

A photograph of a Marcellus shale rock formation, showing distinct horizontal layers of dark, fractured rock. The rock is weathered and broken into smaller pieces, with some small green plants growing in the cracks. The overall appearance is rugged and layered.

*Environmental Protection and  
Marcellus Shale Well  
Development*



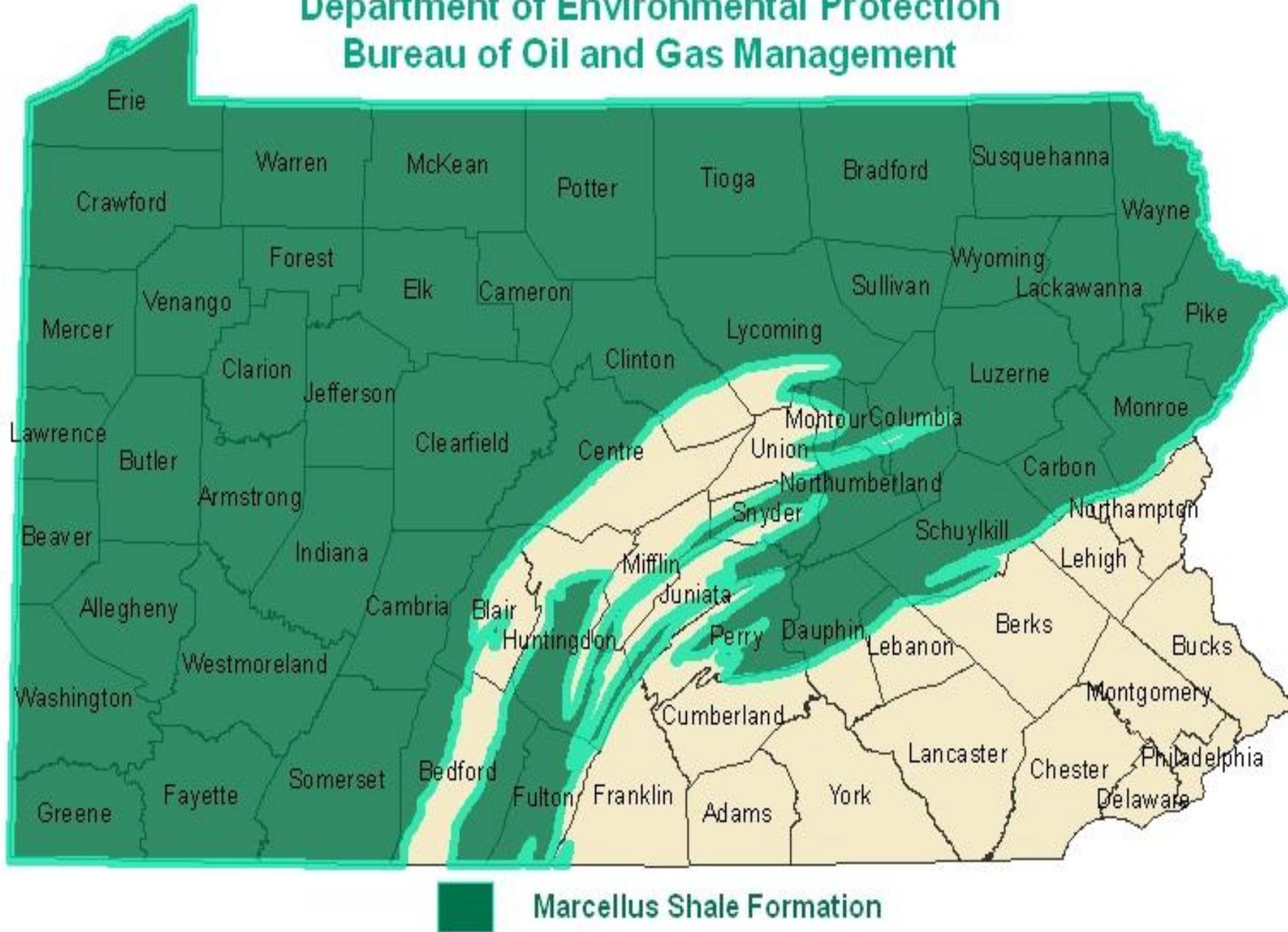
Scott Perry  
Director  
Bureau of Oil and Gas Management

# Shale Gas Plays, Lower 48 States



Source: Energy Information Administration based on data from various published studies.  
 Updated: March 10, 2010

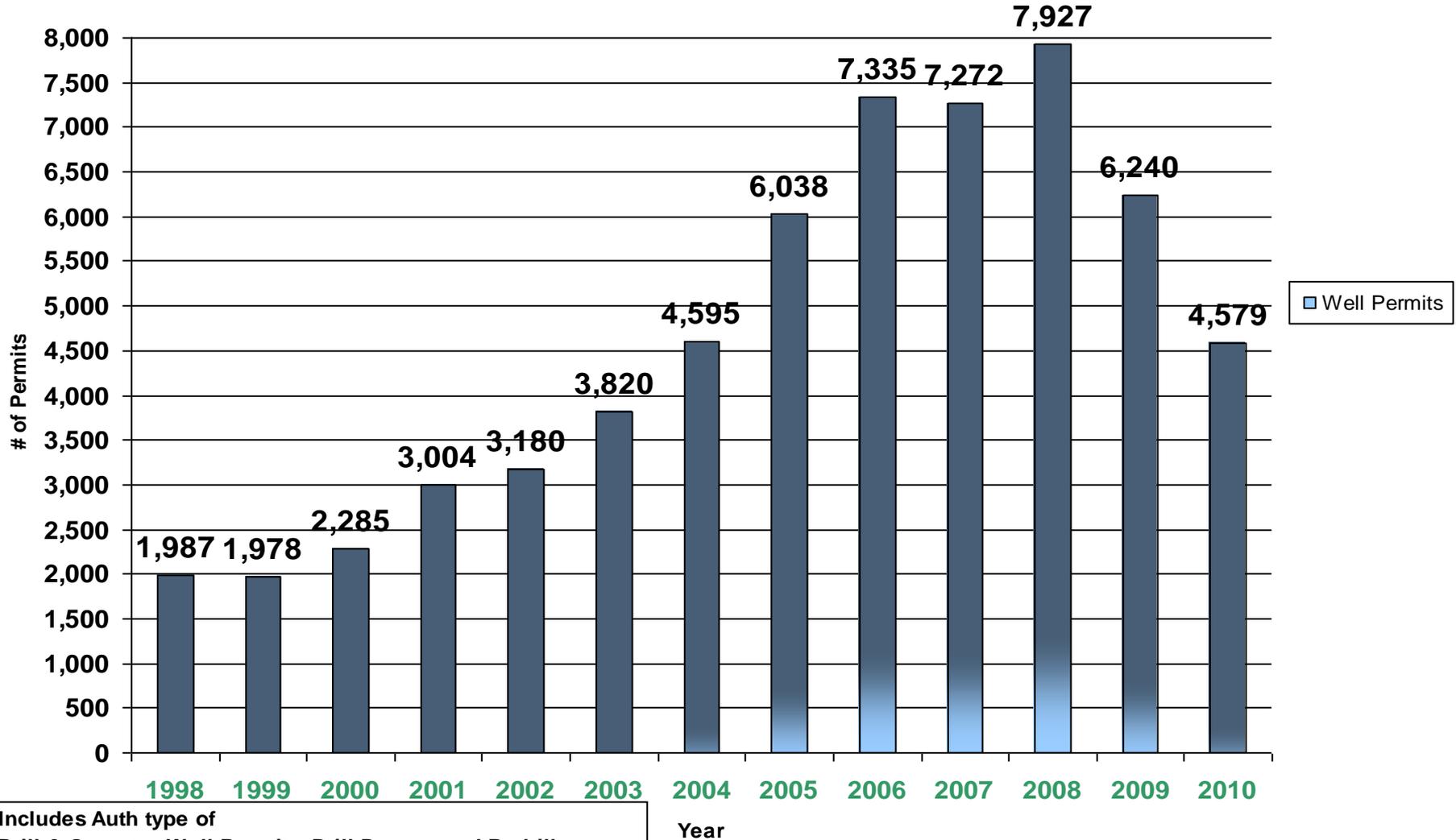
Commonwealth of Pennsylvania  
Department of Environmental Protection  
Bureau of Oil and Gas Management



# Department of Environmental Protection Bureau of Oil and Gas Management

## Well Permits Issued by Year

09/15/2010

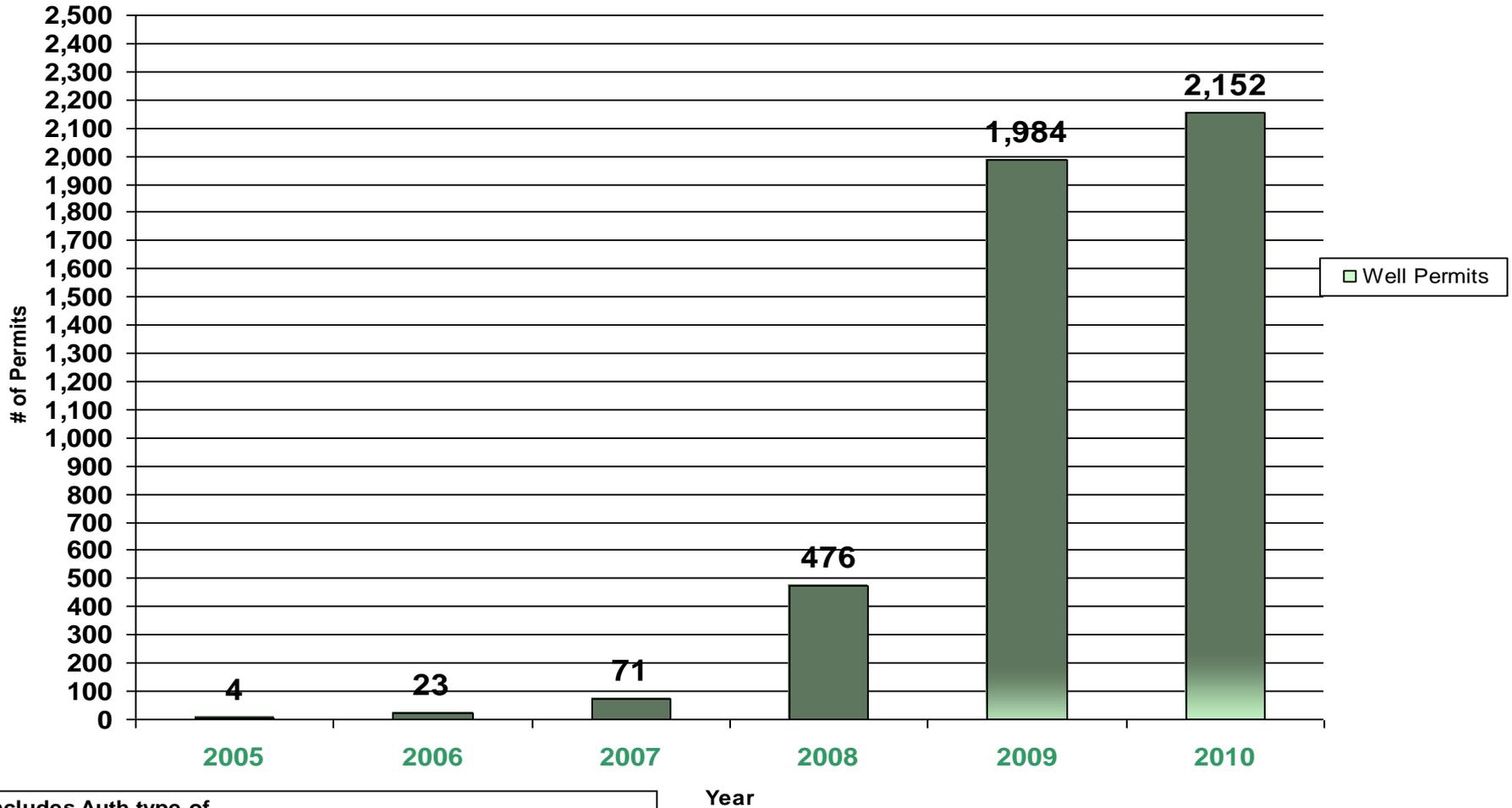


Includes Auth type of  
Drill & Operator Well Permits, Drill Deeper and Redrills.

# Department of Environmental Protection Bureau of Oil and Gas Management

## Marcellus Shale Well Permits Issued by Year

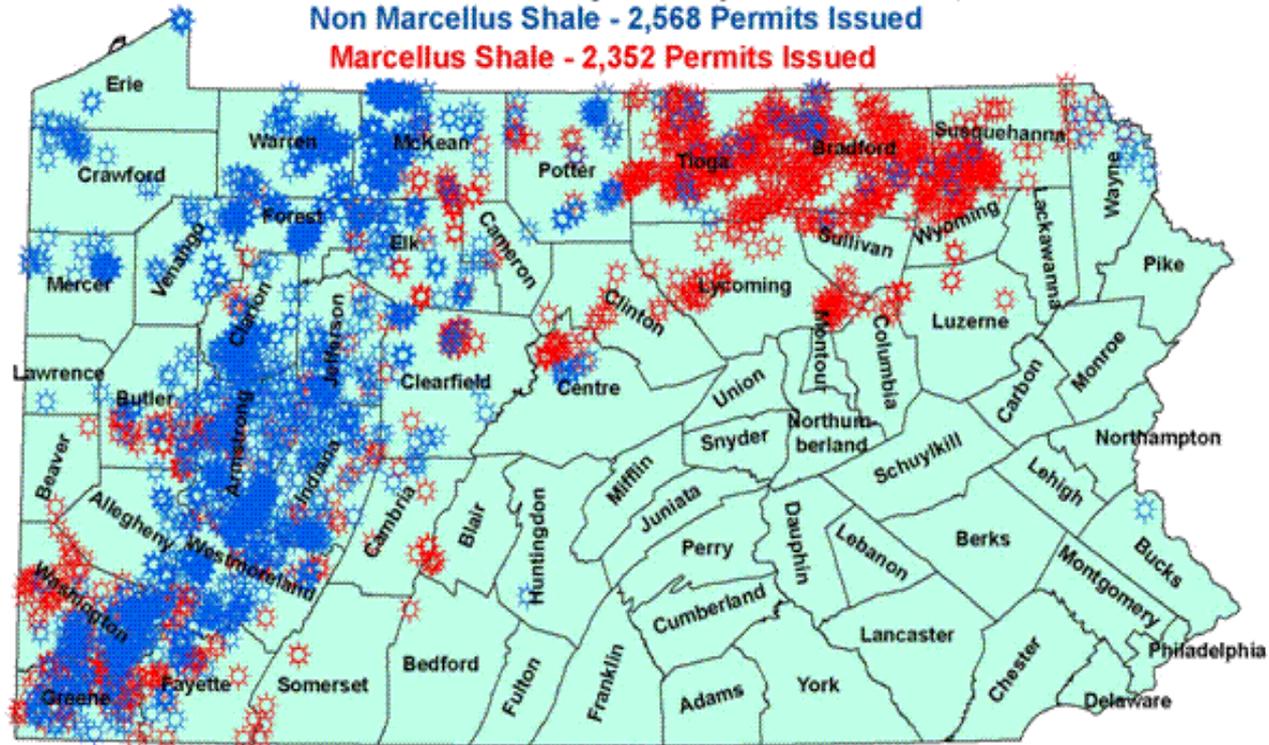
09/15/2010



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# Department of Environmental Protection Bureau of Oil and Gas Management Well Permits Issued

Total Permits Issued January thru September 2010 - 4,918  
Non Marcellus Shale - 2,568 Permits Issued  
Marcellus Shale - 2,352 Permits Issued



Updated 10/05/2010

# Well Construction Standards

Regulations finalized at October 12 EQB meeting

Casing and Cementing Standards

Inspection requirements for existing wells

Blow out prevention and response

Stray gas response requirements

Disclosure of fracking chemicals

# Water Withdrawal

- Single water management plan covers multiple well sites.
- Applies in Ohio, Susquehanna and Delaware basins
- Required to protect existing and designated uses  
– 25 Pa. Code Chapter 93
- Water Resources Planning Act (Act 220)  
registration

# Centralized Impoundments

- All pits and impoundments must be impervious and structurally sound.
- Low impact centralized impoundments that store wastewater are permitted by regional oil and gas staff.
- High impact impoundments permitted by dam safety.
  - Impact wetlands, on streams, breach threatens welfare/property.

# Wastewater Management

- TDS strategy
- New and Expanded Sources Only
  - 500 Mg/1 TDS
  - 250 Mg/1 Chlorides
  - 10 Mg/1 Barium and Strontium
- Underground Injection Control Program
  - EPA administers
  - Only 8 class II UIC disposal wells in PA.
  - Over 20 injectivity applications before EPA

# Contact Information

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