
THE APPLICATION OF SIERRA RESOURCES, LLC. TO AMEND RULES FOR THE EL STAGGS (7330) FIELD, STARR AND HIDALGO COUNTIES, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: July 11, 2003

Hearing held: August 22, 2003

Appearances

Dale Miller

Representing

Sierra Resources, Inc.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Field rules for the El Staggs (7330) Field, adopted November 20, 1978, under Docket No. 4-70,471, as amended, are summarized as follows:

1. Designated interval from 7670' to 8310' as shown on the log of the Hinojosa et al Lease Well No. 1;
2. 467'-1867' well spacing;
3. 640 acre proration units with 10% tolerance and a maximum diagonal of 8000'; optional 160-acre units with a maximum diagonal of 4500'; and
4. Allocation based 50% on acreage and 50% per well.

Sierra Resources is requesting that the between-well spacing be amended to 1200' and that 40-acre optional units be adopted with a maximum diagonal of 2100'.

DISCUSSION OF THE EVIDENCE

The El Staggs (7330) Field was discovered in 1976, and has six active wells, all operated by Sierra Resources. Pitco Investments, Ltd. has a well on the proration schedule of this field, but its well has been inactive for over 20 years. There have been a total of twelve wells produced from the El Staggs (7330) Field, with four now plugged and two with Rule 14(b)(2) exceptions. The deliverabilities of the active wells range from 21 to 1195 MCF per day.

The interval between 7670' and 8310' in the Gulf Energy and Minerals Company (now Sierra

Resources) Hinojosa et al Lease Well No. 1 includes five Vicksburg sandstones within the El Staggs (7330) Field. There is already a two-factor allocation formula (based 50% on acreage and 50% on deliverability), though it has been suspended.

Only three of the five Vicksburg sandstones in the proposed designated interval have been productive to date. Although the Vicksburg Formation is fractured in this area, all completions have to be fractured stimulated before producing. The more successful wells in this field are on the eastern end. Cumulative field production is 11 BCF and 171,000 BC.

The total pay thickness ranges from 12 to 25' in individual wells, with an average of 18'. The thickness of individual sandstones varies and the applicant believes that some sandstone lenses can drain much farther than others. The average porosity is 19% and the average water saturation is 50%. The original reservoir pressure was 2404 psi and the recovery factor is estimated to be 80%. The recoverable gas-in-place is calculated to range from 687 to 914 MCF per acre-foot, with an average of 795 MCF per acre-foot. The average recoverable gas underneath 40 acres is therefor estimated to be 573 MMCF and underneath 640 acres is estimated to be 9.2 BCF.

The estimated ultimate production from the ten successful wells ever completed in this field ranges from 210 MMCF to 3.3 BCF. The estimated average drainage area of all ten wells is 90 acres. Sierra made a detailed study of wellbores and logs from five of these wells. The drainage areas of the five wells in the detailed study range from 36 to 266 acres.

The well with the largest estimated drainage area, Sierra's Garza et al Unit No. 2, has an estimated ultimate recovery of 3.3 BCF, 90% of it from the Vicksburg sandstone that Sierra refers to as "A". The 14' of net pay used to calculate the drainage area for this well includes sandstones in addition to "A", which reduced the well's possible drainage area. According to Sierra, more than 320 acres of sandstone "A" have been drained in this well, while much smaller areas of the other sandstones with net pay were drained.

Because of the highly variable drainage areas of the five sandstones, Sierra believes that infill drilling will be able to recover reserves that cannot be drained by the current wells. Between well spacing of 1200' will allow infill wells to be drilled on 40 acre density.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators in the El Staggs (7330) Field on July 30, 2003.
2. The El Staggs (7330) Field was discovered in 1976, and has six active wells, all operated by Sierra Resources.
3. The designated interval for the El Staggs (7330) Field (between 7670' and 8310' in the log of Sierra Resources' Hinojosa et al Lease Well No. 1) includes five Vicksburg sandstones though only three have been productive so far.

4. The thickness of the individual sandstones varies and the applicant believes that some sandstone lenses can drain much farther than others.
 - a. The pay thickness (the sum of all potentially productive sandstones) ranges from 12 to 25' in individual wells, with an average of 18'.
 - b. The estimated ultimate production from the ten successful wells ranges from 210 MMCF to 3.3 BCF.
 - c. The drainage areas of five wells, included in a detailed study that compared net pay to drainage area, range from 36 to 266 acres.
 - d. Ninety percent of the estimated ultimate recovery of Sierra's Garza et al Unit No. 2, the well with the greatest estimated drainage area, has come from the sandstone that Sierra refers to as "A". The 14' of net pay used to calculate the drainage area of this well includes more sandstone than just "A", artificially reducing the estimate of drainage area.
 - e. Over 320 acres of sandstone "A" have been drained by Sierra's Garza et al Unit No. 2.
5. Some of the Vicksburg sandstones will drain less than 40 acres and infill drilling on 40-acre optional units will allow additional reserves to be produced.
6. Between-well spacing of 1200' is standard for 40-acre density and will facilitate infill drilling.
7. There is already a two-factor allocation formula (based 50% on acreage and 50% on deliverability), though it has been suspended.

CONCLUSIONS OF LAW

1. Proper notice was given as required by statute.
2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
3. Amending the spacing and density rule, to allow optional 40-acre units, will prevent waste, protect correlative rights within the field, and promote orderly development of the field.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the field rules for the El Staggs (7330) Field be amended to decrease the between-well spacing to 1200' and provide for 40-acre optional units, as per the attached order.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner

Date of Commission Action: September 9, 2003