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From: Perry, Steve H (shperry) <shperry@chevron.com>

Sent: Monday, September 29, 2014 11:56 AM

To: rulescoordinator
Cc: Perry, Steve H (shperry)

Subject: Chevron Comments to 16 Tex Admin Code 3.9 and 3.46

Attachments: CVX SWR 9 46.pdf

Please find Chevrons comments to SWR 3.9 and 3.46

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September 29, 2014

Rules Coordinator Railroad Commission of Texas P.O. Box 12967 Austin, TX. 78711-2967

Submitted to: rulescoordinator@rrc.state.tx.us

Re: Chevron U.S.A. Inc. Comments: Proposed Amendment of 16 Tex. Admin Code §3.9, relating to Disposal Wells, and §3.46, relating to Fluid Injection into Productive Reservoirs; Oll and Gas Docket 20-0290951

Chevron U.S.A. inc. (Chevron) is an integrated energy company involved in all aspects of the energy business: exploration and production, manufacturing, transportation, marketing, and research. Chevron is committed to conducting its operations, in Texas and elsewhere, safely and in a manner that protects the environment. Chevron is an active operator in several regions of Texas, including the Permian Basin and East Texas, and is an active member of the Texas Oil & Gas Association (TxOGA).

Chevron appreciates the opportunity to provide comments on the proposed amendments to §3.9 and §3.46 as proposed by the Railroad Commission of Texas (RRC). Additionally, Chevron supports the comments provided to this docket by TxOGA. We support the Commission's continuous improvement of oil and gas regulations in order to responsibly regulate activities and to protect the public and natural resources.

We believe that the proposed induced seismicity revisions to §3.9 and §3.46 are appropriate overall. We endorse several specific proposed provisions such as enhanced ability to modify permits and require increased frequency of pressure and rate data reporting, as discussed below.

Additionally, we would like to address the preamble reference to magnitude 2.0 events as the USGS frame of reference. We believe that magnitude 2.5 is a more appropriate threshold for references to USGS monitoring given the current seismic monitoring network in Texas. It is important that seismic monitoring be consistent in both space and time such that a threshold magnitude event can be detected no matter where it occurs in Texas and that an increase in detected threshold events over time as the monitoring network improves is not misinterpreted as

an increase in induced seismic events. RRC could propose lowering the threshold once an expanded seismic network is in place.

Some provisions, discussed below, are less likely to assist the RRC in protecting the public and natural resources. Seismicity that appears to be associated with injection disposal in Texas is concentrated in a limited number of localities (e.g., DFW metropolitan area, Amarilio area, etc.). introduction of state-wide rules that need only apply in a few areas is detrimental to resource development. These actions would be better suited for field-wide rules.

- Proposed rule regarding 10 year/5 psi pressure front —The proposed rule does not state any guidelines for the input data or parameters, or calculation method(s) for determining the pressure front. This in itself makes the rule somewhat ambiguous and problematic in its application. Furthermore, without specific guidance regarding verification of the input parameters (some of which are rarely measured and can vary by orders of magnitude) and calculation method; the confidence level in the calculation would be low and the uncertainty high. The actual pressure front that would be induced in the subsurface would be complicated by the actual injection history, faults, injection horizon parameters, and interaction with other wells.
- We do not believe the pressure front calculation requirement should be included in all applications due to the calculation complexity and range of variables; if pressure front calculations are retained they should be placed in §3.9(3)(C) and 3.§46(b)(1)(D), as data that may be required by the Commission on a case-by-case basis.
- Proposed rule regarding reporting of historical seismic events There may be merit in
 the reporting to the RRC of historical seismic events in the vicinity of a proposed
 disposal well, particularly for disposal wells to be located in regions where seismicity has
 already occurred. The radius of concern could be associated with the proposed injection
 rate should likely be zoned based on the proposed maximum allowed injection rate of
 the new disposal well. Dividing the radius of concern between low volume injection (e.g.,
 <5000 bbl/day) and high volume injection (e.g., >5000 bbl/day) is acceptable (though not
 necessarily complete). The radii of concern currently being discussed by TxOGA is:
 - 3.57 miles or 40 sq. miles for high volume wells
 - Exemption from requirement or lower radii of concern for low volume wells
- Proposed rule regarding additional geologic and geophysical data submittal We support the requirement to provide on request additional geologic and geophysical data, as a prudent measure to help protect the public. In particular, knowing the proximity of bedrock to the injection interval is a reasonable request since injection into bedrock or formations near bedrock has been associated with increased seismic events near

injection wells in reported studies. Note, however, that some of this data is not likely to be known by the permit applicant or operator.

- Proposed rule change regarding RRC ability to modify disposal well permits based on an
 increase in seismic activity This is a prudent rule change to assist the RRC in
 protecting the public and natural resources. An appeals procedure should also be
 implemented to allow an operator to present evidence to the RRC as well.
- Proposed rule change regarding more frequent reporting of injection pressure and rate as warranted – This is a prudent measure by the RRC to assist in protecting the public and natural resources.

Chevron appreciates your consideration of our comments and those provided by TxOGA. We look forward to our continuing engagement with the Commission on seismicity and other issues affecting the oil and gas industry in Texas. Please contact me if you have any questions about or would like to further discuss our comments.

Sincerely

Steve Perry