

ARKANSAS OIL & GAS COMMISSION

Shane E. Khoury
Deputy Director / General
Counsel

AOGC MISSION

The purpose of the Arkansas Oil and Gas Commission is to prevent waste, encourage conservation, **and** protect the correlative rights of ownership associated with the production of oil, natural gas and brine, while protecting the environment during the production process, through the regulation and enforcement of the laws of the State of Arkansas.

Commission Structure

- **9 Commissioners:**
 - Governor appointed, 6 year terms, no term limitations, member terms staggered. Promulgates regulations.
- **Director:**
 - Hired by Commissioners with approval of the Governor, serves at the pleasure of the Governor. Serves as Commission Secretary, non-voting member. Administers regulatory program.
- **Staff:**
 - Hired by Director, currently authorized 40 full-time employees & 10 “extra help” positions. Implements regulatory program.

REGULATORY FUNCTIONS

Issue Permits to drill

oil, natural gas and brine production wells and other exploratory holes.

Issue Authority to Operate and Produce wells through approval of:

- Authorize production zone completions
- Initial production test to establish production allowable
- Commingling of separate zones of production

Conduct compliance

inspections during drilling process and operational life of well.

Issue authority to plug and abandoned well, including plugging process approval and staff witness of plugging procedure to insure protection of producing and fresh water zones.

REGULATORY FUNCTIONS

- Issue Permits to conduct seismic operations for exploration of oil and natural gas.
- Issue Permits to drill and operate Class II UIC enhanced oil recovery injection wells and saltwater disposal wells under authority of US EPA.
 - ADEQ – Surface facilities and disposal of other materials, cuttings, etc.
- Issue Permits to drill and operate Class V UIC brine injection wells for the disposal of spent brine fluids following removal of bromine and other minerals.

REGULATORY FUNCTIONS

- Issue Permits to Regulate the Gathering Handling, and Transportation of Exploration and Production Fluids. Require each “transporter” using motor vehicles to transport exploration and production fluid (excludes fresh water), to be permitted.
- Issue Permits and Regulate Natural Gas Pipelines, for certain pipelines under the authority of the US DOT, and certain pipelines that are not federally regulated.

REGULATORY FUNCTIONS

- Classify Wells for Severance Tax Purposes:
 - General Rule A-7 – Outlines procedure and how wells are classified.
 - Three different tax categories based on different categories:
 - 1.5% for New conventional wells for 24 months, and new high cost wells for 36 months. High cost can be extended if well hasn't paid out.
 - 5% for Conventional and High Cost after payout.
 - 1.25% for Marginal Conventional (less than 250 mcf per day) and Marginal High Cost (less than 100 mcf per day).

REGULATORY FUNCTIONS

- Process royalty and working interest owners complaints
 - non-payment, late payment, improper amount.
 - authority to audit in non-compliance situations
 - Investigate improper assessment of expenses
- Investigate Landowner complaints
 - enforce environmental regulations
 - facilitate discussions with operator
- Provide information and presentations to General Public, Legislature, state and federal government agencies, and other stakeholders.

REGULATORY FUNCTIONS

Conduct monthly Commission Hearings

- Review and approve regulations
- Create Exploratory Drilling Units
- Establish Field Rules
- Establish well setbacks and spacing
- Hear applications for Integration of interests to protect correlative rights of Mineral interests and leasehold working interests
- Declare certain wells “abandoned.”
- Impose civil penalties and/or compel compliance.

THE COMMISSION DOES NOT....

- Interpret mineral leases or provide legal advise concerning leases (publications on web page)
- Interpret landowner/operator agreements for land use or determine land damage costs resulting from drilling
- Adjudicate the validity of mineral leases
- Maintain records of mineral lease ownership

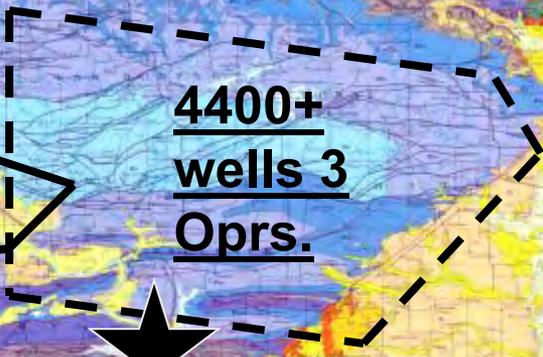
OFFICE LOCATIONS

- **Little Rock** – Directors Office
 - Administrative offices, legal staff, fiscal, personnel
- **EL Dorado** – South Arkansas Regional Office
 - Statewide permit issuance, oil and gas production reporting, field inspection/enforcement, well records
- **Fort Smith** – North Arkansas Regional Office
 - Gas production reporting, field inspection/enforcement, well records,
 - Satellite field office in **Conway** for Fay Shale.



4,000+ wells
100 Oprs.

Fort Smith



4400+
wells 3
Oprs.

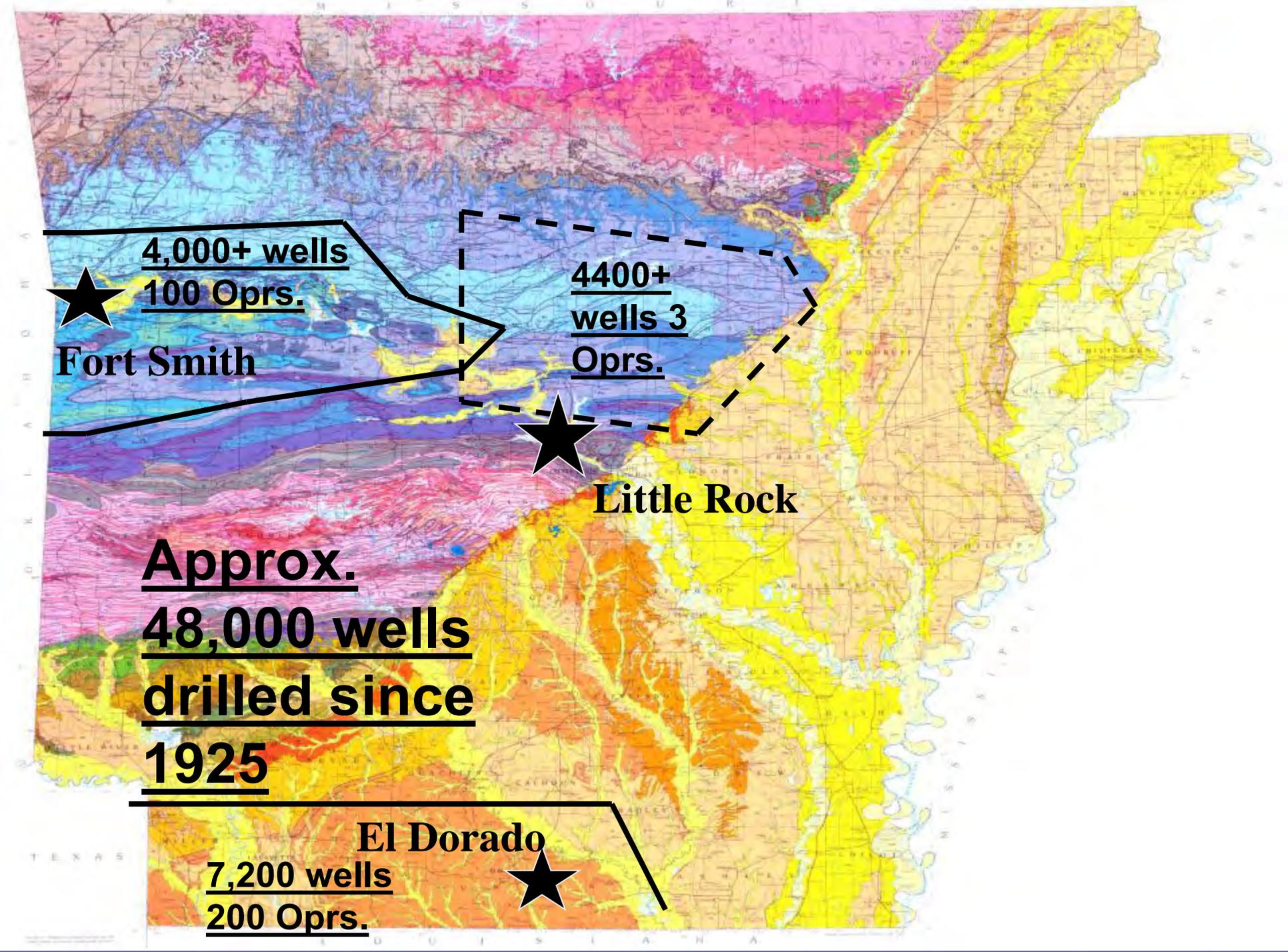


Little Rock

Approx.
48,000 wells
drilled since
1925

El Dorado

7,200 wells
200 Oprs.



Natural Gas Production Information

■ **Production Information:**

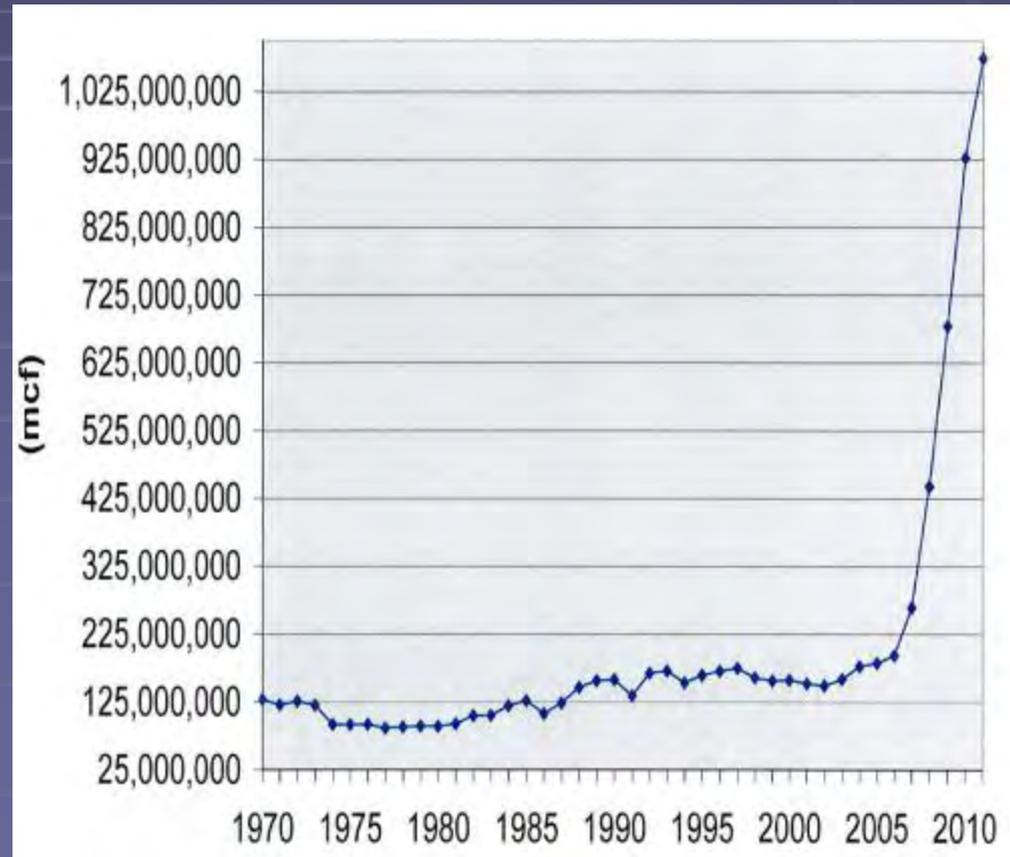
- 2006 – less 200 bcf. 2011– over 1 tcf. Approximately 88% is from the Fayetteville Shale, 12% is from the Arkoma Basin.
 - AR - consume less than 250 bcf per year.

■ **# Producing Gas wells in AR:**

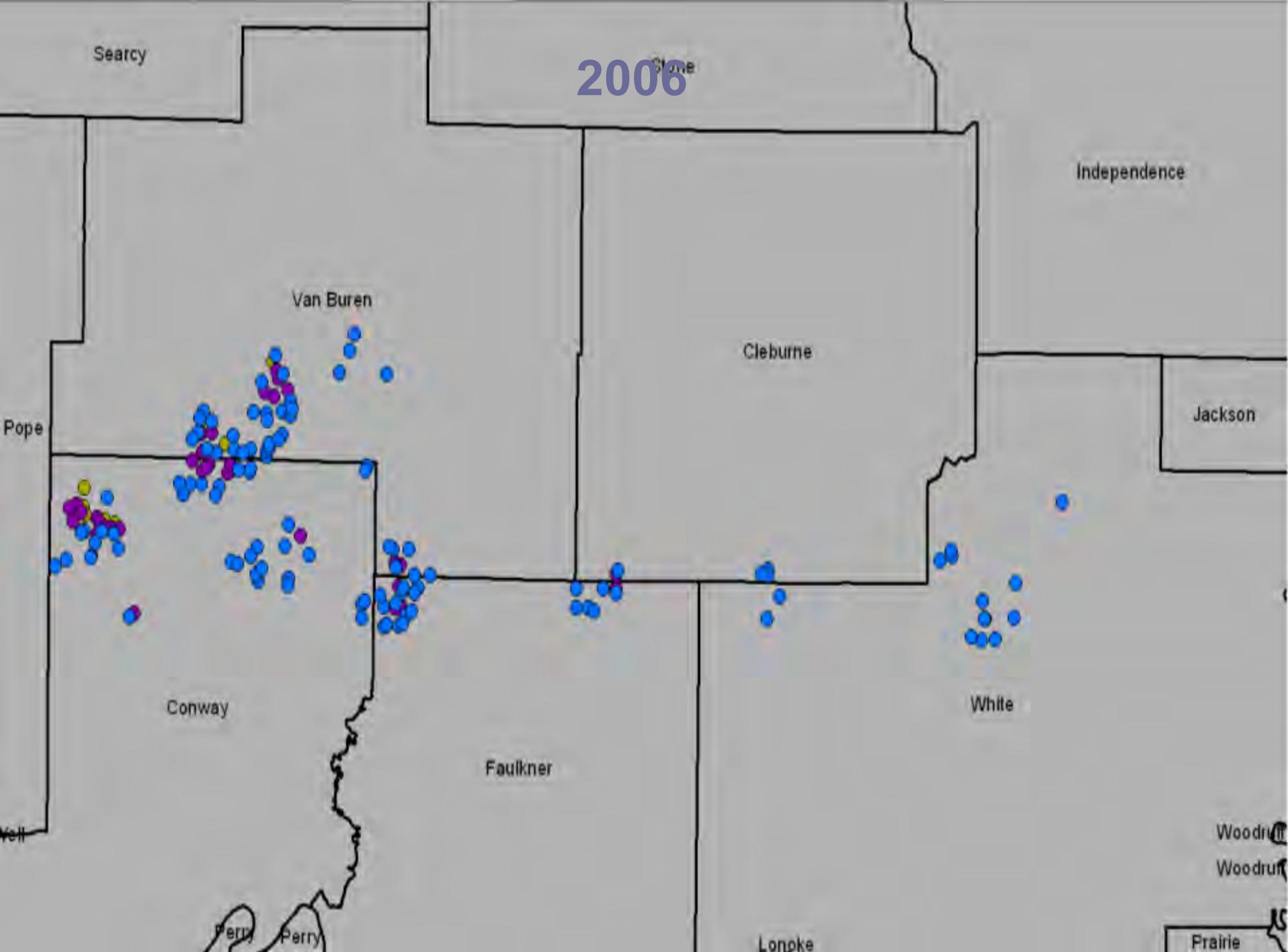
- 2006 3977
- 2007 4641
- 2008 5544
- 2009 6487
- 2010 7112
- 2011 over 8700

■ **# of Producing Wells in FS:**

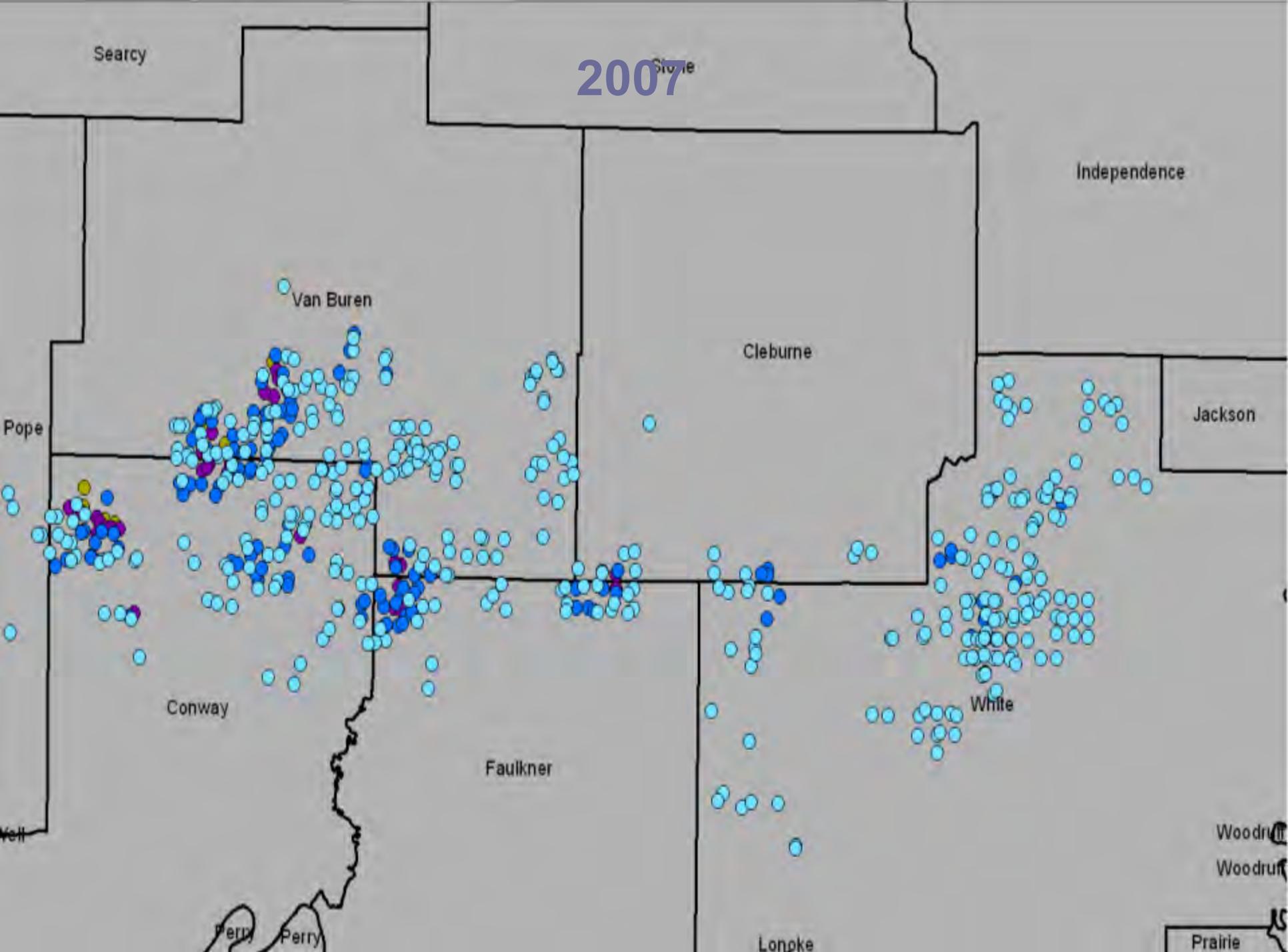
- 2006 165
- 2007 574
- 2008 1290
- 2009 2138
- 2010 3033
- 2011 Over 3800



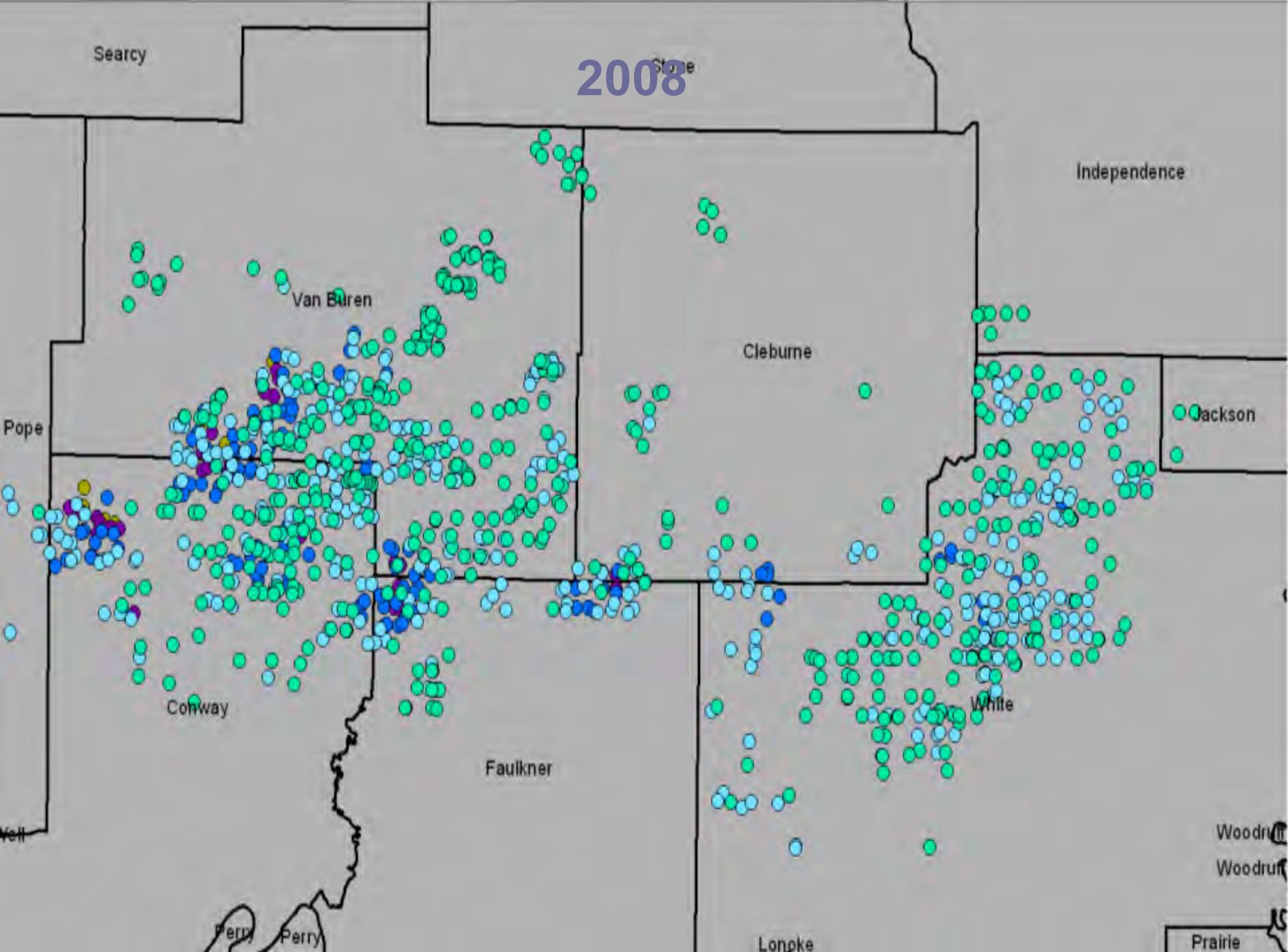
2006



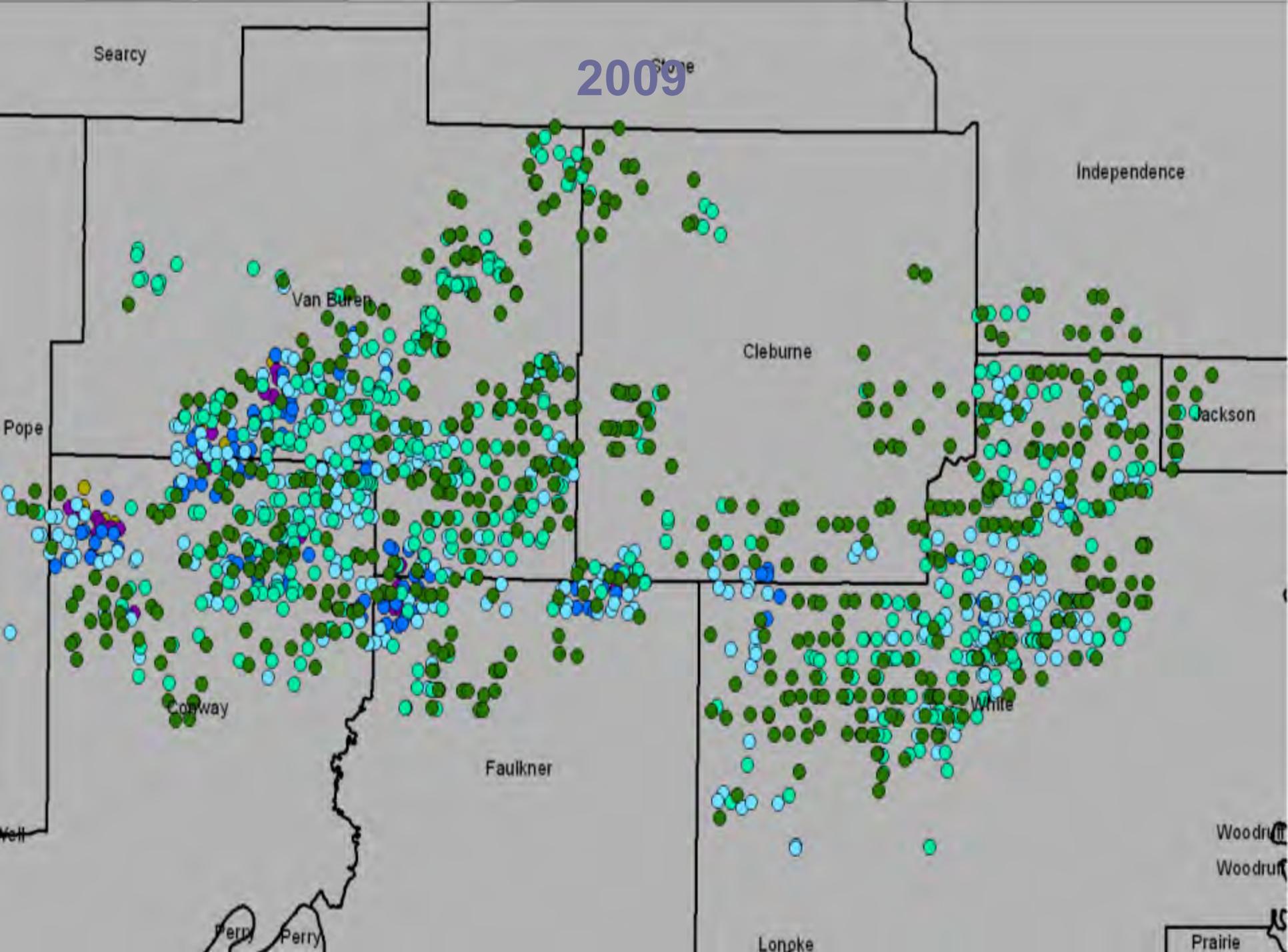
2007



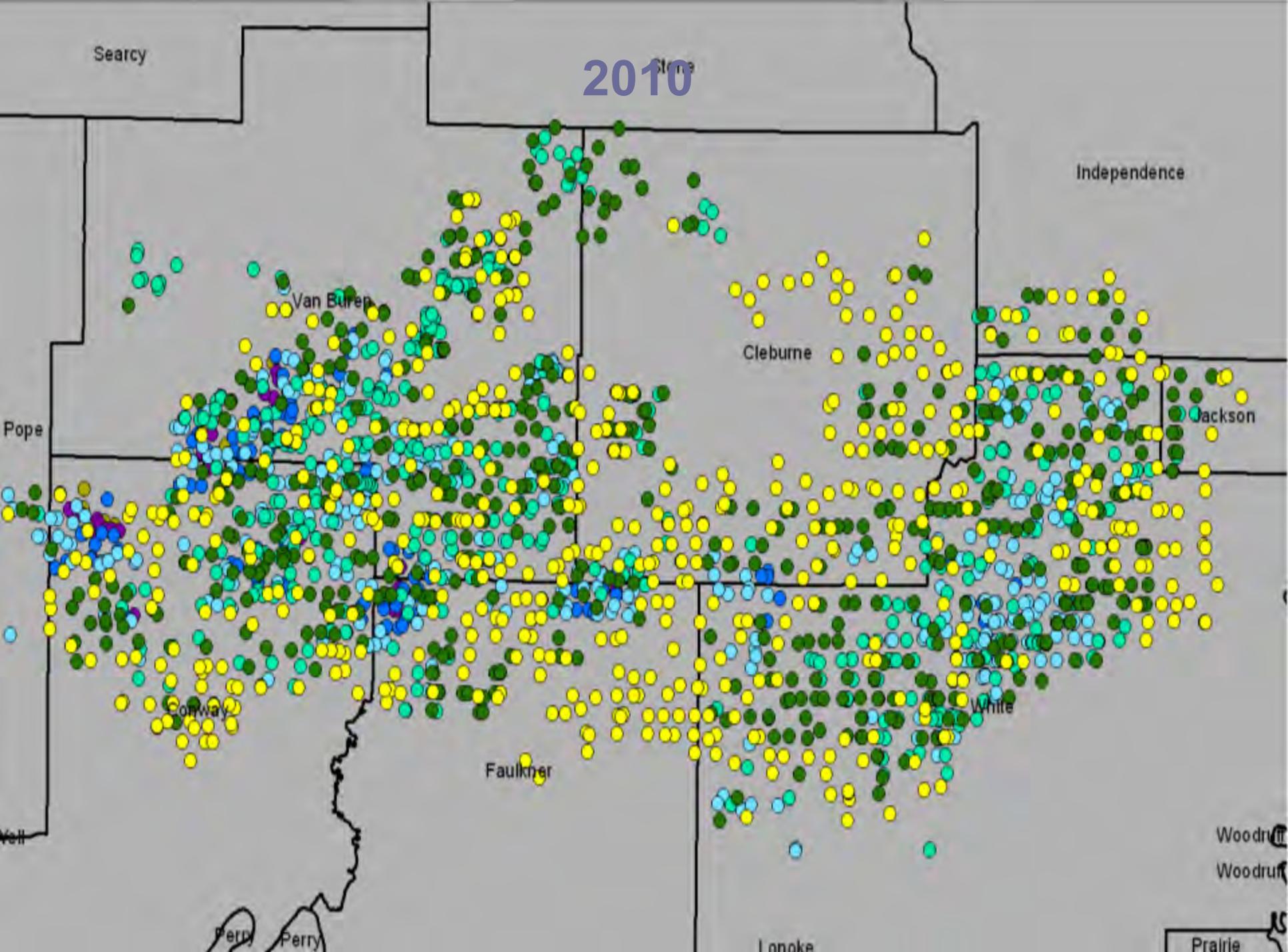
2008



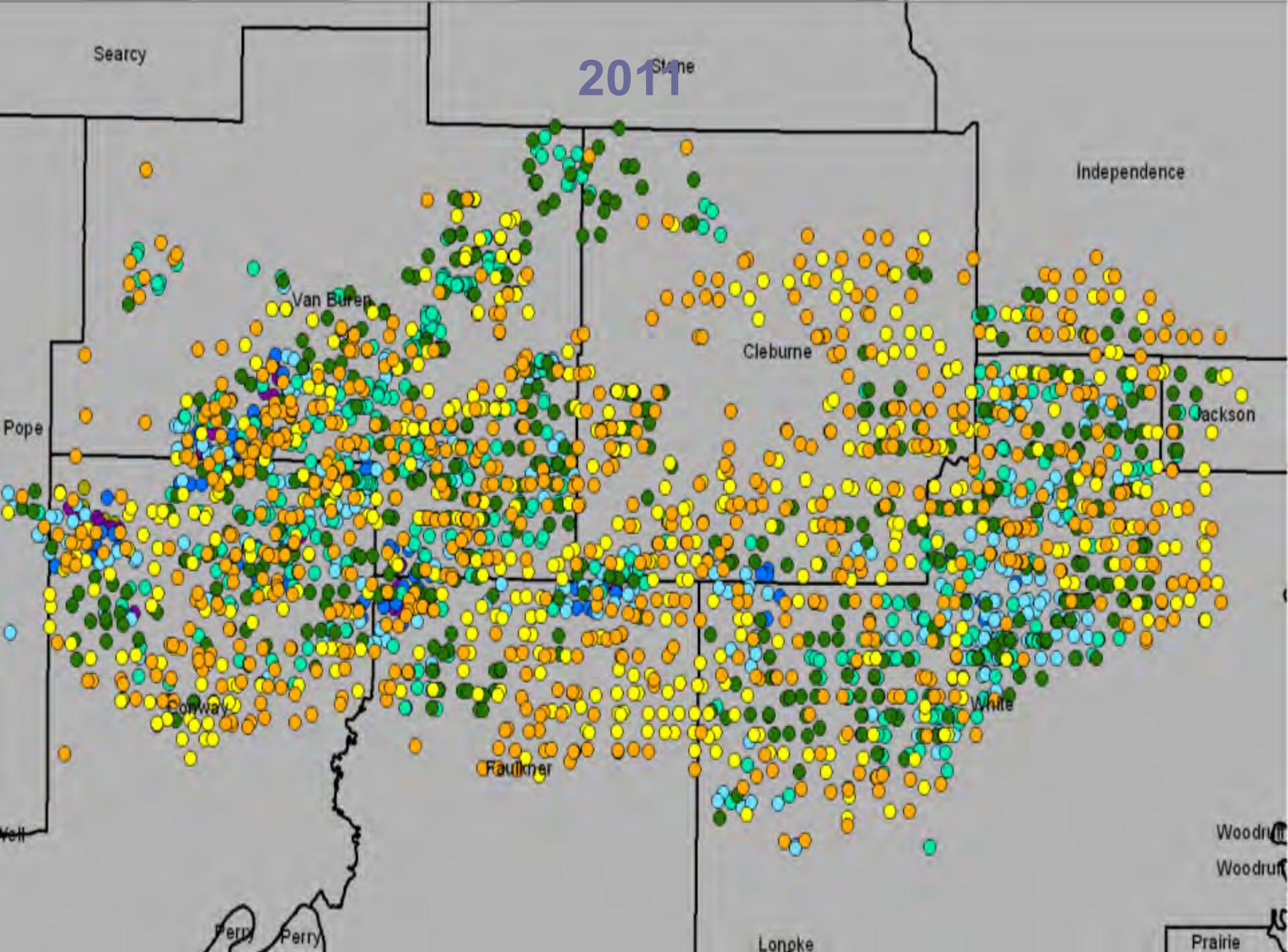
2009



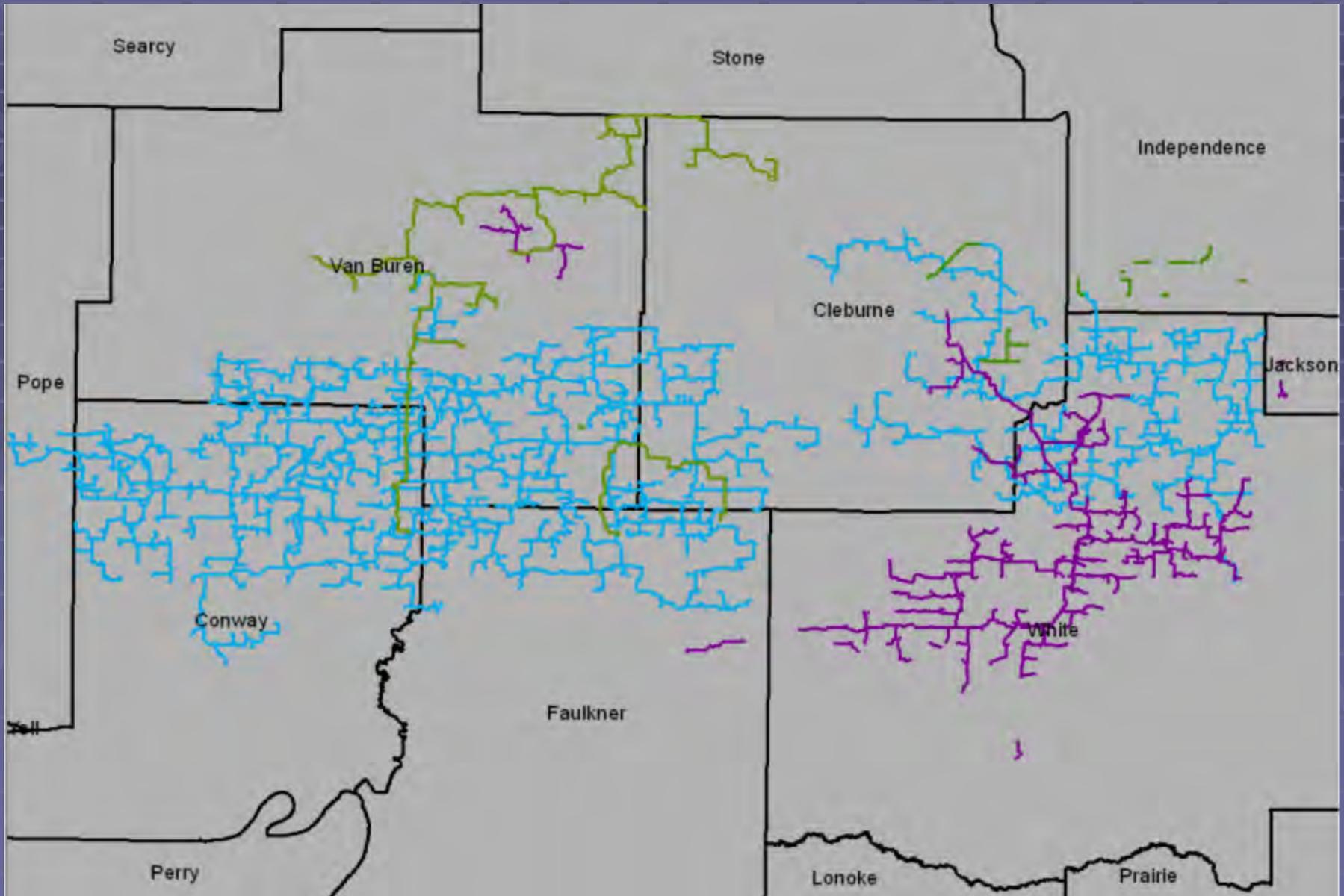
2010



2011



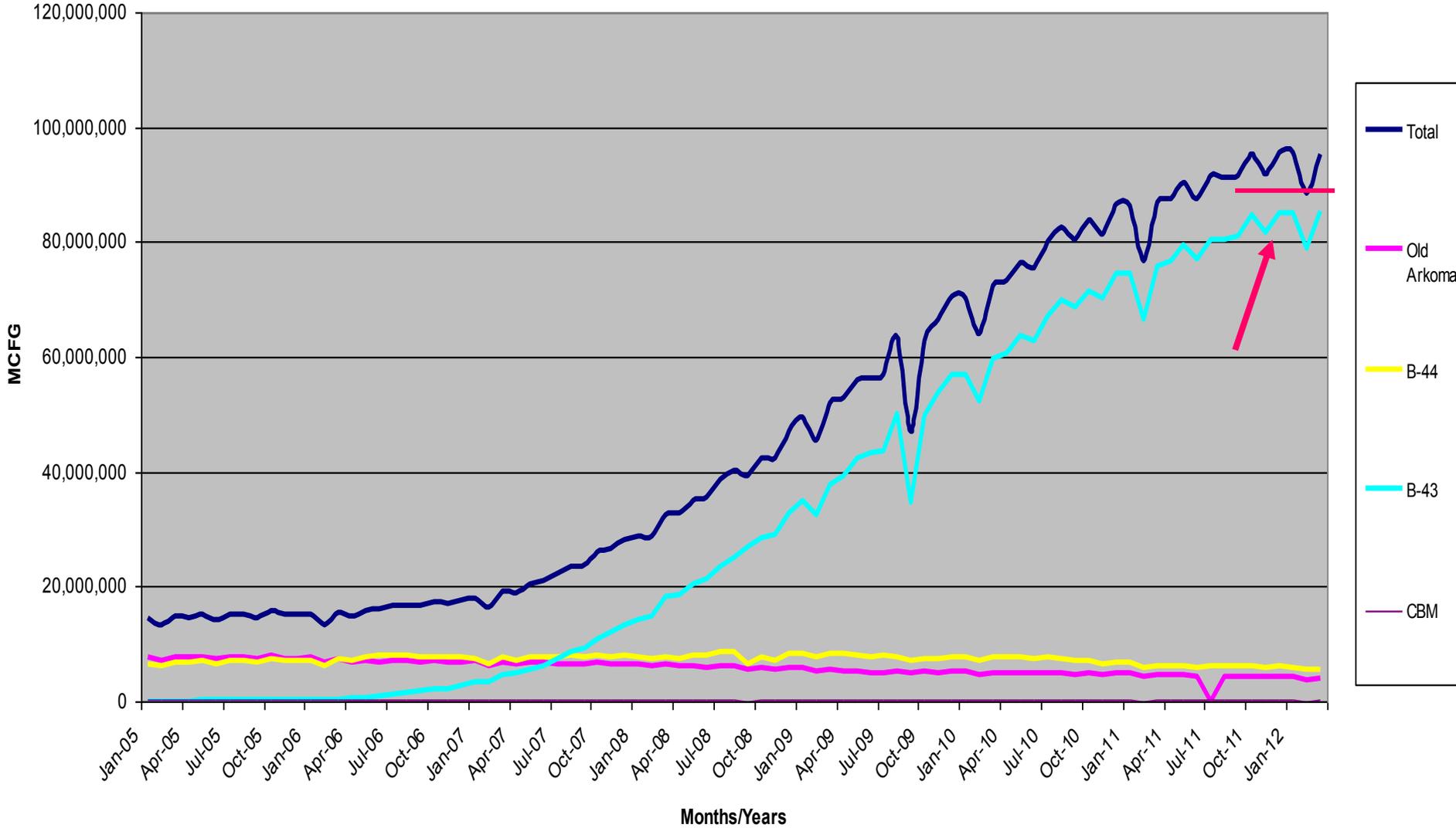
2800 Miles Of Gathering Pipeline

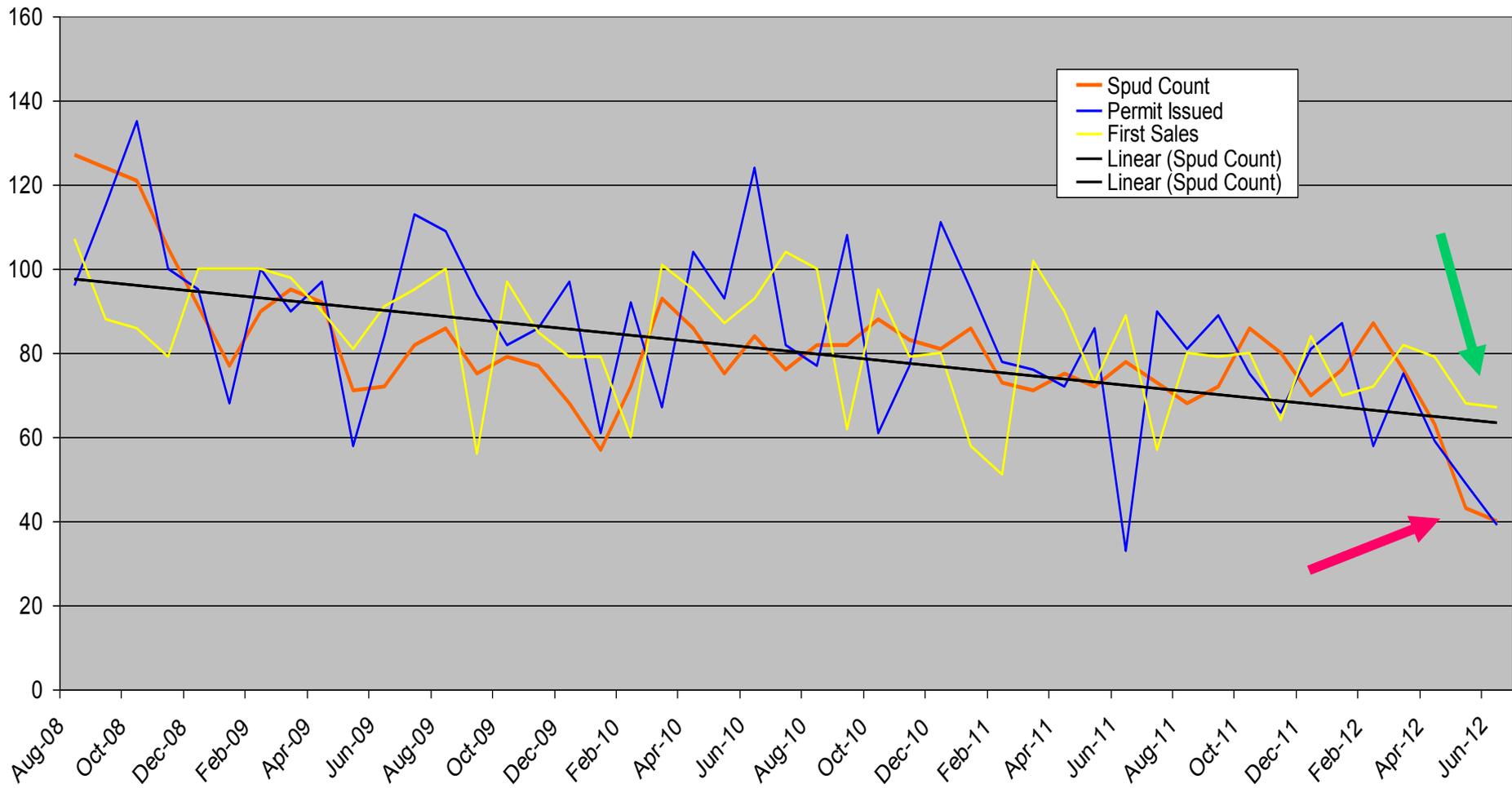


Drilling and “Fracking” in FS

- Average lateral length – 4517 ft*
- In terms of frac jobs, average numbers of stages is 11*
 - bbls of fluids per stage = 1,171*
 - Lbs of sand per stage = 636,372*
- * Based on 1624 wells completed between 12/14/2009 & 12/21/2011
- Average cost of a FS wells is approx. 3.5 million dollars. (Estimated)

Dry Gas Production in Arkansas





Commission Response

(since 2006)

- **12 staff positions added**
(technical, legal and field)
Requesting 4 more in next session.

- **Fayetteville Shale area field office established**

- **107 rule modifications**
 - At least 30 obsolete rule repeals
 - 8 new rules adopted
 - 69 amendment to existing rules
 - B-43 – Amended 5 times since 2006.

Examples of Arkansas Modern Regulations

- Revised Drilling Pit Regulations Providing for Recycling of Hydraulic Fracture Flowback Fluids to Reduce Water Use—**General Rule B-17.**
- Public Disclosure of Contents of Hydraulic Fracture Fluids —**General Rule B-19.**
- Cross-unit Wells — **General Rule B-43.**
- New Rule Regulating Noise Levels at Non-Wellhead Compressor Stations— **General Rule D-20.**
- Moratorium — Disposal Wells — Amendment to **General Rule H-**

B-17: Well Drilling Pits & Completion Pits Requirements

- **ADEQ Regulation 34 and AOGC General Rule B-17 are the same.**
 - Most all forms and contact for industry is with AOGC
- **Memorandum of Understanding between ADEQ & AOGC**
 - Onsite – AOGC. Offsite – ADEQ (except WMA)
- **Key Elements:**
 - **Applicability:** Applies to all pits completed during drilling, completion, and testing of oil, gas, or Class II disposal wells;
 - **Enforcement responsibilities shared between AOGC and ADEQ;**
 - **Defines pit types and manner of construction and closure requirements;**
 - **Allows for pit extended use when utilizing frac flowback recycling procedures;**

Off Site Reserve Pit:
Shallow Ground Water

Off Site Tank Battery:
Shallow Ground Water
or
Fresh Water



Fresh Water Source
(Creek, River, Stream)

Fresh Water Source
(Company Owned Ponds)
(Private Ponds and Lakes)
(State Watersheds)

LEGEND



Vacuum Truck (Fluid Hauling)



Transfer Pump



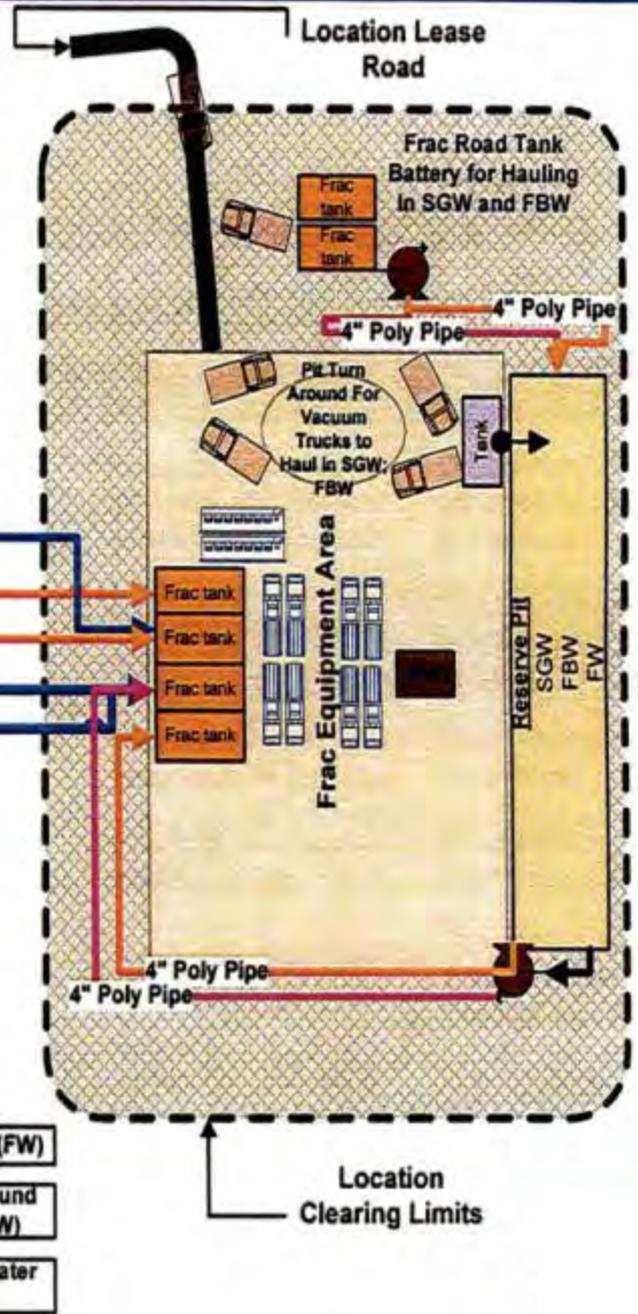
Fresh Water (FW)



Shallow Ground Water (SGW)



Flowback Water (FBW)



Location Lease Road

Frac Road Tank Battery for Hauling in SGW and FBW

Pit Turn Around For Vacuum Trucks to Haul in SGW; FBW

Frac Equipment Area

Reserve Pit
SGW
FBW
FW

Location Clearing Limits

Increased Public Awareness with Disclosure of Frac Chemicals – General Rule B-19

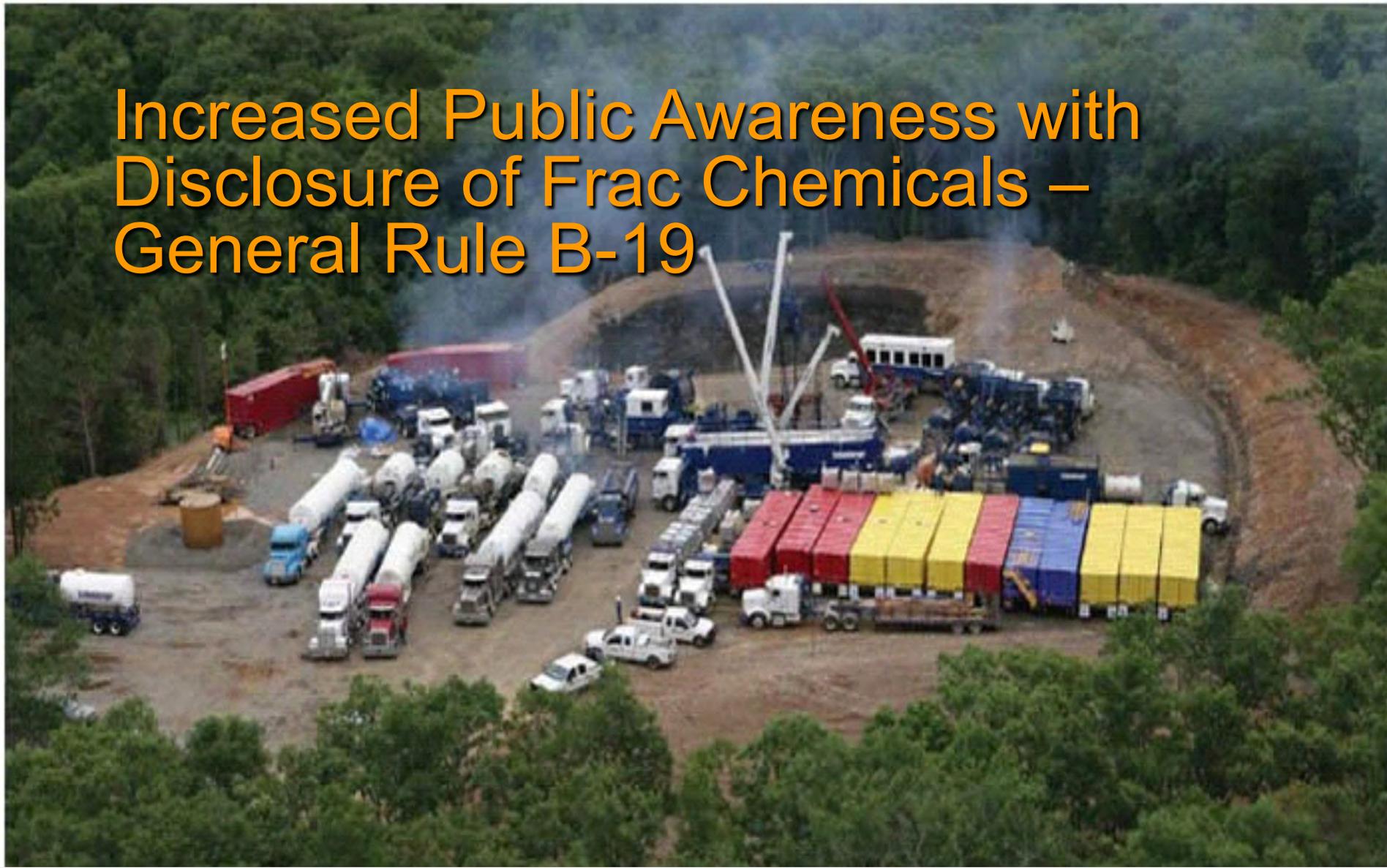
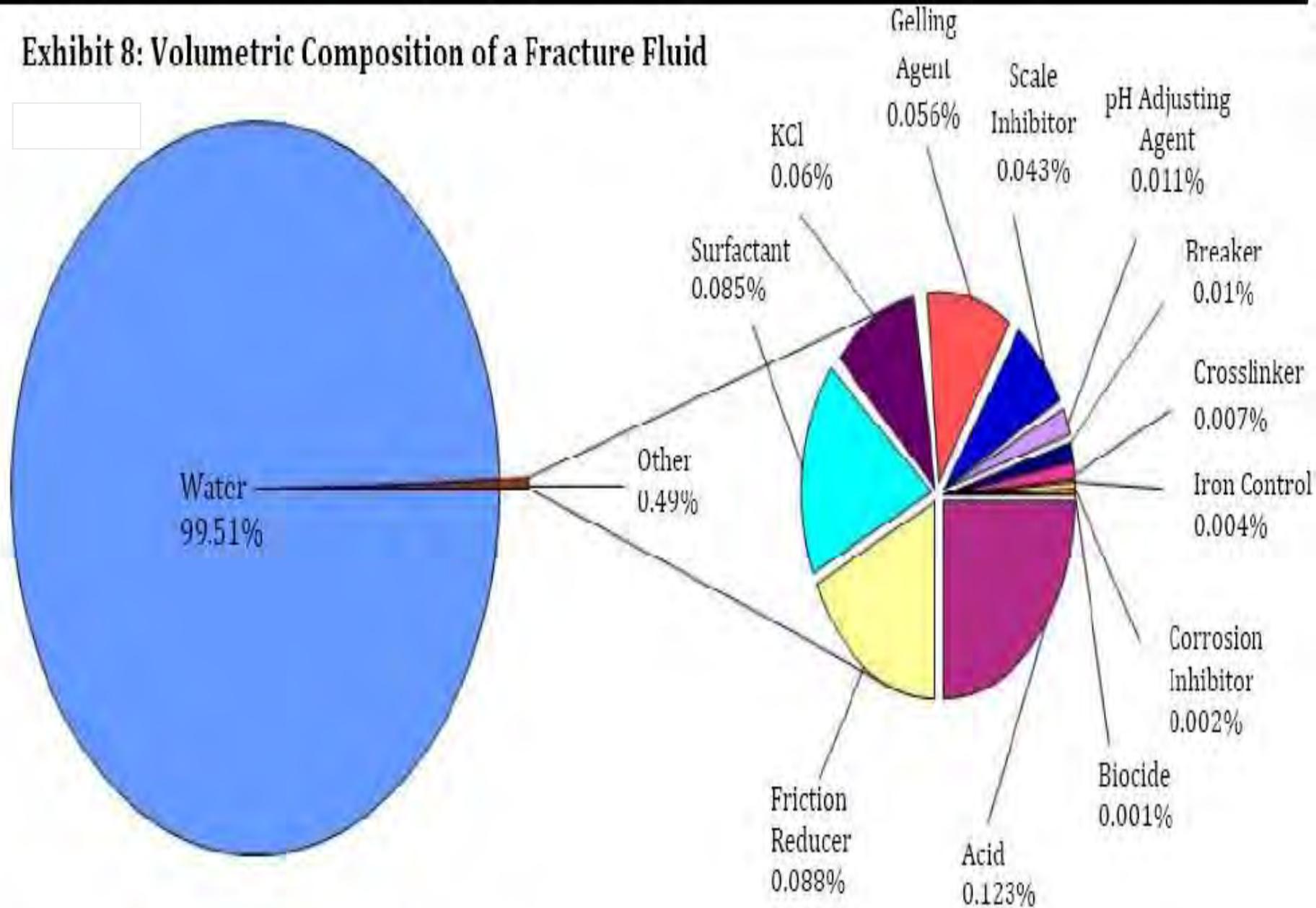


Exhibit 8: Volumetric Composition of a Fracture Fluid



Source: Compiled from Data collected at a Fayetteville Shale Fracture Stimulation by AII Consulting 2008

RULE B – 19 REQUIREMENTS FOR WELL COMPLETION UTILIZING FRACTURE STIMULATION

January 15, 2011

- Only applies to new wells, for which an initial drilling permit is issued on or after Jan. 15, 2011.
- PH is required to indicate intent to perform hydraulic fracture treatment. If the PH didn't indicate this at the time of drilling permit application, PH must send in required information prior to commencement of hydraulic fracture treatment.
- PH must report the type of well (vertical, horizontal, directional); estimated true vertical and measured depths of production casing; and casing grade and minimum yield pressure for the production casing utilized.

RULE B – 19 REQUIREMENTS FOR WELL COMPLETION UTILIZING FRACTURE STIMULATION

January 15, 2011

- PH must submit the proposed cement formulations minimum compressive strength and estimated top of cement for production casing string.
 - June of 2011 - Production Casing for Fay. Shale wells is required to cemented from top of Fay. Shale to surface.

- Requires surface casing to be set in accordance with applicable Commission rules, and must have sufficient internal yield pressure to withstand anticipated maximum pressures.
 - June of 2011 – Fay Shale Well General Rq. = 500 ft below lowest elevation within 1 mile, with a minimum of 1000 feet of surface casing to be set and cemented back to surface.
 - If PH encounters a fresh water zone (prior to the setting of surface casing), or gains knowledge that freshwater will be encountered from a deeper zone that was specified on the permit, the PH is required to set surface casing to 100 feet below the deepest encountered zone.

RULE B – 19 REQUIREMENTS FOR WELL COMPLETION UTILIZING FRACTURE STIMULATION

DISCLOSURE PROVISIONS

- Persons performing Hydraulic Frac Treatments must register with AOGC.
- Violation to use any person or company not registered with AOGC.
- If Perform Hydraulic Frac Treatments, must disclose and maintain three separate master lists,
 - All Hydraulic Frac Fluids used
 - All Additives used
 - All Chemical Constituents and associated CAS numbers utilized, (or Chemical Family Name if it qualifies for protection as a trade secret exemption under 42 U.S.C. 11042)

RULE B – 19 REQUIREMENTS FOR WELL COMPLETION UTILIZING FRACTURE STIMULATION

- After Completion of Hydraulic Frac Treatment, PH must report:
 - Max pump pressure during each stage; types and volumes of Frac Fluid and proppant used for each stage, calculated frac height and estimated TVD of top of frac;

- PH required to provide AOGC for each well all:
 - Frac Fluids actually used
 - Additives used (specified by type) & actual rate or concentration for each additive, expressed as pounds per thousand gallons or gallons per thousand gallons, and as percent by volume of the total frac fluids and additives
 - Chemical constituents and associated CAS, or chemical family name if constituent qualifies for protection as a trade secret exemption.
 - Rule requires disclosure of chemical constituents to health care professional, a doctor, or a nurse, even if it qualified for protections as a trade secret.



Commission News and Alerts

[2012 Hearing Schedule](#)

[Fayetteville Shale Casing Requirements as of June 1, 2011](#)

[Online Payment Service](#)

[Permanent Disposal Well Moratorium Area](#)

[2011 Hearing Schedule](#)

Proposed Rules

[Notice of Rule Change - General Rule B-17 \(Well Drilling Pits & Completion Pits Requirements\) Public Comment Ends January 17, 2011](#)

[General Rule B-17 Draft \(Well Drilling Pits & Completion Pits Requirements\) Public Comment Ends January 17, 2011](#)

New Final Rules

[Rule A-5 \(Enforcement Procedures\) Effective February 2, 2012](#)

[Rule H-1 \(Class II Disposal and Class II Commercial Disposal Well Permit Application Procedures\) Effective February 2, 2012](#)

[Rule D-20 - \(Noise Level Requirements for Non-Wellhead Compressor Facilities\) - Effective November 1, 2011](#)

[Rule B-17 - \(Drilling Pit and Completion Pit Requirements\) - Effective October 3, 2011](#)

Operator Procedural Information

[General operator requirements for a permit to drill or transfer a Well](#)

To report emergencies, incidents, spills, spill activity, file Form 2A, 11, or well bore information for north Arkansas please contact the Fort Smith Regional office [via email](#) or by calling 479-646-6611

To report emergencies, incidents, spills, spill activity, file Form 2A, 11, or well bore information for south Arkansas please contact the El Dorado Regional office please contact [via email](#) or by calling 870-862-4965



**301 Natural Resources Dr.
Ste. 102
Little Rock, AR 72205**
501-683-5814
501-683-5815 (Fax)



**2215 West Hillbary
El Dorado, AR
71208**
870-862-4965
870-862-8823 (Fax)



**3209 Phoenix Ave.
Ft. Smith, AR
72303**
479-646-6611
479-649-7686 (Fax)

Well Fracture Information

Wells Permitted with Intent of Fracture Stimulation

Only wells subject to General Rule B-19 are contained in the file. The well records consist of the Form 2 - Drilling Permit Application and Form 3A - Well Fracture Stimulation Report. Well files not yet containing a Form 3A have not yet been fracture stimulated. A well file designated as "Amended" indicates the original permit application has been amended and the copy shown is the amended Form 2.

Companies Performing Fracture Treatments	Form 1	Chemical List	Form 37
Calfrac Well Services Corp. - Denver, CO	Form 1	Chemical List	Form 37
Schlumberger Technology Corporation - Sugarland, TX	Form 1	Chemical List	Form 37
Multi-Chem Group, LLC - San Angelo, TX	Form 1	Chemical List	Form 37
Cudd Pumping Services, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Halliburton Energy Services, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Weatherford Artificial Lift Systems, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Superior Well Services, Inc - Indiana, PA	Form 1	Chemical List	Form 37
Baker Hughes Oilfield Operations, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Gore Nitrogen Pumping Service, LLC - Seiling, OK	Form 1	Chemical List	N/A

Rule B-19

Form 1 - Required Registration for Performing Fracture Stimulation		
Form 2 - Permit Form Required to Perform Fracture Treatment		
Form 3A - Well Fracture Stimulation Report		
Form 37 - Request for Trade Secret Exemption		



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Well Fracture Information

Wells Permitted with Intent of Fracture Stimulation

Only wells subject to General Rule B-19 are contained in the file. The well records consist of the Form 2 - Drilling Permit Application and Form 3A - Well Fracture Stimulation Report. Well files not yet containing a Form 3A have not yet been fracture stimulated. A well file designated as "Amended" indicates the original permit application has been amended and the copy shown is the amended Form 2.

Companies Performing Fracture Treatments	Form 1	Chemical List	Form 37
Calfrac Well Services Corp - Denver, CO	Form1	Chemical List	Form 37
Schlumberger Technology Corporation - Sugarland, TX	Form1	Chemical List	Form 37
Multi-Chem Group, LLC - San Angelo, TX	Form1	Chemical List	Form 37
Cudd Pumping Services, Inc. - Houston, TX	Form1	Chemical List	Form 37
Halliburton Energy Services, Inc. - Houston, TX	Form1	Chemical List	Form 37
Weatherford Artificial Lift Systems, Inc. - Houston, TX	Form1	Chemical List	Form 37
Superior Well Services, Inc - Indiana, PA	Form1	Chemical List	Form 37
Baker Hughes Oilfield Operations, Inc. - Houston, TX	Form1	Chemical List	Form 37
Gore Nitrogen Pumping Service, LLC - Sealing, OK	Form1	Chemical List	N/A

Rule B-19



Form 1 - Required Registration for Performing Fracture Stimulation.		
Form 2 - Permit Form Required to Perform Fracture Treatment		
Form 3A - Well Fracture Stimulation Report		
Form 37 - Request for Trade Secret Exemption		



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Well Fracture Information

Wells Permitted with Intent of Fracture Stimulation

Only wells subject to General Rule B-19 are contained in the file. The well records consist of the Form 2 – Drilling Permit Application and Form 3A – Well Fracture Stimulation Report. Well files not yet containing a Form 3A have not yet been fracture stimulated. A well file designated as “Amended” indicates the original permit application has been amended and the copy shown is the amended Form 2.

Companies Performing Fracture Treatments	Form 1	Chemical List	Form 37
Calfrac Well Services Corp. - Denver, CO	Form 1	Chemical List	Form 37
Schlumberger Technology Corporation - Sugarland, TX	Form 1	Chemical List	Form 37
Multi-Chem Group, LLC - San Angelo, TX	Form 1	Chemical List	Form 37
Cudd Pumping Services, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Halliburton Energy Services, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Weatherford Artificial Lift Systems, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Superior Well Services, Inc. - Indiana, PA	Form 1	Chemical List	Form 37
Baker Hughes Oilfield Operations, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Gore Nitrogen Pumping Service, LLC - Sealing, OK	Form 1	Chemical List	N/A



Rule B-19

Form 1 - Required Registration for Performing Fracture Stimulation.		
Form 2 - Permit Form Required to Perform Fracture Treatment		
Form 3A - Well Fracture Stimulation Report		
Form 37 - Request for Trade Secret Exemption		



Well Fracture Information

Wells Permitted with Intent of Fracture Stimulation

Only wells subject to General Rule B-19 are contained in the file. The well records consist of the Form 2 - Drilling Permit Application and Form 3A - Well Fracture Stimulation Report. Well files not yet containing a Form 3A have not yet been fracture stimulated. A well file designated as "Amended" indicates the original permit application has been amended and the copy shown is the amended Form 2.

Companies Performing Fracture Treatments	Form 1	Chemical List	Form 37
Calfrac Well Services Corp - Denver, CO	Form1	Chemical List	Form 37
Schlumberger Technology Corporation - Sugarland, TX	Form1	Chemical List	Form 37
Multi-Chem Group, LLC - San Angelo, TX	Form1	Chemical List	Form 37
Cudd Pumping Services, Inc. - Houston, TX	Form1	Chemical List	Form 37
Halliburton Energy Services, Inc. - Houston, TX	Form1	Chemical List	Form 37
Weatherford Artificial Lift Systems, Inc. - Houston, TX	Form1	Chemical List	Form 37
Superior Well Services, Inc - Indiana, PA	Form1	Chemical List	Form 37
Baker Hughes Oilfield Operations, Inc. - Houston, TX	Form1	Chemical List	Form 37
Gore Nitrogen Pumping Service, LLC - Sealing, OK	Form1	Chemical List	N/A



Rule B-19

Form 1 - Required Registration for Performing Fracture Stimulation.		
Form 2 - Permit Form Required to Perform Fracture Treatment		
Form 3A - Well Fracture Stimulation Report		
Form 37 - Request for Trade Secret Exemption		



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ARKANSAS OIL AND GAS COMMISSION

FORM 37 Claim of Entitlement to Withhold the Identity of a Chemical Constituent as a Trade Secret OR Request for Trade Secret Exemption

Submit Form To:

Oil Service Regulation Office
P. O. Box 19810
Little Rock, Arkansas 72219

RECEIVED
MAY 2 2011

SECTION A - Classification of Trade Secret

Invention Person-Performing Hydraulic Fracturing Other - Specify in Detail

SECTION B

Company: Schlumberger Technology Corporation
Address: 100 Schlumberger Dr., MD-27
City: Sugar Land State: Texas Zip: 77478
Phone: (281) 285-9040 Fax: (281) 285-6598
Email: chenebrev@sh.com

SECTION C

In accordance with General Rule 8-16, a person shall disclose a list of all Chemical Constituents contained in all such Additives, provided, however in those limited instances where the specific identity of any such Chemical Constituent and associated CAS number is entitled to be withheld as a trade secret under the criteria set forth in subsection (a)(2) of 42 U.S.C. § 11042. In such cases, the Chemical Family associated with such Chemical Constituent shall be provided.

Chemical Family associated with the Chemical Constituent: Anionic Polymer

Does the Chemical Constituent, and associated CAS number, qualify for withholding as a trade secret? Yes No

In order to claim that the Chemical Constituent and associated CAS number is entitled to protection as a trade secret, you must include specific information regarding each of the following (Please check all that apply):

- 1. You have not disclosed the information to any other person, other than a member of a bona-fide agency providing services, 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 works in connection with such information.
- 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 substantial harm to the competitive position of such person.
- 4. The chemical identity is not readily discernible through reverse engineering.

CERTIFICATE

I declare under the penalty of perjury that this record has been reviewed by me and to the best of my knowledge is true, correct and complete.

Christina Kelen
2011-05-02

Larisha Chenebrev
Special Claims Proceedings

APPROVED Yes No *L. S. G.* 6/7/11
Special Claims Proceedings

Well Fracture Information

Wells Permitted with Intent of Fracture Stimulation 

Only wells subject to General Rule B-19 are contained in the file. The well records consist of Form 2 - Fracturing Permit Application and Form 3A - Well Fracture Stimulation Report. Well files not yet containing a Form 3A have not yet been fracture stimulated. A well file designated as "Amended" indicates the original permit application has been amended and the copy shown is the amended Form 2.

Companies Performing Fracture Treatments	Form 1	Chemical List	Form 37
Calfrac Well Services Corp. - Denver, CO	Form 1	Chemical List	Form 37
Schlumberger Technology Corporation - Sugarland, TX	Form 1	Chemical List	Form 37
Mult-Chem Group, LLC - San Angelo, TX	Form 1	Chemical List	Form 37
Cudd Pumping Services, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Halliburton Energy Services, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Weatherford Artificial Lift Systems, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Superior Well Services, Inc. - Indiana, PA	Form 1	Chemical List	Form 37
Baker Hughes Oilfield Operations, Inc. - Houston, TX	Form 1	Chemical List	Form 37
Gore Nitrogen Pumping Service, LLC - Seiling, OK	Form 1	Chemical List	N/A

Rule B-19

Form 1 - Required Registration for Performing Fracture Stimulation		
Form 2 - Permit Form Required to Perform Fracture Treatment		
Form 3A - Well Fracture Stimulation Report		
Form 37 - Request for Trade Secret Exemption		



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Search in Rule B19

Click left of database field,
to sort list by this field

<input type="radio"/> Permit	44398
<input type="radio"/> Operator	
<input type="radio"/> Section	
<input type="radio"/> Township	
<input type="radio"/> Range	
<input type="radio"/> Document	
<input type="radio"/> API_Well_Number	
Fulltext	

Selective selection

Start search

Re

[Logout](#) [Select file cabinet](#) [Storage menu](#)

Result list Rule B19

Permit	Operator	Section	Township	Range	Document	API_Well_Number		
 44398	SEECO, Inc.	3	9N	14W	Form 2	0314111177		
 44398	SEECO, Inc.	3	9N	14W	Form 3a	0314111177		

1-2 from 2 | 1

[Logout](#) [Select file cabinet](#) [New search](#) [Storage menu](#)

ARIZONA OIL AND GAS COMMISSION
FORM 37
WELL FLUIDS EVALUATION REPORT

SECTION 1 - Well Identification

Well Name	County	Section	Township	Range	Block
...

SECTION 2 - Fluid Identification

Fluid Name	Viscosity (cP)	Specific Gravity	Color	Odor
...

SECTION 3 - Test Results

...

RECEIVED
 JUL 06 2008
 ARIZONA OIL AND GAS COMMISSION
 2007 NORTH AVENUE

John C. Cristofalo

ARIZONA OIL AND GAS COMMISSION
FORM 37
Claim of Offense to Withhold the Identity of a Chemical Constituent as a Trade Secret OR Request for Trade Secret Exemption

SECTION 1 - Submitter Information

Private Person Private Person/Corporate Entity State/County/Local

SECTION 2 - Chemical

Name: ...
 CAS Number: ...
 Chemical Formula: ...

SECTION 3 - Offense Information

Chemical trade secret used as chemical constituent? Yes No

Does the Chemical Constituent, and associated CAS number, qualify for withholding as a trade secret? Yes No

...

RECEIVED
 JUL 06 2008
 ARIZONA OIL AND GAS COMMISSION
 2007 NORTH AVENUE

John C. Cristofalo

ARIZONA OIL AND GAS COMMISSION
FORM 37
Claim of Offense to Withhold the Identity of a Chemical Constituent as a Trade Secret OR Request for Trade Secret Exemption

SECTION 1 - Submitter Information

Private Person Private Person/Corporate Entity State/County/Local

SECTION 2 - Chemical

Name: SRF INC
 Address: 711 Ave 25E
 City: Altamira
 Phone: 912-338-1336 FAX: 912-338-2810

SECTION 3 - Offense Information

Chemical trade secret used as chemical constituent? Yes No

Does the Chemical Constituent, and associated CAS number, qualify for withholding as a trade secret? Yes No

...

RECEIVED
 JUL 06 2008
 ARIZONA OIL AND GAS COMMISSION
 2007 NORTH AVENUE

Robert Weston
Robert Weston

ARIZONA OIL AND GAS COMMISSION
FORM 37
Claim of Offense to Withhold the Identity of a Chemical Constituent as a Trade Secret OR Request for Trade Secret Exemption

SECTION 1 - Submitter Information

Private Person Private Person/Corporate Entity State/County/Local

SECTION 2 - Chemical

Name: ...
 CAS Number: ...
 Chemical Formula: ...

SECTION 3 - Offense Information

Chemical trade secret used as chemical constituent? Yes No

Does the Chemical Constituent, and associated CAS number, qualify for withholding as a trade secret? Yes No

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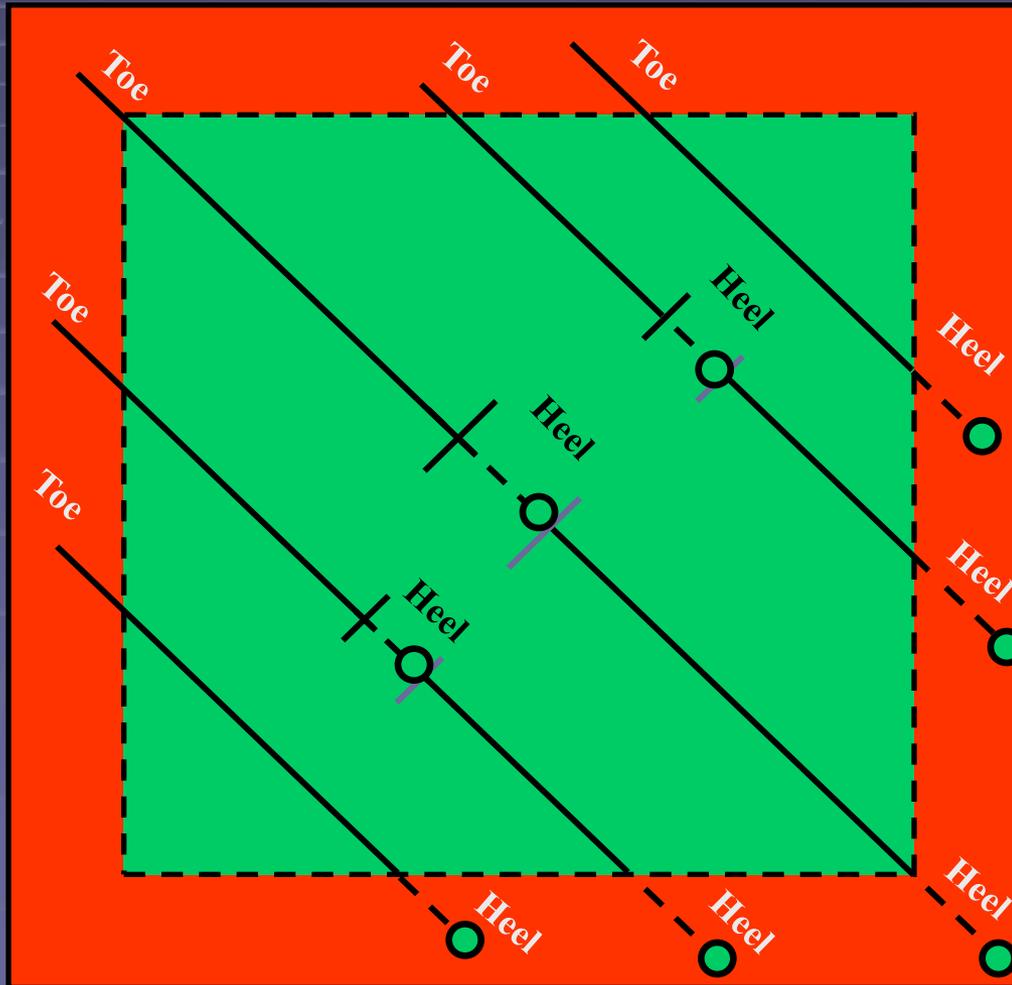
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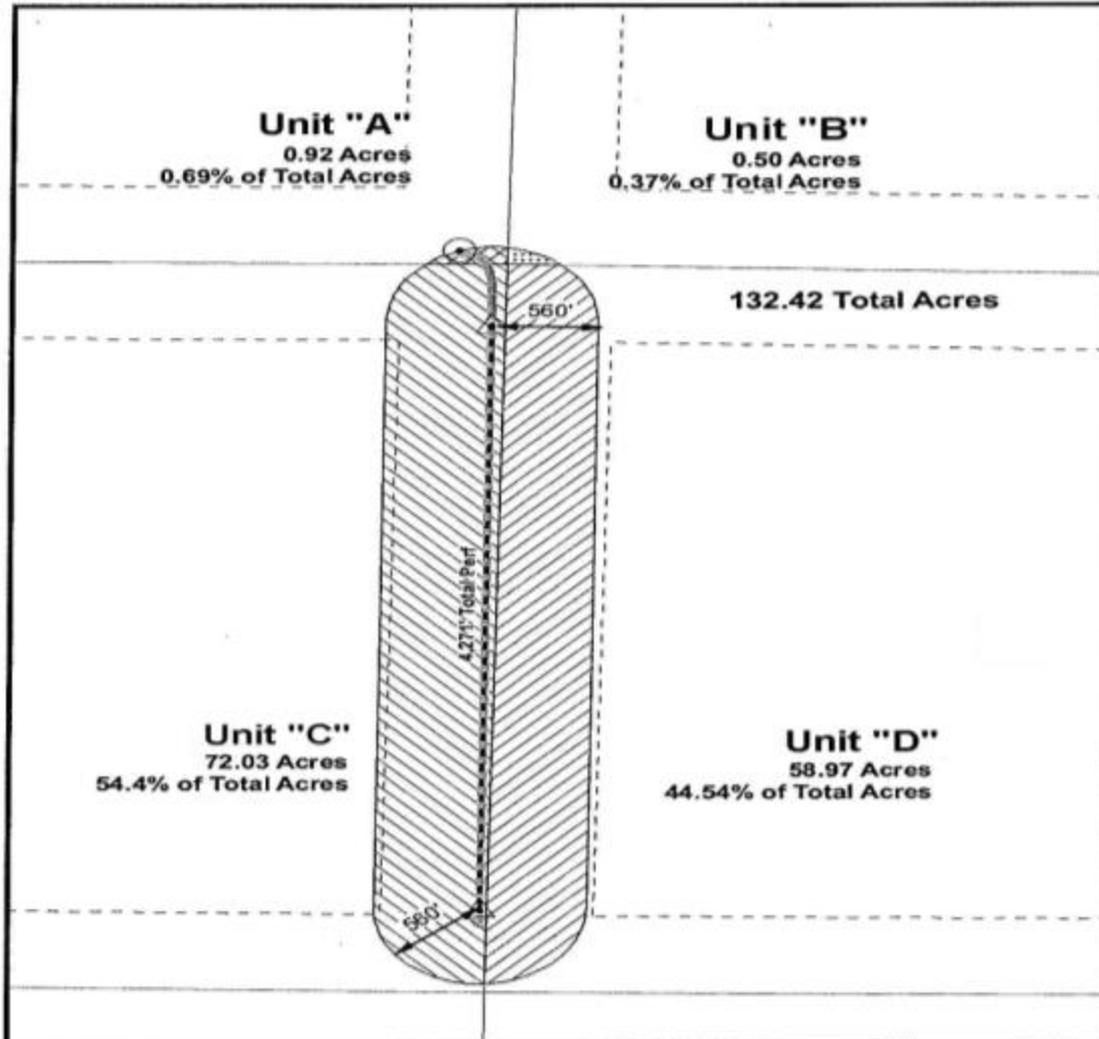
Fayetteville Shale Development General Rule B-43

- Defines Fayetteville Shale Producing Area
- Establishes 640 Acre Units Drilling Units, classified as either Established or Exploratory
- Establishes Well Setback and Maximum Wells Per Unit (16 wells, per unit, per reservoir, 560' setback from unit boundaries, 448' setback between entirely in-unit wells)
- Procedure for Commission Handling of Competing Integration Applications
- No Allowable
- **Authorizes shared Cross Unit Wells** and Establishes Methodology for Sharing Royalty and Expenses – Minimize Footprint.

640 Acre Governmental Section
Drilling Unit In Fayetteville Shale Showing
EALRY Horizontal Well Development Plan



Hypothetical Band-aide Map with Four Affected Units

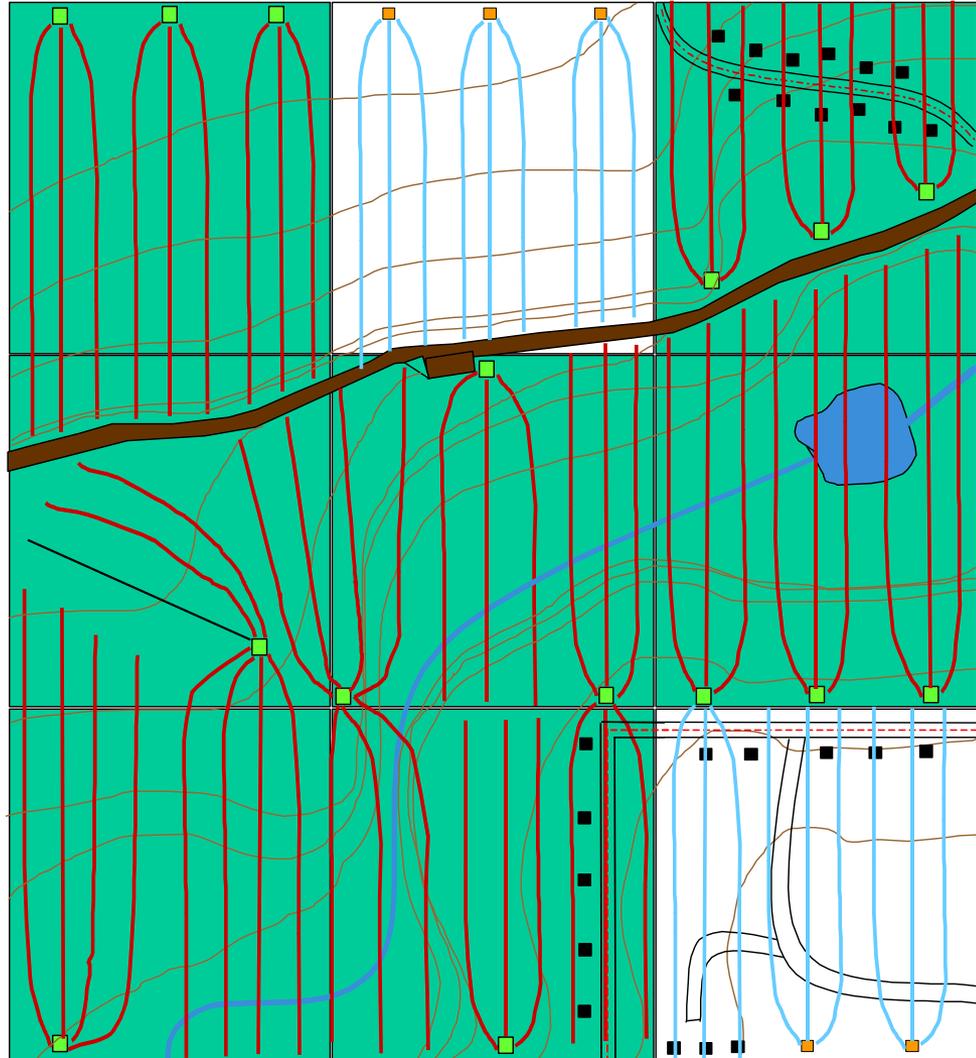


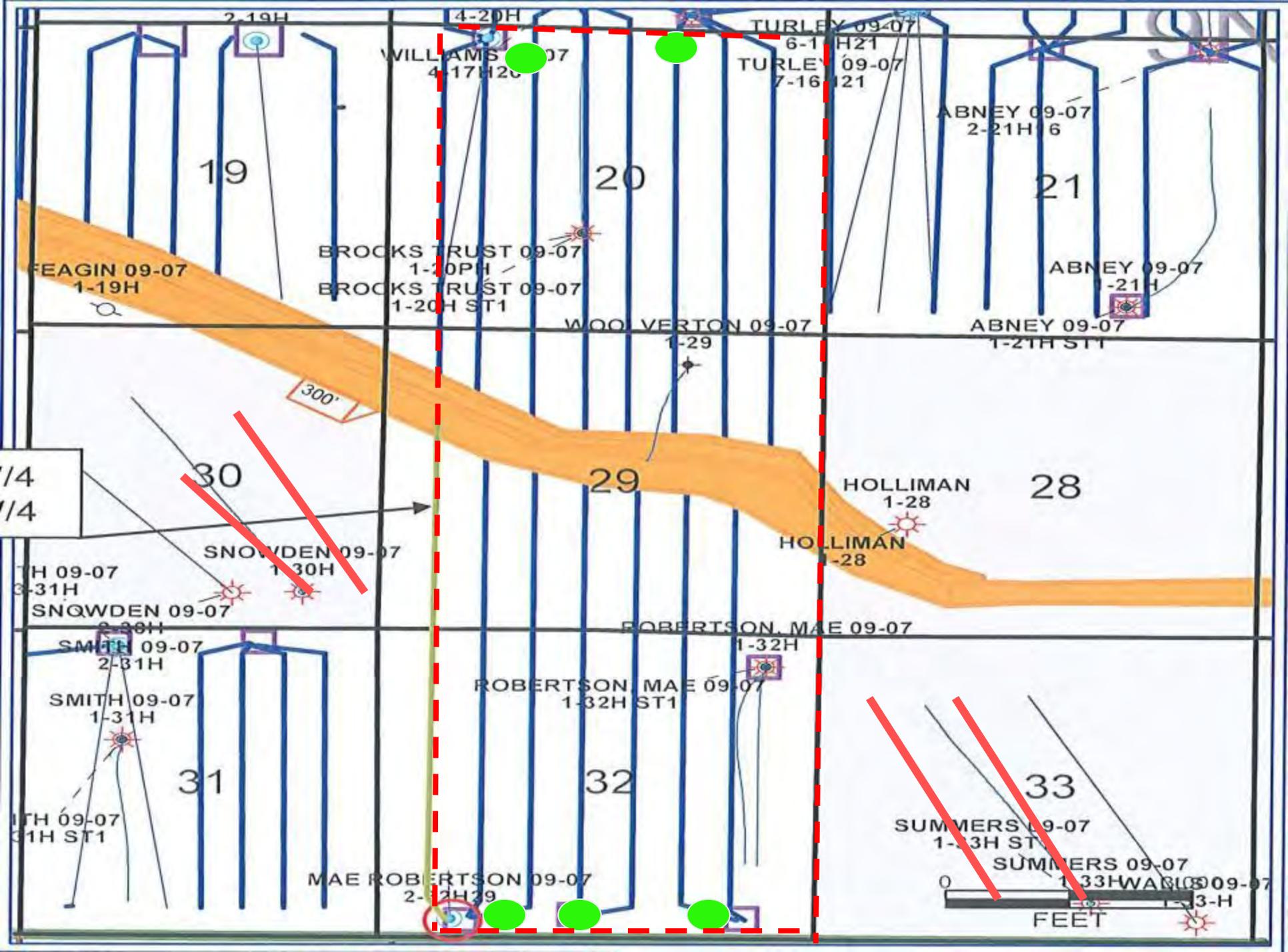
LEGEND

- | | | | |
|--|----------------|--|---------------|
| | Perf Locations | | 560' Set Back |
| | Perf | | Sections |
| | Path | | |

End-of-Game Development Picture

- Resource is prudently developed
- No Waste; surface or subsurface
- Surface disturbance is minimized
- Correlative rights are protected
- Cooperation among operators (Company A operates Shaded Units; Company B operates White Units)
- 9+ Sections Developed
- 20 Pads Required
- 75 Wells
- ~ 100% Coverage





Actual Usage in Fayetteville Shale

- In 2010, less than six years after the first horizontal Fayetteville Shale well was drilled, over 50% of all Arkansas horizontal well permits issued were for cross-unit wells.
- In 2011, estimated that over 85% of horizontal Fayetteville Shale wells were cross-unit wells.

D-20 NOISE LEVEL REQUIREMENTS FOR NON-WELLHEAD COMPRESSOR FACILITIES

(Final 11/1/2011)

- Based on the proposed language of SB 870 (failed to make it out of committee during the last regular session)
 - Several members of the Senate Committee who voted against the bill either supported, or at least did not oppose, General Rule D-20 at the Rules Committee. One Senator said that although she did not support the bill, she was in favor of the rule, as rules can be amended easier than laws.
- Rule sets a maximum noise limit as 55 dB(A) Leg, as measured for the exterior of the nearest pre-existing noise sensitive areas for non-well head compressor facilities.
 - Noise sensitive areas include schools, hospitals, churches, nursing homes, and structures regularly used for overnight accommodation.
- Newly constructed facilities have a year from commencement of construction to comply, and all existing facilities subject to the provisions of this rule have until July 1, 2012 to comply.

Compressor Sites in Fayetteville Shale Play – Approximately 130

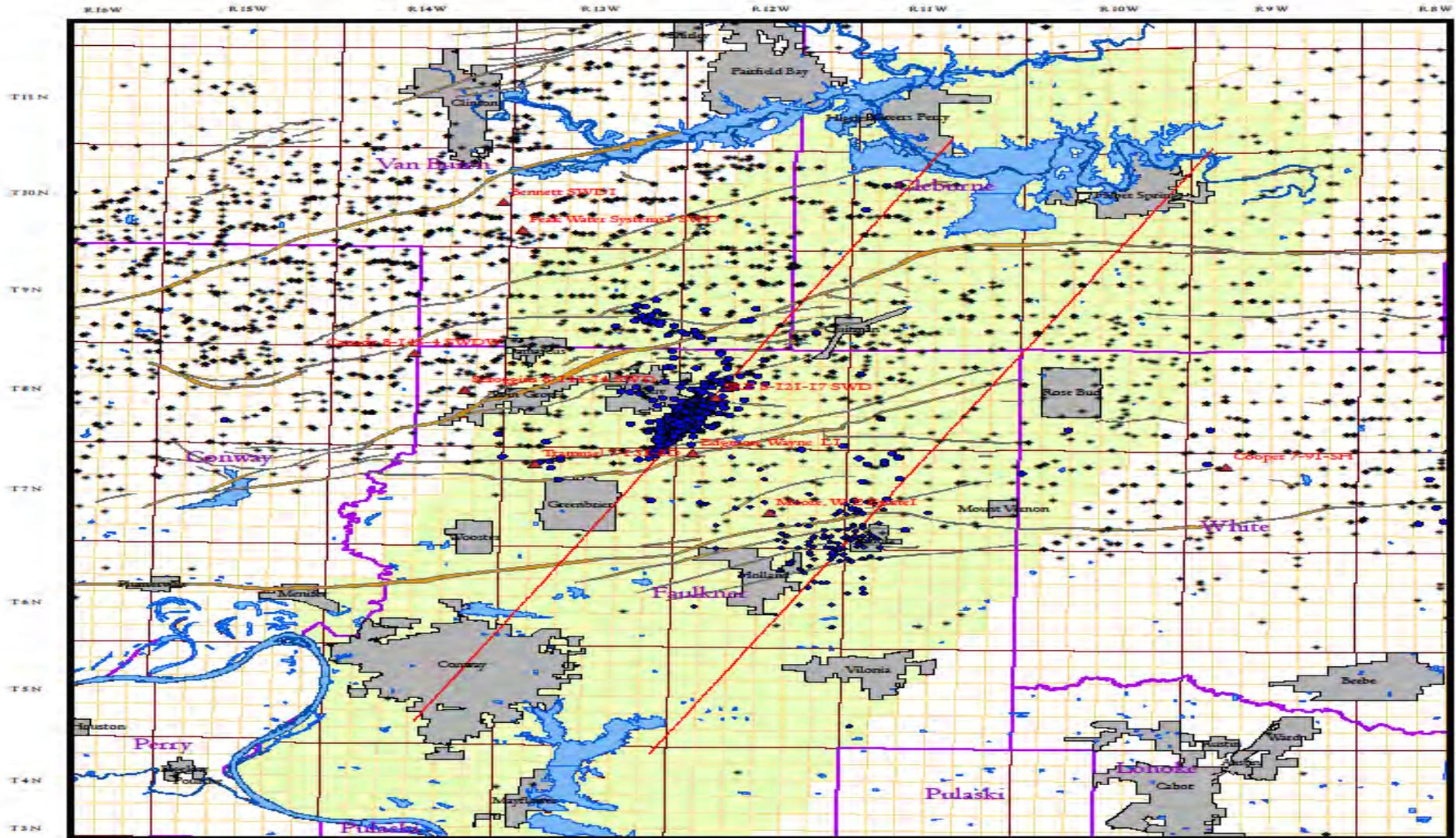


H-1 – CLASS II DISPOSAL AND CLASS II COMMERCIAL DISPOSAL WELL PERMIT APPLICATION PROCEDURES

Final – 2/17/2012

- Proactive - Rule amended to provide setbacks from Faults and Other Disposal Wells.
- Requirements to submit seismic and other related information indicating unknown faults in the area of proposed Disposal Wells in the Fayetteville Shale area.

Permanent Disposal Well Moratorium Area



Arkansas Oil and Gas Commission
Lawrence Bengal, Director



About the Map
The faults depicted on this map are based on available field data on file at the Arkansas Geological Survey (AGS) and the Arkansas Oil and Gas Commission (AOGC). Faults provided by the AOGC were compiled from interpretation data prepared by various geologists of the companies operating in the Department's domain. These data are the best information presently available and may not represent all faults in a given location or the entire length of the north-south depicted on this map.

DISCLAIMER

Maps are for general purposes only. They do not represent a legal survey. Although this map was compiled from digital data that was originally processed on a computer system using ESRI ArcView 3.2a software, the Arkansas Oil and Gas Commission (AOGC) is not responsible, expressed or implied, for errors by the AOGC regarding the quality of the data on any other system, nor shall the act of distribution constitute any such warranty. While every effort has been made to ensure that these data are accurate and reliable within the limits of the contract state of the art, AOGC cannot assume liability for any damages resulting from any errors or omissions in the data, nor as a result of the failure of the data to conform to a particular system. AOGC makes no warranty, expressed or implied, over the use of distribution software such as ArcView.

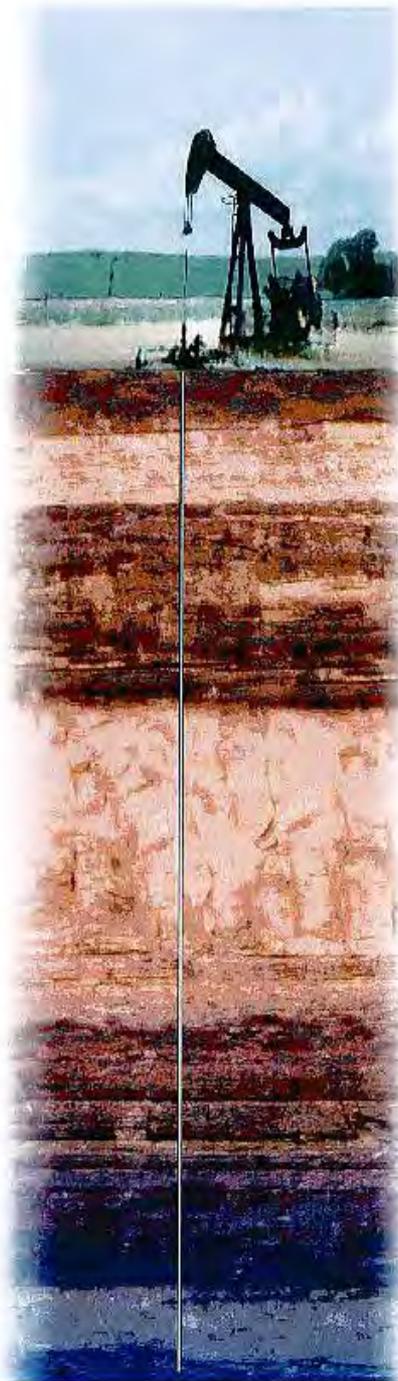


Legend
▲ Disposal Wells



Arkansas Hydraulic Fracturing State Review

February, 2012



Report concluded:

“regulatory program well managed and professional” with rule amendments, water well complaint protocol and AOGC web page cited as program strengths.

Primary recommendations:

- Conduct inspections during active hydraulic fracturing operations – Implemented
- Notice – Implemented – Pending Rule
- Increase staffing to provide additional field inspection capability – Requested in FY 14 Budget

QUESTIONS ?

