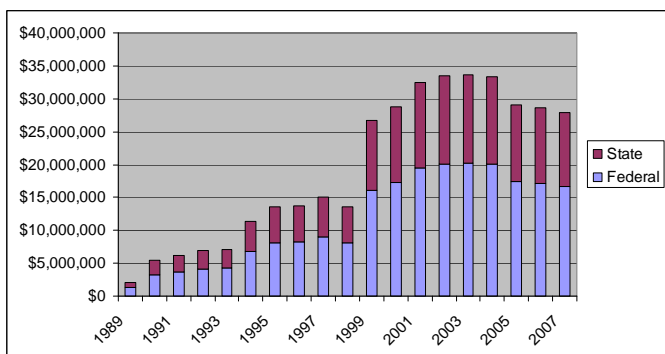




# 2006 Mid-Atlantic States Annual Nonpoint Source Program Highlights

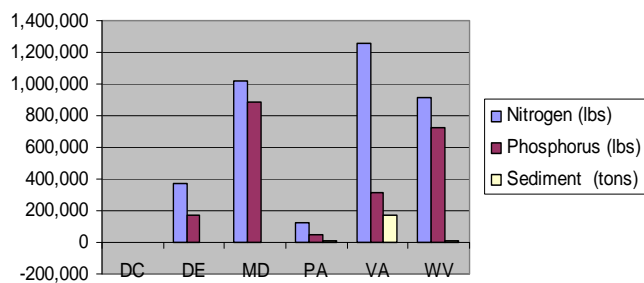
## Introduction

In 1987, Congress established the Nonpoint Source (NPS) Pollution Management Program under Section 319 of the Clean Water Act (CWA). This program provides states with technical assistance and grant funding, through the EPA, to implement NPS pollution controls to achieve goals that protect, improve and restore water quality as described in the State's NPS pollution management program plans. Annual Nonpoint Source (NPS) Reports are submitted from the states in response to Section 319(h)(8) and (11) of the Clean Water Act (33 USC 1329)



The graph above shows the combined federal and state funding amounts for the national NPS program efforts since 1989. The total amount of federal funds that have been allocated to NPS program efforts since that time has been 1.6 billion dollars; 221 million for NPS program efforts within Region 3. While this annual report only highlights the successes and pending efforts of the 2006 regional NPS program efforts, it is important to acknowledge that these projects were made possible only as a result of the continued funding efforts over the past 18 years; ensuring the promise of continued funding towards our NPS efforts is crucial to building our programs to meet the continued challenges of addressing NPS issues in the future.

**Increases In Load Reductions  
National Environmental Indicators 2006**



The chart above shows the load reductions from BMPs that were installed during fiscal year 2006. The states in Region 3 have contributed to 30% of the national goal for nitrogen reduction, 32% of the national goal for phosphorus reduction and 22% of the national goal for sediment reduction.

The following is a summary of the regional annual reports and describe the environmental outcomes of each State's NPS program in 2006.

## DELAWARE

Delaware's Nonpoint Source Program is managed by the Delaware Department of Natural Resources and Environmental Control. Public support and involvement are crucial for the success of DE's NPS implementation strategy and, ultimately, the achievement of their water quality improvement goals.

## Agricultural Programs

### Conservation Reserve Enhancement Program (CREP)

The Delaware CREP Program is a voluntary, incentive-based federal program that pays farmers and landowners' attractive incentives for putting their least productive lands under a 10 or 15 year contract that requires the land to be put into the conservation practice the landowner chooses. In 2006, the following was achieved:

- CREP Coordinator hired
- Over 5,000 acres to date signed over to the program

Cumulative reductions of nitrogen, phosphorus and sediment loads through land set aside as conservation reserve land are listed below:

<b><i>Pollutant</i></b>	<b><i>Reduction Units</i></b>
Nitrogen	185,209 Pounds/year
Phosphorus	8,263 Pounds/year
Sediment	33,071 Tons/year

#### Sussex Conservation District Agricultural Conservation Planners

- Conservation Planners and Compliance Inspector positions funded

*These positions oversee activities like soil sampling, nutrient management, phosphorous site index analysis, manure spreader calibrations to ensure accurate applications of manure to crop fields and pre sidedress nitrate testing of corn (PSNT).*

- PSNT resulted in a reduction of 72,082 lbs of nitrogen.

#### Nutrient Management Relocation Program

The Relocation Program provides financial reimbursement to farmers, brokers, and trucking businesses for the transportation cost of relocating litter from a Delaware farm to an alternative use project or another farm for land application.

- In 2006, 77,724 tons of excess poultry litter were relocated, a six year total of nearly 400,000 tons.

Since the Program's inception, over 400,000 tons of poultry litter has been relocated, containing an estimated 25 million pounds of nitrogen and 16 million pounds of phosphorus. If that tonnage had been applied to the source farm rather than relocated, 1,982,922 pounds of nitrogen and 194,294 pounds of phosphorus would have potentially made their way to Delaware's surface waters.

#### State Revolving Fund Loan Program

The following BMPs were installed throughout the state as part of the State Revolving Fund Loan Program:

<b><i>Poultry BMPs</i></b>	<b><i>#</i></b>	<b><i>Amount</i></b>
Manure Structures	26	\$ 280,466
Poultry carcass Composers	10	\$ 30,118
Dead bird incinerators	4	\$ 20,404
Front-end loaders	8	\$ 85,544
Calibratable spinner manure spreaders	1	\$ 12,700
Heavy use area protection pads	128	\$ 203,035
<b><i>Dairy BMPs</i></b>	<b><i>#</i></b>	<b><i>Amount</i></b>
Dairy Waste Management Systems	4	\$ 81,395

#### **Pollution Control**

##### Tributary Action Teams

Tributary Action Teams are developing in the Broadkill River, Christina Basin, St. Jones River, and the Upper Chesapeake watersheds to address issues of pollution in these watersheds. To date, Tributary Action Teams around the state have documented:

2,772 lbs / day nitrogen reduction

227 lbs / day phosphorus reduction

Pollution Control Strategies propose to reduce additionally:

8,040 lbs / day nitrogen

133 lbs / day phosphorus



*Conservation Partnership display at the Delaware State Fair.*

#### **Program Implementation**

The following programs have been implemented in various watersheds throughout the state:

##### Inland Bay Watershed

- Nutrient Protocol Development

##### Appoquinimink Watershed

- BMP Implementation
- Watershed Implementation Plan
  - baseline watershed assessment
  - identify stormwater retrofits
  - upland pollution prevention
  - stream corridor restoration opportunities
- Behavior Study
- Corrective Stormwater Measures for Village Brook Project Designed and Constructed
- Pet Waste Collection Project
- Riparian Buffer Mapping and Ordinance Creation
- Riparian Buffer Planting
- Stormwater Retrofit and Stream Restoration
- Water Quality Sampling on Dove Nest Branch for the Village Brooke Project

#### **Pike Creek at Three Little Bakers Stream Restoration Project**

- A stream restoration project in the fall of 2005 along Pike Creek in northern New Castle County covered 5,000 feet of stream.

- This included the creation of 3 acres of wetlands and the planting of streamside vegetation that will further protect the banks, improve and maintain water quality and provide wildlife habitat
- 5 acres of the riparian corridor were enhanced with the planting of native trees and shrubs.

Successes include:

- stabilization of the stream banks to reduce erosion;
- creation of habitat – putting in sequences of riffles and pools in the stream channel and planting the banks with a large number of trees and shrubs;
- improvements to water quality;
- reduction in the number of out-of-bank flooding events; and
- Maintaining the natural look of the stream as nature would dictate.

Meander bends were introduced to the existing stream channel which will help reduce flow velocity and return the stream to a more natural state. Several stream-side wetlands were also constructed. All completed by mid-October.

## DISTRICT OF COLUMBIA

The nonpoint source pollution program in Washington DC is directed by their Water Protection Division (WPD)/Department of the Environment. Their program is defined by long term goals with short term milestones. Currently, Washington DC is focusing on implementing low impact development with a compliance based program.

### Regulation: Development Control and Stormwater Management

- 2,320 construction plans approved (in compliance with sediment and storm water control)
- 7,363 construction sites inspected
- 221 storm water management facilities inspected
- 84 post maintenance inspections completed
- Out of this, 293 inspections ended in enforcement actions

### Low Impact Development Projects

- At Ross Elementary School, a groundwater recharging subterranean Stormtech chamber was installed – accepts water from a 6000 square foot area, and a pervious parking area with subterranean storage capacity was built.
- At the Minnesota Avenue Metro Station, two large raingardens were retrofitted. They receive water from a 20,000 square foot area.
- Two Chesapeake Bay Foundation green roof grants were received and implemented:
  - A 3,000 square foot roof belonging to the American Society of Landscape Architects
  - A 12,000 square foot roof to be installed in 2007 belonging to the JBG Companies Office Building

- 4,000 square feet of impervious asphalt removed from Draper Elementary School, replaced with a rain garden and native vegetation.
- Two rain gardens constructed at Roosevelt High School to the “habitat project” area.
- Urban wetland constructed at Seaton Elementary



*The DC Schoolyard Greening Consortium conducted a tour for educators and community members that showcased 5 DC public schools.*

### Habitat Restoration

- Construction of 16 acres of wetland in the Anacostia Watershed completed in 2005 show a general improvement of native habitat – over 40 species of plants and 100% coverage in most of the 28 plots measured.

### Education and Outreach

- 1,074 school children engaged in environmental education activities in local school districts.
- 5 DC public schools visited as part of the Schoolyard Greening Consortium Tour.
- DC Public Schools science standards expanded to include environmental education.
- Dockwalker (clean marina education) training course held, attended by 34 boat owners, yacht club officers, and marina staff.
- Anacostia River Environmental Fair – 400 students attended, grades 4 – 8 from 11 schools.
- Annual Summer Environmental Education Camp conducted – 80 students participated.
- Project Learning Tree – 39 educators participated in 5 workshops.
- National Oceanic and Atmospheric Administration Youth Summit – 80 students participated.

### Storm Drain Labeling

700 storm drains labeled 2.93% of total drains.

## MARYLAND

Maryland's mission is to implement effective nonpoint source pollution control programs. These programs are designed to achieve and maintain beneficial uses of water, improve and protect habitat for living resources, and protect public health through a mixture of water quality and/or technology based programs including: regulatory and/or non-regulatory programs; and financial, technical, and educational assistance programs.

The NPS Program's three priority goals are:

- Reducing nonpoint source pollution;
- Restoring and protecting habitat (e.g., streams, riparian buffers and wetlands)
- Removing waters from the State's list of impaired waters (e.g. the 303(d))

## State-wide Wetland Restoration

### Urban Wetlands Program

Year 1 (2006): Monitoring objectives, strategy and protocols to investigate needs developed.

Year 2 (2007): 2 projects planned to treat 36.35 acres.

Estimated reduction amounts:

279.5 lbs phosphorus, 179.3 lbs nitrogen, 42.5 tons sediment

### Laurel Valley

- Currently in monitoring phase
- Estimated reduction amounts: 40lbs nitrogen, 7 lbs phosphorus

### Chartley Stream (Gwynns Falls)

- Implementation of a riparian forest buffer resulting in nitrogen reductions of 317 lbs/year, phosphorus of 419 lbs / year, sediments 5,652 lbs/year
- Stream restoration activities resulting in nitrogen reductions of 40lbs / year, phosphorus 7 lbs / year, and sediments 5,100 lbs / year

## Agriculture

### Lower Potomac Watershed

- 200 acres moved into conservation cropping – Results:
  - 922 lbs nitrogen removed
  - 226 lbs phosphorus removed
    - Implementation of cover crops on 150 acres – Results:
      - 1422 lbs nitrogen removed
      - 19.5 lbs phosphorus removed
- Nutrient Management on 500 acres
  - 1555 lbs nitrogen removed
  - 150 lbs phosphorus removed



*Corsica River Monitoring Project*

## State-wide Agriculture Outcomes

Table 3: Agriculture 2006 Outcomes as proposed in Project Work Plans

Practice	Planned BMPs	Nitrogen Reduction Approx. (lb/yr)	Phosphorous Reduction Approx. (lb/yr)
Soil Conservation and Water Quality Plans (acres)	12,743	14,505	2,555
Nutrient Management plans (acres)	2,750	3,130	551
Soil Conservation and Water Quality Plans	190	N/A	N/A
Nutrient Management plans	10	N/A	N/A
Best Management Practices (General)	272	N/A	N/A
Stream Buffer (Forest) Plantings	2	N/A	N/A
Animal Waste Storage Structures	12	14,446	1,636
Stream Fencing (feet)	5,000	68,298	6,683
Water Troughs	2	N/A	N/A
Grassed Waterways (acres)	30	294	35
Conservation Tillage (acres)	1,000	5,691	N/A
Cover Crops (acres)	4,800	8,660	396
CREP (acres)	192	2,229	274
Total		16,874	670

## PENNSYLVANIA

The following is a summary of progress made by the state of Pennsylvania's nonpoint source program during the federal fiscal year 2006. The main causes of stream impairment from nonpoint source pollution in Pennsylvania are abandoned mine drainage, agricultural runoff and urban runoff/storm sewers.

Pennsylvania's Section 319 Program is currently beginning Phase III of its Watershed Implementation Planning process. This includes three major steps:

- Target planning to Total Maximum Daily Load (TMDL) approved watersheds that have load reduction goals.
- Develop Watershed Implementation Plans (WIPs) that meet the EPA's basic elements and are acknowledged by the EPA Region III Nonpoint source program.
- Implement WIP recommendations to meet TMDL pollutant load reduction goals.



EPA accepted 12 watershed-based implementation plans by the end of FFY 2006. Several of these have been initiated, but none are yet substantially implemented.

Most of Pennsylvania's Section 319 funding is now directed to **watershed restoration** in targeted watersheds where a WIP has been completed or is under development. Pennsylvania's primary goal is to address streams and lakes that are documented as impaired in these watersheds and to address TMDLs in those watersheds that have an approved TMDL. Funding sources for these watershed restoration and improvement projects include:

- Since FFY 1991, PA has received almost \$68 million dollars in Section 319 funding, including \$5.9 million in FFY 2006.
- The Growing Greener grant program has provided more than \$181 million in watershed restoration and protection grants for 1,592 projects since 1999. In 2005 a \$625 million dollar bond was approved, extending the program for a 6-year period. Pennsylvania's Chesapeake Bay Program has committed \$34 million dollars in cost-share funds to install Best Management Practices on farms since 1984.
- A new state Nutrient Management grant program has invested \$13 million on 250 farms in the Bay watershed for farmland BMPs.
- Pennsylvania's Conservation Reserve Enhancement Program (CREP) brings over \$200 million in federal funds to Pennsylvania farms covering 265,000 acres.
- \$530,000 in funding from the Chesapeake Bay Small Watershed grant program has funded 13 water quality improvement projects for 2006.

## Water Quality Improvements

Watershed Restoration Projects:

- Mt. Rock Spring Creek (Cumberland County): this waterbody was impaired due to agricultural and construction siltation, first listed on the 303(d) list in 1998.
- South Branch Blacklick Creek (Cambria County): placed on the 303(d) list in 1996 due to contamination from metals and 2002 due to poor pH.
- North Branch Little Mahoning Creek (Indiana County): impaired by siltation from abandoned mine land, 303(d) listed in 2006.



Watershed Protection Projects:

- Cross Creek (Washington County)
- Raccoon Creek (Washington County)
- Burd Run (Cumberland County)

NPS Load Reductions:

<i>Pollutant</i>	<i>Reduction Units</i>
Nitrogen	105,758 Pounds/year
Phosphorus	51,064 Pounds/year
Sediment	19,685 Tons/year
Acidity	2,842 Tons/year
Aluminum	325 Tons/year
Iron	204 Tons/year

Watershed success stories:

- Mill Creek agricultural and stream restoration projects in Bradford County:- Monitoring indicates significant decreases in sediment and nutrient loading in the stream feeding Stephen Foster Lake. Most farms on Mill Creek have achieved successful implementation of BMPs.
- Revloc refuse pile reclamation in Cambria County:- This abandoned mine land restoration project reduced acidity loading 93% and aluminum loading 95% in the South Branch of Blacklick Creek. Water quality monitoring indicates pH rise from 4.3 up to 6.4.

Pennsylvania continues semi-annual meetings with its Nonpoint Source Liaison Workgroup, allowing organizations outside of state government to provide input to its nonpoint source management program. A 2007 update to the state's Nonpoint Source Management Program Plan is currently nearing completion.

## VIRGINIA

Virginia's nonpoint source pollution Management Program is led by the Department of Conservation and Recreation. The Program utilizes partnerships to advance long and short-term goals for the reduction of nonpoint source pollution.

### Virginia Waters Cleanup Plan

A significant accomplishment in 2006 is the passing of The *Chesapeake Bay and Virginia Waters Clean-up and Oversight Act* (HB-1150), which was enacted into law in 2006. HB-1160 requires the Secretary of Natural Resources to develop a comprehensive plan for the clean up of the Chesapeake Bay and Virginia waters designed as impaired by the U.S. EPA.

### TMDL Development and Implementation

During 2006, Virginia developed 90 TMDLs and 9 TMDL Implementation Plans. As of May 2006, Virginia has

completed 344 TMDLs, 168 for free flowing streams and 107 for shellfish closures, 21 implementation plans, and has de-listed an additional 72 impairments. In 2006 there were 25 active TMDL Implementation projects; 15 WQIF TMDL projects and 10 §319(h) implementation projects. Collectively these §319(h) projects implemented 203 BMPs.

#### **WQIF - State Funding of NPS Pollution Reduction**

The Virginia Water Quality Improvement Fund (WQIF) was established in 1997 to provide state funding for water quality improvements throughout Virginia. Over \$63,773,400 was allocated to NPS pollution reduction activities to be used July 06-June 2008 including significant resources for agricultural cost-share, Conservation Reserve and Enhancement Program (CREP) and to provide grants for on the ground practices to control nonpoint source pollution in watersheds in Virginia.

**WQIF NPS Cooperative and Strategic Projects:** DCR allocated a total of \$6.5 million of state WQIF resources to fund 43 NPS pollution reduction projects. These projects were a mix of Strategic NPS Water Quality Initiatives as well as Cooperative NPS Programs with local governments. Another \$4.5 million will be available in FY07 for similar projects.

**Agricultural WQIF Support:** During 2006 a total of 1,1612 farmers participated in the state WQIF agricultural cost-share program, installing 5,655 practices that covered 168,734 acres. An additional 254 farmers participated in the state funded WQIF CREP program, resulting in the installation of 836 BMPs that netted 2,005 acres of buffer restored and 226 miles of stream buffered.

#### **Nutrient Management Program**

The development of nutrient management plans was a critical element of Virginia's NPS program. In 2006 Nutrient Management Plans were completed on 178,829 acres.

#### **Pesticide Disposal Programs**

A total of 85,315 pounds of canceled, banned or unwanted agricultural and commercial pesticides were collected and subsequently destroyed.

#### **Pollution Reductions:**

Collectively the NPS programs in Virginia installed 6,694 BMPs and reduced 1.94 million pounds of Phosphorous, 5.36 million pounds of Nitrogen, 367,000 tons of sediment and 5.54E+15 CFU of bacteria. The individual program accomplishments are summarized in the table below.

#### **Karst Groundwater Protection Program:**

Karst Program staff successfully convinced the Department of Environmental Quality to modify a Water Withdrawal Permit for Blue Spring in Frederick County to increase in-stream minimum flows to 1,200,000 gallons per day; thus decreasing

the impact on the downstream ecosystem, which includes the only known Virginia location for the Appalachian Spring snail and a significant population of Wood Turtles, both listed as endangered in Virginia. This project resulted in the purchasing by DECry, of a 118-acre tract including the cave to be made into a Natural Area Preserve.

Program Source	# of BMPs Installed	Pollutant			
		Fecal Coliform (CFU)	P (Lbs)	N (lbs)	Sediment (Tons)
319(h) TMDL Projects	203	5.54E+15	411	2,904	253
Nutrient Management	n/a	n/a	1,521,835	3,363,773	n/a
WQIF Agricultural Cost-Share	5,655	n/a	412,234	1,949,577	358,376
WQIF CREP	836	n/a	8,368	43,297	7,959
<b>TOTAL</b>	<b>6,694</b>	<b>5.54E+15</b>	<b>1,942,848</b>	<b>5,359,551</b>	<b>366,588</b>

#### **Urban Programs**

Virginia Adopt a Stream Program: In 2006 3,716 volunteers removed 1,897 bags of litter, and cleaned 330 miles of stream.

#### **Erosion and Sediment Control (E&SC) and Stormwater:**

DCR staff conducted 39 E&SC training classes for 1,548 individuals and conducted 2 exams to certify 614 individuals and recertified 308. In addition, 3,219 individuals were trained and certified as Responsible Land Disturbers and 655 were re-certified. DCR staff also reviewed 32 local E&SC programs for consistency and 500 plan reviews for state agency projects. DCR staff completed 1,400 project inspections covering 3,200 acres; VDOT staff completed an additional 1,200 inspections. During 2006, 2,580 land disturbing activities were issued General Permits and Staff completed 850 General Permit site inspections.

#### **Resource Extraction – Department of Mines, Minerals and Energy (DMME)**

In 2006, DMME reclaimed approximately 352 acres of abandoned coalmine lands including 23 abandoned mine land projects. In addition, 151-orphaned mineral mine sites were inventoried with the support of Section 319 Funds and 11 acres from nine Orphaned Land Sites and one bond forfeiture site were reclaimed. During 2006 seven orphaned well sites and five bond forfeiture sites were reclaimed, encompassing 10 acres of land.



*Ely Creek Acid Mine Drainage (AMD) before and after reclamation, Lee Co.*

## **WEST VIRGINIA**

The West Virginia Nonpoint Source Program is managed by the West Virginia Department of Environmental Protection. The WV works with a variety of partners to achieve its watershed management goals. State agency partners include the West Virginia Conservation Agency, the West Virginia Division of Forestry, the DEP Office of Oil and Gas, and the Department of Health and Human Services. Additionally, incremental grant project partners include the National Mine Lands Reclamation Center, the WVDEP Abandoned Mine Lands Program, and the Natural Resources Conservation Service. Most importantly, West Virginia works closely with many citizen led watershed associations.

The primary causes of stream impairment from nonpoint source pollution in West Virginia are abandoned mine drainages, severe erosion relating to forestry and oil and gas roads, failing septic systems, and agriculture.

### **Education**

- Held the third annual Mid Atlantic Volunteer Monitoring conference, with 125 attendees
- West Virginia Save Our Streams program held a variety of workshops and certified 205 volunteer monitors.
- West Virginia Conservation Agency presented "Sediment Challenges, Wild Mountains, Rolling Streams" to address the issue of sedimentation in local watersheds
- Office of Oil and Gas conducted 16 BMP training workshops to address runoff issues from active and abandoned service roads

### **Agriculture**

- Developed 44 nutrient management plans – this will lead to the reduction of 6613 lbs nitrogen and 625 lbs phosphorus in total.
- Developed an additional 111 farm plans
- Sediment load reductions of 42 tons / year have been projected based on stream bank stabilization activities in Little Grave Creek, where a combination of flooding and land management practices (farming and logging) led to major erosion problems in 2004 – 2005.

- Agricultural improvements, including those addressing water supply, fencing, animal waste storage, heavy use areas, and winter feeding areas were implemented in the Pecks Run and Finks Run regions. This has led to a total annual reduction of 267.1 tons / year of nitrogen, 342.2 of phosphorus, and 1792.2 of sediment.
- In Spring Creek, BMPs including fencing, irrigation, runoff management, nutrient management and prescribed grazing plans, waste storage systems, and animal use protection were implemented. See chart below
- As a result of these installations, Spring Creek reports sediment reductions at 2627 tons, nitrogen at 11,064 lbs / year, and phosphorus at 5,532 lbs / year.

### **Mining**

- Passive treatment and rerouting streams through limestone channels are both being used at Morris Creek, to treat acid mine drainage problems from upstream. Results are not yet known.
- In the Lower Cheat, acid mine runoff was addressed at Pringles Run, Upper Muddy Creek, and Sovern Run. Performance of an installed system at Pringles Run has decreased in the last 3 years. This year, the addition of further treatment methods will hopefully restore system performance. The Upper Muddy Creek reports reductions of 81% in acid, 94% in iron, and around 65% in manganese and aluminum in the past year. Reductions in acid, iron, manganese and aluminum from the Sovern Run at the Clark Property site are all above 90%, and those at the Tichnell Property site are all above 70% for the past year.
- Construction of limestone channels was completed in the Long Branch tributary in September of this year. Drastic improvements in pH and conductivity have been noted. Reductions of acid, aluminum, and manganese are expected at rates of 153 tons / year, 11 tons / year, and 1.4 tons / year, respectively.

### **Logging and Oil and Gas Road Related Runoff and Erosion**

- 16 BMP training workshops were given for oil and gas company employees in the Little Sandy and Upper Buckhannon watersheds. There were 392 participants, representing 51 companies and contractors. These workshops were sponsored by the Office of Oil and Gas.
- A stream restoration demo site was built in Little Sandy Creek to address erosion and sediment due to the presence of oil and gas roads. This template, which involved reconstructing roadsides and planting with native vegetation, will be assessed in the following year for implementation throughout the watershed.

- The WVU Hardwood Center conducted research on seedbed mixes to find the best mix for reforesting newly logged areas. Research concluded that minimizing sediments by using planted native mixtures can provide broad benefits to the overall forest ecosystem.
- In the Upper Buckhannon, a two part project was undertaken. The first part of the project was to repair approximately 4,000 linear feet of a multi-use dirt road. The second part of the project was to repair gulley erosion to a gas line right-of-way caused by unauthorized All-Terrain-Vehicles (ATV), which included a portion of the riverbank. Areas that were damaged by ATVs were graded and reshaped, cross drains were improved, additional drainage ditches were installed all denuded areas were seeded and mulched and a gate was installed to deny ATV access. The table below demonstrates anticipated reductions in tons per year of soil lost to erosion as a result of road and pipeline stabilization.



*A culvert outfall protection on an oil and gas road in Little Sandy Creek*

### **Natural Gas Road and Pipeline Stabilization**

#### **Summary**

Left Fork of the Buckhannon River HUC  
05020001, WVMTB-32\_00

#### **Multi-use road:**

Annual estimated erosion - 740 tons/year

Anticipated erosion reduction – 629 tons/year

#### **Pipeline Stabilization:**

Estimated soil erosion– 416 tons/year

Anticipated erosion reduction – 408 tons/year

#### **Abandon gas well road:**

Estimated soil erosion – 55.6 tons/year

Anticipated erosion reduction – 52.8 tons/year

### **Septic Systems**

- The Little Sandy Creek watershed Sewage Survey was completed. Over 42% of participants had either no septic system, or a system that was failing. Currently, work is being done to map failing systems.



### **Contact Information:**

A full version of these reports are available at  
<http://epa.gov/reg3wapd/nps/accomplishments.htm>

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