

***RESIDENT'S GUIDE TO* HYDRAULIC FRACTURING CHEMICAL DISCLOSURE RULES**

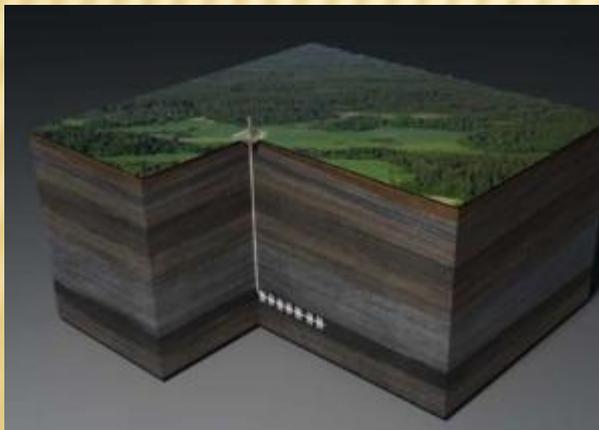
Energy Advisory Board
April 5, 2012

Kirby Wynn, GarCo Oil and Gas Liaison

*Thank you to Linda Spry O'Rourke (COGCC) and
Andrew Casper (COGA) for providing most of the presentation slides*

HYDRAULIC FRACTURING: DEFINITION

- ✘ The use of fluids to create a crack by hydraulic pressure
- ✘ The continued injection of fluids into the created crack fracture to make it grow larger
- ✘ The placement of small granular solids into the crack to ensure the crack remains open after the hydraulic pressure is no longer applied



WHY HYDRAULICALLY FRACTURE A WELL?

- ✘ Increase the **Rate** at which the well is capable of producing oil or gas
- ✘ Most unconventional formations **Require** hydraulic fracturing to be economic

BACKGROUND FOR DISCLOSURE RULE

- ✘ Nearly every well in Colorado is hydraulically fractured (HF)
- ✘ COGCC regulates HF
- ✘ Public concern with fluids used in process
- ✘ National trend is public disclosure
- ✘ Summer 2011: Governor Hickenlooper announced support of state disclosure rule

CHEMICAL DISCLOSURE RULE PROCESS

- ✘ COGCC Stakeholder Meetings
- ✘ Parties to Rulemaking:
 - + Industry
 - + Environmental Community
 - + Local Government Interests/Water Utilities
- ✘ Dec. 5, 2011 Hearing
- ✘ Dec. 13, 2011 Compromise and Final Rule Adoption

CHEMICAL DISCLOSURE RULE PROCESS

- ✘ Was a consensus rulemaking
- ✘ ******* In 2011, many GarCo operators began voluntarily disclosing their hazardous fracturing chemicals using the www.FracFocus.org website.

HIGHLIGHTS OF RULE CHANGES:

- ✘ Improved Access to Records
- ✘ Public Disclosure of Hydraulic Fracturing Chemicals
 - + New Form 41 for trade secret information
- ✘ Required Notice of Intent to Conduct Hydraulic Fracturing Treatment
 - ✘ New Form 42 for public notification

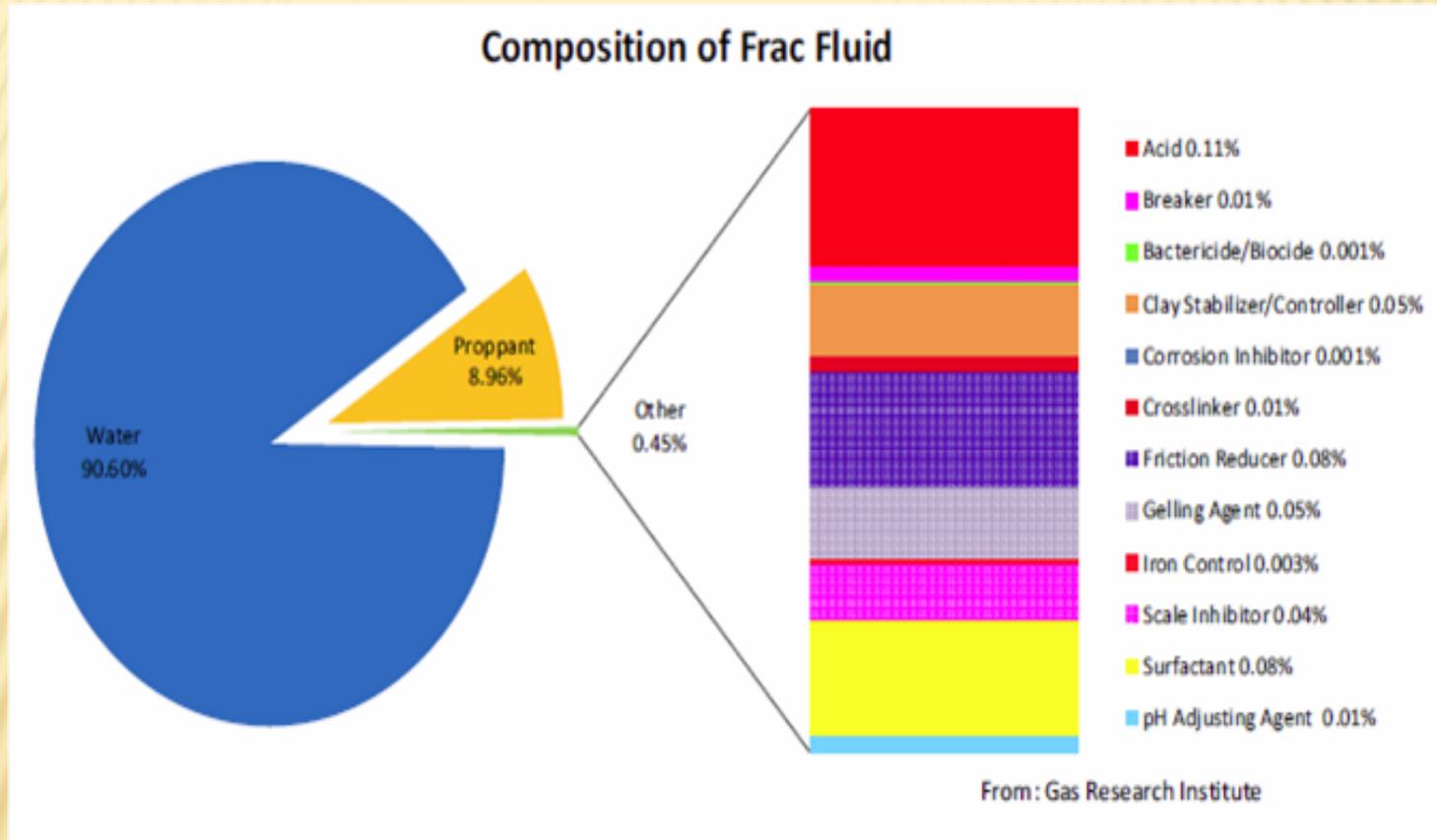
HIGHLIGHTS OF RULE CHANGES:

- ✘ Applies to all hydraulic fracturing treatments on or after April 1, 2012.
- ✘ Requires public disclosure of HF chemicals using **FracFocus.org** (60 days)
- ✘ Appropriate Trade Secret Protection
- ✘ 48 hour advance notice from Operator to the Commission is required of intention to hydraulically fracture a well.

HIGHLIGHTS OF RULE CHANGES

- ✘ Information reported (well-by-well basis)
 - + Volume of water used
 - + Chemicals and concentrations (may be reported in a format that does not link chemical ingredients to respective additive)
- ✘ Trade Secrets
 - + *Family name still required*
 - + Structure of the disclosure requirement may may minimize number of trade secret claims

HYDRAULIC FRACTURING FLUIDS



HYDRAULIC FRACTURING FLUIDS

- Depending on the fluid system being pumped various additives are used:
 - Polymers
 - Crosslinkers
 - pH Control
 - Gel Breakers
 - Surfactants
 - Clay Control
 - Bacteria Control
 - Fluid Loss Additives
- Additives are transported in concentrated form
- Typically injected at less than 3 gallons per 1,000 gal of water (0.3%)
- All additive injection rates are controlled.
- The purpose of any additive is to help improve the overall process

INDUSTRY GOALS FOR CHEMICAL DISCLOSURE

- ✘ Implementation of public disclosure rule which is effective to alleviate public concern
- ✘ Appropriate level of disclosure, balancing the public interest with burden to industry
- ✘ Provide the necessary information in the proper context for risk management

FRACFOCUS.ORG WEBSITE

Welcome / Publications / News & Updates / Projects & Partnerships / Links

Frac Focus
Chemical Disclosure Registry

HYDRAULIC FRACTURING
HOW IT WORKS

GROUNDWATER PROTECTION

FIND A WELL
BY STATE

REGULATIONS
BY STATE

CHEMICALS GLOSSARY

FREQUENT QUESTIONS

WELCOME

Welcome to **FracFocus**, the hydraulic fracturing chemical registry website. This website is a joint project of the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission.

On this site you can search for information about the chemicals used in the hydraulic fracturing of oil and gas wells. You will also find educational materials designed to help you put this information in perspective.

[LEARN MORE >](#)

Looking for information about a well site near you?

[FIND A WELL](#)

Search for nearby well sites that have been hydraulically fractured to see what chemicals were used in the process.

FAQs

◀ 1/3 ▶

Q. Where does the water for hydraulic fracturing come from?

A. Although the source of water for fracturing can come from surface water, ground water or both, the volumes of water needed for fracturing horizontal shale gas wells necessitate that, with some notable exceptions like the Barnett shale in Texas, surface water provide the bulk of the water used in most areas of the country. Water can be taken from streams, ponds or artificial impoundments, or can be purchased from water providers such as a municipality. In some cases recycled water from prior hydraulic fracturing

Is groundwater protected?

Groundwater Protection: Priority Number One

Oil and natural gas producers have stringent requirements for how wells must be completed. The genesis of these requirements is water safety.

Going in the first line of defense used to protect freshwater aquifers

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FRACFOCUS.ORG WELL SEARCH

The screenshot shows a web browser window displaying the Frac Focus website. The address bar shows the URL <http://www.hydraulicfracturingdisclosure.org/fracfocustfind/>. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The toolbar contains various icons for navigation and utility. The website's header features the Frac Focus logo (Chemical Disclosure Registry) and navigation links for HYDRAULIC FRACTURING, GROUNDWATER PROTECTION, CHEMICAL USE, REGULATIONS BY STATE, FIND A WELL BY STATE, and FREQUENT QUESTIONS. The main content area is titled "Find a Well" and includes a search form with the following fields: STATE (Colorado), COUNTY (Mesa), WELLS IN COUNTY (Choose a Well Name), OPERATOR (Choose One), API WELL NUMBER, and WELL NAME. Below the form are "Search" and "Reset" buttons, with a note: "Not Seeing Map Markers? Please Click The 'Reset' Button (left)." A map of the United States is displayed below the form, with "Map" and "Satellite" options. The map shows the state of Colorado highlighted. The browser's status bar at the bottom right indicates a zoom level of 75%.

FRACFOCUS.COM : LOCATE WELLS WITH MAP

The screenshot displays the web application interface for locating wells. At the top, the browser address bar shows the URL <http://www.hydraulicfracturingdisclosure.org/fracfocusfind/Map.aspx>. Below the browser window, the application has a menu bar with 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. A toolbar contains various icons for navigation and search.

The main search area includes the following fields:

- STATE: Colorado
- COUNTY: Mesa
- WELLS IN COUNTY: Choose a Well Name
- OPERATOR: Choose One
- API WELL NUMBER: (empty)
- WELL NAME: (empty)

Buttons for 'Search' and 'Reset' are located below the search fields. A message reads: "Not Seeing Map Markers? Please Click The 'Reset' Button (left)."

The map area shows a satellite view of the Mesa area in Colorado. A blue pin is placed on the map, and a callout box provides the following details:

- API Number: 0507709725
- Well Name: Stites 20-8A
- Operator: Occidental Oil and Gas
- Job Date: 10/11/2011

At the bottom right of the application window, a notification bar states: "Solve PC issues: 1 important message 2 total messages".

FRACFOCUS.ORG: WELL INFORMATION

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	5/9/2011
State:	Colorado
County:	Garfield
API Number:	05-045-16289
Operator Name:	Chevron USA Inc.
Well Name and Number:	SKR 598-36-AV-01
Longitude:	-108.34021
Latitude:	39.5725861111111
Long/Lat Projection:	NAD83
Production Type:	Gas
True Vertical Depth (TVD):	6,318
Total Water Volume (gal)*:	1,566,037

FRACFOCUS.COM: CHEMICAL DISCLOSURE

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**
Water	Chevron	Base Fluid			100.00%	92.83980%
Sand-Premium White-30/50	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	6.98169%
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.00625%
			Potassium hydroxide	1310-58-3	5.00%	0.00104%
BE-7	Halliburton	Biocide	Sodium hypochlorite	7681-52-9	30.00%	0.02696%
			Sodium hydroxide	1310-73-2	2.00%	0.00180%
SANDWEDGE WF	Halliburton	Conductivity Enhancer	Heavy aromatic petroleum naphtha	64742-94-5	10.00%	0.00526%
RE8234SCW	Baker Petrolite	Scale Inhibitor	Amine phosphonate salt	Trade Secret	30.00%	0.00456%
			Ethylene Glycol	107-21-1	30.00%	0.00456%
			Methanol	67-56-1	30.00%	0.00456%
			Modified Amine	Trade Secret	10.00%	0.00152%

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations require the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is disclosed on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

PLANNED IMPROVEMENTS TO FRACFOCUS

- ✘ The rule intends for the FracFocus website to be searchable by chemical ingredient, chemical abstract service number and time period by January 1, 2013 (Note: the site is already searchable by well, by county and by operator).
- ✘ If the site is not searchable by those additional parameters by 2013, the COGCC will begin making the information available and searchable on its own site, as soon as practicable.

TRADE SECRETS

- ✘ If a vendor, service provider or operator claim a chemical and/or its concentration as a trade secret, a form (Form 41) must be submitted to the director of the Oil and Gas Conservation Commission.
- ✘ Trade Secret provisions allow any person who believes a trade secret has been inappropriately claimed to seek redress through the COGCC initially and then through the courts, if needed.

TRADE SECRETS FORM 41

- ✘ Form 41 must include contact information for a representative should further information be promptly needed regarding the composition of the trade secret chemical claimed.
- ✘ Form 41 must be updated immediately if contact information changes
- ✘ By signing the Form 41 document, the signer is legally attesting to the legitimacy of the trade secret claim.
- ✘ Trade secret information must be provided promptly to the COGCC director and health professionals upon request.

**FORM
41**

Rev
12/11

**State of Colorado
Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



OGCC RECEPTION

Receive Date:

Document Number:

TRADE SECRET CLAIM OF ENTITLEMENT

If a chemical used in the hydraulic fracturing treatment of a well is entitled to trade secret protection, the operator must still provide information on its chemical family to FracFocus. The supplier, service company or operator, as applicable, must also provide the identity of a trade secret chemical to a health professional that satisfies certain conditions (immediate disclosure is required in medical emergencies). At the time of claiming that a chemical, concentration, or both is a trade secret, the vendor, service company or operator must file a Form 41 with the Commission to provide accurate contact information. If the contact information changes for the party maintaining trade secret protection they must immediately submit a new Form 41 with the current information.

Entity Asserting Trade Secret Claim

OGCC Operator Number: _____	Contact Person: _____
Company Name: _____	Phone: () _____
Address: _____	Fax: () _____
City: _____ State: _____ Zip: _____	Email: _____

Classification of Entity Asserting Trade Secret Claim

Operator Vendor Service Provider

Other - Specify in detail: _____

Claim of Entitlement to Trade Secret Protection

Rule 205A requires disclosure of all chemicals intentionally added to base fluid as part of a hydraulic fracturing treatment, as well as the maximum concentrations and (if applicable) CAS numbers for those chemicals, except in those limited situations where the specific identity or concentration of a chemical are permitted to be withheld as a trade secret. For purposes of Rule 205A, the term "trade secret" is defined in the COGCC Series 100 Definitions (Nov. 2011 version).

The Entity identified above claims that the identity or maximum concentration, or both, of the following chemical qualifies as a trade secret:

You may use a descriptive label, such as "Company TS1," for a chemical identifier in lieu of identifying the chemical. This chemical identifier may be used to reference the chemical in subsequent disclosures filed with the Chemical Disclosure Registry.

In order to claim that information is entitled to protection as a trade secret, you must check all the affirmations below and submit specific information regarding each of the following (can be attached on separate pages).

- 1. The entity holding the trade secret information has not disclosed the information to any other person, other than a member of a local emergency planning committee, an officer or employee of the United States or a state or local government, an employee of such person, or a person who is bound by a confidentiality agreement, and such person has taken reasonable measures to protect the confidentiality of such information and intends to continue to take such measures, or disclosure has otherwise been limited such that the information is not readily available to competitors.
- 2. The information is not required to be disclosed, or otherwise made available, to the public under any other Federal or State law.
- 3. Disclosure of the information is likely to cause harm to the competitive position of the entity holding the trade secret information.
- 4. The information is not readily discoverable through reverse engineering.

This form must be signed by an authorized agent of the entity making assertion.

I certify under penalty of perjury that this report has been examined by me and to the best of my knowledge is true, correct and complete.

Print Name: _____ Email: _____
Signature: _____ Title: _____ Date: _____

**Signature block
certifying trade secret status**

COGCC HANDLING OF TRADE SECRET CLAIMS

- ✘ COGCC does not verify if something is a trade secret unless an issue is raised by an affected party
- ✘ COGCC verifies that information has been provided
- ✘ *If there is a complaint, COGCC can investigate or the courts could investigate.*
- ✘ Certification on form 41 allows policing of trade secret claims and legal challenges

HYDRAULIC FRACTURING NOTIFICATION

FORM

42

Rev
03/12

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



OGCC RECEPTION

Receive Date:

03/22/2012

Document Number:

400264496

NOTICE OF NOTIFICATION

Entity Information

OGCC Operator Number: 16700 Contact Person: Julie Justus
Company Name: CHEVRON USA INC Phone: #Error
Address: 6001 BOLLINGER CANYON RD Fax: #Error
City: SAN RAMON State: CA Zip: 94583 Email: jjustus@chevron.com

API #: 05 - 045 - 17282 Facility ID: Location ID:
Sec: 9 Twp: 05 Range: 98W Qtr: Qtr: SE NE Lat: Long:

NOTICE OF HYDRAULIC FRACTURING TREATMENT – 48-hour notice required

Date of Treatment: 03/26/2012 Time: 08:00 (HH:MM)

This form must be signed by an authorized agent of the entity making assertion.

I certify under penalty of perjury that this report has been examined by me and to the best of my knowledge is true, correct and complete.

Print Name: Julie Justus Email: jjustus@chevron.com

Signature: Title: R,H & E Spec. Date: 03/22/2012

MORE INFORMATION ON FRACING AVAILABLE ON COGCC WEBSITE

HOME Colorado Oil and Gas Conservation Commission

A division of the Colorado Department of Natural Resources Transparency Online Project (TOP)

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MISSION
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GENERAL CONTACTS
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FORMS
STAFF RPT
PERMITS
NEWS/MEDIA
DATABASE
LOCAL GOV
IMAGES
MAPS
HELP

PUBLIC ANNOUNCEMENTS

[Hydraulic Fracturing Confidentiality Agreement Form 35](#) (02/16/2012)
Click on this link to see Notice of Hearing and associated documents.

[Hydraulic Fracturing Disclosure Rulemaking](#)
Click on this link to see Special Meeting Notice, First Prehearing Order, Draft Statement of Basis and Purpose, and Proposed Amendments.

LTD 32-09 and 32-09H comment period extended *New*
The comment period for the proposed , Quicksilver Resources Pirtlaw Partners, LTD 32-09 and 32-09H, well and site in Routt County has been extended by request to 4/26/2012

Form 42 Now Available in eForm and PDF Format *New*
The Form 42, Notice of Notification (Notice of Hydraulic Fracturing) is now available in eForm and in the Form section in a PDF format.

[eForm Training for Industry Staff and LGD Staff](#) (03/20/2012)
The COGCC is presenting eForm Training session in various locations around the state in the coming months. Please click on the link above to get more details on locations and dates.

[Form 41, Trade Secret Claim Form Now Available](#) (03/12/2012)
Form 41, Trade Secret Claim of Entitlement is now available to be filed through eForm. A paper version can be found on the Forms page.

HOT TOPICS

[Setback Review Stakeholder Group](#) (03/23/2012)
The COGCC Setback Review Stakeholder Group documentation web pages

[Governor's Task Force for State and Local Govt](#) (03/19/2012)
Task Force on Cooperative Strategies Governor's Task Force Regarding State and Local Regulation of Oil and Gas Development

[Oil and Gas Industry Spills and Releases](#) (10/13/2011)
This memorandum explains how the COGCC seeks to prevent spills and releases, and when they occur, ensure that they are promptly contained, investigated, and remediated.

[Hydraulic Fracturing Information](#) (06/07/2011)
With the public's interest in and concern about the potential impacts of fracking on public health and the environment, the COGCC has compiled information for the public's review.

CONCLUSION

New Rules provide:

- ✘ New approach to chemical disclosure
- ✘ Balance of interests
- ✘ Transparency and accountability
- ✘ Increased public confidence