WATERSHED-BASED SOURCE WATER PROTECTION PROGRAMS IN PENNSYLVANIA

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Establishment of Early Warning Spill Detection Networks on all major rivers in PA has been the basis for development of watershed-based SWP programs:

- Schuylkill Action Network (SAN)
- SRBC Lower Susquehanna SWP Program
- Potomac River Basin Drinking Water Source Protection Partnership
Delaware Valley Early Warning System

Partners:
- 23 WTPs from 12 utilities (PA)
- 5 WTPs from 5 utilities (NJ)
- Gov. agencies
- Also used by 25+ industries
Instrumentation Board at PWD’s Queen Lane Intake

Remote Terminal Unit
Digital Output Displays
Turbidimeter
pH Probe
Conductivity Probe
Components of the Delaware Valley Early Warning System

- Telephony Event Reporting
- Telephony Event Notification
- Web Event Reporting
- Web Event Notification

Water Quality Event Web Site

Spill Map & WQ Query Tools on Website

Data Warehouse

Real Time Monitor Data

Water System WQ Data
E. Active Windows

D. Tree Menu: used to select EWS functions

A. List of Active Events

C. Buttons for Map Tools

B. Map of Events, Intakes, Roads, Towns
Schuylkill Action Network (SAN)

Organizational Chart

Executive Steering Committee

Planning Committee

- Agriculture Workgroup
- Acid Mine Drainage Workgroup
- Pathogens/Compliance Workgroup
- Storm water Workgroup

Education and Outreach Team

Data Team
SAN Success Story

Schuylkill Watershed Regional Planning

Schuylkill Watershed Priority Lands Strategy: GIS initiative to ID high-priority drinking water protection areas & other ecological resources for land conservation/preservation on a regional basis.
Susquehanna River Basin in PA
Early Warning System (EWS)

- PA EWS program - 2003
- New York - 2006
- Enhancing drinking water protection efforts
- pH, temperature, and turbidity @ intake locations with real-time data transmission
- Four stations with organic contaminant detection capabilities
- Stations established upstream of intakes
Network Deployment

- 14 priority watersheds identified to date
- 8 stations installed, with 6 publishing data to web site
- 30 stations by June 2010 (10 more by Dec. 2010)
- Input welcome
Lower Susquehanna SWP Program

Scope of Work

- Development of individual source water protection plans for over 20 systems (>40 sources) in the Lower Subbasin
- Development of a Lower Susquehanna Subbasin Source Water Protection Strategy
- Enhancement/expansion to the PA portion of the EWS
Allegheny and Monongahela River Early Warning Detection Systems (AMEWDS)

Pennsylvania DEP
Ohio River Valley Water Sanitation Commission (ORSANCO)
River Alert Information Network (RAIN) - Upper Ohio, Monongahela & Allegheny Rivers

~30 water systems (PA)

Interest from WV & MD systems
River Alert Information Network

RAIN is a regional source water protection (SWP) program dedicated to protecting shared drinking water resources used by community water systems.

RAIN’s mission is to serve the public by creating an early warning detection system on the major rivers of Southwestern Pennsylvania to address public health issues, watershed protection and environmental accountability.
## Current River Data

<table>
<thead>
<tr>
<th>Station</th>
<th>Date/Time</th>
<th>pH</th>
<th>Conductivity (mS/cm)</th>
<th>Temperature (°C)</th>
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<tbody>
<tr>
<td>M88</td>
<td>9/10/2010 - 5:50 PM</td>
<td>7.4 SU</td>
<td>0.391 mS/cm</td>
<td>24.3</td>
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<td>7.3 SU</td>
<td>0.651 mS/cm</td>
<td>24.2</td>
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<td>9/10/2010 - 5:45 PM</td>
<td>8.2 SU</td>
<td>0.600 mS/cm</td>
<td>23.9</td>
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<td>6.3 SU</td>
<td>0.418 mS/cm</td>
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<td>0.361 mS/cm</td>
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<td>7.0 SU</td>
<td>0.379 mS/cm</td>
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<td>Temp_Avg: 63.4 F</td>
<td>pH_Avg: 8.6 SU</td>
<td>Cond_Avg: 1.233 mS/cm</td>
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<td>MT2</td>
<td>9/10/2010 - 6:00 PM</td>
<td>Temp_Avg: 67.5 F</td>
<td>pH_Avg: 8.4 SU</td>
<td>Cond_Avg: 1.796 mS/cm</td>
</tr>
</tbody>
</table>

The Current River Data Chart displayed here is to make it easier to get current river information in near real time from one central location. Current river data displayed for pH, conductivity and temperature is collected from various sites along the Allegheny, Monongahela, and Ohio rivers.
Potomac River Basin Drinking Water Source Protection Partnership

- Water utilities (DC metro + others) & governmental partners (state SWP agencies - DC, MD, PA, VA, WV + ICPRB, EPA, USGS, MWCOG)

- Multi-state coordinated approach to SWP in Potomac Basin

- PA DEP – charter member

- Initial emphasis on pathogens and emerging contaminants (*Crypto* strategy, EC workshops, WRF projects, track research & new initiatives)

- Also: Road salt op-ed in *Washington Post*, table-top spill exercise, info exchange among states on permitting and WQS
Summary: PA’s EW/SD Networks & Watershed-Based Source Water Protection Programs

- Early warning & spill detection (EWSD) networks in place on all major rivers in PA
- Two watershed-based source water protection programs (WB SWPP) in place => Potomac & Schuylkill Basins
- One under development => Lower Susquehanna Basin
- One proposed => Ohio Basin (RAIN)
- Marcellus Shale gas development not anticipated in present network design; SRBC adding remote WQM network sites in NW part of basin & along PA-NY border