



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

BRUCE KING  
GOVERNOR

2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

November 14, 1994

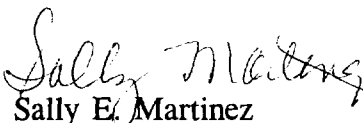
KELLAHIN AND KELLAHIN  
Attorneys at Law  
P. O. Drawer 2265  
Santa Fe, New Mexico 87504

RE: CASE NO. 11038  
ORDER NO. R-10239

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Sincerely,

  
Sally E. Martinez  
Administrative Secretary

cc: BLM - Farmington  
OCD - Aztec Office  
Taxation & Revenue Dept.

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:

APPLICATION OF MERIDIAN OIL INC.  
FOR DOWNHOLE COMMINGLING, RIO  
ARRIBA COUNTY, NEW MEXICO.

CASE NO. 11038

Order No. R-10239

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on August 18, 1994, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this \_\_\_\_\_ day of November, 1994, 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, Meridian Oil Inc., seeks exceptions from Division General Rule 303(C) to establish, on an area wide basis, authorization for downhole commingling of Dakota, Mesaverde and Gallup production in the wellbores of existing or subsequently drilled wells anywhere within Sections 26 through 30, 33, 34, and the S/2 of 35, all in Township 26 North, Range 6 West, NMPM, Rio Arriba County, New Mexico.

(3) The subject area is comprised of two separate Federal leases, the Vaughn Federal Lease (NM-602), which consists of Sections 26 through 29, and the Klein Federal Lease (NM-601), which consists of Sections 30, 33, 34 and the S/2 of 35.

(4) The evidence presented indicates that the interest ownership underlying the Vaughn Federal Lease is common, and the interest ownership underlying the Klein Federal Lease is common.

(5) According to applicant's testimony, it currently operates within the Klein-Vaughn Lease area:

- 26- Basin-Dakota Gas Pool producing wells
- 7- Blanco-Mesaverde Gas Pool producing wells
- 1- Undesignated Gallup producing well

(6) The applicant's proposed plan of operation for the Klein-Vaughn Lease area is as follows:

- a) the Basin-Dakota Gas Pool producing wells which are currently producing at or below a pre-determined economic threshold will be temporarily abandoned in the Dakota formation, and each well will be completed and tested in the Mesaverde and Gallup formations. After sufficient production information is obtained to establish an allocation formula, all three formations will be commingled in the wellbore;
- b) existing Blanco-Mesaverde Gas Pool wells will not be commingled with either the Dakota or Gallup formations;
- c) approximately five new wells will be drilled within the Klein-Vaughn Lease area and will initially be dually completed as Mesaverde and commingled Dakota/Gallup producers. At such time as these wells become uneconomic, they will be commingled in the Mesaverde, Dakota and Gallup formations.

(7) The twenty-four Basin-Dakota Gas Pool producing wells the applicant proposes to commingle are as follows:

<u>WELL NAME</u>	<u>WELL LOCATION</u>
Vaughn No. 8	Unit A, 26-26N-6W
Vaughn No. 12E	Unit C, 26-26N-6W
Vaughn No. 12	Unit K, 26-26N-6W
Vaughn No. 8E	Unit P, 26-26N-6W
Vaughn No. 13	Unit A, 27-26N-6W
Vaughn No. 14E	Unit D, 27-26N-6W
Vaughn No. 14	Unit K, 27-26N-6W
Vaughn No. 15	Unit A, 28-26N-6W
Vaughn No. 30E	Unit D, 28-26N-6W
Vaughn No. 30	Unit K, 28-26N-6W
Vaughn No. 15E	Unit P, 28-26N-6W
Vaughn No. 31	Unit B, 29-26N-6W
Vaughn No. 32E	Unit D, 29-26N-6W
Vaughn No. 31E	Unit I, 29-26N-6W
Vaughn No. 32	Unit K, 29-26N-6W
Klein No. 28E	Unit C, 33-26N-6W
Klein No. 26	Unit H, 33-26N-6W
Klein No. 28	Unit K, 33-26N-6W
Klein No. 19	Unit A, 34-26N-6W
Klein No. 19E	Unit C, 34-26N-6W
Klein No. 24E	Unit I, 34-26N-6W

Klein No. 24  
Klein No. 27  
Klein No. 27E

Unit L, 34-26N-6W  
Unit K, 35-26N-6W  
Unit O, 35-26N-6W

(8) The evidence presented indicates that twenty-two of the twenty-four above-described Dakota producing wells are currently marginal with production averaging approximately 88 MCF gas per day.

(9) The Vaughn Well Nos. 12E and 14 are currently non-marginal with production averaging approximately 419 MCF gas per day, however, applicant testified that these wells, as well as the other Dakota producing wells within the Klein-Vaughn Lease area, are experiencing liquid loading problems which would be greatly alleviated by the proposed downhole commingling.

(10) The current average production from Blanco-Mesaverde Gas Pool wells within the Klein-Vaughn Lease area is approximately 351 MCF gas per day.

(11) The single Gallup producing well within the Klein-Vaughn Lease area currently produces at a rate of approximately 45 MCF gas per day.

(12) The evidence and testimony indicated~~x~~ that the present wellbore configurations of the existing Dakota producers within the Klein-Vaughn Lease area precludes completing these wells as dual producers.

(13) The applicant's geologic evidence and testimony indicated~~x~~ that:

a) the Klein-Vaughn Lease area is located on the southwest edge of the Blanco-Mesaverde Gas Pool;

b) the only member of the Mesaverde formation which has potential for gas production in the Klein-Vaughn Lease area is the Point Lookout, and, due to the non-homogeneous nature of the Point Lookout, there is limited potential for further production;

c) there is potential for Gallup production throughout the Klein-Vaughn Lease area, however, such production is likely to be marginal, as evidenced from the recent completion of the Klein Well No. 28E which is capable of producing approximately 45 MCF gas per day.

d) the Basin-Dakota is fully developed within the Klein-Vaughn Lease area with the exception of Section 30 and the SE/4 of Section 33.

(14) The expected producing rates within the Mesaverde and Gallup formations within the Klein-Vaughn Lease area are insufficient to justify drilling stand alone wells to recover these reserves.

(15) The proposed downhole commingling is necessary in order for the applicant to economically recover Blanco-Mesaverde and Undesignated Gallup Pool reserves underlying the Klein-Vaughn Lease area.

(16) The applicant further demonstrated through its evidence and testimony that within the wells it proposes to commingle within the Klein-Vaughn Lease area:

- a) there will be no crossflow between the commingled pools;
- b) none of the commingled zones exposes the others to damage by produced liquids;
- c) the fluids from each zone are compatible with the other;
- d) the bottom hole pressure of the lower pressure zones should not be less than 50 percent of the bottom hole pressure of the higher pressure zone adjusted to a common datum; and,
- e) the value of the commingled production is not less than the sum of the values of the individual production.

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

(18) The downhole commingling of the twenty-four wells described in Finding No. (7) above in the Dakota, Mesaverde and Gallup formations will allow the applicant the opportunity to recover additional gas reserves from the Klein-Vaughn Lease area which may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

(19) The applicant further seeks to establish an administrative procedure whereby the Supervisor of the Aztec District Office of the Division may approve the downhole commingling of subsequently drilled wells within the Klein-Vaughn Lease area provided that the wells meet a certain economic threshold, and that sufficient information is presented to establish an allocation formula.

(20) There are relatively few new drills which will be subsequently downhole commingled within the Klein-Vaughn Lease area.

(21) Obtaining Division approval as per Division Rule No. 303(C) for a relatively few number of wells within the Klein-Vaughn Lease area does not represent an excessive regulatory burden on the

applicant.

(22) The applicant should be required to obtain approval to downhole commingle Dakota, Mesaverde and Gallup production within the wellbores of subsequently drilled wells within the Klein-Vaughn Lease area from the Santa Fe Office of the Division upon submittal of the data required by Division Rule No. 303(C).

(23) The applicant should consult with the supervisor of the Aztec District Office of the Division subsequent to the completion of testing operations on the subject wells in order to determine a proper allocation of production.

(24) The operator should immediately notify the supervisor of the Aztec district office of the Division any time any of the subject wells have been shut-in for seven consecutive days and shall concurrently present, to the Division, a plan for remedial action.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Meridian Oil Inc., is hereby authorized to commingle gas production from the Basin-Dakota, Blanco-Mesaverde and Undesignated Gallup Gas Pools within the following described wells in Rio Arriba County, New Mexico:

<u>WELL NAME</u>	<u>WELL LOCATION</u>
Vaughn No. 8	Unit A, 26-26N-6W
Vaughn No. 12E	Unit C, 26-26N-6W
Vaughn No. 12	Unit K, 26-26N-6W
Vaughn No. 8E	Unit P, 26-26N-6W
Vaughn No. 13	Unit A, 27-26N-6W
Vaughn No. 14E	Unit D, 27-26N-6W
Vaughn No. 14	Unit K, 27-26N-6W
Vaughn No. 15	Unit A, 28-26N-6W
Vaughn No. 30E	Unit D, 28-26N-6W
Vaughn No. 30	Unit K, 28-26N-6W
Vaughn No. 15E	Unit P, 28-26N-6W
Vaughn No. 31	Unit B, 29-26N-6W
Vaughn No. 32E	Unit D, 29-26N-6W
Vaughn No. 31E	Unit I, 29-26N-6W
Vaughn No. 32	Unit K, 29-26N-6W
Klein No. 28E	Unit C, 33-26N-6W
Klein No. 26	Unit H, 33-26N-6W
Klein No. 28	Unit K, 33-26N-6W
Klein No. 19	Unit A, 34-26N-6W
Klein No. 19E	Unit C, 34-26N-6W
Klein No. 24E	Unit I, 34-26N-6W
Klein No. 24	Unit L, 34-26N-6W
Klein No. 27	Unit K, 35-26N-6W
Klein No. 27E	Unit O, 35-26N-6W

(2) The applicant shall consult with the supervisor of the Aztec District Office of the Division subsequent to the completion of testing the subject wells in order to determine a proper allocation of production.

(3) The operator shall immediately notify the supervisor of the Aztec district office of the Division any time any of the subject wells have been shut-in for seven consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) Approval to downhole commingle subsequently drilled wells within the Klein-Vaughn Lease area shall be obtained from the Santa Fe Office of the Division upon submittal of the data required by Division Rule No. 303(C).

(5) 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.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY  
Director

S E A L

**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. 11038  
Order No. R-10239**

**APPLICATION OF MERIDIAN OIL INC.  
FOR DOWNHOLE COMMINGLING, RIO  
ARRIBA COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This cause came on for hearing at 8:15 a.m. on August 18, 1994, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 14th day of November, 1994, 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, Meridian Oil Inc., seeks exceptions from Division General Rule 303(C) to establish, on an area wide basis, authorization for downhole commingling of Dakota, Mesaverde and Gallup production in the wellbores of existing or subsequently drilled wells anywhere within Sections 26 through 30, 33, 34, and the S/2 of 35, all in Township 26 North, Range 6 West, NMPM, Rio Arriba County, New Mexico.

(3) The subject area is comprised of two separate Federal leases, the Vaughn Federal Lease (NM-602), which consists of Sections 26 through 29, and the Klein Federal Lease (NM-601), which consists of Sections 30, 33, 34 and the S/2 of 35.

(4) The evidence presented indicates that the interest ownership underlying the Vaughn Federal Lease is common, and the interest ownership underlying the Klein Federal Lease is common.

(5) According to applicant's testimony, it currently operates within the Klein-Vaughn Lease area:

- 26- Basin-Dakota Gas Pool producing wells
- 7- Blanco-Mesaverde Gas Pool producing wells
- 1- Undesignated Gallup producing well

(6) The applicant's proposed plan of operation for the Klein-Vaughn Lease area is as follows:

- a) the Basin-Dakota Gas Pool producing wells which are currently producing at or below a pre-determined economic threshold will be temporarily abandoned in the Dakota formation, and each well will be completed and tested in the Mesaverde and Gallup formations. After sufficient production information is obtained to establish an allocation formula, all three formations will be commingled in the wellbore;
- b) existing Blanco-Mesaverde Gas Pool wells will not be commingled with either the Dakota or Gallup formations;
- c) approximately five new wells will be drilled within the Klein-Vaughn Lease area and will initially be dually completed as Mesaverde and commingled Dakota/Gallup producers. At such time as these wells become uneconomic, they will be commingled in the Mesaverde, Dakota and Gallup formations.

(7) The twenty-four Basin-Dakota Gas Pool producing wells the applicant proposes to commingle are as follows:

<u>WELL NAME</u>	<u>WELL LOCATION</u>
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Vaughn No. 8E	Unit P, 26-26N-6W
Vaughn No. 13	Unit A, 27-26N-6W
Vaughn No. 14E	Unit D, 27-26N-6W
Vaughn No. 14	Unit K, 27-26N-6W
Vaughn No. 15	Unit A, 28-26N-6W
Vaughn No. 30E	Unit D, 28-26N-6W
Vaughn No. 30	Unit K, 28-26N-6W

Vaughn No. 15E	Unit P, 28-26N-6W
Vaughn No. 31	Unit B, 29-26N-6W
Vaughn No. 32E	Unit D, 29-26N-6W
Vaughn No. 31E	Unit I, 29-26N-6W
Vaughn No. 32	Unit K, 29-26N-6W
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Klein No. 19	Unit A, 34-26N-6W
Klein No. 19E	Unit C, 34-26N-6W
Klein No. 24E	Unit I, 34-26N-6W
Klein No. 24	Unit L, 34-26N-6W
Klein No. 27	Unit K, 35-26N-6W
Klein No. 27E	Unit O, 35-26N-6W

(8) The evidence presented indicates that twenty-two of the twenty-four above-described Dakota producing wells are currently marginal with production averaging approximately 88 MCF gas per day.

(9) The Vaughn Well Nos. 12E and 14 are currently non-marginal with production averaging approximately 419 MCF gas per day, however, applicant testified that these wells, as well as the other Dakota producing wells within the Klein-Vaughn Lease area, are experiencing liquid loading problems which would be greatly alleviated by the proposed downhole commingling.

(10) The current average production from Blanco-Mesaverde Gas Pool wells within the Klein-Vaughn Lease area is approximately 351 MCF gas per day.

(11) The single Gallup producing well within the Klein-Vaughn Lease area currently produces at a rate of approximately 45 MCF gas per day.

(12) The evidence and testimony indicate that the present wellbore configurations of the existing Dakota producers within the Klein-Vaughn Lease area precludes completing these wells as dual producers.

(13) The applicant's geologic evidence and testimony indicate that:

- a) the Klein-Vaughn Lease area is located on the southwest edge of the Blanco-Mesaverde Gas Pool;

- b) the only member of the Mesaverde formation which has potential for gas production in the Klein-Vaughn Lease area is the Point Lookout, and, due to the non-homogeneous nature of the Point Lookout, there is limited potential for further production;
- c) there is potential for Gallup production throughout the Klein-Vaughn Lease area, however, such production is likely to be marginal, as evidenced from the recent completion of the Klein Well No. 28E which is capable of producing approximately 45 MCF gas per day.
- d) the Basin-Dakota is fully developed within the Klein-Vaughn Lease area with the exception of Section 30 and the SE/4 of Section 33.

(14) The expected producing rates within the Mesaverde and Gallup formations within the Klein-Vaughn Lease area are insufficient to justify drilling stand alone wells to recover these reserves.

(15) The proposed downhole commingling is necessary in order for the applicant to economically recover Blanco-Mesaverde and Undesignated Gallup Pool reserves underlying the Klein-Vaughn Lease area.

(16) The applicant further demonstrated through its evidence and testimony that within the wells it proposes to commingle within the Klein-Vaughn Lease area:

- a) there will be no crossflow between the commingled pools;
- b) none of the commingled zones exposes the others to damage by produced liquids;
- c) the fluids from each zone are compatible with the other;
- d) the bottomhole pressure of the lower pressure zones should not be less than 50 percent of the bottomhole pressure of the higher pressure zone adjusted to a common datum; and,
- e) the value of the commingled production is not less than the sum of the values of the individual production.

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

(18) The downhole commingling of the twenty-four wells described in Finding No. (7) above in the Dakota, Mesaverde and Gallup formations will allow the applicant the opportunity to recover additional gas reserves from the Klein-Vaughn Lease area which may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

(19) The applicant further seeks to establish an administrative procedure whereby the Supervisor of the Aztec District Office of the Division may approve the downhole commingling of subsequently drilled wells within the Klein-Vaughn Lease area provided that the wells meet a certain economic threshold, and that sufficient information is presented to establish an allocation formula.

(20) There are relatively few new drills which will be subsequently downhole commingled within the Klein-Vaughn Lease area.

(21) Obtaining Division approval as per Division Rule No. 303(C) for a relatively few number of wells within the Klein-Vaughn Lease area does not represent an excessive regulatory burden on the applicant.

(22) The applicant should be required to obtain approval to downhole commingle Dakota, Mesaverde and Gallup production within the wellbores of subsequently drilled wells within the Klein-Vaughn Lease area from the Santa Fe Office of the Division upon submittal of the data required by Division Rule No. 303(C).

(23) The applicant should consult with the supervisor of the Aztec District Office of the Division subsequent to the completion of testing operations on the subject wells in order to determine a proper allocation of production.

(24) The operator should immediately notify the supervisor of the Aztec district office of the Division any time any of the subject wells have been shut-in for seven consecutive days and shall concurrently present, to the Division, a plan for remedial action.

**IT IS THEREFORE ORDERED THAT:**

(1) The applicant, Meridian Oil Inc., is hereby authorized to commingle gas production from the Basin-Dakota, Blanco-Mesaverde and Undesignated Gallup Gas Pools within the following described wells in Rio Arriba County, New Mexico:

<u>WELL NAME</u>	<u>WELL LOCATION</u>
Vaughn No. 8	Unit A, 26-26N-6W
Vaughn No. 12E	Unit C, 26-26N-6W
Vaughn No. 12	Unit K, 26-26N-6W
Vaughn No. 8E	Unit P, 26-26N-6W
Vaughn No. 13	Unit A, 27-26N-6W
Vaughn No. 14E	Unit D, 27-26N-6W
Vaughn No. 14	Unit K, 27-26N-6W
Vaughn No. 15	Unit A, 28-26N-6W
Vaughn No. 30E	Unit D, 28-26N-6W
Vaughn No. 30	Unit K, 28-26N-6W
Vaughn No. 15E	Unit P, 28-26N-6W
Vaughn No. 31	Unit B, 29-26N-6W
Vaughn No. 32E	Unit D, 29-26N-6W
Vaughn No. 31E	Unit I, 29-26N-6W
Vaughn No. 32	Unit K, 29-26N-6W
Klein No. 28E	Unit C, 33-26N-6W
Klein No. 26	Unit H, 33-26N-6W
Klein No. 28	Unit K, 33-26N-6W
Klein No. 19	Unit A, 34-26N-6W
Klein No. 19E	Unit C, 34-26N-6W
Klein No. 24E	Unit I, 34-26N-6W
Klein No. 24	Unit L, 34-26N-6W
Klein No. 27	Unit K, 35-26N-6W
Klein No. 27E	Unit O, 35-26N-6W

(2) The applicant shall consult with the supervisor of the Aztec District Office of the Division subsequent to the completion of testing the subject wells in order to determine a proper allocation of production.

(3) The operator shall immediately notify the supervisor of the Aztec district office of the Division any time any of the subject wells have been shut-in for seven consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) Approval to downhole commingle subsequently drilled wells within the Klein-Vaughn Lease area shall be obtained from the Santa Fe Office of the Division upon submittal of the data required by Division Rule No. 303(C).

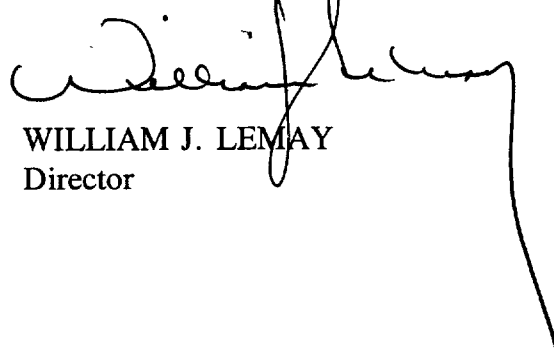
(5) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

*CASE NO. 11038*  
*Order No. R-10239*  
*Page -7-*

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read 'William J. Lemay', is written over the printed name and title. The signature is fluid and cursive, with a long, sweeping tail that extends downwards and to the right.

WILLIAM J. LEMAY  
Director

S E A L

# Memo

From  
DAVID CATANACH  
Petroleum Engineer

To Bill, Jim

It's been 81 days since the hearing on this case. (August 18). The reasons it is late are as follows:

Needed transcript which was received on October 11, 1994 - 54 days after the hearing

Rough draft order which Kellahan was supposed to submit was received on Friday - November 4, 1994

DC

**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:**

**APPLICATION OF MERIDIAN OIL INC.  
FOR DOWNHOLE COMMINGLING  
RIO ARriba COUNTY, NEW MEXICO.**

**CASE NO.: 11038  
ORDER No. R-\_\_\_**

**MERIDIAN OIL INC.'S  
PROPOSED  
ORDER OF THE DIVISION**

**BY THE DIVISION:**

This cause came on for hearing at 8:15 a.m., on August 18, 1994, at Santa Fe, New Mexico, before Examiner David R. Catanach.

Now on this \_\_\_ day of November 1994, the Division Director, having considered the testimony, the record, and the recommendation 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) That the applicant, Meridian Oil Inc. ("Meridian"), seeks exceptions from Division General Rule 303(C) to establish on an area-wide basis authorization for downhole commingling of Dakota, Mesaverde and Gallup gas production in the wellbores of future wells drilled anywhere within an area containing 4,802.48 acre, more or less, and known as the

"Klein/Vaughn Area", Rio Arriba County, New Mexico, said production being portions of the Basin-Dakota Gas Pool, the Blanco-Mesaverde Gas Pool and Undesignated Gallup production and being more specifically described as follows:

**TOWNSHIP 26 NORTH, RANGE 6 WEST, NMPM**

Sections 26-30: All

Sections 33-34: All

Section 35: S/2

(3) In addition, Meridian seeks authority to downhole commingle gas production in the wellbores of twenty-four (24) wells within the Klein/Vaughn Area as listed on Exhibit "A".

(4) Meridian is the operator of 19 Basin Dakota Gas Pool wells, 7 Blanco-Mesaverde Gas pool wells, 1 Undesignated Gallup Gas well, and 1 Mesaverde-Dakota dually completed well all located within the Klein/Vaughn Area.

(5) In the absence of special circumstances, Division general state-wide Rule 303(C) requires that administrative applications for downhole commingling of gas production be submitted, processed and approved on a well by well basis.

(6) Sufficient data is now available from existing wells in the Klein/Vaughn Area to support the Division approving the downhole commingling of Dakota, Mesaverde and Gallup gas production for existing wells listed on Exhibit A" and for future wells in the Klein/Vaughn Area on an "area-wide" basis rather than on a "well-by-well basis."

(7) Production from the Gallup pool is now either marginal or uneconomic from existing wells within the Klein/Vaughn Area and the economic life of that production is extended if it is downhole commingled with Mesaverde pool production.

(8) Production from the Dakota pool and Mesaverde pool is now either marginal or uneconomic due either to low production and/or the loading of liquids in the wellbores from existing wells within the Klein/Vaughn Area and the economic life of that production is extended if it is downhole commingled.

(9) The approval of downhole commingling of these formations in the Klein/Vaughn Area will extend the economic life of the existing wells and thereby increase ultimate recovery from these formations.

(10) That there are five (5) remaining undeveloped 160-acre gas proration and spacing units listed as:

**T26N, R6W**

Section 30: ALL (4 wells)

Section 33: SE/4 (1 well)

(11) Any new wells to be drilled in the Klein/Vaughn Area should be approved for downhole commingling upon submittal to the NMOCD-Aztec of production data demonstrating that only one of the zones is economic based upon criteria which Meridian submitted at the hearing.

(12) A minimum of six (6) months of production from the Dakota pool and from the Mesaverde pool, as applicable, from any new wells is necessary in order to have sufficient production and pressure history from which to make an accurate allocation formula.

(13) The processing of downhole commingling applications for the Klein/Vaughn Area on a "well-by-well" basis will be an administrative burden to the Division and to the operator.

(14) Approval of downhole commingling on an area-wide basis for the Klein/Vaughn Area is in the best interests of conservation, the prevention of waste and the protection of correlative rights.

(15) Meridian Oil Inc. requests the adoption of a summary administrative procedure with the necessary exceptions to Division Rule 303(C) so that the Supervisor of the Aztec District Office of the Division

shall approve the downhole commingling of said production for new wells on an area-wide basis for the Klein/Vaughn Area.

(16) The ownership is common among these three formations within the Klein/Vaughn Area.

(17) Based upon Meridian's evidence, the Division further finds that:

a) The wells in the Klein/Vaughn Area which are currently single completions in the Dakota formation, the Mesaverde formation or the Gallup formation cannot be dually completed because of mechanical condition and therefore downhole commingling is necessary to economically produce in all three formations.

b) The well in the Klein/Vaughn Area which is currently dually completed in the Dakota and Mesaverde formations cannot be produced with the Gallup formation because of mechanical conditions and therefore Gallup production will be wasted unless it is produced by downhole commingling.

c) Any new well to be drilled in the Klein/Vaughn Area that is determined to be economic only in the Mesaverde formation will require downhole commingling in order to maximize recoveries from either the Gallup or Dakota formations.

d) That there will be no crossflow between the three zones commingled.

e) That the value of the commingled production will not be less than the sum of the values of the individual production.

f) It is expected that the bottom hole pressure of the lower pressure zone is not less than 50 percent of the bottom hole pressure of the higher pressure zone adjusted to a common datum.

g) That gas production from future wells from the Dakota, the Mesaverde and the Gallup Pool in the Klein/Vaughn Area should be capable of only capable of low rate production. The reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingle within an existing or future well.

(18) That in order to allocate the commingled production to each of the commingled zones in the wells, applicant will submit to the supervisor of the Aztec district office of the Division a determination of an allocation formula for each of the production zones on a wellbore basis as described on Exhibit " " attached, along with actual cost, data and production information for each such well.

(19) The supervisor of the Aztec office of the Division should be authorized to approve the downhole commingle and authorize the operator to produce the well if the economic limit for production of either the Dakota, Gallup, or Mesaverde is less than the curve plotted on Exhibit "D". In the event the well initially fails to qualify for downhole commingle, the well can still qualify at a Future Date if and when the economic limit of either the Dakota, Gallup, or Mesaverde production drops below the curve on Exhibit "D"

(20) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time either of the wells is shut in for an extended time period.

(21) No offset operator and / or interest owner appeared at the hearing in opposition to the proposed downhole commingle.

**IT IS THEREFORE ORDERED:**

(1) That the applicant, Meridian Oil Inc., is hereby authorized to commingle Dakota, Mesaverde and Gallup production within the wellbores of the twenty-six (26) existing wells within the "Klein/Vaughn Area" as listed on Exhibit "A" attached hereto.

(2) That the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine an allocation formula for the allocation of production to each zone within the wellbore of each said well listed on Exhibit "A" attached hereto which formula shall be consistent with the allocation formula and formate set forth on Exhibit "B" attached hereto.

**IT IS FURTHER ORDERED**

(3) That the following administrative procedure is hereby adopted whereby the district supervisor of the Division District office at Aztec shall administratively authorize downhole commingling of the Basin Dakota, Blanco Mesaverde and undesignated Gallup zones in any future wells located within the Klein/Vaughn Area" as described in Finding No.(2), above.

(4) That qualifications and application for and approval of requests for downhole commingle, shall be made in accordance with the following:

(a) Application for administrative approval of downhole commingling under this order shall include:

- (1) Name and address of the operator
- (2) Lease name, well number, well location, and names of the pools to be commingled.
- (3) A mechanical log of the well.
- (4) A diagrammatic sketch of the well showing casing, tubing, cement tops, perforations, and any downhole equipment.

- (5) Pressure and production for each zone to be commingled as determined as follows:
  - a. Pressure and production for the Dakota zone to be commingled will be with a minimum of six (6) months production.
  - b. Pressure and production for the Gallup zone will be determined with production testing during completion.
  - c. Pressure and production for the Mesaverde zone to be commingled will be with a minimum of six (6) months production.
- (6) A formula consistent with the form set forth on Exhibit "B" attached for the allocation of production to each of the commingled zones.

(b) As part of the procedure for obtaining authorization to produce the subject well as a downhole commingle well, the operator shall submit to the Supervisor of the Aztec Office of the Division a sworn certificate verifying the cost, the Initial Rate and the EUR for the well.

(5) The Supervisor of the Aztec office of the Division shall approve the downhole commingling and authorize the operator to produce the well if the Economic limit for production from either pool in that well is less than the curve for the dual completion case as plotted on Exhibit "C". In the event the well initially fails to qualify for downhole commingling, the well can still qualify at some future date if and when the Economic Limit in that well for production from either pool drops below the dual completion case curve plotted on said Exhibit "C".

(6) That the operator shall immediately notify the Division's Aztec district office any time any well commingled under the terms of this order has been shut-in for an extended time period and shall concurrently present, to the Division a plan for remedial action.

(7) Upon such approval, the well shall be operated in accordance with the provisions of this order which authorized the commingling, and allocation of the commingled production from the well to each of the producing zones shall be in accordance with the allocation formula set forth in this order.

(8) The Division Director may rescind authority to commingle production in the wellbore and require both zones to be produced separately, if, in his opinion, waste or reservoir damage is resulting thereby, or if any change of conditions render the installation no longer eligible for downhole commingling under the provisions of Rule 1, paragraphs (a) through (d).

(9) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

**Exhibit 'A'**

**Twenty-Four (24) Existing Wells  
that are available for commingled production from the DK, GP, & MV in the  
"Klein/Vaughn Area" listed by location.**

<b>Well Name</b>	<b>#</b>	<b>Location</b>		<b>Comp Date</b>
VAUGHN	8	26N06W26A	DK	11/18/88
VAUGHN	12E	26N06W26C	DK	12/10/85
VAUGHN	12	26N06W26K	DK	06/16/71
VAUGHN	8E	26N06W26P	DK	10/22/85
VAUGHN	13	26N06W27A	DK	11/2/71
VAUGHN	14E	26N06W27D	DK	11/20/85
VAUGHN	14	26N06W27K	DK	08/06/71
VAUGHN	15	26N06W28A	DK	07/14/71
VAUGHN	30E	26N06W28D	DK	11/20/85
VAUGHN	30	26N06W28K	DK	10/17/79
VAUGHN	15E	26N06W28P	DK	11/11/85
VAUGHN	31	26N06W29B	DK	12/17/80
VAUGHN	32E	26N06W29D	DK	12/12/85
VAUGHN	31E	26N06W29I	DK	01/09/86
VAUGHN	32	26N06W29K	DK	12/10/80
KLEIN	28E	26N06W33C	DK	01/10/85
KLEIN	26	26N06W33H	DK	11/05/79
KLEIN	28	26N06W33K	DK	12/30/80
KLEIN	19	26N06W34A	DK	07/01/72
KLEIN	19E	26N06W34C	DK	10/10/85
KLEIN	24E	26N06W34I	DK	10/10/85
KLEIN	24	26N06W34L	DK	11/26/73
KLEIN	27	26N06W35K	DK	09/20/78
KLEIN	27E	26N06W35O	DK	10/25/85

**Exhibit 'B'**

**Klein / Vaughn Lease Area  
Dakota Pressure / Production Information**

NAME	#	LOCATION		7-Day ISICP	DATE	Btm Hole 03/31/94	Most recent rate MCFD
VAUGHN	8	26N06W26A	DK	2597	11/18/68		44
VAUGHN	12E	26N06W26C	DK	1508	12/10/85	516	460
VAUGHN	12	26N06W26K	DK	2423	06/16/71		32
VAUGHN	8E	26N06W26P	DK	1772	10/22/85	957*	115
VAUGHN	13	26N06W27A	DK	2225	11/2/71		39
VAUGHN	14E	26N06W27D	DK	2208	11/20/85		153
VAUGHN	14	26N06W27K	DK	2604	08/06/71		378
VAUGHN	13E	26N06W27O	DK	1805	01/31/92		412
VAUGHN	15	26N06W28A	DK	2475	07/14/71	920	24
VAUGHN	30E	26N06W28D	DK	2201	11/20/85		178
VAUGHN	30	26N06W28K	DK	2272	10/17/79	730	93
VAUGHN	15E	26N06W28P	DK	1950	11/11/85		108
VAUGHN	31	26N06W29B	DK	2052	12/17/80		50
VAUGHN	32E	26N06W29D	DK	2212	12/12/85		110
VAUGHN	31E	26N06W29I	DK	2334	01/09/86		58
VAUGHN	32	26N06W29K	DK	2489	12/10/80	694	67
KLEIN	28E	26N06W33C	DK	2104	01/10/85		51
KLEIN	26	26N06W33H	DK	1538	11/05/79		133
KLEIN	28	26N06W33K	DK	2509	12/30/80	835*	54
KLEIN	26E	26N06W33O	DK	2100	10/02/85		97
KLEIN	19	26N06W34A	DK	2598	07/01/72	1013*	56
KLEIN	19E	26N06W34C	DK	2087	10/10/85	903*	110
KLEIN	24E	26N06W34I	DK	1910	10/10/85		90
KLEIN	24	26N06W34L	DK	2264	11/26/73		171
KLEIN	27	26N06W35K	DK	2473	09/20/78		115
KLEIN	27E	26N06W35O	DK	2311	10/25/85	891*	83

Current Bottom-hole Pressure Average: 828 psi @ 7000' +/-  
Current Candidate Commingle Rate Average: 114 MCFD

\* Echometer Interpreted Bottom-Hole Pressure

Note: Vaughn # 13E is a dual Mesaverde / Dakota producer.  
Klein # 26E is plugged & abandoned

# Klein / Vaughn New <sup>1 Phase</sup> Drill Dual Completion

## Dakota Determination To Commingle Rate of Return vs EUR

