

OKLAHOMA

Corporation Commission

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OIL & GAS CONSERVATION DIVISION



Tim Baker, Director

August 19, 2016

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

Media Advisory - Luther/Wellston Area Earthquakes

The Oklahoma Corporation Commission's (OCC) Oil and Gas Conservation Division (OGCD) is taking additional steps in the Luther/Wellston area to address recent earthquake activity. The plan covers oil and gas wastewater wells that are disposing into the Arbuckle formation. These actions are in addition to the 40 percent volume reduction plan completed in May that includes the Luther/Wellston area.

Under the plan, the two Arbuckle disposal wells within 3 miles of the latest seismicity will be shut down. 19 Arbuckle disposal wells within 10 miles of the latest seismicity will be further limited in volume.

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Editors, Producers: Attached is the OGCD letter to operators concerning the Luther/Wellston area, a list of the disposal wells covered by the plan, a map showing disposal well location and recent earthquake activity.

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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: August 18th, 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. The following addresses the recent earthquakes near Luther and Wellston. The most recent events, a magnitude 3.7 MW and 3.9 MW earthquakes, as reported by the Oklahoma Geological Survey (OGS), occurred on August 16th and 17th, 2016. Wells within a ten mile buffer from a centrally located point between these two earthquake events must comply with the schedule below.

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. As has been the practice, daily pressures and volumes for such wells should be supplied every Monday to the Commission, on a weekly basis, via the e-filing system for the 1012D.

Additionally, if volumes and pressures are recorded on any basis more frequent than daily, these records are requested for the wells in this area. Email the up-to-date records to ogvolumes@occemail.com every Monday until further notice.

The following schedule applies to all wells within the defined zones in the Area of Interest:

Zero to three miles (0-3 miles):

A managed shut-in of wells currently injecting, to be completed on or before August 25, 2016.

Three to ten miles (3-10 miles):

Wells between 3 and 10 miles of the centrally located point will be required to operate at or below the latest reported 30-day average volume, from the e-filed weekly form 1012D.

In addition, gauges and flow meters shall be placed on such wells on or before Friday, August 25, 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. This must be filed via the e-filing system for the 1012D. For complete instructions on the e-filing process contact ogvolumes@occemail.com.

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 February 14, 2017, 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,

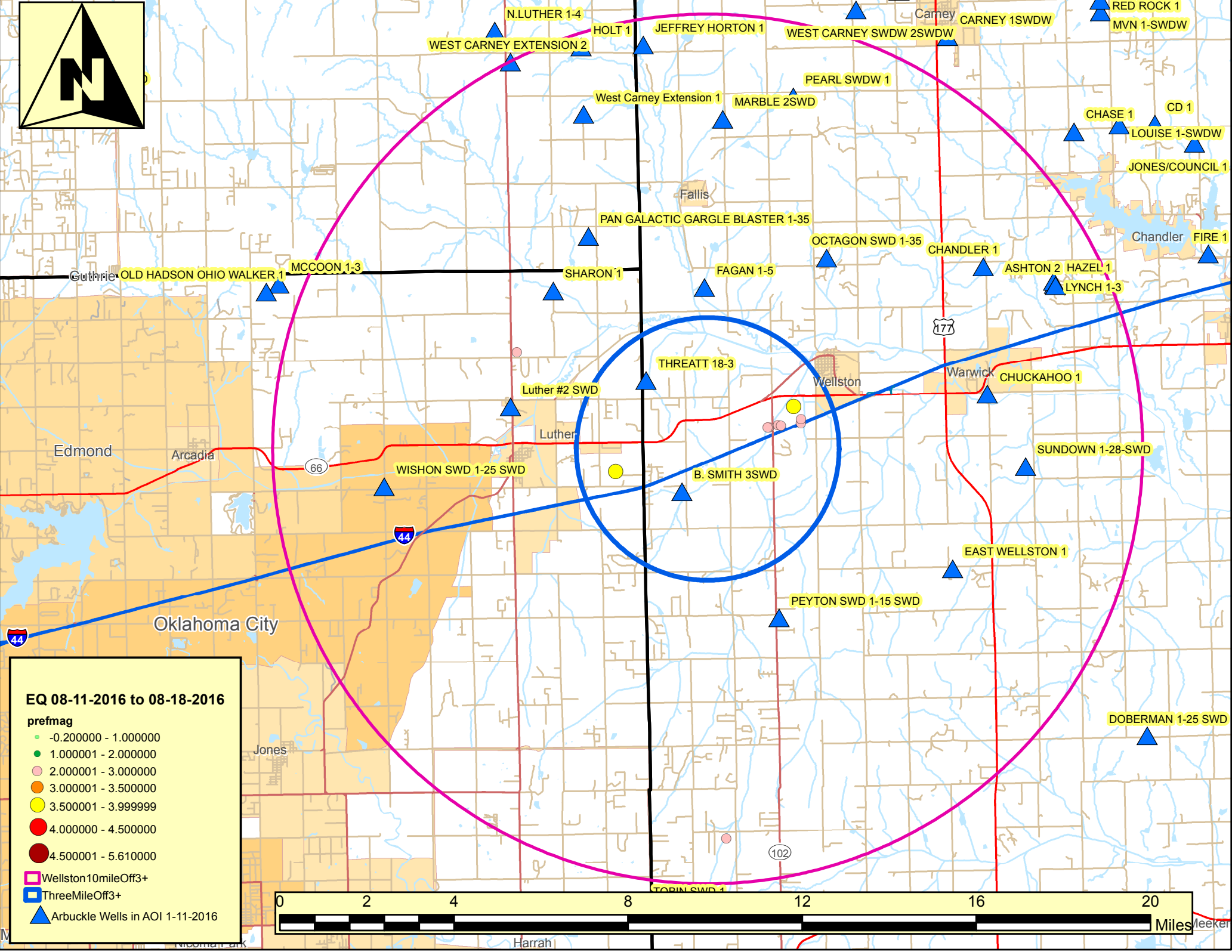


Tim Baker, Director
Oil and Gas Conservation Division

Enclosures: Map and Well List

The Arbuckle disposal wells in this area are listed below:

API	Operator Name	Well Name Number
35-081-23631-00-00	E O K OPERATING LLC	JEFFREY HORTON 1
35-083-23545-00-00	E O K OPERATING LLC	HOLT 1
35-081-23734-00-00	HULEN OPERATING COMPANY	THREATT 18-3
35-081-23495-00-00	MARJO OPERATING MID-CONTINENT LLC	PEARL SWDW 1
35-081-23707-00-00	MARJO OPERATING MID-CONTINENT LLC	CHANDLER 1
35-083-23524-00-00	MARJO OPERATING MID-CONTINENT LLC	WEST CARNEY EXTENSION 1
35-083-23634-00-00	MARJO OPERATING MID-CONTINENT LLC	WEST CARNEY EXTENSION 2
35-081-23845-00-00	MIDSTATES PETROLEUM COMPANY LLC	EAST WELLSTON 1
35-081-23909-00-00	MIDSTATES PETROLEUM COMPANY LLC	HAZEL 1
35-081-23923-00-00	MIDSTATES PETROLEUM COMPANY LLC	CHUCKAHO 1
35-081-23640-00-00	MORAN-K OIL LLC	FAGAN 1
35-081-23907-00-00	NEW DOMINION LLC	B. SMITH 31
35-081-24052-00-00	NEW DOMINION LLC	PEYTON SWD 1-15
35-109-21577-00-00	NEW DOMINION LLC	LUTHER 2
35-109-22351-00-00	NEW DOMINION LLC	WISHON SWD 1
35-083-23592-00-00	SPECIAL ENERGY CORPORATION	PAN GALACTIC GARGLE BLASTER 1-35
35-109-22171-00-00	SPECIAL ENERGY CORPORATION	SHARON 1
35-081-23832-00-00	SUNDOWN ENERGY LP	SUNDOWN 1
35-081-24016-00-00	TERRITORY RESOURCES LLC	OCTAGON SWD 1-35
35-081-01877-00-00	VENTURA ENERGY SERVICES LLC	ASHTON 2
35-081-02053-00-00	XANADU EXPLORATION COMPANY	FALLIS 1
	Shut in	



EQ 08-11-2016 to 08-18-2016

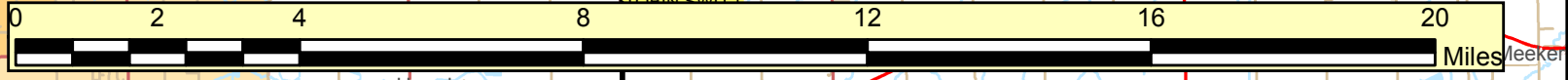
prefmag

- -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

□ Wellston10mileOff3+

□ ThreeMileOff3+

▲ Arbuckle Wells in AOI 1-11-2016



Earthquake Response Summary

- 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.
- The Oklahoma Corporation Commission's Oil and Gas Conservation Division (OGCD) took its first action on Arbuckle disposal wells regarding earthquakes concerns in September 2013, resulting in one well shutdown and the prevention of the startup of another. There are currently 27 Arbuckle disposal wells shut in as a result of OGCD actions.
- In early 2015, new research and data provided the basis for a switch from isolated actions on individual wells to larger plans covering more square miles and wells, resulting in plans that have, when taken in conjunction with previous actions, reduced total disposed volume in earthquake areas by approximately 800,000 barrels a day over 2014 levels.
- The volume reduction area currently covers about 11 thousand square miles, and a 15 thousand square mile "Area of Interest" (AOI) has been established. All Arbuckle wells in the AOI must report disposal volumes at least weekly. New applications for Arbuckle disposal wells in the AOI are not given administrative approval.

Recent Actions

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

<http://www.occeweb.com/News/2016/03-07-16ADVISORY-AOI,%20VOLUME%20REDUCTION.pdf> (Note: On the advice of seismologists, plan y cu' phased in over a two month period. Completed May 31).

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

<http://www.occeweb.com/News/2016/02-16-16WesternRegionalPlan.pdf> (Completed on April 30)

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

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

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 227 wells plugging back (i.e., reducing depth), and 14 wells reducing their disposed volume by half.