. Taylor, S. Busler, T. Danehy, M. Dunn, K. Lanich, J. Belgredan, S. Smith, C. Treter, and D. Treter

### SRWC 8th Annual Symposium This Month April 10, 11, and 13!!

### Thursday April 10th at Grove City College 6 pm to 9 pm Investigating Watershed Issues: Supporting Student Research Through Public/Private Partnerships

The following are the students, titles, and topics that will be presented:

**Suman Basyal** (Slippery Rock University, SRU), "Poplar (*Populus nigra L.*) Cuttings in a Soil Model System." (Plant Propagation)

**Todd Fleckenstein, John Greene, Kevin Hasbrouck,** and **Gwen Kennedy** (Westminster College), "Phytoremediation: Can Duckweed and Parrot's Feather Effectively Reduce Concentrations of Aluminum and Manganese from Acid Mine Drainage to EPA Standards for Surface Water?" (Water Research)

**Ryoko Funada** (SRÚ), "Quantitative Determination of Hydroxy-coumarin (Umbelliferone) by a Combined Method of Chromatography and Color Change." (Soil Science)

**Sarah Grabowski** (Grove City College, GCC), "The Impact of Acid Mine Drainage on the Seaton Creek Watershed." (Water Research)

**Michele Gauger** and **Dr. Steven Doherty** (SRU), "Forest Stewardship Strategy and Assessment for Slippery Rock University Forest Properties." (Forest Stewardship)

Merina Manandhar (SRU), "Qualitative Reactions for the Determination of Phenolics in Willow and Poplar Composted Leaves." (Soil Science)

**Molly Martinchek** and **Joselyn Hohenwarter** (SRU), "Annual Report on the Vertical Flow Treatment System at the Jennings Environmental Education Center." (AMD)

**Nicholas Morgan** (GCC), "Macroinvertebrate Survey of Limestone Treated Streams in the Slippery Rock Watershed." (Ecosystem Recovery)

Mahesh Pun (SRU), "Willow (Salix purpurea L.) Propagation in the Fabricated Soil." (Plant Propagation)
Shawn Rummel (GCC), "The Relationship Between Vegetative Characteristics and Grassland Bird Communities Inhabiting an Old Field Community and Reclaimed Surface Mine in Clarion Co., Northwest PA." (Wildlife Biology)

### Also Join Us for the Following Programs!!

### Friday April 11th at Jennings Environmental Education Center 8:30 am to 3:30 pm 8th Annual Slippery Rock Watershed Coalition Symposium

The keynote speaker for this year is **Eric Thumma** Deputy Secretary for the PA DEP. This year's program will include a presentation and a "hands on" simulation to help those in attendance understand what is involved in designing and building a passive treatment system. A field tour of some of the SRWC's passive systems will round out the day (appropriate field attire recommended). Lunch is provided. Pre-registration is preferred but not required. Those who pre-register will receive a **free t-shirt** to commemorate the event. (See below for registration information.)

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

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. This unique event will be a wonderful conclusion to this year's symposium, please be sure to join us!!!

### **For More Information:**

If you have questions about any of the events listed above or would like to pre-register for April 11th, please call Deanna Treter at 724-776-0161 or e-mail sri@salsgiver.com. Hope to see you there!!!



SRWC Participants Posing with the Dominion Community Impact Award!
Front Row: Tim Danehy, Kim Lanich, Deanna Treter, Margaret Dunn, and Janice Belgredan Back Row: Dave Johnson, Will Taylor, Cliff Denholm, Chris Treter, Shaun Busler, Valentine Kefeli, Steve Smith, and Charlie Cooper

### Dominion Community Impact Award Luncheon at the Renaissance Hotel in Pittsburgh

On Wednesday March 12th, Stream Restoration Inc. employees headed downtown for a wonderful luncheon to receive the **Dominion Community Impact Award for 2002**. Stream Restoration was honored for its work in the Slippery Rock Creek Watershed, highlighting specifically the Goff Station Restoration Area Project. The award money will be used for education and outreach purposes. Those who attended were: **Margaret Dunn, Tim Danehy, Shaun Busler, Cliff Denholm,** and **Deanna Treter**. Congratulations to the other award winners: **The Progress Fund, Hosanna House, Homeless Children's Education Fund, Connect, Inc., Nazareth Housing Services, Adams Memorial Library,** and **Conservation Consultants, Inc.** Everyone had a wonderful time getting to know the other award winners and the Dominion employees. There was delicious food and beautiful centerpieces comprised of cookie-flower bouquets with each award winners name on a cookie as well. In the photo above you can see SRWC participants posing with the award and great cookies, which we enjoyed during our monthly meeting. Thank you Dominion for the luncheon and award! All the hard work Dominion does to recognize and promote community programs is greatly appreciated!!!!



### We Picked Up Trash Along I-79 Friday March 28th

Once again we were out picking up trash along our stretch of I-79. We met at the "park 'n ride" off of exit 99 and had our picnic lunch. The "treasures" that accumulated during the long hard winter were collected by a dedicated bunch of real garbage go-getters! No snow that day but plenty of trash. It was very windy and those who helped deserve a round of applause: Margaret Dunn, Tim Danehy, Shaun Busler, Cliff Denholm, Charlie Cooper and Deanna Treter. Thank you to all those who helped! Reserve June 27th on your calendar for the next trash pick up day!

### **Addition to Last Months Catalyst**

We are deeply sorry for failing to include the names of all the people in the photo to the right. **Jim Mondok** is the Mercer County Conservation District Manager and he is on the far left of the picture. **John Schombert** is the Executive Director of the 3 Rivers Wet Weather Demonstration Program (www.3riverswetweather.org) he is on the far right of the picture. Both are leaders in environmental protection and conservation and deserving of more recognition than we alone can give!!!



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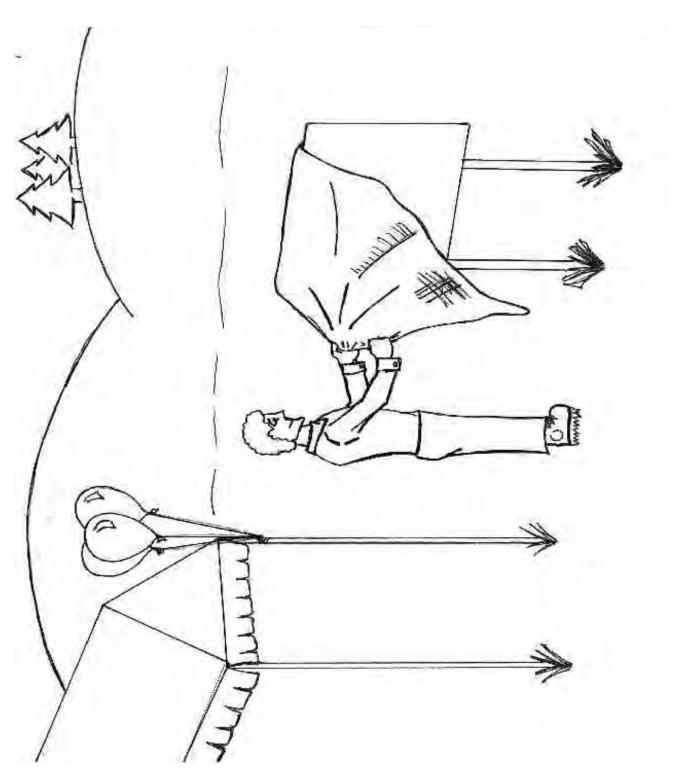
### The KIDS Catalyst SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY



### Color your own groundbreaking!!!

On the back of this months catalyst there is an article about a groundbreaking with a sign unveiling. A groundbreaking is when people get together to start the work on a project. Color the picture below for your own groundbreaking!! When you are done send it back to us for a free gift certificate!

The first person to send back the word search from last month was Katrina Bonetti! Thanks Katrina!



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Thanks to The William & Frances Aloe Charitable Foundation, Environmentally Innovative Solutions, LLC, Dominion, 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, <a href="mailto:sri@salsgiver.com">sri@salsgiver.com</a>, <a href="mailto:www.srwc.org">www.srwc.org</a>. April Distribution: 1000 copies

### Highlighting Other Partnership Efforts (HOPE!)

### <u>Partnering with Aultman Watershed Association</u> <u>for Restoring the Environment (AWARE)</u>

On Friday March 21st, residents, local and state officials, project partners and AWARE members came together for the groundbreaking of the Aultmans Run Restoration Area. The project will consist of a 1/2-acre wetland that will treat an iron-laden discharge from a gravity drain from an old, abandoned, underground coal mine. The wetland will

be planted with native vegetation to promote wildlife habitat. [With the completion of the proposed work we expect to prevent approximately 11,000 lbs/year of iron from entering Aultmans Run helping to restore this Trout Stocked Fishery!] This project will be the first discharge treated in this watershed and is very visible along State Route 286. Many people attended the groundbreaking, which ended just as heavy rains were moving in! Here is a list of those who were in attendance for the event: Brian Okey AWARE and IUP; Bill Shane and Bernie Smith, Commissioners of Indiana County; PA State Rep. Dave Reed; Joe Allison, Malcolm Crittenden, Scott Alexander, and Jeff Fliss from the PA DEP; Lee Roy Vatter of the Crooked Creek Watershed Assoc.: Fred Johnson. Amerikohl Mining; John Somonick, Judith Aker,



Carol Cummins, William Frain Sr., Donald Burkett, Ann Burtick, Paul Calvetti, Carl Trout, Ken Marshall, Beth Marshall, and Bill Altimus of the Aultman Watershed Association for Restoring the Environment (AWARE); Kim Lanich and Dave Jessloski, Aquascape; Margaret Dunn, Tim Danehy, Shaun Busler, Cliff Denholm, and Deanna Treter, Stream Restoration Inc.; Payton Harvey and Angela Walker, area residents; as well as Rebecca Coleman. The photo shows everyone gathered as we unveil the sign that will be placed at the site. Thank you to

We are all in this together! The groups involved in this endeavor: Stilley (landowner); Aultman Watershed Association for Restoring the Environment (AWARE); PA DEP-Cambria DMO; PA DEP-BMR; Amerikohl Mining Inc.; Aquascape; BioMost, Inc.; Stream Restoration Inc.; Western Pennsylvania Watershed Protection Program; Volunteers.

### THE CATALYST

### SLIPPERY ROCK WATERSHED COALITION MONTHLY ACTIVITIES UPDATE

<u>THIS MONTH'S MEETING:</u> Thursday August 12 at 7pm Jennings Environmental Education Center, pizza and pop will be provided. 7/8/04 Meeting Attendance: S. Busler, C. Cooper, T. Danehy, C. Denholm, M. Dunn, D. Johnson, V. Kefeli

### BC19/19B: A New Beginning for Blacks Creek

For nearly a century Blacks Creek has flowed red-orange with iron from the many sites where coal was extracted. According to a Total Maximum Daily Load (TMDL) Report for the Blacks Creek Watershed by the PA Department of Environmental Protection (Knox), all impairments related to high levels of metals were caused by abandoned mine drainage. A total of 7 discharges were documented to contribute to these elevated levels of metals.

In June 2004, the Slippery Rock Watershed Coalition began construction of its newest passive treatment system and is the first to be built in the 7-square mile Blacks Creek Watershed. This system will consist of an aerobic wetland that will treat two discharges. The alkaline, iron discharges, known as BC19 and BC19B, flow from abandoned oil wells creating large iron plumes in Blacks Creek. The wetland will help oxidize and settle the iron solids before entering Blacks Creek.

Thanks to John Stoops, Mike Colossimo, and Wayne Fuchs of Quality Aggregates, Inc. for all their hard work in constructing the wetland in less than ideal site conditions! To date, the site has been lowered to the approximate bottom elevation of the wetland basin and the outside berm next to Blacks Creek is nearly complete. This project would not be possible without the support of PA DEP's Growing Greener Program, Butler County Commissioners, Western Pennsylvania Watershed Program, and in-kind contributions from project partners.



### Join Us on the 3rd Annual Riverboat Cruise!!!

Next month is the **3rd Annual Ohio Watershed Riverboat Cruise**, and we want **you** to be a part of the fun! Please join us for a **free** voyage on the Ohio River **September 16** aboard the Gateway Clipper Fleet's magnificent Majestic. Over 425 participated in this great event last fall and we know this year's cruise will be just as fun! Join watershed groups, professionals, local and state government officials, private business, industry, educators, and all those interested in learning more about the Ohio River Watershed. Pre-cruise festivities will begin at 11:00 AM, and boarding starts at 12:30 PM at Station Square in Pittsburgh. We will sail the Ohio from 1:00 PM until 4:00 PM. A guided narration including points of interest that we pass along the Ohio, a trip through a lock and dam, interesting presentations, networking opportunities, poster displays, free snacks, and great door prizes await you! Topics to be presented and discussed include the history of Neville Island, river ecology, the workings of a lock and dam, water wells, sediment control, the new water resources law, and more! Hopefully we can duplicate the perfect weather we enjoyed last year! **UPDATE!!! A producer of PBS documentaries has just asked if he could film some of the festivities for his latest project!!!** 

If your group would like to bring a poster display, limited space is available at no cost on a first-come first-serve basis. For additional information or to register for the cruise, visit <a href="www.streamrestorationinc.org/">www.streamrestorationinc.org/</a> <a href="rsvp">rsvp</a> or call Margaret Dunn at 724-776-0161 or Maggie Hall at 412-442-4000. We hope to see you there!!

PHOTO OF THE MONTH



Have you ever wondered how The Catalyst gets done? Here is the mastermind behind your monthly update newsletter on the happenings of the Slippery Rock Watershed Coalition! Look for next month's special feature: an article on Gerber rice cereal vs. sweet potatoes! (Pictured here is Isaac Busler, 7 months old, son of the SRWC's Melissa Busler, who helps Isaac just a little with The Catalyst).

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### It Was a 'Diverse' Workshop at Jennings

The diversity of life on this planet is astounding and vitally important to the health of the environment. Yet, biodiversity at all levels—genetic, species, and ecosystem—is a current issue that few understand. On June 23 at Jennings Environmental Education Center, twenty-three local educators had the opportunity to explore Pennsylvania's biodiversity by participating in hands-on activities that investigated the concepts of biodiversity and examined local and global issues related to biodiversity. Theresa Alberici, Pennsylvania Game Commission, and Terri Kromel, Pennsylvania Bureau of State Parks, unveiled a brand new teacher resource entitled Window on the Wild: Biodiversity Basics, A Pennsylvania Supplement. This informative activity guide is designed to be a local supplement to the World Wildlife Fund's national curriculum. Teachers received both publications. Excited teachers were amazed at the wealth of information found in this valuable new resource and everyone had fun participating in the creative, educational, and entertaining activities. "It's in the Genes", "Creature Connection", "Pennsylvania Biodiversity I.Q." and "The Case of the Endangered Species" are the titles of just a few activities the teachers got to experience. A tour of the unique Jennings prairie and an introduction to the resident endangered species, the Massasauga rattlesnake, were also provided. This workshop will be offered throughout the state this summer. For more information about how to attend, please contact Theresa Alberici at <a href="mailto:teachers">talberici@state.pa.us</a>.

### **Diverse Experiences for an Intern**



This week a new intern from **Quality Aggregates Inc.** has graced us with her presence. Her name is **Maggie Tilson** and she travels all the way from sunny and beautiful Neville Island to learn more about stream restoration. She will be helping out in the office and observing some field work. While not interning, Maggie attends the University of North Carolina-Chapel Hill, where she is currently in her Sophomore year studying biology. Although her passion is mainly medicine, Maggie attended a Duke summer camp at which she learned to love ecology and geology as well. For the remainder of the summer, Maggie will continue to intern for Quality Aggregates and Aquascape. So far this summer, she has helped plant a wetland and maintain the nursery for Aquascape. These past few months have been a tremendous learning experience for Maggie; participating in everything from the business aspect of a company to the manual labor involved in making a company a success, she now has skills and memories that will come in handy in the future.



### The KIDS Catalyst

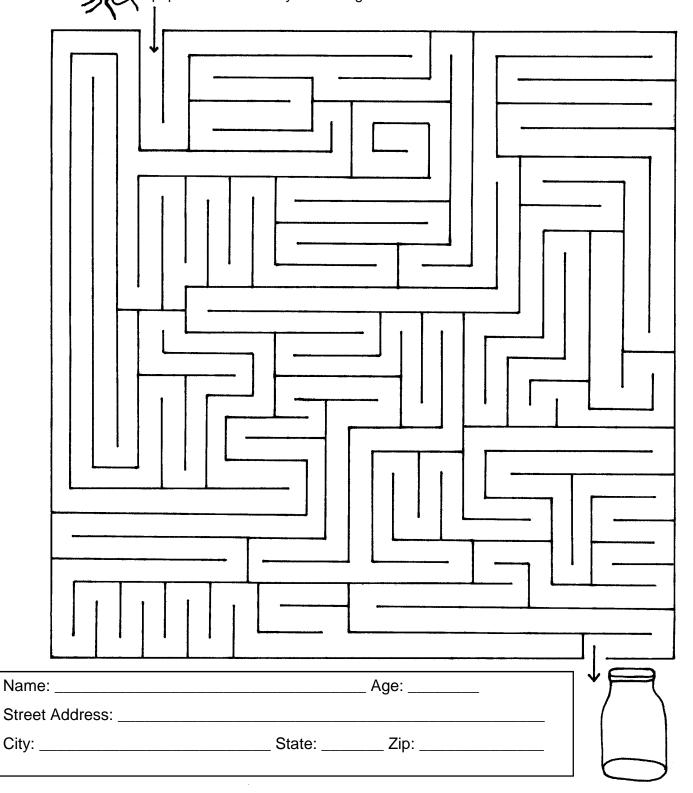
### SLIPPERY ROCK WATERSHED COALITION FUN ACTIVITY

### Mighty Maze



Have you noticed lots of fireflies at night this summer? Did you know the firefly is the official state insect of PA? "Bioluminescence" is the scientific word that describes how these insects produce light to glow—a chemical reaction is taking place. Fireflies give off light to warn predators to stay away and also to attract other fireflies of the op-

posite sex by flashing certain patterns of light like a signal. It's fun to try to catch fireflies and watch them glow. In the maze below, see if you can get the firefly into the jar! Send us your paper and we'll mail you a free gift certificate! Good luck!



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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, <a href="mailto:sri@streamrestorationinc.org">sri@streamrestorationinc.org</a>, <a href="mailto:www.srwc.org">www.srwc.org</a>. August Distribution: 1219 copies

### Highlighting Other Partnership Efforts (HOPE!)

### **Wetland Planting in the Aultmans Run Watershed**



On the cool, overcast Saturday of July 17, Bob Beran and Maggie Allio of Beran Environmental Services and Shaun Busler of Stream Restoration Incorporated met with about a half dozen volunteers at the SR286 Passive Treatment System in Center Township, Indiana County, to plant an aerobic wetland. The volunteers, from the Aultman Watershed Association for Restoring the Environment (AWARE), diligently worked for four hours planting hundreds of plants and reconfiguring a portion of the wetland. Thanks to Brian Okey, Michael Poage, Carol Cummins, Carl Trout, and Harry Charles of AWARE for making a difference in their watershed! Only native species were planted including: smart weed, three-way sedge, spatterdock, and burreed. The work on the 17th helped to quickly es-

tablish plant growth, which helps to treat the water that has been severely degraded due to an abandoned mine. In addition, the volunteers added new species of plants to those that had naturally established themselves within the wetland to create diversity.

The area was mined extensively for coal by R & P in the early 1900s. The discharge, a gravity drain from an abandoned underground mine, is conveyed by a clay pipe from the mine under S.R. 286. The discharge was then conveyed by a ditch to Aultman Run. With numerous partners, the ditch was expanded into a large aerobic wetland from mid-December 2003 through January 2004. Data gathered from the last sampling event, June 10, indicated the wetland is indeed performing as hoped. The raw mine water contained 13.8 mg/L dissolved iron, while the treated water contained only 1.6 mg/L dissolved iron.

It is encouraging to see the beautiful wetland emerging at this very fertile site! Thank you AWARE volunteers for your help in creating a habitat sure to be utilized by many types of wildlife! **Matt Beran**, age 9, also attended the event and verified that wildlife was indeed using the wetland already. He caught one of the numerous toads hopping around the vegetation. If you are interested in joining AWARE or volunteering with future projects such as this one, please contact Brian Okey of AWARE at (724) 357-3766 or Shaun Busler of Stream Restoration Inc. at (724) 776-0161.

### The Village of Aultman

By:

Donald E. Burkett

### **The Village of Aultman**

By: Donald E. Burkett (A resident of Aultman since 1940) Taken from recollections of older residents of the village.

Aultman is a small ex-coal mining town located approximately 7 miles south and east of Indiana, Pa. and approximately one half mile north of Traffic Route 286. Construction of this town was began in the year 1912 on a 187 acre tract of land formerly owned by Elizabeth Rhea and was completed in the early 1920's. Aultman was named by the local farmers who lived in the area for a small stream called Aultman's Run. The village, when completed, consisted of one hundred seven wooden frame houses, three brick homes, a mine shop, a mine office, a community hall, a doctor's office and a company store. The brick homes were for the superintendent and foreman and the wooden homes were to house the miners and their families. These homes were of two sizes, either a four room small house or a larger seven-room home. The Hyde Murphy Construction Company did construction of these homes. There were no double houses in Aultman. It is the only mining town in the area without a double home. Aultman has one other feature not seen in many coal mining towns. That feature being a suburb. This suburb is widely known as the Ten Commandments as there are 10 houses along route 286. We local people refer to this as No. 5 having reference to the No. 5 mine Shaft in that area.

The company store was the source of our being while I was growing up in Aultman. They sold anything and everything from foodstuffs and meats to furniture and even boats motors and trailers. As most of you already know everything was bought on books and when payday came around they just took the money owed them and gave you whatever was left from your wages. Most people know that not much was left. Most of the men on payday received a statement with what they called "snakes" on them meaning that they received no money. At some point it became a law that they had to give you at least five dollars for wages. People have poked fun at company stores, but if you were brought up during that period, it was not all-bad. The quality of the products they sold was good and they did have the best meat that money could buy at that time. The town's post office was housed in the company store. This made the company store a community meeting place where everyone met and had a good time. The store shut its doors in 1957and the post office was moved into a private home. Jennie Bloomquist from where the Post office operated owned the first home. In remained there until 1960. In 1960, Janet Fairbanks became the postmistress and the post office remained in her home until 1988. When she retired the postal department erected the post mounted boxes along the main road where everyone now walks to receive the mail.

The mines were at their peak production in the year of 1928 with 2000 tons mined daily when the mines were working at full capacity. It was shortly after this that the mines hit a fault and was closed although the shafts are still visible today if you know where to look for them. At its peak there were five shafts. The BR&P Railroad transported the coal from the mines to its final destination. This railroad also brought goods to the company store. After the closing of the Aultman mines, most of the miners were transferred to the McIntire mines and this same railway then was used to transport the miners to their workplace. I have still to find out what year they quit running the railroad to Aultman. Mr. Lanich of Coal Run Pennsylvania purchased his first buses and took over the transporting of miners to McIntire and from this the Lanich Buslines came into being. To this day they are still in operation in Jacksonville, Pa.

The year of 1921 is an important year in the history of our community. It was in this year that the original water system was put into operation. Prior to this time, a gas-operated pump was located in the front of house no. 363; the concrete slab is still there. This is where all the people drew their water. The new well was drilled just east of the mine office and a 22,500-gallon wooden tank was constructed on the hill near where the ball diamond would be constructed at a later date. The R&P Coal Company provided a person to maintain this water system. His name was G.W Kinter whom also took care of the repairs to the houses. This water was the best in the area until after the town was sold and some mine water infiltrated through the deteriorating pipes. A new Water System was installed in Aultman by I.C.M.S.A. This was the first water system that they were responsible for construction and operating.

Around the year 1946, the ball diamond was constructed near the old water tank. Aultman, as did most other coal mining towns, had a company sponsored ball team. They were called the Aultman Terriers. They were not the best of the teams but they all had fun playing the game. The ball field is now just a memory of the past.

In the year 1947, the R&P Coal Company gave the miners living in the homes the opportunity to purchase these homes. The houses were sold for the price of 700 dollars for a small house and eleven hundred dollars for the larger houses. The remaining homes that were not bought by the renters were sold to Kovalchick Salvage Company in 1949.

Aultman had it's own elementary school like all other coal mining towns. It housed all eight grades for primary education and then it was off to Homer City High School then Laura Lamar high school and now Homer Center High School. The original school burned down and the new school was constructed on its present site in 1932. Unfortunately that school was closed for cost cutting reasons in 1960. To this day I cannot understand why at that time they would close a perfectly good brick school building and send our children to some wooden frame schools, such as Rissinger School and Lucerne School. The Aultman School building now houses TiJohn Industries

Electricity as we know it today was brought into Aultman in 1950. Prior to that time, the electricity was provided to the town at no cost by the Coal Company. It was 25 cycle and all the lights glowed yellow and all motors had to be changed to accommodate the 25 cycle and then changed back when 60-cycle electricity was introduced. The Christmas of 1950 was when I received my Lionel Electric Train, which I still have in my possession today.

The Fire Company was started in the 1960's after some serious fires had destroyed some homes in the town. It is still in existence today. The irony is that the Fire Company had to bounce back from of all things a fire that completely destroyed all of the building and equipment.

T. W. Phillips Gas and Oil Company of Butler Pennsylvania brought natural gas to our community in 1967. Prior to this, the houses were heated by coal. At this juncture, coal was becoming increasingly scarce, so an alternative-heating source had to be found. Few homes at this time were being heated with oil and even fewer were using L.P. gas.

In the early 1970's a group of ladies from the town of Aultman formed a group calling themselves "Parents for Playground". Through the efforts of these Ladies the town of Aultman opened it's own Playground. The Aultman Volunteer Fire Association donated the land on which it was built. This was the first playground in the Homer Center area and through the effort of these ladies a new group was spurred. This new organization is called the Homer Center Parks and Recreation Department.

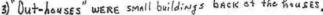
Aultman was the first coal mining community to have it's own sewage system . This pilot project was started the summer of 1979 and was in service in December of that year. This plant was initiated with a HUD grant of 114,000 dollars obtained by the county commissioners. The tap in fee for Aultman was set at 150 dollars . Compare this to the fee that you in the Homer City area paid this year.



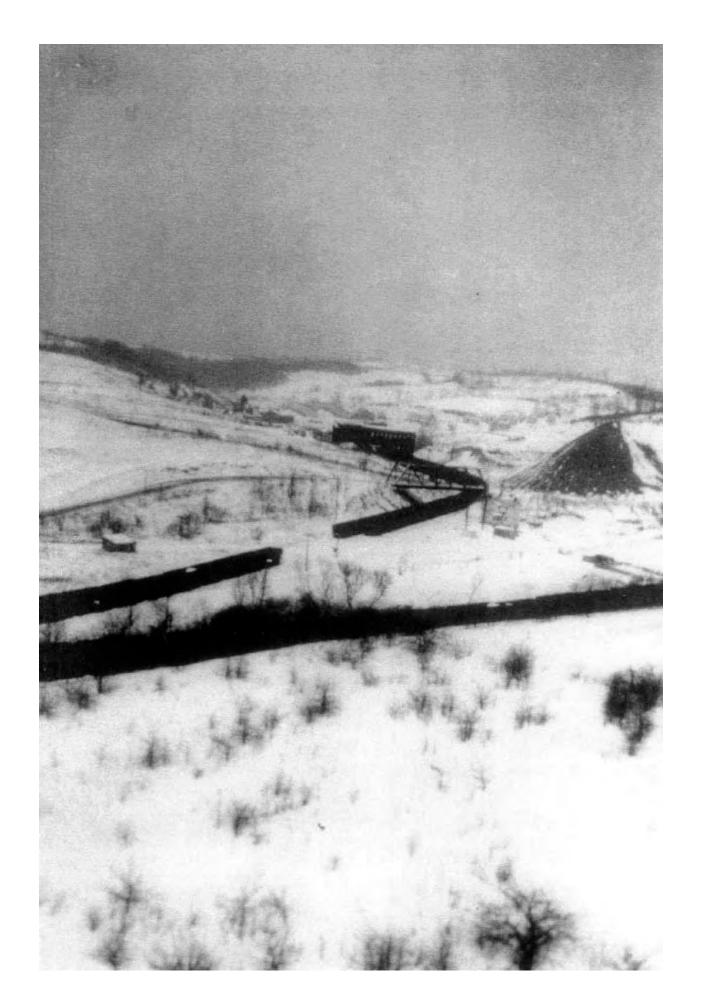
1 50 homes built in 1912 - Don left, NEAR middle between top and bottom, ARE some of houses going up;

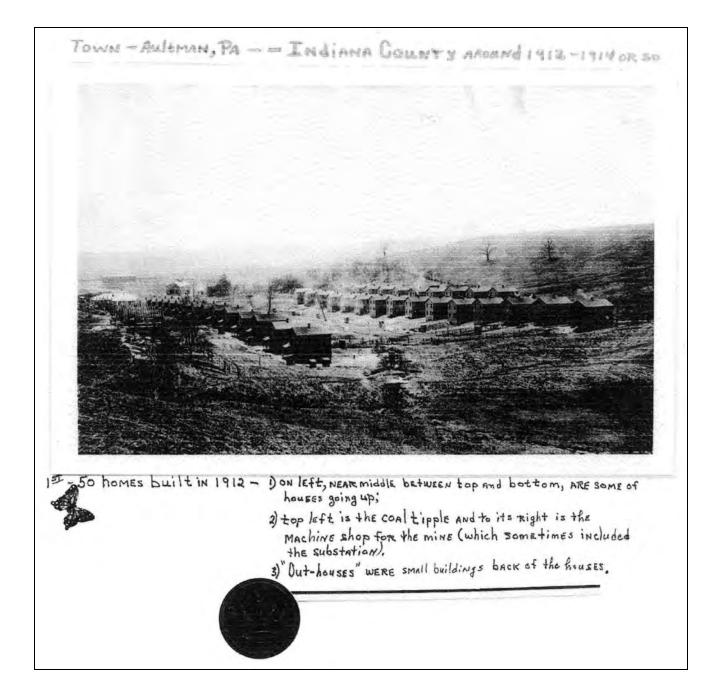
2) top left is the coal tipple and to its right is the Machine shop for the mine (which sometimes included the substation).

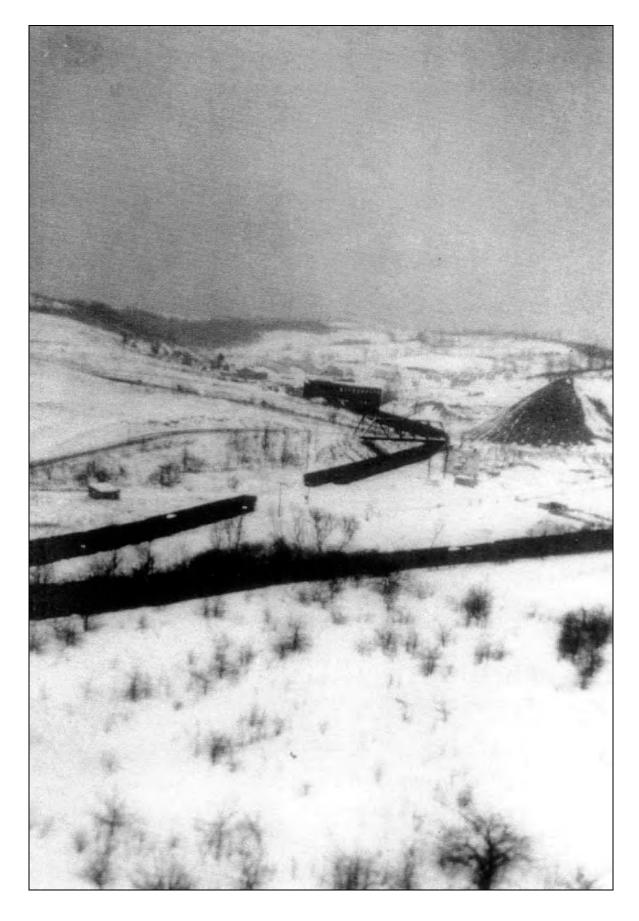
3) " Dut-houses" were small buildings back of the houses.











### Aultman Bridge- "Old Route 80 - much later Tito 286"



DID Route 80 bridge went over the railroad tracks which went to the tipple.

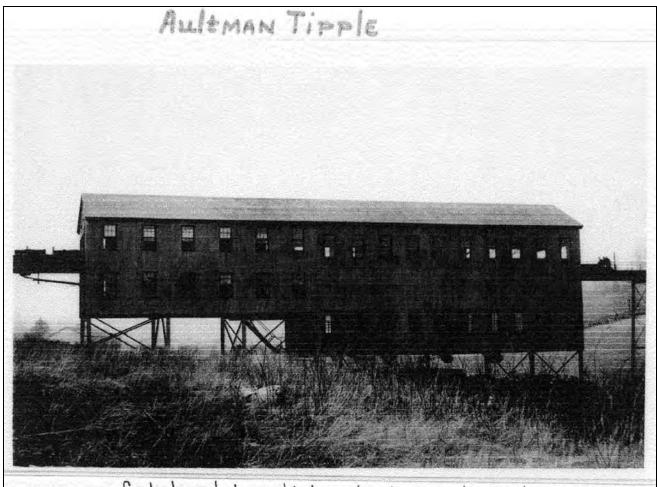
The track went across the road (by now, 1998 is Pete Fancella's home)

Across a small creek and behind homes "called 10 Commandments" and up to, now Route 217, and behind (Now) Ed Sledzik's garage — then on to Jacksonville (Kent) railroad station. Behind railroad station, past some houses and across road below Golden Pheasant Inn/Bar — between "Harvey's House" and the road to Coal Run.

Switch located here and track went left past "Valyo/Campitella house and right to Coal Run and McIntyre mines.







Cont cleaned, dumped into RailRoad CARS and on for delivery.

LOCATED ON OUTSKIRTS OF TOWN (Aultman) AND NEAR RAILROAD AND ROUTE 80.

1912-1914

### Aultmans Run Watershed, Indiana County, Pennsylvania Qualitative Watershed Assessment

(Draft)

PA Department of Environmental Protection, Bureau of Mining and Reclamation

October 2001

### Aultman Run Watershed Indiana County Pennsylvania

Qualitative Watershed Assessment Conemaugh River/Blacklick State Water Plan Watershed – 18D Stream Code – 43913

Environmental Studies Section
Division of Environmental Analysis and Support
Department of Environmental Protection

October 2001

### INTRODUCTION

During August 16,17, 30, and 31, 2001, a qualitative watershed assessment was conducted on Aultman Run, Indiana County. The Bureau of Mining and Reclamation, in conjunction with interested parties (Aultman Watershed Association for Restoring the Environment, Stream Restoration Inc., and the Cambria DMO), initiated a preliminary, baseline study of the watershed for future planning and remediation work. One tributary of Aultman Run, Reeds Run, is on the 303 (d) list for determination of Total Daily Maximum Load (TMDL). In response, Bureau of Mining and Reclamation and SRI staff planned and implemented collection of data at approximately twenty sites. The sampling stations include main-stem, unnamed tributaries, and mine drainage discharges. A map labeling the sites are on page 1 through 4.

### GENERAL WATERSHED DESCRIPTION

Aultman Run is a tributary of the Conemaugh River in the Ohio River basin. The watershed lies in Blacklick and Center Townships, Indiana County, PA. The drainage encompasses 28.3 square miles and flows in a southerly direction. The headwaters of Aultman Run are a series of spring/wetland fed tributaries that flows approximately 13.0 stream miles into Blacklick Creek. Elevations range from 1002 to 1201 feet and contain relatively flat rural and forested lands with some gently rolling hills of low relief.

### **METHODS**

At each sampling station, water samples were collected by the grab method using a 500 ml bottle and two 125 ml bottles (Nitric and Hydrochloric acid fixed). Field meters were used to measure air and water temperature, specific conductance, dissolved oxygen, pH, and flow.

Benthic macroinvertebrates were collected at sites with a potential for life using a qualitative "kick screen" method. Relative abundances of each taxon were examined and representative specimens were preserved in alcohol and returned to the lab for identification.

### WATER QUALITY

Water quality data is summarized on Table 1 and 2. This section will discuss chemical trends in Big Run from the headwaters to the mouth. Stations AUL10, UNT16, AUL09, and UNT15 represent the headwaters. AUL10 was not sampled due to the lack of substantial flow. UNT16, AUL09, and UNT15 lab analysis indicate nothing that would impact Big Run. UNT16 and downstream station AUL09 shows an increased value in total iron. The segment of Big Run between AUL09 and AUL08, does not differ much in parameter values. UNT14 enters between AUL08 and AUL07. It was not sampled due to the lack of substantial flow. Likewise, water quality does not change much upstream from AUL07. One exception is the almost doubling of total iron values. Just downstream from AUL07, is a mine discharge aside Route 286 (UNT08A). UNT08 is an alkaline discharge with high concentrations of metals, especially Iron. UNT13 represents a station on an unnamed tributary flowing south through the town of Aultman. It's values show clean water quality. UNT12 is an accumulation of UNT12A, UNT12B, and UNT12C. A moderately low pH and elevated levels of metals indicate a possible influence from

mining along the tributary labeled UNT12C. UNT11 and UNT09 have water quality values associated with clean streams. UNT10 and UNT08 were not sampled due to the lack of substantial flow and therefore made sampling in-stream station, AUL06, unnecessary. Despite the impact of UNT08A (Rt. 286 discharge, under powerlines), water quality actually improves down to station AUL05. Alkalinity, pH, and acidity remain roughly the same. Metal concentrations decrease greatly, especially total iron.

A comparison of lab analysis data between AUL05 and AUL04 describes the impact of Reeds Run on Aultman Run. Although pH and alkalinity decrease minutely, total iron nearly doubles, total manganese, aluminum, and sulfates nearly triple. UNT07 is a station on a tributary that enters below AUL04 and exhibits good water quality values for pH, alkalinity, and metal concentrations. UNT06 shows the impact of this tributary flowing through an old strip mine. Alkalinity and pH are moderately low. While values for acidity and sulfates are up. There is also a noticeable increase in total manganese and aluminum. An unnamed tributary, station UNT15, enters downstream in a southeasterly direction. Values for alkalinity are relatively high in the tributary when compared to the rest of the stream. Water quality changes very little from AUL04 to AUL03. Coal Run, station COA1, has a low pH, but total iron, ferrous iron, manganese, and sulfates have high concentrations. The only major changes, between AUL03 to AUL02, are lower concentration values of total iron, ferrous iron, aluminum, and an increase in sulfates. UNT04, UNT03, UNT02, and UNT01 lacked substantial flow to sample and can be illustrated by examining the segment between AUL02 and AUL01. AUL01 has virtually identical values to AUL02.

### **AQUATIC BIOTA**

The indigenous aquatic community is an excellent indicator of long-term conditions and is used as a measurement of both water quality and ecological significance. Habitat and benthic macroinvertebrate data was collected during August 16, 17, 30 and 31, 2001.

### Habitat

The habitat assessment data is summarized on Table 3 and 4. In-stream habitat conditions were evaluated at each station. The habitat evaluation consists of rating twelve habitat parameters to derive a station habitat score (EPA Rapid Bioassessment Protocol for Use in Wadeable Streams and Rivers). The range of habitat score totals for Aultman Run stations were 138 to 184, generally considered to be a majority of sub-optimal to optimal habitat conditions.

### **Benthos**

Benthic macroinvertebrate collection efforts included the PA-DEP Rapid Bioassessment Protocol III benthic sampling methodology. The PA-DEP RBPIII method is a modification of EPA's Rapid Bioassessment Protocols (RBPs; Plafkin, et al 1989). The collected and processed benthic samples serve as a basis for analysis and comparison of tolerance values to generally accepted water quality predictive scoring ranges. Low scores are indicative of poor quality and higher scores better quality (1-10). Due to stream degradation and lack of consistent numbers, the results were limited to a qualitative analysis (family and tolerance index).

Potential aquatic insect life was sampled at all stations. The numbers of individuals and kind of taxa were somewhat lower than could be found in physically similar stream systems. This could be attributed to past and current mining. A qualitative inventory was done and summarized here. The following stations: AUL02, COA1, AUL03, AUL08, and UNT13 were the only sites having populations. Families found at AUL02 are Hydropshychidae (TI 4), Polycentripodidae (TI 6), and Tipulida (TI 3). Hydropshychidae (TI 4) was the only group found at COA1 and AUL03. AUL08 had Corydalidea (TI 0), Decapoda (TI 6), Hydropshychidae (TI 4). Only one family, Tipulida (TI 3), was observed at station UNT13.

### **Fish**

Fish were not sampled because of limited resources. Aultman Run does have adequate water quality and habitat to support fish populations.

## TABLE 1 - WATER QUALITY SUMMARY

\* Metal concentrations are measured in micrograms per liter, all others are in milligrams per liter, unless stated otherwise.

			0	-		-					
Station /	UNT16	UNT16 AUL09	UNT15	AUL09	AUL09 AUL08	UNT13 UNT12 UNT11	UNT12	UNT11	UNT09 UNT08A	UNT08A	AUL04
Sample ID											

### Field Parameters

										-	Securitario de Constitución de	
Air T (°C)	26.9	21.1	27.8	21.1	32.3	19.2	28.3	23.2	23.2	22.1	30.3	
Water T (°C)		22.6	20.7	22.6	23.7	15.4	19.1	19.5	19.5	16.5	23.3	
Ha	7.4	7.4	7.5	7.4	7.3	7.7	5.9	7.6	7.6	4	7.5	
Cond (µmhos)	16	302	92	302	462	277	428	877	743	1120	1230	
Dissolved O <sub>2</sub>	5.9	6.4	7.4	6.4	7.5	6.7	6.7	7.3	Too Low	8.4	9.6	
Flow (g/min.)	12.3	73.6	N/A	73.6	276.5	N/A	132.5	Too Low Too Low	Too Low	N/A	234.2	

## Laboratory Parameters

-	_		-	459 393				-
7.2	88	0	118	332	832	80	131	742
7.5	128	0	28	49.3	273	90	48	< 200
2	7.8	46.2	22	214	779.9	280	1430	1230
7	78	0	9	155	269	130	333	< 200
6.8	58	0	38	35.8	1120	20	261	698
7	90	0	12	28.3	1150	80	157	219
6.8	48	0	40	29.5	479	707	33	410
7	90	0	12	28.3	1150	80	157	219
7.4	108	0	32	26.1	2420			342
Ha	Alkalinity	Acidity	TSS	SO <sub>4</sub>	FB - fof *	Ferrous Fe*	Mn - fot *	Al - tot.*

## TABLE 2 - WATER QUALITY SUMMARY

\* Metal concentrations are measured in micrograms per liter; all others are in milligrams per liter, unless stated otherwise.

		20000	30.00			0			
Station /	UNT07	UNT07 UNT06	UNT05	AUL03	COA01	AUL02	AUL01	17	
Sample ID									

### Field Parameters

			77	The same and other Designation of the last	The state of the s	The state of the s	THE PERSON AND PROPERTY OF THE PERSON AND PARTY OF THE	The same of the last of the la
Air T (°C) 22.7	22.7	23.1	23.5	25.4	25.5	31	25.4	
Water T (°C)	18.6	13.6	16.4	25.4	25.2	21.3	18.9	
Hd	7.9	5	7	7.5	6.5	7.5	7.5	
(soumh) puo	832	805	843	1130	0	1026	1150	
Dissolved O <sub>2</sub>	N/A	Too Low Too	Too Low	9.1	7.1	8.6	8.1	
Flow (g/min.)	57.8	0.2 Too	Too Low	N/A	9.7	268.8	298.6	
-								

## Laboratory Parameters

A STATE OF THE PERSON NAMED IN COLUMN NAMED IN									
					92				
					77				
	8.9	09	0	10	479.6	524	100	852	< 200
	6.8	64	0	2	491	266	160	1280	< 200
	6.8	09	0	14	397.8	1690	240	1280	876
	6.8	09	0	14	397.8	1690	240	1280	876
	7.2	374	0	18	310	1340	310	2550	< 200
	4.7	8	24	14	472	156	40	1090	1250
	8	192	0	29	414	105	30	102	< 200
	Hd	Alkalinity	Acidity	TSS	SO <sub>4</sub>	Fe - tot.*	Ferrous Fe*	Mn - tot.*	Al - tot.*

# TABLE 3 - HABITAT ASSESSMENT SUMMARY

HABITAT	scoring					STAT	STATIONS				
PARAMETER	range	AUL01	AUL02	COA01	AUL03	UNT05	UNT07	AUL04	UNT09	UNT11	UNT12
<ol> <li>epifaunal substrate</li> <li>and upstream cover</li> </ol>	0 - 40	36	32	20	34	36	36	32	36	36	36
3 . embeddedness (HG)/ pool substrate characterization (LG)	0 - 20	12	12	13	12	19	17	12	17	17	17
4 . velocity/depth (HG)/ pool variablility (LG)	0 - 20	15	15	2	15	10	4	15	4	4	4
5 . sediment deposition	0 - 20	6	6	. 8	6	12	20	6	20	20	20
6 . channel flow status	0 - 20	17	17	7	17	15	15	17	15	15	15
7 . channel alteration	0 - 20	18	17	20	20	20	20	20	20	20	20
8 . frequency of riffles (HG)/channel sinousity (LG)	0 - 20		13	14	13	10	17	13	17	17	17
9 . bank stability	0 - 20	14	14	14	14	18	18	14	18	18	18
10 . vegetative protection 11 & grazing/disruptive	0 - 40	18	21	24	21	24	21	21	21	21	21
12 . riparian vegetative zone width	0 - 20	18	41 .	16	12	4	41	12	41	14	14
Total Score	0 - 240	170	164	138	167	178	182	165	182	182	182

# TABLE 4 - HABITAT AS .. SSMENT SUMMARY

HABITAT	scoring	,				STATIONS	IONS
PARAMETER	range	AUL07	AUL08	UNT15	AUL09	UNT16	
epifaunal substrate and upstream cover	0 - 40	34	34	36	34	36	240-181 OPTIMAL 180-121: SUB-OPTIMAL
. embeddedness (HG)/	0 - 20	17	17	17	17	17	120-61: MARGINAL
pool substrate							<=60: POOR
characterization (LG)							
4 . velocity/depth (HG)/	0 - 20	4	4	4	4	4	*Not all monitoring sites
pool variablility (LG)							are listed; only sites with
. sediment deposition	0 - 20	20	20	20	20	20	habitat assessments
. channel flow status	0 - 20	15	15	15	15	. 15	done
7 . channel alteration	0 - 20	20	20	20	20	20	
8 . frequency of riffles	0 - 20	17	17	17	17	17	
(HG)/							
channel sinousity							
(16)							
<ol><li>bank stability</li></ol>	0 - 20	16	16	18	16	18	Service recognision beauty 11.
10 . vegetative protection	0 - 40	21	21	21	.21	21	
& grazing/disruptive					ļ.		
pressures							
12 . riparian vegetative	0 - 20	16	16	16	16	16	
zone width							
Total Score	0 240	180	180	184	180	184	

Monitoring Site	Site ID	Surface Elevation	River Mile	Latitude	Longitude	Stream #	River Basin Date	
Mosther Conditions	AUL02	1095'	N/A	40 30 49	79 17 17	43913	River	
Weather Conditions	Cloudy	Past 24 Hours None	Heavy Rain Last 7 Days None	Air Temperature 31.0* C				
Stream Characterization	Stream Subsystem Perrential	Stream Origin Mix of Origins	Stream Type Warmwaler	Catchment Area	Gradient			
Watershed Features	Dom. Landuse	Mine Orginado Citt	Erosion					
Riparian Vegetation	Dom. Type	Dom. Species American Hornheam heerb and hemlock	Moderate and hemlock					
Instream Features	Reach Length N/A	Stream Width	Sampling Reach	Avg, Depth	Velocity 268 6 Gal/Min	Canopy Cover	Stream Morph.	Channelized/Dam
Large Woody Debris	Area N/A	Density N/A	100		0.00	rainy open	shallow pools; minority of shallow riffles and minority of shallow riffles and minority of shallow riffles and sing-	NO NO
Aquatic Vegetation	Dom. Type N/A	Dom. Species N/A	% Reach w/ AV N/A				Thirding of Straigow Illines all of	850
Water Quality	Temperature 21.3*C	Spec. Conductance	Dissolved Oxygen 8.6 MG/L	Field pH .	Turbidity	Odors	Oil	
	Lab pH 6.8	Alkalinity 64.0 MG/L	Acidity 0.0 MG/L	TSS 2.0 MG/L	Total FE	Ferrous FE	Total MN Total AL	Total Sulfates
Sediment/Substrate Deposition	Odors None	Oils	Deposits					
Inorganic/Organic Substrate	Inorganic Majority of cobble an	d boulders; minority of are	avel and silt	Organic Moderate number	of Sticks Woods	Coarse Plant Mat	داناه	
Epifaunal Substrate and Instream Cover	50% or more of substrate colonization potential - 32	trate favorable for epifaur	al colonization and fish cover;	mix of snags, subme	rged logs, under	cut banks, cobble o	50% or more of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential - 32	ge to allow full
Embeddedness (HG) or Pool Substrate Char. (LG)	Pool substrate chara	cterization - Mixture of so	Pool substrate characterization - Mixture of soft sand, mud, or clay, mud may be dominant; some root mats and submerged vegetatiom present - 12	y be dominant; some	root mats and su	omerged vegetatio	n present - 12	
Velocity/Depth Regime (HG) or Pool Variability (LG)		Pool variability - Majority of pools large-deep; very few shallow - 15	very few shallow - 15					
Sediment Deposition	Moderate deposition	of new gravel, sand or fin	e sediment on old or new bars	s; 50-80% of the botto	m affected; sedir	nent deposits at be	Moderate deposition of new gravel, sand or fine sediment on old or new bars; 50-80% of the bottom affected; sediment deposits at bends; moderate deposition of pool prevalent-9	ol prevalent-9
Channel Flow Status Channel Alteration	Water reaches base Channelization or dre	of both lower banks, and adging absent or minimal;	Water reaches base of both lower banks, and minimal amount of channel subs Channelization or dredging absent or minimal: stream with normal pattern - 17	bstrate is exposed - 1	7			
Frequency of Riffles (HG) or Channel Shousity (LG)	Channel sinousity - T	Channel sinousity - The bends in the stream increase the	crease the stream length 1 to	stream length 1 to 2 times longer than if it was in a straight line - 13	f it was in a straig	ht line - 13		
Bank Stability	Left- Moderately stab	ole; infrequent, small area	Left- Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion - 7	er; 5-30% of bank in r	each has areas o	f erosion - 7		
Veg. Protection, Grazing/ Dis. Pressure, & Rip Zone	Left and Right - 70-9 to any great extent; r	0% of streambank surface nore than one half of the	Left and Right - 70-90% of streambank surfaces covered by native vegetation, but one class of plants is not well to any great extent; more than one half of the potential plant stubble height remaining - 21  Left and Right - Width of of poarian zone 12-18 meters: human activities have innarcled zone only minimally - 14	in, but one class of pli emaining - 21	ants is not well re	presented; disrupti	Left and Right - Vigoria promise according for the control of the potential plant growth potential test and growth more than one half of the potential plant stubble height remaining - 21.  Left and Right - Width of of frioring 2019 12-18 meters: human activities have impacted zone only minimally - 14.	plant growth potential
Bioassessment Collection	Gear Used 1 M Squared Kick Ne	Gear Used Where Sampled Where Sampled I M Squared Kick Net Fast/Slow Riffles/Runs	# of Kicks or Jabs 2.0 Kicks					
General Biota Abundance	Periphyton None	Filamentous Algae Minimal		Slimes	Macrobenthos	Fish	-	
Macrobenthos Abundance- Family and	1							
Tolerance Index	Hydropshychidae 4	Polycentripodidae 6	Tipulida 3					
3			RU-SR-WA	80.JJ./A.   81711				
Fish Composition-	None						,	
			· TATIBLE - FI					(

.1

Manually of Color State No. COLOR 1 (1997) 1 (19									
Trial Now	Demogr	COA01	Surrace Elevation 1095.0'	KIVET MILE	atitude 0.51	Longitude	Stream #	River Basin Date	100
Trial of Chairs   Stream Origin   Name   22 Carcinated   Name   22 Carcinated   Name		Now	Past 24 Hours	Heavy Rain Last 7 Days	emperature	01 /1 6/	43913	Conemaugh River 8/16/2	001
titues printation between Steam Origina Stream Origina Stream Origina Stream Colleges NA Act and the C		Cloudy	None	None	25.5*C				
The control of the co	Stream Characterization	Stream Subsystem	Stream Origin	Stream Type	Catchment Area	Gradient			
Hartes Contributions because the contribution of the contribution of the contribution because the contribution of the contribution	Mathematical Ecotor	Perrential	Mix of Origins	Warmwater	N/A	Low			
Treas Reach Mappe, Electric Characteristics of the Control of Cover Stream Worth.  Name and Characteristics of the Control of Cover Stream Worth.  Name and Characteristics of the Control of Cover Stream Worth.  Name and Characteristics of the Control of Cover Stream Worth.  Name and Characteristics of the Control of Cover Stream Worth.  Name and Characteristics of the Control of Cover Stream Worth.  Name and Characteristics of Cover Stream Worth.  Name and	watershed reathres	Forest/Mining	Mine Drainage/Silt	Moderate					
tures  National March Length  National March	Riparian Vegetation	Dom. Type	Dom. Species						
Navati Length 2 Statesh Walth Shahing Freach A/Q. Depth 9 Galogo Free Statesh Walth Shahing Cover Stresson Market Control of Statesh Walth Shahing Cover Stresson Market Cover S	Inetron Continue	rees	Ked Maple, Beech			-			
Dour Yea Not a Not	instream reatures	Keach Length N/A	Stream Width 2.0'	Sampling Reach N/A	Avg, Depth 0.12'	Velocity 9.69 Gal/Min	Canopy Cover	Stream Morph. Majority of shallow riffles	Channe
Part	Large Woody Debris	Area N/A	Density			Meter		and runs; minority of	
No.	Aquatic Vegetation	Dom. Type	Dom Species	% Reach w/ AV				shallow pools	
In   Turnibation   Spec. Conductation   Dissolved Oxygon   Est play   Furnibility   Odors   Osigon   Conductation   Dissolved Oxygon   Est play   None   None   Lab pht   Activity   Activity   Activity   Total Miles   Est play   None   Moderna   Lab pht   Activity   Activity   Activity   Activity   Total Miles   Est play   None   Moderna   Mod		N/A	N/A	N/A					
strate Godors None Holds 6.5 None None Noted Noted 15.5 Total FE Forcus FE Total MN Total AL Allahidy Alculut, 15.5 Total FE Forcus FE Total MN Total AL 1. 160.0 U.S. 1. 160.0 U.S. 1. 120.0 U.S. 1.	Water Quality	Temperature	Spec. Conductance	Dissolved Oxygen	Field pH	Turbidity	Odors	lio	
state of the state		25.2°C	0.004	7.1 MG/L	6.5	None	None	None	
None Odors None None Mone Majorly of sill and tion precipitation for the control of the control		6.8	60.0 MG/L	Acidity 0.0 MG/L	TSS 14.0 MG/L	<b>Total FE</b> 1690.0 UG/I	Ferrous FE	5	-
strate Cover (HG) or har. (LG) gime (HG) gime (HG) lity (LG) osition Status ration files (HG) lity Grazing/ Rip. Zone Collection oundance ndex RBP)	Sediment/Substrate	Odors	Oils	Deposits					
strate Cover (HG) or har. (LG) gime (HG) gime (HG) lity (LG) osition Status ration fles (HG) lity Cone Collection oundance	Inordanic/Ordanic	Inordanic	None	Majority of silt and Iron prec	ipitation				
Statuse (HG) or har. (LG) gime (HG) lity (LG) ostition station Status Fration Grazing/ Bity (LG) lity Grazing/ Oundance oundance oundance oundance- oundance	Substrate	Majority of cobble, gr	avel, silt, and iron		Organic Moderate number	of Sticks, Woods	, Coarse Plant Mat	erials	
(HG) or har. (LG) glime (HG) lity (LG) osition Status ration fles (HG) lity Grazing/ Rip. Zone Collection oundance add add add ABP)	and Instream Cover	10-30% mix or stable	nabitat, nabitat availabili	ity less than desirable; substra	ate frequently disturb	ed or removed- 2	0		
gime (HG) lity (LG) osition Status ration files (HG) lisity (LG) lility Grazing/ Rip. Zone Sollection oundance nd ndex RBP)	Embeddedness (HG) or Pool Substrate Char (LG)	Pool substrate charac	cterization - Mixture of so	oft sand, mud, or clay; mud ma	ay be dominant; no ro	of mat or subme	rged vegetation - 1	3	
Status Status ration fles (HG) lifty Grazing/ Rip. Zone Collection oundance nd d d d ABP)	Velocity/Depth Regime (HG or Pool Variability (LG)	1	ority of pools small-shallor	w or pools absent- 2					
Status ration fles (HG) usity (LG) lifty Grazing/ Rip. Zone Sollection oundance nd ndex RBP)	Sediment Deposition	Moderate deposition	of new gravel, sand or fir	ne sediment on old or new ba	rs; 50-80% of the bot	tom affected; sec	liment; sediment d	eposits at bends: moderate	denosition of
Grazing/ fles (HG) lifty Grazing/ Rip. Zone Collection oundance- oundance- ndex RBP)	Channel Flow Status	pool prevalent - 8	110000000000000000000000000000000000000	1,00	-				
Ility Grazing/ Grazing/ Rip. Zone Collection oundance oundance- nd ndex RBP)	Channel Alteration	Channelization or dre	the available channel; a	nd /or rittle substrates are exp	0sed - 7				
Grazing/ Rip. Zone Sollection Sundance and Adex RBP)	Frequency of Riffles (HG)	Channel sinousity - T	he bends in the stream i	ncrease the stream length 1 to	2 2 times longer than	if it was in a stra	ight line - 14		
Grazing/ Rip. Zone Sollection Sundance and Adex (3BP)	Rank Stability	off. Moderately stab	ora lloma toomaniani	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Grazing/ Rip. Zone Collection Col	Dank Stability	Right - Moderately stan	able; infrequent, small area able; infrequent, small ar	is of erosion mostly healed over eas of erosion mostly healed	er; 5-30% of bank in over; 5-30% of bank	reach has areas in reach has area	of erosion - 7		
None None None None None None None None	Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone		0% of streambank surfac t extent; more than one h ninimally - 16	es covered by native vegetati alf of the potential plant stubb	on, but one class of late height remaining	plants is not well 24 Left and Rig	represented; disrup nt - Width of of ripa	ition evident but not affect rian zone 6-12 meters; hu	ng full plant growth nan activities have
undance Periphton Filamentous Algae Macrophytes Slimes Macrobenthos  None Rare  undance- nd Hydropshychidae ndex 4  None Rare None Rare  None Rare  None Rare  None Rare  None Rare  None None Rare  None None Rare  None None Rare  None None Rare	Bioassessment Collection								
undance- hd Hydropshychidae hdex 4 ABP) None	General Biota Abundance	Periphyton None		1	Slimes	Macrobenthos	1		
ndex ABP)	Macrobenthos Abundance								
	Family and Tolerance Index (1-10, EPA RBP)	Hydropshychidae 4							
Contract	Fiah Composition-	None							
CHARLES AND ACTUAL STATE OF THE									
The control of the co									
	garmography -								

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Monitoring Site Demographics	Site ID AUL03	Surface Elevation	River Mile	Latitude 40 30 01	Longitude	Stream #	River Basin		
Weather Conditions	Now	Past 24 Hours	Heavy Rain Last 7 Days	Air Temperature		2000	Conemangn River	1 0/10/2001	
Stream Characterization	Stream Subsystem	None Stroam Origin	None Free	25.4*C					
	Perrential		Stream Type Warmwater	Catchment Area N/A	Gradient Low				
Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	<b>Erosion</b> Moderate						
Riparlan Vegetation	Dom. Type Trees	Dom. Species American Hornbeam , beech, and hemlock	beech, and hemlock						
Instream Features	Reach Length	Stream Width	Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.		Channelized/Dam
Large Woody Debris	Area N/A	Density			lack of flow in	rainy Open	majority of deep pools and shallow pools; minority of shallow riffles	shallow riffles	oN.
Aquatic Vegetation	Dom. Type	Dom. Species	% Reach w/ AV		10000		and shallow, runs, and pools	, and pools	
Water Quality	Temperature	Spec. Conductance	Dissolved Oxygen	Field nH	Turbidity	2000	ā		
	25.4*C	1130	9.1 MG/L	7.5	None	None	None		
	Lab pH 6.8	Alkalinity 60.0 MG/L	Acidity 0.0 MG/L	TSS 14.0 MG/I	Total FE	Ferrous FE	Total MN	Total AL	Total Sulfates
Sediment/Substrate Deposition	Odors	Oils	Deposits Silt and come metals precipitate	del		100 0014	1280.0 00/L	0/0.0 UG/L	397.8 MG/L
Inorganic/Organic Substrate	Inorganic Majority of cobble as	Inorganic Majority of cohble and bouldare, minority of greenel and buildare.		Organic					
Epifaunal Substrate	50% or more of substrate	Strate favorable for epifau	moderate of second and bounders, minority or graver and sin.  Solo or moderate favorable for epifaunal colonization and fish cover, mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full properties or other stable habitat and at stage to allow full properties and at stage to all properties and at stage to allow full properties and at stage to all properties and at a stage to all properties are all properties and at a stage to all properties are all properties and at a stage to all properties are all properties and at a stage to all properties are all properties and at a stage to all properties are all properties are all properties and at a stage to all properties are all properties are all properties and at a stage to all properties are all propert	moderate number of Sticks, Woods, Coarse Plant Materials if mix of snags, submerged logs, undercut banks, cobble or of	erged logs, under	Coarse Plant Mater cut banks, cobble	erials or other stable hab	itat and at stage t	o allow full
Embeddedness (HG) or	Pool substrate chan	Pool substrate characterization - Mixture of soft sand, mud, or	oft sand, mud, or clay; mud me	clay, mud may be dominant; some root mats and submerged vegetatiom present - 12	root mats and su	ubmerged vegetati	iom present - 12		
Velocity/Depth Regime (HG) or Pool Variability (LG)	1 1	Pool variability - Majority of pools large-deep; very few shallow	very few shallow - 15						
Sediment Deposition	Moderate deposition	n of new gravel, sand or fi	Moderate deposition of new gravel, sand or fine sediment on old or new bars; 50-80% of the bottom affected; sediment deposits at bends; moderate deposition of ood prevalent	rs; 50-80% of the bot	om affected; sedi	ment deposits at b	bends; moderate de	position of pool pr	evalent - 9
Channel Alteration	Channelization or di	e of both lower banks, and	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed - 17 Channelization or dredoing absent or minimal stream with normal pattern - 20	substrate is exposed -	17				
Frequency of Riffles (HG)	Channel sinousity -	The bends in the stream	Channel sinousity - The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line - 13	o 2 times longer than	if it was in a straig	ght line - 13			
Bank Stability	Left- Moderately sta	able; infrequent, small are	Left- Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion - 7	ver; 5-30% of bank in	reach has areas	of erosion - 7			
Veg. Protection, Grazing/ Dis. Pressure, & Rlp. Zone	Left and Right - 70- to any great extent;	Left and Right - 70-90% of streambank surfaces covered by mit of any grade actent; more than one half of the potential plant st. and Birth Width of of finance.	Left and Right - 70-90% of streambank surfaces covered by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth potential for any great extent, more than one half of the potential plant stubble height remaining - 21	ion, but one class of premaining - 21	lants is not well r	s of erosion - 7 epresented; disrup	otion evident but not	affecting full plan	t growth potential
Bioassessment Collection	Gear Used 1 M Souared Kick Net	Where Sampled Net Fast/Slow Riffles/Rins	# of Kicks or Jabs	activities frave impacted zone only minimally - 12  Jabs	minimaliy - 12				
General Biota Abundance	Periphyton None		1	Slimes	Macrobenthos	Fish			
Macrobenthos Abundance- Family and Tolerance Index	None Hydropyshychidae 4								
		S. S							
Fish Composition-	None								
			Spirit is a smirit property						
		WORKER AND THE							

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Canopy Gover Stream Morph. Partly shaded Even amount of shallow-deep/shallow rrifles, runs and pools and pools  Odors Oil Not oil, but shimmery - AMD? Ferrous FE Total MN Total AL. 310.0 UG/L 2550.0 UG/L <200.0 UG/L Straight line - 10  Straight line - 10  Straight line - 10  Straight deposition in pools - 12  Straight line - 10  Straight line - 10  Straight deposition of rip. 200 12-18 meters; human authors Fish  thos Fish  thos Fish  None	a Sit	Site ID	Surface Elevation	River Mile	atitude .	Longitude	Stream #	River Basin Date	
Heavy Rain Last 3 Hours   Heavy Rain Last 7 Days   2 interpretation		UNTOS	1095.0'		,0 52	79 17 14	43913		
Petrantial Subsystem of Cache May Stream Nype (Cache Stream Nype)  Mac of Copy (Cache Stream Name)  Mac of Copy (Cache Stream Name)  Mac of Copy (Cache Stream Name)  Mac of Cache Stream Name (Cache Stream Name)  Mac of Mac of Cache Stream Name (Cache Stream Name)  Mac of Mac of Cache Stream Name (Cache Stream Name)  Mac of Mac of Cache Stream Name (Cache Stream Name)  Mac of Mac of Mac of Stream Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)  Mac of Mac of Mac of Name (Cache Stream Name)		Now Cloudy	Past 24 Hours None	y Rain	remperature 23.5*C			1	
Dom. Linds (control Registration of the Cartain Special Moderate Control Registration (control Registration of the Cartain Special Moderate Control Registration (control Registration of the Cartain Special Moderate Control Registration (control Registration Control Registration Con	Stream Characterization	Stream Subsystem	Stream Origin Mix of Origins	Stream Type	Catchment Area	Gradient			
Post	Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	Erosion					
Reach Length Name Stream Width Sampling Reach Name Name Stream Width Name Name Name Name Name Name Name Name	Riparian Vegetation	Dom. Type Trees	Dom. Species Beech, shagbark hicko	ory, sumac		,			
No. No. Species No	Instream Features	Reach Length	Stream Width	Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.	Channelized/Dam
Don. Type  Non. Type  Non. Type  Non. Species  Non. Non. Non. Non. Non. Non. Non. Non.	Large Woody Debris	Area N/A	Density N/A				and shaded	deep/shallow rrffles, runs	ON.
Tuniperature Spec. Conductative Dissolved Oxygan   Field pH Tunibidity Oxfors   Oil but shimmery - AMD7   Lub pH   Amalinity Acidity   Tess   Total FE   Ferrous FE   Total M   Total AL   Lub pH   Amalinity Acidity   Tess   Total FE   Ferrous FE   Total M   Total AL   Olders   Oil McCL   Oil McCL   18.0 McCL   13.00 U.CL   250.0 U.CL   250.0 U.CL   274.0 McCl   Olders   Oil McCL   Oil McCL   Oil McCL   18.0 McCL   13.00 U.CL   250.0 U.CL   250.0 U.CL   274.0 McCl   Olders   Oil McCL   Oil McCL   Oil McCL   Oil McCL   Oil McCL   250.0 U.CL   250.0 U.CL   250.0 U.CL   250.0 U.CL   274.0 U.CL   Olders   Oil McCL   Oil McCL   Oil McCL   Oil McCL   Oil McCL   Oil McCL   250.0 U.CL   250.0 U.	Aquatic Vegetation	Dom. Type N/A	Dom. Species	each w/				and pools	
Odors Olds  130 0 MG/L  130 0	Water Quality	Temperature 16.4 °C Lab pH	Spec. Conductance 843 Alkalinity	Dissolved Oxygen Flow too low Acidity	Field pH 7 TSS	Turbidity None Total FE	Odors None Ferrous FE	Oil Not oil, but shimmery - AMD?	
	Sediment/Substrate	7.2 Odors	374.0 MG/L Oils	0.0 MG/L Deposits	18.0 MG/L	1340.0 UG/L	310.0 UG/L		
	Deposition	None	None	Silt and some metals precip	iltate				
	inorganic/Organic Substate	Inorganic Majority of cobble, gra	avel, sand, and silt; some	e metals precipitation	Organic A lot of leaves and	other detrifus m	aterial		
	and Instream Cover	50% or more of subst colonization potential	rate favorable for epifau - 36	nal colonization and fish cove	r; mix of snags, subn	nerged logs, und	ercut banks, cobble	or other stable habitat and at sta	ge to allow full
	Embeddedness (HG) or Pool Substrate Char. (LG)	Pool substrate charac	cterization - Mixture of su	ibstrate materials, with gravel	and firm sand preva	lent - 19			
	or Pool Variability (LG)		low pools much more pre	evalent than deep pools - 10					
	Sediment Deposition Channel Flow Status	Some new increase it	n bar formation, mostly fr	rom gravel, sand, or fine sedir	ment; 20-50% of the	bottom affected;	slight deposition in	oools - 12	
	Channel Alteration	Channelization or dre	edging absent or minimal	; stream with normal pattern -	20 20				
	requency of Riffles (HG) or Channel Sinousity (LG)	Channel sinousity - T	he bends in the stream i	ncrease the stream length 1 to	o 2 times longer than	if it was in a stra	ight line - 10		
	Bank Stability	Left- Banks stable; ev Right - Banks stable;	vidence of erosion or bar; evidence of erosion or l	ik failure absent or minimal; lii bank failure absent or minimal	ttle potential for futur	e problems; <5%	of bank affected - §	0	
Gear Used Where Sampled # of Kicks or Jabs  1 M Squared Kick Net Fast/Slow Riffles/Runs 2.0 Kicks Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None None	Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone		0% of streambank surfac ny great extent; more tha minmally - 14	es covered by native vegetati n one half of the potential plan	on, but one class of	plants is not well aining - 24; Left	represented; disrup and Right - Widith o	tion evident but not affecting full pring full pring rip. zone 12-18 meters; human	activities have
Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None None None None None	Sioassessment Collection			# of Kicks 2.0 Kicks					
None	Seneral Biota Abundance			Macrophytes None	Slimes	Macrobenthos	1		
Fish Composition-	facrobenthos Abundance Family and Tolerance Index								
Company   Comp	Fish Composition-			· Inches					

Weather Conditions  Stream Characterization Stream Subsystem Cloudy Stream Subsystem Perrential Watershed Features Riparian Vegetation Instream Features Reach Length N/A Large Woody Debris N/A Aquatic Vegetation N/A Water Quality Temperature 13.6°C Lab pH 4.7 Sediment/Substrate Inorganic/Organic Substrate N/A N/A  Water Quality Area N/A  Water Quality Ary Sediment/Substrate Inorganic/Organic N/A Anorganic None Inorganic		N/A	40 31 43	× 1		Toylor dollow		
			Section of the last of the las	00 11 01	43913	Concinaugh Med	Conemaugh River 8/16/2001	
		Heavy Rain Last 7 Days	Air Temperature					
		None	23.1°C					
		Stream Type	Catchment Area	Gradient				
		Coldwater	N/A	N/A	*piped with tag	*piped with tag "Spring Run ST"		
		Erosion						
		N/A						
		Il Rose Bush						
		Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.		Channelized/Dam
	N/A	N/A	N/A	1.0 Gal/6.0 Min	Shaded			Yes
	Density			Bucket				
	N/A							
	Dom. Species	% Reach w/ AV						
	N/A	N/A						
	re Spec. Conductance	Dissolved Oxygen	Field pH	Turbidity	Odors	0		
	805	Flow too low	. 2	None	None			
	Alkalinity	Acidity	TSS	Total FF	Forrolls FF	Total MM	Total	7
	8.0 Mg/L	24.0 MG/L	14.0 MG/L	156.0 UG/I	40.0116/1	1000 0 11G/I	1250 0 11511	10tal Sulfates
8 8	Oils	Deposits				7	1230.0 OG/L	412.0 MG/L
	None	N/A						
	,		Organic					
			N/A					
Epifaunal Substrate N/A								
and Instream Cover								
Embeddedness (HG) or N/A								
Pool Substrate Char. (LG) N/A								
Velocity/Depth Regime (HG) N/A								
or Pool Variability (LG) N/A								
Sediment Deposition N/A								
Channel Alteration N/A								
Frequency of Riffles (HG) N/A								
or Channel Sinousity (LG) N/A								
Bank Stability N/A								
Veg. Protection, Grazing/ N/A								
Dis. Pressure, & Rip. Zone N/A								
Bioassessment Collection Gear Used	Where Sampled	# of Kicks or Jabs						
	1 M Squared Kick Net Fast/Slow Riffles/Runs							
General Biota Abundance Periphyton		Macrophytes	Slimes	Macrobenthos	Fish			
None	None	None	None	None	None			

Family and Tolerance Index Fish Composition-

Michiglier   Since   Since   Since   Eventue   Since   Since   Eventue   Since   Sin										
Cicculoy North States (States) and States (States) and States) and States (States) and States) and Sta	S	Site ID	Surface Elevation	r M	' atitude	Longitude	Stream #	River Basin	Date	
Since a round by the control of the		Now	1090.0	NA	32 02	79 16 58	43913	Conemangh Rive	r 8/16/2001	
Ferrential Subsystem (Carlot Ribberton Errains)  For Durl Anadase		Cloudy	None	None	22.7*C					
Percental Marketon of cognition Tendento Tendent	Stream Characterization	Stream Subsystem		lε	Catchment Area	Gradient				
Don't hardness because the Page Politidos Envolved  Toom Name of Species State		Perrential		Warmwater	NA	low	*piped with tag	Spring Run ST"		
Point Spiece   Poin	Watershed Features	Dom. Landuse Forest/Minion	Local NPS Pollution	Erosion						
Reach Length Ava Ava Bornsign Born Species B	Riparian Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species Black Cherry, Multiflora	Rose Bush						
No. Type  No. Ty	Instream Features	Reach Length	Stream Width 3.0'	Sampling Reach	Avg, Depth	Velocity 57 8 Gal/Min	Canopy Cover	1		Channelized/Dam
Don. Type  Nah.  N	Large Woody Debris	Area N/A	Density N/A		21:0	Meter	rainy Shaueu	- 1	w-riffle and runs	No
Temperature Spec. Conductance Disastved Oxygen Field pH Turbidity Odors Oil None Name Name Factor Askaninky Askan Conductance Disastved Oxygen 7 9 Mone Name Factor E Total M Total FE Factor Ferrors	Aquatic Vegetation	Dom. Type	Dom. Species	% Reach w/ AV						
16 8 °C Color Signature Signature Color Signature Color Signature Color Signature Color Signature Signature Color Signature Signature Color Signature Color Signature Signature Color Signature Color Signature Color Signature Signature Signature Signature Color Signature Color Signature Color Signature Signature Color Signature Signature Color Signature Si	Water Quality	N/A Temperature	Spec Conductance	N/A Discolved Owgen	היסוק ארו					
Page 1982   1920 MONI.   Action   Action   1920 MONI.   105 OUGI.   102 0 UGI.	funnit in	18.6*C	832	Flow too low	7.9	I urbidity None	Odors	Oil		
None None None None None None None None		Lab pH 8	Alkalinity 192.0 MG/L	Acidity 0.0 MG/L	TSS 29.0 MG/I	Total FE	Ferrous FE	Total MN	Total AL	Total Sulfates
	Sediment/Substrate	Odors	Oils	Deposits			10000	102.0 03/L	<200.0 UG/L	414.0 MG/L
	Inorganic/Organic	Inorganic		CAL	Organic					
	Substrate	Majority of cobble, gr	ravel, and silt		Sticks, wood, coar	se plant material				
	Epitaunal Substrate and Instream Cover	Greater than 50% of	substrate favorable for e	oifaunal colonization; mix of	cobble or other stable	habitat and at a	stage to allow full	colonization potenti	al - 36	
	Embeddedness (HG) or Pool Substrate Char. (LG)	Pool substrate Chara	acteristics - Mixture of sub	strate materials, with gravel	or other material and	firm sand prevale	nt - 17			
	elocity/Depth Regime (HG)		ority of pools small-shallo							
	or Pool Variability (LG)									
	Sediment Deposition	Little or no enlargem	nent of islands or point bar	s and less than <20% of the	bottom affected by se	diment depositio	n - 20			
	Channel Alteration	Channelization or do	he available channel; or <	25% of channel substrate is	exposed - 15					
	Frequency of Riffles (HG) or Channel Sinousity (LG)	Channel sinousity - 7	The bends in the stream in	ocease of the stream length	3 to 4 times longer th	an if it was in a s	raight line - 17			
	Bank Stability	Left and Right - Banl	ks stable; evidence of ero	sion or bank failure absent or	minimal; little potent	ial for future prob	lems; <5% of bank	affected - 18		
	Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone	Left and Right - 70-9 to any great extent-	30% of the streambank su	rfaces coverd by native vege	tation, but one class of	of plants is not we	Ill represented; dis	ruption evident but	not affecting full p	lant growth
Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None	Bioassessment Collection	Gear Used 1 M Squared Kick No	Where Sampled et Fast/Slow Riffles/Runs	# of Kicks or Jabs			ny minimany- 14			
None	General Biota Abundance	Periphyton None	Filamentous Algae None	1	Slimes None	Macrobenthos	Fish			
Tolerance Index Fish Composition-	Aacrobenthos Abundance- Family and	None								
Fish Composition-	Tolerance Index									
The content and	Fish Composition-									
TOTAL TOTAL TOTAL STATE										

Monitoring Site	Site ID	Surface Elevation	River Mile	Latitude	Longitude	Stream #	River Basin Da	Date	
Weather Conditions	Now	Past 24 Hours	Heavy Rain Last 7 Days	Air Temperature	1 1 2 2	43813	Conemaugn River 8/16/2001	16/2001	
Stream Characterization	Cloudy Stream Subsystem	None Stream Origin	None Stream Type	30.3*C Catchment Area	Gradient				
	Perrential	Mix of Origins	Warmwater	N/A	Low				
Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	Erosion Moderate						
Riparlan Vegetation	Dom. Type Trees	Dom. Species American Hornbeam , beech, and hemlock	beech, and hemlock						
Instream Features	Reach Length N/A	Stream Width	Sampling Reach	Avg, Depth	Velocity 234.2 Gal/Min	Canopy Cover	Stream Morph.		Channelized/Dam
Large Woody Debris	Area N/A	Density N/A					and shallow pools;	Hos and man	ON
Aquatic Vegetation	Dom. Type N/A	Dom. Species N/A	% Reach w/ AV				or selection of se	mes and runs	
Water Quality	Temperature 23.3*C Lab pH	Spec. Conductance 1230 Alkalinity 60.0 MG//	Dissolved Oxygen 9.6 MG/L Acidity	Field pH 7.5 TSS	Turbidity None Total FE	Odors None Ferrous FE		Total AL	Total Sulfates
Sediment/Substrate	Odors	Oils	Deposits	10.0 141071	1370.0 OG/L	130.0 OG/L	1160.0 UG/L /5	755.0 UG/L	393.0 MG/L
Deposition	None	None	Silt and some metals precipitate	oitate					one female from the
Inorganic/Organic	Inorganic Majority of cobble and	bouldors: misociar of b	110 000 000	Organic					
Epifaunal Substrate	50% or more of subst	formulation of substrate favorable for epifaunal colonizations of substrate favorable for epifaunal colonizations.	Moderate number of Substrate favorable for epifaunal colonization and fish cover, mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stane to allow full	Moderate number of Sticks, Woods, Coarse Plant Materials 9r, mix of snags, submerged logs, undercut banks, cobble or of	of Sticks, Woods rerged logs, unde	Coarse Plant Mat Srcut banks, cobble	erials	and at stand	to allow full
and Instream Cover Embeddedness (HG) or		ntial - 32 cterization - Mixture of so	full colonization potential - 32 Pool substrate characterization - Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetatiom present - 12	ay be dominant; some	Froot mats and s	ubmerged vegetat	iom present - 12	allo at stage	to allow full
Velocity/Depth Regime (HG) or Pool Variability (LG)		Pool variability - Majority of pools large-deep; very few shallow - 15	very few shallow - 15						
Sediment Deposition	Moderate deposition	of new gravel, sand or fi	Moderate deposition of new gravel, sand or fine sediment on old or new bars; 50-80% of the bottom affected: sediment deposits at hends: moderate deposition of new gravel, sand or fine sediment on old or new bars; 50-80% of the bottom affected: sediment deposits at hends: moderate deposition of an article and or fine sediment on old or new bars; 50-80% of the bottom affected: sediment deposition of new gravel.	rs: 50-80% of the bott	tom affected: sec	liment deposits at 1	hends: moderate denos	loog of pooli	O taclorion
Channel Flow Status	Water reaches base	of both lower banks, and	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed - 17	ubstrate is exposed -	17		odon orange de la companya de la com	1000	מפאשופוזו - פ
Frequency of Riffles (HG)	Channelization or dre	adging absent or minima	Channelization or dredging absent or minimal; stream with normal pattern - 20 Channel singuisity - The hends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line 42	- 20	orto o di som ji ji	inht line			
or Channel Sinousity (LG)				to z times toriger trian	II II was in a sire	iignt line - 13			
Bank Stability	Left- Moderately stab Right - Moderately sta	ole; infrequent, small area able; infrequent, small a	Left-Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion - 7— Right - Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion - 7	ver; 5-30% of bank in over; 5-30% of bank	reach has areas	of erosion - 7			
Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone	1	Left and Right - 70-90% of streambank surfaces covere to any great extent; more than one half of the potential Left and Right - Width of of ribarian zone 6-12 meters; I	Left and Right - 70-90% of streambank surfaces covered by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth potential to any great extent; more than one half of the potential plant stubble height remaining - 21 Left and Right - Width of of ribarian zone 6-12 meters; human activities have impacted zone only minimally - 12	ion, but one class of remaining - 21	plants is not well	represented; disruj	ption evident but not aff	fecting full pla	nt growth potential
Bloassessment Collection		Where Sampled et Fast/Slow Riffles/Runs	# of Kicks or Jabs s 2.0 Kicks						
General Biota Abundance			1	Slimes	Macrobenthos	Fish			
Macrobenthos Abundance- Family and Tolerance Index	1					DIGN			
south of the state	• Edward Ferming								
Fish Composition-	None								

Gins Boundary         Final A House         Feat A House         Feat A House         Concurrently Nove 1972(0)         Concurrent Properties         Concurrently Nove 1972(0)         Concurrently	Demor 'cs	Site ID	Surface Elevation	River Mile	Latitude	Longitude	Stream #	River Basin	Date	
Conception   Notes   Notes   Notes   Conception   Notes   Conception   Notes   Conception   Notes		Now	Past 24 Hours	Heavy Rain Last 7 Days	ir Temperature	79 16 53	43913	Conemangh Rive	er 9/5/2001	
Stream Subayastem   Stream Origin   Stream Type   Catchmont Area Gradient   Touchage amongs in Stream Subayastem   Stream Subayastem   Stream Subayastem   Stream Origin   Stream No.		Cool, clear	None	None	ar remperature 22.1*C					
Dom. Lands as Local Miss Pollution: Evenion Eventualisation Polem. Lands 1 (2018) Pollution Eventualisation Polem. Evening State Part September 1 (2018) Pollution	Stream Characterization	Stream Subsystem Perrential	Stream Origin Mine Drainage	Stream Type N/A	Catchment Area	Gradient N/A	*Discharge amo	ngst a field under		
Dom. Type   Dom. Species	Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	Erosion None						
Reach Length   Siream Width   Surpling Reach   Avg. Depth   Volocity   Court   Stream Morph.     Ana	Riparlan Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species Multifloral Rose Bush. J	ewel Weed, Black Locust, Re	d Maple: loos spaos	dead plants ro	ote			
NA         NA         NA         NA           NA         NA         NA         NA           NA         NA         NA         NA           NA         NA         NA         Analalia           NA         Analalia         Analalia         Analalia           Analalia         Analalia         Analalia         Analalia           Anala         Anala         Analalia         Anala           Anala         Anala         Anala         Anala           Anala         Anala         Anala         Anala           Anala         Anala         Anala	Instream Features	Reach Length N/A	Stream Width	Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.		Channelized/Dam
Down Type   Down Species   W. Reach w/ AV	Large Woody Debris	Area N/A	Density			VINI.	Open	N/A		No
16-70   Pingentium   Space, Conductance   Dissolved Oxygen   Field pH   Turbidity   Odors   Oil	Aquatic Vegetation	Dom. Type	Dom. Species	% Reach w/ AV						
37    0.0 MGAL	Water Quality	Temperature 16.5*C Lab pH	Spec. Conductance 1120 Alkalinity	Dissolved Oxygen 8.3 MG/L Acidity	Field pH 4 TSS	Turbidity None Total FE	Odors Sulfur Ferrous FE	Oil None Total MN	Total Al	Total Culfatos
None	Sodimont/Cubetrate	3.7	0.0 MG/L	149.8 MG/L	16.0 MG/L	4710.0 UG/L	1570.0 UG/L	6210.0 UG/L	20400.0 UG/L	459.0 MG/L
NIA	Deposition	None	None	Deposits Metals precipitation						
NIA	Inorganic/Organic Substrate	Inorganic N/A			Organic					
NVA	Epifaunal Substrate	N/A			N/N					
NIA	and Instream Cover Embeddedness (HG) or	N/A								
NVA	Pool Substrate Char. (LG)	N/A								
NIA	Velocity/Depth Regime (HG)	N/A								
NIAA NIAA NIAA NIAA NIAA NIAA NIAA NIAA	or Pool Variability (LG)	N/A								
NAA	Sediment Deposition	N/A								
NAA	Channel Flow Status	N/A								
NAA NAA NAA NAA NAA NAA NAA NAA NAA A Where Sampled # of Kicks or Jabs 1 M Squared Kick Net Fast/Slow Riffles/Runs 2.0 Kicks Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None None	Channel Alteration	NA								
NIA	or Channel Sinousity (LG)	K A N								
N/A  N/A  Gear Used Where Sampled # of Kicks or Jabs  1 M Squared Kick Net Fast/Slow Riffles/Runs 2.0 Kicks Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None None None	Bank Stability	N/A N/A								
Gear Used Where Sampled # of Kicks or Jabs  1 M Squared Kick Net Fast/Slow Riffles/Runs 2.0 Kicks  Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None	Veg. Protection, Grazing/	N/A								
Gear Used Where Sampled # of Kicks or Jabs  1 M Squared Kick Net Fast/Slow Riffles/Runs 2.0 Kicks Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None None None None None	Dis. Pressure, & Rip. Zone	N/A								
Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None None None None None	Bioassessment Collection	Gear Used 1 M Squared Kick Ne		# of Kicks or Jabs 2.0 Kicks						
None	General Biota Abundance	Periphyton None		Macrophytes None	Slimes	Macrobenthos	1			
Fish Composition-	Macrobenthos Abundance- Family and Tolerance Index	None							,	
Fish Composition-										
The state of the s	Fish Composition-									
					• god menuo					

Monitoring Site	Site ID	Surface Elevation	River Mile	Latitude	Longitude	Stream #	River Basin Date	
Weather Conditions	Now	Past 24 Hours	Hoavy Pain Last 7 Days	Air Temporature	79 16 32	43913	Conemaugh River 8/31/2001	
	Cloudy and cool		None	23.2*C				
Stream Characterization	Stream Subsystem Perrential	Stream Origin Mixture of origins	Stream Type Warmwater	Catchment Area	Gradient			
Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	Erosion None					
Riparian Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species Black Cherry, Multiflora	I Rose Bush					
Instream Features	Reach Length	Stream Width Sampling F	Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.	Channe
Large Woody Debris	Area N/A	Density N/A					מישור שווים מוושווסאירווווס מווט וחו	NO
Aquatic Vegetation	Dom. Type	Dom. Species	% Reach w/ AV					
Water Quality	Temperature 19.5°C Lab pH	Spec. Conductance 743 Alkalinity	Dissolved Oxygen Flow too low Acidity	Field pH 7.6 TSS	Turbidity None Total FE	Odors None Ferrous FE		Total Sulfates
Sediment/Substrate Deposition	Odors None	Oils	0.0 MG/L Deposits	118.0 MG/L	832.0 UG/L	80.0 UG/L	131.0 UG/L 742.0 UG/L	332.0 MG/L
Inorganic/Organic Substrate	Inorganic Majority of cobble, gravel, and silt	ravel, and silt		Organic Sticks wood coarse plant material	se plant material			
Epifaunal Substrate and Instream Cover Embeddedness (HG) or	Greater than 50% of Pool substrate Chara	substrate favorable for el acteristics - Mixture of sub	Greater than 50% of substrate favorable for epifaunal colonization; mix of cobble or other stable habitat and at a stage to allow full colonization potential - 36 Pool substrate Characteristics - Mixture of substrate materials, with gravel or other material and firm sand prevalent - 17	cobble or other stable	s habitat and at a	a stage to allow full ent - 17	colonization potential - 36	
or Pool Variability (LG) Sediment Deposition		Little or no enlargement of islands or point bars and less than <209	Little or no enlargement of islands or point bars and less than <20% of the hottom affected by sediment denosition = 20	bottom affected by se	Jilianut denocitio	20		
Channel Flow Status	Water fills >75% of the	he available channel; or <	Water fills >75% of the available channel; or <25% of channel substrate is exposed - 15	exposed - 15		0.7		
Channel Alteration Frequency of Riffles (HG) or Channel Sinousity (LG)	Channel sinousity - 7	edging absent or minmal, The bends in the stream i	Channelization or dredging absent or minmal; stream with normal pattern - 20 Channel sinousity - The bends in the stream increase of the stream length 3 to 4 times longer than if it was in a straight line - 17	20 3 to 4 times longer th	ian if it was in a	straight line - 17		
Bank Stability	Left and Right - Bank	ks stable; evidence of ero	Left and Right - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 18	r minimal; little potenti	ial for future prol	blems; <5% of bank	c affected - 18	
Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone Bloassessment Collection	Left and Right - 70-9 to any extent - 21; Le Gear Used 1 M Squared Kick Ne	Left and Right - 70-90% of the streambank surito any extent - 21; Left and Right - Width of rip. Gear Used Where Sampled 1 M Squared Kick Net Fast/Slow Riffes/Runs	Left and Right - 70-90% of the streambank surfaces coverd by native vegetation, but one class of plants is not well represent to any extent - 21; Left and Right - Width of rip. Zone 12-18 meters; human activities have impacted zone only minimally - 14 Gear Used Where Sampled # of Kticks or Jabs  1 M Squared Kick Net Fast/Slow Riffles/Runs - 2.0 Kicks	tation, but one class or activities have impac	of plants is not w cted zone only rr	rell represented, dis ninimally - 14	Left and Right - 70-90% of the streambank surfaces coverd by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth to any extent - 21; Left and Right - Width of rip. Zone 12-18 meters; human activities have impacted zone only minimally - 14  Gear Used  1 M Squared Kick Net Fast/Slow Riffles/Runs 2 0 Kicks	Il plant growth
General Biota Abundance	Periphyton None	Filamentous Algae None		Slimes	Macrobenthos	s Fish		
Macrobenthos Abundance- Family and Tolerance Index	None							
Fish Composition-	None							
designation of the second seco	-	The same of the sa						

Valence   Vale	Manifester Off.	91.10							
Cloudy and cool Name Strates (1994) a feat Strate (1994) a feat Strate (1994) a feat Strate (1994) and cool Name Name Name Name Name Name Name Name	Demo	UNT11	Surface Elevation	River Mile	Latitude	Longitude	Stream #	River Basin Date	
Stream Sub-year and color		Now	Past 24 Hours	Heavy Rain Last 7 Dave	12 53 Tompozaturo	79 16 02	43913	Conemaugh River 8/31/2001	
Stream Subsystem Situation Origin Stream Type Carciment Ava Gradient Formation Leading Carcin Marine of Carcin Freedom Nun Formation Carcin Marine of Carcin Freedom Nun Form York Carcin Carci		Cloudy and cool	None	None	remperature 23.2*C				
Peachiganidae moderne en circular Research Nan November Nan	Stream Characterization	Stream Subsystem	Stream Origin	Stream Type	Catchment Area	Gradient			
Forestwining with Dorns Species Procession of the Cherry Auditorial Rose Bush Non- Treath Length No. Species Procession Cherry Auditorial Rose Bush No. Bush	Watershed Features	Dom. Landuse	Mixture of origins Local NPS Pollution	Warmwater	N/A	wol.			
Trieschkein Peinta Bissel Chieven, Abalificat Beace Bauth Nach Length Nach Middle Nach Wilder Nach Middle Nach Wilder Nach Wild	Ribarian Venetation	Forest/Mining	Mine Drainage/Silt	None					
NA Ana NAM National Matth Sampling Reach Avg Depth Volcoty Catopy Cover Stronn Morph.  NA Ana NAM NAM NAM NAM NAM NAM Analysis Reach MAN NAM Too low Parity Shaded Majordy of shallow-rifle and unas Nother Vype Dom Species V Reach wal AV Nother Nam		Trees/Herb. Plants	Black Cherry, Multiflora	al Rose Bush		,			
Non-Type  Don's Species "K Raach w/AV  Non-Type  Non-Typ	Instream Features	Reach Length N/A	Stream Width N/A	Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.	Channelized/Dam
Non-Type  Don-Type  Don-Type  Don-Type  Don-Type  Non-Type  Spec. Conductance  None  None  None  None  None  None  None  Spec. Conductance  Spec.	Large Woody Debris	Area N/A	Density N/A			MOLOGI	ratily shaded	Majroity of shallow-riffle and runs	No.
Temperature Sine: Conductance Disabled Oxygen 1 Field pH Turbidity Odors 0ill  Lab pH Arallingy Acidity 178 None  Lab pH Arallingy Acidity 178 None  Odors 00 More  Odors 00 More  None  N	Aquatic Vegetation	Dom. Type	Dom. Species	% Reach w/ AV					
14 ppt 1 Akhalish Akhalish Acidiny 158S Total FE Notice Total Multiple Colors  Odors  Odors  Olos  None  None  None  Ogoshic  Ogo	Water Quality	Temperature	Spec. Conductance	Dissolved Oxygen	Field pH	Turbidity	Odors	lio	
None Note Note Note Note Note Note Note Not	AND BEEN ADMINISTRA	Lab pH 7.5	Alkalinity 128.0 MG/I	Acidity	TSS	Total FE	Ferrous FE	MN	Total Sulfates
	Sediment/Substrate Deposition	Odors	Oils	Deposits	100 NO.02	273.0 UG/L	90.0 UG/L		49.3 MG/L
	Inorganic/Organic	Inorganic		N/A	Organic				
	Substrate Epifaunal Substrate	Majority of cobble, gr Greater than 50% of	avel, and silt substrate favorable for ep	oifaunal colonization; mix of	Sticks, wood, coars	se plant material habitat and at a	stage to allow full o	olonization notential - 36	
	Embeddedness (HG) or Pool Substrate Char. (LG)	Pool substrate Chara	cteristics - Mixture of sub	strate materials, with gravel	or other material and	firm sand prevale	nt - 17		
	elocity/Depth Regime (HG) or Pool Variability (LG)		ority of pools small-shallov	w or pools absent - 4			3.		
	Sediment Deposition	Little or no enlargement	ent of islands or point bar	s and less than <20% of the	bottom affected by se	diment depositio	i - 20		
	Channel Alteration	Channelization or dre	doing absent or minmal:	25% of channel substrate is	exposed - 15				
	Frequency of Riffles (HG)	Channel sinousity - T	he bends in the stream ir	ncrease of the stream length	3 to 4 times longer th	an if it was in a s	raight line - 17		
	Bank Stability	Left - Banks stable; e Right - Banks stable	evidence of erosion or bar	nk failure absent or minimal; I	little potential for futur	e problems; <5%	of bank affected -		
	Veg. Protection, Grazing/	Left and Right - 70-9	0% of the streambank sur	rfaces coverd by native veger	tation, but one class of	of plants is not we	% of bank affected line lead	- 9	1
Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None None None None None None None None	ols. Pressure, & Rip. Zone Bloassessment Collection	Gear Used  1 M Squared Kick Ne	Where Sampled Where Sampled	- Width of rip. Zone 12-18 m # of Kicks or Jabs	eters; human activitie	s have impacted	zone only minimall	7 - 14	iant growth
None	General Biota Abundance	Periphyton None	Filamentous Algae	1	Slimes	Macrobenthos	Fish		
	facrobenthos Abundance- Family and Tolerance Index	None N				D C C C C C C C C C C C C C C C C C C C	None		
Companies   Comp	Fish Composition-	None							
CONTROL CONTRO									
		2.8							

Monitoring Site Demographics	Site ID UNT12	Surface Elevation 1099.0'	River Mile N/A	Latitude 40 33 14	Longitude 79 16 55	Stream # 43913	River Basin Date Conemation River 8/31/2001	Date 8/31/2001	
Weather Conditions	Now Cloudy and cool	Past 24 Hours	Heavy Rain Last 7 Days None	Air Temperature 28.3*C					
Stream Characterization	Stream Subsystem Perrential	Stream Origin Mixture of origins	Stream Type Warmwater	Catchment Area	Gradient	*Travels through old strip mine	old strip mine		
Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	<b>Erosion</b> None						
Riparian Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species							
Instream Features	Reach Length N/A	Stream Width 4.0'	Sampling Reach	Avg, Depth	Velocity 132.5 Gal/Min	Canopy Cover	Stream Morph.  Maindly of shallow-riffle and runs	riffle and rine	Channelized/Dam
Large Woody Debris	Area N/A	Density N/A					Acidate of Station		ON.
Aquatic Vegetation	Dom. Type N/A	Dom. Species > N/A	% Reach w/ AV						
Water Quality	Temperature 19.1*C Lab pH 5	Spec. Conductance 428 Alkalinity 7.8 MG/L	Dissolved Oxygen 6.7 MG/L Acidity 46.2 MG/L	Field pH 5.9 TSS	Turbidity None Total FE	Odors None Ferrous FE	Oil None Total MN	Total AL	Total Sulfates
Sediment/Substrate Deposition	Odors	Oils	Deposits					1230.0 00/L	214.0 MG/L
Inorganic/Organic Substate	Inorganic Majority of cobble, gravel, and silt	avel. and silt		Organic Sticks wood coarse plant material	se plant material				
Epifaunal Substrate and Instream Cover	Greater than 50% of	substrate favorable for ep	Greater than 50% of substrate favorable for epifaunal colonization; mix of cobble or other stable habitat and at a stage to allow full colonization potential - 36	sobble or other stable	habitat and at a	stage to allow full c	olonization potential	- 36	
Embeddedness (HG) or Pool Substrate Char. (LG)	Pool substrate Chara	cteristics - Mixture of sub	Pool substrate Characteristics - Mixture of substrate materials, with gravel or other material and firm sand prevalent - 17	or other material and fi	irm sand prevale	nt - 17			
Velocity/Depth Regime (HG) or Pool Variability (LG)	Pool variability - Majo	Pool variability - Majority of pools small-shallow or pools absent - 4	w or pools absent - 4						
Sediment Deposition	Little or no enlargeme	ent of islands or point bar	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition - 20	oottom affected by sec	diment deposition	1-20			
Channel Flow Status	Water fills >75% of the	ne available channel; or <	Water fills >75% of the available channel; or <25% of channel substrate is exposed - 15	exposed - 15					
Channel Alteration Frequency of Riffles (HG) or Channel Sinousity (LG)	Channelization or dre Channel sinousity - T	edging absent or minmal; The bends in the stream in	Channelization or dredging absent or minmal; stream with normal pattern - 20 Channel sinousity - The bends in the stream increase of the stream length 3 to 4 times longer than if it was in a straight line - 17	20 3 to 4 times longer tha	an if it was in a st.	raight line - 17			
Bank Stability	Left - Banks stable; e Right - Banks stable;	evidence of erosion or bar evidence of erosion or b	Left - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 9 Right - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems: <5% of bank affected - 9	ittle potential for future little potential for futu	e problems; <5% re problems; <5%	of bank affected -	6		
Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone	Left and Right - 70-9	0% of the streambank su	Left and Right - 70-90% of the streambank surfaces coverd by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth to any oreat extent - 21: Left and Right - Width of rin Zone 12-18 meters: human activities have imported zone and minimally 4.	ation, but one class o	f plants is not we	Il represented; disr	uption evident but no	ot affecting full pl	ant growth
Bioassessment Collection	Gear Used 1 M Squared Kick Net	Where Sampled Fast/Slow Riffles/Runs	# of Kicks or Jabs		000000000000000000000000000000000000000	my minimally = 14			
General Biota Abundance	<b>Periphyton</b> None			Slimes	Macrobenthos None	Fish None			
Macrobenthos Abundance- Family and Tolerance Index	None		VI 100 A.2000 F						
	04/7 / 1800 • (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Annual Control of the						
Fish Composition	None								
Contraction of the last of the									

Monitoring Site	Site ID	Surface Elevation	River Mile	· · · !tude	Longitude	Stream #	River Basin Date	
	UNT13	1129.0'	N/A	1	79 16 49	43913	Conemaugh River 9/5/2001	П
Weather Cc , ins	Cool clear warm	Past 24 Hours	Heavy Rain Last 7 Days	emperature				
Stream Characterization	Stream Subsystem		Stream Type	Catchment Area	Gradient			
Wafershed Features	Dom Landies	Mixture of origins	Warmwater	N/A	Low			
אמנסו אווממ ו משנחופס	Forest/Mining	Mine Drainage/Silt	None	*,				
Riparian Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species Ferns, and berry bushes	es					
Instream Features	Reach Length	Stream Width 10.0'	Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.	Channelized/Dam
Large Woody Debris	Area N/A	Density N/A				r ainy open	runs, and pools; Minority	No
Aquatic Vegetation	Dom. Type N/A	Dom. Species	% Reach w/ AV				or deep run and pools	
Water Quality	Temperature 15.4*C Lab pH	Spec. Conductance 277 Alkalinity 78.0 MC/II	Dissolved Oxygen 6.7 MG/L Acidity	Field pH 7.7 TSS	Turbidity None Total FE	Odors None Ferrous FE		-
Sediment/Substrate Deposition	Odors	Oils	Deposits	O.U MIG/L	097.0 UG/L	130.0 UG/L	333.0 UG/L <200.0 UG/L	UG/L 155.0 MG/L
Inorganic/Organic Sibstrate	Inorganic Majority of cobble. or	Inorganic Majority of cobble, gravel, and sill: minority of boulders	boulders	Organic Slinke wood coarea plant material	leisotem tacka on			
Embeddedness (HG) or	Greater than 50% of Pool substrate chara	substrate favorable for e	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of cobble or othe Pool substrate characteristics - Mixture of substrate materials, with gravel and firm sand prevalent; - 17	h cover; mix of cobble and firm sand prevale	or other stable h	abitat and at any st	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of cobble or other stable habitat and at any stage to allow full colonization potential - 17 Pool substrate characteristics - Mixture of substrate materials, with gravel and firm sand prevalent; - 17	potential - 17
Velocity/Depth Regime (HG) or Pool Variability (LG)		Pool variability - Majority of pools small-shallow or pools	ow or pools absent - 4					
Sediment Deposition	Little or no enlargem	Little or no enlargement of islands or point bars and less	rs and less than <20% of the	than <20% of the bottom affected by sediment deposition - 20	diment depositio	n - 20		
Channel Flow Status Channel Alteration	Channelization or dre	he available channel; or edging absent or minmal	Water fills >75% of the available channel; or <25% of channel substrate is exposed - 15 Channelization or dradging absent or minmal; stream with normal pattern - 20	s exposed - 15				
Frequency of Riffles (HG)	Channel sinousity -	The bends in the stream	Channel sinousity - The bends in the stream increase of the stream length 3 to	the stream length 3 to 4 times longer than if it was in a straight line - 17	an if it was in a s	traight line - 17		
Bank Stability	Left - Banks stable; (	Left - Banks stable; evidence of erosion or bank failure a Right - Banks stable; evidence of erosion or bank failure	Left - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 8 Right - Banks stable: evidence of erosion or bank failure absent or minimal: little notential for future problems; <5% of bank affected - 8	bsent or minimal; little potential for future problems; <5% of bank affected - 8 absent or minimal: little notential for future problems: <6%, of bank affected a	re problems; <5%	of bank affected -	8	
Veg. Protection/Riparian Width		30% of the streambank sure. 7 Left and Right - Widt	Left and Right - 70-90% of the streambank surfaces coverd by native vegetation, but one class of plants is not well represented; d growth to any extent - 7 Left and Right - Width of rip. Zone 12-18 meters; human activities have impacted zone only minimally - 8	etation, but one class of human activities have	of plants is not we	ell represented; disionly minimally - 8	Left and Right - 70-90% of the streambank surfaces coverd by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth to any extent - 7 Left and Right - Width of rip. Zone 12-18 meters; human activities have impacted zone only minimally - 8	ling full plant
bioassessment Collection		Gear Used Where Sampled 1 M Squared Kick Net Fast/Slow Riffles/Runs	# of Iticks or Jabs s 2.0 Kicks			1 000		
General Biota Abundance	Periphyton None	Filamentous Algae None		Slimes	Macrobenthos Rare	Fish		
Macrobenthos Abundance- Family and Tolerance Index	Tipulida 3							
Fish Composition-			-					
	WHEN.	AND STANDARD STANDARD	WAS SHIP					

Monitoring Site	Site ID	Surface Elevation	River Mile	Latitude	Longitude	Stream #	River Basin	Date	
Weather Conditions	Now	Past 24 Hours	Heavy Rain Last 7 Days	Air Temperature	81 01 67	43913	Conemangh River	8/30/2001	
	Cool, clear	None	None	23.9*C					
Stream Characterization	Stream Subsystem Perrential	Stream Origin Mixture of origins	Stream Type Warmwater	Catchment Area	Gradient				
Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	Erosion None						
Riparian Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species Ferns, and berry bushes	So						
Instream Features	Reach Length	Stream Width 10.0'	Sampling Reach	Avg, Depth	Velocity	Canopy Cover	Stream Morph.	910	Channelized/Dam
Large Woody Debris	Area N/A	Density N/A				nodo (mp.	run, pool; ; minority of	of _	001
Aquatic Vegetation	Dom. Type	Dom. Species	% Reach w/ AV				מפפל זמון מווח להסוף		
Water Quality	Temperature 23.9°C Lab pH	Spec. Conductance 261 Alkalinity	Dissolved Oxygen 7.13 MG/L Acidity	Field pH 7.3 TSS	Turbidity None Total FE	Odors None Ferrous FE	Oil None Total MN	Total AL	Total Sulfates
Sediment/Substrate Deposition	Odors	Oils	Deposits	24.0 MG/L	2030.0 UG/L	150.0 UG/L	382.0 UG/L	364.0 UG/L	54.6 MG/L
Inorganic/Organic Substrate Substrate		avel, and silt; minority of	boulders	Organic Sticks wood coars	se plant material				
Epifaunal Substrate and Instream Cover	Greater than 50% of	substrate favorable for e	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of cobble or other stable habitat and at any stage to allow full colonization potential - 34	cover; mix of cobble	or other stable h	abitat and at any s	stage to allow full color	nization potent	ial - 34
Embeddedness (HG) or Pool Substrate Char. (LG)	Pool substrate charac	cteristics - Mixture of sub	Pool substrate characteristics - Mixture of substrate materials, with gravel and firm sand prevalent; - 17	and firm sand prevaler	nt; - 17				
Velocity/Depth Regime (HG)		Pool variability - Majority of pools small-shallow or pools	w or pools absent - 4						
Sediment Deposition	Little or no enlargeme	ent of islands or point bar	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition - 20	bottom affected by se	diment deposition	on - 20			
Channel Flow Status	Water fills >75% of the	he available channel; or	Channelization or dedeing about or minoral, or <25% of channel substrate is exposed - 15	exposed - 15					
Frequency of Riffles (HG) Channel Sinousity (LG)	Channel sinousity - T	The bends in the stream	Channel shousity - The bends in the stream increase of the stream length 3 to	in normal pattern - 20 the stream length 3 to 4 times longer than if it was in a straight line - 17	an if it was in a	straight line - 17			
Bank Stability	Left - Banks stable; e Right - Banks stable:	evidence of erosion or ba	Left - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 8 Right - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 8	little potential for futur	re problems; <59	% of bank affected	8 7		
Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone	Left and Right - 70-90% or growth to any extent - 21 Left and Right - Width of	10% of the streambank st 21 h of rip. Zone 12-18 mete	Left and Right - 70-90% of the streambank surfaces coverd by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth to any extent - 21  Left and Right - Width of rip. Zone 12-18 meters; human activities have impacted zone only minimally - 16	station, but one class c	of plants is not w	vell represented; di	a - o sruption evident but no	ot affecting full	plant
Bioassessment Collection	Gear Used 1 M Squared Kick Ne	Gear Used Where Sampled 1 M Squared Kick Net Fast/Slow Riffles/Runs	# of Kicks or Jabs s 2.0 Kicks				848 Is303		
General Biota Abundance		Filamentous Algae Minimal	1	Slimes	Macrobenthos	s Fish None			
Macrobenthos Abundance- Family and Tolerance Index	one N								
Fish Composition-	None								~
									0

MOUITOINING SHE	Site ID	Surface Elevation	Kiver Mile	Latitude	Conditude	Stroam #	River Resin Date	
Demod	AUL 08	1099 0'	N/A	38 40	20 46 20	10040	Marie Dasiii Dalle	
	Now	Past 24 Hours	Heavy Rain Last 7 Days	ir Temperature	79 10 39	43913	Conemangh River 8/30/2001	
	Cool, clear	None	None	32.3*C				
Stream Characterization	Stream Subsystem	Stream Origin	Stream Type	Catchment Area	Gradient			
Waterchad Ecoture	Perrential	Mixture of origins	Warmwater	N/A	Low			
watershed realines	Forest/Mining	Mine Drainage/Silt	None					
Riparian Vegetation	Dom. Type	Dom. Species						
	Trees/Herb. Plants	N/A			,			
Instream Features	Reach Length N/A	Stream Width 6.0'	Sampling Reach	Avg, Depth 0.15'	Velocity 276.5 GallMin	Canopy Cover	Stream Morph.	Channelized/Dam
Large Woody Debris	Area N/A	Density N/A				and characteristics	run, pool; minority of deep-	O.Z.
Aquatic Vegetation	Dom. Type	Dom. Species	% Reach w/ AV				run and pools	
	N/A	N/A	N/A					
water Quality	1 emperature	Spec. Conductance	Dissolved Oxygen	Field pH	Turbidity	Odors	lio	
	Lab pH	Alkalinity	Acidity	TSS	Total FF	None Ferroire FE	None Total Min	
	6.8	58.0 MG/L	0.0 MG/L	38.0 MG/L	1120.0 UG/L	50.0 UG/I	261 0 11G/l 869 0 11G/l	<u> </u>
Sediment/Substrate	Odors	Oils	Deposits					71. 33.8 MG/L
Inordanic/Ordanic	Inordanie	None	SIII					
Substrate	Majority of cobble, gr	Majority of cobble, gravel, and silt; minority of boulders	oulders	Organic Sticks, wood, coarse plant material	se plant material			
Epitaunal Substrate and Instream Cover	Greater than 50% of	substrate favorable for ep	ifaunal colonization and fish c	over; mix of cobble or	r other stable hab	itat and at any sta	Greater than 50% of substrate favorable for epifaunal colonization and fish cover, mix of cobble or other stable habitat and at any stage to allow full colonization potential - 34	otential - 34
Embeddedness (HG) or Pool Substrate Char (LG)	Pool substrate charac	Pool substrate characteristics - Mixture of substrate material	trate materials, with gravel an	s, with gravel and firm sand prevalent; - 17	: - 17			
Velocity/Depth Regime (HG)	Pool variability - Majo	Pool variability - Majority of pools small-shallow or pools abs	or pools absent - 4					
or Pool Variability (LG)								
Sediment Deposition	Little or no enlargeme	ent of islands or point bare	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition - 20	ottom affected by sed	iment deposition	- 20		
Channel Flow Status	Water fills >75% of the	e available channel; or <	Water fills >75% of the available channel; or <25% of channel substrate is exposed - 15	xposed - 15				
Fraction by of Riffles (HC)	Chappel singuisity T	be beed in the effect in	Channel channel The head in the channel, stream with normal pattern - 20	0.				
or Channel Sinousity (LG)	Citatiliei siiiousity - 1	chainei sinoushy - The benus in the siteam increase of the	crease of the stream length 3	stream length 3 to 4 times longer than if it was in a straight line - 17	n if it was in a stra	aight line - 17		
Bank Stability	Left - Banks stable; e	vidence of erosion or ban	Left - Banks stable; evidence of erosion or bank failure absent or minimal: little notential for future oxoblome; xee, of bank affected or	tle notential for future	problems. 6507	bolooffe dock t		
BARTERIA	Right - Banks stable;	evidence of erosion or ba	Right - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 8	little potential for futur	e problems; <5%	of bank affected -		
Veg. Protection, Grazing/	Left and Right - 70-9	Left and Right - 70-90% of the streambank surfaces coverd	faces coverd by native vegeta	ition, but one class of	plants is not well	represented; disri	by native vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth	full plant growth
Bioassessment Collection	Gear Used	Where Sampled	Gear Used Where Sampled # of Kicks or Jaks	activities have impact	ed zone only min	mally - 16		
	1 M Squared Kick Net							
General Biota Abundance	Periphyton None		Macrophytes	Slimes	Macrobenthos	Fish		
Macrobenthos Abundance-		,				2000		
Family and Tolerance Index (1-10, EPA RPB)	Corydalidae 0	Decapoda (Order) 6	Hydropshychidae 4					
Fish Composition-	None							

ation Storain Subayana Stenen Organ Standard Name (2001)  Storain Subayana Stenen Organ Standard Name (2001)  Storain Subayana Stenen Organ Standard Name (2001)  Storain Subayana Stenen Organ Standard (2001)  Storain Storain Storain Standard (2001)  Storain Storain Storain Storain Standard (2001)  Storain Storain Storain Storain Storain (2001)  Storain S	Monitoring Site Demographics	Site ID UNT15	Surface Elevation 1169.0'	River Mile N/A	Latitude 40 34 14	Longitude 79 14 39	Stream # 43913	River Basin	Date	
	Weather Conditions	Now	Past 24 Hours	/ Rain	Air Temperature			one de la company de la compan	1	
	Stroam Characterization	Cool, clear		None	27.6*C					
	dream Characterization	Stream Subsystem Perrential		Stream Type Warmwater	Catchment Area N/A	Gradient				
	Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	Erosion None						
	Riparian Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species Black Locust, Red Ma	ple, Black Cherry, and Red Og	×					
	Instream Features	Reach Length N/A	Stream Width 7.5'	Sampling Reach N/A		Velocity	Canopy Cover	Stream Morph.	-riffle and rune	Channelized/Dam
	Large Woody Debris	Area N/A	Density N/A				popular frame fram	And a	alla alla lalla	DN DN
	Aquatic Vegetation	Dom. Type N/A	Dom. Species N/A	% Reach w/ AV						
	Water Quality	Temperature 20.7*C Lab pH	Spec. Conductance 92 Alkalinity	Dissolved Oxygen 7.4 MG/L Acidity	Field pH 7.5 TSS	Turbidity None Total FE	Odors None Ferrous FE	Oil None Total MN	Total AL	Total Sulfates
	Sediment/Substrate Deposition	Odors	Oils	Deposits	40.0 INIO/L	479.0 UG/L	70.0 UG/L	33.0 UG/L	410.0 UG/L	29.5 MG/L
	Inorganic/Organic Substrate	Inorganic Majority of cobble, o	rravel, and silt		Organic Sticks wood coar	einotem toelo es				
	Epifaunal Substrate and Instream Cover Embeddedness (HG) or	Greater than 50% o	f substrate favorable for e acteristics - Mixture of su	spifaunal colonization; mix of or spifaunal colonization; mix of or spifaula in strate materials, with gravel or	cobble or other stable	habitat and at a	a stage to allow full ent - 17	colonization potentia	1 - 36	
	ocity/Depth Regime (HG) or Pool Variability (LG)	Pool variability - Ma	jority of pools small-shalle	ow or pools absent - 4						
	Sediment Deposition	Little or no enlargen	nent of islands or point ba	ars and less than <20% of the	bottom affected by se	ediment denosition	no - 20			
	Channel Flow Status	Water fills >75% of	the available channel; or	<25% of channel substrate is	exposed - 15					
	requency of Riffles (HG)	Channelization or d	redging absent or minma The bends in the stream	; stream with normal pattern - increase of the stream length	20 3 to 4 times longer th	an if it was in a	straight line - 17			
	Bank Stability	Left - Banks stable:	evidence of erosion or ha	ank failure absent or minimal.	ittle potential for futur	o probleme: 750	/ of honly official			
	eg. Protection, Grazing/	Right - Banks stable Left and Right - 70-	e; evidence of erosion or 190% of the streambank su	bank failure absent or minimal, urfaces coverd by native veget	ittle potential for fut ation, but one class	e problems, <37 ure problems; <{ of plants is not w	% of bank affected - 5% of bank affected rell represented; dis	9  - 9 ruption evident but n	not affecting full	plant growth
Periphyton     Filamentous Algae     Macrophytes     Slimes     Macrobenthos       None     None     None       None     None       None     None	s. Pressure, & Rip. Zone oassessment Collection	Gear Used  1 M Squared Kick N	Left and Right - Width of a Where Sampled let Fast/Slow Riffles/Run	rip. Zone 12-18 meters; humar # of Kicks or Jabs ps. 2.0 Kicks	activities have impa	cted zone only n	ninimally - 16			
None	eneral Biota Abundance	Periphyton None	Filamentous Algae Minimal	1	Slimes	Macrobentho				
	icrobenthos Abundance- Family and Tolerance Index	None								
				Australia (Australia Australia Austr						
	Fish Composition-	None								

-									
Demod	All 09	Surface Elevation	River Mile	titude	Longitude	Stream #	River Basin	Date	
Weather Cons	Now	Daet 24 Hours	Ucasa Dain Lock 7 Days	1	79 14 35	43913	Conemaugh River 8/30/2001	8/30/2001	
	Cool. clear. warm	None	None None	1 emperature					
Stream Characterization	Stream Subsystem		Stream Type	Catchment Area	Gradient				
	Perrential		Warmwater	N/A	Low				
Watershed Features	Dom. Landuse	Local NPS Pollution	Erosion						
Ribarian Vegetation	Forest/Mining	Mine Drainage/Silt	None						
	Trees/Herb. Plants	Shagbark Hickory, Yellow Poplar,	low Poplar, Black Cherry, Witch Hazel	/itch Hazel					
Instream Features	Reach Length N/A	Stream Width 4.0'	Sampling Reach	Avg, Depth 0.13'	Velocity 73.6 Gal/Min	Canopy Cover	Stream Morph.		Channelized/Dam
Large Woody Debris	Area N/A	Density N/A					run, pool; minority of deep runs	5	
Aquatic Vegetation	Dom. Type N/A	Dom. Species	% Reach w/ AV				and pools		
Water Quality	Temperature 22.6*C Lab pH	Spec. Conductance 302 Alkalinity	Dissolved Oxygen 6.4 MG/L Acidity	Field pH 7.4 TSS	Turbidity None Total FE	Odors None Ferrous FE	Oil None Total MN	Total AL	Total Sulfates
Sediment/Substrate Deposition	Odors None	Oils	Deposits Silt	12.0 MG/L	1150.0 UG/L	80.0 UG/L	157.0 UG/L	219.0 UG/L	28.3 MG/L
Inorganic/Organic Substrate	Inorganic Majority of cobble, gr	ravel, and silt: minority of	boulders	Organic Slicks wood coar	rse plant material				
Epifaunal Substrate	Greater than 50% of	substrate favorable for e	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of cobble or other stable habitat and at any stage to allow full colonization potential - 34	h cover; mix of cobble	or other stable h	abitat and at any st	age to allow full colo	onization potent	ial - 34
Embeddedness (HG) or Pool Substrate Char. (LG)	Pool substrate chara	acteristics - Mixture of sub	Pool substrate characteristics - Mixture of substrate materials, with gravel and firm sand prevalent; - ,17	and firm sand prevale	ent; - 17				
Velocity/Depth Regime (HG) or Pool Variability (LG)		Pool variability - Majority of pools small-shallow or pools absent - 4	w or pools absent - 4						
Sediment Deposition	Little or no enlargem	rent of islands or point bar	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition - 20	e bottom affected by s	sediment depositio	n - 20			
Channel Flow Status	Water fills >75% of the	he available channel; or <	Water fills > 75% of the available channel; or <25% of channel substrate is exposed - 15	s exposed - 15		, r			
Frequency of Riffles (HG) or Channel Sinousity (LG)	Channel sinousity -	The bends in the stream in	Channel sinousity - The bends in the stream increase of the stream length 3 to 4 times longer than if it was in a straight line - 17	h 3 to 4 times longer th	han if it was in a s	traight line - 17			
Bank Stability	Left - Banks stable; (Right - Banks stable;	evidence of erosion or ba	Left - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 8 Right - Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected - 8	i; little potential for futual; little potential for fu	ure problems; <5%	of bank affected - % of bank affected	8 -		
Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone	Left and Right - 70-9 to any extent - 21: 1	30% of the streambank su	Left and Right - 70-90% of the streambank surfaces coverd by native Vegetation, but one class of plants is not well represented; disruption evident but not affecting full plant growth to any extent - 21: Left and Right - Width of the 7-na 19-18 meters: human activities have impered and solve properties.	etation, but one class	of plants is not we	all represented; dis	ruption evident but no	ot affecting full	plant growth
Bioassessment Collection	Gear Used 1 M Squared Kick Ne	Gear Used Where Sampled 1 M Squared Kick Net Fast/Slow Riffles/Runs	# of Kicks or Jabs		acted 20116 Olly 1	minimally - 10			
General Biota Abundance	Periphyton None	Filamentous Algae Minimal	Macrophytes None	Slimes	Macrobenthos	Fish			
Macrobenthos Abundance- Famly and Tolerance Index	None								
Fish Composition-	None								
Beetholog Sta									
		AND RESIDENCE AND ADDRESS OF THE PERSON NAMED IN COLUMN 1 AND THE		Annual Control of the					

The State of	Monitoring Site Demographics	Site ID UNT16	Surface Elevation	River Mile	Latitude	Longitude	Stream #	River Basin D	Date	
Stream Shared and the control of the	Weather Conditions	Now	Past 24 Hours	Heavy Rain Last 7 Days	Air Temporaturo	12 14 71	43813	Conemangn River 8	/30/2001	
Stream Subsystem Stream Origin (1997)  Formulation Leading Leading (1997)  Formulation Leading (1997)  Formula		Cool, clear		None	26.9*C					
Dom. Type         Dom. Type         Control Will Page Include         Control State Included Incl	Stream Characterization	Stream Subsystem Perrential		Stream Type Warmwater	Catchment Area	Gradient				
Dom. Type  Born. Species  Born. Conductance of Species  Born. Spec	Watershed Features	Dom. Landuse Forest/Mining	Local NPS Pollution Mine Drainage/Silt	Erosion None						
No. Avea Nat. Stream Worth. Sampling Reach NA. Depth Volocity Canopy Cover Stream Morph. NA. Avea Nat. Nat. Avea Nat. Avea Nat. 1 Galf 4 89 S Perty Straated Majority of strainov-ritie and runs. Nat. Nat. Nat. Nat. Nat. Nat. Nat. Nat	Riparlan Vegetation	Dom. Type Trees/Herb. Plants	Dom. Species Red Maple, Hickory, B		uch-Me-Not					
Notes Non-Type Dom. Species – "K Reach W AV Non-Type Dom. Species – "K	Instream Features	Reach Length N/A	Stream Width N/A		Avg, Depth	Velocity 1 Gal/ 4 89 S	Canopy Cover	Stream Morph.	E pac of	Channelized/Dam
Non-Type Don. Spacies - W. Reach w/AV  Non-Type None Space Conductance Disasoved Oxygen 74 for the None None None None None Space Conductance Disasoved Oxygen 774 for the None Space Conductance Disasoved Oxygen 774 for None Space Conductance Space Conductance Space Conductance Space Conductance Space Conductance Space Spac	Large Woody Debris	Area N/A	Density N/A					wajiony of stranow-tr	alle alle lulls	001
Funguesture   Spec. Conductance   Spec. Mode Oxygen   Field PH   Turbidity   Odors   Oil	Aquatic Vegetation	Dom. Type	n. Species	% Reach w/ AV						
Total AL Abdielling Activity 152 Molt. 2420 U.Grt. 190 U.Grt. 720 U.Grt. 720 U.Grt. 190 U.Grt. 720	Water Quality	Temperature 19.0*C	Spec. Conductance	solved MG/L	Field pH 7.4	Turbidity None	Odors None	Oil		
None		Lab pH 7.2	Alkalinity 108.0 MG/L	Acidity 0.0 MG/L	TSS 32.0 MG/L	<b>Total FE</b> 2420.0 UG/L	Ferrous FE	_	otal AL	Total Sulfates
	Sediment/Substrate Deposition	Odors None	Oils	Deposits N/A					1500 0.21	20.1 MG/L
	Inorganic/Organic Sibstrate	Inorganic Majority of cobble, g	ravel, and silt		Organic Sticks, wood coar	se plant material				
	Epifaunal Substrate	Greater than 50% o	f substrate favorable for e	pifaunal colonization; mix of	cobble or other stable	e habitat and at a	stage to allow full o	colonization potential -	36	
	Embeddedness (HG) or Pool Substrate Char. (LG)		racteristics - Mixture of su	bstrate materials, with gravel	or other material and	firm sand prevale	ent - 17			
	elocity/Depth Regime (HG) or Pool Variability (LG)		jority of pools small-shalld	ow or pools absent - 4						
	Sediment Deposition	Little or no enlargen	nent of islands or point ba	rs and less than <20% of the	bottom affected by se	ediment denositio	0 - 00			
	Channel Flow Status	Water fills >75% of	the available channel; or	<25% of channel substrate is	exposed - 15					
	Frequency of Riffles (HG) or Channel Shousity (LG)	Channel sinousity -	The bends in the stream	stream with normal pattern- increase of the stream length	3 to 4 times longer th	nan if it was in a s	traight line - 17			
	Bank Stability	Left - Banks stable; Right - Banks stable	evidence of erosion or ba	ank failure absent or minimal;	little potential for futu	re problems; <5%	of bank affected -	6		
	Veg. Protection, Grazing/ Dis. Pressure, & Rip. Zone	Left and Right - 70-	90% of the streambank sueff and Right - Width of right	Infaces coverd by native vege	tation, but one class	of plants is not we	ell represented; disr	ruption evident but not	affecting full p	lant growth
Periphyton Filamentous Algae Macrophytes Slimes Macrobenthos None	Sloassessment Collection	Gear Used 1 M Squared Kick N	Where Sampled let Fast/Slow Riffles/Run	# of Kicks or Jabs		cted zone only in	miniany - 10			
None	General Biota Abundance		Filamentous Algae	1	Slimes	Macrobenthos	1			
	Aacrobenthos Abundance- Family and Tolerance Index									
	States (Artist Colors)									
	Fish Composition-	None								





Surface Elevation: 1095' Latitude: 40 30 51 COA01

Surface Elevation: 1095' Latitude: 40 30 52

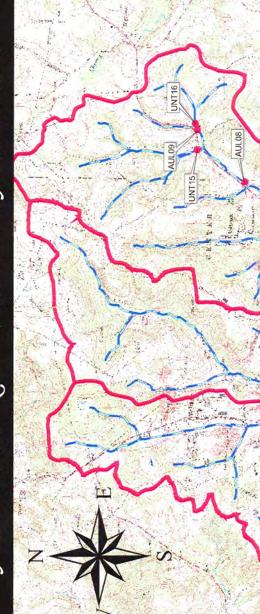
Surface Elevation: 1099 Longitude: 79 17 14

Surface Elevation: 1099' Latitude: 40 31 59 Longitude: 79 17 06

Surface Elevation: 1099' ongitude: 79 16 58 Latitude: 40 32 02

Scott Alexander August 2001

# Austsmans Run Watershed Assessment



Surface Elevation: 1101' Latitude: 40 32 53 Longitude: 79 16 02 UNT11

Surface Elevation: 1122' Latitude: 40 32 52 Longitude: 79 16 32

Surface Elevation: 1099' Latitude: 40 33 14 Longitude: 79 16 55

UNT13

UNT12

UNT09

UNT13 Surface Elevation: 1099' Latitude: 40 33 24 Longitude: 79 15 37

AUL08

Surface Elevation: 1099' Latitude: 40 33 48 Longitude: 79 15 02

UNT07

AUL04

JNT06

Surface Elevation: 1169' Latitude: 40 34 14 Longitude: 79 14 39

AUL09

Latitude: 40 34 11 Longitude: 79 14 35 Surface Elevation: 1182'

UNT16

Aultman Run Watershed

V Aultman Run

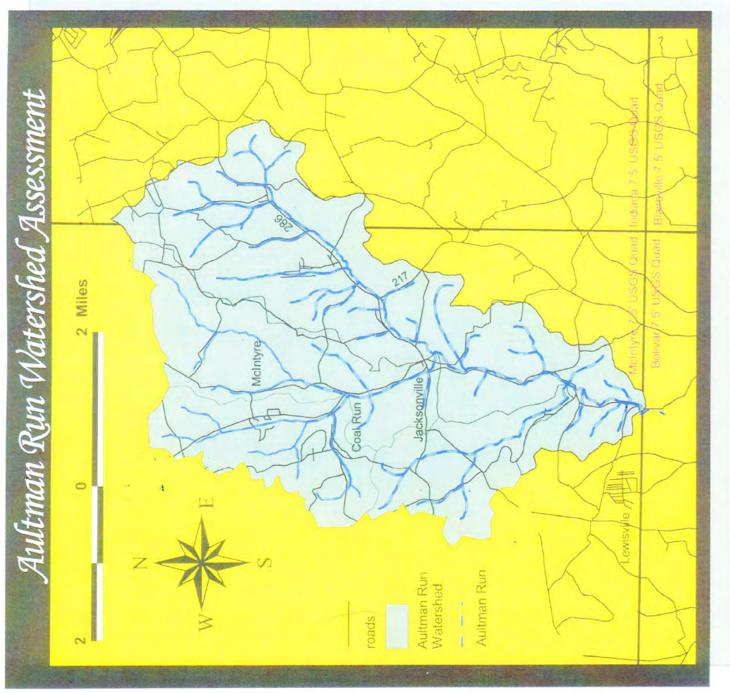
UNT05 AUL03

Sample Point

Surface Elevation: 1201' Latitude: 40 34 15 Longitude: 79 14 21

5000 Feet

Monitoring and Assistance Initiative Watershed







Surface Elevation: 1002' Longitude: 79 17 37 Latitude: 40 30 01 AUL01

Surface Elevation: 1072' Latitude: 40 30 09 Longitude: 79 17 31

# UNTOT

# UNT03

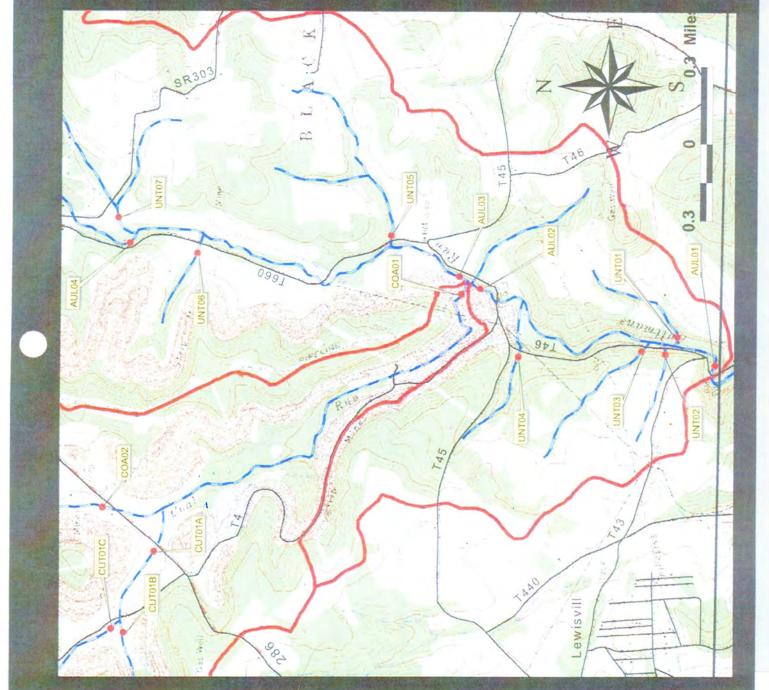
1098, Surface Elevation: 10 Latitude: 40:30:51 Longitude: 79:17:36

Surface Elevation, 1095' Latitude, 40 30 49 Longitude: 79 17 17 AUL02

# UNT04

Surface Elevation: 1095' Longitude, 79 17 16 Latitude: 40 30 49

Surface Elevation: 1095' Latitude: 40 30 51 Longitude: 79 17 16



CUT01A

Watershed

Monitoring and

Assistance

Initiative

Surface Elevation, 1199° Latitude, 40, 31, 53 Longitude, 79, 18, 29

Surface Elevation 1252' Latitude: 40 31 59 Longitude: 79 18 49 CUT01B

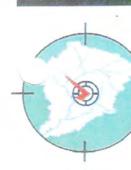
Surface Elevation 1236' Latitude: 40 32 01 Longitude: 79 18 48

Surface Elevation: 1214' Latitude: 40 32 03 Longitude: 79 18 16 COA02

Surface Elevation: 1095' Latitude: 40 30 52 Longitude: 79 17 14

Latitude: 40 32 02 Longitude 79 16 58 Surface Elevation: 1099'

Latitude: 40 31 59 Longitude: 79 17 06 Surface Elevation, 1099° AUL04



Surface Elevation, 1299" Longitude: 79 18 34 Latitude: 40 32 37 COA03

Surface Elevation, 1111 Latitude, 40 32 19 REE01

Surface Elevation, 1109' Latitude: 40 32 24 Longitude: 79 17 09 RUNT01

Surface Elevation: 1112 Latitude: 40 32 25 Longitude: 79 17 06 REE02

Surface Elevation: 1103 Longitude: 79 17 26 Latitude: 40 33 03 RUNT02

Surface Elevation, 1099 Longitude: 79 17 31 Latitude: 40 33 03 RUNT03

Surface Elevation: 1100

Surface Elevation 1009 Latitude 40 33 21 Longitude: 79 17 27 RUNT04A

Surface Elevation: 1159 Longitude: 79 17 14 Latitude: 40 33 55 RUNT04B

RUNT04C

Surface Elevation 1102' Surface Elevation 1148' Longitude: 79 17 16 Longitude: 79 17 31 Latitude: 40 33 19 Latitude: 40 33 56 REE04

Aultman Run Wershed Assessment

Matersher

Monitoring and

Assistance Initiative Surface Elevation: 1156' Latitude: 40 33 27 Longitude: 79 17 47 REE05

Surface Elevation: 1159' Latitude: 40 33 29 Longitude: 79 17 46 RUNT06 Surface Elevation: 1197

Surface Elevation: 1197' Latitude: 40 33 45 REE06 Longitude: 79 17 54 RUNT07 Surface Elevation: 1197

Surface Elevation: 1200' REE07

AUL05

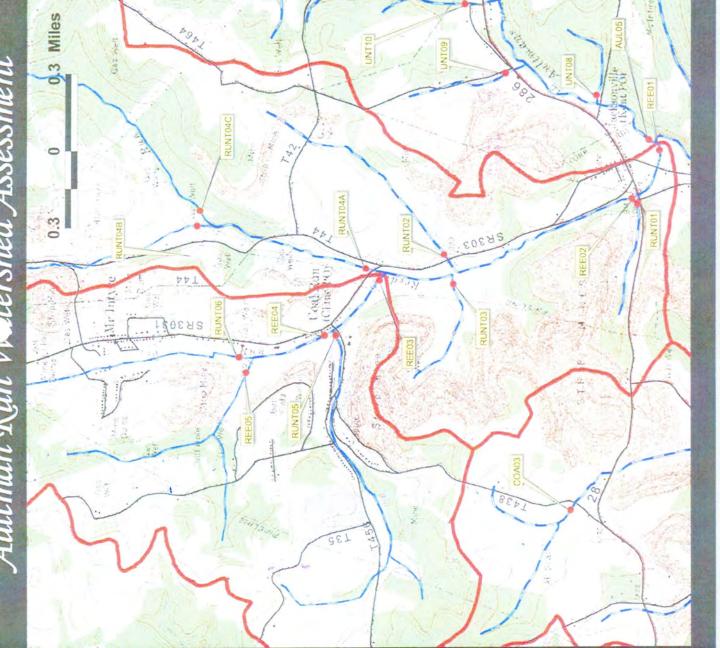
Surface Elevation: 1129' Latitude: 40 32 33 Longitude: 79 16 49

UNT08 Latitude: 40 32 33 Surface Elevation: 1128

Longitude: 79 16 38 UNT09

UNT10 Latitude: 40 32 59 Longitude: 79 16 12 Surface Elevation: 1109

Scott Alexander July 2001





Surface Elevation: 1101\* Latitude: 40 32 53

Surface Elevation: 1099' Latitude: 40 32 59 Longitude: 79 10 01 Longitude: 79 16 02 AUL06

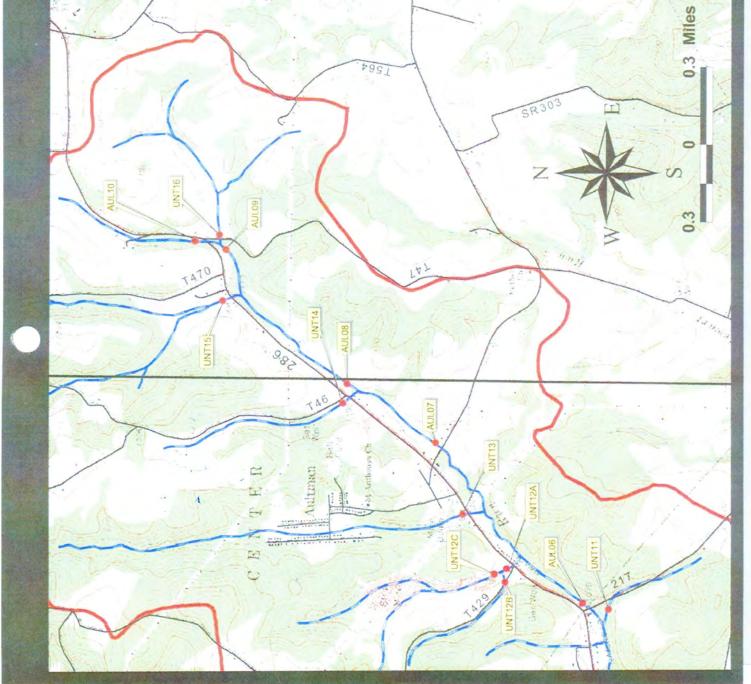
Surface Elevation: 1099' Latitude: 40 33 14 Longitude: 79 16 55 JNT12A

Surface Elevation: 1099' Latitude: 40 33 15 Longitude: 79 16 55

Surface Elevation, 1099 Latitude, 40,33,16 Longitude: 79 15 53 JNT12C

Surface Elevation: 1099' Latitude: 40 33 24 Longitude: 79 15 37

Surface Elevation: 1099' Latitude: 40 38 29 Longitude: 79 15 18 AUL07



Watershed Assistance Initiative Anonitoring and

Surface Elevation; 1099' Latitude: 40 38 49 Longitude: 79 16 39 UNT14

AUL08 Surface Elevation: 1099' Latitude: 40 33 48 Longitude: 79 15 02

UNT15 Surface Elevation: 1169° Latitude: 40 34 14 Longitude: 79 14 39 Surface Elevation: 1182' Latitude: 40 34 11 Longitude: 79 14 35

Surface Elevation: 1201' Latitude: 40 34 15 Longitude: 79 14 21 UNT16

Surface Elevation: 1195' Latitude: 40 34 16 Longitude: 79 14 23 AUL 10

Scott Alexander

Sample Point	Date	Method of Flow Meas.	Flow (gpm)	Field pH	Lab pH	Spec. cond. (umhos/cm)	Field Temp (C)	Alk. (F) (mg/L)	Alk. (L) (mg/L)	Acid. (mg/L)	Fe (mg/L)	D. Fe (mg/L)	Mn (mg/L)	D. Mn (mg/L)	Al (mg/L)	D. Al (mg/L)	Sulfate (mg/L)	Susp. Solids (mg/L)
286 Discharge	11/17/1999	Cross-section	120	6.0	6.3	473	11		48	30	17.1		0.9		0.0		160	41
286 Discharge	12/17/1999	Cross-section	196	5.5	6.5	500	5		0	9	19.8		1.1		0.0		146	24
286 Discharge	4/5/2000				6.3				88	0	16.7		0.8		0.0		250	8
286 Discharge	7/13/2000				6.3				94	0	15.9		0.9		0.0		132	18
286 Discharge	10/11/2000				6.3				74	0	24.7		0.9		0.2		167	14
286 Discharge	1/29/2001		103	6.5	6.7	444	12		76	0	15.8	13.6	0.8	0.7	0.2	0.1	122	5
286 Discharge	2/19/2001			5.9	6.5	471	11		84	0	12.7	11.8	0.7	0.7	1.4	0.9	121	13
286 Discharge	8/30/2001	Bucket	36	6.2	6.4	424	13		73	0	14.3	13.3	0.6	0.6	0.1	0.0	186	17
286 Discharge	10/3/2002			5.9	6.6	482	12		72	-54	19.4	18.7	0.7	0.7	0.2	0.1	207	6
286 Discharge	10/17/2002			6.1	6.6	527	12		66	-44	21.0	20.3	0.8	0.8	0.2	0.1	213	11
286 Discharge	12/19/2002	Bucket	108	6.0	6.0	493	10		60	-33	19.1	18.8	0.8	0.8	0.2	0.1	177	2
286 Discharge	4/2/2004	Assumed	167	6.2	6.7	476	11	85	79	-55	14.4	14.2	0.6	0.6	0.2	0.2	120	12
286 Discharge	6/10/2004	Assumed	131	6.2	6.3	455	12	91	80	-51	14.9	13.8	0.6	0.6	0.2	0.0	133	8
286 Discharge	7/29/2004	Assumed	97	6.2	6.5	477	12	98	73	-36	14.7	13.8	0.6	0.6	0.2	0.1	131	1
286 Discharge	10/18/2004	Assumed	119	6.1	6.5	472	11	95	85	-42	14.4	13.5	0.6	0.6	0.1	0.0	142	10
286 Discharge	2/21/2005	Assumed	187	6.2	6.5	523	11	86	64	-22	18.0	17.6	0.6	0.6	0.3	0.0	194	8
286 Discharge	4/18/2005	Assumed	156	6.4	6.5	480	12	89	84	-42	15.8	15.2	0.7	0.6	0.1	0.0	183	4
	Min	*	36	5.5	6.0	424	5	85	0	-55	12.7	11.8	0.6	0.6	0.0	0.0	120	1
	Max		196	6.5	6.7	527	13	98	94	30	24.7	20.3	1.1	0.8	1.4	0.9	250	41
	Avg		129	6.1	6.4	478	11	91	71	-20	17.0	15.4	0.7	0.7	0.2	0.1	164	12
i	Range		160	1.0	0.7	103	8	13	94	84	12.0	8.6	0.5	0.2	1.4	0.9	130	40

**Description:** Deep mine gravity drain; North East side of electric lines and South of SR-286

Sample Point	Date	Method of Flow Meas.	Flow (gpm)	Field pH	Lab pH	Spec. cond. (umhos/cm)	Field Temp (C)	Alk. (F) (mg/L)	Alk. (L) (mg/L)	Acid. (mg/L)	Fe (mg/L)	D. Fe (mg/L)	Mn (mg/L)	D. Mn (mg/L)	Al (mg/L)	D. Al (mg/L)	Sulfate (mg/L)	Susp. Solids (mg/L)
85-13	8/30/2001			7.3	6.9	353	20		68	0	1.4		0.3		0.2		85	10
85-13	10/3/2002			7.1	7.3	537	15		81	-68	6.5	0.8	0.5	0.5	0.2	0.1	165	6
85-13	10/17/2002			7.0	7.2	232	11		42	-38	0.7	0.3	0.1	0.1	0.3	0.0	48	4
85-13	4/2/2004			7.0	7.1	168	8		21	-14	0.4	0.1	0.1	0.1	0.3	0.2	43	4
85-13	6/10/2004			7.1	6.8	344	20	55	64	-49	2.4	0.0	0.5	0.2	0.4	0.0	93	17
85-13	7/29/2004			7.0	7.0	181	19		27	-16	0.4	0.1	0.1	0.0	0.1	0.1	31	2
85-13	10/18/2004			7.0	7.0	335	9		51	-39	2.7	1.5	0.4	0.4	0.1	0.0	84	7
85-13	2/21/2005			6.7	6.9	177	5		20	-11	0.5	0.2	0.1	0.1	0.3	0.1	37	10
85-13	4/18/2005			7.3	7.2	57	18	28	39	-30	0.8	0.4	0.1	0.1	0.0	0.0	18	7
	Min			6.7	6.8	57	5	28	20	-68	0.4	0.0	0.1	0.0	0.0	0.0	18	2
	Max			7.3	7.3	537	20	55	81	0	6.5	1.5	0.5	0.5	0.4	0.2	165	17
	Avg			7.1	7.0	265	14	42	46	-29	1.7	0.4	0.2	0.2	0.2	0.1	67	7
	Range			0.6	0.5	480	15	27	61	68	6.1	1.5	0.5	0.4	0.4	0.2	146	15

**Description:** Aultman Run directly downstream of 286 discharge and unnamed tributary (Old 13a).

Sample Point	Method Date Flow M		Field pH	Lab pH	Spec. cond. (umhos/cm)	Field Temp (C)	Alk. (F) (mg/L)	Alk. (L) (mg/L)	Acid. (mg/L)	Fe (mg/L)		Mn mg/L)	D. Mn (mg/L)	Al (mg/L)	D. Al (mg/L)	Sulfate (mg/L)	Susp. Solids (mg/L)
85-14	11/17/1999 Cross-se	ction 96	5.9	7.1	198	10		35	2	0.2		0.1		0.0		29	8
85-14	12/16/1999 Cross-se	ction 740	5.7	7.2	133	4		13	2	0.3		0.1		0.0		23	2
85-14	1/26/2000 Estima	ed 110	6.2	7.4	207	3		22	4	0.3		0.1		0.0		23	3
85-14	2/25/2000 Cross-se	ction 4299	6.5	7.3	172	12		15	2	0.1		0.0		0.0		21	7
85-14	3/29/2000 Cross-se	ction 354	5.9	7.4	130	10		18	4	0.6		0.0		0.3		22	3
85-14	4/24/2000 Cross-se	ction 5386	6.1	7.4	122	16		15	3	0.1		0.0		0.0		21	2
85-14	8/30/2001		7.3	6.9	215	24		52	0	0.5		0.2		0.2		41	5
85-14	10/3/2002		7.1	7.4	281	16		60	-54	0.6	0.4	1.2	0.7	0.4	0.1	70	3
85-14	10/17/2002		7.0	7.2	236	11		39	-35	0.4	0.2	0.1	0.1	0.3	0.0	50	7
85-14	4/2/2004		7.1	7.1	133	8		17	-9	0.3	0.0	0.1	0.0	0.2	0.1	31	3
85-14	6/10/2004		7.1	6.9	227	20	53	56	-39	1.0	0.1	0.2	0.2	0.4	0.0	34	13
85-14	7/29/2004		7.0	7.0	162	19		24	-10	0.4	0.0	0.1	0.1	0.1	0.0	23	1
85-14	10/18/2004		7.0	7.0	192	9		42	-29	0.5	0.3	0.2	0.1	0.1	0.0	38	23
85-14	2/21/2005		6.8	7.0	166	4		21	-11	0.3	0.1	0.0	0.0	0.1	0.0	30	7
85-14	4/18/2005		7.6	18.0	149	18	28	25	-19	0.0	0.0	0.0	0.0	0.0	0.0	34	2
	Min	90	5.7	6.9	122	3	28	13	-54	0.0	0.0	0.0	0.0	0.0	0.0	21	1
	Max	740	7.6	18.0	281	24	53	60	4	1.0	0.4	1.2	0.7	0.4	0.1	70	23
	Avg	3473	6.7	7.9	182	12	41	30	-13	0.4	0.1	0.2	0.1	0.1	0.0	33	6
i	Range	7309	1.9	11.1	159	21	25	47	59	1.0	0.4	1.2	0.7	0.4	0.1	49	22

**Description:** Aultman Run upstream of 286 discharge

Sample Point	Date	Method of Flow Meas.	Flow (gpm)	Field pH	Lab pH	Spec. cond. (umhos/cm)	Field Temp (C)	Alk. (F) (mg/L)	Alk. (L) (mg/L)	Acid. (mg/L)	Fe (mg/L)	D. Fe (mg/L)		D. Mn (mg/L)	Al (mg/L)	D. Al (mg/L)	Sulfate (mg/L)	Susp. Solids (mg/L)
85-15	10/3/2002			7.4	7.9	603	12		109	-96	0.2	0.1	0.2	0.2	0.2	0.2	112	1
85-15	10/17/2002			7.4	7.6	390	12		66	-61	0.3	0.2	0.4	0.3	0.3	0.1	97	6
	Min			7.4	7.6	390	12		66	-96	0.2	0.1	0.2	0.2	0.2	0.1	97	1
	Max			7.4	7.9	603	12		109	-61	0.3	0.2	0.4	0.3	0.3	0.2	112	6
	Avg			7.4	7.8	497	12		87	-79	0.3	0.1	0.3	0.2	0.3	0.1	105	4
i	Range			0.0	0.3	213	0		43	36	0.1	0.1	0.2	0.2	0.0	0.1	15	5

**Description:** Unnamed tributary entering Aultmans Run near mouth of 286 Discharge

Sample Point	Date	Method of Flow Meas.	Flow (gpm)	Field pH	Lab pH	Spec. cond. (umhos/cm)	Field Temp (C)	Alk. (F) (mg/L)	Alk. (L) (mg/L)	Acid. (mg/L)	Fe (mg/L)	D. Fe (mg/L)	Mn (mg/L)	D. Mn (mg/L)	Al (mg/L)	D. Al (mg/L)	Sulfate (mg/L)	Susp. Solids (mg/L)
85-16	10/3/2002	Bucket	50	6.9	6.9	470	14		57	-51	12.9	10.4	0.7	0.7	0.1	0.0	198	4
85-16	10/17/2002	Bucket	60	6.9	6.8	488	12		55	-46	14.8	13.9	0.8	0.7	0.1	0.0	193	10
85-16	4/2/2004	Bucket	167	7.0	7.3	448	12	78	77	-65	6.9	4.4	0.7	0.7	0.2	0.2	158	2
85-16	6/10/2004	Bucket	131	7.0	6.9	406	19	73	72	-59	4.3	1.6	0.8	0.7	0.2	0.0	105	10
85-16	7/29/2004	Bucket	97	7.0	7.1	475	23	77	70	-56	0.9	0.7	0.7	0.5	0.2	0.0	127	5
85-16	10/18/2004	Bucket	119	7.1	6.8	443	11	77	66	-42	8.2	5.3	0.6	0.6	0.1	0.1	121	11
85-16	2/21/2005	Bucket	187	6.9	6.8	494	9	65	52	-37	10.3	9.9	0.7	0.7	0.0	0.0	177	13
85-16	4/18/2005	Bucket	156	7.0	6.8	438	19	77	70	-58	6.3	4.6	0.6	0.5	0.0	0.0	144	8
	Min		50	6.9	6.8	406	9	65	52	-65	0.9	0.7	0.6	0.5	0.0	0.0	105	2
	Max		187	7.1	7.3	494	23	78	77	-37	14.8	13.9	0.8	0.7	0.2	0.2	198	13
	Avg		121	7.0	6.9	458	15	75	65	-52	8.1	6.3	0.7	0.6	0.1	0.0	153	8
	Range		137	0.2	0.5	88	14	13	25	28	13.9	13.2	0.2	0.2	0.2	0.2	93	11

**Description:** 286 Discharge at the end of the constructed channel before entering Aultman Run

Sample Point	Date	Method of Flow Meas.	Flow (gpm)	Field pH	Lab pH	Spec. cond. (umhos/cm)	Field Temp (C)	Alk. (F) (mg/L)	Alk. (L) (mg/L)	Acid. (mg/L)	Fe (mg/L)	D. Fe (mg/L)	Mn (mg/L)	D. Mn (mg/L)	Al (mg/L)	D. Al (mg/L)	Sulfate (mg/L)	Susp. Solids (mg/L)
WL	4/2/2004	Assumed	167	6.9	7.3	445	12	78	71	-57	9.0	5.9	0.7	0.7	0.2	0.1	123	5
WL	6/10/2004	Assumed	131	6.7	6.7	403	19	73	67	-52	4.9	2.2	0.8	0.7	0.3	0.0	89	9
WL	7/29/2004	Assumed	97	6.5	6.9	478	23	72	68	-51	3.1	1.7	0.6	0.6	0.0	0.0	143	1
WL	10/18/2004	Assumed	119	6.7	6.7	437	11	77	67	-46	8.8	6.4	0.6	0.6	0.0	0.0	129	5
WL	2/21/2005	Assumed	187	6.7	6.7	500	9	78	53	-35	12.5	11.6	0.7	0.7	0.2	0.2	181	16
WL	4/18/2005	Assumed	156	6.6	6.7	443	17	80	70	-56	7.9	7.1	0.7	0.6	0.0	0.0	153	6
	Min	1	97	6.5	6.7	403	9	72	53	-57	3.1	1.7	0.6	0.6	0.0	0.0	89	1
	Max		187	6.9	7.3	500	23	80	71	-35	12.5	11.6	0.8	0.7	0.3	0.2	181	16
	Avg		143	6.7	6.8	451	15	76	66	-50	7.7	5.8	0.7	0.6	0.1	0.0	136	7
I	Range		90	0.4	0.6	97	14	8	17	23	9.3	9.9	0.2	0.2	0.3	0.2	92	15

**Description:** Effluent of constructed aerobic wetland at rip-rap spillway.

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