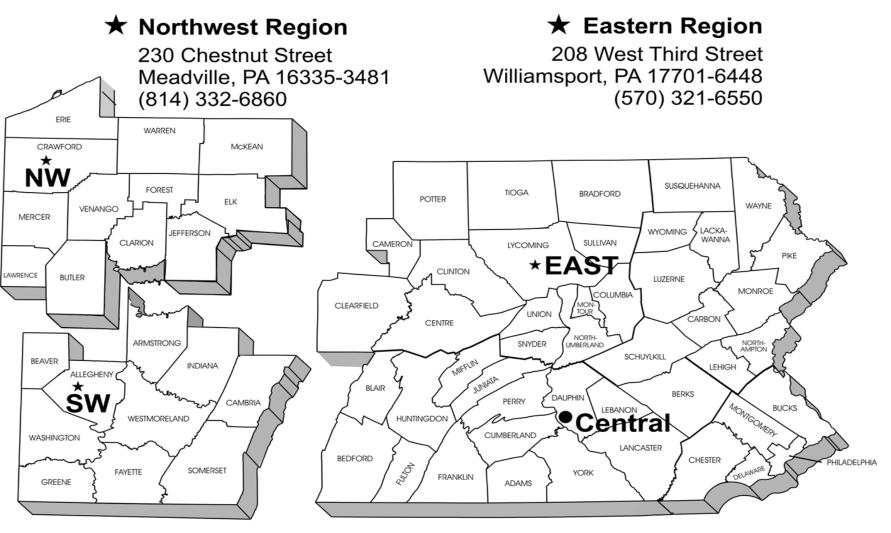
### Eastern Oil and Gas Region

Jennifer Means PA Department of Environmental Protection

#### Oil and Gas Regions

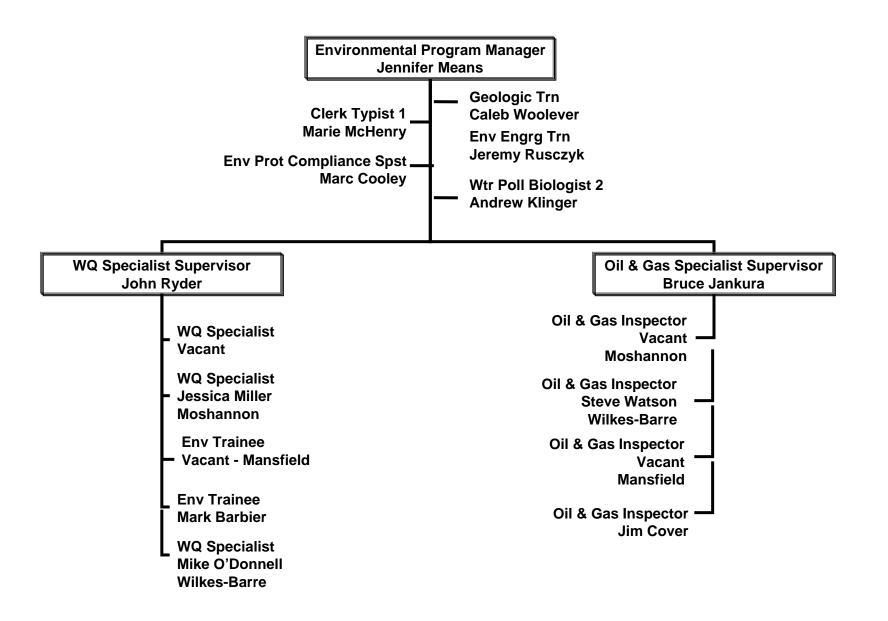


#### ★ Southwest Region

400 Waterfront Drive Pittsburgh, PA 15222-4745 (412) 442-4024

#### Central Office

Bureau of Oil and Gas Management PO Box 8765 Harrisburg, PA 17105-8765 (717) 772-2199



# Gas Drilling & Water Resources

- Stormwater
  - Construction
  - Post-construction
- Stream/Wetland Encroachments
- Chemical storage
- Drilling
- Water use
- Wastewater disposal

Eastern Region Responsibilities

### Stormwater

- Construction
  - Erosion and Sedimentation
  - Required: E&S plan, possibly ESCGP-1
- Post-Construction
  - Increase stormwater runoff due to increase in impervious area (well pads, roads)
  - Required: Post-Construction Stormwater Management Plan/Site Restoration plan

### **Stream/Wetland Encroachments**

- Need to cross streams and/or wetlands with access roads, gathering lines, etc.
- Potential impact to habitat
- Potentially effect stormwater conveyance
- Required: General permit or Joint permit from the Department for these activities

## **Chemical Storage and Use**

- Chemicals stored on site and used during drilling and hydrofracturing
- Potential for spills- impacts to soil, surface water, groundwater
- Required: Preparedness, Prevention, and Contingency plan (PPC plan)
- Requires notification of Department and others
- Clean-up/remediation of spills required



Eastern Region:

• Complaint investigations, inspections, compliance and enforcement

## Water Use

- Hydraulic fracturing ("fracing") uses large quantities of water (+/- 5 million gallons)
- Potential impacts of water withdrawals to surface water and ground water
- Required: Water Management plan approved by DEP
- SRBC approval if within Susquehanna River basin
- DRBC approval if within Delaware River basin

## Wastewater Disposal

- Portion of water used during hydraulic fracturing returns to the surface as "flowback"
- Potential impacts to surface and ground water if improperly disposed
- Required:
  - Identify disposal facilities in "Control and Disposal" part of PPC plan
  - Residual waste- must follow all reporting requirements and list disposal facility on site restoration report (Waste Management Program)
  - Treatment Plants need DEP approval to accept waste (Water Management Program)

## Challenges

- Staffing
- Building a new program
- Volume and rate of activity
- Technology



