

OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 06-0274442

**THE APPLICATION OF QUANTUM RESOURCES MANAGEMENT, LLC. TO AMEND
THE FIELD RULES FOR THE WHITE OAK (COTTON VALLEY SAND) FIELD, GREGG,
RUSK, AND UPSHUR COUNTIES, TEXAS**

HEARD BY: Andres J. Trevino P.E., Technical Examiner
James Doherty- Legal Examiner

HEARING DATE: February 22, 2012

APPLICANT:

James M. Clark, P.E.

REPRESENTING:

Quantum Resources Management, LLC.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Field rules for the White Oak (Cotton Valley Sand) Field were last adopted by Final Order in Docket No. 06-0208741, effective July 18, 1995. The rules in effect for the field are summarized as follows:

1. Designation of the field as the correlative interval from 10,330 feet to 10,680 feet as shown on the electric log of the Maud Smith Well No. 1;
2. 467'-1,200' well spacing;
3. 160 acre gas units with a maximum diagonal of 4,500 feet; optional 80 acre units with a maximum diagonal of 3,250 feet;
4. Allocation based on 75% acreage and 25% deliverability.

Quantum Resources requests that the rules be amended as follows:

1. Designation of the field as the correlative interval from 10,330 feet to 10,680 feet as shown on the electric log of the Maud Smith Well No. 1(No Change);
2. 467'-600' well spacing;
3. 160 acre gas units with a maximum diagonal of 4,500 feet; optional 40 acre units with a maximum diagonal of 2,500 feet;
4. Allocation based on 75% acreage and 25% deliverability (No Change).

Quantum Resources also requests that the allocation formula for the field remain suspended.

This application was unopposed and the examiners recommend that the field rules for the White Oak (Cotton Valley Sand) Field be amended as requested.

DISCUSSION OF EVIDENCE

The White Oak (Cotton Valley Sand) Field was discovered in 1991 at a depth of 10,580 feet. The field is a non-associated gas field with 165 active wells of which Quantum Resources operates 148 of the wells. There are nine other operators in the field. The allocation formula has been suspended since 1995.

Field rules adopted in 1995 provided for 467'/1,200' well spacing and 160/optional 80 acre density. Quantum Resources now believes that the addition of a 40 acre optional density is necessary to maximize recovery from the field.

Quantum Resources presented drainage calculations for two wells in the field to substantiate the requested rules. Using decline curve analysis and information taken from available well logs, reservoir parameters for the Houston Stephens Well No. 4 are estimated to be net pay of 42 feet, 7.3% porosity, 39.9% water saturation and recovery factor of 85%. Based on an estimated EUR of 834 MMCF, Quantum Resources estimates that the No. 4 will ultimately drain 48 acres. Reservoir parameters for the Mattie Moncrief Well No. 3 are estimated to be net pay of 51 feet, 7.5% porosity, 48.6% water saturation and recovery factor of 85%. Based on an estimated EUR of 604 MMCF, Quantum Resources estimates that the No. 3 will ultimately drain 33 acres.

Quantum Resources requests that the spacing rule be amended to provide for a minimum of 600 feet between wells. Recently drilled wells have encountered virgin pressures when wells were drilled closer than 1,200 feet from another well. This is an indication that the heterogenous nature of the Taylor Sands may leave reserves behind unless wells are drilled closer than 1,200 feet. There have been 14 Rule 37/38 exceptions

issued in recently issued drilling permits in the White Oak (Cotton Valley Sand) Field. The Willow Springs (Cotton Valley Sand) Field, an adjacent field to the White Oak (Cotton Valley Sand) Field, currently has 467'/600' spacing. The 600 foot well spacing will allow greater flexibility in drilling wells on existing units without the need for Rule 37/38 exceptions and to allow the recovery of additional reserves that would otherwise remain unrecovered.

The designated interval for this field will not be changed and remains as 10,330 feet to 10,680 feet as shown on the electric log of the Maud Smith Well No. 1. This interval includes the entire Taylor Sands formation within the Cotton Valley and is composed of heterogenous accumulations of hydrocarbons. Quantum Resources requests that the allocation formula remain based on 75% acreage and 25% deliverability and that the allocation formula remain suspended as there remains a 100% demand for all gas produced from the field.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten days prior to the date of hearing.
2. The White Oak (Cotton Valley Sand) Field was discovered in 1991.
3. The field is a non-associated gas field. Rules governing the field provide for 467'-1,200' well spacing, 160/optional 80 acre density and 75% acreage and 25% deliverability allocation.
4. There are 165 active gas wells in the White Oak (Cotton Valley Sand) Field of which Quantum Resources operates 148 of the wells.
5. Wells in the field have drainage areas which are less than the current 80 acre optional units. Development with optional 40 acre density is necessary to maximize recovery from the field.
 - a. The Houston Stephens Well No. 4 has a calculated drainage area of 48 acres based on 834 MMCF ultimate recovery.
 - b. The Mattie Moncrief Well No. 3 has a calculated drainage area of 33 acres based on 604 MMCF ultimate recovery.
6. The correlative interval from 10,330 feet to 10,680 feet as shown on the electric log of the Maud Smith Well No. 1, which includes the entire Taylor Sands in the Cotton Valley, remains unchanged.
7. Well spacing of 600 feet between wells will allow the recovery of additional reserves as it will allow closer well spacing between existing wells and drilling

into undrained heterogenous gas accumulations.

8. Quantum Resources requests that allocation based on 75% acreage and 25% deliverability remain unchanged and that the allocation formula remain suspended.

CONCLUSIONS OF LAW

1. Proper notice of this hearing was issued.
2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.
3. Amending the field rules for the White Oak (Cotton Valley Sand) Field is necessary to prevent waste and protect correlative rights.

RECOMMENDATION

Based on the above findings and conclusions of law, the examiners recommend that the field rules for the White Oak (Cotton Valley Sand) Field be amended as requested by Quantum Resources Management, LLC.

Respectfully submitted,

Andres J. Trevino P.E.
Technical Examiner

James Doherty
Hearings Examiner