

**THE APPLICATION OF XTO ENERGY INC. FOR STANDING AND IF STANDING IS GRANTED, TO CONSOLIDATE VARIOUS TEAGUE AND MIMMS CREEK FIELDS INTO THE TEAGUE (TRAVIS PEAK) FIELD AND (PROPOSED) TEAGUE (CV-BOSSIER CONS.) FIELD AND TO ADOPT RULES FOR THESE FIELDS, FREESTONE COUNTY, TEXAS**

---

**Heard by:** Margaret Allen, Technical Hearings Examiner

**Procedural history**

Application received: April 4, 2006

Hearing held: May 18, 2006

**Appearances**

Rick Johnston

Representing

XTO Energy Inc.

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

XTO Energy Inc. ("XTO") is seeking standing and, if standing is granted, to have the following Teague and Mimms Creek fields consolidated into a new field to be known as the Teague (CV-Bossier Cons.) Field:

Teague	(Cotton Valley Sd.), (Bossier, Upper), (Bossier Sand), (Cotton Valley) and (TP-CV Cons.)
Teague, N.E.	(Bossier Sand)
Teague, S.	(Cotton Valley Lime) and (Bossier)
Teague, SW.	(Cotton Valley)
Teague, West	(Cotton Valley) and (Haynesville)
Teague Townsite	(Bossier) and (Cotton Valley)
Mimms Creek	(Cotton Valley 12940) and (Cotton Valley Sand)

The field rules proposed for the Teague (CV-Bossier Cons.) Field can be summarized as follows:

1. Correlative interval from 10,357' to 12,728' as shown on the log of the Samedan Oil Cosson Gas Unit, Well No. 2;
2. 467'-600' well spacing;
3. 640 acre gas proration units with 20 acre optional units; and
4. allocation based 5% per well and 95% on deliverability, with the allocation formula suspended.

XTO also seeks standing and, if standing is granted, to consolidate the Teague, S. (Travis Peak);

Teague, West (Travis Peak) and Teague Townsite (Travis Peak) Fields into a reactivated Teague (Travis Peak) Field. The field rules proposed for the Teague (Travis Peak) Field are the same as those for the Teague (CV-Bossier Cons.) Field apart from a designated interval between 8236' and 10,357' as shown on the log of the Samedan Oil Cosson Gas Unit, Well No. 2.

XTO believes its Butler GU Well No. 4, and Ham GU Well Nos. 3, 4, 6F, 10, 11, 12 and 13 should be transferred from the Teague (TP-CV Cons.) Field and assigned to the Teague (Travis Peak) Field.

### **DISCUSSION OF THE EVIDENCE**

In 1997, Docket No. 05-0217479 consolidated the Teague (C.V. Sand Cons.), Teague (Travis Peak) and Teague (Travis Peak, Lower) Field into a new field known as the Teague (TP-CV Cons.) Field. The Teague (C.V. Sand Cons.) Field had already been formed in 1996 by the consolidation of the Teague (Cotton Valley, Upper) and Teague (10,600) Fields. The 1997 Final Order adopted field rules specifying 660'-1320' well spacing and 160/80 acre density. The Teague (TP-CV Cons.) Field included the Travis Peak sandstones, Cotton Valley sandstones and Bossier sandstones, but did not include the underlying Cotton Valley limestone (also known as the Haynesville Lime). There are 13 active wells in the Teague (TP-CV Cons.) Field, eight of which produce only from the Travis Peak formation.

#### **Travis Peak**

XTO believes the Teague (Travis Peak) Field should be resegreated from the Teague (TP-CV Cons.) Field and that all wells in this area producing from the Travis Peak formation be placed into this reactivated field. There are been very few wells that have downhole commingled the Travis Peak with the Cotton Valley/Bossier sequence. Three fields also producing from the Travis Peak [the Teague, S. (Travis Peak); Teague, West (Travis Peak) and Teague Townsite (Travis Peak) Fields] have grown together with the Travis Peak wells in the Teague (TP-CV Cons.) Fields and XTO believes all of these Travis Peak wells should be placed in a single field. The Teague, S. (Travis Peak) Field has one well, operated by Valence Operating Company, while the Teague Townsite (Travis Peak) Field has no wells. The Teague, West (Travis Peak) Field has 14 active wells, with three of these operated by XTO. There are three other operators who did not appear at this hearing to object. Only the Teague, West (Travis Peak) Field has rules; these specify 660'-1320' well spacing and proration units of 320/80 acres.

#### **Cotton Valley Sand**

Three fields produce from the Cotton Valley sandstones [the Teague (Cotton Valley Sd); Teague, S.W. (Cotton Valley) and Teague, West (Cotton Valley) Fields] in addition to the Teague (TP-CV Cons.) Field. The Teague (Cotton Valley Sd) Field has three wells, all operated by XTO, and field rules that specify 660'-1320' well spacing and 640/320 acre proration units. The Teague, SW. (Cotton Valley) Field has seven wells with five different operators, and is on Statewide Rules. The Teague, West (Cotton Valley) Field has one well operated by Apache Corporation, and 660'-1867' well spacing with 640 acre density.

#### **Bossier Sand**

Five Teague fields produce from the Bossier sandstones, in addition to the Teague (TP-CV Cons.) Field [Teague (Bossier, Upper); Teague (Bossier Sand); Teague, NE (Bossier Sand); Teague, S. (Bossier Sand); and Teague Townsite (Bossier) Fields]. The Teague (Bossier, Upper) and Teague (Bossier Sand) Fields each have two wells operated by XTO. The Teague (Bossier Sand) Field has rules

with 467'-1200' well spacing and 640 acre units and is the only Bossier field with special spacing or density rules. The Teague, N.E. (Bossier) Field has ten Hunt Petroleum wells and two XTO wells. There are no wells in the Teague, S. (Bossier Sand) Field. The Teague Townsite (Bossier) Field has five active wells, with two operators in addition to XTO.

#### Mimms Creek fields

The Mimms Creek (Cotton Valley Sand) Field is a consolidated field that includes both the Cotton Valley sandstones and Bossier sandstones. There are 233 wells, operated by seven operators in addition to XTO. Field rules specify 467'-1000' well spacing and 160 acre units.

The Mimms Creek (Cotton Valley 12940) Field is set up for wells producing from the Cotton Valley limestone but has no wells now. XTO believes that wells from the Mimms Creek field area have grown together with those of the Teague and Teague Townsite Cotton Valley fields and should be consolidated together.

#### Cotton Valley Lime

In addition to the Mimms Creek (Cotton Valley 12940) Field, there are four other Cotton Valley limestone fields in this area [Teague (Cotton Valley); Teague, S. (Cotton Valley Lime); Teague, West (Haynesville) and Teague Townsite (Cotton Valley) Fields]. The Teague (Cotton Valley) Field is a larger field, with 51 wells, all operated by XTO. This field has 660'-1320' well spacing and 640/320 acre density. The Teague, S. (Cotton Valley Lime) Field has five XTO wells and 660'-1320' well spacing with 640 acre units. The Teague, West (Haynesville) Field has no wells. The Teague Townsite (Cotton Valley) Field has 35 wells producing from the Cotton Valley limestone, with two operators in addition to XTO. This field has rules with 660'-1320' well spacing and 640/320 acre units.

#### Production history

The average historical production per well is greatest from the Haynesville fields--as much as 3.5 BCF per well. The cumulative production of the largest Cotton Valley Sand/Bossier field, the Mimms Creek (Cotton Valley Sand) Field is 244 BCF, with an average of 0.9 BCF per well. The largest Travis Peak field has produced 28 BCF from 17 wells.

XTO calculated the ultimate recovery and estimated drainage areas of 34 wells in these various Cotton Valley and Bossier fields being consolidated. The net pay ranges from 30' to 270' and estimated ultimate recoveries range from 50 MMCF to 23 BCF. The ultimate drainage areas range from 4 acres to over 900 acres. Twelve of the wells have ultimate drainage areas less than 30 acres and XTO proposes that optional 20 acre density be adopted.

XTO calculated the drainage area of only one well completed only in the Travis Peak. This well has an EUR of 3.8 BCF and drainage area of 106 acres. The average cumulative recovery from Travis Peak wells is similar to that from Cotton Valley wells. XTO is requesting the same rules for the Travis Peak as it is directly underlain by the Cotton Valley and may pose a recompletion target. Before the Teague (Travis Peak) Field was consolidated into the Teague (TP-CV Cons.) Field it had 467'-1200' well spacing and 640 acre density.

#### Stratigraphy

The proposed type well, the Samedan Oil Cosson GU Well No. 2 shows the top of the Travis Peak at 8236'. The base of the Travis Peak/top of the Cotton Valley sandstone is at 10,357'. The base of the Bossier sandstone/top of the Haynesville limestone is at 12,154' and the base of the

Haynesville/Cotton Valley Lime is at 12,728'. Individual sandstones within the Travis Peak formation and within the Cotton Valley and Bossier Sand sequence are highly lenticular and cannot be easily correlated between wells. Allowing multiple sandstones to be produced together in each wellbore will facilitate recovery from marginal sandstones that would not otherwise be produced. The applicant believes that approval of this application will facilitate further development of these formations. The Cotton Valley Sand, Bossier Sand and Haynesville (also known as Cotton Valley Lime) have already been downhole commingled in many wells carried in the subject fields.

#### Proposed rules

These consolidated Cotton Valley and Travis Peak fields will include multiple reservoirs and state statutes therefor require two-factor allocation formulas. The ones proposed, based 5% per well and 95% on deliverability, will protect correlative rights and satisfy statutory requirements. None of the wells in the fields being consolidated is prorated, and the applicant asked therefor that the allocation formulas for the consolidated fields be suspended.

Proposed field rules for the Teague (Travis Peak) and (CV-Bossier Cons.) Field are similar to those of the nearby Dew (C.V. Consolidated), Freestone (Travis Peak) and Freestone (CV-Bossier Cons.) Fields, all of which have 467'-600' well spacing and 640 acre density with 20 acre optional units. XTO expects that all of these fields may eventually be consolidated into a single Cotton Valley field and single Travis Peak field. The maximum diagonal for 20 acre units in the Dew (C.V. Consolidated) Field is 1800' and XTO believes this would facilitate infill drilling in the two fields resulting from this hearing.

#### **FINDINGS OF FACT**

1. Notice of this hearing was given to operators of all wells assigned to the fields to be consolidated on May 3, 2006.
2. The following fields have grown together and their wells are interspersed.

<u>Field Name</u>	<u>RRC Field No.</u>
Teague (Cotton Valley Sd.)	88576 300
Teague, SW. (Cotton Valley)	88581 500
Teague, West (Cotton Valley)	88582 082
Teague (Bossier, Upper)	88576 102
Teague (Bossier Sand)	88576 100
Teague, N.E. (Bossier Sand)	88577 150
Teague, S. (Bossier)	88578 200
Teague Townsite (Bossier)	88596 490
Teague (Cotton Valley)	88576 200
Teague, S. (Cotton Valley Lime)	88578 300
Teague, West (Haynesville)	88582 100
Teague Townsite (Cotton Valley)	88596 500
Teague (TP-CV Cons.)	88596 700
Mimms Creek (Cotton Valley Sand)	61780 302
Mimms Creek (Cotton Valley 12940)	61780 500

3. The Teague (TP-CV Cons.) Field was formed in 1997 by the consolidation of three fields, including the Teague (Travis Peak) Field, that produce from the Travis Peak sandstones, and from the Cotton Valley sandstones and Bossier sandstones.

4. More wells produce from the Cotton Valley and Bossier sandstones together with the deeper Cotton Valley limestone (also known as the Haynesville), than together with the shallower Travis Peak sandstones.
5. Separation of the Teague (Travis Peak) Field out of the Teague (TP-CV Cons.) Field will allow all of the Travis Peak wells in the area, including the following XTO Energy, Inc. ("XTO") wells that produce only from the Travis Peak formation to be assigned to a Travis Peak field:

Butler GU #4	API #42-161-32235	Gas ID #187949
Ham GU #3	API #42-161-31231	Gas ID #149566
Ham GU #4	API #42-161-31283	Gas ID #152705
Ham GU #6F	API #42-161-31325	Gas ID #157811
Ham GU #10	API #42-161-31870	Gas ID #181973
Ham GU #11	API #42-161-32123	Gas ID #186593
Ham GU #12	API #42-161-32115	Gas ID #185845
Ham GU #13	API #42-161-32223	Gas ID #187196

6. XTO Energy Inc. has standing to bring this application to consolidate all Cotton Valley fields because it has leases in the field area and is planning to develop these leases further.
7. None of the other operators in these fields objected to the field consolidations or proposed rules.
8. The Cotton Valley Sand, Bossier Sand and Haynesville (also known as the Cotton Valley Lime) have already been downhole commingled in many wells in the area, and field consolidation will promote further development in these fields.
9. The log of the Samedan Oil Company Cosson Lease Well No. 2 shows the top of the Travis Peak at 8236', the top of the Cotton Valley Sand at 10,357', the top of the Cotton Valley Lime at 12,154', and the base of the Cotton Valley Lime (which is equivalent to the Haynesville) at 12,728'.
10. The Teague (Cotton Valley Sd), Teague, S.W. (Cotton Valley) and Teague, West (Cotton Valley) Fields produce from the Cotton Valley sandstones as does the Teague (TP-CV Cons.) Field.
11. The Teague (Bossier, Upper); Teague (Bossier Sand); Teague, NE (Bossier Sand); Teague, S. (Bossier Sand); and Teague Townsite (Bossier) Fields produce from the Bossier sandstones, as does the Teague (TP-CV Cons.) Field.
12. The Mimms Creek (Cotton Valley Sand) Field is a consolidated field that includes both the Cotton Valley sandstones and Bossier sandstones, while the Mimms Creek (Cotton Valley 12940) Field is set up for wells that produce from the Cotton Valley Lime.
13. In addition to the Mimms Creek (Cotton Valley 12940) Field, four other fields, the Teague (Cotton Valley); Teague, S. (Cotton Valley Lime); Teague, West (Haynesville) and Teague Townsite (Cotton Valley) Fields, produce from the Cotton Valley Limestone.

14. Only three fields have over 20 wells--Mimms Creek (Cotton Valley Sand) Field has 233 wells, Teague (Cotton Valley) Field has 51 wells, and Teague Townsite (Cotton Valley) Field has 35 wells.
15. XTO operates wells in nine of the 15 Cotton Valley/Bossier fields and in two of the four Travis Peak fields that are the subjects of this application.
16. Six hundred forty acre proration units with 20 acre optional units are appropriate for the consolidated Teague (CV-Bossier) Field.
  - a. The net pay in 34 of the wells ranges from 30' to 270' and estimated ultimate recoveries range from 50 MMCF to 23 BCF.
  - b. The ultimate drainage areas of these 34 wells range from 4 acres to over 900 acres.
  - c. Twelve of the wells have ultimate drainage areas less than 30 acres.
  - d. The nearby Dew (C.V. Consolidated) and Freestone (CV-Bossier) Fields have the same density.
  - e. Five of the fields being consolidated already have 640 acre density.
  - f. The largest field, the Mimms Creek (Cotton Valley Sand) Field, has produced 244 BCF, with average cumulative production of 0.9 BCF per well.
17. The density rule appropriate for the Teague (CV-Bossier) Field is also appropriate for the Teague (Travis Peak) Field.
  - a. One well completed only in the Travis Peak formation has an estimated ultimate recovery of 3.8 BCF and drainage area of 106 acres.
  - b. The average cumulative recovery from Travis Peak wells is similar to that from Cotton Valley wells.
  - c. The Travis Peak is directly underlain by the Cotton Valley and may pose a recompletion target.
  - d. Before the Teague (Travis Peak) Field was consolidated into the Teague (TP-CV Cons.) Field it had field rules with 467'-1200' well spacing and 640 acre density.
  - e. Proposed field rules for the Teague (Travis Peak) Field are similar to those of the nearby consolidated Freestone (Travis Peak) Field.
  - f. The largest Travis Peak field has produced 28 BCF from 17 wells.
18. Well spacing of 467'-600' is common for 20 acre optional units.
19. The consolidated fields will include multiple reservoirs and state statutes therefor require two-

factor allocation formulas.

20. The ones proposed, based 5% per well and 95% on deliverability, will protect correlative rights and satisfy statutory requirements.
21. None of the wells in these existing 15 Cotton Valley/Bossier fields or three Travis Peak fields that are the subjects of this application are being prorated now, and there is a market for all of the gas that these wells can produce.

### **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. Consolidation into the requested fields will prevent waste and protect correlative rights, while encouraging conservation.
4. The rules recommended for the consolidated fields will prevent waste, protect correlative rights within the field, and satisfy statutory requirements.
5. Transferring wells into the proper field will protect correlative rights and promote conservation.
6. Suspension of the allocation formula is appropriate for fields with 100% market demand.

### **EXAMINER'S RECOMMENDATION**

Based on the above findings and conclusions, the examiner recommends the consolidation of the various Teague and Mimms Creek fields that produce from the Cotton Valley sandstones, Bossier sandstones and Cotton Valley limestone in the Teague area into a new field to be known as the Teague (CV-Bossier Cons.) Field. The Teague, S. (Travis Peak), Teague, West (Travis Peak) and Teague Townsite (Travis Peak) Fields should be consolidated into the reactivated Teague (Travis Peak) Field. The field rules proposed for the Teague (CV-Bossier Cons.) and Teague (Travis Peak) Fields should be adopted and the proposed well transfers should be approved, as per the attached order.

Respectfully submitted,

Margaret Allen  
Technical Hearings Examiner