

Corporation Commission

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OKLAHOMA CITY OKLAHOMA 73152-2000

255 Jim Thorpe Building
Telephone: (405)521-2302
FAX: (405)521-3099

OIL & GAS CONSERVATION DIVISION



Tim Baker, Director

March 7, 2016

Contact: Matt Skinner
405-521-4180
m.skinner@occcemail.com

Media Advisory - Regional Earthquake Response Plan for Central Oklahoma and Expansion of the Area of Interest

The Oklahoma Corporation Commission's (OCC) Oil and Gas Conservation Division (OGCD) is continuing to move forward in its response to the risk of triggered earthquakes in Oklahoma, announcing today actions to further reduce the amount of oil and gas wastewater injected by Arbuckle disposal wells in earthquake areas and increase the size of the so-called "yellow light" area.

OGCD director Tim Baker says the central Oklahoma action will cover more than 5,000 square miles and more than 400 Arbuckle disposal wells. It is similar to the regional response strategy that was instituted in western Oklahoma on February 16.

"The western and central Oklahoma actions combined cover over 10,000 square miles and more than 600 Arbuckle disposal wells," Baker said.

Baker says the goal of the central Oklahoma plan is to reduce the total volume disposed in the area to 40 percent below the 2014 total.

"This means a reduction of more than 300,000 barrels a day from the 2015 average injection volumes," Baker explained.

In a separate action, the OGCD is also expanding the size of the "Area of Interest" (AOI), bringing more restrictions to disposal well operations in areas that have not yet seen major earthquake activity.

"This will result in 118 more Arbuckle disposal wells being covered by so-called "yellow light" earthquake precautions. These include having to prove the well has not been drilled too deep in order to keep operating, and daily and weekly volume recording and reporting requirements," Baker said. "It also eliminates the possibility of administrative approval of a new Arbuckle disposal well application. The AOI expansion is a proactive move to get ahead of the earthquake activity.

"The central Oklahoma volume reduction plan covers an area where we have taken numerous, localized actions over the past 12 months, such as in the Cushing, Crescent, and Edmond areas. But the research and data has grown to provide the basis needed to both expand into a regional approach for volume reduction and increase the size of the AOI." said Baker.

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(CENTRAL pg. 2)

Baker said the speed at which the latest actions were developed is a major step forward.

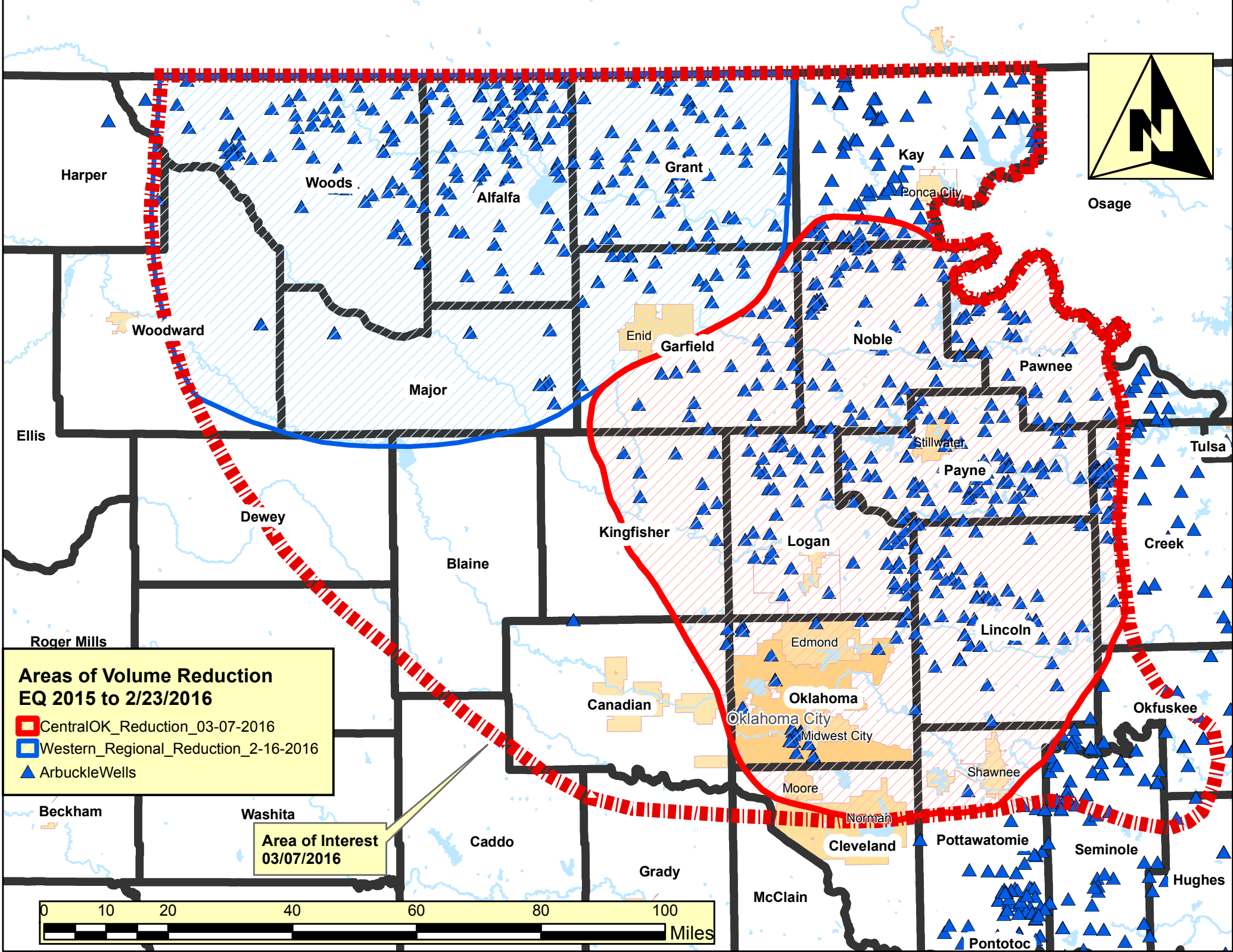
“Our working relationship with the Oklahoma Geological Survey continues to bear more fruit, greatly helped by the fact that we have been able to add staff to the earthquake effort as a result of the emergency funding from Governor Fallin and grants from the Oklahoma Energy Resources Board and the Groundwater Protection Council,” said Baker. “We have also begun the process of a huge upgrade in our computing power, which will give us far more powerful tools and provide more data to researchers.”

The central Oklahoma volume reduction plan will be phased in over two months in keeping with recommendations from researchers, who warn against sudden pressure changes. The first stage starts today. Notification of well operators began on Thursday, March 3.




It is important to note that researchers agree that any decrease in earthquakes that may result from such plans is rarely immediate, and must be evaluated over the course of several months.

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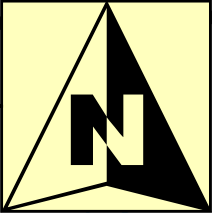
Producers, editors note: See included letters to operators on both actions, maps of the impacted areas, a volume reduction schedule, and a summary sheet of actions taken.



**Areas of Volume Reduction
EQ 2015 to 2/23/2016**

-  CentralOK_Reduction_03-07-2016
-  Western_Regional_Reduction_2-16-2016
-  ArbuckleWells

**Area of Interest
03/07/2016**



Harper

Woods

Alfalfa

Grant

Kay

Ponca City

Osage

Woodward

Enid

Garfield

Noble

Pawnee

Ellis

Major

Stillwater

Payne

Tulsa

Dewey

Kingfisher

Logan

Creek




Blaine

Roger Mills

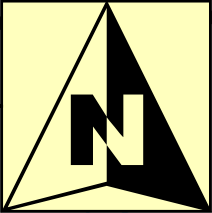
Edmond

Lincoln

**Areas of Volume Reduction
EQ 2015 to 2/23/2016**

-  CentralOK_Reduction_03-07-2016
-  Western_Regional_Reduction_2-16-2016
-  ArbuckleWells

**Area of Interest
03/07/2016**



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Logan

Creek

Blaine

Roger Mills

Edmond

Lincoln

Canadian

Oklahoma

Oklahoma City

Midwest City

Okfuskee

Moore

Shawnee

Beckham

Washita

Caddo

Norman

Cleveland

Pottawatomie

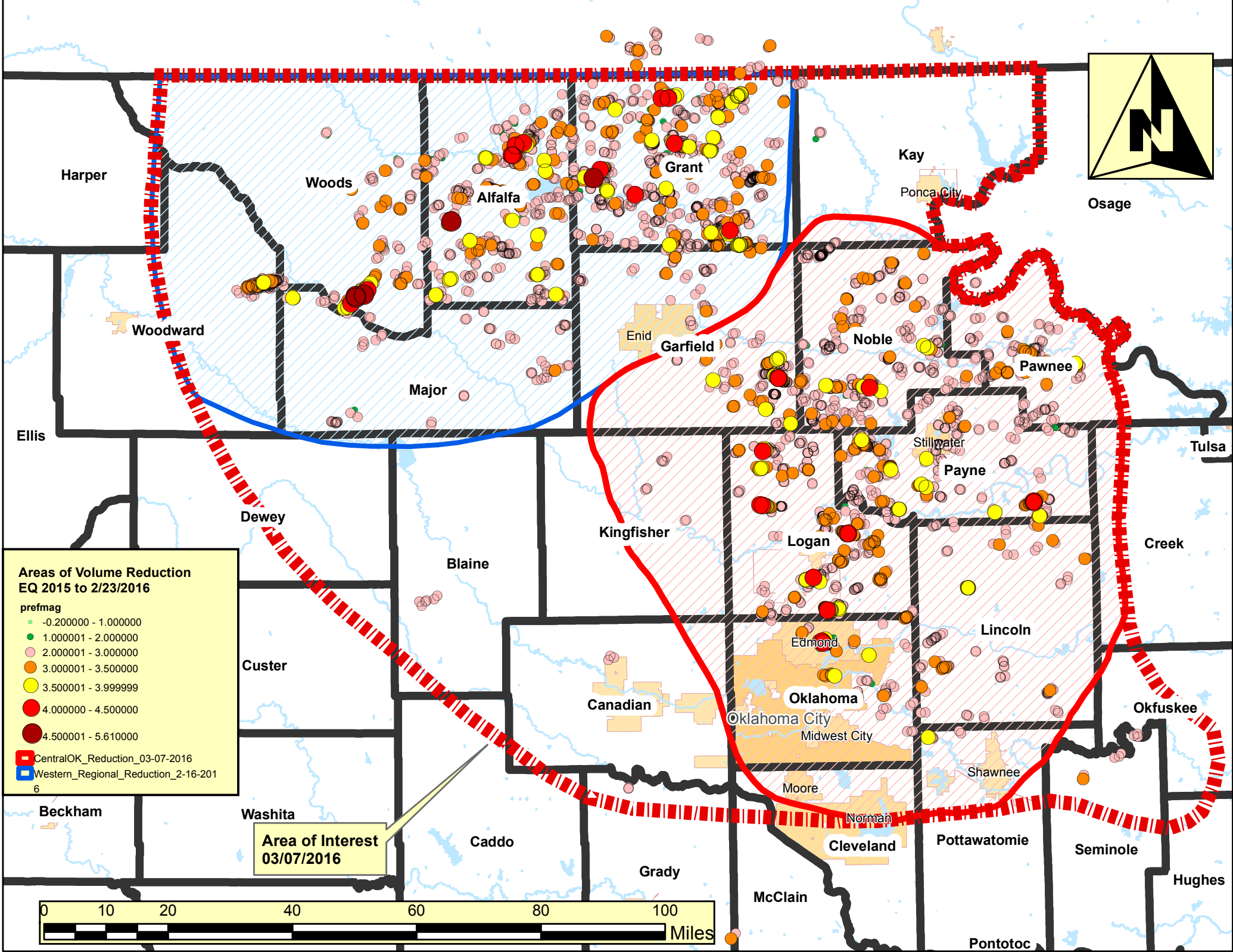
Seminole

Grady

McClain

Hughes

Pontotoc



**Areas of Volume Reduction
EQ 2015 to 2/23/2016**

- prefmag
- -0.200000 - 1.000000
 - 1.000001 - 2.000000
 - 2.000001 - 3.000000
 - 3.000001 - 3.500000
 - 3.500001 - 3.999999
 - 4.000000 - 4.500000
 - 4.500001 - 5.610000

- ▬ CentralOK_Reduction_03-07-2016
- ▬ Western_Regional_Reduction_2-16-2016

Beckham

Washita

Area of Interest
03/07/2016

Caddo

Grady

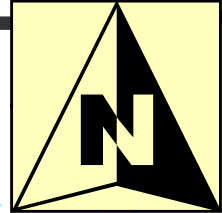
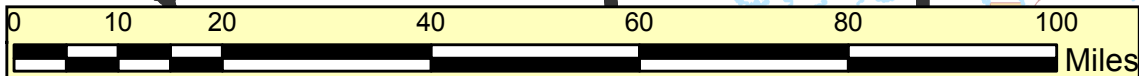
McClain

Cleveland

Pottawatomie

Seminole

Hughes



Harper

Woods

Alfalpa

Grant

Kay

Ponca City

Osage

Woodward

Major

Enid

Garfield

Noble

Pawnee

Ellis

Dewey

Kingfisher

Blaine

Logan

Stillwater

Payne

Tulsa

Creek

Custer

Canadian

Edmond

Oklahoma

Lincoln

Okfuskee

Oklahoma City

Midwest City

Moore

Shawnee

Norman

Pontotoc

Central Oklahoma Volume Reduction Directive

Monday, March 07, 2016

Oklahoma Corporation Commission

Stages		
3/7/16- 3/28/16	25%	1,405
3/29/16- 4/17/16	25%	1,321
4/18/16/16- 5/7/16	25%	1,237
5/8/16- 5/28/16	25%	1,153

SUMMARY

- **Central Oklahoma Volume Reduction Plan and expansion of AOI are the 18th and 19th actions taken since March, 2015 by the Oklahoma Oil and Gas Conservation Division (OGCD) in response to the issue of triggered earthquakes.**
- **Actions taken since March 2015 total a volume reduction from previous daily averages of more than 1 million barrels per day (bpd)**

Central Oklahoma Volume Reduction Plan

- **Area size: approximately 5,200 square miles**
- **Arbuckle disposal wells initially covered: 406***
- **Number of operators: 126***
- **Volume reduction: More than 300,000 bpd**
 - **A barrel is 42 gallons**
 - **Well limited to the lesser of 20,000 bpd or two times the reported daily average**
 - **Well 30 day daily average limited to no more than 15,000 barrels**
- **Goal: Bring total annual volume of wastewater disposed in area to 40 percent below the 2014 total**
- **Wells that have stopped operation under previous OGCD plans shall remain shut-in**
- **Counties included in plan wholly or in part: Oklahoma, Logan, Kingfisher, Garfield, Noble, Pawnee, Payne, Lincoln, Creek, Pottawatomie, Cleveland**

***Subject to revision based on records review**

Area of Interest (AOI) Expansion

- **Arbuckle disposal wells not already covered by previous AOI shall perform daily volume recording and weekly reporting of volumes for use by regulators and researchers (more frequently if so requested)**
- **No administrative approval of Arbuckle disposal well applications in AOI is allowed**
 - **Application must go through full court process, and approval can only be granted by majority vote by Commissioners**
 - **Any permit approved is limited to 6 months, and contains requirements for seismicity monitoring and regular testing**
 - **Well can be shut-in by OGCD with no court hearing**

BOB ANTHONY
Commissioner

Todd Hiatt
Commissioner

Dana Murphy
Commissioner

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OIL & GAS CONSERVATION DIVISION



Tim Baker, Director

TO:

FROM: Tim Baker, Director, Oil and Gas Conservation Division

**RE: Reduction in Volumes for Wells Located in Area of Interest for
Triggered Seismicity**

DATE: March 7, 2016

The Commission's Oil and Gas Conservation Division (OGCD) continues to expand its efforts to reduce the risk of earthquakes potentially triggered by saltwater disposal wells. This letter addresses the reduction of volumes being disposed in the Arbuckle formation in wells within the defined area of interest. Your company has been identified as operating one or more Arbuckle disposal well(s) located within the defined area (map enclosed). Your company is requested to reduce volumes disposed into such well(s) according to the schedule enclosed with this letter.

All disposal well volumes shall be calculated on a daily basis. Operational changes in daily disposal volumes are acceptable as long as the disposal volumes comport with the enclosed schedule. The total allowed daily disposal volume capacity for all wells may be distributed at your discretion, with the following limitations:

1. Volume reductions will be carried out in four (4) stages, as indicated in the enclosed reduction schedule, with full compliance by May 28, 2016;
2. No well shall exceed the authorized daily disposal volume per permit or order;
3. No daily disposal volume for any well shall exceed the lesser of 20,000 bbls per day or two times (2x) the reported daily average;
4. The 30 day average daily disposal volume shall be no more than 15,000 bbls for each well;
5. The 30 day average daily disposal volume for all of the operator's wells shall not exceed the total allowed daily

- disposal volume capacity, as outlined in the enclosed schedule;
6. Wells shut in or operating at reduced volumes under the letter dated October 16, 2015, issued by the OGCD, will remain under that plan; and
 7. Except as noted above, this letter and the enclosed schedule will supersede any reduction plan previously issued to the operator for wells in this area.

In addition, gauges and flow meters shall be placed on such wells on or before Friday, March 18, 2016, if they are not already so equipped. If you are not currently doing so, you must begin recording daily volumes and pressures for such wells and report this information every Monday on a weekly basis to the OGCD within seven (7) days of the date of this letter. The email address for reporting volumes and pressures to the OGCD is ogvolumes@occemail.com.

The seismic events that occurred during the week of January 4th, 2016, in the Fairview area appear to have a very close correlation to the storms that created power outages in such area. It is believed that the power outage may have created a situation where a number of producing wells were shut in, then simultaneously came back on line. When the wells began producing again, this apparently resulted in a tremendous volume of produced water being disposed into the Arbuckle formation at the same time. The OGCD recommends that in the future when a power outage of this magnitude occurs, the production volumes be staged or phased in over a period of time.

The actions requested in this letter will be reviewed periodically for efficacy, and adjustments may be made to the requested actions. The first review will commence no later than one hundred eighty (180) days after the completion of the volume reduction schedule, or on or before November 28, 2016, and subsequent reviews will be on recurring one hundred eighty (180) day cycles, unless circumstances warrant more frequent reviews.

If you object to the actions sought in this letter, you must submit a written request for a technical conference to the OGCD within five (5) days of the date of this letter. Written requests can be sent to Charles Lord or Jim Marlatt at the email addresses listed below, or at the address or facsimile number indicated in the letterhead. Except for good cause shown, failure to timely submit a written request for a technical conference shall be deemed to constitute your agreement to the actions requested of you in this letter.

If you have any questions contact the OGCD:

Charles Lord or
(405) 522-2751
c.lord@occemail.com

Jim Marlatt
(405) 522-2758
j.marlatt@occemail.com

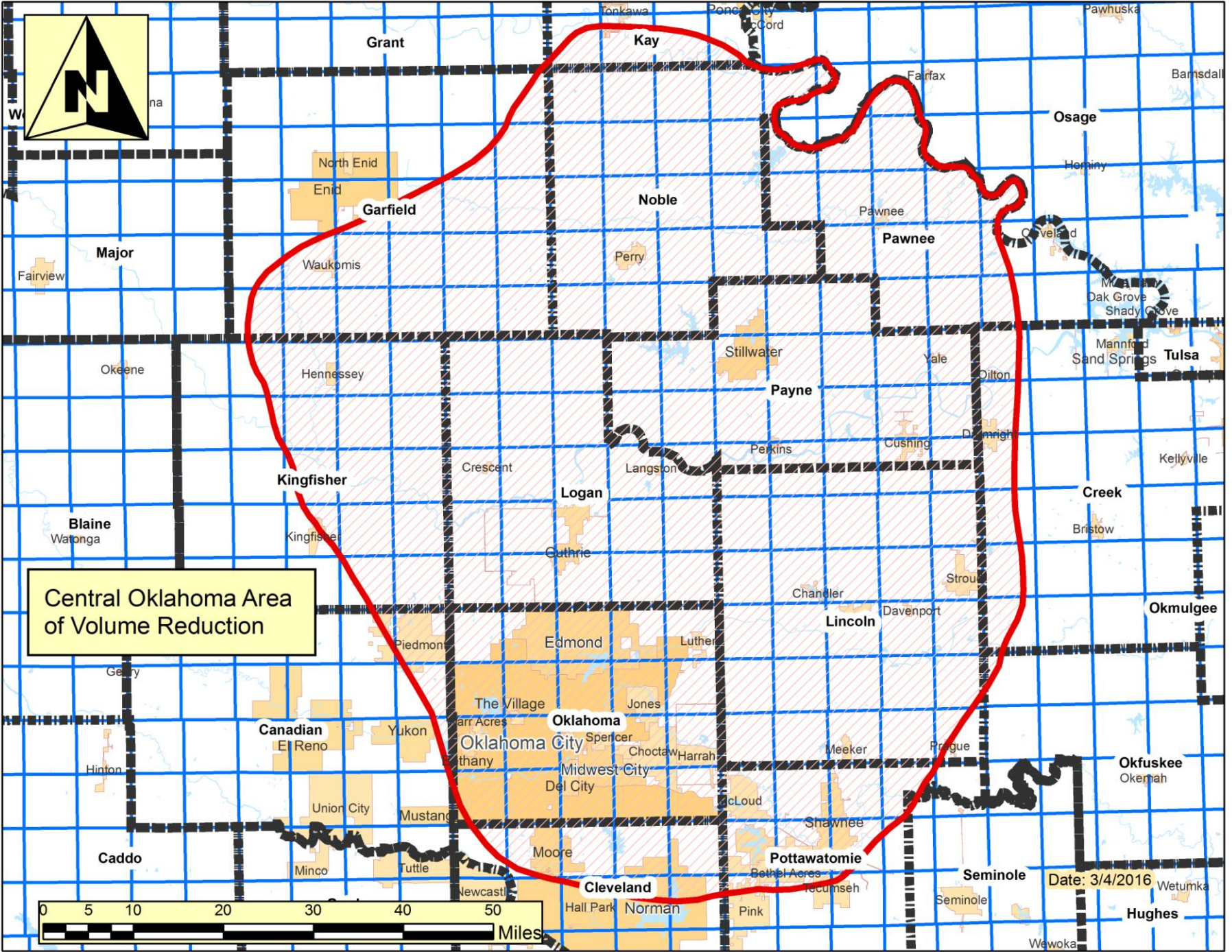
Thank you in advance for your cooperation and attention to the procedures set forth in this letter and enclosed schedule.

Sincerely,

A handwritten signature in black ink, appearing to read "Tim Baker". The signature is fluid and cursive, with a large initial "T" and "B".

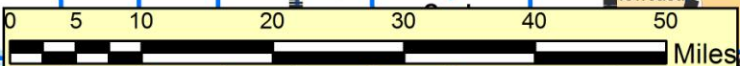
Tim Baker, Director
Oil and Gas Conservation Division

Enclosures: Map and Well List



Central Oklahoma Area
of Volume Reduction

Date: 3/4/2016



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OIL & GAS CONSERVATION DIVISION



Tim Baker, Director

TO:

FROM: Tim Baker, Director, Oil and Gas Conservation Division

RE: Wells located within Expanded Areas of Interest for Triggered Seismicity

DATE: March 7, 2016

Most companies receiving this letter received one or more of our letters regarding the Area of Interest for Induced Seismicity (now Triggered Seismicity). The OGCD is expanding our search for Arbuckle wells that may be completed in the basement below the Arbuckle formation. If you have not either received the March 18th or July 15th, 2015 letters, your company has now been identified as operating one or more Arbuckle disposal well(s) located within the Oil and Gas Conservation Division's (OGCD) Expanded Areas Of Interest for triggered seismicity. A map of the Area of Interest is attached; a revised version of the map will also be made available at www.occeweb.com under "Hot Topics."

As you are aware, Oklahoma has experienced a dramatic increase in the number of earthquakes over the past few years. There is general agreement among seismologists that fluid disposal into or in communication with the crystalline basement rock presents a potential risk for induced seismicity. As part of the effort to reduce this risk, the OGCD is requesting your company establish that your well(s) (listed on the attached page) are not disposing into or in communication with the crystalline basement rock. Wells disposing into the Reagan Sand or Granite Wash are considered to be in communication with the crystalline basement rock. All wells found to be in contact or communication with the crystalline basement rock must be plugged back. To be in compliance with this request, the following criteria have been established:

- A. The following criteria have been established as sufficient information to satisfy the OGCD that a well is not in contact or communication with the crystalline basement rock:
- 1) Driller's logs, gamma ray logs, and formation evaluation logs, to total depth.
 - 2) If logs need to be run, a gamma ray log to total depth will be acceptable.
 - 3) Additional evaluation processes are possible, but must be approved by OGCD.
- B. The following criteria has been established for wells that will be required to plug back:

- 1) Plug back procedures and a plugging schedule must be approved by the OGCD.
- a. A well is not allowed to dispose an amount that exceeds the actual annual average total disposal volume while an approved plugging schedule is in effect.
- 2) The appropriate OGCD District Office must be contacted to allow a field inspector to witness the plug back procedures.
- 3) Before and after plug back, a measurement consisting of a static water level within the well measured by four (4) similar fluid level shots at 15 minute intervals must be taken.
- 4) After plugging operations are completed, the daily reports must be submitted to and approved by OGCD to obtain final approval.
- 5) An Updated 1002A Completion Report must be filed with the OCC.
- 6) Guidelines for plugging back are as follows:
 - a. The Operator can fill the Granite – Granite Wash – Reagan Sand portion of the hole with bailed rock, but the Arbuckle section must have cement.
 - b. If the well has fill in the Arbuckle section, the cement must be both a minimum of 25' thick AND a minimum of 100' above the base of the Arbuckle.
 - i. Example 1: Well X has fill to 50' above the base of the Arbuckle then they will be required to set a 50' cement plug.
 - ii. Example 2: Well Y has fill to 150' above the base of the Arbuckle then they will need to set a minimum 25' cement plug.

Operators will have thirty (30) days from the date of this letter to satisfy the criteria set forth above, or wells will be subject to being shut in. Wells currently disposing of 500 bbls per day or less will be given until May 30, 2016 to comply, however, all wells must begin reporting volumes and pressures on a weekly basis. Once the OGCD has found the well(s) to be in compliance with this request, operations will be allowed to resume, in accordance with any volume reduction actions in place for the well.

In addition, gauges and flow meters shall be placed on such wells on or before Friday, March 18, 2016, if they are not already so equipped. If you are not currently doing so, you must begin recording daily volumes and pressures for such wells and report this information every Monday on a weekly basis to the OGCD within seven (7) days of the date of this letter. The email address for reporting volumes is ogvolumes@occemail.com. Please direct all questions regarding the volume reporting forms to ogvolumes@occemail.com.

The seismic events that occurred during the week of January 4th, 2016, in the Fairview area appear to have a very close correlation to the storms that created power outages in such area. It is believed that the power outage may have created a situation where a number of producing wells were shut in, and then simultaneously came back on line. When the wells began producing again, this apparently resulted in a tremendous volume of produced water being disposed into the Arbuckle formation at the same time. The OGCD recommends that in the future when a power outage of this magnitude occurs, the production volumes be staged or phased in over a period of time.

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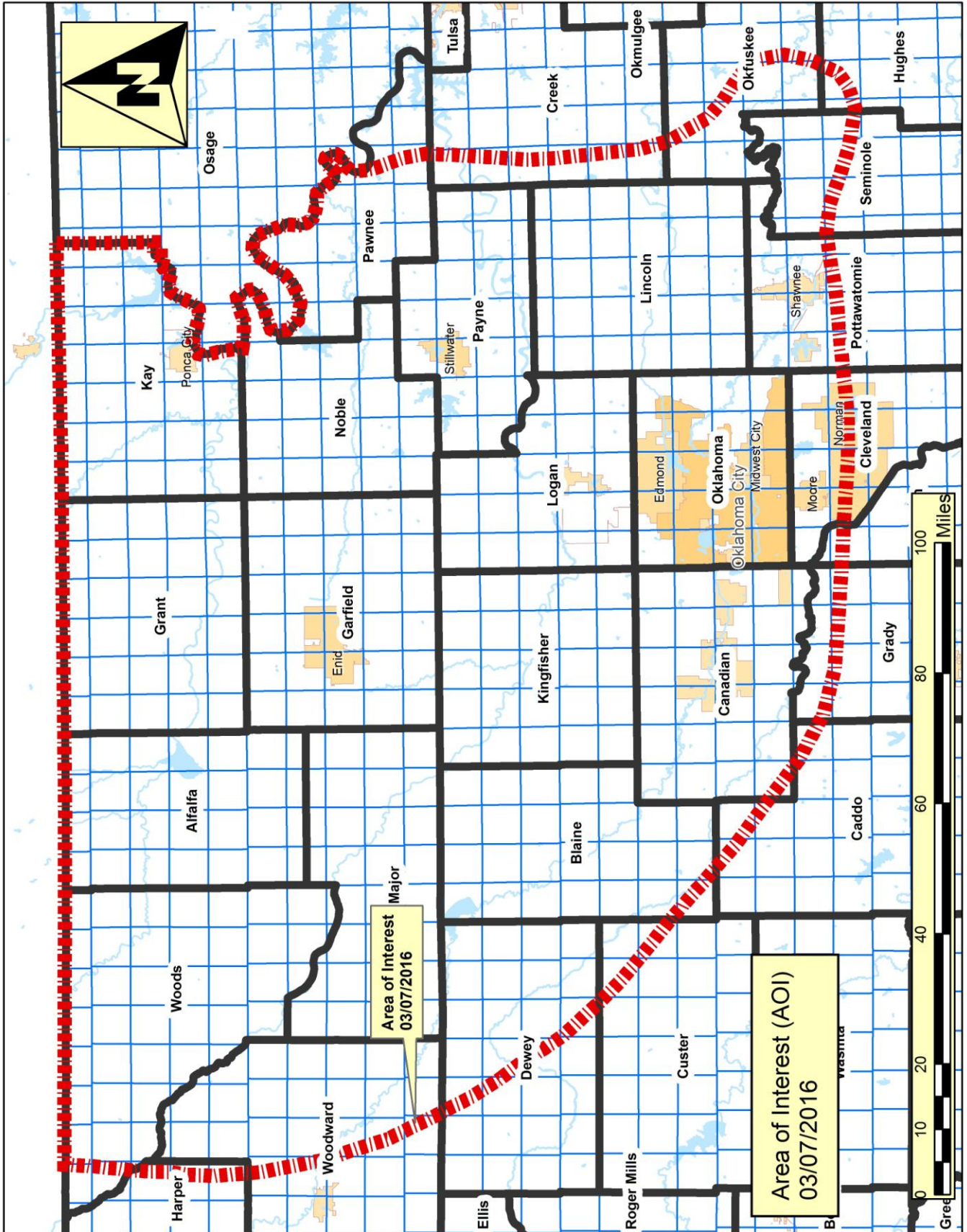
Thank you in advance for your cooperation and attention to the requests set forth in this letter.

Sincerely,



Tim Baker, Director
Oil and Gas Conservation Division

Enclosures: Map and Well List



SERVICE - ASSISTANCE - COMPLIANCE
EXCELLENCE IS OUR STANDARD

Operator (126)	Well Count	2014		2015		Allowance
		Cumulative	Daily	Cumulative	Daily	
ADVANCE OIL CORP	1	539,629	1,478	543,521	1,489	1,153
AEI PROD CO	1	-	-	-	-	-
ALTEX RES INC	1	-	-	-	-	-
AMERICAN ENERGY WOODFORD LLC	22	19,432,286	53,239	19,919,857	54,575	39,267
AMES OIL GAS CORP	1	-	-	-	-	-
ANTHIS LAND CO LLC	1	-	-	-	-	-
ARROW ENERGY INC	1	78,294	215	74,492	204	204
ATLANTIC RICHFIELD CO	1	-	-	-	-	-
BARON EXPLORATION CO	2	1,232,454	3,377	-	-	-
BARTA ENTERPRISES	1	147,767	405	-	-	-
BAUGH ALLAN L	1	58,000	159	58,000	159	159
BECCA OIL LLC	1	18,212	50	4,136	11	11
BENSON MINERAL GROUP INC	2	199,572	547	121,430	333	333
BEREXCO LLC	14	17,466,790	47,854	16,544,801	45,328	32,099
BRITTANY ENERGY LLC	4	2,319,395	6,355	1,683,194	4,611	3,554
BSO INC	1	6,720	18	15,090	41	41
C B OIL CO	1	-	-	-	-	-
CHAPARRAL ENERGY LLC	7	5,131,617	14,059	7,649,051	20,956	14,638
CHER OIL CO LTD	1	532,900	1,460	346,576	950	797
CHESAPEAKE OP INC	8	13,775,711	37,742	10,834,133	29,683	20,810
CHOATE OILFIELD SERVICES LLC	1	-	-	1,481,889	4,060	2,850
CIMARRON RIVER OP CO	2	936,000	2,564	-	-	-
CISCO OP LLC	1	376,575	1,032	191,207	524	516
COLPITT BROTHERS OP CO	1	-	-	-	-	-
CONCORDE RESOURCE CORPORATION	3	1,935,265	5,302	1,578,868	4,326	3,365
CRAWLEY PETROLEUM CORP	1	-	-	-	-	-
CROWN ENERGY CO	3	4	0	2,886,719	7,909	5,596
CUMMINGS OIL CO	2	2,362,210	6,472	2,100,891	5,756	4,139
D B OP LLC	1	2,113,322	5,790	-	-	-
DAKOTA EXPLORATION LLC	3	525,438	1,440	668,606	1,832	1,413
DAVIS BROS OIL PROD	1	-	-	-	-	-
DEVON ENERGY PROD CO LP	54	88,644,095	242,861	81,229,111	222,546	154,768
DEXXON INC	2	795,615	2,180	-	-	-
DJ TANK TRUCKS INC	1	19,292	53	20,245	55	55
DONRAY PETROLEUM LLC	2	2,700,000	7,397	2,722,500	7,459	5,263
DORADO EP PARTNERS LLC	5	1,411,861	3,868	2,375,393	6,508	4,994
DRYES CORNER LLC	1	1,469,082	4,025	1,199,711	3,287	2,339
EASTOK PIPELINE LLC	9	20,206,024	55,359	8,692,023	23,814	17,247
ELDER CRAIG OIL AND GAS LLC	3	330,580	906	9,296	25	25
ENERSOURCE PETROLEUM INC	1	59,658	163	251,102	688	624
ENERVEST OPERATING LLC	5	1,120,018	3,069	1,630,324	4,467	3,613
EQUAL ENERGY US INC	17	26,912,188	73,732	24,070,194	65,946	45,966
GASTAR EXPLORATION USA INC	1	2,937	8	16,914	46	46
GC PETROLEUM INC	1	149,047	408	-	-	-
GILLHAM PAUL OIL CO	2	10,395	28	33,355	91	91
GK PROD LLC	1	333,338	913	-	-	-
GLM ENRG INC	1	1,466,325	4,017	46,544	128	128

Operator (126)	Well Count	2014		2015		Allowance
		Cumulative	Daily	Cumulative	Daily	
HERITAGE PETROLEUM MARBET LLC	1	53,870	148	40,313	110	110
HIGHMOUNT OP LLC	2	-	-	-	-	-
HIGHTOWER ENERGY LLC	1	18,000	49	14,600	40	40
HINKLE OILGAS INC	2	802,370	2,198	3,643,711	9,983	6,929
HULEN OP CO	1	74,857	205	66,491	182	182
INTERNATIONAL ENERGY CORP	3	1,948,040	5,337	1,634,319	4,478	3,465
JEFFRIES PUMPING SERVICE INC	1	225,400	618	217,135	595	563
JONES L E OP INC	2	1,117,147	3,061	636,180	1,743	1,320
KIRKPATRICK OIL CO INC	2	833,148	2,283	1,034,294	2,834	2,210
KOBY OIL CO LLC	3	1,437,500	3,938	1,414,636	3,876	3,068
LINN OP INC	1	212,039	581	79,460	218	218
LONGFELLOW ENERGY LP	4	6,531,651	17,895	4,342,674	11,898	8,533
M M ENERGY INC	3	12,373,792	33,901	8,196,810	22,457	15,207
MAR BAR ENTERPRISES INC	1	1,445,017	3,959	1,304,099	3,573	2,528
MARJO OP CO INC	7	3,027,133	8,294	2,145,871	5,879	4,500
MEADOWBROOK OIL	1	121,543	333	92,976	255	255
MEASON PETRO LLC	1	372,206	1,020	143,293	393	393
MID CON ENERGY OP LLC	11	15,071,470	41,292	14,929,821	40,904	28,526
MID WAY ENV SERV INC	1	188,514	516	295,989	811	705
MIDCON ENERGY OP LL	1	-	-	-	-	-
MIDSTATES PETROLEUM CO LLC	6	5,890,956	16,140	8,030,527	22,001	15,201
MONTCLAIR ENERGY LLC	1	1,765,561	4,837	2,387,360	6,541	4,487
MORAN K OIL LLC	1	29,200	80	22,630	62	62
MUSTANG FUEL CORP	3	2,326,715	6,375	1,992,870	5,460	4,114
NATURAL RESOURCES OP LLC	1	126,141	346	106,271	291	291
NBI SERVICES INC	1	86,237	236	187,070	513	508
NEW DOMINION LLC	10	63,949,011	175,203	49,122,236	134,581	90,354
NORTH CENTRAL OIL	1	-	-	-	-	-
OAKLAND PETROLEUM OP CO INC	1	1,368,750	3,750	1,408,273	3,858	2,716
OBRIEN OIL CORP	1	63,042	173	44,140	121	121
OIL PRODUCTION SYSTEMS INC	1	-	-	-	-	-
OPTIMA EXPLORATION LLC	2	495,000	1,356	-	-	-
ORCA OP CO LLC	1	2,567,011	7,033	796,890	2,183	1,611
PEDESTAL OIL CO INC	1	249,755	684	224,360	615	576
PETCO PETROLEUM CORP	3	1,267,236	3,472	1,823,991	4,997	3,638
PETRO WARRIOR LLC	2	2,243,527	6,147	1,766,537	4,840	3,534
PETROQUEST ENERGY LLC	4	658,579	1,804	356,084	976	865
POLK BR INC	1	154,413	423	-	-	-
RAINBO SERVICE CO	1	18,515	51	538,833	1,476	1,144
RAM ENERGY	1	41,909	115	-	-	-
RAMSEY PROPERTY MANAGEMENT LLC	1	69,559	191	65,780	180	180
RANGE PROD CO	16	39,099,700	107,122	31,855,551	87,275	60,322
RC HOLDINGS	1	27,885	76	-	-	-
RED HAWK DISPOSAL LLC	1	-	-	-	-	-
REDDY OG CORP	1	-	-	-	-	-
REVELATION GASOIL OKLAHOMA LLC	1	1,544,446	4,231	-	-	-
RHOADES OIL CO	1	-	-	-	-	-

Operator (126)	Well Count	2014		2015		Allowance
		Cumulative	Daily	Cumulative	Daily	
SANDRIDGE EXPLORATION PROD LLC	2	2,023,269	5,543	1,426,123	3,907	2,749
SELLERS JACK B ESTATE OF	1	254,393	697	315,275	864	740
SHERMAN LARRY OIL LLC	2	783,954	2,148	377,729	1,035	1,015
SHERMAN OIL GAS LLC	1	90,284	247	86,060	236	236
SHIELDS OP INC	1	360,000	986	597,062	1,636	1,250
SHORT OIL CO	1	237,250	650	237,250	650	599
SOUTHWEST PETROLEUM CORP	3	30,993	85	-	-	-
SPECIAL ENERGY CORP	14	5,954,274	16,313	5,118,840	14,024	10,121
SPESS OIL CO INC	1	57,651	158	-	-	-
STACY OP LLC	2	31,450	86	45,369	124	124
STEPHENS ENERGY GROUP LLC	1	215,752	591	82,019	225	225
STEPHENS JOHNSON OPERATION CO	1	139,278	382	-	-	-
STEPHENS PROD CO	1	643,590	1,763	635,639	1,741	1,319
STILL A B WELL SERVICE INC	1	5	0	47,276	130	130
SUNDANCE ENERGY OKLAHOMA	6	1,931,179	5,291	761,203	2,085	2,031
SUNDOWN ENERGY LP	3	2,600,111	7,124	726,801	1,991	1,484
TAG PETROLEUM INC	2	146,000	400	146,000	400	400
TARKA ENERGY LLC	7	3,826,047	10,482	8,108,750	22,216	15,512
TARWATER OG LLC	1	-	-	-	-	-
TAYLOR R C COMPANIES INC	1	824,867	2,260	2,078,108	5,693	3,928
TERRITORY RESOURCES LLC	10	11,044,072	30,258	9,951,997	27,266	19,263
TNT OP CO INC	1	3,131,100	8,578	2,856,068	7,825	5,334
TOOMEY OIL CO INC	1	839,500	2,300	337,311	924	780
TRU OP LLC	1	-	-	393,693	1,079	882
TRUEVINE OP LLC	4	551,898	1,512	535,992	1,468	1,381
USEDK OKC LLC	6	5,051,496	13,840	1,884,007	5,162	4,330
VENTURA ENERGY SERVICES LLC	1	36,000	99	122,110	335	335
WEST PERKINS COMMERCIAL DISPOSAL LLC	1	1,125,880	3,085	281,432	771	679
WHITE OP CO	6	6,705,058	18,370	6,796,327	18,620	13,309
WICKLUND PETROLEUM CORP	1	584,802	1,602	314,142	861	738
WISE OILGAS CO LLC	1	21,600	59	25,061	69	69
YARHOLA PROD CO	1	-	-	-	-	-
Totals	397*	433,957,214	1,188,924	374,248,892	1,025,339	723,541

*Additional wells with no operators assigned (8)

PARTIAL ACTION LIST SINCE MARCH, 2015

NOTE: Researchers largely agree that wastewater injection into the Arbuckle formation poses the largest potential risk for earthquakes in Oklahoma. Most of the wastewater comes not from hydraulic fracturing operations, but rather from producing wells. The water exists in the producing formation and comes up with the oil and natural gas.

March 7, 2016 – Central Oklahoma Regional Volume Reduction Plan and Expansion of Area of Interest

February 16, 2016 – Western Oklahoma Regional Volume Reduction Plan:

<http://www.occeweb.com/News/2016/02-16-16WesternRegionalPlan.pdf>

January, 20, 2016 – Medford, Byron-Cherokee areas:** Sandridge Energy - 8 wells to stop disposal, 9 wells to be used by researchers. 36 wells to reduce volume. Total volume reduction: 191,327 barrels/day, (40 percent). A barrel is 42 gallons.

****Supersedes Sandridge Energy portion of plans issued 12/3/15.**

<http://www.occeweb.com/News/01-20-16SANDRIDGE%20PROJECT.pdf>

January 13, 2016 - Fairview area: 27 disposal wells to reduce volume. Total volume reduction for the area in question: 54,859 barrels a day or (18 percent). **<http://www.occeweb.com/News/01-13-16ADVISORY.pdf>**

January 4, 2016 - Edmond area: 5 disposal wells to reduce volumes by 25 to 50 percent. Wells 15 miles from epicenter to conduct reservoir pressure testing. (Two disposal wells ceased operation as part of the action).

<http://www.occeweb.com/News/01-04-16EQ%20ADVISORY.pdf>

December 3, 2015 – Byron/Cherokee area: 4 disposal wells shut-in, volume cuts of 25 to 50 percent for 47 other disposal wells. ** http://www.occeweb.com/News/12-03-15BYRON-CHEROKEE_MEDFORD%20EARTHQUAKE%20RESPONSE.pdf

****see 01-20-16 plan for changes**

December 3, 2015 – Medford area: 3 disposal wells shut-in and f cuts of 25 to 50 percent in disposed volumes for 19 other wells. The total net volume reduction for the area in question is 42 percent

http://www.occeweb.com/News/12-03-15BYRON-CHEROKEE_MEDFORD%20EARTHQUAKE%20RESPONSE.pdf

(more)

(ACTIONS, pg. 2)

November 20, 2015 – Crescent: 4 disposal wells shut-in, 7 others reduce volume 50 percent.

<http://www.occeweb.com/News/11-20-15CRESCENT%20ADVISORY.pdf>

November 19, 2015 – Cherokee: 2 disposal wells shut-in, 23 others reduce volume 25 to 50 percent.

<http://www.occeweb.com/News/CHEROKEE%20ADVISORY-VOLUME,%20OPERATOR.PDF>

November 16, 2015 – Fairview: 2 wells reduce volume 25 percent, 1 well stop operations and reduce depth.

<http://www.occeweb.com/News/11-16-15FAIRVIEW%20and%20MAP.pdf>

November 10, 2015 – Medford: 10 wells reducing volume disposed 25 to 50 percent.

<http://www.occeweb.com/News/11-10-15MEDFORD02.pdf>

October 19, 2015 – Cushing: 13 wells either ceasing operations or cutting volume disposed 25 percent.

<http://www.occeweb.com/News/10-19-15CUSHING%202.pdf>

August 3, 2015 – Volume cutback plan for area that includes portions of northern Oklahoma, Logan, Lincoln, and Payne counties. Goal is to bring total disposed volume in area to 30 percent below 2012 total (pre seismicity). Plan covers 23 wells.

<http://www.occeweb.com/News/08-03-15VOLUME%20ADVISORY%20RELEASE.pdf>

July 28, 2015 – Crescent: 2 wells shut in, 1 reducing volume 50 percent.

<http://www.occeweb.com/News/Crescent%20wells.pdf>

** July 17, 2015 – Directive for 211 disposal wells in the Arbuckle to check depth. Must prove that that depth is not in communication with basement rock, or a plug back operation is completed to bring the bottom of the well at least 100 feet up into the Arbuckle. <http://www.occeweb.com/News/DIRECTIVE-2.pdf>

** March 25, 2015 – Directive for 347 wells in the Arbuckle to check depth, etc.

<http://www.occeweb.com/News/2015/03-25-15%20Media%20Advisory%20-%20TL%20and%20related%20documents.pdf>

** To date, the July 17 and March 25 directives have resulted in 224 wells plugging back (i.e., reducing depth), and 14 wells reducing their disposed volume by half.

(more)

(ACTIONS, pg 3)

Some of the other actions taken:

All applications for Arbuckle disposal wells must go through a seismicity review and a public court hearing process. No administrative approval is allowed. Any permit that may eventually be granted is only good for six months and well can be shut in at any time because of seismicity concerns. Monitoring for seismicity and other requirements are also placed on the wells.

All Arbuckle disposal wells operating in an “Area of Interest” have to record daily and report weekly their volumes and pressures for use by researchers and regulators.

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