

# GEOLOGIC SUMMARY

- CHK has submitted regional geology that is supported & confirmed by the technical literature. Samson has not submitted any regional geology.
- CHK local geology is supported by the geologic literature. Samson's is not.
- CHK has utilized the proper industry standard technique for determining sand content from wireline logs. Samson has not.
- CHK has been consistent in it's sand value determination. Samson has not.
- CHK can repeatedly demonstrate their sand determination values. Samson cannot.
- The CHK geologic mapping has been consistent throughout. Samson's has not.
- The CHK geology is established by multiple mapping horizons. Samson's is not
- CHK has done detailed stratigraphic correlations & mapped the individual sand units. Samson has not.
- CHK's geology and sand orientation is confirmed by the reservoir engineering data. Samson's is not.
- The CHK mapping has accurately predicted Morrow sand presence & productivity. Samson's has not.
- The Samson "Paleo-high" and "Sand Distribution Trough" did not exist.
- A North-South orientation of Morrow sand reservoirs is not reasonable in this area.
- Composite mapping of the net Middle Morrow sands indicates an East-West depositional pattern.
- Detailed stratigraphic correlations and mapping of 3 individual sand units indicates this same East-West depositional pattern.
- Reservoir Engineering pressure data and Gas Gravity Analysis confirm the CHK geology.
- Reservoir Engineering evaluation of EUR by Decline Curve Analysis and by Volumetric Analysis confirms the CHK geology.

**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION COMMISSION**

**IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION FOR THE PURPOSE OF  
CONSIDERING:**

**CASE NO. 13492 (De Novo)**

**APPLICATION OF SAMSON RESOURCES COMPANY,  
KAISER-FRANCIS OIL COMPANY AND MEWBOURNE  
OIL COMPANY FOR CONCESSION OF TWO DRILLING  
PERMITS AND APPROVAL OF A DRILLING PERMIT  
LEA COUNTY, NEW MEXICO.**

**CASE NO. 13493 (De Novo)**

**APPLICATION OF CHESAPEAKE OPERATING, INC.  
FOR COMPULSORY POOLING,  
LEA COUNTY, NEW MEXICO**

**ORDER NO. R-12343-B**

**CHESAPEAKE OPERATING, INC.'S POST-HEARING BRIEF**

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"Chesapeake") submit the following Post-Hearing Brief.

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## I. INTRODUCTION.

This proceeding involves competing applications to establish a 320 acre spacing unit for the K-F State "4" Well No. 1, API No. 30-025-37129 (hereinafter "KF-4 Well") that was drilled into the Morrow formation from a surface location of 660 feet FSL and 990 feet FEL to a bottom hole location ("BHL") of 688 feet FSL and 1947 feet FEL (SE/4) by Chesapeake Operating, Inc. during the spring of 2005.

In Case 13493, Chesapeake seeks an order pooling all uncommitted mineral interests from the top of the Wolfcamp to the base of the Morrow formation underlying the S/2 of Irregular Section 4, Township 21 South, Range 35 East, NMPM, Lea County, New Mexico, to form a standard 320-acre gas spacing and proration unit ("GPU") for all formations or pools spaced on 320-acres within this vertical extent (for convenience referred to as the S/2 lay-down unit). In Case 13492, filed with the Division by Mewbourne Oil Company ("Mewbourne")<sup>1</sup>, Samson Resources Company ("Samson") and Kaiser-Francis Oil Company ("Kaiser") (collectively the "Samson Group") seek an order canceling the Division's approval of two Applications for Permit to Drill ("APDs") issued to Chesapeake Operating, Inc. for the KF-4 Well and Chesapeake's Cattleman "4" State Com Well No. 1<sup>2</sup> and to approve an APD filed by Mewbourne for its Osudo "4" State Com Well No. 1 to be located 660 feet FSL and 1650 feet FEL of Section 4 (SE/4).

Because these two cases ultimately involve a dispute over the orientation of a 320-acre spacing unit for the KF-4 Well, they were consolidated for purposes of hearing. The granting of one application will require the denial of the other. As a result of the unique circumstances in which the cases arose, the Commission has the benefit of specific production and log data from the well that is the object of the competing

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<sup>1</sup> Although Mewbourne initially filed Case No. 13492 seeking to cancel Chesapeake's APDs and establish Mewbourne as the operator of the its Osudo "4" State Com Well No. 1, Mewbourne did not join in the Samson Group's appeal of the Division's Order in the underlying case to the Oil Conservation Commission ("Commission"). Additionally, Mewbourne did not file a Pre-Hearing Statement or participate in proceedings before the Commission. Therefore, Mewbourne acquiesced in and is bound by the Division's Order No. R-12343-B.

<sup>2</sup> During the August 22-23, 2005 Examiner hearing in Case No. 13492, Chesapeake withdrew its APD for the Cattleman "4" State Com Well No. 1.

proposals to enable it to fix a spacing unit that best prevents waste and protects the correlative rights of the parties.

At the outset of this proceeding, the Samson Group predicted a parade of horrors if the Commission were to grant Chesapeake's application. Those predictions have proved false. Although the hearing of this case stretched several months, no evidence was presented that the Division has experienced any problems with operators seeking APDs to drill on property in which they lacked an ownership interest, or claims of trespass. Instead, the Division's APD approval process has proceeded in an orderly fashion in accordance with the Commission's precedents, rules and the oil and gas conservation statutes.

The evidence demonstrated that Chesapeake applied for its APD in good faith based upon its prior experience and the Commission's ruling in *Pride*. Its plan to form a spacing unit for the well had received the consent of one of the two record working interest owners, Samson, to participate in the well. Additionally, the Division issued a ruling allowing Chesapeake to continue drilling the well, a decision which essentially obviated the Samson Group's contention that Chesapeake's APD for the KF-4 should be retroactively revoked based upon a purported lack of good faith basis for seeking the APD. The Samson Group's complaint about the good faith basis for seeking the APD is a complete red herring designed to distract the Commission from its statutory charge to determine whether Chesapeake's proposal best prevents waste and protects correlative rights. As the Commissioner of Public Lands stated, "geology should solely dictate the correct spacing" for the KF-4 Well.

The technical evidence established that Chesapeake's proposal for a lay-down spacing unit for the KF-4 is based upon Isopach mapping techniques which map individual sand units of often unpredictable Morrow sand trends, is consistent with regional geology and the geologic literature which describes the source and direction of sand deposition of the Morrow in the vicinity of the KF-4 Well and was validated by petroleum engineering evidence. Because Chesapeake's proposal is superior to that of the Samson Group, the Commission should grant Chesapeake's application and pool all uncommitted interests in the S/2 of Section 4 to establish a lay-down spacing unit for the KF-4 Well.

**II. CHESAPEAKE'S APPLICATION FOR COMPULSORY POOLING IS GROUNDED UPON AN APD APPLIED FOR IN GOOD FAITH IN ACCORDANCE WITH COMMISSION PRECEDENT AND DIVISION PRACTICES.**

**A. Stipulated Facts Regarding the Parties' Interests and Chronology of Events.**

1. Chesapeake and the Samson Group stipulated to the following facts regarding the interests owned by each in the competing spacing units for the KF-4 Well and parties efforts to form their proposed spacing unit, which were taken from the Division's findings in Order No.R-12343-B<sup>3</sup>:

A. Section 4 of Township 21 South, Ranch 35 East, NMPM, in Lea County, is an irregular section consisting of approximately 950.8 acres, more or less, and is approximately one mile wide from east to west, and one and one-half miles long from north to south. The subdivisions of Section 4 are as follows:

(1) the southeast quarter (geographically, the east half of the south one-third), consisting of lots 17, 18, 23 and 24;

(2) the southwest quarter (geographically, the west half of the south one-third), consisting of lots 19 through 22;

(3) lots 9, 10, 15 and 16, being the quarter section immediately north of the southeast quarter, hereinafter called "the east half of the middle one-third;" and

(4) lots 11 through 14, being the quarter section immediately north of the southwest quarter, hereinafter called "the west half of the middle one-third."

(5) lots 1 through 5, consisting of 310.8 acres, more or less, being the two northern most quarter sections.

B. Oil and gas minerals within the entire Section 4 (as well as the surface) are owned by the State of New Mexico, and all acres have been leased. Lease status and ownership are as follows:

(1) The southeast quarter is leased under State of New Mexico Lease No. B-1481. Kaiser-Francis, Samson, and Mewbourne own all the working interest.

(2) The southwest quarter is leased under State of New Mexico Lease No. VO-7063. Chesapeake Permian LP owns all the working interest.

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<sup>3</sup> The paragraph numbering in this section conforms to the paragraph numbers in the Stipulation by the Parties as to Undisputed Evidence to be Considered by the Commission.

(3) The middle one-third of Section 4 is leased under State of New Mexico Lease No. VO-7054. Samson owns all the working interest.

(4) The northern one-third of Section 4 is leased under State of New Mexico Lease No. VO-7062. Chesapeake Permian LP owns all the working interest.

(5) Chesapeake does not own any interest in the southeast quarter of Section 4, and has not owned any such interest at any time relevant to this case. Chesapeake has no contractual right with respect to the mineral estate in the southeast quarter of Section 4 unless such right arises by virtue of approval by Samson of an AFE (authorization for expenditures) issued by Chesapeake for the KF 4 well, under circumstances detailed below.

C. On February 27, 2005, Mewbourne ran electric logs showing over 40 feet of Morrow porosity on its Osudo 9 State Com. Well No. 1 (API No. 30-025-36828) (the "Osudo 9 well") located in the southeast quarter of the northeast quarter of Section 9, Township 21 South, Range 35 East, NMPM, being the quarter section immediately south of the southeast quarter of Section 4. On March 8, 2005, Mewbourne placed that well on line and began selling natural gas. The Osudo 9 well is a prolific producer of natural gas from the Morrow formation and is owned by Mewbourne, Chesapeake, and Finley Resources.

D. On March 10, 2005 Chesapeake Operating, Inc. filed an APD for the KF 4 Well, designating a lay-down spacing unit consisting of the southeast and southwest quarters of Section 4. The Division approved Chesapeake's APD on March 11, 2005.

E. On March 9, 2005, Chesapeake sent a letter to Samson (received on March 11, 2005) proposing the drilling of the KF 4 well "in the south half of Section 4" and requesting the recipient to elect whether or not to participate. The letter also invited Samson to enter into negotiations for sale of their interest to Chesapeake, but stated, "be advised that entering into negotiations to sell Samson's interest does not excuse or allow

Samson to delay the required election under this well proposal.” Chesapeake also sent a similar proposal letter to Kaiser-Francis. Chesapeake did not send a proposal letter to Mewbourne because Mewbourne had not yet obtained an interest in the proposed spacing unit.

F. There was no operating agreement between Chesapeake and Samson or Kaiser-Francis that would require an election, and Chesapeake knew that there was no such agreement.

G. On March 22, 2005 Samson signed and returned Chesapeake’s election letter and AFE, indicating that it elected to participate in the proposed KF 4 well, but did not send its portion in of the dry hole costs as requested in the letter.

H. On March 28, 2005 Mewbourne, as operator on behalf of Samson et al., filed an APD for its proposed Osudo 4 State Com. No. 1. The Mewbourne APD proposed a location in the southeast quarter and the east half of the middle third of Section 4. The Division rejected Mewbourne’s APD on March 30, 2005, by reason of the earlier approval of Chesapeake’s APD.

I. On March 30, 2005 Samson sent a letter and fax to Chesapeake stating that, “Samson hereby rescinds and revokes its invalid election to participate in [the KF 4 well].”

J. On April 15, 2005 Chesapeake began site construction for the KF 4 well.

K. On April 20, 2005 Mewbourne, as the last of the designated parties (Kaiser-Francis, Samson, and Mewbourne), signed a communitization agreement providing for a communitized unit in the Morrow consisting of the southeast quarter and the east half of the middle third of Section 4.

L. On April 26, 2005 the applications in these cases were filed with the Division.

M. On April 27, 2005, the New Mexico State Land Office approved the Communitization Agreement described above, noting that, “[t]he effective date of this approval is April 1, 2005.”

N. On April 27, 2005 Chesapeake spudded the KF 4 well.

O. The well was completed and placed on production on January 2006.

P. As of April 2006, the well had produced 270,279 Mcf of gas and 2,286 barrels of oil.

**B. Additional Facts Supporting Chesapeake’s Good Faith in Applying for an APD and Drilling the KF-4 Well.**

1. In previous cases, the Commission has entered certain orders that established the precedents that Chesapeake acted in conformity with the Commission’s rules and decisions in filing its APD for the KF-4 Well and control the Commission’s ruling in this case:

(a) In *TMBR/Sharp*, which involved a permit dispute with Arrington, the Commission determined that an operator can drill first and obtain a compulsory pooling order afterwards stating that “It is the responsibility of the operator filing an application for a permit to drill to do so under a good faith claim of title and a good faith belief that it is authorized to drill the well applied for.” *See* Order R-11700-B, finding 28);

(b) In the *TMBR/Sharp* compulsory pooling dispute with Ocean, the Commission ultimately resolved the dispute over spacing unit orientation upon which orientation dedicated the greatest reservoir volume to the well. *See* Order R-11700-D, finding 16;

(c) In *Pride*, the Commission allowed Pride to: (a) re-enter a well on the Yates tract in which Pride had no interest; (b) compulsory pool a stand-up W/2 spacing unit dedicated to this well even though Yates had previously formed a lay-down N/2 spacing unit in which Pride had no interest; (c) compulsory pool Yates into the Pride spacing unit even

though Yates had formed a voluntary spacing unit; (d) change the orientation of the Yates' spacing unit and (e) cause Yates' approved APD to be revoked and to obtain an approved APD for Pride to be reinstated. See Order R-12108.

(d) In *Pride*, the Commission concluded that "an owner who would have a right to drill at its proposed location in the event of a voluntary or compulsory pooling of the unit it proposes to dedicate to the well has the necessary good faith claim of title to permit it to file an APD even though it has not yet filed a pooling application." See Order R-12108:C, page 6, para 8 (i); see also Order No. R-12108-C, page 5, para. 8(g).

(e) In the *Valles Caldera Trust* case relied upon by the Samson Group, Geoproducts of New Mexico, Inc. sought approval of APDs to re-enter some abandoned geothermal wells. Despite having a mineral interest, Geoproducts did not have a surface use permit from the United States Forest Service. The Trust contended that federal law preempted the Commission's jurisdiction. Significantly, the Commission decided not to issue a permit because Geoproducts clearly did not have the right to conduct the contemplated activity, because it lacked the required federal permit.

2. The Commission's order in *Pride* was issued several months after its decision in *Valles Caldera*. See Order R-12093-A, dated February 12, 2004. Therefore, it established the rule of decision and controls any remaining issues surrounding Chesapeake's good faith and the *bona fides* of the APD issued to Chesapeake for the drilling of the KF-4 Well. Given its decision in *Pride*, the Commission cannot, consistent with due process, announce a new rule here that would impose additional requirements for seeking an APD that would create injustice and hardship to Chesapeake. See *Stein v. Alpine Sports, Inc.*, 1998 NMSC 40, P17, 126 N.M. 258, 968 P.2d 769 (presumption that new rule of decision will operate retroactively overcome where the parties relied upon the prior rule and application would create injustice)

3. Chesapeake operates hundreds of wells in New Mexico on behalf of itself and its affiliates, including the record title holder of Lease No. VO-7063, Chesapeake

Permian L.P. In filing for its APD for the KF-4 Well, Chesapeake followed the same procedures and forms it has used for the other wells it has drilled. *See* Testimony of Chesapeake's Land witness, Lynda Townsend.

4. Chesapeake understood the that it could obtain an APD on acreage to be dedicated to a spacing unit based upon past practice and precedent by the Commission establishing the right of an operator to apply for an APD to drill a well on property that would be pooled to form a spacing unit. *Id.*

5. Chesapeake believed that the Osudo 9-1 well might expose the S/2 of Section 4 to drainage and therefore it was reasonable for Chesapeake to commence drilling the KF-4 Well as soon as possible prior to obtaining a compulsory pooling order. *Id.*, testimony of Chesapeake's Land witness, Mike Hazlip.

6. Chesapeake's APD was approved by the Hobbs OCD on the same day it was filed. Before commencing surface work, Chesapeake negotiated with and obtained the consent of the surface lessee to conduct drilling operations. *Id.*

7. As established by the stipulated testimony of the director of the Hobbs OCD office, Paul Kautz, the approval of Chesapeake's APD and C-102 by the Hobbs OCD was consistent with the Division's practice. *See* Stipulated Testimony of Paul Kautz, *passim*.

8. The OCD's approval of an APD is conditional upon the operator subsequently being able to establish that it has obtained a spacing unit for the well. *Id.* p. 135.

9. Mr. Kautz further testified that the Division has never required ownership information for the proposed spacing unit to be included in the form C-102 before the

onset of online permitting information, and ownership information was not a mandatory field for the electronic APD forms at the time Chesapeake filed its APD. *Id.*, pp. 124, 140.

10. The Division has never denied an APD based upon the absence of ownership information for a proposed spacing unit. The Division had approved hundreds of APDs that did not include information regarding ownership in the proposed spacing unit. *Id.*, 133-134.

11. Following the approval of its APD for the KF-4, Chesapeake continued to negotiate with the record owners of interest in Section 4 to secure their approval for the well but its efforts were unsuccessful because the Samson Group and Mewbourne were working to form a competing spacing unit for a well to be drilled in the S/E/4 of Section 4. *See* Testimony of Lynda Townsend.

12. Before the Com Agreement was executed, Chesapeake filed its compulsory pooling application with the Division on April 26, 2005 and commenced work to begin drilling the KF-4 Well the next day.

13. Although the Commissioner of Public Lands tentatively approved the Com Agreement, there was no evidence introduced that final approval was ever given by the Commissioner as required by the rules of the State Land Office, which provide as follows:

A Communitization agreement may be necessary to fulfill the Oil Conservation Division (OCD) proration unit requirements for well spacing. Whenever separate tracts of state land cannot be independently developed and operated in conformity with an established well spacing program for the field or area, all lessees of record within the proration unit must sign a Communitization agreement. The Commissioner of Public Lands must approve this agreement *after* completion of the well and prior

to production. *Tentative approval will be given prior to completion of the well but final approval must be issued before the well can be produced.*

SLO Oil and Gas Manual, p. 166. (Emphasis added).

14. Not only was final approval never obtained, the Commissioner of Public Lands stated his position that:

the SLO's does not believe that this entry onto State Trust Lands by Chesapeake was in bad faith and understands that issues pertaining to the configuration for the spacing unit will be resolved by the proceedings pending before the Oil Conservation Division. As expressed in our meeting the Land Office believes that geology should solely dictate the correct spacing and all the parties will have their opportunity to be heard at the Oil Commission proceeding.

CHK Land Exhibit 15.

15. While the competing applications were pending before the Division, Mewbourne and the Samson Group sought an emergency order from the Division to prevent Chesapeake from drilling the KF-4 Well.

16. On May 24, 2005, the Division denied the Samson Group's request to prohibit Chesapeake from drilling the KF-4 Well, thereby granting Chesapeake the authority to continue drilling the Well because all parties agreed the well should be drilled in the same approximate location and the Samson Group had not presented any evidence that Chesapeake was not competent to drill the well. *See* Order No.R-12343-A.

17. The Samson Group did not appeal the Division's May 24, 2005 Order to the Commission. The Samson Group acquiesced in the drilling of the well, which all parties recognized needed to be drilled quickly due to the potential threat from drainage presented by the Osudo No. 9 well.

18. Because the Division through a specific order allowed Chesapeake to drill the KF-4 Well, any issues regarding the purported lack of good faith by Chesapeake

when it filed its APD for the well are moot. As noted by the Division in its final ruling: “the determination of the compulsory pooling application necessarily also determines whether or not Chesapeake’s APD should be cancelled.” If the Division grants compulsory pooling and appoints Chesapeake as operator of the unit, then Chesapeake’s APD should stand. *See* Order No. R-12343-B, Samson Exhibit 11.

19. Mewbourne’s application for an APD for the Osudo “4” State Com Well No. 1 has in essence been abandoned by Mewbourne. Mewbourne, the party that filed the competing case and sought to be designated operator of the competing well, did not appeal the Division’s ruling and the KF-4 Well is the only well that will be drilled in the S/E 4 of Section 4 regardless of the orientation of the spacing unit.

**C. The Division’s Ruling in Favor of Chesapeake’s Proposed Lay-Down Unit.**

20. On August 22-23, 2005, these cases were heard by Division Examiner William E. Jones. By Order R-12343-B, dated January 10, 2006, the Division granted Chesapeake’s application and denied the Samson Group’s application. *See* Samson Exhibit 11. As determined by the Division:

D. Whether Chesapeake’s subsequent entry and conduct of drilling operations on the southeast quarter of Section 4 constituted a “trespass” or “bad faith trespass,” as Samson et al claim, are issues for the courts which the Division has neither the competence nor the jurisdiction to decide. Clearly, since Chesapeake had an approved APD (properly approved according to the teaching of the *Pride* case), such actions did not constitute violations of the Oil and Gas Act or Division rules, and accordingly should not influence the division’s decision in these cases.

*See* Samson Exhibit 11.

**III. THE COMMISSION CLEARLY POSSESSES JURISDICTION TO GRANT CHESAPEAKE'S INVOLUNTARY POOLING APPLICATION AND IS NOT BOUND BY THE COM AGREEMENT IN DETERMINING THE ORIENTATION OF THE SPACING UNIT FOR THE KF-4 WELL.**

**A. The Commission Must Set a Spacing Unit for the KF-4 Well Which Best Protects Correlative Rights, Prevents Waste and Affords the Owners to Receive Their Just and Fair Share of the Oil or Gas From the Unit.**

1. The Division's authority to establish spacing and proration units for wells based on its statutory directive to prevent waste and protect correlative rights is well established. The contention by the Samson Group that the Commission is somehow required to accept a proposed spacing unit formed under a voluntary communitization agreement which was never finally approved by the State Land Office and without considering whether the proposed spacing unit will prevent waste and protects correlative rights is specious.

2. The Pooling statute, NMSA 1978, §70-2-17, provides ample authority to the Commission to establish spacing units for a well, stating in part:

*When two or more separately owned tracts of land are embraced within a spacing or proration unit, or where there are owners of royalty interests or undivided interests in oil and gas minerals which are separately owned or any combination thereof, embraced within such spacing or proration unit, the owner or owners thereof may validly pool their interests and develop their lands as a unit. Where, however, such owner or owners have not agreed to pool their interests, and where one such separate owner, or owners, who has the right to drill has drilled or proposes to drill a well on said unit to a common source of supply, the division, to avoid the drilling of unnecessary wells or to protect correlative rights, or to prevent waste, shall pool all or any part of such lands or interests or both in the spacing or proration unit as a unit.*

(a) \* \*

All orders effecting such pooling shall be made after notice and hearing, and shall be upon such terms and conditions as are just and reasonable and will afford to the owners of owners of each tract or interest in the unit the opportunity to recover or receive without unnecessary expense his just and fair share of the oil or gas, or both.

NMSA 1978, § 70-2-17I (emphasis added).

3. In every compulsory pooling dispute, the objecting parties have the right to oppose the application on the basis that the unit should be comprised of different property with a proposal for different or competing spacing or proration unit than the one advocated by the applicant for pooling. That property may be the subject of an operating agreement, voluntary communitization agreement, farmout or other document that carries with it certain expectations of development.

4. The basic function of the Commission is to determine whether the agreement contemplated would prevent waste, protect correlative rights and prevent the unnecessary drilling of wells, ensuring that the reservoir at issue can be most efficiently drained with each party owning interests in the same receiving their fair allocation of minerals.

5. The evidence established that Chesapeake sought a voluntary pooling of interests, which was initially approved by one of the interest owners in the contiguous tracts, Samson. When Samson subsequently attempted to withdraw its election to participate in the drilling at the well, and the other interest owner of record refused to participate, Chesapeake filed its application for compulsory pooling with the Division. The Samson Group, knowing that Chesapeake had received approval for its APD for the KF-4 Well, embarked on a course to deprive Chesapeake of its rights through the execution of a Com Agreement that was only tentatively approved by the Commissioner of Public Lands.

6. Although the Commission has no jurisdiction to determine whether that agreement established superior property rights, the Samson Group presented no evidence that the Com Agreement was finally approved by the Commissioner

7. To the contrary, the Commissioner has clearly stated his position that the tentatively approved agreement should not dictate the orientation of the spacing unit but instead that "the Land Office believes that geology should *solely* dictate the correct spacing and all the parties will have their opportunity to be heard at the Oil Commission proceeding." See Chesapeake Land Exhibit 15.

8. The New Mexico Supreme Court has ruled that the Commission has ample authority under the Oil and Gas Act in passing upon applications to establish well spacing units comprised of acreage that differ from standard units, over objection that

there is in place an agreed plan of development comprised of a standard sized unit. *See Rutter & Wilbanks Corp. v. Oil Conservation Comm'n*, 87 N.M. 286, 289, 532 P.2d 582, 585 (1975). The court held that not only did the Commission have compulsory pooling authority to pool separately owned tracts within a spacing or proration unit, it had the power to pool separately owned tracts within an oversize non-standard spacing unit comprised of tracts that had a completed well and could have been dedicated to standard 320-acre spacing units for the Washington Ranch-Morrow Gas Pool. *See* Commission Order Nos. R-4353 and R-4354).

9. The *Wilbanks* Court's ruling was based upon the broad powers of the Commission to establish well spacing units:

The authority of the Commission to create spacing units is found in § 65-3-11, N.M.S.A. 1953, as amended. The second paragraph of this section provides:

“Apart from any authority, express or implied, elsewhere given to or existing in the commission by virtue of this act or the statutes of this state, the commission is hereby authorized to make rules, regulations and orders for the purposes and with respect to the subject matter stated herein, viz.: \* \* \* “(10) To fix the spacing of wells;

But R & W then makes an unlawful delegation argument based on inadequate standards regarding the Commission's authority under § 65-3-14.5, *supra*, or under a Commission rule or regulation. It contends the Commission exceeded its authority because it had no standards to follow in creating the non-standard spacing units in excess of the 320 acre standard spacing unit provided for in Rule 104I, *supra*. We disagree.

Section 65-3-10, N.M.S.A. 1953 provides:

“The commission is hereby empowered, and it is its duty, to prevent the waste prohibited by this act and to protect correlative rights, as in this act provided. To that end, the commission is empowered to make and enforce rules, regulations and orders, and to do whatever may be reasonably necessary to carry out the purposes of this act, whether or not indicated or specified in any section hereof.”

Additionally, N. M. Oil Conservation Com'n, Rules and Reg. No. 104(L) (1971) specifically provides:

“In order to prevent waste the Commission may, after notice and hearing, fix different spacing requirements and require greater acreage for drilling tracts in any defined oil pool or in any defined gas pool notwithstanding the provisions of B and C above.”

\* \* \*

We hold these standards sufficient to allow the Commission’s power to prorate and create standard or non-standard spacing units to remain intact. The fact that more explicit standards appear in particular sections of the conservation statutes does not dictate a different result.

*Id.*

10. The statutes and regulations quoted in *Wilbanks* have not changed and the Samson Group clearly cannot dictate to the Commission the configuration for a spacing unit by entering into a Com Agreement which was never finally approved by the SLO.

11. In *Sims v. Mechem*, 72 N.M. 186, 382 P.2d 183 (1963), the New Mexico Supreme Court considered the compulsory pooling powers of the Commission and determined that any agreement between owners may be modified by the Commission:

Unquestionably the commission is authorized to require pooling of property when such pooling has not been agreed upon by the parties . . . and it is clear that the pooling of the entire west half of Section 25 had not been agreed upon. ***It is also clear from sub-section (e) of the same section (citing to what is now 70-2-17.E) that any agreement between owners and leaseholders may be modified by the commission.*** But the authority of the commission to pool property or to modify existing agreements relating to production within a pool under either of these sub-sections must be predicted on the prevention of waste.”

72 N.M at 189, 382 P. 2d at 185 (Emphasis added). The Supreme Court has also held that the Commission can order the force pooling of multiple zones when an adjacent working interest owner only agrees to participate in the pooling of one of the zones. *Viking Petroleum, Inc. v. Oil Conservation Comm’n*, 100 N. M. 451, 455, 672 P. 2d 280, 284 (1983).

12. There are also many examples where the Commission or Division has approved the establishment of a spacing unit notwithstanding a contrary plan of development. Chief among those is the recent *Pride* decision discussed *supra*.

13. In Case 11434, the Division held a hearing on the application of Meridian Oil Company for a compulsory pooling order for a Mesaverde infill well against Doyle Hartman and Four Star Oil & Gas Company. Four Star and Hartman contended the

Division did not have the authority to authorize the compulsory pooling of a Mesaverde infill well because the original parties in the spacing unit had signed a 1953 operating agreement which contained a plan for the spacing of but one single Mesaverde well within a 320-acre spacing unit. The Division entered Order R-10545 ruling that the Division, in accordance with Section 70-2-17(E), had the authority and would exercise that authority to modify this 1953 operating agreement to the extent necessary to prevent waste and to issue a compulsory pooling order to permit the drilling of an infill well.

14. A further review of previous pooling orders demonstrates that the Division has on several occasions ordered the compulsory pooling of acreage despite the existence of contrary agreement for development. The Division issued Order R-9332 on October 24, 1990 granting an application by Doyle Hartman for compulsory pooling in which he was allowed to pool his undeveloped acreage in the Eumont Gas Pool into an existing gas spacing unit already operated by Chevron and containing a existing well. Hartman was further authorized to drill a second "infill well" over Chevron's objection. In doing so, the Division necessarily ruled that it was not bound to follow the existing voluntary agreement of Chevron for the operations of its existing spacing unit for its well. Instead, in order to prevent waste and protect correlative rights the Commission required the inclusion of additional acreage in the spacing unit.

15. Conservation laws and the rules, regulations and orders promulgated thereunder have the effect of modifying the provisions of existing leases and other contracts and agreements. Without that effect, then parties could make agreements which are contrary to or inconsistent with what the Division or Commission determines are appropriate rules for the development of a pool, including the economic waste caused by drilling too many or to few wells, well locations, well density, spacing unit sizes, production allowables, gas-oil ratios, etc.

16. New Mexico law confers exclusive authority upon the Division and Commission to make determination about spacing units, utilizing established statutory and regulatory criteria. The Commission in this proceeding has the authority and the responsibility to issue a compulsory pooling order in accordance with Section 70-2-17 or Section 70-2-17(E) NMSA (1978) where, like here, the parties owning interests in the proposed spacing unit cannot reach agreement and the Commission, as did the Division,

must decide which of two competing proposals will best serve the interests underlying the conservation laws of the State.

**IV. THE EVIDENCE DEMONSTRATED THAT CHESAPEAKE'S PROPOSAL FOR A LAY DOWN SPACING UNIT IS SUPERIOR TO THE SAMSON GROUP'S PROPOSAL**

The geologic evidence and reservoir data introduced at the hearing clearly demonstrated that the spacing unit for KF- 4 Well with the greatest potential for commercial production clearly lies in the S/2 lay-down spacing unit proposed by Chesapeake. Accordingly the Commission, at did the Division, must recognize that it is duty bound to approve the unit that will offer the greatest opportunity to protect correlative rights, prevent drainage and ensure that the reservoir is efficiently developed notwithstanding the fact that the Samson Group, *after* Chesapeake had already begun its course to establish a lay-down unit for the south half of irregular Section 4, entered into agreement to establish a competing and inferior proposed spacing unit.

**A. The Geologic Evidence Supports an East-West Sand Trend and a Lay-Down Unit.**

1. Section 4 is an Irregular Section containing 960 acres and consists entirely of lands leased by the Commissioner of Public Lands. Chesapeake's proposed orientation for the spacing unit is for a lay down unit in the S/2 while the Samson Group's proposal is for a stand up unit containing lots 9, 10, 15, 16, and the SE/4 (hereafter referred to as "E/2") of Section 4.

2. Regardless of the orientation, the royalty interest of the Commissioner of Public Lands is unaffected and the Commissioner of Public Lands has stated his position that "geology should solely dictate the correct spacing and all the parties will have their opportunity to be heard at the Oil Commission proceeding." *See* Chesapeake Land Exhibit 15.

3. The geologic evidence demonstrated that the KF-4 Well is a commercial well, in communication with the same geologic formation as the Osudo No. 9 well; the Osudo No. 9 Well presented the risk of drainage to lands in the S/2 of Section 4. As detailed below, the geologic and engineering evidence demonstrates that the greatest potential for commercial production lies in the lay-down unit proposed by Chesapeake.

By contrast, there is no indication that there are commercial sands to the north in the same zone that would support the orientation of the standup unit proposed by the Samson Group. The lay down unit proposed by Chesapeake offers the greatest opportunity to protect correlative rights, prevent drainage and ensure that the reservoir is efficiently developed.

4. As required by Commission precedent, the Division found that the key issue in dispute between Chesapeake and the Samson Group is what orientation of the spacing unit for the KF-4 well will contain the greatest potential reservoir volume. (See Order R-11700.D finding 16). The answer is dependent upon whether the primary pay sand in the Osudo 9-1 well is oriented north-south as contended by the Samson Group or northwest to southeast as contended by Chesapeake.

5. Chesapeake's geologist, David Godsey, presented structure and isopach maps demonstrating that Chesapeake's geologic interpretation for the deposition of Morrow sands in Section 4 is consistent with the regional geologic framework as established by the published literature and regional mapping. See Chesapeake Exhibits 12 through 17.

6. The testimony of Chesapeake's geologist was supported by a thorough cross-section of geologic literature from 1955 to present, from 25 authors, which demonstrated the following:

- (b) The Delaware Basin began forming in late Mississippian into the early Pennsylvanian.
- (c) Morrowan sediments were derived from the Pedernales Uplift to the NW and locally from the CBP to the East.
- (d) In the vicinity of the KF-4 Well, sources for sand were sediments originally eroded from the Pedernales Uplift, deposited during transgressions and high stands along the flanks of the Central Basin Platform ("CBP") then eroded again from the CBP and re-deposited.
- (e) Supplemental sediments were derived from erosion of the Mississippian section off the exposed CBP itself.
- (f) The Midland Basin was not yet formed during Morrowan time and was an area of non-deposition. This resulted in an overall East-West deposition direction by dip oriented fluvial and fluvio-deltaic systems in the vicinity of the KF-4 Well.
- (g) The axis of the Delaware Basin lies to the West of the KF-4 Well area and trends in a North-South lineation.

- (h) To the west of the KF-4 Well vicinity, dip-oriented fluvial sand depositional systems merged in the deeper Delaware Basin with sands derived directly from the Pedernales.
- (i) Mapping of the Middle Morrow sands as one unit must be followed by detailed stratigraphic correlations and sample analysis to differentiate individual sand units.
- (j) Individual sand bodies should then be mapped separately to differentiate reservoir separation.
- (k) Reservoir Engineering data, production decline histories and pressure data analysis should be utilized to confirm geologic interpretation.

7. Chesapeake has mapped the entire unit for the producing Morrow sands, performed detailed large scale log correlations, examined the sample descriptions to guide in correlations, mapped the individual sand reservoirs and confirmed the correlations and reservoir mapping and connectivity with reservoir engineering analysis.

8. Chesapeake's Isopach maps were established by several reliable mapping techniques, including:

- (l) Chesapeake's interpretation is based upon sand thickness data points that are clearly defined and repeatedly demonstrated from wireline log data.
- (m) Chesapeake mapped net sand as determined by Neutron/Density log crossplot of sandstone crossover character for lithology identification, the established technical criteria used routinely throughout the industry. The Samson Group did not use the established technical criteria. Chesapeake's Regional Gross Morrow Isopach (Chesapeake's Exhibit 8) is in agreement with the literature.
- (n) Chesapeake's isopachs of each of the three sand units: (1) the S. Osudo Upper Morrow; (2) the S. Osudo "New" Upper Morrow; and (3) the S. Osudo Lower Morrow included data obtained since the Examiner hearing that further confirms the accuracy of Chesapeake mapping techniques. See Chesapeake Exhibit 17, 19 and 21.

9. The Samson Group's mapping is inferior to that of Chesapeake, treating the Morrow only as one unit, mapping that single unit and stopping. The Samson Group provided no engineering evidence to confirm its geologic mapping technique.

**B. Chesapeake's Log Interpretation Method for Determining Sand Content is Superior to the Samson Group's Method.**

1. The differences between Chesapeake and Samson Group's isopach maps were based upon significant differences in log analysis and the method used for determining sand content in a wellbore. *See, e.g.*, Chesapeake Rebuttal Exhibit 21.

2. Chesapeake determined the net clean sand thickness utilized in its mapping by Neutron/Density sandstone crossover log character for lithology identification, the PE (photoelectric absorption coefficient) value for a secondary lithology indicator and the GR (gamma ray) curve as a clay volume indicator. *See* Chesapeake Exhibits 2 and 3

3. If the sand content is determined properly, the application of a porosity cutoff, as used by Samson, should only serve to decrease the net sand content. However, in many instances, Samson's values are far greater than those of Chesapeake that applied no porosity cutoff limit.

4. Samson's use of an incorrect method for determining net clean sand caused it to be mistaken about the sand thickness of the Hunger Buster well mistakenly placing that well in the center of a North-South orientation channel that does not exist.

5. The Samson Group based its determination of sand content in a wellbore by calculating the net clean sand as determined by GR log with x-plot porosity greater than or equal to 6%.

6. Chesapeake provided substantial evidence that the GR log is not a true lithology indicator; it is rather a shaliness indicator of a given rock type. Samson's geologist assumed the lithology to be sand but no specific GR cutoff was indicated by Samson. Samson is utilizing the x-plot  $\emptyset$  curve as a cutoff. The x-plot is not a lithology indicator; it is an estimate of porosity independent of lithology

7. Although Chesapeake's sand determinations remained consistent, The Samson Group's sand determinations had changed over time and did not support a north-south orientation. Inexplicably, Samson had mapped no sand for six Morrow producing wells. *See* Chesapeake Rebuttal Exhibits 1 and 2.

8. Chesapeake and the Samson Group arrived at different net thickness of sand for certain key wells (a) WEK#1, Unit F, Sec 15, (b) PQ Osudo #1, Unit G, Sec 16,

(c) Hunger Buster #3, Unit I, Section 9, (d) Osudo 9-1, Unit H, Section 9 and (e) Apache's State WEL Com #2, Unit E, Section 10 and others. *See* Chesapeake Exhibits 21 thru 29

9. The Samson Group contended that the Hunger Buster 9 #3 has almost twice the thickness of sand as the KF-4 Well and nearly as much as the Osudo 9 State #1. Yet, the KF-4 Well tested from a natural completion at a rate of 2.23 MMcf per day with 2000# FTP on a 14/64" choke. The Osudo 9 State #1 wellbore was also a natural completion achieving rates of over 21 MMcf per day.

10. The Hunger Buster 9 State #3 has achieved a maximum rate of only 700 Mcf per day after an attempt at fracture stimulation and has continued to perform poorly. This is a clear indicator that Samson's evaluation of sand content for the wellbores is incorrect. *See* Chesapeake Exhibit 23.

11. The Samson Group sought to explain the poor production of the Hunger Buster 9 #3 well on problems and errors encountered when drilling the well. However, despite the close proximity to the Osudo 9 State #1 well and prospect of significant drainage if its geologic evidence is correct, Kaiser Francis has not attempted to rework or recomplete the Hunger Buster 9 #3 well to take advantage of the 41 feet of producing sand it mapped for the well.

12. Samson calculated a thickness of 4 ft of sand in the recently P&A Apache State WEL Com #2 (10E); Chesapeake calculated 0 ft. Apache determined that there was no net pay in the wellbore and plugged the wellbore. With the proximity of the high rate Osudo well to the State WEL Com wellbore, if there truly were 4 net ft. of sand greater than 6% porosity, then Apache would have attempted a completion. *See* Chesapeake Exhibit 24.

13. Production and pressure data for the control wells, including the KF-4 Well, the Hunger Buster #3 and the Apache dry hole support Chesapeake's analysis.

14. Production and logging data for wells drilled since the Examiner's hearing in August 2005 confirms the correctness of Chesapeake's geological data clearly supporting a northwest to southeast trend for the Morrow sands in and around the KF-4 Well. *See* Chesapeake Exhibits 7, 8 and 9.

**C. The Samson Group's Mapping Ignores a Known Depositional Structure and Erroneously Manufactures Another.**

15. The Samson Group premised its north-south orientation upon a Structure map, with sand diversion around an assumed closed structure called the paleo high stating that the sand trend would go through the low on the east side of the high. Yet, Samson's geologist mapped the sand not through this saddle but wandering up the regional structure to the east. *See* Chesapeake Rebuttal Exhibit 4.

16. The Samson Group relied upon its structural high mapped in the NW/4 of section 4 and the NE/4 of section 5 as a positive feature during deposition of the Morrow and as such had a direct influence on sand distribution. Samson's geologist stated that the sands were diverted around this high, citing the thin sand development in the Jake L. Hamon State E 8321-1 wellbore (4L) and the Wilson J-1 (5O). *See* Chesapeake Exhibit 18.

17. Samson's geologist testified that that the Central Basin Platform "CBP" was not a sediment source for the Morrow in Section 4 and that the only sediment source for the Morrow was the Pedernales Uplift located to the northwest of Section 4 and the Diablo Platform to the south.

18. The testimony of Samson's geologist was contradicted by the Samson Group's own Literature Exhibits. These contradictions were numerous:

- i. Samson Exhibit 6, p. 75. Samson's geologist testified that chert was not a sediment source for the Morrow. This article describes the Mississippi, which is a sediment source for the Morrow, as a brown cherty limestone.
- ii. Samson Exhibit 7, pp. 55-56, 59, 61-61 (Mazzullo, 1999). This article includes a Paleogeographic map of the Delaware Basin in Morrow time which depicts the CBP as a sediment source. The term "sediment" is used for all highland sources in the article. The article further states that the formation of the CBP began in late Mississippi time and was relatively low relief but there was locally large scale tilting and erosion of the Mississippi; occurring throughout the Morrow. The article further condemns the practice followed by the Samson Group's of mapping the Morrow as one unit.
- iii. Samson Exhibit 9, p. 107 (Frenzel, Heckel 2004). The article states there was non-deposition & erosion over the CBP and describes the Pennsylvania as a time of high-frequency sea-level fluctuations.

- iv. Samson Exhibit 10, pp. 414-415, 417 (Weeks, Galley 1955). The Article describes the Mississippi as a carbonate and clastic unit with siltstone on sandstone units. It further realizes that the CBP emerged in late Mississippi time with widespread erosion of pre Morrow sediments.
- v. Samson Exhibit 12, p. 38-39, 42 (Lindsay, Garber, Hayes, Wilshire, James, Speer 1996). The article establishes that Delaware Basin and CBP emerged in late Mississippi time and that sediment was sourced from the Pedernal Uplift and other "highland areas", i.e., the CBP. The article includes a Paleogeographic map of Pennsylvania showing Morrow sediment source from CBP and uses the term "sediment" for all highland sources and with no differentiation of terms for clastic and sediment. It also states that the Pennsylvania clastic input was from Pedernal and the CBP and has a Paleogeographic map of Morrow showing sediment source from the CBP, and East-Westerly sediment transport direction
- vi. Samson Exhibit 18 (Speer, James, Mazzullo 1993), pp. 159-160. The article states that clastic input into Delaware basin comes from the Pedernal Uplift and CBP. As in other articles, no distinction made between "clastic" and "sediments." It describes middle Morrow fluvial-deltaic to basinal marine facies with more numerous sands than lower and variable depositional patterns suggest alternating transgressions and regressions. A Paleogeographic map of Southeastern New Mexico of the Morrow shows CBP highlands to East and depositional systems from East-Westerly direction. The map further shows sediment depositional patterns rimming basin, trending towards the axis of the Delaware Basin and the term "clastic depositional" is applied to all source areas.

19. In questioning by the Commissioners, Samson's geologist acknowledged that if geologic literature he relied upon provided that the Central Basin Platform was a depositional source of Morrow sands then his testimony would be called into question. As demonstrated by the numerous contradictions set forth in paragraph 23, the CBP is a well-recognized depositional source for Morrow sands in the literature.

20. Chesapeake's geological evidence demonstrated that Samson's mapping is in direct conflict with the proven regional geology, stating that immediately north of the Samson map, as seen on the Chesapeake's mapping of exhibits 4, 10 and in the industry literature in exhibits 12 thru 17. Samson's contention of north-south trending sand

sourced only from the Pedernales Uplift was not supportable by any credible geological literature.

21. The descriptions of the sands in the logs for the KF-4 Well are also consistent with characteristics of sand that would have been locally sourced from the CBP.

22. Samson's Structure map is further flawed for reasons that include the following: its interpretation does not honor the proven data points in the known well control for the area, does not honor the regional geology as accepted by the industry and demonstrated by Chesapeake's mapping, does not honor the pressure decline data of the producers in the vicinity, and does not even honor their own stated controls on sand deposition. *See* Chesapeake Exhibit 18.

**D. Chesapeake's Orientation is Supported by All Available Geologic and Engineering Evidence.**

23. Chesapeake demonstrated that its proposed orientation presents the greatest potential for the development of reservoir volume, would prevent waste and protect correlative rights, for reasons that include the following:

- i. The Net Middle Morrow Sand Isopach (GEO Exhibit 4) establishes the regional trend of the sand deposition in an easterly to westerly orientation from the CBP into the Delaware basin.
- ii. There is substantial evidence in the geologic literature supporting the conclusion that the CBP is a local source for the deposition of sands in an east-west orientation and that sands were distributed in an east-west orientation through fluvial streams in and around Section 4.
- iii. Chesapeake's geologic data and evaluation for the Morrow formation in the area, including Section 4, is superior to Samson's data and evaluation.
- iv. Detailed stratigraphic correlations between the wellbores differentiating the distinct sand units yield net sand Isopach maps (Exhibits 7, 8, 9) in this same easterly to westerly sand orientation.

Samson did not attempt to differentiate the individual sand units.

24. Chesapeake's mapping fully comports within the regional geologic framework as established by the published literature and the regional mapping submitted by Chesapeake. The industry literature (GEO Rebuttal Exhibit B-1) indicates the nearest local depositional influence for Morrow sediment source is the CBP with sedimentation

trending in an easterly to westerly direction from the CBP into the Delaware Basin. Chesapeake's Regional Gross Morrow Isopach (GEO Exhibit 26) and Regional Morrow X-Section (GEO Exhibit 5) are in agreement with the literature.

25. The Samson Group's proposal for the E/2 stand-up spacing unit is inferior and fails to prevent waste and protect correlative rights because:

- i. Samson's geologist premised his mapping upon a north-south sand trend which is contrary to the pressure data presented by Chesapeake that invalidates that sand trend direction. There is no well control point north of the KF-4 Well to justify the extension of the sand trend northerly as drawn by the Samson Group.
- ii. The Samson Group's own geological evidence condemned the Western half of the middle third of Section 4. Thus, if the Commission approved the E/2 stand-up unit, then Chesapeake, in order to drill a well in the SW/4, will be forced to dedicate a W/2 stand-up unit and share 50% of production with Samson who will not contribute any productive acreage to the spacing unit.

Chesapeake's correlative rights would be impaired by the Samson Group's proposal.

26. The absence of well control points north of the KF-4 Well create serious doubts about the reliability of Samon's north-south orientation and its attempt to extend this reservoir north of the KF-4 Well. To the contrary, it is reasonable to assume that Chesapeake's Exhibit 4, "0" pay contour for the CC "3" State Well No. 3 extends between this well and the KF-4 Well, limiting the ability of a reservoir orientated North-South to squeeze between the CC "3" State Well No. 3 and the K-F-4 Well.

27. Samson's Isopach map, its Exhibit "C," erroneously assumed that the CC "3" State Well No. 3 in the SWS/4SW/4 of Section 3 was in the same reservoir as the KF-4 Well and the Osudo 9-1 well while its petroleum engineer and Chesapeake's geologist and engineer conclude they are not.

**E. Petroleum Engineering Evidence Supports a Lay-Down Unit.**

28. Chesapeake's geological interpretation is supported by the pressure data available in the area. Chesapeake's petroleum engineer, Jeff Finnell, established that there is no north-south connection between producers in the vicinity of the KF-4 Well, and pressure data in fact demonstrate east-west connection of reservoirs. See Exhibits PE#9, PE#12 and PE#13. The pressure data shows that there is a northern reservoir pod and a southern reservoir pod both orientated east-west with the northern pod consisting of

three wells each connected: the WEK State Com #1, the State 15 #1; both in Sec. 15, and the PQ Osudo #1 in Sec. 16. , while the southern pod consists of WEL Com #1 (10K) to the Osudo 9 State #1 (9H) and the KF-4 Well (4W) that are in pressure communication. *See* Chesapeake PE# Rebuttal PE #56.

29. The wells in Section 15 and 16 are in an East-West communication trend due to the pressure profiles of the WEK Well No. 1 (Unit F, Sec 15) the State "15" Well No. 1 (Unit N, Sec 15) and the PQ Osudo Well No. 1 (Unit G, Sec 16) are synonymous in time. *See* Chesapeake Exhibit PE 34 and Rebuttal Exhibit PE-56.

30. The KF-4 Well appeared to be correlative to the main pay interval being produced in the Osudo 9-1 well and that pressure data demonstrated that KF-4 Well has less than virgin pressure. The most probable source of the pressure depletion in the KF-4 Well is from the Osudo 9-1 well that has collectively produced approximately 2.0 Bcf and has produced at daily rates in excess of 21 mmcfpd since first production in March 2005. *See* Chesapeake PE-4,5, 7, 8, 9

31. The State "15" Well No. 1 had a virgin bottom hole pressure but quickly dropped to fit the BHP vs Time profile of the WEL Com Well No. 1. *See* Chesapeake Exhibit PE-31.

32. The PQ Osudo Well No. 1, directly west of the WEK Well No 1, had an initial reservoir pressure of 5326# that exhibits depletion from the WEK Well No. 1. *See* Chesapeake Exhibit PE-16, PE-33 and Rebuttal PE-56.

33. The PQ Osudo Well No 1 also quickly dropped to fit the BHP vs. Time profile of the WEK Well No. 1 and the State "15" Well No.1. *See* Chesapeake Exhibit PE# 34.

34. The wells in Section 9 and 10 are not in a north-south communication trend because the BHP vs. Time profile of the State WEL Com Well No. 1 (Unit K, Section 10) and the profile of the WEK Well No. 1 (Unit F, Section 15) are not synonymous BUT would have been had the reservoir been orientated north-south. *See* Chesapeake Exhibit PE-29.

35. The State WEL Com Well No. 1, with an initial virgin reservoir pressure, produced 2.9 Bcfg. With the WEK Well No. 1 (Unit F Sec 15) producing 3.0 Bcfg, once the WEL Com Well No. 1 went into production, the WEL Com Well No. 1's pressure

should have been less than virgin pressure but was not thus refuting the claim by Samson that this reservoir is oriented north-south. *See* Chesapeake Rebuttal Ex PE-56.

36. The KF-4 Well, the Osudo 9-1 well and the Hunger Buster State Well No. 3 all came in below virgin reservoir pressure due to the partial depletion from the State WEL Com Well No. 1. The CC "3" State Well No. 1 came in at virgin pressure but thirty days later had a BHP of 1264# resulting in the conclusion that the CC "3" State Well No. 1 is drilled into a limited reservoir that is not connected with the KF-4 Well, the Hunger Buster Well No. 3 and the Osudo 9-1 Well. *See* Chesapeake Rebuttal Ex PE-56.

37. There is no nearby Morrow producer in the vicinity other than the State WEL Com Well No. 1 that could have reduced the reservoir pressure as seen in the KF-4 Well, the Osudo 9-1 well and the Hunger Buster State Well No. 3. *See* Chesapeake Rebuttal PE-56.

38. The CC-3 and the Apache State WEL Com Well No. 2 are in essence dryholes. With these two dryholes, it is not reasonable to map this reservoir with a north-south orientation with the two dryholes directly north of the State WEL Com Well No. 1. *See* Chesapeake Rebuttal PE-56 and PE-11 thru 15.

**F. Production Data Confirms Chesapeake's Mapping.**

39. Chesapeake presented production data, PE Exhibits 2-9, which demonstrated that:

- i. The poor performance of the wells in the S/2 of Section 9, south of the Osudo 9 well is consistent with an east-west orientation of the reservoir.
- ii. It is not probable that the reservoir constricts at the location of the CC 3 State 1 Well to form a very narrow channel as the Samson Group's north-south orientation requires.
- iii. The poor performance of the Hunger Buster #3 is contrary to a north-south orientation of the reservoir.
- iv. The WEK Well No. 1, commenced production at virgin pressure (approx. 7354 #) produced 6.4 Bfc. This volume of gas removed from this Morrow reservoir had a direct impact upon the poor performance of the State "15" Well No. 1 and the PQ Osudo Well No.1. *See* Chesapeake PE-25-38.

**G. Gas Analysis Confirms Chesapeake's Mapping.**

40. Chesapeake presented gas analysis data that demonstrate that the range of difference among the gas specific gravity of six wells which further supports its mapping of an east-west sand trend. *See* Chesapeake's PE-17 through 19.

**H. Relative Value of the 160-Acre Tracts in Section 4.**

41. The only evidence submitted concerning the relative "value" of tracts in Section 4 was Chesapeake's calculations utilizing a volumetric method which estimates that the reservoir volume for each of the six 160-acre tracts in Section 4. *See* Chesapeake's PE-21 through 23, PE-4, 5, 7, 8, 9.

42. The volumetric calculations further confirm Chesapeake's mapping and demonstrates that a lay-down unit in the S/2 of Section 4 will best afford the owners the ability to produce their fair share of the gas in the reservoir in Section 4.

**V. CONCLUSION.**

43. The approval of Chesapeake's application will prevent waste and best protect correlative rights and is fair to all parties. Although this case came before the Commission on unique circumstances in which a well was drilled before the establishment of a spacing unit, the Commission has been presented with superior evidence to determine the best orientation for the spacing unit.

44. The Samson Group have benefited from Chesapeake's prompt drilling of the well by eliminating the risk of drainage of acreage owned in the S/2 of Section 4 during a period of extremely tight demand for rigs. Chesapeake bore the risk of a dry hole and the Samson Group had the benefit of electing to participate in the well after its costs and producing capability were established.

45. The Commission, with the benefit of information concerning well logs, pressure data and production data for the KF-4 well is able to make a fully informed decision in carrying out its statutory directive to establish a spacing unit for the well that avoids the drilling of unnecessary wells, protect correlative rights, prevent waste and affords to the owner of each interest in the Unit the opportunity to recover or receive without unnecessary expense its just and fair share of hydrocarbons in the reservoir in Section 4.

46. Chesapeake's application should be approved by pooling all uncommitted interests, whatever they may be, in the oil and gas within the lay-down spacing Unit in the south half of Section Four and the Samson Group's application should be denied.

47. Chesapeake should be designated the operator of the KF-4 well and of the proposed Unit.

48. Reasonable charges for supervision (combined fixed rates) should be fixed at \$5,000 per month while drilling and \$500 per month while producing, provided that these rates should be adjusted annually pursuant to Section III.1.A.3. of the COPAS form titled "Accounting Procedure-Joint Operations."<sup>4</sup>

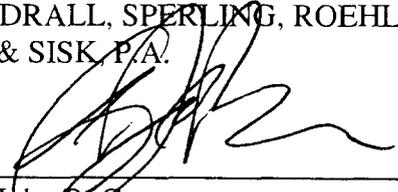
Respectfully submitted,

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<sup>4</sup> Following the issuance of Order No. R-12343-B, the Samson Group elected to pay their share of estimated costs for drilling and completing the KF-4 Well. Therefore, it is not necessary for the Commission to set the standard 200% risk charge for non-participating owners.

ATTORNEYS FOR CHESAPEAKE OPERATING, INC.  
AND CHESAPEAKE PERMIAN, L.P.

WE HEREBY CERTIFY that a true and correct copy of the foregoing pleading was hand-delivered to the following counsel of record this 21 day of January, 2007:

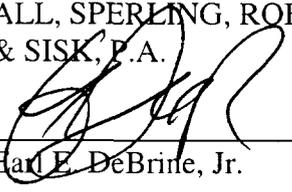
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