STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

ADMINISTRATIVE ORDER DHC-1005

Meridian Oil Company
P.O. Box 4289
Farmington, NM 87499-4289

RECEIVED
MAY 3 1 1994
OIL CON. DIV.
DIST. 3

Attention: John D. Clayton

San Juan 28-5 Unit Well No. 212
Unit L, Section 15, Township 28 North, Range 5 West, NMPM,
Rio Arriba County, New Mexico.
Basin-Fruitland Coal and Undesignated-Pictured Cliffs Pools

Dear Mr. Clayton:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations to permit the subject well to commingle production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the two zones is hereby placed in abeyance.

In accordance with the provisions of Rule 303-C-4., total commingled oil production from the subject well shall not exceed 20 barrels per day, and total water production shall not exceed 40 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by Division Rules and Regulations or by the gas allowable for each respective prorated pool as printed in the Division's San Juan Basin Gas Proration Schedule.

Assignment of allowable to the well and allocation of production from the well shall be in accordance with the allocation formula shown on Exhibit "A", attached hereto and made a part hereof. Any condensate production will be allocated entirely to the Undesignated-Pictured Cliffs interval.

The operator is responsible for reporting the monthly gas production from the subject well to the Division utilizing the allocation formula adopted herein. An annual report shall be submitted by the operator to both the Aztec and Santa Fe offices of the Division showing the complete computations for the previous twelve-month period.

FURTHER: The operator shall notify the Aztec District Office of the Division upon implementation of the commingling process.

Pursuant to Rule 303-C-5, the commingling authority granted by the order may be rescinded by the Division Director if, in his opinion, conservation is not being best served by such commingling.

Approved at Santa Fe, New Mexico on this 25th day of May, 1994.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

WJL/DRC/amg

cc: Oil Conservation Division - Aztec
U.S. Bureau of Land Management - Farmington

S.J. 28-5 UNIT #212

MONTHLY GAS PRODUCTION ALLOCATION FORMULA

GENERAL EQUATION

Qt = Qftc + Qpc

WHERE: Qt = TOTAL MONTHLY PRODUCTION (MCF/MONTH)

Qftc = FRUITLAND COAL (FTC) MONTHLY PRODUCTION
Qpc = PICTURED CLIFFS (PC) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR Qftc:

Qftc = Qt - Qpc

ANY PRODUCTION RATE OVER WHAT IS CALCULATED FOR THE PICTURED CLIFFS (PC) USING THE APPLIED FORMULA IS FRUITLAND COAL (FTC) PRODUCTION.

PICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

Qpc = Qpci * e^{-(Dpc)*(t)}

WHERE: **Qpci** = INITIAL PC MONTHLY FLOW RATE (CALCULATED FROM FLOW TEST)

Dpc = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM:
Dpc = (Qpci-Qpcabd)/Np(pc)
See Determination of Qpci and PC Estimated Ultimate Recovery (EUR)
Qpcabd = 300 MCF/M

WHERE: **Np(pc)** = PICTURED CLIFFS ESTIMATED ULTIMATE RECOVERY (EUR)
P*x 0.81 MMCF/PSI x Rf**
P* = INITIAL RESERVOIR PRESSURE (7 DAY SIBHP)
RF = RECOVERY (FIELD ANALOGY): = 0.95
** DETERMINED FROM MATERIAL BALANCE (FIELD ANALOGY) AND VOLUMETRIC RESERVES (LOG ANALYSIS)

By calculating PC EUR FROM SIBHP and determining PC initial flow rate, Dpc can then be estimated utilizing the previously described parameters

THUS: **Qftc = Qt - Qpci * e^{-(Dpc)*(t)}**

WHERE: **(t) IS IN MONTHS**

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.

Ernie Busch

From:	Ernie Busch
To:	David Catanach
Subject:	MERIDIAN OIL INC. (DHC)
Date:	Tuesday, May 17, 1994 8:44AM
Priority:	High

WELL NAME & NO.	SAN JUAN 28-5 UNIT #212
LOCATION	L-15-28N-05W
RECOMMEND	APPROVAL

Control Number: 005893 POINT OF DISPOSITION AND WELL COMPLETION INFORMATION **REVISION**

OGRID: 002505 Operator Name: BLACKWOOD & NICHOLS CO A LTD PARTNERSHIP

20 N. BROADWAY 1500 MID AMERICAN TOWER OKLAHOMA City OK 73102-8260

C-115 Filer Contact Name: Christell Sammons Phone: (405)552-4732 FAX: 405 552-4550

POD: 0598210 Product Type: OIL Facility Type: 03 Location: G 19 31N 06W County SAN JUAN

	OGRID	Name	OGRID	Name
Authorized Transporter(s):	009018	GIANT REFINERY		

Description of POD (40 characters or less): _____

POD: 0598230 Product Type: GAS Facility Type: 01 Location: G 19 31N 06W County SAN JUAN

	OGRID	Name	OGRID	Name
Authorized Transporter(s):	~~016191~~	~~NORTHWEST PIPELINE CORP.~~		
	025244	Williams Field Services		

Description of POD (40 characters or less): _____

POD: 0598250 Product Type: WATER Facility Type: 05 Location: G 19 31N 06W County SAN JUAN

Description of POD (40 characters or less): _____

WELL COMPLETIONS

Code	Pool Name	Code	Producing Property Name		API Well No.	Location	Well
72319	BLANCO MESAVERDE (PRORATED GAS)	002117	NORTHEAST BLANCO UNIT	✓	30-045-10572	G 19 31N 06W	061

MERIDIAN OIL

April 21, 1994

New Mexico Oil Conservation Division
Attn: Mr. Bill LeMay
P.O. Box 2088
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

RE: San Juan 28-5 Unit #212
Unit L, Section 15, T28N, R05W
Rio Arriba County, New Mexico
Downhole Commingling Request

Dear Mr. LeMay:

Meridian Oil Inc. is applying for an administrative downhole commingling order for the referenced well in the Pictured Cliffs and the Basin Fruitland Coal fields. The ownership of the zones to be commingled is common. All offsetting acreage in this case belongs to Meridian Oil Inc. A letter has been sent to the Bureau of Land Management notifying them.

The Fruitland Coal and Pictured Cliffs wells producing in this area operated by Meridian are marginally productive. Based on offset production in this area, drilling of separate wells and dual completions to produce the Fruitland Coal and Pictured Cliffs are not economically justified. The only economical way to recover the Fruitland Coal and Pictured Cliffs reserves in this drill block is to downhole commingle production from both zones in this well.

It is proposed to complete the Pictured Cliffs formation and test its production. It is then proposed to set a bridge plug above the Pictured Cliffs, perforate and stimulate the Fruitland Coal, and test its production. The bridge plug will then be removed, and both zones produced through a single string of tubing. The reservoir characteristics of each of the subject zones are such that underground waste will not be caused by the proposed commingling. Neither producing interval makes oil, and only minimal amounts of similar water are produced in the offset wells. The average shut-in pressures in the area for the Pictured Cliffs and Fruitland Coal are **1090** and **1070** psi, respectively.

The allocation of the commingled production will be calculated using the attached allocation formula. This formula is based on offset Pictured Cliffs production performance (material balance) and volumetrics, and uses accepted Reservoir Engineering methods to allocate the Pictured Cliffs reserves. This addresses the Fruitland Coal producing characteristics of early life inclining production rates.

Approval of this commingling application will allow for the prevention of wasted resources and protection of correlative rights. Included with this letter are plats showing ownership of offsetting leases for both the Pictured Cliffs and Fruitland Coal, a copy of the letter to the BLM and an allocation formula.

Sincerely,

John D. Clayton
Regional Engineer

SHL/rjp
Attachments

cc: Frank T. Chavez - NMOCD/Aztec

MERIDIAN OIL

April 21, 1994

Bureau of Land Management
1235 La Plata Highway
Farmington, NM 87401

RE: San Juan 28-5 Unit #212
Unit L, Section 15, T28N, R05W
Rio Arriba County, New Mexico
Downhole Comrningle Request

Gentlemen:

Meridian Oil Inc. is in the process of applying for a downhole commingling order from the New Mexico Oil Conservation Division (NMOCD) for the referenced well located in Rio Arriba County, New Mexico. The approved application will commingle the Pictured Cliffs and the Basin Fruitland Coal fields.

The purpose of this letter is to notify you of Meridian's application. If you have no objections to the NMOCD issuing a commingling order, we would appreciate your signing this letter and returning the original to Mr. LeMay at the following address with a copy to this office:

Mr. William LeMay
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Your prompt attention to this matter would be appreciated.

Yours truly,

for JDC

John D. Clayton
Regional Engineer

The undersigned hereby waives objection to the referenced Downhole Commingle Request.

COMPANY/OWNER:_____

TITLE:_____

DATE:_____

S.J. 28-5 UNIT #212

MONTHLY GAS PRODUCTION ALLOCATION FORMULA

GENERAL EQUATION

Qt = Qftc + Qpc

WHERE: Qt = TOTAL MONTHLY PRODUCTION (MCF/MONTH)

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Qpc = PICTURED CLIFFS (PC) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR Qftc:

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WHERE: **Qpci** = INITIAL PC MONTHLY FLOW RATE (CALCULATED FROM FLOW TEST)

Dpc = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM:
Dpc = (Qpci-Qpcabd)/Np(pc)
See Determination of Qpci and PC Estimated Ultimate Recovery (EUR)
Qpcabd = 300 MCF/M

WHERE: **Np(pc)** = PICTURED CLIFFS ESTIMATED ULTIMATE RECOVERY (EUR)
P*x 0.81 MMCF/PSI x Rf**
P* = INITIAL RESERVOIR PRESSURE (7 DAY SIBHP)
RF = RECOVERY (FIELD ANALOGY): = 0.95
** DETERMINED FROM MATERIAL BALANCE (FIELD ANALOGY) AND VOLUMETRIC RESERVES (LOG ANALYSIS)

By calculating PC EUR FROM SIBHP and determining PC initial flow rate, Dpc can then be estimated utilizing the previously described parameters

THUS: **Qftc = Qt - Qpci * e^{-(Dpc)*(t)}**

WHERE: **(t) IS IN MONTHS**

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.

S.J. 28-5 UNIT #212

DETERMINATION OF Qpci:
(INITIAL PICTURED CLIFFS MONTHLY PRODUCTION)

$$Qpci = Qt(1) \times Qpc(p) / \{Qpc(p) + Qftc(p)\}$$

WHERE:

Qt(1) = FIRST MONTH TOTAL PRODUCTION (MCF)

Qpc(p) = FINAL PICTURED CLIFFS FLOW TEST (MCFPD)

Qftc(p) = FINAL FRUITLAND COAL FLOW TEST (MCFPD)

S.J. 28-5 UNIT #212

EXAMPLE DETERMINATION OF:

(a) Np(pc)	PC EUR
(b) Qpci	INITIAL PC MONTHLY FLOW RATE
(c) Dpc	PC MONTHLY DECLINE RATE

(a) DETERMINATION OF Np(pc)

Np(pc) = 0.81 (MMCF/PSI) X P*(PSI) X Rf

P* = 1090 PSI (FROM 7 DAY SIBHP)

Np(pc) = 0.81 MMCF/PSI X 1090 PSI X 0.95

Np(pc) = 839 MMCF

(b) DETERMINATION OF Qpci

Qpci = Qt(1) X {Qpc(p)/(Qpc(p) + Qftc(p))}

Qt(1) =	15,000 MCF	1ST MONTH TOTAL PRODUCTION
Qpc(p) =	500 MCF/D	PC FLOW TEST
Qftc(p) =	400 MCF/D	FTC FLOW TEST

Qpci = 15,000 MCF/M X {500 MCF/D/(500 MCF/D + 400 MCF/D)}

Qpci = 8,333 MCF/M

(c) DETERMINATION OF Dpc

Dpc = (Qpci - Qpcabd)/Npc

Qpcabd = 300 MCF/M

Dpc =(8,333MCF/M - 300MCF/M)/(839,000MCF)

Dpc = 0.010/M

THUS: Qftc = Qt(MCF/M) - 8,333(MCF/M) X e^{-(0.010(1/M)) X t(M)}

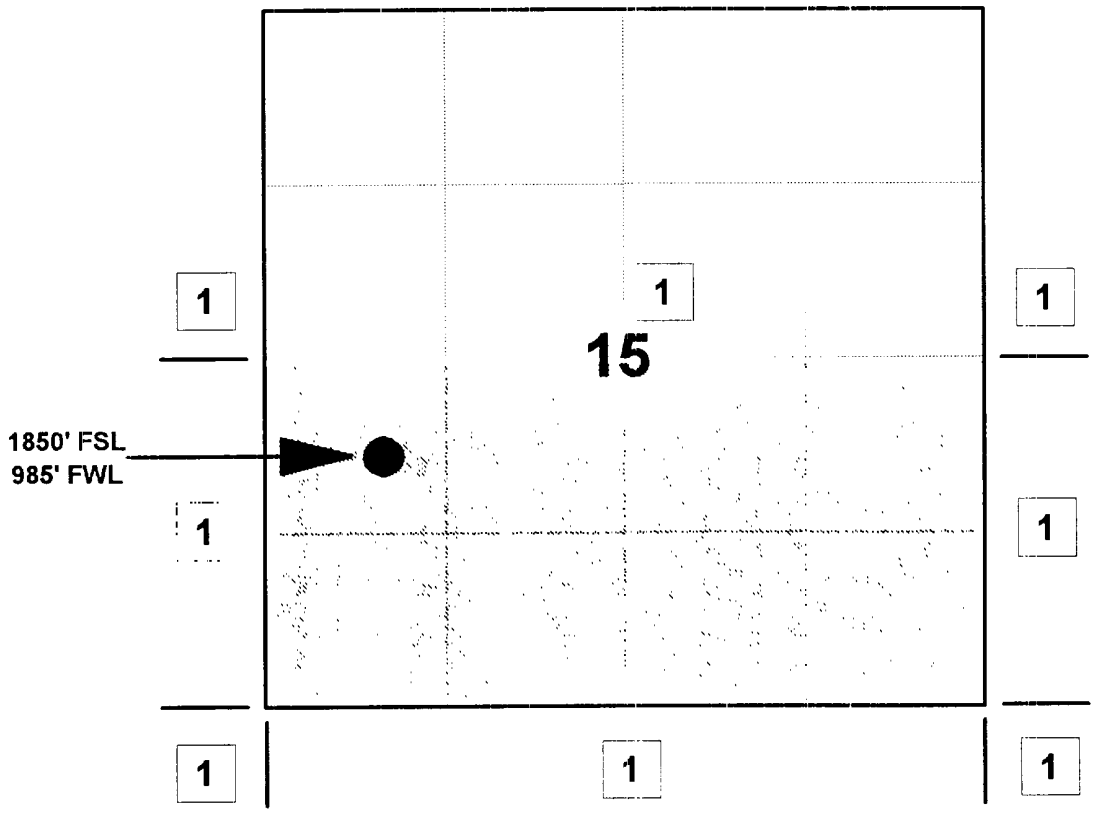
MERIDIAN OIL INC

SAN JUAN 28-5 UNIT #212

OFFSET OPERATOR \ OWNER PLAT

Pictured Cliffs \ Fruitland Coal Commingle Well

Township 28 North, Range 5 West



1) Meridian Oil Inc

Fruitland Coal Formation

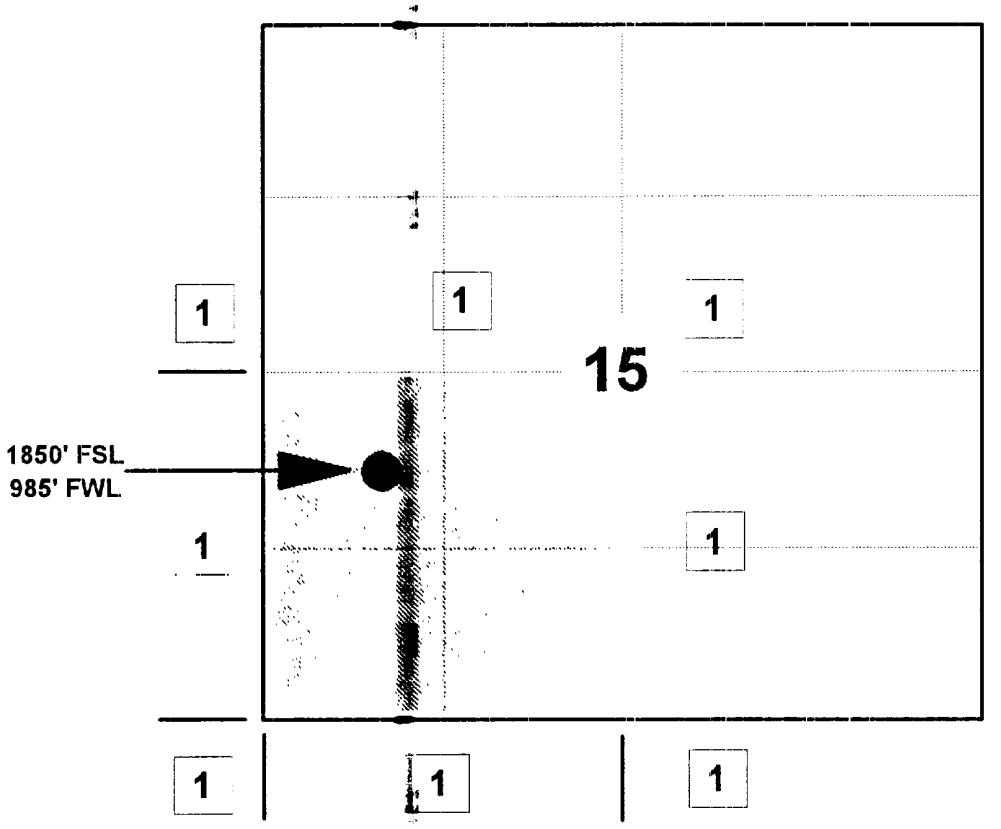
MERIDIAN OIL INC

SAN JUAN 28-5 UNIT #212

OFFSET OPERATOR \ OWNER PLAT

Pictured Cliffs \ Fruitland Coal Commingle Well

Township 28 North, Range 5 West



1) Meridian Oil Inc

Pictured Cliffs Formation