

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. 10100  
Order No. R-9330

APPLICATION OF SAMUEL GARY JR. & ASSOCIATES,  
INC. FOR SPECIAL OPERATING RULES FOR  
DRILLING HORIZONTAL/HIGH ANGLE WELLBORES  
IN THE SAN ISIDRO (SHALLOW) UNIT, RIO PUERCO-  
MANCOS OIL POOL, SANDOVAL COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on October 3, 1990, at Santa Fe, New Mexico, before Examiner Jim Morrow.

NOW, on this 26th day of October, 1990, 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 applicant, Samuel Gary Jr. & Associates, Inc., is a working interest owner in, and the unit operator of, the San Isidro (Shallow) Unit (the Unit), which covers the lands described on Exhibit A attached hereto, located in Sandoval County, New Mexico.
- (3) The Unit comprises 18,897.16 acres, more or less, all of which are federal minerals. Except for Unit Tract No. 19 on the exterior of the Unit, comprising 120 acres, one hundred percent of working interests in the Unit are committed to the Unit, and the Bureau of Land Management has approved the Unit.
- (4) The Unit was formed for the purpose of conducting a horizontal drilling program within the Unit.
- (5) A proposed horizontal pilot well and the Unit are located within the boundaries of the Rio Puerco-Mancos Oil Pool and, as such, would be subject to the special rules and regulations for said pool, which require 320-

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acre spacing and proration units with wells to be located no closer than 660 feet from the outer boundary of the proration unit, nor closer than 330 feet from any quarter-quarter section line, nor closer than 1,800 feet to any other well completed or drilled within the Pool. The allowable for a well completed in said Pool is 320 barrels of oil per day; limiting gas-oil ratio is 500. Pool rules also provide for no more than one well on a 320-acre unit.

(6) The applicant proposes drilling additional horizontal wells to the Mancos formation within the Unit; these wells are being permitted with the Bureau of Land Management. It is anticipated that one of these wells will be commenced by the end of October, 1990. If the pilot well and the second well are successful, additional horizontal wells will be drilled within the Unit.

(7) Testimony by the applicant indicated that this type of well completion should result in the recovery of a substantially greater amount of oil than would normally be recovered by a conventional well completion, thereby preventing waste.

(8) The applicant further proposed the following special rules for horizontal/high angle wells drilled to the Mancos formation within the Unit:

- (a) That the horizontal portion of the wellbore be no closer than 660 feet to the outer boundary of a well unit.
- (b) That the operator be permitted to dedicate, at its option, up to two 320-acre units to a well.
- (c) That each horizontal well have an unrestricted allowable and gas-oil ratio while drilling and completing, limited to a 60-day period.
- (d) That, after expiration of the above 60-day period, each well have an allowable of 320 barrels of oil per day for a 320 acre unit, or 640 barrels of oil per day for a 640-acre unit, (which is equal to the normal allowable assigned to a standard 320-acre proration unit in the pool times two).
- (e) That an administrative procedure be authorized to approve horizontal wells in the Unit.

(9) No interest owner objected to the proposed horizontal directional drilling pilot project or to the proposed special rules for the Unit.

(10) Due to the formation of the Unit there are no offset operators within the Unit, and promulgation of special rules for drilling horizontal

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wells in the Mancos formation within the Unit will not adversely affect correlative rights.

(11) At the hearing on this matter, the applicant requested that the portion of this case regarding a gas reinjection/pressure maintenance project be dismissed. The request should be granted.

(12) The applicant presented evidence that in order to properly drill its proposed wells, the horizontal wellbores will need to cross quarter-quarter section lines.

(13) The applicant presented evidence that in order to properly drill certain of its proposed wells, and in order to allow greater flexibility while drilling the wells, the horizontal wellbores may need to be located within two 320-acre standard spacing and proration units.

(14) The applicant submitted evidence that the horizontal wells will be drilled in an underbalanced state, and that production during drilling and completing is necessary to prevent formation damage and to permit testing to evaluate producing capacity. Such production will provide data which will be useful in promulgating permanent rules for wells in the Unit. An oil allowable of 19,200 barrels (based on a top daily allowable of 320 barrels for a 320-acre proration unit) for a 60-day period should be adequate. However, a provision should be included to authorize the Division Director to assign additional allowable if warranted during the 60-day period.

(15) The applicant further presented evidence that, in order to angle in better on the Mancos formation, certain wells may have non-standard surface locations.

(16) According to evidence submitted by the applicant, certain spacing and proration units may be non-standard in size.

(17) The special operating rules should be subject to certain bottomhole considerations:

- (a) The bottomhole location of a well should not be located closer than 660 feet to the outer boundary of each spacing unit.
- (b) Horizontal wells on the exterior spacing units of the Unit should not be closer than 1,800 feet to an existing or drilling well within the Pool but outside of the Unit.

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- (c) Notice should be given to offset operators outside of the Unit prior to commencement of a horizontal well on the exterior spacing and proration units.

(18) The applicant proposed that, as to spacing units formed with existing Mancos wells located thereon, it be required to seek Division approval before simultaneously dedicating two or more wells to one spacing unit. One person would also be designated as operator of the proposed proration unit and all wells on the proration unit prior to the date of first production from the proposed additional wells.

IT IS THEREFORE ORDERED THAT:

(1) The application of Samuel Gary Jr. & Associates, Inc. for special operating provisions for drilling horizontal/high angle wellbores in the Mancos formation within the San Isidro (Shallow) Unit, Sandoval County, New Mexico, is hereby approved.

(2) Applicant's request for authority to institute a gas reinjection/pressure maintenance project in the San Isidro (Shallow) Unit area is hereby dismissed.

(3) Temporary special operating provisions for horizontal/high angle wellbores within the San Isidro (Shallow) Unit (Rio Puerco-Mancos Oil Pool) are hereby promulgated as follows:

SPECIAL OPERATING RULES AND REGULATIONS  
FOR THE  
SAN ISIDRO (SHALLOW) UNIT  
Covering Lands Described on Exhibit A, Attached

RULE 1. Each well completed or recompleted in the Rio Puerco-Mancos Oil Pool within the San Isidro (Shallow) Unit shall be spaced, drilled, operated and produced in accordance with the Special Operating Rules and Regulations hereinafter set forth.

RULE 2. Spacing and proration units may contain 320 acres or 640 acres as set out below:

(a) One or more wells may be completed or recompleted on a standard unit containing 320 acres, more or less, consisting of the N/2, S/2, E/2 or W/2 of a governmental section.

(b) Two standard 320-acre units may be combined to form a 640-acre, more or less, unit consisting of an entire governmental section when portions of a horizontal well penetrate the Mancos shale under both 320

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acre units. The resulting 640-acre unit may be developed with one or more wells.

(c) When the conditions in 2(b) are not met, the Division Director shall have the authority to administratively approve the formation of a 640-acre unit consisting of an entire governmental section. Applications for such approval shall set out the reasons for the request and include information to show how the proposed unit will result in additional recovery and/or improved Unit operations and may be submitted along with the application for administrative approval for the horizontal well using the procedures set out in Rule 8 below. If approved, the resulting 640-acre units may be developed with one or more wells.

RULE 3. Each well shall be located no nearer than 660 feet to the outer boundary of the spacing or proration unit. Wells completed on any unit on the exterior of the San Isidro (Shallow) Unit shall not be nearer than 1800 feet to any other well outside said Unit completed or drilling in the pool.

RULE 4. The Division Director may grant an exception to the requirements of Rule (3) without hearing when an application has been filed for an unorthodox surface location or the recompletion of a well previously drilled to a deeper horizon, provided said well was drilled at an orthodox or approved unorthodox location for such original horizon, provided that the bottomhole location of the well complies with Rule 3. For wells within the interior of the San Isidro (Shallow) Unit, the Division Director may approve the application upon receipt. Such approval shall consist of acceptance of Division Form C-102 or the corresponding BLM form showing the proposed non-standard surface location. For wells on the exterior spacing units of said Unit, all operators or owners of undrilled tracts offsetting the proposed location shall be notified of the application by registered or certified mail, and the applicant shall state that such notice has been furnished. The Director may approve the application upon receipt of written waivers from all parties described above, or if no objections to the unorthodox location have been entered, within 20 days after the Director has received the application.

RULE 5. Allowables shall be assigned in the following manner:

(a) A standard 320-acre proration unit (316 through 324 acres) shall be subject to a 320-acre depth bracket allowable of 320 barrels per day. 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 320 acres.

(b) A standard 640-acre proration unit (632 through 648 acres) shall be subject to a 320-acre depth bracket allowable of 320 barrels

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per day times two, being 640 barrels per day. 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 640 acres.

RULE 6. The Supervisor of the Aztec district office of the Division shall have the authority to approve a non-standard proration unit within the Rio Puerco-Mancos Oil Pool and the Unit without notice and hearing when the unorthodox size or shape is necessitated by a variation in the legal subdivision of the United States Public Lands Survey and the non-standard unit is not less than 75% nor more than 125% of a standard proration unit (320 or 640 acres). Such approval shall consist of acceptance of Division Form C-102 or the corresponding BLM form showing the proposed non-standard unit and the acreage contained therein.

RULE 7. The Division Director may grant an exception to the requirements of Rule 5 when the unorthodox size or shape of the proration unit is necessitated by a variation in the legal subdivision of the United States Public Lands Survey and the non-standard gas proration unit is less than 75% or more than 125% of a standard gas proration unit, (320 or 640 acres), or where the following facts exist and the following provisions are complied with:

(a) The non-standard unit consists wholly of a governmental section or half section.

(b) As to spacing units on the exterior of the San Isidro (Shallow) Unit, the applicant presents written consent in the form of waivers from all offset operators or working interest owners of undrilled tracts outside said Unit.

(c) In lieu of Paragraph (b) of this rule, the applicant may furnish proof of the fact that all of the aforesaid parties were notified by registered or certified mail of his intent to form such non-standard unit. The Division Director may approve the application if no such party has entered an objection to the formation of such non-standard unit within 30 days after the Division Director has received the application.

RULE 8. (A) The Division Director shall have the authority to administratively approve an intentionally deviated well in the Rio Puerco-Mancos Oil Pool, within the San Isidro (Shallow) Unit, for the purpose of penetrating the Mancos shale by means of a wellbore drilled horizontally, provided the following conditions are complied with:

(1) The surface location of the proposed well is a standard location or the applicant has obtained approval of an unorthodox surface location as provided for in Rule (4) above.

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(2) The bore hole shall not enter or exit the Mancos shale outside of a drilling window which is in accordance with the setback requirements of Rule (3).

(B) To obtain administrative approval to drill an intentionally deviated horizontal wellbore, the applicant shall file such application with the Santa Fe and Aztec offices of the Division.

As to spacing units on the exterior of the San Isidro (Shallow) Unit, the applicant shall further provide a copy of such application to all operators or owners of undrilled tracts offsetting the proposed proration unit for said well by registered or certified mail, and the application shall state that such notice has been furnished. The application shall further include the following information:

(1) A copy of Division Form C-102, or the corresponding BLM form, identifying the proposed proration unit to be dedicated to the well.

(2) Schematic drawings of the proposed well which fully describe the casing, tubing, perforated or open hole interval, kick-off point, and proposed trajectory of the drainhole section.

As to spacing units on the exterior of said Unit, the Director may approve the application upon receipt of written waivers from all parties described above, or if no objection to the intentionally deviated horizontal wellbore has been entered, within 20 days after the Director has received the application. If any objection to the proposed intentionally deviated horizontal well is received within the prescribed time limit as described above, the Director shall, at the applicant's request, set said application for public hearing.

As to all other horizontal wells within said Unit, the Director may approve the application upon receipt.

(C) During or upon completion of drilling operations the operator shall further be required to conduct a directional survey on the vertical and lateral portions of the wellbore and shall submit a copy of said survey to the Santa Fe and Aztec offices of the Division.

(D) The Division Director, at his discretion, may set any application for intentionally deviated horizontal wellbores for public hearing.

**RULE 9.** A horizontal/high angle well in the Rio Puerco-Mancos Oil Pool within the Unit shall have an oil allowable of up to 19,200 barrels (60 x

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320 bbls.) for a 60-day period while drilling and completing. The Division Director may administratively approve the assignment of additional allowable during this period.

RULE 10. If a well is drilled on a proration unit upon which there is located another well or wells completed in and capable of producing from the Rio Puerco-Mancos Oil Pool, then only one of said wells may be produced at any one time until the operator receives administrative approval from the Division Director for simultaneous dedication. Simultaneous dedication may not be granted until a single operator has been designated for all wells on the proration unit.

RULE 12. The limiting gas-oil ratio shall be 500 cubic feet per barrel of oil.

IT IS FURTHER ORDERED THAT:

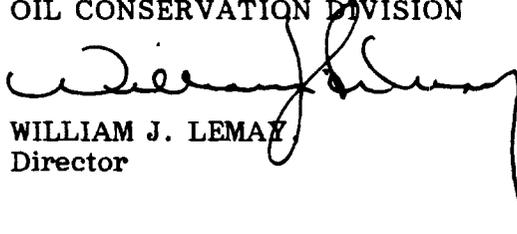
(4) The Special Operating Rules and Regulations for the San Isidro (Shallow) Unit shall become effective November 1, 1990.

(5) This case shall be reopened at an examiner hearing in October, 1992 at which time the operator and interest owners in the Unit should be prepared to appear and show cause why the foregoing Special Operating Rules and Regulations should remain in effect.

(6) 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

  
WILLIAM J. LEMAY  
Director

S E A L

dr/

San Isidro (Shallow) Unit Area  
 Rio Puerco-Mancos Oil Pool  
 Sandoval County, New Mexico

**Township 21 North, Range 2 West, NMPM**

Section 31: All  
 Section 32: All  
 Section 33: All

**Township 21 North, Range 3 West, NMPM**

Section 35: All  
 Section 36: All

**Township 20 North, Range 2 West, NMPM**

Section 5: All  
 Section 6: All  
 Section 7: All  
 Section 8: All  
 Section 18: All

**Township 20 North, Range 3 West, NMPM**

Section 1: All  
 Section 2: All  
 Section 3: All  
 Section 4: All  
 Section 5: All  
 Section 7: All  
 Section 8: All  
 Section 9: All  
 Section 10: All  
 Section 11: All  
 Section 12: All  
 Section 13: All  
 Section 14: All  
 Section 15: All  
 Section 16: All  
 Section 17: All  
 Section 18: All  
 Section 22: All  
 Section 23: All  
 Section 24: All

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

CASE NO. 10331  
Order No. R-9330-A

APPLICATION OF VETERAN EXPLORATION  
INC. TO AMEND DIVISION ORDER NO. R-9330.  
SANDOVAL COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 11, 1991, at Santa Fe, New Mexico, before Examiner Jim Morrow.

NOW, on this 1st day of August, 1991, 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 applicant, Veteran Exploration Inc., (Veteran), is a working interest owner in, and the unit operator of, the San Isidro (Shallow) Unit (the Unit), which covers the lands described on Exhibit A attached to OCD Order No. R-9330.
- (3) The Unit comprises 18,897.16 acres, more or less. All unit lands are federal minerals. One hundred percent of the working interest owners are committed to the Unit, and the Bureau of Land Management has approved the unit.
- (4) The Unit was formed for the purpose of conducting a horizontal drilling program within the Unit.
- (5) Order No. R-9330 approved special operating rules for drilling horizontal wells in the Unit. The rules include provisions for the administrative approval of horizontal wellbores which do not cross section lines (see Rule 8) and for spacing and proration units containing either 320 acres or 640 acres consisting of either an entire or one-half of a governmental section (see Rule 2).
- (6) Veteran seeks amendments to the Rules to expand the administrative approval process to include applications which would dedicate acreage from more than one section to a horizontal well and to allow horizontal wells to cross section lines.
- (7) The applicant submitted the following information through exhibits and the testimony of witnesses:

- (a) Geological conditions exist within the unit which make it advantageous to drill horizontal wells across section lines. A unit map was submitted showing a "maximum flexure" line in the Mancos formation which is typical of other similar structures within the unit.
  - (b) Vertical wells near the flexure line have produced more total oil at higher rates than wells farther removed from line.
  - (c) In some cases the flexure line is very near to section lines. Horizontal wells drilled across the flexure line and section lines should encounter conditions favorable for good producing rates and high ultimate oil recovery.
  - (d) Approving the applicant's request would not harm correlative rights since the unit is comprised of 100% federal minerals and all working interest owners are committed to the Unit.
- (8) No operator or interest owner objected to the applicant's request.
- (9) Veteran's request will result in the recovery of additional oil by allowing horizontal well drilling to be planned based on geology without regard to section lines. It will not harm correlative rights and should therefore be approved.

IT IS THEREFORE ORDERED THAT:

- (1) The application of Veteran Exploration Inc. to amend Division Order No. R-9330 is hereby approved.
- (2) Special Operating Rule 2 for the San Isidro (Shallow) Unit is hereby amended as follows:

"Rule 2. Spacing and proration units may contain 320 acres, 480 acres, or 640 acres as set out below:

- (a) - No change
- (b) - No change
- (c) - No change
- (d) The Director shall have the authority to administratively approve the formation of 320-acre, 480-acre, or 640-acre units consisting of contiguous quarter sections from more than one government section when a horizontal well crossing section lines is being applied for. Applications for such approval shall set out the reasons for the request and shall include geological evidence to

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Order No. R-9330-A  
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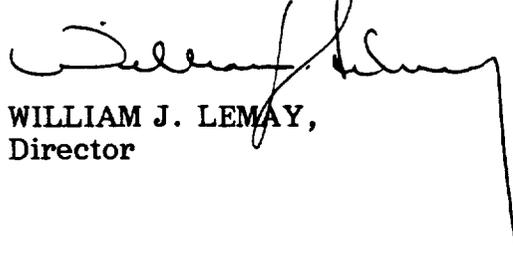
show that the proposed unit and well are necessary and will result in additional recovery and/or improved Unit operations. Requests for such approval shall be submitted along with the rule 8 application for administrative approval for the horizontal well to be drilled on the spacing and proration unit. Evidence of prior BLM approval shall also be submitted."

(1) The above amendment to Rule 2 shall become effective on August 1, 1991.

(2) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY,  
Director

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