

**THE APPLICATION OF T-C OIL COMPANY TO CONSIDER TEMPORARY FIELD RULES  
AND AN MER FOR THE ANAQUA (3100) FIELD, REFUGIO COUNTY, TEXAS**

---

**Heard by:** Andres J. Trevino, P.E. on May 7, 2009

**Appearances:**

John Soule  
Roger Dixon

**Representing:**

T-C Oil Company

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

T-C Oil Company requests that temporary field rules be adopted for the Anaqua (3100) Field. The proposed rules are summarized as follows:

1. Designation of the field as the correlative interval from 3,062 feet to 3,125 feet as shown on the log of the River Ranch -A-/Williams State Unit No. 1;
2. 233' - 466' well spacing;
3. 20 acre units with 10 acre tolerance and a maximum diagonal of 1,500 feet;
4. Allocation based on 100% acreage.

T-C Oil Company also requests that the Commission approve a field wide MER allowable of 250 BOPD and that all overproduction in the well be canceled.

This application was unopposed and the examiner recommends adoption of the proposed temporary field rules. The allocation formula based on 100% acreage will not be included as a field wide MER will be approved and all wells will receive a top allowable of 250 BOPD regardless of acreage. It is also recommended that an MER allowable of 250 BOPD for all wells in the Anaqua (3100) Field be approved and that all overproduction be canceled.

### DISCUSSION OF EVIDENCE

The Anaqua (3100) Field was discovered in September 2008 upon completion of the River Ranch -A-/Williams State Unit No. 1 by T-C Oil Company. On initial test, the well produced at a rate of 139.3 BOPD of 20.8 API gravity oil and 50 MCFD with a 345 flowing tubing pressure with a gas lift assistance. Additional wells are planned and have been completed in the field.

The River Ranch -A-/Williams State Unit No. 1 is perforated in the Catahoula sand between 3,088 feet and 3,097 feet. T-C Oil Company requests that the field be designated as the correlative interval from 3,062 feet to 3,125 feet as shown on the log of the River Ranch -A-/Williams State Unit No. 1. This interval includes the entire productive Catahoula sand. Reservoir data provided indicates the reservoir has no gas cap and has a strong water drive.

The River Ranch -A-/Williams State Unit No. 1 has produced approximately 18,163 BO and 3.9 MMCF gas through March 2009. Average porosity of the reservoir is 35%, the average net pay thickness of 38 feet and average water saturation is 52%. Recoverable reserves are estimated to be 250,000 STB with a 30% recovery factor. Volumetric calculations indicated that the River Ranch -A-/Williams State Unit No. 1 will drain approximately 37 acres. The ultimate recovery factor may be more or less depending on the efficiency of the natural water drive.

During April and May 2009, T-C Oil Company tested the River Ranch -A-/Williams State Unit No. 1 at various rates to determine sensitivity. The results of the test are summarized as follows:

<u>choke size</u>	<u>oil rate</u>	<u>gas rate</u>	<u>gas-oil ratio</u>	<u>FTP</u>
19/64"	236 BOPD	65 MCFD	276 cuft/bbl	276 psi
20/64"	265 BOPD	72 MCFD	272 cuft/bbl	259 psi
16/64"	193 BOPD	55 MCFD	286 cuft/bbl	343 psi
10/64"	94 BOPD	24 MCFD	252 cuft/bbl	424 psi
8/64"	57 BOPD	17 MCFD	299 cuft/bbl	379 psi

The producing gas-oil ratio shows no rate sensitivity. The GOR remained fairly constant and varied slightly between 252 cuft/bbl to 299 cuft/bbl. The highest daily test rate was 267 BOPD and 80 MCFD. When the well was choked back to produce below the allowable of 100 BOPD the well began to produce in slugs and started to load up. The flowing tubing pressure increased of by 63%.

The reservoir is within a highly faulted area with multiple seismic targets. The reservoir energy is primarily derived from a moderately strong water drive. T-C Oil Company believes that producing the well at capacity (up to 250 BOPD) will not harm the reservoir.

The Anaqua (3100) Field is located on the heavily wooded, sloping flood plain near the San Antonio River. T-C Oil Company requests 233'-466' well spacing to accommodate an appropriate drilling location at the surface and to properly develop this reservoir with potentially shallower and deeper targets.

The River Ranch -A-/Williams State Unit No. 1 has accumulated overproduction of approximately 3,163 BO of April 1, 2009. T-C Oil Company requests that this overproduction be canceled.

#### **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 Anaqua (3100) Field was discovered in September 2009 upon completion of the River Ranch -A-/Williams State Unit No. 1 by T-C Oil Company. Additional wells have been completed in the field.
3. The top allowable in the field is the discovery allowable of 100 BOPD and 200 MCFD.
4. Wells in this field can reasonably be expected to drain at least 20 acres. With an estimated ultimate recovery of 250,000 BO, the River Ranch -A-/Williams State Unit No. 1 is expected to drain approximately 37 acres.
5. Producing the River Ranch -A-/Williams State Unit No. 1 at a rate of up to 250 BOPD will not cause waste.
  - a. The River Ranch -A-/Williams State Unit No. 1 is not rate sensitive. The oil is a low gravity, low GOR oil assisted by a moderate water drive.
  - b. The River Ranch -A-/Williams State Unit No. 1 produces most efficiently at a rate of approximately 236 BOPD and 65 MCFD. At reduced rates the begins to produce in slugs.
6. Well spacing a minimum of 233 feet from lease lines and 466 feet between wells is necessary place wells between multiple targets at various depths between numerous faults. The surface is located in a heavily wooded area near the sloping flood plain of the San Antonio River.

7. Allocation based on 100% acreage is not necessary as all wells will receive a top allowable of 250 BOPD regardless of acreage.
8. The River Ranch -A-/Williams State Unit No. 1 has accumulated overproduction of approximately 3,163 BO of April 1, 2009.

**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. Adoption of the proposed field rules for the Anaqua (3100) Field on a temporary basis is necessary to prevent waste, protect correlative rights and promote development of the field.
4. Approval of an MER of 250 BOPD for all wells in the Anaqua (3100) Field and cancellation of overproduction will prevent waste and will not harm correlative rights.

**RECOMMENDATION**

Based on the above findings and conclusions of law, the examiner recommends that the Commission adopt the field rules proposed by T-C Oil Company for the Anaqua (3100) Field on a temporary basis, subject to review in 18 months. It is also recommended that the an MER allowable of 250 BOPD for all wells in the field and that all overproduction for this well be canceled.

Respectfully submitted,

Andres J. Trevino  
Technical Examiner