

IOGCC Mid-Year Meeting

Bismarck, North Dakota



U.S. Department of Energy • Office of Fossil Energy
National Energy Technology Laboratory

STATE OIL AND NATURAL GAS REGULATIONS DESIGNED TO PROTECT WATER RESOURCES



May 2009



VANITY FAIR



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OIL SPILL WALL STREET HOLLYWOOD'S TOP 40 MEDIA BRYAN BURROUGH MICHAEL LEWIS BETHA

vanity fair > BUSINESS >

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ENVIRONMENT

A Colossal Fracking Mess

The dirty truth behind the new natural gas. *Related: A V.F. video look at a town transformed by fracking.*

By **Christopher Bateman** • Photographs by **Jacques del Conte**
WEB EXCLUSIVE June 21, 2010

88
tweets

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WBAI, 99.5 FM - www.wbai.org

1. What happens when there is an environmental catastrophe?
2. Where are the discussions on the city, state & national level about Hydrofracking in New York?
3. What language do gas companies use to sell the idea of drilling for natural gas and how are those ideas incorporated by media activists?
4. Are gas companies over-estimating the amount of natural gas in the Marcellus Shale to investors? Who gets the gas once it is released?
5. Who are the activists and what role are they playing to bring awareness to the forefront?
6. Where is the discussion on energy policy and why isn't solar energy part of it?
7. **The metaphysics of land and minerals and the rights of nature.**

Top Story Stumboer: Seeina Red

Latest News Gates expresses regret for civilian

Video Candidates Steer Back to the Issues

SEE MORE FROM THE HOMEPAGE



PROJECT GREEN

A Toxic Spew?

Officials worry about impact of 'fracking' of oil and gas.

By [Jim Moscou](#) | Newsweek Web Exclusive
 Aug 20, 2008 | Updated: 5:26 p.m. ET Aug 20, 2008

Robert Nickelsberg / Getty Images

Pumped: Workers release carbon-dioxide vapor after 'fracking' a natural-gas well in eastern New Mexico

ADVERTISEMENT

Top Ten Technology/ Business More Topics

MOST VIEWED MOST E-MAILED GET & SHARE

- 1 Buying Villas in Sicily
- 2 What Does the Financial Meltdown Mean for You?
- 3 Careers: A Tough Job Market For Business School G...
- 4 Lehman's Failure Marks the End of a Banking Era
- 5 Why Cars Don't Get 50mpg
- 6 Forbes: What Happened to Lehman and Merrill Lynch?
- 7 Finally, a Compromise Bill on Drilling and Energy?
- 8 The Bad News About Green Architecture
- 9 Lehman: Why Some Banks Don't Get Aid
- 10 The Economy: Why It's Worse Than You Think

Set Range: Past 24 hrs Updated 9/17/2008 12:10AM EST

GALLERY

The Most Fuel Efficient Cars
 Ten small and stylish rides that save gas and money

- The Car of the Future
- Why Cars Don't Get 50mpg
- Energy: Is Offshore Oil Drilling the Answer?
- Gallery: The History of Solar Energy
- Cars vs. Bikes: The New Road Rage

From the Editors (2) Recommended (6) Topics (4)

- The Most Fuel Efficient Cars
- Going Green Means Staying Profitable for
- Clinton Marshall

Published: March 1, 2011

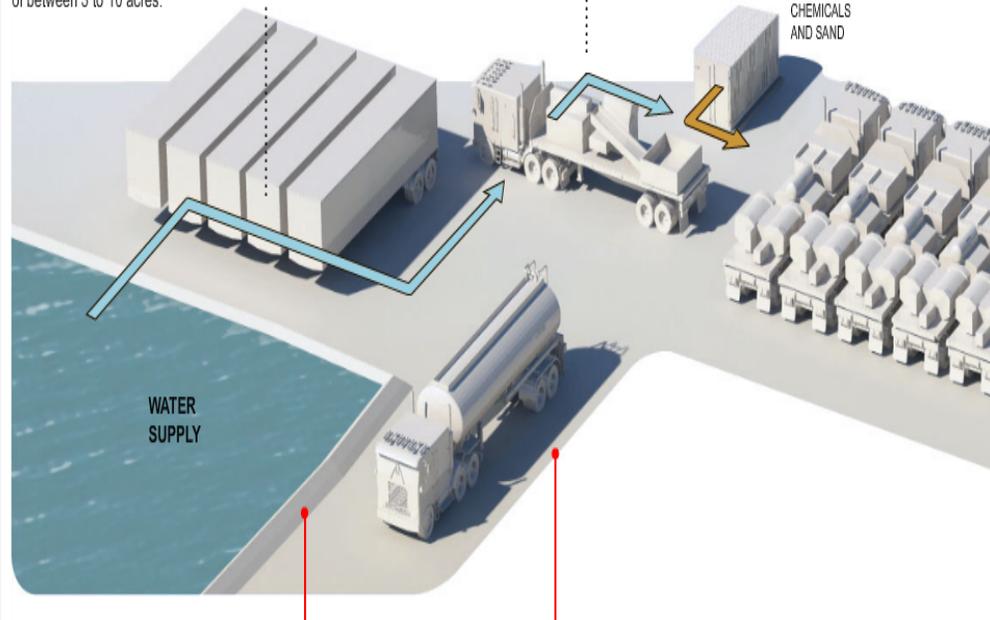
Chemicals and Toxic Materials That Come With Hydrofracking

Waste disposal and other hazards in drilling for natural gas.

1 2 3 NEXT

Millions of gallons of water can be used to activate a typical gas well. It is stored in an artificial pond, part of a drilling complex that can require a forest clearing of between 3 to 10 acres.

Sand and chemical agents, often toxic, are blended into the water.



GASLAND

A FILM BY JOSH FOX



CLICK →
ON YOUR
STATE TO
TAKE ACTION

- MAP VIEWS
- STORIES
 - DRILLING AREAS
 - WATERWAYS

WHAT THE FRACK?
 A loophole in the '05 Energy Bill exempts gas drillers from EPA guidelines like the Clean Water Act.

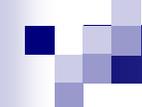


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The Truth Behind Gasland
Site By One Trick Pony

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WHY IS HYRAULIC FRACING A CONTINUING PROBLEM?

- Exploration in new geographic areas
- Severed Minerals Estates
- Highly Technical Process
- Misinformation from Press
- Incomplete water well testing
- Lack of Information from Oil and Gas Companies
- Trade Secrets from Service Companies

INSIDE THE DC BELTWAY

Legislatively

The “FracAct” is
Dead

Administratively

DOE, EPA and
BLM are very
active



DOE Activities

Home Suggested Sites Web Slice Gallery



NATURAL GAS SUBCOMMITTEE OF THE
SECRETARY OF ENERGY ADVISORY BOARD
Safety of Shale Gas Development



About

Resources

Public Input

"Setting the Bar for Safety & Responsibility"

On May 5, 2011, U.S. Energy Secretary Steven Chu charged the Secretary of Energy Advisory Board (SEAB) Natural Gas Subcommittee to make recommendations to improve the safety and environmental performance of natural gas hydraulic fracturing from shale formations. Secretary Chu extended the Subcommittee membership beyond SEAB members to include the natural gas industry, states, and environmental experts. The Subcommittee is supported by the Departments of Energy and Interior, and the U.S. Environmental Protection Agency.

President Obama directed Secretary Chu to form the Natural Gas Subcommittee as part of the President's "[Blueprint for a Secure Energy Future](#)" - a comprehensive plan to reduce America's oil dependence, save consumers money, and make our country the leader in clean energy industries.

The Subcommittee will conduct a review, and will work to identify any immediate steps that can be taken to improve the safety and environmental performance of hydraulic fracturing. They will also develop advice for the agencies on shale extraction practices that ensure protection of public health and the environment.

Notice of Public Meeting

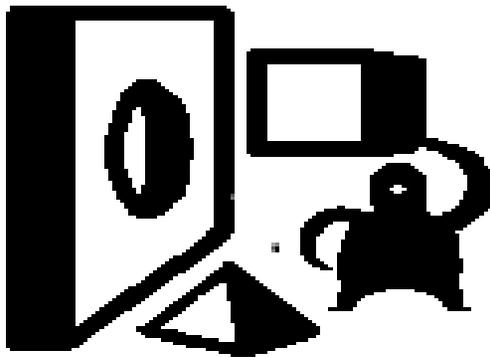
The [SEAB Natural Gas Subcommittee will hold a public meeting](#) on Monday, June 13, 2011, at Washington Jefferson College in Washington, Pennsylvania.

The event will be broadcast live via webcast. The link to the webcast will be made available on this site on the day of the event.



EPA

- Regulate HF under the UIC Program
- Issue Guidance for wells using Diesel
- Permit by State or EPA Regional Office





Former Bush EPA Official Says Fracking Exemption Went Too Far; Congress Should Revisit

by [Abraham Lustgarten](#)

ProPublica, March 9, 2011, 1:21 p.m.

14 Comments | Republish | E-mail | Print

When Benjamin Grumbles was assistant administrator for water at the Environmental Protection Agency in the George W. Bush administration, he oversaw the release of a 2004 EPA report that determined that hydraulic fracturing was safe for drinking water. Then he watched as Congress used those findings to bolster the case for passing a law that prohibited the EPA from regulating fracking under the Safe Drinking Water Act.

In two interviews with ProPublica -- the first on June 29, 2009, soon after he left the EPA, and the second on March 5, 2011 -- Grumbles ponders the criticism leveled at the 2004 study and suggests that it's now time for Congress and the EPA to take another look at hydraulic fracturing. Our questions, and his answers, have been combined and edited for length to the version you see here. Grumbles is currently on the board of the Clean Water America Alliance, a group focusing on water sustainability issues. He has also served as head of Arizona's Department of Environmental Quality.



Benjamin Grumbles, assistant administrator for water at the Environmental Protection Agency, testifies on Capitol Hill, on April 15, 2008. (Susan Walsh/AP Photo)

This article is part of an ongoing investigation:

[Buried Secrets: Gas Drilling's Environmental Threat](#)

The promise of abundant natural gas is colliding with fears about water contamination.



Tweet

The Story So Far

The push to find clean domestic energy has zeroed the country in on one resource it has plenty of: natural gas. Vast deposits large enough to supply the country for decades have become the focus of a drilling boom stretching

Joint Leadership Initiative of the GWPC and IOGCC

National Oil and Gas Data Portal:
Collaboration and Leadership Among
States



Slide 11

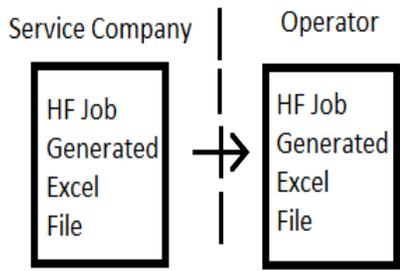
sdb1 sbelieu, 9/24/2010

sdb2 sbelieu, 9/24/2010

Step One

Chemical Registry Tool

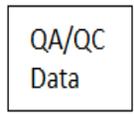
- Simple tool that will allow Operators to voluntarily submit information regarding HF
 - Present this chemical data to the public to aid with understanding and transparency
 - Educate users on what is being shown and allow for user comments
 - Provide means to upload activities @well level for viewing
 - Provide means to search



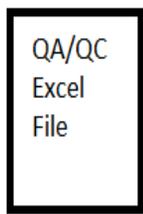
1.

Process to Upload Data to Web Site:

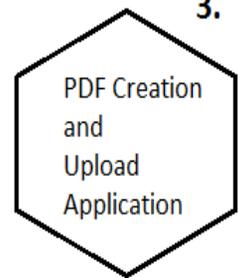
1. Generate Data by Service Company
2. QA/QC by Operator
3. Configure Upload with Application
4. Verify data Uploaded into Web Site



2.



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3.

WEB SITE 4.

Hydraulic Fracturing Chemical Registry Disclosure Website

FracFocus Statistics

- Participating companies = 46
- Reporting companies = 34
- Wells reported = 1732
- Site visits = 43,592
- Unique visitors = 32,146
- Countries = 103

Find Chemical Record

[Publications](#) / [News & Updates](#) / [Projects & Partnerships](#) / [Links](#)



HYDRAULIC FRACTURING
HOW IT WORKS

GROUNDWATER
PROTECTION

FIND A WELL
BY STATE

REGULATIONS
BY STATE

CHEMICALS
GLOSSARY

FREQUENT
QUESTIONS

Find a Well

SEARCH OPTIONS



STATE:

Texas



COUNTY:

Choose a County



WELLS IN COUNTY:

Choose a County First



OPERATOR:

Choose One



API WELL NUMBER:

____-____-____

WELL NAME:

SEARCH

RESET

(Note: One search option is required to do a search.)



Operator Login

[Log In]
[Log In]

Home

Find Chemical Record

What is Fracing?

About

[Log In]

Hydraulic Fracturing
DISCLOSURE

**FracFocus**
Chemical Disclosure Registry

FIND A WELL
BY STATE

ABOUT PROJECT
PARTNERS

(Note: Clicking the FracFocus, FIND A WELL links will open a new window.)

Operator Log In

Please enter your Email Address and Password. Click here to [REGISTER](#) if your Company does not have an account.

USER MENU

- Home
- Register

Account Information

Email:
mlayne@all-llc.com
Password:

Validation Question:
What is the name of the street on which you grew up?

Validation Answer:

Keep me logged in

[Forgot Password?](#)

Search Results

[Publications](#) / [News & Updates](#) / [Projects & Partnerships](#) / [Links](#)



HYDRAULIC FRACTURING
HOW IT WORKS

GROUNDWATER
PROTECTION

FIND A WELL
BY STATE

REGULATIONS
BY STATE

CHEMICALS
GLOSSARY

FREQUENT
QUESTIONS

Find a Well

[← Back To Search](#)

	API No.	Job Date	State	County	Operator	Well Name	Well Type	Latitude	Longitude	Projection
	42-483-33102	1/26/2011	Texas	Wheeler	ALL Consulting - Test Users	Stiles 16 #1016H	Gas	35.459572	-100.090508	NAD27



Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/26/2011
State:	Texas
County:	Wheeler
API Number:	42-483-33102
Operator Name:	Apache Corp
Well Name and Number:	Stiles 16 #1016H
Longitude:	-100.090508
Latitude:	35.469572
Long/Lat Projection:	NAD27
Production Type:	Gas
True Vertical Depth (TVD):	13,651
Total Water Volume* (gal):	6,224,064

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)**	Comments
Water	BHI	Carrier	Water	7732-18-5	100.00%	93.89335%	
Prime Plus	BHI	Proppant	Quartz (SiO2)	14808-60-7	100.00%	5.33749%	
Mineral Oil	BHI	Solvent	Mineral Oil	8042-47-5	100.00%	0.01149%	
GBW-5	BHI	Breaker	Ammonium Persulfate	7727-54-0	100.00%	0.00918%	
Alpha 1427	BHI	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00469%	
			Quaternary Ammonium Chloride	7173-51-5	10.00%	0.00156%	
			Alkyl Dimethyl Benzyl Ammonium Chloride (C12-16)	68424-85-1	7.00%	0.00109%	
			Ethanol	64-17-5	5.00%	0.00078%	
			Water	7732-18-5	60.00%	0.00937%	
ClayCare	BHI	Clay Control	Choline Chloride	67-48-1	75.00%	0.07684%	
			Water	7732-18-5	30.00%	0.03073%	
FRW-20	BHI	Friction Reducer	Hydrotreated Light Distillate	64742-47-8	30.00%	0.03527%	
NE-900	BHI	Non-emulsifier	Methanol	67-56-1	30.00%	0.01406%	

Educate Users

The screenshot displays the FracFocus website interface. At the top, a dark blue navigation bar contains the text "Projects & Partnerships / Links & Resources / Contact Us". Below this, the "FracFocus CHEMICAL DISCLOSURE REGISTRY" logo is on the left, and a horizontal menu lists "HYDRAULIC FRACTURING HOW IT WORKS", "WATER SAFETY", "FIND A WELL STATE MAP", "REGULATIONS BY STATE", "CHEMICALS GLOSSARY", and "FREQUENT QUESTIONS".

The main content area features a large graphic of a wellbore penetrating through various geological layers. To the right of this graphic is the heading "Hydraulic Fracturing & HOW IT WORKS". The text below explains: "This technique uses a specially blended liquid which is pumped into a well under extreme pressure causing cracks in rock formations underground. These cracks in the rock then allow oil and natural gas to flow, increasing resource production." A "MORE ABOUT THE PROCESS >" button is positioned below the text. At the bottom of this section, three tabs are visible: "Hydraulic Fracturing", "Find a Well", and "What Chemicals Are Used?".

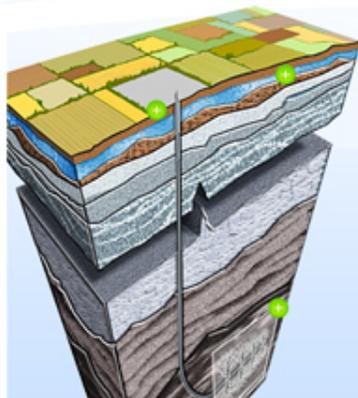
On the right side of the main content area, there is a section titled "Looking for information about a well site near you?". It features a map of the United States with green dots indicating well sites. A dark blue button labeled "FIND A WELL" is overlaid on the map. Below the map, the text reads: "Search for nearby well sites that have been hydraulically fractured to see what chemicals were used in the process."

Below the map section is an "FAQs" section with a "1 / 8" indicator. A question is listed: "Q. Do states do ongoing testing of water and well construction?" The answer is: "A. Yes. Companies are required to regularly conduct tests and submit detailed logs to state regulators." A button labeled "All FAQs >>" is located at the bottom of this section.

Further down, there is a section titled "Drinking Water Safety: Priority Number One". It includes a sub-heading "Is our water safe?" and a photograph of water droplets. The text states: "Oil and natural gas producers have stringent requirements for how wells must be completed. The genesis of these requirements is water safety." and "Casing is the first line of defense used to protect freshwater aquifers." A button labeled "More About Water Safety >>" is provided.

At the bottom of the main content area, there are three small image thumbnails with navigation arrows. The first is labeled "Chemicals Glossary >>", the second "How It Works >>", and the third "State Regulations >>".

The footer of the page contains the logos for "Oil & Gas" and "GROUNDWATER" and the copyright notice "© Copyright GWPC & IOGCC, 2010".



Hydraulic Fracturing & HOW IT WORKS

This technique uses a specially blended liquid that is pumped into a well under extreme pressure causing cracks in rock formations underground. These cracks in the rock then allow oil and natural gas to flow, increasing resource production.

[MORE ABOUT THE PROCESS >](#)

Hydraulic Fracturing Process

[Site Setup](#)

[Drilling Risks / Safeguards](#)

[Casing](#)

[Hydraulic Fracturing](#)

[Waste Removal](#)

[Production](#)

[History of Hydraulic Fracturing](#)

Looking for information about a well site near you?



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

SITE PREPARATION & SETUP



Setting up a well site takes several weeks. Time considerations must be made for leveling the immediate area, constructing the pad site, possibly building roads to transport equipment and prepping for the drilling rig.

Once preparation is complete, the crew will begin the drilling process that includes casing, cementing and completing the well.

[Learn More >](#)

A HISTORIC PERSPECTIVE



The first commercial well to use hydraulic fracturing successfully was drilled in 1949. Over the next 60 years, geologists and engineers tested multiple fracturing techniques on many different geological formations.

The ability to produce more oil and natural gas from older wells made the process valuable for US domestic energy production. By the early 1990s, hydraulic fracturing had been used on nearly 1 million producing wells.

Technology continues pushing the envelope with operators now fracturing about 35,000 wells each year.

[Learn More >](#)





Water Safety & USAGE

Pure, clean drinking water. Nothing can replace it. This is why fresh-water aquifers are protected through strictly regulated safety practices.

[MORE ABOUT WATER SAFETY >](#)

Water Safety & Usage

[Groundwater Aquifers](#)

[Casing Process](#)

[Drilling Usage](#)

[Hydraulic Fracturing Usage](#)

Looking for information about a well site near you?



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

WATER USAGE

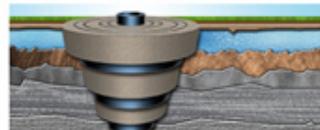


Hydraulic fracturing requires large quantities of water. Oil and natural gas producers have developed multiple ways to obtain the water necessary for wells that are hydraulically fraced.

Building ponds and reservoirs to capture rain, recycling water and contracting with public works and farmers are some of the innovative ways the industry is obtaining, monitoring and regulating water usage in areas.

[Learn More >](#)

A CLEAR CASE FOR PROTECTION



Casing is a process that is regulated by the state for each hydraulically fraced well site.

Well casing acts as a protective barrier between hydraulic fracturing fluid, oil and natural gas that flows through the well and the freshwater aquifers.

The casing layers extend underground with the surface casing reaching anywhere from 50-1,500 feet below freshwater aquifers. Production casing can extend from 5,000-10,000 feet underground.

[Learn More >](#)





HYDRAULIC FRACTURING
HOW IT WORKS

GROUNDWATER
PROTECTION

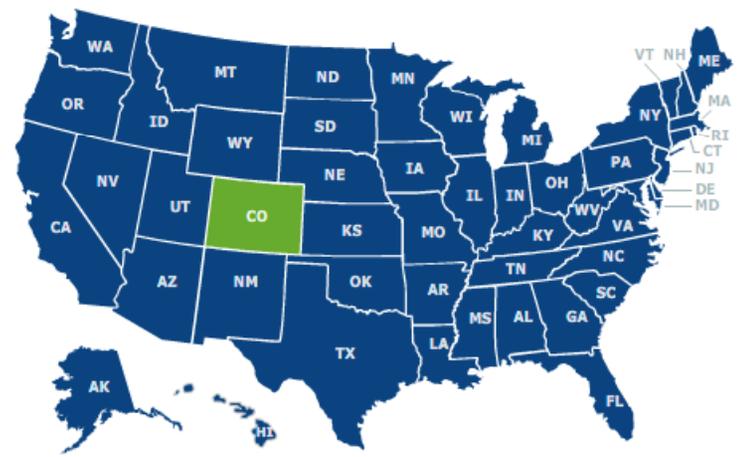
FIND A WELL
BY STATE

REGULATIONS
BY STATE

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QUESTIONS

Regulations By State



Colorado Contact Information

Oil and Natural Gas Representatives:
Colorado Oil & Gas Conservation Commission
Phone: 303.894.2100
Email: dnr.oqcc@state.co.us

Regulations:
[Learn More About Regulations](#) ‡
[View Colorado Regulations](#) ‡

‡ - When you click links marked with the ‡ symbol, you will leave the FracFocus website and go to websites that are not controlled by or affiliated with this site.



HYDRAULIC FRACTURING
HOW IT WORKS

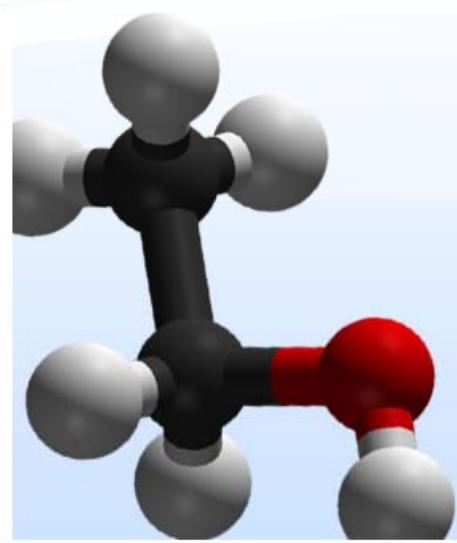
GROUNDWATER
PROTECTION

FIND A WELL
BY STATE

REGULATIONS
BY STATE

CHEMICALS
GLOSSARY

FREQUENT
QUESTIONS



Chemicals Glossary

WHAT'S USED IN HF?

While chemical mixtures are used in hydraulic fracturing, they make up less than 1% of the total mix. These chemicals have multiple purposes such as reducing friction and dissolving minerals in the well.

Chemical Search

SEARCH >

Note: Not every chemical listed here is used in every fracturing job.

- A B C D E F G H I J K L M N O P Q R S T U V W X Y Z search

Acetaldehyde

Acetic Acid

Ammonium Persulfate



You have questions. WE HAVE ANSWERS.

Find out what you'd like to know about hydraulic fracturing. And if you don't find your answer here, drop us a line using our "Ask a Question" section.

[HOW HYDRAULIC FRACTURING WORKS >](#)

WHAT IS HYDRAULIC FRACTURING?

Hydraulic fracturing, commonly referred to as fracing, is the process of creating small cracks, or fractures, in underground geological formations to allow natural gas to flow into the wellbore and on to the surface where the gas is collected and prepared for sale to a wide variety of consumers.

During the fracing process, a mixture of water, sand and other chemical additives designed to protect the integrity of the geological formation and enhance production is pumped under high pressure into the shale formation to create small fractures.

The newly created fractures are "propped" open by the sand, which allows the natural gas to flow into the wellbore where it is collected at the surface and subsequently delivered to a wide ranging group of consumers.



- How does natural gas end up in reservoirs or pockets? 
- Why is hydraulic fracturing necessary? 
- What chemicals are used in fracing? 
- Are fracing chemicals dangerous? 
- How can I be sure that my groundwater is protected? 
- What is the likelihood of a spill at the wellhead during the fracing process? 

Not finding your answer?

ASK A QUESTION.

NAME

PHONE

EMAIL

STATE

QUESTION

TEXT BELOW



ASK





HYDRAULIC FRACTURING
HOW IT WORKS

GROUNDWATER
PROTECTION

FIND A WELL
BY STATE

REGULATIONS
BY STATE

CHEMICALS
GLOSSARY

FREQUENT
QUESTIONS

Find a Well

SEARCH OPTIONS



STATE:

Choose a State ▼

COUNTY:

Choose a State First ▼

WELLS IN COUNTY:

Choose a County First ▼

OPERATOR:

Choose One ▼

API WELL NUMBER:

____-____-____

WELL NAME:

SEARCH

RESET

(Note: One search option is required to do a search.)

Shale Gas Basins with RBDMS States



Why RBDMS Works

- Installed in 23 oil and gas state agencies
- The only existing data management system that is state based yet meets national goals and objectives
- Managed by state steering committee
- Support by a state technical committee
- Outreach activities to industry
- Continually improving by seek input from industry and public to facilitate permitting and reporting
- Funded by US DOE, and States

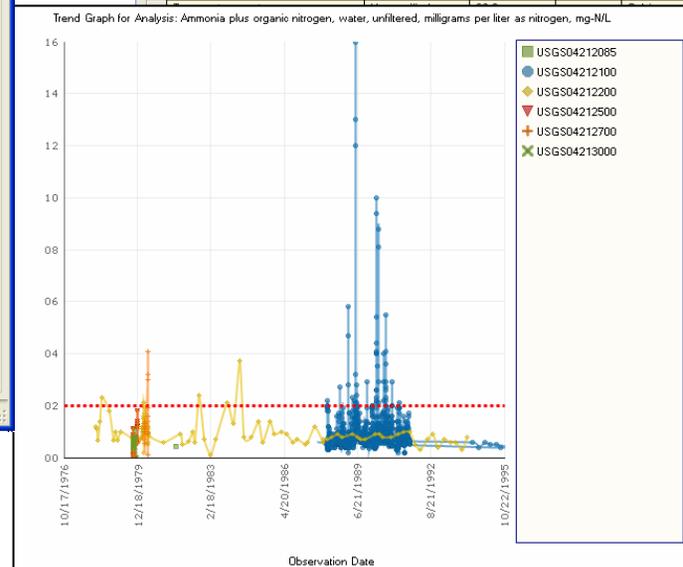
RBDMS for Water

The screenshot shows the 'Ohio Mining - RBDMS for Water' application. The 'GIS' tab is active, displaying a map of the Tuscarawas region with a yellow highlighted area. A table on the left lists various wells with columns for API Well ID, Layer Name, and other details. The table includes entries like 341572 Mines, 341572 RBDMS Wells, and 341572 Loc. Below the table, a message states 'GIS tab activated to display locations selected.'

API Well ID	Layer Name	
341572	Mines	
341572	RBDMS Wells	
341572	Loc	
34157234820000	OG	ND
34157601160000	OG	DM
34157202490000	OG	ND
34157240680000	OG	FR
34157240840000	OG	ND
34157214160000	OG	DM
34157242460000	OG	ND
34157248120000	OG	ND
34157233660000	OG	FR
34157215700000	OG	FR
34157210100000	OG	ND
34157230260000	OG	DM
34157230110000	OG	DM
34157216490000	OG	DM
34157215110000	OG	DM
34157214330000	OG	FR
34157210290000	OG	DM
34157210200000	OG	DM
34157211200000	OG	FR
34157211170000	OG	DM
34157246740000	OG	ND

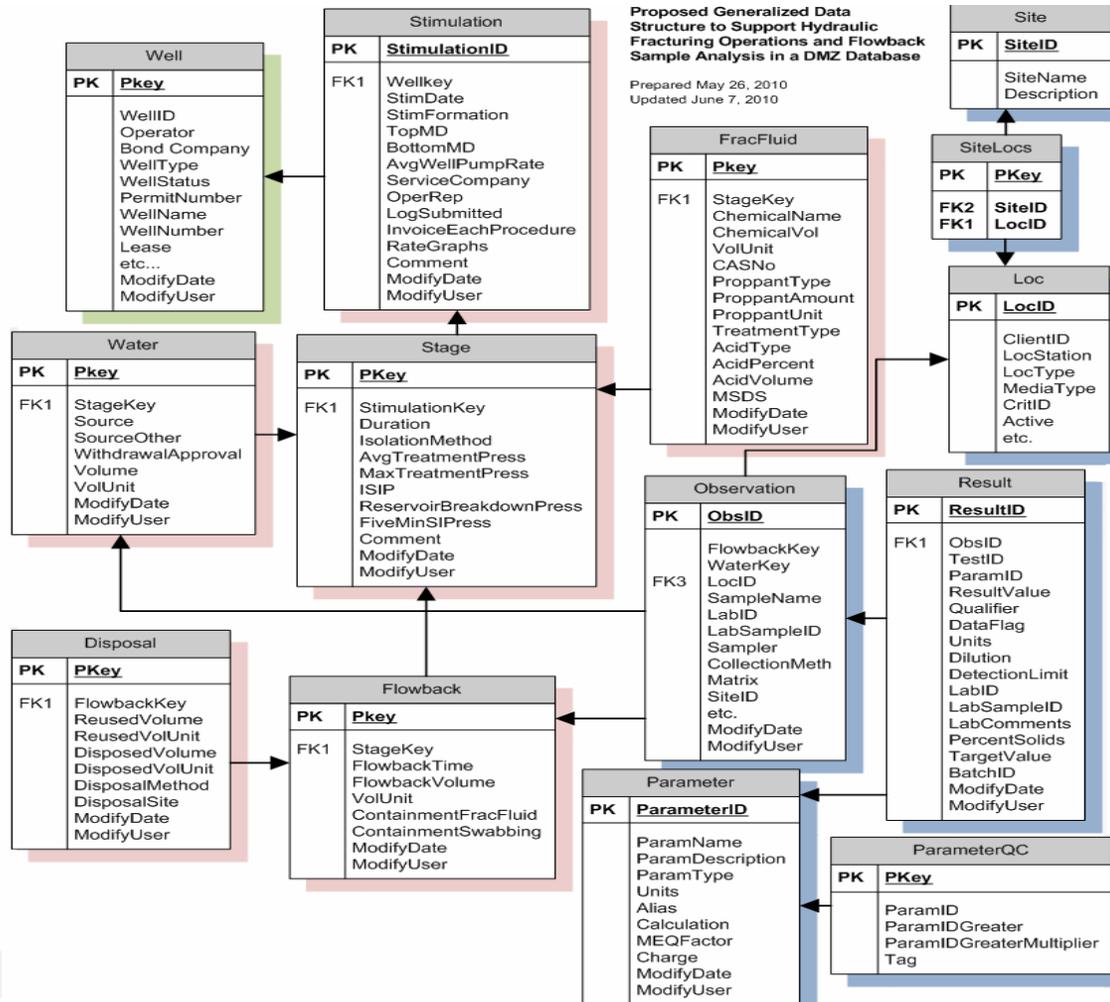
The screenshot shows the 'Ohio Mining - RBDMS for Water' application with the 'Observations' tab active. It displays a table of observations for site USGS04210100. The table has columns for Obs. ID, Obs Date, Obs Group, Reason, ProjectCode, Upper, Lower, and M. A context menu is open over the table, showing options like 'Print COC Document' and 'Where Obs. Date is null'. Below the table is a form for entering observation details, including fields for Sample Name, Lab Sample ID, Sampler, and Comments. A 'Parameter Set to view/edit' dropdown is set to 'USGS Field', and a table below it shows parameters like Barometric pressure, Dissolved oxygen, and Temperature.

Obs. ID	Obs Date	Obs Group	Reason	ProjectCode	Upper	Lower	M
352954	07/06/2006						
350632	09/03/2004						
350631							
350630							
350629	07/12/1998						



Source water quality and quantity tracking and laboratory information management for mining activity oversight.

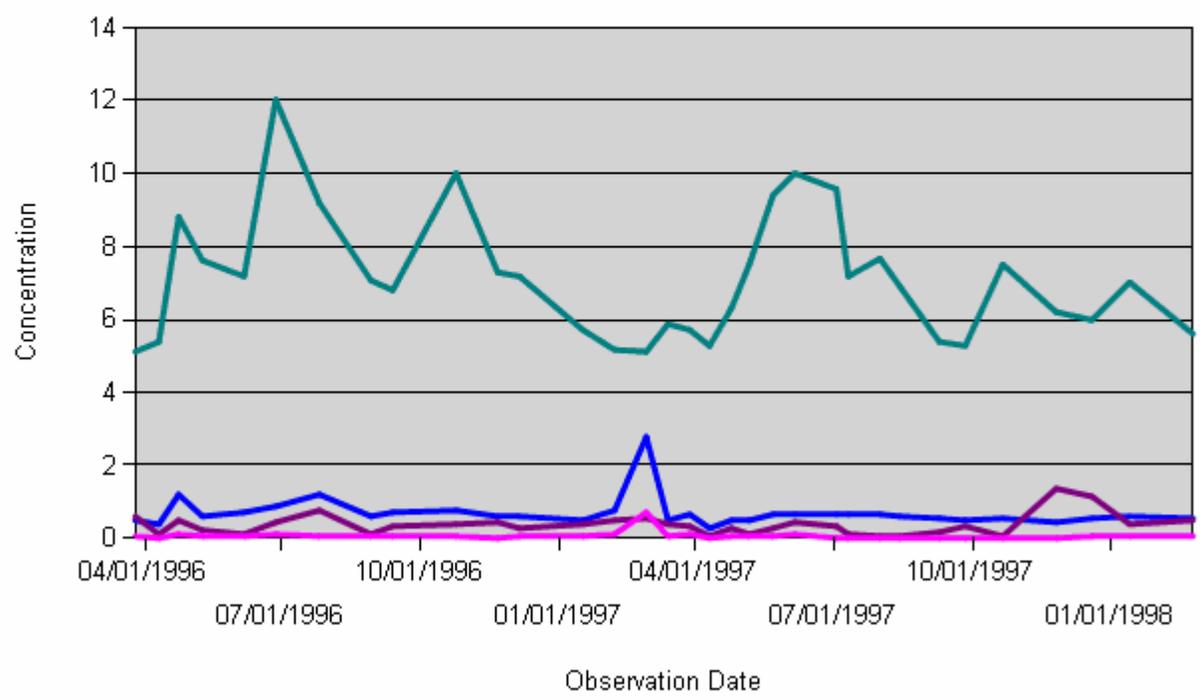
RBDMS Water and HF Schema



- TrendGraph
 - USGS04212200
 - USGS04211820

Location: USGS04211820

Trend Graph



Ammonia Organic carbon, water, filtered

eReport



Well Name	API Well #	Months Prod	Oil Tank #	Gas Meter	Water Prod/in	Oil Prod	Gas Prod/lrj	Gas Used On Lease	Taxable Gas
Fisher, J	31029030290000	10	27A	3997454	400	20	150		
Genveil Frank 1	31029030320000	7	27A	3	330		100		
Suess P and M 1	31029030650000	8	25	903934	200		40		
Ali 1	31029189420000	11	27	8600	378	15	97		
Guatino 1	31029189430000	3	24B	6156	30		0		
Miller, Mervyn 1	31029190210000	9	25	6157	500		220		
Kyre, T 1	31029200170000	9	25	6162	1007	1	502		
Colosanti, C 1	31029200180000	8	27A	343663	230		0		

Certification: I understand that Environmental Conservation Law (ECL) Sec. 23-0305 requires me to file complete and accurate well records on a form provided by NYSDEC and that ECL Sec. 23-0305 provides that knowingly violating ECL Sec. 23-0305 is punishable as a misdemeanor. I certify under penalty of perjury that the information provided above is complete and accurate.

Print Name and Title of Authorized Person: _____
 Signature: _____ Date: _____

Now in use in NE, UT, PA, NY, MT, ND, AK, AR, and is being installed in MS.

Oil and Gas Data Portal

Nationwide and Pilot Data Sets Based on Existing and Evolving Data Management Capabilities

- **Well Locations and Status**
- **Wellbore Diagram**
- **Details of Construction**
- **Stimulation and Completion Reports**
- **Hydraulic Fracturing Fluids and Operations Data**
- **National Chemical Data Registry**
- **Water Quality/Quantity Information**
- **Source Water Protection Areas**
- **Oil and Gas Basins, Hydrograph, and Geographic Data**

Participating Companies with Upload Counts

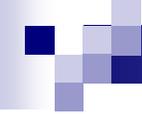
Anadarko Petroleum Corporation	443	Laredo Petroleum, Inc.	0
Antero Resources Corporation	0	Marathon Oil	10
Apache Corporation	48	Newfield Exploration	32
Bill Barrett Corp	0	Noble Energy, Inc.	0
BP America Production Company	4	Occidental Oil and Gas	0
Cabot Oil & Gas Corp	37	PDC Energy	2
Chesapeake Operating, Inc.	322	Penn Virginia Oil & Gas Corporation	0
Chevron USA Inc.	53	Petrohawk Energy Corporation	32
Citrus Energy Corporation	0	Pioneer Natural Resources	25
ConocoPhillips Company	23	Plains Exploration & Production Company	5
CONSOL Energy Inc.	0	PRIMA EXPLORATION INC.	0
Devon Energy Production Company L. P.	122	QEP Energy Company	3
El Paso E&P Company	11	Range Resources Corporation	2
Encana Oil & Gas (USA) Inc.	4	Samson	0
Energen Resources Corporation	32	SandRidge Energy	0
Energy Corporation of America	5	Seneca Resources Corporation	8
EnerVest, Ltd.	2	Shell Exploration & Production Company	27
EOG Resources, Inc.	3	SM Energy	1
EQT Production	13	Southwestern Energy	244
EXCO Resources, Inc.	16	Talisman Energy USA Inc.	24
Forest Oil Corporation	1	Ward Petroleum	1
Hess Corporation	0	Williams	39
HighMount Exploration & Production	12	XTO Energy/ExxonMobil	126

Questions Submitted to FracFocus

- **Question:** does the water ever come back after being pumped into the ground?
- **Answer:** The amount of fluids that return to the surface through the well casing after hydraulic fracturing varies substantially depending upon the several factors including the depth of emplacement, the formation characteristics and the bottom hole pressure. In general, however, you can expect a range of as little as 13% to as much as 70% or more of the fluids to be returned.

Questions Submitted to FracFocus

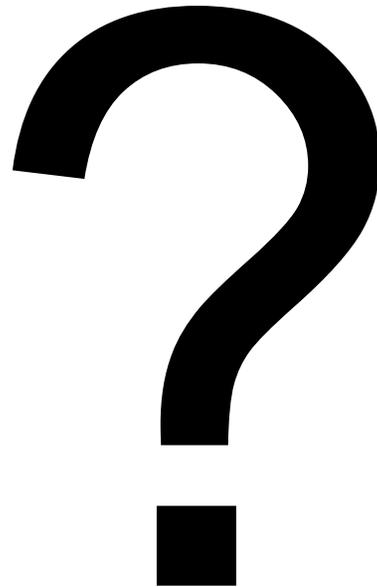
- **Question:** Isn't it typical for fracturing fluid flowback to come all the way to the surface, or at least to the level of groundwater?
- **Answer:** Yes, flowback typically returns to the surface through the inside of the well casing where it is isolated from groundwater zones. It is then gathered and typically transported to disposal wells or treated and re-cycled in new fracture jobs.



Questions Submitted to FracFocus

- **Question:** Can I search for wells only based on state and county? In other words, do I need well name, number, etc.
- **Answer:** If you select a state and hit the search button it will return a list of all wells in the state that are in the system. If you select the state and county it will narrow the search down to the county level and so on.

Questions



mpaque@gwpc.org