



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

OIL AND GAS DOCKET NO. 7C-0292679

**THE APPLICATION OF EXCO RESOURCES, INC. FOR AN INCREASED NET GAS OIL RATION DETERMINATION AND CANCELLATION OF OVERPRODUCTION FOR THE NOELKE/SUGG UNIT NO. 1 LEASE, LONESOME REEF (WOLFCAMP) FIELD, IRION COUNTY, TEXAS**

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**HEARD BY:** Brian Fancher, P.G. – Technical Examiner  
John Dodson – Legal Examiner

**HEARING DATE:** May 19, 2015  
**RECORD CLOSED:** May 26, 2015  
**SUBMISSION DATE:** August 12, 2015  
**CONFERENCE DATE:** August 25, 2015

**APPEARANCES:**

**REPRESENTING:**

**APPLICANT:**

Worth Thornton  
James M. Clark, P.E.

Exco Resources, Inc.

**EXAMINERS' REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

The captioned docket's April 30, 2015, Notice of Hearing indicated that Exco Resources, Inc. ("Exco") seeks to increase the net gas-oil ratio ("GOR") for its Noelke/Sugg Unit, Well No. 1 ("Subject Well") to 650,000 cubic feet of natural gas per day ("650 MCFGD"). Exco also requests that all overproduction accrued from the Subject Well be cancelled.

At the May 19<sup>th</sup> hearing, however, representatives of Exco amended its original request from 650 MCFGD to 500 MCFGD.

On May 26, 2015, Exco's counsel submitted its late-filed Exhibit No. 10, which indicates that the Subject Well was transferred an entity, controlled by EXCO in February 2013.

Furthermore, on July 1, 2014, Exco changed that entity's name to Compass Energy Operating, LLC.<sup>1</sup>

The captioned docket's Notice of Hearing was mailed to the Service List provided by Exco, which includes COG Operating, Compass Energy Operating LLC, Meadco Properties, Exco Resources Inc., and counsel on behalf of Exco.<sup>2</sup>

The subject application is unopposed and the Examiners recommend that it be approved, as amended by Exco.

### **DISCUSSION OF THE EVIDENCE**

Mr. James M. Clark testified as an expert in petroleum engineering on behalf of Exco in the captioned docket. Mr. Clark is a consulting Petroleum Engineer.

#### **Field and Well History**

On September 16, 2014, Exco requested a hearing on the subject application. On September 30, 2014, the Examiners issued a "standard" letter to Exco that details necessary well test instructions to be performed on the Subject Well in order to obtain proper data to support Exco's subject application.

The Lonesome Reef (Wolfcamp) Field ("Lonesome Field") was discovered in September 1994, and is classified as an associated-prorated field. All wells completed in the Lonesome Field are governed by Statewide Rules (*i.e.*, no special field rules exist for the field). All oil production from the field is administered a maximum daily allowable of 111 barrels of oil per day, and a maximum Net GOR of two standard cubic feet of gas for each stock tank barrel of oil produced.<sup>3</sup> Mr. Clark testified that production from the Lonesome Field is derived through a solution-gas drive mechanism.

The Subject Well was completed in October 2007 and since has remained a flowing well. Upon completion, the Subject Well was tested for initial potential and resulted in 133 barrels of oil per day, 200 MCFGD, 10 barrels of water per day, and a GOR of 1,504 standard cubic feet of gas per stock tank barrel of oil.

Mr. Clark testified that the Subject Well's GOR has increased over time. Mr. Clark testified that variable rate tests were performed on the subject well from October 13 – 31, 2014, which effectively produced the Subject Well at choke sizes ranging from 16/64" to 26/64" choke.<sup>4</sup> Mr. Clark testified that as the Subject Well's production was perpetually limited, or "choked-back", the wellbore's tubing annulus loaded with liquid and the GOR increased from roughly 9,000 to 22,000 standard cubic feet of gas per stock tank barrel. Mr. Clark testified that the liquid loading was further exhibited by the decrease in tubing pressure as the well was

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<sup>1</sup> Exco Exh. No. 10.

<sup>2</sup> See letter dated September 16, 2014, from Exco's counsel Brian Sullivan and Worth Thornton.

<sup>3</sup> See Tex. Admin. Code §3.49.

<sup>4</sup> Exco Exh. Nos. 5 and 6.

choked-back, which demonstrates that it effectively diminished the Subject Well's production from the Lonesome Field.

### Exco's Argument

Statewide Rule 49(a) states:

Any oil well producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil produced shall be allowed to produce daily on the that volume of gas obtained by multiplying its maximum daily oil allowable...by 2,000. The gas volume thus obtained shall be known as the daily gas limit of the well. The daily oil allowable of the well shall then be determined by dividing its daily gas limit...by its producing gas-oil ratio in cubic feet per barrel of oil produced.

Mr. Clark testified that the Subject Well loaded up on four different occasions during the mentioned variable rate test when it was choked back to roughly 25/64" choke. Mr. Clark testified that the Subject Well could not be choked back to meet the Lonesome Field's top allowable of 2,000:1 without harming the well or causing physical waste because as the wellbore loads with liquid the production from the Lonesome Field is suppressed due to the allowable restraint in place by Statewide Rule 49.<sup>5</sup> In other words, Mr. Clark testified that as oil production is constrained by the column of liquid in the wellbore, gas continues to rise which results in a loss of reservoir energy resulting in physical waste. Mr. Clark testified that the Subject Well produces most efficiently when it is allowed to produce at GOR of 500 MCFGD.

Finally, Mr. Clark estimated that through the end of April 2015, the Subject Well overproduced from the Lonesome Field by approximately 8,818 barrels of oil and 101,125 MCFG. Mr. Clark testified that cancellation of the accrued overproduction in the Subject Well will not cause harm.

### FINDINGS OF FACT

1. Exco Resources, Inc. ("Exco") seeks to increase the net gas-oil ratio ("GOR") for the Noelke/Sugg Unit, Well No. 1 ("Subject Well") to 500,000 cubic feet of natural gas per day ("500 MCFGD") located in the Lonesome Reef (Wolfcamp) Field ("Lonesome Field"), Irion County, Texas ("Subject Application").
2. All operators in the Lonesome Field were provided the Subject Application's Notice of Hearing dated April 30, 2015.
3. The Subject Application is unopposed.
4. The Lonesome Field was discovered in September 1994 is governed by Statewide Rules.

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<sup>5</sup> Testimony at 11:00 of audio recording.

5. The Subject Well was completed in the Lonesome Field in October 2007 and resulted in the following initial potential production rate:
  - a. 133 barrels of oil per day;
  - b. 200 MCFGD;
  - c. 10 barrels of water per day; and,
  - d. GOR of 1,504 standard cubic feet of gas per stock tank barrel of oil.
6. A variable rate test was performed on the Subject Well from October 13, 2014, through October 31, 2014 (the "Test").
7. The Subject Well was placed on a range of choke sizes spanning from 16/64" to 26/64" choke throughout the Test.
8. The Subject Well's GOR increased and its tubing pressure decreased when the choke size was perpetually made smaller in size during the Test.
9. Production from the Lonesome Field is derived from a solution-gas drive mechanism.
10. Increasing the net GOR to 500 MCFGD in the Subject Well is reasonable and will prevent waste.
11. Cancellation of the Subject Well's overproduction is reasonable and will not cause harm.

**CONCLUSIONS OF LAW**

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas – Tex. Nat. Res. Code §81.051.
2. Legally sufficient notice has been provided to all affected persons.
3. Approval of the increased net GOR authority with a casinghead gas limit of 500 MCFGD in the Subject Well and cancellation of the Subject Well's overproduction will not cause waste and will not harm correlative rights.

**EXAMINERS' RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the Examiners recommend that the Commission authorize the Noelke/Sugg Unit, Well No. 1 to produce under a net gas-oil ratio of 500 MCFGD and that all accumulated overproduction attributed to the well be canceled.

Respectfully submitted,



Brian Fancher, P.G.  
Technical Examiner



John Dodson  
Legal Examiner