

# Colorado Mesa University 2013 Water Course

## New COGCC Groundwater Rules

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Colorado Oil and Gas Conservation Commission  
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OIL & GAS CONSERVATION COMMISSION

# COGCC MISSION

The Commission's diverse mission, as expressed in the Legislative declaration, is to:

- Foster the responsible, balanced development, production, and utilization of the natural resource of oil and gas in the state of Colorado in a manner consistent with protection of public health, safety, and welfare, including protection of the environment and wildlife resources;
  - § 34-60-102(1)(a), C.R.S.



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# COMMISSION'S STRUCTURE

- Commission structure and subject matter expertise are set by statute.
- 9 individuals:
  - 7 appointed by Governor
  - Executive Director of DNR and Executive Director CDPHE.
  - Term of office is four years, but serve at pleasure of Governor



# COMMISSION'S AUTHORITY

- The Commission acts in both quasi-legislative and quasi-judicial capacities.
  - Develops polices that are implemented through formal rule making or by Orders issued after a full public hearing.
  - Conducts enforcement actions and adjudicates disputes arising from matters within its jurisdiction.
- Conducts hearings at public meetings approximately once per month.



# EXPERIENCE AND EXPERTISE

COGCC staff members have an average of 20 years of experience working with oil and gas development



COGCC is a science-driven organization, with investigations conducted by highly trained, experienced and educated personnel.

Half of COGCC employees have graduate degrees in areas of scientific expertise including geochemistry, hydrology and geology.



Staff includes 34 specialists involved in inspecting oil and gas sites and enforcement of regulations. The environmental unit alone includes 18 specialists.



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# Groundwater Sampling Rules

Oil and Gas operations occur in multiple areas throughout the State where citizens obtain their water supply from groundwater sourced by water wells or springs.

Groundwater users have expressed concerns to COGCC, Oil and Gas Operators, and local governments.

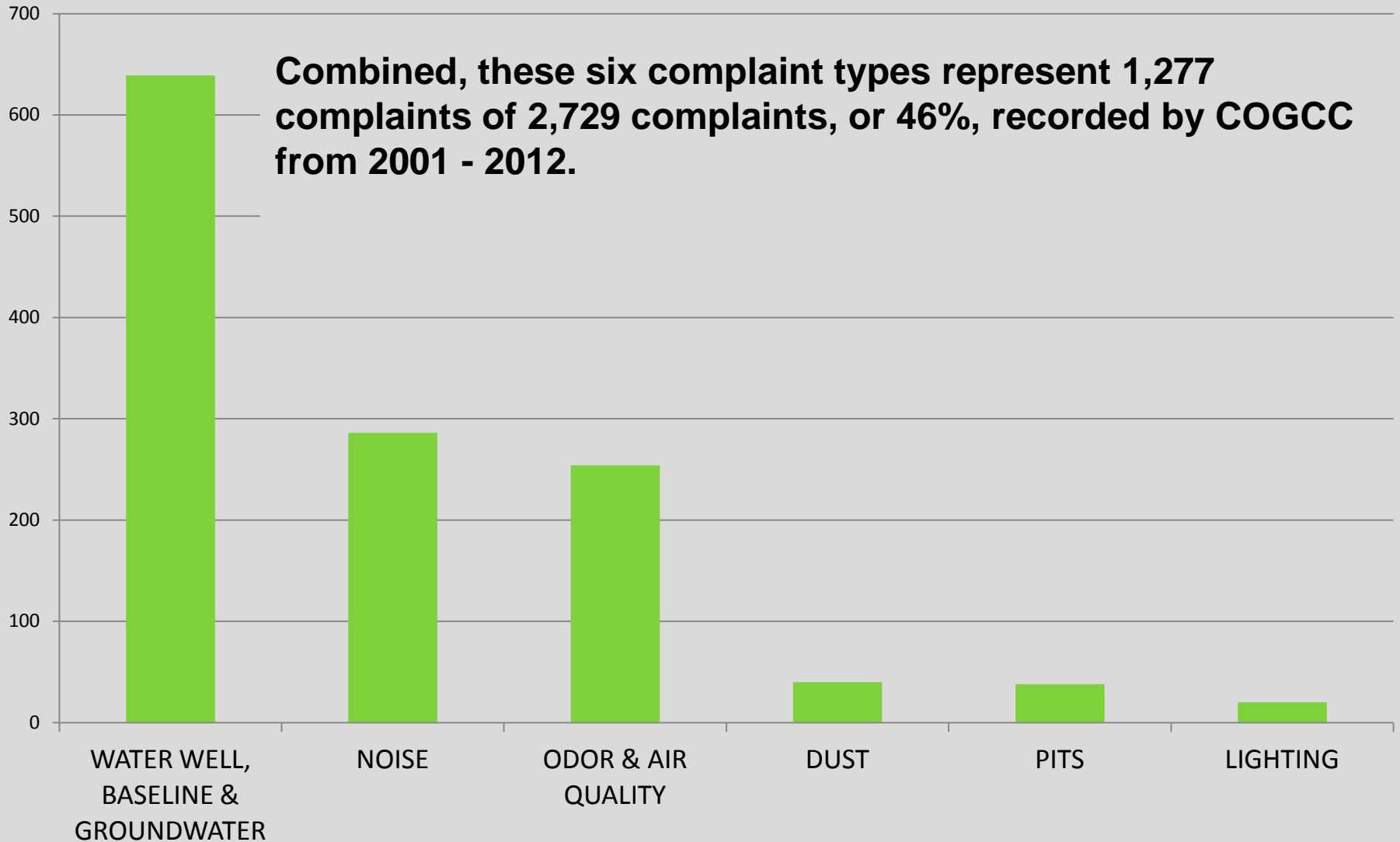
COGCC receives on average, two requests to sample a water well every week.

Several local governments have proposed or adopted rules/policies regarding groundwater sampling near oil and gas wells and facilities.



# Complaints 2001 - 2012

**Combined, these six complaint types represent 1,277 complaints of 2,729 complaints, or 46%, recorded by COGCC from 2001 - 2012.**





# New Sampling Rules:

What problem we are trying to solve?

Establish pre-drilling condition of groundwater in the area of proposed oil and gas operations;

Aid in determining whether drilling and completion operations have resulted in impacts to groundwater;



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# New Sampling Rules:

What problem we are trying to solve?

Not meant to substitute for routine maintenance and sampling of domestic water wells by well owners



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# New Sampling Rules:

What problem we are trying to solve?

The proposed Rules are not the primary means by which the Commissions Rules protect bedrock aquifers. Rather, groundwater sampling will augment existing COGCC Rules that protect groundwater.



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# Supplement Existing Rules

- Surface Casing –Rule 317.d., e., f., g., 317A.a., b.
- Well Cementing – Rule 317.h., i.
- Bradenhead Testing – Rule 317.j, 341
- MIT Testing – Rule 326
- Pit Lining – Rule 904
- Lining Production Facilities – proposed Rule 604.c.2.G.
- Form 2A Process for Siting and Constructing Surface Facilities – Rule 303.d.



# Existing GW Sampling Rules and Orders

Date	Rule or Order	Description
Apr 2000	112-156 & 112-157	Sampling near CBM wells in the San Juan Basin
Dec 2005	Rule 318A.e	Sampling within GWA for infill wells
Apr 2009	Rule 608	Sampling near all CBM wells Statewide
April 2009	Rule 305.d	Provides for Conditions of Approval which can require groundwater sampling on Form 2A.
Sept 2011	Rule 318A	Expands required sampling to all of GWA



# GW Rules Overview

- New Rule 609: applies statewide except GWA and coal bed methane wells.
- Amended Rule 318A.e.(4): applies in GWA. Modifies existing groundwater sampling requirements w/in GWA.
- Existing Rule 608: applies with respect to coal bed methane wells.



# Rule 609 Overview

- Effective date: May 1, 2013
- Applies to Oil and Gas Wells, Multi-Well Sites, Dedicated Injection Wells.
  - Production Facilities at Director's discretion, consistent with other Commission Rules.
- Requires samples from all Available Water Sources (max of 4) within a ½ mile radius.
  - If more than 4 water sources, set of six criteria for determining which locations to select





# Water wells within a quarter mile of oil and gas permit locations

County	Total Permit Locations*	Permit Locations with 1 or more water wells within a Quarter Mile	Permit Locations with ZERO water wells within a Quarter Mile	Percent Permit Locations with ZERO water wells within a Quarter Mile	Max Number of Water Wells within a quarter mile of a permit location
WELD	935	371	564	60%	35
GARFIELD	199	45	154	77%	35
RIO BLANCO	89	2	87	98%	5
LA PLATA	84	32	52	62%	8
MOFFAT	72	10	62	86%	6
YUMA	67	31	36	54%	4
LAS ANIMAS	65	20	45	69%	6





# Water wells within a half mile of oil and gas permit locations

County	Total Permit Locations*	Permit Locations with 1 or more water wells within a Half Mile	Permit Locations with 0 water wells within a Half Mile	Percent Permit Locations with ZERO water wells within a Half Mile	Max Number of Water Wells within a half mile of a permit location
WELD	933	608	325	35%	90
GARFIELD	200	84	116	58%	45
RIO BLANCO	87	4	83	95%	6
LA PLATA	83	52	31	37%	35
MOFFAT	71	24	47	66%	11
YUMA	67	60	7	10%	24
LAS ANIMAS	63	34	29	46%	12



# Rule 609 Overview

- An initial baseline and 2 subsequent samples are required.
  - Pre-drilling sample w/in 12 months prior to spud
  - 1<sup>st</sup> subsequent sample 6-12 months after completion
  - 2<sup>nd</sup> subsequent sample 60-72 months after completion



# Rule 609 Overview

- Full analytical suite for baseline samples; oil and gas specific indicator constituents post-drilling.
- Sampling and Analysis Plan: COGCC will develop Model SAP, based on COGA SAP. Model SAP will be routinely updated, posted to web site, and will be presumptive SAP.



# COGA Voluntary Baseline Groundwater Sampling Program Summary

- Effective January 2012.
- Sample 2 groundwater water wells, springs, or seeps within 1/2 mile radius of the surface location.
- Analyze for complete analytical list on Table 1 in the COGA Sampling and Analysis Plan.
- Collect initial baseline and a 1 year sample.
- Submit data to COGCC for posting on Public Website



# Rule 609 Overview

- All analytical results provided to COGCC; posted to web site; provided to local government upon request
- Notifications: Operator must notify COGCC and well owner if:
  - Thermogenic gas is detected, or methane is detected above 10 mg/l or increases by more than 5 mg/l.
  - Operator must notify COGCC if BTEX compounds or TPH is detected



# Rule 609 Overview

- Liability: Sampling results obtained to satisfy Rule requirements create no presumption of liability, fault, or causation against the owner or operator of a Well.





# Rule 318A.e(4) Overview

- Effective date: May 1, 2013
- Applies to Oil and Gas Wells, Multi-Well Sites, Dedicated Injection Wells.
  - Production Facilities at Director's discretion, consistent with other Commission Rules.
- Requires samples from 1 Available Water Source within the governmental quarter section of the proposed well.





# Rule 318A.e(4) Overview

- An initial baseline and 1 subsequent sample are required.
  - Operator may rely on prior samples taken w/in past 60 months for baseline
  - Subsequent sampling event 6-12 months after drilling.



# Rule 318A.e(4) Overview

- Full analytical suite for baseline samples and reduced analytical suite for subsequent samples.
- Analytical results posted to COGCC web site
- Notifications, SAP, Liability provisions all same as Rule 609.



# New Groundwater Rules

	Rule 609—outside of GWA	Rule 318A.e.(4) – inside GWA
Applicability	Statewide, except Rule 608, <b>and</b> Greater Wattenberg Area, under Rule 318A.e.(4)	Greater Wattenberg Area
Facilities covered	Oil and Gas Wells, Multi-Well Sites, Dedicated Injection Wells. Production Facilities at Director’s discretion, consistent with other Commission Rules.	Oil and Gas Wells, Multi-Well Sites, Dedicated Injection Wells. Production Facilities at Director’s discretion, consistent with other Commission Rules.



# New Groundwater Rules

	Rule 609—outside of GWA	Rule 318A.e.(4) – inside GWA
Number of Sampling Locations	All Available Water Sources w/in ½ mile, to a maximum of 4.	1 Available Water Source per governmental quarter section. If no Available Water Source w/in quarter section, look within ½ mile radius for AWS in previously unsampled quarter section.
Location of Samples	If more than 4 AWS, use selection criteria.	If more than 1 AWS, use selection criteria



# New Groundwater Rules

Sampling Events	Rule 609—outside of GWA	Rule 318A.e.(4) – inside GWA
Number / Timing	1 pre-drilling sampling event 2 subsequent sampling events; <ul style="list-style-type: none"><li>• 6-12 months after drilling</li><li>• 60-72 months after drilling</li></ul>	1 pre-drilling sampling event 1 subsequent sampling event; <ul style="list-style-type: none"><li>• 6-12 months after drilling</li></ul>



# New Groundwater Rules

	<b>Rule 609—outside of GWA</b>	<b>Rule 318A.e.(4) – inside GWA</b>
Target Analytes	Full suite for pre-drilling; oil and gas specific indicator constituents post-drilling.	Full suite for pre-drilling; oil and gas specific indicator constituents post-drilling.
Sampling and Analysis Plan	COGCC will develop Model SAP, based on COGA SAP. Model SAP will be routinely updated, posted to web site, and will be presumptive SAP.	COGCC will develop Model SAP, based on COGA SAP. Model SAP will be routinely updated, posted to web site, and will be presumptive SAP.



# Benefits of the Rules to Oil and Gas Operators

- Establishes water quality conditions prior to oil & gas development for use as a baseline.
- Opportunity for operators to demonstrate that sampled water wells and springs have not been impacted.
- If an oil and gas impact is discovered, remedial measures can be implemented immediately, potentially reducing the costs of mitigation.





# Benefits of the Rules to Local Governments

- Can report to the citizens that a systematic groundwater sampling program is underway in response to local resident groundwater concerns.
- Local governments and their citizens will be able to access the groundwater data through the COGCC public website.



# **COGCC RIFLE OFFICE**

**796 Megan Ave., Suite 201  
Rifle, Colorado 81650**

**Phone: 970-625-2497**

**Rifle Complaint Line: 970-285-0322**



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**Thank you!**



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