



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET No. 7C-0307632

THE APPLICATION OF HUNT OIL COMPANY TO CONSIDER A NET GAS-OIL RATIO AND CANCEL ALL OVERPRODUCTION FOR THE AMACKER-TIPPETT (WOLFCAMP) FIELD, UPTON COUNTY, TEXAS

HEARD BY: Karl Caldwell — Technical Examiner
Jennifer Cook — Administrative Law Judge

HEARING DATE: January 17, 2018
CONFERENCE DATE: February 27, 2018

APPEARANCES:

APPLICANT:

H. Philip Whitworth
Stephanie Kover
Rick Johnston, P.E.

REPRESENTING:

Hunt Oil Company

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Hunt Oil Company ("Hunt") requests approval of increased net gas-oil ratio (GOR) authority with a daily gas limit of 2,200 Mcf per day for the Amacker-Tippett (Wolfcamp) Field. Hunt initially requested a daily casinghead gas limit of 3,000 Mcf per day, but clarified at hearing that it no longer requests a 3,000 Mcf per day limit, but instead requests only a 2,200 Mcf per day limit. Hunt also requests that all over-production for the field be canceled as of the effective date of the Final Order in this matter. The application is unopposed and the Technical Examiner and Administrative Law Judge (collectively, "Examiners") recommend approval of the application.

DISCUSSION OF THE EVIDENCE

The Amacker-Tippett (Wolfcamp) Field was discovered on October 7, 1954. The January 2018 proration schedule shows there are three operators and thirteen active oil wells in the field. The January 2018 gas proration schedule shows one active gas well in the field, but denotes that well is a P & A well - conditional. The top oil allowable for oil

wells in the field is 435 BOPD and the current daily casinghead gas limit is 870 Mcf per day.

An analogous field to the Amacker-Tippet (Wolfcamp) Field in the area is the Amacker-Tippet, SW (Wolfcamp) Field. Wells completed in the Amacker-Tippet (Wolfcamp) Field are interspersed between wells completed in the Amacker-Tippet, SW (Wolfcamp) Field. The field rules for the Amacker-Tippet, SW (Wolfcamp) Field allow oil wells to produce at a daily casinghead gas limit 2,200 Mcf per day in accordance with a net GOR field rule adopted by the Commission in Final Order No. 7C-0233650 for that field.

Wells in both the Amacker-Tippet (Wolfcamp) Field and the Amacker-Tippet, SW (Wolfcamp) Field produce from carbonate mounds. Generally, wells in these fields are drilled through the entire Wolfcamp Formation and perforated at the base of the reservoir. The Wolfcamp Formation is vertically fractured in this area, and this completion technique allows gravity drainage of the oil and the formation of a secondary gas cap when the reservoir pressure falls below the bubble point pressure. This secondary gas cap helps to maintain reservoir energy. Over time, the gas cap expands downward and reaches the perforated interval, resulting in increasing gas-oil ratios for the producing oil wells in the field.

The Hunt Halff-Amacker-Bott Well No. 4 (API No. 42-461-33820) was completed in the Amacker-Tippet (Wolfcamp) Field on September 15, 1997. On October 23, 1997, the well was recompleted with perforations from 9,062 feet to 9,170 feet. Since recompletion, the well produces only from these perforations, which are located at the base of an approximately 500-foot thick carbonate mound. A Form W-2 test dated October 28, 1997 reported the potential for the recompleted well to be 350 BOPD with 400 Mcf of casinghead gas per day. The well produced at a constant rate of about 3,000 BO per month and 2,000 Mcf of casinghead gas per month until 2016, at which time the reservoir appears to have reached its bubble point pressure. As a result, gas began to evolve out of solution and the gas-oil ratio began to increase steadily. A new Form W-10 test dated February 3, 2017 reported the potential for the well to be 80 BOPD with 1,353 Mcf of casinghead gas per day, resulting in a GOR of 16,912.5:1.

Hunt received a letter from the Commission stating that the Halff Amacker-Bott Lease in the Amacker-Tippet (Wolfcamp) Field is overproduced by 57,196 Mcf. To prevent having to shut-in the well, Hunt requested a hearing for a net GOR for the subject field and cancellation of all overproduction in the field. The January 2018 proration schedule indicates the well carries a penalized oil allowable of 51 BOPD because the well GOR exceeds the field GOR of 2000:1.

Hunt performed a variable rate test on the well. The summarized results of the test, stated as average values by choke setting, are shown in Table 1.

Table 1: Variable Rate Test Summary

BOPD	Mcf per day	Casing Pressure	Tubing Pressure	Choke	GOR
41	681	900	650	14	16,463
39	787	900	650	15	19,940
37	799	900	660	15	21,757
52	996	1,089	736	15	19,153
54	1,003	1,100	750	15	18,621
78	1,525	950	652	21	19,481

The variable rate test indicates the well is not rate sensitive. The GOR varied in producing the well on a 15/64" choke, ranging between 18,621:1 to 21,757:1. When the well was switched to a 21/64" choke size, the GOR was 19,481:1, remaining within the range of GORs obtained with the smaller choke size. The rate test demonstrates that the well is not rate sensitive.

Hunt initially requested a daily casinghead gas limit of 3,000 Mcf per day for the Amacker-Tippet (Wolfcamp) Field. At hearing, Hunt clarified that it is no longer requesting a daily casinghead gas limit of 3,000 Mcf per day, but instead requests a limit of only 2,200 Mcf per day. Hunt also requests the cancellation of all overproduction in the field. The Half-Amacker-Bott Well No. 4 is currently the only over produced well in the field. Based on production data from offset wells it appears the Half-Amacker-Bott No. 4 is the only well producing from the carbonate mound that the wellbore penetrates, and therefore canceling its overage will not harm correlative rights.

Hunt agreed on the record, that, pursuant to the provisions of Texas Government Code §2001.144(a)(4)(A), this Final Order shall be effective on the date a Master Order relating to this Final Order is signed.

FINDINGS OF FACT

1. Notice of this hearing was given to all parties entitled to notice at least ten (10) days prior to the date of the hearing, and no protests were received.
2. The Amacker-Tippet (Wolfcamp) Field was discovered on October 7, 1954, and the January 2018 oil proration schedule shows the top oil allowable for oil wells in the field is 435 BOPD with a casinghead gas limit of 870 Mcf per day for the field (per the Statewide rule 2,000:1 gas-oil ratio).
3. The Hunt Half-Amacker-Bott Well No. 4 (API No. 42-461-33820) is completed in the Amacker-Tippet (Wolfcamp) Field producing from perforations at 9,062 feet to 9,170 feet, as recompleted on October 23,

1997. These perforations are located at the base of an approximately 500-foot thick carbonate mound.
4. Wells in the Amacker-Tippet (Wolfcamp) Field produce from carbonate mounds. The wells are drilled through the entire Wolfcamp which is vertically fractured. The completion technique involves perforating the wells at the base of the reservoir.
 - a. This completion technique allows gravity drainage of the oil and the formation of a secondary gas cap when the reservoir pressure falls below the bubble point pressure.
 - b. This secondary gas cap helps to maintain reservoir energy. Over time, the gas cap expands downward and reaches the perforated interval, resulting in increasing gas-oil ratios for the producing oil wells in the field.
 - c. The Hunt Halff-Amacker-Bott Well No. 4 produced at a constant rate of about 3,000 BO per month and 2,000 Mcf per month until 2016 when the reservoir reached the bubble point pressure, and the gas-oil ratio began to increase steadily;
 - d. A W-10 test dated February 3, 2017 reported the potential for the well to be 80 BOPD with 1,353 Mcf per day, resulting in a gas-oil ratio of 16,912.5:1; and
 5. A variable rate test of the Hunt Halff-Amacker-Bott Well No. 4 shows the well is not rate sensitive.
 6. The Amacker-Tippet, SW (Wolfcamp) Field is an analogous field in the immediate area in which wells produce from carbonate mounds. By Final Order No. 7C-0233650, oil wells in this field are allowed to produce with a daily casinghead gas limit of 2,200 Mcf per day pursuant to a net GOR rule for the field.
 7. Adopting the requested net GOR rule with a daily casinghead gas limit of 2,200 Mcf per day for Amacker-Tippet (Wolfcamp) Field will allow the efficient production of hydrocarbons from this field.
 8. Cancellation of the over-production for the Amacker-Tippet (Wolfcamp) Field is appropriate.
 - a. The over-production accrued before adoption of the net GOR relief will prevent shutting waste and will not harm correlative rights.

- b. No operator has opposed this request.
 - c. This net GOR is identical to a net GOR rule adopted by the Commission for an adjacent and analogous field the Amacker-Tippet, SW (Wolfcamp) Field.
9. Hunt agreed on the record, that, pursuant to the provisions of Texas Government Code §2001.144(a)(4)(A), this Final Order shall be final and effective on the date a Master Order relating to this Final Order is signed.

CONCLUSIONS OF LAW

1. Proper notice was issued as required by all applicable statutes and regulatory codes.
2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.
3. Approval of increased net gas-oil ratio authority with a daily casinghead gas limit of 2,200 Mcf per day for the Amacker-Tippet (Wolfcamp) Field and cancellation of overproduction for the field will prevent waste and will not harm correlative rights.
4. Pursuant to §2001.144(a)(4)(A), of the Texas Government Code, and the consent of the applicants, this Final Order is final and effective when a Master Order relating to this Final Order is signed on February 27, 2018.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend that authority be granted to produce oil wells in the Amacker-Tippet (Wolfcamp) Field at a daily gas limit of 2,200 Mcf per day and that all accumulated overproduction for this field be canceled as of the effective date of the Final Order in this matter.

Respectfully submitted,



Karl Caldwell
Technical Examiner



Jennifer Cook
Administrative Law Judge