

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. 11985
ORDER NO. R-11048

**APPLICATION OF SAGA PETROLEUM, L.L.C. FOR AN UNORTHODOX GAS
WELL LOCATION, EDDY COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case 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 2nd day of September, 1998, 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 this case and its subject matter.

(2) The applicant, Saga Petroleum, L.L.C. ("Saga"), seeks authority to drill its Dero Federal Well No. 3 at an unorthodox gas well location 1980 feet from the South line and 660 feet from the West line (Unit L) of Section 35, Township 19 South, Range 28 East, NMPM, Eddy County, New Mexico, for any and all formations and/or pools developed on 320-acre spacing from the top of the Wolfcamp formation to the base of the Morrow formation. The S/2 of Section 35 is to be dedicated to the well in order to form a standard 320-acre gas spacing and proration unit within that vertical extent.

(3) Division records indicate that the dedicated acreage for the proposed Dero Federal Well No. 3 is located:

(a) within the boundaries of the Winchester-Wolfcamp Gas Pool;

(b) within one mile of the Winchester-Upper

Pennsylvanian Gas Pool;

- (c) within the boundaries of the Winchester-Strawn Gas Pool;
- (d) within one mile of the Winchester-Atoka Gas Pool;
and
- (e) within the boundaries of the Winchester-Morrow Gas Pool.

(4) The Winchester-Upper Pennsylvanian Gas, Winchester-Strawn Gas, Winchester-Atoka Gas, and Winchester-Morrow Gas Pools are all subject to Division **Rules 104.C(2)(b) and D(3)**, which provide for 320-acre spacing and proration units with wells to be located no closer than 1650 feet from the nearest end boundary, nor closer than 660 feet from the nearest side boundary, nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary, and restricts the number of wells allowed per spacing unit to one.

(5) At the time of the hearing Saga testified to the existence of a standard 320-acre gas spacing and proration unit for Winchester-Morrow Gas Pool production that is currently dedicated to Saga's Dero Federal Com. Well No. 2 (**API No. 30-015-20973**), located at a standard gas well location 660 feet from the South line and 1980 feet from the West line (Unit N) of Section 35.

(6) The Winchester-Wolfcamp Gas Pool was established in 1973, and is therefore subject to Division **Rule 104.C(2)(a)**, requiring 160-acre spacing and proration units and wells to be located no closer than 660 feet to any outer boundary of the dedicated tract nor closer than 330 feet from any quarter-quarter section or subdivision inner boundary. The location of Saga's proposed Dero Federal Well No. 3 is considered to be orthodox for the standard 160-acre Wolfcamp gas spacing and proration unit that will comprise the SW/4 of Section 35; therefore, that portion of this application regarding the Winchester-Wolfcamp Gas Pool is deemed unnecessary and should be dismissed.

(7) OXY USA Inc. ("OXY"), an offsetting operator and lessee, appeared in opposition to Saga's application.

- (a) To the west, in the E/2 of Section 34, Township 19 South, Range 28 East, NMPM, Eddy County, New Mexico, OXY operates the DWU Federal Well No. 6 (**API No. 30-015-28803**), located at a standard gas well location 1980 feet

from the South line and 660 feet from the East line (Unit I) of Section 34, which is producing from the Winchester-Strawn Gas Pool.

(b) Within the adjacent 320-acre unit to the north, the N/2 of Section 35, OXY is proposing to drill its DWU Federal Well No. 7 at an unorthodox gas well location (approved by Division Administrative Order NSL-4032, dated May 11, 1998) 1650 feet from the North line and 660 feet from the West line (Unit E) of Section 35 in order to test the Undesignated Winchester-Upper Pennsylvanian Gas Pool, Winchester-Strawn Gas Pool, Undesignated Winchester-Atoka Gas Pool, and Undesignated Winchester-Morrow Gas Pool.

(8) The principal zones of interest to both parties in this case are the Strawn and Morrow formations.

(9) Both parties in this case provided geological evidence and testimony on the Strawn formation in the immediate area. The combined data indicates that the Winchester-Strawn Pool, like many Strawn pools in southeast New Mexico, consists of algal mounds each with localized porosity development and each having rapid facies changes over short distances.

(10) This geological data indicates that OXY's DWU Federal Well No. 6 is producing from one of these many small algal mounds. Well control in the immediate area indicates that the reservoir is approximately 300 acres in size, is elliptical in shape, extends approximately one-mile on its north/south axis and approximately one-half mile in width, and is bisected by the section line between Sections 34 and 35. It appears that approximately 50% of this reservoir's productive limits lie within the E/2 of Section 34, 25% within the N/2 of Section 35, and 25% within the S/2 of Section 35.

(11) The closest "standard" gas well location in the S/2 of Section 35, being 660 feet from the South line and 1650 feet from the West line (Unit K), will miss this reservoir entirely. To enable the mineral interests within the S/2 of Section 35 to obtain their rightful share of Strawn gas reserves underlying the S/2 of Section 35, it is necessary that a well be drilled at a location considered to be unorthodox.

(12) In order to offset OXY's production from the existing DWU Federal Well No. 6, which is 660 feet from the section line between Sections 34 and 35, with counter-drainage while not gaining an advantage on the offsetting OXY operated tract, Saga is proposing a

mirrored location of 660 feet from the same section line in the opposite direction. The evidence presented establishes that a “no flow boundary” between these two wells will result.

(13) In the absence of a unitization agreement by all parties owning an interest in this small Strawn reservoir, the resulting offset drainage/counter-drainage by OXY’s DWU Federal Well No. 6 and Saga’s proposed Dero Federal Well No. 3 will best serve to prevent waste, is in the best interest of conservation, and will serve to protect correlative rights.

(14) There is no encroachment to the north by the proposed Saga well since it will be the required distance (660 feet) from the nearest side boundary that divides Section 35 into its north and south halves.

(15) Saga is hereby authorized to drill its Dero Federal Well No. 3 at an unorthodox gas well location 1980 feet from the South line and 660 feet from the West line (Unit L) of Section 35 and complete in the Undesignated Winchester-Strawn Gas Pool thereby establishing a standard 320-acre gas spacing and proration unit comprising the S/2 of Section 35.

(16) According to the evidence presented, cumulative gas production attributable to the Winchester-Morrow Gas Pool within the S/2 of Section 35 totals 4,270 MCF of gas from the following wells in the following amounts:

(a) Saga’s Dero Federal Com. Well No. 1 (**API No. 30-015-20304**) located at an unorthodox gas well location 660 feet from the South and East lines (Unit P) of Section 35 (approved by Division Administrative Order NSL-541, dated March 17, 1972) has produced 2,463 MCF; and

(b) Saga’s Dero Federal Com. Well No. 2 [as described in Finding Paragraph (5) above] has produced 1,807 MCF.

(17) According to the evidence presented, cumulative gas production attributable to the Winchester-Morrow Gas Pool within the E/2 of Section 34 totals 458 MCF of gas from the following wells in the following amounts:

(a) Reeves County Systems, Inc.’s DWU Federal Well No. 4 (**API No. 30-015-23078**) located at an unorthodox gas well location 800 feet from the South line and 2000 feet from the East line (Unit O) of Section 34 (approved by Division Order No. R-6106, issued in Case No. 6579 dated September 19, 1979) has produced 205 MCF; and

(b) Reeves County Systems, Inc.'s DWU Federal Well No. 1 (API No. 30-015-20779) located at a standard gas well location 1980 feet from the South and East lines (Unit J) of Section 34 has produced 253 MCF.

(18) The technical evidence presented by both parties indicates that there is no offset drainage occurring from the E/2 of Section 34 within the Morrow formation that makes this well necessary to protect correlative rights of the mineral interests in the S/2 of Section 35. This well to the Morrow interval only serves to position a well at an advantageous position within the S/2 of Section 35 to further deplete as much of the Morrow reserves underlying the S/2 of Section 35 as possible.

(19) The applicant should not be precluded from drilling its proposed Dero Federal Well No. 3 at the location it believes, based upon its geologic interpretation, to be the best available location within the S/2 of Section 35 in order to further deplete the last remaining Morrow reserves that the applicant has a right to produce. HOWEVER, should this well be successfully completed within the Winchester-Morrow Gas Pool, the currently producing Dero Federal Com. Well No. 2 must be shut-in pursuant to Division Rule 104.D(3). FURTHER, in order to protect the correlative rights of the owners of Morrow interests underlying the E/2 of Section 34, a production penalty should be assessed against any Morrow gas production from that well.

(20) The distance from the closest standard gas well location within the S/2 of Section 35 (1980 feet from the South line and 1650 feet from the West line (Unit K) of Section 35) to the proposed unorthodox gas well location (1980 feet from the South line and 660 feet from the West line (Unit L) of Section 35) equals 990 feet.

(21) The percentage encroachment equals 60 percent and should be applied as a penalty on production:

$$[1.00 - (660 \text{ feet}/1650) \times 100 = 60 \text{ percent penalty.}]$$

(22) The production penalty on Morrow gas production should be applied toward the Dero Federal Well No. 3's ability to produce into a pipeline as determined from a deliverability test to be conducted on a semiannual basis.

(23) Approval of the subject application with a 60 percent production penalty will afford the applicant the opportunity to produce its just and equitable share of the gas in the Winchester-Morrow Gas Pool, prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive

number of wells and otherwise prevent waste and protect correlative rights.

(24) The applicant should advise the supervisor of the Division's Artesia district office of the date and time the production test(s) will be conducted in order that the tests may be witnessed.

(25) There was insufficient geological and engineering evidence presented by the applicant in this matter to justify unrestricted production from either the Undesignated Winchester-Upper Pennsylvanian Gas Pool or the Undesignated Winchester-Atoka Gas Pool from the proposed Dero Federal Well No. 3. These two intervals, however, like the Winchester-Morrow Gas Pool, should not be precluded from producing.

(26) Like the Morrow interval, previously described, the percentage encroachment for the Upper Pennsylvanian and Atoka intervals equals 60 percent:

$$[1.00 - (660 \text{ feet}/1650) \times 100 = 60 \text{ percent penalty.}]$$

(27) The same 60% production penalty in both the Undesignated Winchester-Upper Pennsylvanian Gas Pool and/or the Undesignated Winchester-Atoka Gas Pool should be applied to the Dero Federal Well No. 3's ability to produce into a pipeline as determined from a deliverability test to be conducted on a semiannual basis.

(28) Approval of the subject application with a 60 percent production penalty will afford the applicant the opportunity to produce its just and equitable share of the gas in the Undesignated Winchester-Upper Pennsylvanian Gas Pool and/or Undesignated Winchester-Atoka Gas Pool, prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells and otherwise prevent waste and protect correlative rights.

(29) The applicant should advise the supervisor of the Division's Artesia district office of the date and time the production test(s) are conducted in order that the tests may be witnessed.

(30) Division Rule 303.C allows an operator to obtain administrative approval to commingle production downhole within a wellbore. Since gas production from those gas producing intervals between the top of the Wolfcamp formation and the base of the Morrow formation within the proposed Dero Federal Well No. 3 will not be produced uniformly, since gas production from both the Winchester-Wolfcamp Gas Pool and Winchester-Strawn Gas Pool is unrestricted and gas production from the Undesignated Winchester-Upper Pennsylvanian Gas Pool, Undesignated Winchester-Atoka Gas Pool, and/or Winchester-Morrow Gas Pool will be restricted by penalty factors, the operator of the Dero Federal Well

No. 3, must bring to hearing any request to commingle any zone within the wellbore.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Saga Petroleum, L.L.C., is hereby authorized to drill its Dero Federal Well No. 3 at an unorthodox gas well location 1980 feet from the South line and 660 feet from the West line (Unit L) of Section 35, Township 19 South, Range 28 East, NMPM, Eddy County, New Mexico.

(2) The S/2 of Section 35 is to be dedicated to the subject well in order to form a standard 320-acre gas spacing and proration unit for gas production from the Winchester-Upper Pennsylvanian Gas, Winchester-Strawn Gas, Winchester-Atoka Gas, and Winchester-Morrow Gas Pools.

(3) Production from the Winchester-Strawn Gas Pool shall be unrestricted.

HOWEVER:

(4) Production from the Undesignated Winchester-Upper Pennsylvanian Gas Pool, Undesignated Winchester-Atoka Gas Pool, and/or the Winchester-Morrow Gas Pool is hereby assessed a production penalty of 60 percent to be applied toward the well's ability to produce from these intervals into a pipeline as determined from a deliverability test to be conducted on the well on a semiannual basis.

(5) The applicant shall advise the supervisor of the Division's Artesia district office of the date and time the production test(s) are conducted in order that the tests may be witnessed.

PROVIDED FURTHER THAT:

(6) The operator of the S/2 of Section 35 shall ensure that only one well is producing from any one of the aforementioned pools at a time in compliance with Division Rule 104.D(3).

(7) Any request for downhole commingling within the Dero Federal Well No. 3 will be set for hearing.

(8) Jurisdiction of this case 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

LORI WROTENBERY
Director