2009 Annual Report
to the
Joint Legislative Oversight Commission
on State Water Resources

IMPLEMENTATION PROGRESS:
WEST VIRGINIA WATER RESOURCES PROTECTION
AND MANAGEMENT ACT
Prepared by
The Department of Environmental Protection
Division of Water and Waste Management
Water Use Section

November 17, 2009
Large Quantity User Certification
Data acquisition
Logging Wells
New groundwater monitoring wells
Marcellus shale hydrofracturing
Water withdrawal guidance
Stimulus money
Watershed meetings
Certification was conducted in May and June of 2009

432 facilities responded

Total increase of 4 facilities since the 2005 survey

Total average water use:
- 2.75 trillion gallons surface water
- 34.6 billion gallons ground water

Next certification January – February, 2010
## DATA ACQUISITION

- Assess current data
- Wetlands
- NPDES outlets
- Land cover
- Public lands locations
- Soil drainage types
- Impervious surfaces
- Surface geology
- Abandoned mine lands
- Remediation sites
- Combined sewer overflows
- Large quantity users
- Source water assessment areas
- 303D Impaired streams
- TMDL Streams
  - Bio
  - Iron
  - Manganese
  - pH
- Category 1 streams
- Average annual temperature
- Average annual precipitation
WELL LOGGING

FIG. 5-2. Schematic Construction of Bedrock Well
Borehole Geophysical Logs for Hrd-0301

Major source of flow into the borehole

Bedding Plane
2008 Ground Water Monitoring Well Network

As reported in the 2008 annual report.
Marcellus Wells Completed
07/15/2006 - 06/16/2009

Source Data: West Virginia Department of Environmental Protection, Office of Oil and Gas, November 2009.
Meeting held October 1, 2008

October – November 2008 Survey – conducted by WVONGA/IOGA

July 2009 Alpha test of reporting software

October 2009 Beta test of reporting software by petroleum companies
Reporting form requires:
- Company information
- Withdrawal locations
- Withdrawal amounts
- Holding pond locations
- Amount used for frac in each well
- Where blowback was disposed
- Amount of disposal
- Amount of recycled fluids (if any)
WATER WITHDRAWAL GUIDANCE

- No regulations governing the quantity of water withdrawn from streams

- Some complaints about water withdrawals associated with petroleum companies

- Addendum developed for Oil and Gas Drilling Permits

- Water withdrawal guidelines developed based on flow
Discharge, cubic feet per second

Most recent instantaneous value: 123  08-14-2009  12:00

USGS 03182500 GREENBRIER RIVER AT BUCKEYE, WV

Median daily statistic (79 years)  * Measured discharge
Discharge

Create presentation-quality graph

Daily discharge statistics, in cfs, for Aug 14 based on 79 years of record

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<th>20th percentile</th>
<th>Median</th>
<th>Most Recent Instantaneous Value</th>
<th>80th percentile</th>
<th>Mean</th>
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Water Withdrawal Info

If flow is greater than 361.9 cfs, you may withdraw from anywhere in this area.

If flow is between 90.5 cfs and 361.9 cfs, you should only withdraw from:

Greenbrier River

If flow is less than 90.5 cfs, you should not withdraw from any stream in the area.

The last reading for this site is 526 Discharge, cubic feet per second @ 10:00:00 11/16/2009.

Click Here to Go to the USGS website for this gauge.
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

- Provided funds under Section 604(b) of the Clean Water Act for water quality management

- DEP was able to secure grants for:
  - Compilation of a mine pool atlas
  - Four training sessions on water management science for county and regional development council representatives
  - Support for Pocahontas County’s Water Resources Task Force (through the Region 4 Planning and Development Council)
Mine pool atlas (West Virginia Geological and Economic Survey)

- Map abandoned mines, including thickness
- Determine quantity of water based on volumetric calculations
- Use GIS to determine which public water supply wells penetrate the mine pool
- Compile quality data from pws wells that penetrate a pool
- Completion time of one year
• Water management training (Interstate Commission on the Potomac River Basin)
  ○ Four classes for county commissioners and Regional Development Commission members

• Pocahontas County Water Resources Task Force
  ○ Money to support VISTA volunteer (travel)
  ○ Purchase GIS software
STATE PLAN: WATERSHED MEETINGS

- We have chosen to develop the plan in volumes.
- One volume will be for general data applied to the entire state.
- There will be approximately 32 watershed volumes.
- An executive summary will highlight proposed legislation (if any).
- The plan will be available for download from the web.
Projected County Water Use Change 2005-2010

Tygart Valley Watershed September 17, 2009
