Delaware Department of Natural Resources & Environmental Control
DIVISION OF WATER
WATER SUPPLY SECTION

Clean Water Act/ Safe Drinking Water Act Integration

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CWA/SDWA Coordination Examples

- Delaware Watershed Assessment Reporting – Groundwater Chapter (305 (b))
- Source Water Assessments for Streams used for Public Drinking Water
- Groundwater Resource Assessment Funding
- Discharge of Contaminated Water from Public Well Development from PWS
(1) Delaware Framework for 305(b) Groundwater-Quality Assessments

Per Clean Water Act, States must:
- Assess groundwater quality “...to the extent practicable”
- Report results every two (2) years

Per U.S. EPA (1997) guidance, States should:
- Use available “ambient” groundwater data
- Account for hydrogeology
- Consider water-quality criteria

DNREC reporting methodology in place since 2008 utilizes SDWIS data linked to Source Water Assessments
Data sources

Water-quality data

DNREC ID

Raw-water tap

Well data: DNREC ID, X, Y, Z, & aquifer
Data sources

- SDWIS = source of water-quality data
- Basic chemistry
  - Nitrate
  - TDS
  - Chloride
  - Sodium
  - Iron
  - Hardness
  - pH
- Organic compounds
  - e.g., MTBE, TCE, benzene
- Trace elements
  - e.g., arsenic
- Radionuclides
  - e.g., radium isotopes
Well network
Well network

- 1,187 active PWS wells
- Aquifer type known for 978 wells (82%)
- Most wells (77%) in Coastal-Plain aquifers
- 52% of wells located in Sussex County

### Aquifer type and number of wells

<table>
<thead>
<tr>
<th>Aquifer Type</th>
<th>Number of Wells</th>
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<tbody>
<tr>
<td>Unconfined</td>
<td>424</td>
</tr>
<tr>
<td>Confined</td>
<td>443</td>
</tr>
<tr>
<td>Semi-confined</td>
<td>52</td>
</tr>
<tr>
<td>Fractured-rock</td>
<td>49</td>
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<tr>
<td>Karst</td>
<td>10</td>
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<tr>
<td>Unknown</td>
<td>63</td>
</tr>
<tr>
<td>Unassigned</td>
<td>146</td>
</tr>
</tbody>
</table>

Coastal Plain Province

Piedmont Province

Aquifer data not available
Trends

Spatial trends in nitrate in Coastal Plain wells
Trends e.g. Nitrate versus Time

Unconfined nitrate as N, in mg/L

PMCL (10 mg/L)

7.05 6.71 7.02 6.7 7.02 6.7
4.7 3.79 4.7 4.2 4.2
2.57 1.2 2.1 1.53
0 0 0 0
(2) Source Water Assessments for Streams used for Public Drinking Water

- Delaware conducted source water assessments for streams in Northern Delaware that are used as major drinking water sources.

- Assessments are used across programs to address point and non-point source problems and for emergency response purposes.
City of Wilmington
Source Water (shed) Area
(3) Groundwater Resource Assessment Funding – Both CWA 106 and SDWA-DWSRF 15% Set-aside

- Pesticides/Nutrients in Ground Water
- Lewes-Rehoboth WHP Modeling – DGS
- SIRB PWS Sampling
- BMP Manual for SWP
- TEPP Well Database Migration
- Water Table Elevation Project 1&2
- Long Neck Area Mercury Study – USGS/DGS
- Groundwater Recharge Mapping Project
- Potomac and Coastal Sussex Saltwater Monitoring projects
- Groundwater Monitoring Project
- Ground Water Availability in Kent County
- Ground Water Availability in Sussex County
- Hydrogeological Assessment Project for Eastern Sussex County
- SWAP Web Site
- EPA Polygon and Data Reporting Projects
- Arsenic in Delaware Soils
- Surface Water Source Water Assessments
- Evapotranspiration Project
- Road Salt Monitoring Project above PWS intake
(4) Discharge of Contaminated Water from Public Well Development from PWS

- Required Coordination between Source water and NPDES Programs
- Limitations and Treatment prior to discharge to surface waters (PFOS/PFOA*, in one instance)

* Perfluoralkyl substances
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