

Colorado's Groundwater Protection Program

Monitoring and Protecting
Groundwater During Oil
and Gas Development

*Natural Resources Law
Center Intermountain Oil
and Gas BMP Project*

November 26, 2012



Topics

- Waters of the State
- Federal and State statutory and regulatory authority
- Water Quality Control Commission
- Groundwater Standards
- Standards implementation
 - COGCC versus CDPHE
- Groundwater Monitoring and Studies

Waters of the State

"State waters" means any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

Waters of State

Simplistic regulatory view: Waters of the State is everything that is not in a pipe.

Clean Water Act

- 1948: Federal Water Pollution Control
- 1972: Federal Water Pollution Control Act Amendments (“Clean Water Act”)
 - established a framework for which states could develop water quality standards
 - Tied to commerce – groundwater not directly addressed
- 1973: Colorado Water Quality Control Act: Provides Colorado authority to set water quality standards, surface water and groundwater
- 1977 and 1986: Clean Water Act amendments

Clean Water Act

- Federal act is focused on surface water
- State act encompasses surface water and groundwater

Safe Drinking Water Act

- Regulates Public Water Systems
- Colorado has primacy to implement SDWA
- Colorado Primary Drinking Water Regulations
 - Adopted by Water Quality Control Commission
- Underground Injection Control Program (UIC)
 - OGCC implements UIC Class II permits
 - EPA implements all other UIC permits

Public Water System

- Public water system (PWS) ... serves an average of at least twenty-five individuals daily at least 60 days out of the year.
- Approximately 2,200 PWS's in Colorado
- Private water wells are not regulated under the SDWA.
- State of Colorado has no authority to regulate or investigate water quality in private wells.

Water Quality Control Commission

- Citizen Board of 9 Commissioners
Appointed by the Governor
- Serve 3 year terms
- Meets Monthly
- Adopts water quality standards through regulations

Water Quality Standards

- Standards Protect Uses
 - Domestic Use Quality
 - Agricultural Use Quality
 - Surface Water Quality Protection
 - Potentially Usable Quality
 - Limited Use and Quality
- Standards are not self-implementing

Groundwater Quality Standards

- Regulation No. 41
 - Statewide standards, referred to as “Basic Standards”
- Regulation No. 42
 - Site-specific groundwater standards
 - Geologic formation specific
 - Intended to cover all areas of the state

Regulation No. 41

- Interim Narrative Standards
- Applies to all Underground Waters of the State, except for waters defined in Regulation No. 42
- Establishes Uses and Standards
 - Most stringent standard applies (Domestic Use)
 - Human-health standards
 - Exposure for 70 years with water consumption of 2 liters a day
 - Cancer risk or health endpoint of 1 in a million

MCLs vs Human-Health Standards

- Maximum Contaminant Levels (MCLs) are the SDWA equivalent of water quality standards
- Starts at the same place (70 years, 2 liters, 1 in a million)
- Takes into consideration economics of achieving the standard
- MCLs are not always equivalent to water quality standards

Regulation No. 42

- Protection of municipal well fields
- Areas of produced water and waste injection (UIC permits)
- Rocky Flats

Senate Bill 1989-181

- Directs agencies to directly implement groundwater standards
 - Hazardous Materials and Waste Management Division (HMWMD)
 - Division of Oil and Public Safety (OPS)
 - Division of Water Resources/State Engineer's Office (DWR)
 - Oil and Gas Conservation Commission (COGCC)
 - Division of Reclamation Mining and Safety (DRMS)
 - Coal Programs administered by DRMS
- WQCC can establish rules if agency fails to protect groundwater through standards implementation

OGCC

- Protects groundwater quality through construction standards and permitting of oil and gas wells
- Implements groundwater standards in enforcement actions (spills, upsets, etc.)
- WQCC, CDPHE has no concerns with OGCC program under SB-181

Groundwater Protection Plan

- SB-181 Agencies implement the same standards
- Regular communication between agencies
- Annual reports to the Water Quality Control Commission
- SB-90-126 Agricultural Chemicals and Groundwater Program

EPA?

- No authority for oversight of groundwater standards
- Oversight of UIC Class II Permits
 - Hydraulic fracturing exempted
- Spill Response
- National hydraulic fracturing study

Groundwater Monitoring

- Monitoring for compliance activities (SB-181 agencies)
- Agricultural Chemicals and Groundwater Program
- No common groundwater database
- Annual coordination with USGS
- No program to monitor state groundwaters since 1996

Groundwater Studies

- SB-181 activities
- OGCC/COGA Baseline Program + proposed rules
- No funding source for other types of investigations

Conclusions

- Colorado has a groundwater protection program that protects all groundwaters of the state.
- Lack of common groundwater quality database is a continuing problem.
- No ambient groundwater monitoring outside of a specific activity.

Questions?

- Andrew Ross
- 303-692-3395
- andrew.ross@state.co.us