

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

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

**CASE NO. 13771**

**APPLICATION OF KAISER-FRANCIS OIL COMPANY FOR POOL  
CREATION, PROMULGATION OF SPECIAL POOL RULES, FOR AN  
EXCEPTION TO THE GAS-OIL RATIO LIMITATION, ASSIGNMENT OF A  
SPECIAL DEPTH BRACKET ALLOWABLE AND TEMPORARY SUSPENSION  
OF DRILLING PERMITS WITHIN THE UNDESIGNATED PORTIONS OF THE  
PROPOSED POOL, EDDY COUNTY, NEW MEXICO**

**CASE NO. 13778**

**APPLICATION OF HAYES LAND AND PRODUCTION, LP, TO APPROVE A  
NON-STANDARD 80-ACRE OIL SPACING AND PRORATION UNIT OR AN 80-  
ACRE PROJECT AREA OR, IN THE ALTERNATIVE, TO RESCIND DIVISION  
ORDER NO. R-12459, EDDY COUNTY, NEW MEXICO**

**ORDER NO. R-12739**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

These cases came on for hearing at 8:15 a.m. on September 14, on October 26, 2006, and again on March 15, 2007, at Santa Fe, New Mexico before Examiner William V. Jones.

NOW, on this 26<sup>th</sup> day of March, 2007, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

**FINDS THAT:**

- (1) Due public notice has been given, and the Division has jurisdiction of these cases and their subject matter.
- (2) By Division Order No. NSL-5133 dated November 17, 2004, the Division authorized Kaiser-Francis Oil Company ("Kaiser-Francis") to drill its Mesa "11" Grande Well No. 2Q (API No. 30-015-33720) at an unorthodox gas well location 2661 feet from

the South line (2700 feet from the North line) and 660 feet from the West line (Unit L or NW/4 SW/4) of irregular Section 11, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico, to test the Strawn and Morrow formations. Pursuant to this order, the W/2 of Section 11 was dedicated to the well forming a standard, approximately 320-acre gas spacing unit for the Undesignated Happy Valley-Strawn Gas and the South Carlsbad-Morrow Gas Pools.

(3) After unsuccessfully attempting completions in the Strawn and Morrow, Kaiser-Francis became interested in exploiting drilling oil shows in the Delaware and Bone Spring formations.

(4) In Division Order No. R-12459 issued in Case No. 13594 on December 1, 2005, the Division approved a non-standard well location for oil production from the Delaware and Bone Spring formations, Wildcat-Delaware and Wildcat-Bone Spring Pools, at 2661 feet from the South line and 660 feet from the West line (Unit L or NW/4 SW/4) of irregular Section 11.

(5) Also in that Case, Kaiser-Francis applied for an approximately 80-acre non-standard spacing unit consisting of the NW/4 SW/4 and SW/4 NW/4 of Section 11. This portion of the application was dismissed after it was determined at the hearing that no correlative rights would be violated by the formation of a standard approximately 40-acre oil spacing and proration unit consisting of Unit L (NW/4 SW/4) of Section 11. Kaiser-Francis presented testimony in the hearing that all interest owners in the W/2 of Section 11 were subject to a JOA and would share in production from this well and that interests in a 40-acre unit would be identical to interests in an 80-acre unit.

(6) On April 7, 2006, Kaiser-Francis recompleted the Mesa "11" Grande Well No. 2Q to the Bone Spring formation and has produced and tested the well since early May.

(7) The Bone Spring production in this area is currently governed by Division Rule 104.B, which requires standard 40-acre spacing and proration units with wells to be located no closer than 330 feet to the outer boundary of the unit. The Division created the East Happy Valley-Bone Spring Pool (97541) on September 20, 2006 by Division Order No. R-12638. Initially the pool only included the SW/4 of Section 11. The E/2 of adjoining Section 10 is operated by J. Cleo Thompson and has been scheduled for inclusion into this pool.

(8) Kaiser-Francis Oil Company as the applicant in Case No. 13771 presented on September 14, 2006, sought to establish a new Bone Spring pool initially within the W/2 of Section 11 and establish Special Pool Rules for that pool providing for 320-acre oil spacing and proration units and a limiting Gas Oil Ratio ("GOR") of 3,000 to 1.

(9) The applicant in Case No. 13778, Hayes Land and Production, LP ("Hayes"), sought approval to form an 80-acre project area to consist of the SW/4 NW/4 and NW/4 SW/4 of Section 11 or, in the alternative, to rescind Division Order No. R-

12459 and shut-in the Mesa "11" Grande Well No 2G.

(10) Both Hayes and Kaiser-Francis now agree that ownership is NOT identical in the W/2 of Section 11 and Hayes interests exist only in the W/2 NW/4 of Section 11. The Mesa "11" Grande Well No 2G is located within the SW/4 of Section 11, but within 19 feet of the NW/4, and will likely drain reserves from this NW/4.

(11) Marbob Energy Corporation ("Marbob") operates wells within one mile of the proposed new pool. As an affected party, Marbob entered an appearance in Case No. 13771, but did not present witnesses.

(12) In addition to Hayes Land and Production, L.P., Mr. J. Cleo Thompson and James Cleo Thompson, Jr., L.P. entered appearances in these cases and presented a geologic witness.

(13) During the September 14, 2006 hearing, Kaiser-Francis presented evidence that demonstrates that:

(a) The productive Bone Spring interval within this well was found from 6312 to 6452 feet and is within the member called the Second Bone Spring limestone. When drilling through that formation, an oil interval was first encountered, then an extremely gassy interval.

(b) After determining bubble point, oil gravity, gas composition, P-V-T relationships, running a deliverability test and borehole spinner, examining electric logs, and monitoring declining pressures and rates, Kaiser-Francis has determined that this reservoir consists of both conventional oil and free gas underneath this oil. The reservoir is highly permeable and the gas and oil intervals cannot be isolated from one another. The best estimate is that this well will recover approximately 60,000 barrels of oil and 800,000 Mcf of gas.

(c) The reservoir as mapped by Kaiser-Francis is elliptical with the longest dimension trending north-south or slightly northwest-southeast.

(d) The characteristics of this reservoir suggest that one well can drain or affect gas reserves beyond the normal 40-acre oil spacing and proration units. With a high permeability and relatively low oil recovery, development of the reservoir with spacing units smaller than 160 acres would result in the inefficient recovery of hydrocarbons.

(e) There are precedents in Bone Spring oil pools (see Division Order No. R-4539), even those without the accompanying gas reservoir, to grant gas production GOR allowables of up to 5,000 to 1. After examining the data, Kaiser-Francis does not believe this will cause waste of reservoir energy or reduce ultimate oil production.

(14) During the September 14, 2006 hearing, Hayes and J. Cleo Thompson presented testimony as follows:

(a) Mr. William Bennett, as the sole owner of Hayes, which entity owns a mineral interest in the W/2 NW/4 of Section 11, is in favor of forming an 80-acre project area or 80-acre non-standard spacing and proration unit consisting of the SW/4 NW/4 and NW/4 SW/4 of Section 11. Hayes does not oppose the proposed 160-acre standup spacing unit but thinks the 80-acre unit would be more reasonable.

(b) J. Cleo Thompson, who operates wells in the adjoining Section 10, is concerned that granting a GOR allowable of more than 2,000 to 1 will cause waste of reservoir energy and result in a lower ultimate recovery of oil. J. Cleo Thompson urged the Division to confine any Special Pool Rules to the W/2 of Section 11 and not require adjoining lands to abide by those rules.

(c) J. Cleo Thompson's geologist testified that the Second Bone Spring limestone member is present in an east-west cross-section beyond the boundaries of Section 11. This reservoir may not necessarily be a one-well reservoir and does not necessarily trend north to south. Other Bone Springs reservoirs exist several miles northeast of this location. Those pools seem to trend northwest to southeast. Many of those pools have 40-acre oil well spacing with 5,000 to 1 GOR allowables or are associated pools with 40-acre oil units and 160-acre gas units.

(15) Prior to and after the September 14 hearing, Hayes and Kaiser-Francis shared data and negotiated these issues.

(16) For its application in the October 26<sup>th</sup> hearing, Kaiser-Francis reduced its desired size of the oil spacing and proration unit from 320 acres consisting of the W/2 of Section 11 to 160 acres consisting of the W/2 W/2 of Section 11. Kaiser-Francis also increased the requested maximum GOR allowable from 3,000 to 1 to 4,000 to 1.

(17) For its application in the October 26<sup>th</sup> hearing, Hayes in Case 13778 completed its proof of notice requirements but did not re-state its case.

(18) Each party presented statements to the Division after the September 14<sup>th</sup> hearing and prior to the date of the October 26<sup>th</sup> hearing. In its statement, Hayes remains primarily concerned about protecting its W/2 NW/4 acreage from being drained without sharing in production. Hayes prefers the 80-acre standup project area with the right to drill 2 wells, but is not opposed to the standup 160-acre, W/2 W/2 oil spacing and proration unit as proposed in Case No. 13771. J. Cleo Thompson is opposed to gas wells being defined by less than 30,000 to 1 GORs - as is used in some Associated Pools, and remains opposed to Special Pool Rules being extended beyond the W/2 of Section 11. Marbob indicated in its statement that a standard 160-acre spacing unit should consist of

a governmental quarter section or the Special Rules should be confined to the W/2 of Section 11.

(19) At the October 26<sup>th</sup> hearing, Kaiser-Francis and Hayes both presented affidavits to the Division showing that formal notice was provided to affected parties of each respective revised case and newspaper notices were posted as well.

(20) The evidence presented by Kaiser-Francis is that this is a high permeability, gassy oil reservoir with relatively low oil recovery per well. Each well may affect a larger area than 40 acres, and mandatory drilling on each 40-acre tract would be unnecessary and wasteful. The free gas interval will likely not be present in each well drilled, so adopted rules should be flexible enough to allow one well per 40 acres if needed. For those reasons and to protect correlative rights and prevent waste, 160-acre spacing and proration units with optional wells on each 40-acre quarter-quarter, should be established. In addition, increasing the maximum allowable GOR to 4,000 to 1 is necessary to optimally produce wells in this reservoir and will not result in a waste of oil reserves.

(21) Regional geologic evidence presented by Hayes, supported by comments from Marbob, indicates that 160-acre spacing and proration units should optimally consist of a governmental quarter section and any Special Rules should reflect that.

(22) The existence of a free gas interval within or below the oil column and the relatively high permeability of this reservoir indicate that 660 feet well setbacks as proposed by Kaiser-Francis are needed and should be approved.

(23) Local mapping done by Kaiser-Francis indicates that an elliptical reservoir possibly exists in the vicinity of the Mesa "11" Grande Well No. 2Q. In order to best encompass this drainage shape and to protect correlative rights, the non-standard 160-acre oil spacing and proration unit consisting of the W/2 W/2 of Section 11 as proposed by Kaiser-Francis should be approved.

(24) The application in Case No. 13771 to establish Special Pool Rules as proposed by Kaiser-Francis with modifications to reflect the evidence presented in this case should be approved.

(25) With approval of the Kaiser-Francis application in Case No. 13771, the application of Hayes Land and Production, L.P. in Case No. 13778 is no longer needed to protect correlative rights and should be dismissed.

**IT IS THEREFORE ORDERED THAT:**

(1) Pursuant to the application of Kaiser-Francis Oil Company in Case No. 13771, the horizontal limits of the East Happy Valley-Bone Spring Pool (97541) are hereby extended to include all of the W/2 of Section 11, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico.

(2) Special pool rules for the East Happy Valley-Bone Spring Pool are hereby established and shall be made retroactive to April 1, 2006:

**SPECIAL RULES AND REGULATIONS  
FOR THE  
EAST HAPPY VALLEY-BONE SPRING POOL**

RULE 1. Each well completed or recompleted in the East Happy Valley-Bone Spring Pool or in the Second Bone Spring limestone within the Bone Spring formation within one mile thereof between the depths of 6,312 feet and 6,452 feet as delineated by that open hole log for the Kaiser-Francis Oil Company Mesa "11" Grande Well No. 2G (API No. 30-015-33720), and not nearer to or within the limits of another designated Bone Spring oil pool, shall be spaced, drilled, operated and produced in accordance with the Special Rules hereinafter set forth.

RULE 2. Each well shall be located on a standard oil spacing and proration unit containing 160 acres, more or less, comprised of a governmental quarter-section being a legal subdivision of the United States Public Lands Survey, provided however, that one optional well may be drilled on each of the quarter-quarter sections in the unit.

RULE 3. The Director of the Oil Conservation Division, hereinafter referred to as the "Division", may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising one or more governmental quarter-quarter sections or lots, or the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 20 days after the Division received the application.

RULE 4. Each well shall be located no closer than 660 feet to any outer boundary of a standard or non-standard spacing and proration unit and no closer than 10 feet to any quarter-quarter section line or subdivision inner boundary.

RULE 5. The Division Director may grant an exception to the requirements of Rule 4 without hearing only when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed location shall be notified of the

application by registered or certified mail, and the application shall state that such notice has been furnished. The Director may approve the application upon receipt of written waivers from all operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Division received the application.

RULE 6. The allowable for a standard proration unit (158 through 162 acres) shall be based on a depth bracket allowable of 382 barrels per day, and in the event there is more than one well on a 160-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion. The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable as the acreage in such non-standard unit bears to 160 acres.

RULE 7. The limiting gas-oil ratio for the East Happy Valley-Bone Spring Pool shall be 4,000 cubic feet of gas per barrel of oil produced.

(3) The location of any well presently drilling to or completed in the East Happy Valley-Bone Spring Pool or in the Bone Spring formation within one mile thereof is hereby approved. The operator of any well having an unorthodox location shall notify the Division's Artesia District Office in writing of the name and location of the well within 30 days from the date of this order.

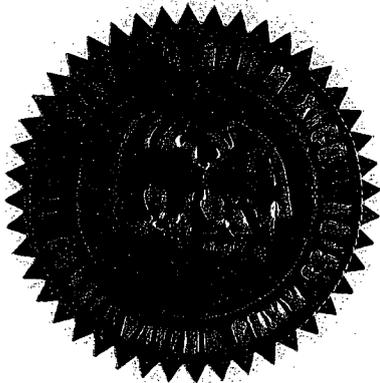
(4) Existing oil wells in the East Happy Valley-Bone Spring Pool shall have dedicated thereto 160 acres in accordance with the foregoing pool rules; or, existing oil wells may have non-standard spacing or proration units established by the Division and dedicated thereto. Failure to file new Forms C-102 with the Division dedicating 160 acres to a well or to obtain a non-standard unit approved by the Division within 60 days from the date of this order shall subject the well to cancellation of allowable.

(5) Pursuant to the application of Kaiser-Francis Oil Company, the W/2 W/2 of Section 11 shall be dedicated to the Mesa "11" Grande Well No. 2G to form a non-standard, standup 160-acre oil spacing and proration unit.

(6) The application of Hayes Land and Production, L.P. in Case No. 13778 to form a non-standard 80-acre oil spacing and proration unit or an 80-acre project area comprising the NW/4 SW/4 and the SW/4 NW/4 of Section 11, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico or, in the alternative, to rescind Division Order No. R-12459, is hereby dismissed.

(7) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in cursive script, appearing to read "Mark E. Fesmire".

MARK E. FESMIRE, P.E.  
Director

**CASE NO. 13872: Continued from the March 1, 2007 Examiner Hearing.**

***Application of Charles D. Ray for compulsory pooling, Lea County, New Mexico.*** Applicant seeks an order pooling all mineral interests from the surface to the base of the Morrow formation underlying the W/2 of Section 29, Township 23 South, Range 34 East, NMPM, to form a standard 320-acre gas spacing and proration unit for any and all formations or pools developed on 320-acre spacing within that vertical extent. The unit is to be designated to the TDS Well No. 1, to be drilled at an orthodox location in the NW/4 of Section 29. Also to be considered will be the cost of drilling and completing the well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision, designation of BC Operating, Inc. as operator of the well, and a 200% charge for the risk involved in drilling and completing the well. The unit is located approximately 20-1/2 miles southwest of Oil Center, New Mexico.

**CASE NO. 13771: Reopened – Amended application of Kaiser-Francis Oil Company for Promulgation of Special Pool Rules for the East Happy Valley Bone Spring Pool, for an Exception to the Gas-oil Ratio Limitation, and Assignment of a Special Depth Bracket Allowable, Eddy County, New Mexico.** Applicant seeks an order establishing special pool rules for the East Happy Valley Bone Spring Pool comprised of the W/2 of Section 11, Township 22 South, Range 26 East, NMPM providing for 160-acre spacing and proration units with the option for a second well and designated well locations, including 330' setback requirements. Applicant also seeks an exception from the gas oil ratio limitation under Division Rule 506 A that would permit wells drilled within each proration unit within the pool to produce up to a GOR limitation of four thousand cubic feet of gas for each barrel of oil produced, along with an increase in the depth bracket allowable to 382 under Division Rule 505. Applicant proposes that the applicability of the special pool rules be limited to the W/2 of said Section 11. Applicant is the operator of the Mesa-Grande 11 Well No. 2 (API No. 30-015-3720) completed in the Second Bone Spring formation at a location 2661' FSL and 660' FWL (Unit L) of Section 11, T22S, R26E. The well and lands are located approximately 1/2 mile southwest of Carlsbad, New Mexico. This Application is set for hearing before a duly appointed examiner of the Oil Conservation Division on March 15, 2007 at 8:15 a.m.

**CASE NO. 13890: In the Matter of the Application of Energen Resources Corporation for Compulsory Pooling and for an Exception to Rule 2 of the Special Pool Rules for the West Lindrith Gallup-Dakota Oil Pool for Designation of a Non-Standard Spacing Unit, Rio Arriba County, New Mexico.** Applicant seeks an order pooling all interests in the Gallup/Dakota formation (West Lindrith Gallup-Dakota Oil Pool) underlying the Lots 3, 4 and the NW/4 of irregular Section 1, Township 24 North, Range 4 West, NMPM, Rio Arriba County, New Mexico. Applicant also seeks to designate said lands as a 216.76± acre non-standard spacing and proration unit. Applicant proposes to drill its Jicarilla 126 S No. 1-E Well to be drilled at a standard location 2535' from the North line and 1735' from the West line of Section 1. The subject lands are located approximately 9.6 miles west of Lindrith, New Mexico.

**CASE NO. 13629: Reopened - Continued from the March 1, 2007 Examiner Hearing.**

In the matter of Case 13629 being reopened pursuant to the provisions of Division Order No. R-12514, which order promulgated temporary special pool rules for the Sand Springs Permo Upper-Pennsylvanian Pool in Lea County, New Mexico, including provisions for 160-acre spacing units and designated well locations. Operators in the Sand Springs Permo Upper-Pennsylvanian Pool may appear and show cause why the temporary special pool rules established by this order should not be rescinded and the pool not be developed on statewide 40-acre spacing.

**CASE NO. 13891: Readvertised - Application of Petrohawk Energy Corporation for authorization to reactivate a waterflood project, Lea County, New Mexico.** Applicant seeks approval for a waterflood project, including the reactivation of a previously approved waterflood (OCD Orders WFX-518 and WFX-530) in Section 8 and 9, Township 22 South, Range 36 East, NMPM, to inject up to a total of 2000 barrels per day, at a maximum pressure of 750 psi, into the Queen Formation, at an approximate depth of 3790 feet to 3890 feet. This proposed waterflood involves the activation of five existing, temporarily plugged injection wells (State A A/C 2 # 61, #64, #65, #68, and # 71). Petrohawk may be contacted through its representative, Mr. Alberto Gutierrez, 500 Marquette Ave NW, Suite 1350, Albuquerque, New Mexico 87102 or (505) 842-8000. These wells are located 5 miles southwest of Eunice, New Mexico.

**CASE NO. 13814: Reopen and Re-advertise - Continued from the March 1, 2007 Examiner Hearing.**

***Amended Application of Chi Operating, Inc. for compulsory pooling, Eddy County, New Mexico.*** Applicant in the above-styled cause seeks an order pooling all mineral interests from the surface to the base of the Morrow formation in the following described spacing and proration units located in the E/2 of Section 4, Township 22 South, Range 26 East, N.M.P.M., Eddy County, New Mexico: the E/2 for all formations and/or pools developed on 320-acre spacing which includes but is not necessarily limited to the Happy Valley-Morrow Gas Pool and the Happy Valley-Atoka Gas Pool; the NE/4 for all formation and/or pools developed on 160-acre spacing within this vertical extent; and the NE/4 NE/4 for all