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OIL & GAS CONSERVATION DIVISION



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February 16, 2016

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Media Advisory - Regional Earthquake Response Plan for Western Oklahoma

The Oklahoma Corporation Commission's (OCC) Oil and Gas Conservation Division (OGCD) is implementing the largest volume reduction plan yet for oil and gas disposal wells in western Oklahoma. The plan covers 5,281 square miles and 245 disposal wells injecting wastewater into the Arbuckle formation.

OGCD director Tim Baker says in conjunction with the 191,000 barrel** a day reduction plan begun in Fairview recently, the total volume cutback for the entire area will be more than half a million barrels a day, or about 40 percent.

** A barrel is 42 gallons

Baker says the earthquake activity in the region demands a regional response.

"We have taken a number of actions in the Medford, Fairview, and Cherokee areas," Baker said. "However, there is agreement among researchers, including our partners at the Oklahoma Geological Survey, that the data clearly underscored the need for a larger, regional response. That is why, even as we took actions in various parts of the region in response to specific earthquake events, we were already working on a larger plan."

Baker says while the plan is a response to the continued seismicity in the area, the action will also include areas that are not yet experiencing major earthquakes.

"The wells covered in this plan include those along the western area of the plan's boundaries where there has not yet been major earthquake activity," said Baker. "This plan is aimed not only at taking further action in response to past activity, but also to get out ahead of it and hopefully prevent new areas from being involved."

The plan will be phased in over 4 stages and 2 months as recommended by researchers, who caution against sudden pressure changes. Meanwhile, staff continues to work on other areas of the state, helped greatly by recent cash infusions.

"The emergency funding from Governor Fallin and a new grant from the Oklahoma Energy Resources Board and the Groundwater Protection Council enable us to add badly needed equipment and staff," Baker said. "As we continue to go forward, we will continue to focus on regional approaches as supported by the latest data."

A map of the area and a list of wells/operators are attached.

(more)

(WESTERN RESPONSE, pg 2)

Below is a list of some of the OGCD actions taken regarding earthquakes***:

***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.

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).

**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

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>**

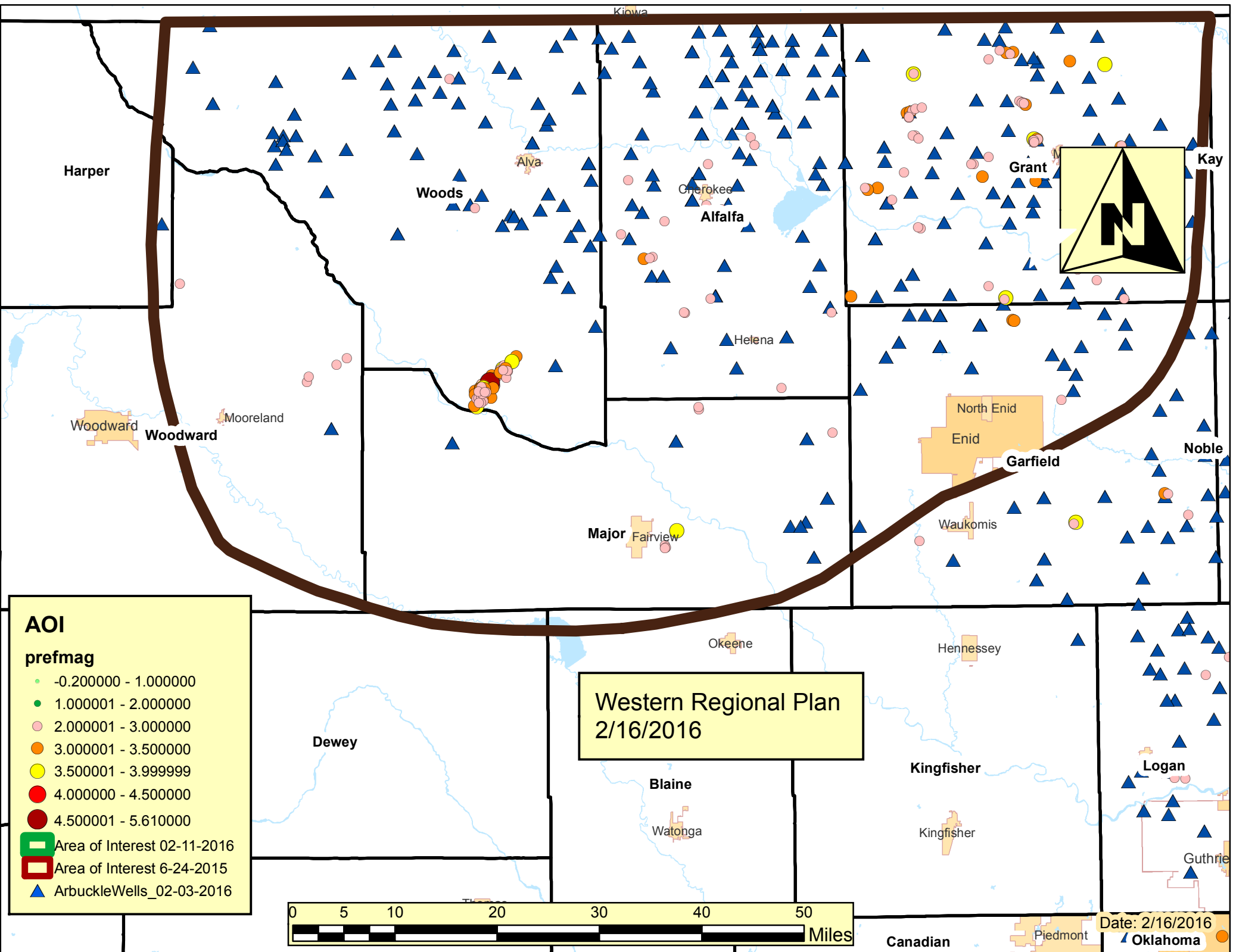
**** March 25, 2015 – Directive for 347 wells in the Arbuckle to check depth, etc. <http://www.occeweb.com/News/2015/03-25-15%20Media%20Advisory%20-%20TL%20and%20related%20documents.pdf>**

**** 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.**

Some of the other actions taken:

All applications for Arbuckle disposal wells must go through a seismicity review. If approved, permit 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 earthquake areas (“areas of interest”) have to record daily and report weekly their volumes and pressures for use by researchers and regulators.



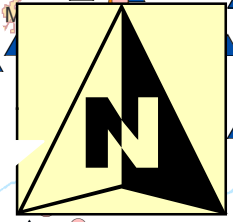
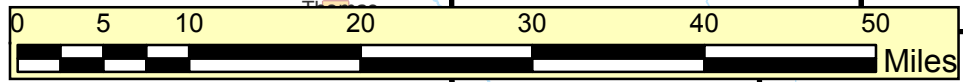
AOI

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

- ▭ Area of Interest 02-11-2016
- ▭ Area of Interest 6-24-2015
- ▲ ArbuckleWells_02-03-2016

Western Regional Plan
2/16/2016



	WellName
ARP OKLAHOMA LLC	DALMATION 1 JACKDAW K 9 OTTERHOUND
ARROWHEAD ENERGY INC	VENCI
CAPSTONE OILFIELD DISPOSAL SERVICE INC	RING
CHAPARRAL ENERGY LLC	CLIFFORD ELSIE ERIKSON FREEDOM MENO MESSENGER A OL FAITHFUL PHILLIPS 15 R H TURKEY CREEK WESSEL
CHESAPEAKE OPERATING INC	AMAZON AR KANSAS 11 28 15 BULLET 25 28 14 CAMPBELL 36 27 13 CAPRON CLAY 7 25 10 COLUMBIA 36 27 12 DUTCH HARBOR EUPHRATES 11 27 12 GIANT GIDEON HDW HOLLOW LOG JORDAN 20 25 13 JUSTIN 10 28 14W MISSISSIPPI 14 26 12 MULLINS NILE 14 28 12 NORTH ALVA OLD FAITHFUL PISTOL 31 28 14 PULLER 7 26 10 RIO GRANDE 16 27 12 ROGUE SCOUT 12 28 17 SOUTH ALVA 18 26 13

CHESAPEAKE OPERATING INC	SPENCER 14 27 17 THAMES 33 28 9 TIGRIS 24 24 11 WISE YELLOW 30 27 10
CHIEFTAIN OIL CO INC	ERMA
CISCO OPERATING LLC	ALICE BOLSER DZ JAMES
CONTINENTAL RESOURCES INC	CHET DOROTHY NG GF
D & B OPERATING LLC	RICH
D & J OIL COMPANY INC	DENNIS JAMES MYERS
DARLING OIL CORPORATION	BUXTON MOLLY
DEM OPERATIONS INC	DIXON
DORADO E & P PARTNERS LLC	BILLY REX BUSH
EAGLE CHIEF MIDSTREAM LLC	CIRCLE
EAGLE EXPLORATION PRODUCTION	DOWNING GEORGE REITZ SCRIBNER
KIRKPATRICK OIL COMPANY INC	LITTLE BEAVER THOMAS
MCQUEEN ED CO INC	PERRY
MIDSTATES PETROLEUM COMPANY LLC	ALFALFA COOK DACOMA DENTON LOHMANN LONGHURST MEIER 2614 MOREHART MURROW TUMBLEWEED ZAHORSKY
MUD OPERATIONS INC	LAUBHANS
NEILSON INC	KERRI ANN
ONEOK HYDROCARBON LP	KOCH FEE
PANHANDLE EASTERN PIPE LINE COMPANY LP	MACKAY MILLEGE
PETROWATER SOLUTIONS LLC	BOUSE

PRIMEXX OPERATING CORPORATION	PRIMEXX PRIMEXX 1
SAND CREEK OPERATING LLC	KRAFT
SANDRIDGE EXPLORATION & PRODUCTION LLC	ALLISON AMANDA LYNN APALOOSA AQUARIUS AUSTIN BAILAR BELLA BETTY ELLEN BETTY ELLEN 2909 BIG BEAR 2506 BILLY 2505 BONNIE JEAN CALLIE CARA CASH CAVIN CHARLY 2407 CHRISSY CLAUDE CONSTANCE COTTONWOOD 2411 DONNA FAYE ELY 2703 FIERO FRANCIS 2507 FRANZ 2816 FRIDA 2305 HADLEY HAN 2816 ISABELLA 2407 JAKE 2406 JESSICA KAYLEE RAE 2305 KIARA KIMBERLY KOPPITZ LANDRY LISA H 2408 LOMA LOUIE WELL LYNCH MANDI JO MARLEY 2511 MARY CHARLENE 2706

SANDRIDGE EXPLORATION & PRODUCTION LLC	NANA NATHANIEL 2806 OLIVIA KATE 2603 ORION OWEN PAINT PHILLIPS PINTO PROTEUS RISITA SARAH ANNE 2916 SEEBE 2713 SHARON SOLO 2815 SOPHIE SQUIRES TIBURON TROY 2408 WALLEY WOODBIDGE WOODY
SAVOY EXPL LP	R R CATTLE
SK PLYMOUTH LLC	NIAGRA FALLS TOEWS TRENT VICTORIA FALLS ZALOUDEK
SPECIAL ENERGY CORP	CONRADY 19 28N 6W DOWNING FERDA 21 28N 4W FRIEOUF KIRBY OPLOTNIK POLECAT POSTLEWAIT SUBERA TOWES 34 25N 4W
SUPERIOR OIL&GAS LLC	EARL
TRIAD ENERGY INC	MARY ANNE WILLIAMS
UNION VALLEY PETROLEUM CORP	WESLEY
USEDK OKC LLC	ESTILL
WHITEHEAD ROSS E	LO JO
TRANS PACIFIC OIL CORPORATION	GREG THURMAN
ORCA OPERATING COMPANY LLC	CARTER
Grand Total	

