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NATURAL RESOURCES-OIL AND GAS LAW

JASON KELLAHIN (RETIRED 1991)

July 29, 1998

HAND DELIVERED

Mr. Michael E. Stogner
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: NMOCD CASE 12006
Application to expand the
Indian Basin-Upper Pennsylvanian
Associated Gas Pool and other relief
Eddy County, New Mexico

Dear Mr. Stogner:

In accordance with your request at the hearing held on July 9, 1998
in the referenced case, please find enclosed our proposed order on behalf
of the applicants.

Please call me if you have any questions

Regards,



W. Thomas Kellahin

cfx: Marathon Oil Company
Attn: Thomas C. Lowry, Esq.

**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. 12006
ORDER NO. R-_____**

**APPLICATION OF MARATHON OIL COMPANY,
YATES PETROLEUM CORPORATION, ORYX
ENERGY COMPANY, DEVON ENERGY
CORPORATION (NEVADA) AND SANTA FE ENERGY
RESOURCES, INC. FOR THE EXPANSION OF THE
INDIAN BASIN-UPPER PENNSYLVANIAN
ASSOCIATED POOL AND THE CONTRACTION OF
THE INDIAN BASIN-UPPER PENNSYLVANIAN
GAS POOL, APPROVAL OF FOUR NON-STANDARD
320-ACRE GAS PRORATION UNITS, AN UNORTHODOX
GAS WELL LOCATION AND APPORTIONMENT
OF GAS ALLOWABLES,
EDDY COUNTY, NEW MEXICO**

**APPLICANTS'
PROPOSED
ORDER OF THE DIVISION**

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 9, 1998, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this ____ day of August, 1998, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicants, Marathon Oil Company, Yates Petroleum Corporation, Oryx Energy Company, Devon Energy Corporation (Nevada), and Santa Fe Energy Resources, Inc. seek an order expanding the Indian Basin-Upper Pennsylvanian Associated Pool to include the "extension area" which would include the ^{following} E/2 of Section 36, T21S, R23E, Sections 20, 21, 28, 29, 30, 31, 32, T21S, R24E, E/2 Section 1, E/2 Section 12, E/2 Section 13, T22S, R23E, and Section 18, T22S, R24E, NMPM and correspondingly contracting the Indian Basin-Upper Pennsylvanian Gas Pool to delete ~~any conflicting acreage from that pool.~~ ^{the following:}

(3) Applicants also seek the approval four ^{of} non-standard 320-acre gas proration and spacing units ("GPU") for the Indian Basin-Upper Pennsylvanian Gas Pool being the W/2 of Section 36, T21S, R23E to be dedicated to the Lowe State Gas Com Well No. 1; the W/2 of Section 1, T22S, R23E on which there is currently no ^{production} well; and the W/2 of Section 12, T22S, R23E to be dedicated to the Smith Federal Gas Com Well No. 2; and the W/2 of Section 13, T22S, R23E to be dedicated to the HOC Federal Gas Com Well No. 2. Applicants further seek the approval of a unorthodox gas well location for the Lowe State Gas Com Well No. 1 located 1712 feet FWL and 1995 feet FNL of Section 36, T21S, R23E.

(4) In the Indian Basin area, the Upper Pennsylvanian formations contain multiple compartmentalized reservoirs which are productive of oil, gas and water from several dolomitized horizons from the top of the Cisco formation to the base of the Canyon formation. The northeastern portion of Indian Basin has been established by the Division as the South Dagger Draw-Upper Pennsylvanian Associated Pool ("**the South Dagger Draw Pool**") while the southwestern portion has been established by the Division as the Indian Basin-Upper Pennsylvanian Gas Pool ("**the Gas Pool**") and the southeastern portion has been established by the Division as the Indian Basin-Upper Pennsylvanian Associated Pool ("**the Associated Pool**").

(5) The "extension area" described in paragraph (1) above, with the exception of Section 18, T22S, R24E, is currently included within the current boundaries of the Gas Pool which provides, among other things, for 640-acre proration and spacing units with well locations to be not closer than 1650 feet to the outer boundary of said units, and a current prorated gas allowable of 6.5 MMCFPD per GPU.

(6) The "extension area" currently has producing wells and operator/owner identified as follows:

Acresage	Operator/owner	Wells
T21S, R23E Section 36	Oryx	Lowe State Gas Com Well No. 1 Oryx Energy Lowe State Well No. 3
T21S, R24E Section 20	Marathon	Indian Hills Unit Well No. 6 Indian Hills Unit Well No. 2 (TA)
Section 21	Marathon	Indian Hills Unit Well No. 1
Section 28	Marathon	Indian Hills Unit Well No. 4 (TA)
Section 29	Marathon	Indian Hills Unit Gas Com Well No. 3 Indian Hills Unit Gas Com Well No. 13
Section 30	Devon	Martha Creek Federal Well No. 1
Section 31	Devon	Winston Gas Com Well No. 1
Section 32	Marathon	IB 32 State Well No. 1-Y IB 32 State Well No. 2
T22S, R23E Section 1 (E/2)	Yates	Zingaro "ANG" Fed Well No. 1
Section 12 (E/2)	Yates	Malone ASA Federal Com Well No. 1
Section 13 (E/2)	Yates	(none)

The following described acreage is to be included in the Indian Basin-Upper Pennsylvanian Associated Pool but is **not** currently within the boundary of the Indian Basin-Upper Pennsylvanian Gas Pool:

T22S, R24E Section 18	Yates	no wells in Upper Penn
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(7) the extension area is divided into:

(a) Sections in T21S, R24E Area

(b) "transition area" comprising the E/2 of Section 36, T21S, R23E, E/2 of Sections 1, 12, and 13, T22S, R23E and Section 18, T22S, R24E

(8) The current eastern and a portion of the southern boundary of the Gas Pool is also the current western and northern boundary of the Associated Pool.

(9) The Associated Pool's principal productive formations are also the Cisco and Canyon formations but its pool rules provide, among other things, for 320-acre proration and spacing units with well locations to be not closer than 660 feet to the outer boundary of said units, an oil allowable of 1400 BOPD and a GOR of 7,000 to one.

(10) On behalf of the applicants, Marathon presented geologic, petroleum engineering and oil and gas mineral ownership and land evidence which demonstrates that this application should be granted and which is summarized as follows:

Geologic evidence

(a) in the Indian Basin area, the Upper Pennsylvanian formations contain multiple compartmentalized reservoirs which are productive of oil, gas and water from several dolomitized horizons from the top of the Cisco formation to the base of the Canyon formation.

(b) the Cisco/Canyon formations within the Gas Pool, including the extension area, and the Associated Pool were originally developed with flowing gas wells on 640-acre gas spacing such that once the gas wells stopped flowing as a result of water encroachment, the wells were abandoned.

(c) the Gas Pool attained its maximum extension in the 1970s and since then, water encroachment has advanced from east to west slowly watering out the flowing gas wells such that flowing gas production is currently west of a subsea elevation along a -3300 foot structural contour line.

(d) in 1992, Yates Petroleum Corporation re-entered the Hickory "ALV" Federal Well No 1 in Unit F of Section 17, T22S, R24E, and using the same high capacity pumps used in South Dagger Draw was able to achieve rates of 400 BOPD and 500 MCFGPD and 1200 BWPD in a former Gas Pool well which has been depleted. Thereafter the Division entered Order R-9922 and created the Associated Pool out of acreage originally included in the Gas Pool.

(e) the Cisco/Canyon formations within the Associated Pool and the extension area are in a separate structural feature from the Gas Pool separated by a structural saddle at the top of the Cisco at a subsea elevation of -3500 feet. New wells in the Associated Pool and the extension area located within 320-acre spacing units are now producing or have the potential to produce oil and gas that was not previously recovered when this area was originally developed as part of the Gas Pool.

(f) current oil and gas production from the Cisco/Canyon formations in the Associated Pool and the extension area required extensive formation "de-watering". Hydrocarbons are mobilized by continuous movement of large volumes of water with artificial lift.

Petroleum Engineering evidence

(a) pressure data demonstrates that:

(i) the Associated Pool, with a pressure on average of 1600 psi, is not in pressure communication with the Gas Pool which has a current pressure on average of 500 psi;

(ii) in the extension area of T21S, R24E, wells in these sections have a pressure related to the Associated Pool;

(b) production data demonstrates that:

(i) there are no flowing gas wells in the extension area;

(ii) old flowing gas wells in the extension area have been abandoned when they watered out and new wells are attaining oil and gas production by using high capacity pumps

(c) The division of Section 36, T21S, R23E and Sections 1, 12, and 13, T22S, R23E (the transition area) into non-standard gas proration and spacing units will provide an equitable "buffer" between the Gas Pool and the Associated Pool because:

(i) wells have been located or can be located such that drainage by wells in the Associated Pool can be met with counter drainage from wells located or to be located on the eastern side of each of the 4 non-standard gas proration units in the Gas Pool provided that wells located on the eastern side of said units can be no closer than 660 feet which is the same setback requirements for wells in the Associated Pool.

(ii) wells located in the Gas Pool will not suffer unfair competition from wells located or to be located in these four-non-standard gas proration units because allowables will be apportioned based upon the gas proration system adopted for the Gas Pool.

Petroleum land evidence

(a) the granting of this Application will not impair correlative rights:

(i) of any working interest owner within any of these existing 640-acre GPUs because there are voluntary joint operating agreements requiring that all those owners will continue to share in production and pay costs from the applicable new 320-acre spacing units on the same proportional basis as they shared in the original 640-acre unit;

(ii) of any overriding royalty interest owner or the federal royalty under a federal oil and gas lease within any of the existing 640-acre GPUs because there are federal communitization agreements requiring that all those owners will continue to share in production from the applicable new 320-acre spacing units on the same proportional basis as they shared in the original 640-acre unit;

(iii) under Section 32, T21S, R24E, which consists of two 320-acre State of New Mexico leases and is operated by Marathon, because there are no overriding royalty owners and the State Land Office desires that the communitization agreement for the existing 640-acre proration unit terminate and be replaced by two 320-acre proration units co-extensive with the two State leases; and

(iv) under Section 36, T21S, R23E, which consists of two State of New Mexico leases and is operated by ORYX, because there are no overriding royalty owners and the State Land Office desires that the existing 640-acre communitization agreement terminate and be replaced by two 320-acre communitization agreements

(11) The applicants are all of the operators of wells in the extension area and they have met and unanimously agreed upon this application.

(12) In accordance with Division notification rules, notification of this application and request for hearing held on July 9, 1998, has been sent to the owners within the proposed expansion area and to the offset operators to each said spacing unit and no objections have been received by either the Division or Marathon Oil Company who sent out these notices.

Division finds

(13) The Division **finds** that:

(a) the Cisco/Canyon formations within Associated Pool and the extension area is a single structural feature such that wells located in this area should be subject to the same special rules and regulations.

(b) geologic and petroleum engineering evidence demonstrates that substantial volumes of oil and gas which otherwise would not be produced, can be economically recovered from the extension area if that area is subject to the current rules applicable to the Associated Pool thereby preventing waste.

(c) making the extension area part of the Associated Pool will afford the opportunity to increase the de-watering process in the reservoir and improve recovery efficiencies for both oil and gas.

(d) the adoption of the four non-standard gas proration and spacing units will establish a temporary "buffer" or transition area between the Gas Pool and the Associated Pool which at this time will establish equity and protect correlative rights.

(e) correlative rights will be protected for all owners because agreements provide that all parties receiving payments based upon 640-acre spacing will continue to receive payments regardless of the spacing change to 320-acres.

(f) In order to protect correlative rights, prevent waste and provide for a more orderly development of the Cisco/Canyon formations, it is necessary to do the following:

(i) contract the Indian Basin-Upper Pennsylvanian Gas Pool to delete the E/2 of Section 36, T21S, R23E, Sections 20, 21, 28, 29, 30, 31, 32, T21S, R24E, E/2 Section 1, E/2 Section 12 and the E/2 Section 13, T22S, R23E from said pool;

(ii) expand the Indian Basin-Upper Pennsylvanian Associated Pool to include the E/2 of Section 36, T21S, R23E, Sections 20, 21, 28, 29, 30, 31, 32, T21S, R24E, E/2 Section 1, E/2 Section 12, E/2 Section 13, T22S, R23E, and Section 18, T22S, R24E,

(iii) approve four non-standard 320-acre gas proration and spacing units ("GPU") for the Indian Basin-Upper Pennsylvanian Gas Pool being the W/2 of Section 36, T21S, R23E to be dedicated to the Lowe State Gas Com Well No. 1; the W/2 of Section 1, T22S, R23E on which there is currently no well; and the W/2 of Section 12, T22S, R23E to be dedicated to the Smith Federal Gas Com Well No. 2; and the W/2 of Section 13, T22S, R23E to be dedicated to the HOC Federal Gas Com Well No. 2.

(iv) the apportionment of gas allowables for the four non-standard GPUs; and

(v) the approval of an unorthodox gas well location for the following well in the Indian Basin Pool which become unorthodox as a result of the change in pool boundary: Lowe State Gas Com Well No. 1 located 1712 feet FWL and 1995 feet FNL of Section 36, T21S, R23E.

(14) Marathon Oil Company, Santa Fe Energy Resources, Inc. and ORYX Energy Corporation were present at the hearing and Marathon Oil Company, on behalf of the applicants, provided technical land, geologic and engineering testimony concerning the reservoir, these pools and its classification.

(15) No other operator and/or interest owner appeared at the hearing in opposition to the application.

(16) Approval of this application will allow the interest owners the opportunity to economically recover their share of the oil and gas in the subject pool, will not reduce ultimate recovery from the subject pool, and will not violate correlative rights.

IT IS THEREFORE ORDERED THAT:

(1) The Indian Basin-Upper Pennsylvanian Gas Pool is hereby **contracted** by the deletion therefrom of the E/2 of Section 36, T21S, R23E, Sections 20, 21, 28, 29, 30, 31, 32, T21S, R24E, E/2 Section 1, E/2 Section 12 and the E/2 Section 13, T22S, R23E from said pool;

(2) The Indian Basin-Upper Pennsylvanian Associated Pool is hereby **expanded** by the inclusion therein of the E/2 of Section 36, T21S, R23E, Sections 20, 21, 28, 29, 30, 31, 32, T21S, R24E, E/2 Section 1, E/2 Section 12, E/2 Section 13, T22S, R23E, and Section 18, T22S, R24E.

(3) four non-standard 320-acre gas proration and spacing units ("GPU") for the Indian Basin-Upper Pennsylvanian Gas Pool being the W/2 of Section 36, T21S, R23E to be dedicated to the Lowe State Gas Com Well No. 1; the W/2 of Section 1, T22S, R23E on which there is currently no well; and the W/2 of Section 12, T22S, R23E to be dedicated to the Smith Federal Gas Com Well No. 2; and the W/2 of Section 13, T22S, R23E to be dedicated to the HOC Federal Gas Com Well No. 2 are hereby **approved**.

(4) any future wells located in each of these four non-standard gas proration and spacing units as close as 660 feet to the eastern boundary of said units shall be considered at standard locations.

(5) the apportionment of gas allowables for the four non-standard GPUs shall be accomplished by applying a .5 acreage factor to each of the non-standard gas proration units.

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(6) an unorthodox gas well location for the following well in the Indian Basin Pool which become unorthodox as a result of the change in pool boundary: Lowe State Gas Com Well No. 1 located 1712 feet FWL and 1995 feet FNL of Section 36, T21S, R23E is hereby **approved**.

(7) Jurisdiction of this cause is 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.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

LORI WROTENBERY
Director