

# 2016 Draft Horizontal Well Rule Revisions

West Virginia Department of Environmental Protection  
Office of Oil and Gas

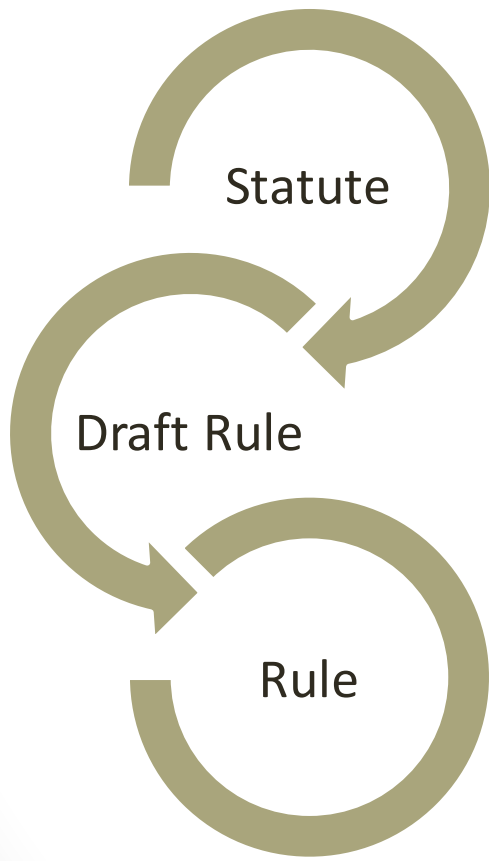
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05/18/2016

# Draft changes overview

- WV Rule Making Process
- Proposed changes
  - Changes required by statute
  - Changes to permitting requirements
  - Changes to operational requirements
  - Changes to reporting requirements

# WV Rule-Making Process



- 35 CSR 8 – Revision Timeline
  - 06/24/2015 – Public Comment
  - 07/23/2015 – Public Hearing
  - 07/31/2015 – Rule Filed
  - 11/23/2015 – Modified Rule
  - 01/13/2016 – Session began
  - 03/12/2016 – Session ended

# Proposed changes overview

## Statutory

- Karst; Water Well testing; Transfers
- Horizontal well plugging standards

## Permitting

- Area of review; Plat requirements
- Aquifer test

## Operational

- Casing Testing; Construction requirements
- Borehole accuracy; Water withdrawal sites

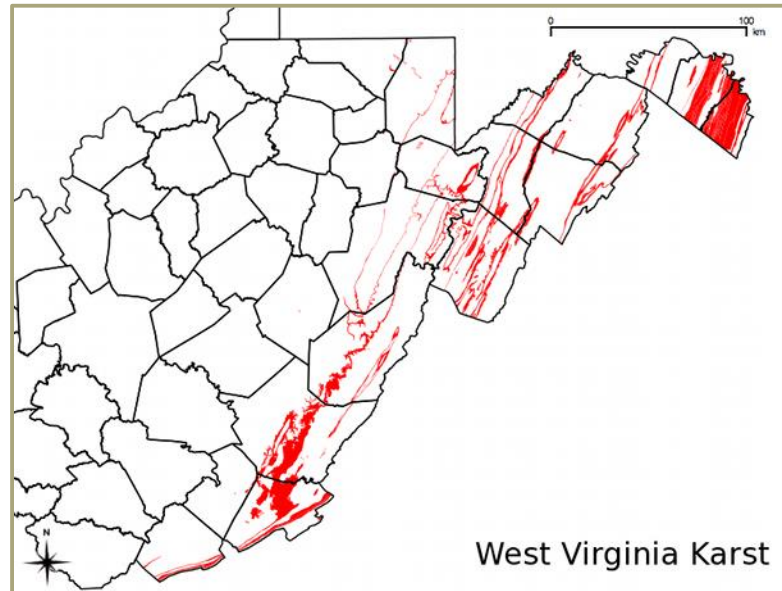
## Reporting

- Frac Focus enhancement
- Produced Water; Condensates

# Statute: § 22-6A-3a

## Karst rules

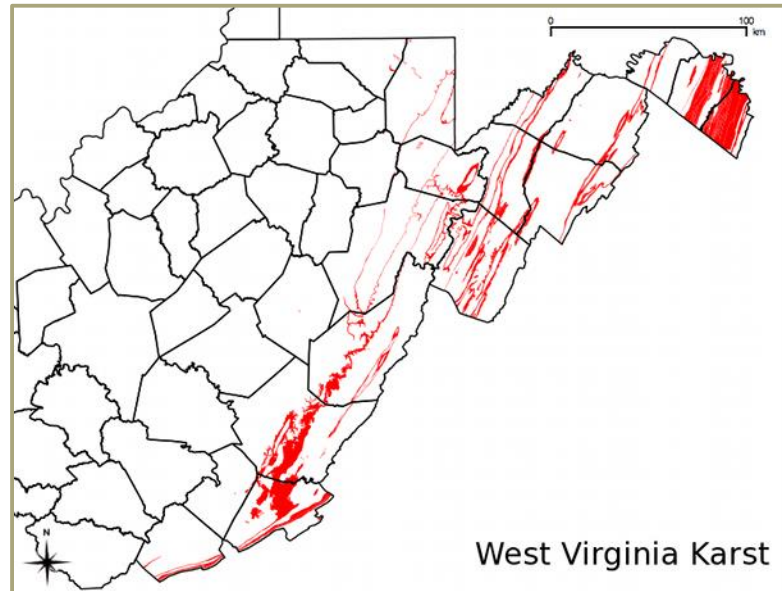
- Permitting
  - Establish designated Karst areas
    - WVGES
  - Perform predrilling testing
    - Identify caves, voids, sinkholes



# Statute: § 22-6A-3a

## Karst rules

- Operational
  - Baseline water testing
    - Hydrologically connected, down-gradient
  - Drilling requirements
    - Air drilling only through freshwater
    - Void procedures
  - Pit and impoundment prohibition



# Statute: §§ 22-6A-13, 22-6A-7

- **Plugging procedures**

- Bridge at the top of the formation
- Plug as a vertical

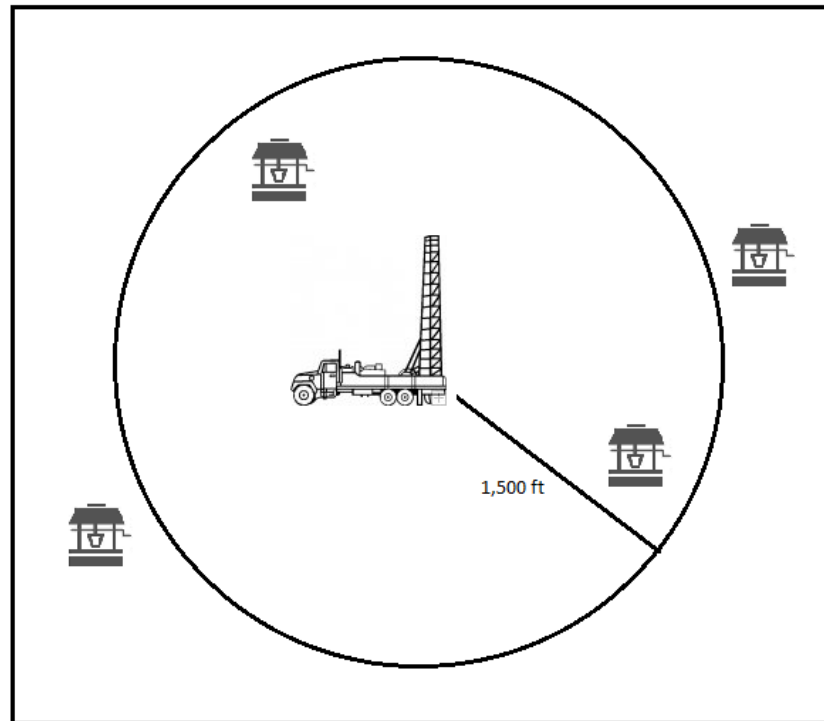
- **Permit transfers**

- Repeal of permit transfer prohibition
- Ensure transferee meets permitting requirements
  - Financial security
  - DOH road bond letter

# Statute: § 22-6A-8

## Groundwater Well Testing

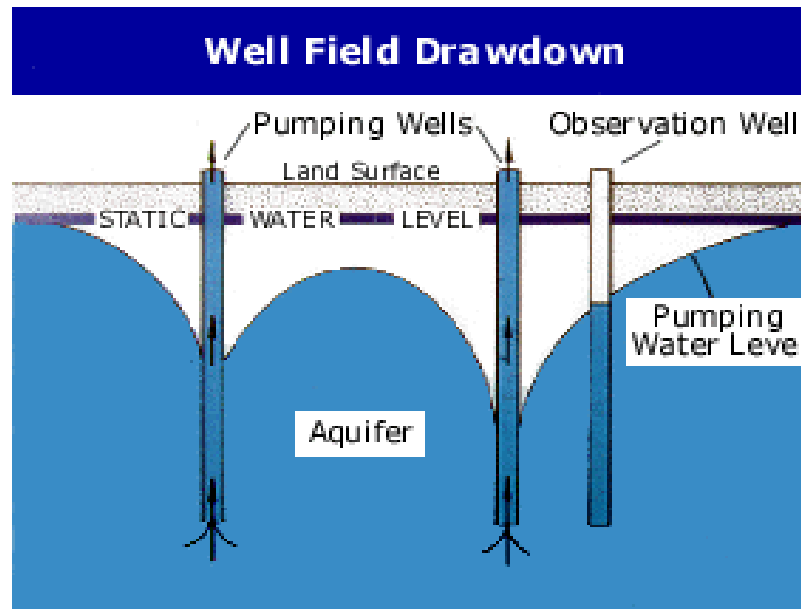
- 1,500 ft. radius to a drilled groundwater supply well
- Upon landowner request
  - Quality Test
    - 35 CSR 8 – 15.3
  - Quantity
    - Site diagram
    - Equipment detail
    - Yield
      - Step drawdown
      - Recharge





# Permitting: Aquifer Test

- **Aquifer Test (35 CSR 8 – 9.1.a.4) – Sustainable Rate**
  - Hydrogeologic delineation
  - Step drawdown test
  - Constant rate drawdown test
  - Recovery analysis
  - Monitoring stations

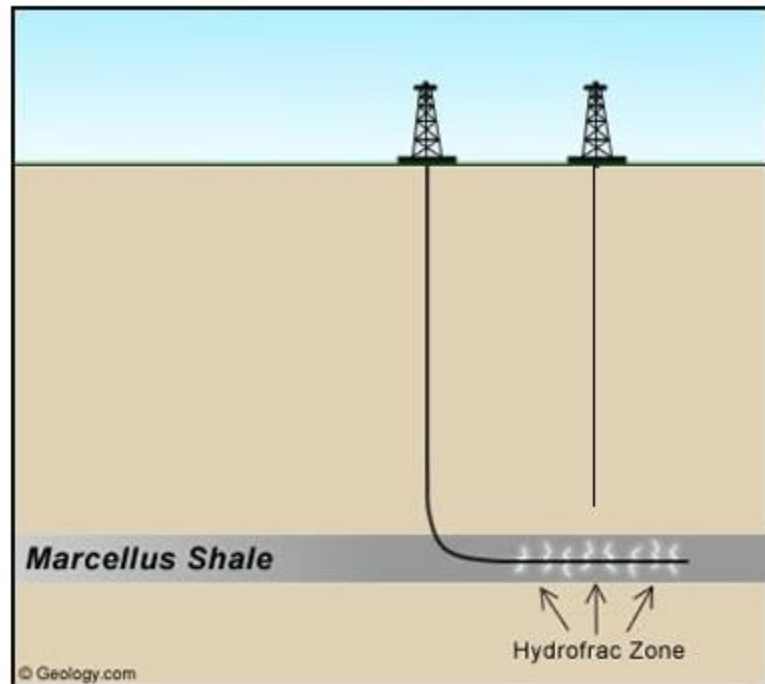


# Operations: Casing

- **Formation integrity testing**
  - Expansion of FIT to surface and coal protection strings
- **Borehole stability**
  - Lengthen freshwater casing to address borehole stability concerns in some circumstances

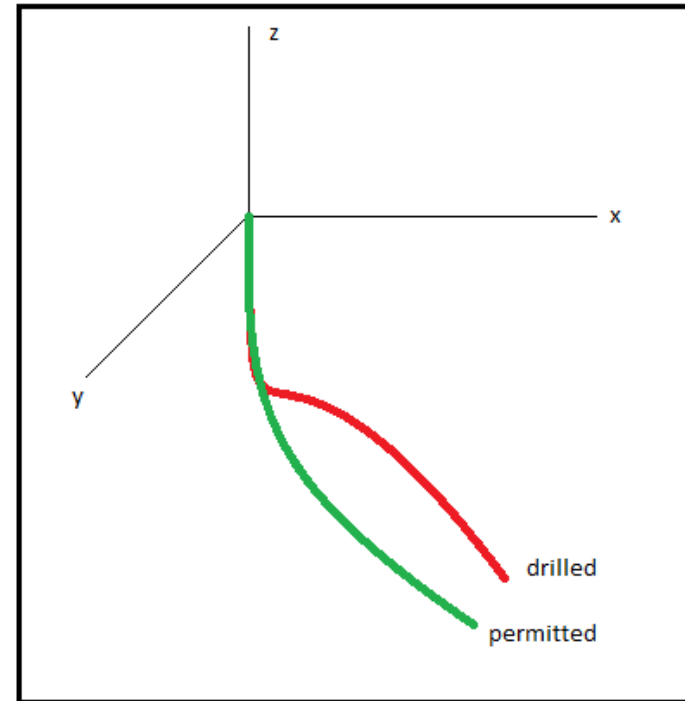
# Permitting: Area of Review

- Unintended fracture propagation
  - Area of review (Prevention)
    - 500 ft. from surface location
    - 500 ft. from lateral
  - Offset wells (Planning)
    - Monitor
    - Plug
  - Operation (Response)
    - Cease operations
    - Gain control
    - Evaluate



# Operations: Borehole accuracy

- Maximum allowable deviation
  - 50 ft. lateral (XY) deviation
  - Safety concerns
  - Ownership concerns
- Record top and bottom hole on plat



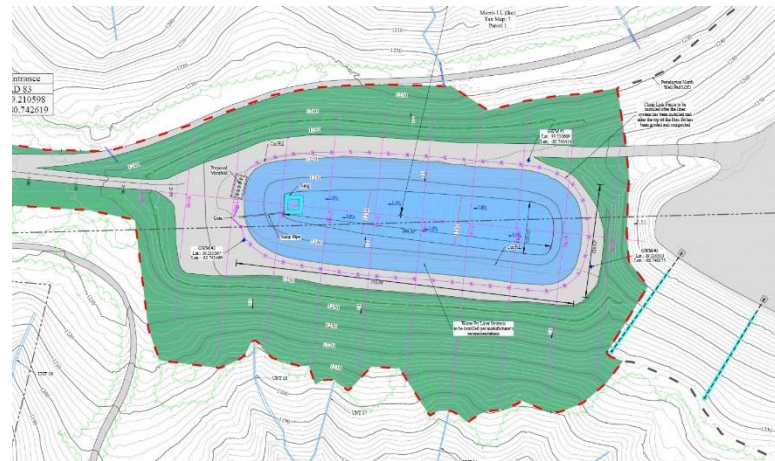
# Operations: Construction Standards

## Pits/Impoundments

- Siting (Centralized)
- Compaction
- Liners
- Leak detection
- Monitoring
- Security

## Well Pads

- Compaction
- Berms



# Operations: Water Withdrawal Sites

- **Signage**
  - Streamline signage requirements
  - Reduce sign clutter
  - Increase effectiveness
- **Site maintenance**
  - WV E&S Control Field Manual



# Reporting:

- **Produced water**
  - Waste tracking
- **Fracturing additives**
  - FracFocus.org modified reporting scheme to reduce claims of trade secrecy
- **NGL clarification**
  - Reduce confusion in annual reporting
  - NGL = Condensate

# Questions/Follow-ups:

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