

**THE STATE CORPORATION COMMISSION  
OF THE STATE OF KANSAS**

Before Commissioners:                    Shari Feist Albrecht, Chair  
   Jay Scott Emler  
   Pat Apple

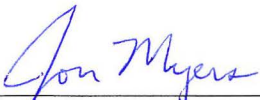
In the Matter of an Order Reducing Saltwater    )    Docket No.: 15-CONS-770-CMSC  
Injection Rates into the Arbuckle Formation,    )  
Applicable to Wells in Defined Areas of        )    CONSERVATION DIVISION  
Increased Seismic Activity in Harper and        )  
Sumner Counties.                                    )

**MOTION TO EXTEND MONITORING PERIOD**

The Commission's March 19, 2015, Order in this docket provides a monitoring period extending 180 days following the issuance of the Order, and for so long thereafter as may be needed, so that Commission Staff and the Kansas Geological Survey may review available data regarding the need for further action by the Commission in this docket. Staff has been analyzing the data that have been gathered since the implementation of the Commission's Order. As described in further detail in the attached *Report and Recommendation*, Staff believes the initial results are encouraging but inconclusive.

The initial 180-day monitoring period described in the Order concludes on September 15, 2015. For the reasons described in the *Report and Recommendation*, Staff requests an additional 180 days of monitoring, to allow Staff to continue analyzing the impact of reduced injection volumes and plugged-back wellbores in the areas subject to the provisions of the Order.

Respectfully submitted,



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## REPORT AND RECOMMENDATION CONSERVATION DIVISION

**TO:** Chair Shari Feist Albrecht  
Commissioner Jay Scott Emler  
Commissioner Pat Apple

**FROM:** Ryan A. Hoffman, Director, Conservation Division

**DATE:** September 14, 2015

**SUBJECT:** 15-CONS-770-CMSC: In the Matter of an Order Reducing Saltwater Injection Rates into the Arbuckle Formation, Applicable to Wells in Defined Areas of Increased Seismic Activity in Harper and Sumner Counties.

### **EXECUTIVE SUMMARY:**

Staff recommends extending the provisions of the Order in Docket No. 15-CONS-770-CMSC limiting Arbuckle disposal well volumes in Harper and Sumner County for 180 days for further monitoring and research purposes. As the Order will be in place for 180 days and there has been a reduction in the number of earthquakes in Harper and Sumner County, as well as within the specific areas of seismic concern; however, more time is needed to assess the impact of the volume reductions on earthquake activity in the pertinent areas.

### **BACKGROUND:**

In response to the growing public safety issues related to the increased seismic activity in areas with large volume Arbuckle disposal wells, the Commission issued the Order in this docket. The Order set a maximum volume for Arbuckle disposal wells in Harper and Sumner County at 25,000 barrels per day per well and established monthly reporting of daily volumes and pressures for all Arbuckle disposal wells disposing of more than 5,000 barrels per day. The Order identified five areas of seismic concern based on the frequency and clustering of locations of earthquakes triggering the Seismic Action Score from the State Response plan recommended by the Induced Seismicity State Task Force. The Order put in place volume reductions over a 180-day period during which KCC staff was to review available data and make recommendations for further action by the Commission. September 15, 2015 constitutes the 180<sup>th</sup> day of the Order.

### **ANALYSIS:**

K.S.A. 2014 Supp. 77-536(a) gives the agency the authority to act when there is “an immediate danger to the public health, safety or welfare requiring immediate state agency action” or “as otherwise provided by law.”

K.S.A. 55-162(b) gives the Commission the authority issue orders “[i]f it appears to the commission that damage may result if immediate remedial action is not taken.”

### **STAFF’S ANALYSIS:**

Based on publically available information on the USGS NEIC website, the number of felt<sup>1</sup> earthquakes in Kansas, Harper and Sumner County, and the five areas of seismic concern have decreased since the Commission the provisions of the Order became effective on March 29, 2015. There were 87 fewer earthquakes in the 120 days following the effective date of the volume reductions/limits than there were in the 120 days preceding the effective date of the volume reductions/limits. Further, the number of M 3.0 or larger earthquakes in Kansas decreased to 23 in the 179 days following the effective date of the volume reductions/limitations from 50 in the 180 days prior to the effective date of the volume reductions/limitations.

During this time, KCC staff has also worked with operators to verify true vertical depths of the large volume Arbuckle disposal wells within the areas of seismic concern and overseen the procedures to plug nine wells back so their disposal zone was not deeper than the base of the Arbuckle formation.

The last volume reduction occurred on June 27, 2015 and the last well within the areas of concern was plugged back on July 23, 2015. This means there have been no changes or new variables within the areas of seismic concern since July 23, 2015. KCC Staff believes the initial results are encouraging and positive; however, it does not believe them to be conclusive at this time.

### **RECOMMENDATION:**

Extend the provisions of Docket No. 15-CONS-770-CMSC for 180 days to allow KCC staff more time to monitor and analyze the impact of reduced injection volumes and plugged back wellbores on the level of seismicity in the areas subject to the provisions of the Order.

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<sup>1</sup> Felt earthquakes are generally M 2.5 or greater. Kansas Seismic Action Plan, p. 1, citing Hayes, 2012.

CERTIFICATE OF SERVICE

I certify that on 9/14/2015, I caused a complete and accurate copy of this Motion to be served via United States mail, with the postage prepaid and properly addressed to the following:

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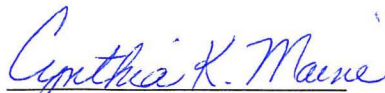
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