

Susan K. Duffy, Chair
Dwight D. Keen, Commissioner
Andrew J. French, Commissioner

Laura Kelly, Governor

THIRD QUARTER REPORT

To: Susan K. Duffy, Chair
Dwight D. Keen, Commissioner
Andrew J. French, Commissioner

From: Ryan A. Hoffman, Director, Conservation Division

Date: 9/30/2020

Re: Docket No. 20-CONS-3219-CINV

BACKGROUND

On February 6, 2020, the Commission opened an investigative docket for the purpose of “(1) keeping the public and the Commission apprised of the investigation of Commission Staff into the causes of increased seismic activity occurring in Rooks County; and (2) providing a forum by which the Commission may take any advisable action as it relates to increased seismic activity in Rooks County.” This is the third quarterly report.

REPORT

A. Injection Volumes

As discussed in the prior reports, Commission Regulation K.A.R. 82-3-408 requires injection information from the prior calendar year to be filed by March 1 of the following year. This means that final 2020 data is not due to the Commission until March 1, 2021. On August 7, 2020, Staff mailed a Data Request pursuant to K.A.R. 82-3-128 to the operators of Class II wells within the investigation area. The letter established a deadline of August 28, 2020, to supply the data via downloadable form from the Commission’s website. The letter warned that failing to supply the requested data for the wells in the investigation area was punishable by monetary fine and that each day of a continuing violation was a separate violation. The information provided in the table below was gathered pursuant to that data request.

Cumulative Class II Arbuckle* Disposal Volume in Rooks County Area		
Reporting Month	Cumulative Barrels	Average Barrels per Well
January 2020	7,845,324	53,735
February 2020	6,280,340	43,016
March 2020	6,534,020	44,754
April 2020	5,491,319	37,612
May 2020	4,833,300	33,105
June 2020	5,391,280	36,927

* The wells within the investigation area includes wells that penetrate and/or likely penetrate the base of the Arbuckle formation and inject into the Granite Wash.

The data above suggests that the overall downward trend for the counties presented previously to the Commission continues to be true for the smaller subset of wells within the investigation area. Staff notes the impact of the pandemic on the oil and gas industry is evident in the numbers above in that the decrease in volumes appears to trough in May with a slight rebound in volumes reported for June. For comparison, the average cumulative monthly disposal volume for the 146 wells in the investigation area during 2019 was 7,188,625 barrels per month. As shown in the chart above, there appeared to be an uptick in disposal to begin 2020 because January's total was nearly 700,000 barrels more than the 2019 monthly average; however, the increase did not continue through foreign market issues and the pandemic's impact on crude oil prices.

B. Earthquakes

Data in the table below is from the Kansas Geological Survey's earthquake database for the investigation area in the third quarter of 2020.¹

Local Date and Time	Latitude	Longitude	Magnitude	County
AUG-17-2020, 06:09:18 PM	39.253	-99.632	2.2	Graham
AUG-19-2020, 12:16:32 AM	39.347	-99.571	2.4	Rooks

The earthquakes listed above are the only ones that occurred during the third quarter of calendar 2020 within the portions of the counties subject to the investigation. Staff would note that there were four other earthquakes listed in the KGS earthquake database in Ellis and Graham Counties for the third quarter of calendar year 2020. Staff has attached a map indicating the locations of all of the earthquakes near the investigation area labeled Exhibit A in relation to the Class II Arbuckle and Class II Granite Wash wells.² During the third quarter of 2019, there were 72 earthquakes in the same counties according the KGS earthquake database.³

¹ <https://chasm.kgs.ku.edu/ords/elog.quake3.SelectQuakes>

² The map does not depict one earthquake in Ellis County that is outside of the area shown on the map.

³ <https://chasm.kgs.ku.edu/ords/elog.quake3.SelectQuakes>

Recommendation

At this time, Staff makes no recommendation for further Commission action related to the seismicity in Rooks County area based on the data available. Staff will continue to monitor the injection and earthquake activity within the 15-mile investigation area. Should either of these activities require immediate action, Staff will request the Commission take such action if the Commission does not take the action on its own motion. Finally, Staff will update the information contained herein and supplement it as necessary on a quarterly basis as contemplated by the Commission's order in this docket.

Rooks County Investigative Docket Area

With Earthquakes Occurring from July 1st, 2020 to September 29th, 2020

