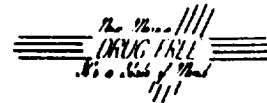




STATE OF NEW MEXICO  
ENERGY, MINERALS and NATURAL RESOURCES DIVISION  
OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178

Date: \_\_\_\_\_

Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504-2088

RE: Proposed MC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed NSP \_\_\_\_\_

Proposed DHC α \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed PMX \_\_\_\_\_  
Proposed DD \_\_\_\_\_

Gentlemen:

I have examined the application received on 11/24/93  
for the Meridian OPERATOR Juanita G #8 LEASE & WELL NO.

G-2-26N-SW and my recommendations are as follows:  
UL-S-T-R

Approve  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours truly,

3-8

submitted in lieu of Form 3160-5

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Sundry Notices and Reports on Wells

1. Type of Well  
GAS

2. Name of Operator  
MERIDIAN OIL

3. Address & Phone No. of Operator  
PO Box 4289, Farmington, NM 87499 (505) 326-9700

4. Location of Well, Footage, Sec., T, R, M  
1650' FNL, 1650' FEL Sec.2, T-26-N, R-5-W, NMPM

5. Lease Number  
Jic.Contract 150

6. If Indian, All. or Tribe Name  
Jicarilla Apache

7. Unit Agreement Name

8. Well Name & Number  
Jicarilla G #8

9. API Well No.

10. Field and Pool  
Blanco MV/Tocito G1

11. County and State  
Rio Arriba Co, NM

12. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OTHER DATA

Type of Submission	Type of Action	
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input checked="" type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injectio
	<input checked="" type="checkbox"/> Other - MV/G1/Dk commingle	

13. Describe Proposed or Completed Operations

01-09-94 MOL&RU. Kill well. TOO H w/tbg.

01-10-94 Ran gge ring to 7600'. Lost ring & basket in hole. TIH w/RBP, stopped @ 7380'. TIH, pushed fish to 7626'. Set RBP @ 7550'. Dump 2 sx sand on plug. Set pkr @ 7543'. PT 3500#, ok.

01-11-94 Load hole. PT csg 5200-7550' @ 3000#/10 min, ok. Set RBP @ 5000'. Set pkr @ 4980'. PT failed, released pkr. Load hole to surface. PT csg 5000-surface @ 500#/10 min, ok. Ran CBL. Ran GR-CCL-CBL 5000-surface'. PT csg 1000#/10 min, ok. TOO H w/RBP. Ran GR-CCL-CBL 7750-5000', GR-dual spaced CNI 7550-5200'. Perf Gallup 7106-7115' w/4 spf.

01-12-94 PU pkr, strap in hole.

01-13-94 Frac w/20/40 sand and gel wtr. Flow back after frac.

01-14-94 Flow back after frac. TOO H.

01-15-94 Set RBP @ 5754'. Perf Pt Lookout and Menefee 5697-5268' w/1 spf. Set pkr @ 5727' and RBP @ 5754'. P 3500#/10 min, ok. Set pkr @ 5196'. Spot acid.

01-16-94 Set pkr @ 5196'. Frac w/20/40 sand and wtr. Flow back. Unload well.

01-17-94 Blow well to pit.

(cont'd on back)

14. I hereby certify that the foregoing is true and correct.

Signed [Signature] Title Regulatory Affairs Date 1/27/94

(This space for Federal or State Office use)  
APPROVED BY [Signature] Title Acting Area Manager Date 2/16/94  
CONDITION OF APPROVAL, if any.

UNACCD

- 01-18-94 Blow well. Set RBP @ 5252'. Ran pressure bomb to 5255'.  
01-19-94 PT @ 5255'. TOOH w/pressure bomb. Blow down. CO to 5754'. TOOH w/RBP.  
01-20-94 CO 7312-7550'. Blow to pit.  
01-21-94 Repair rig.  
01-22/23 CO and flow well.  
01-24-94 TIH, latch onto RBP @ 7550'. TOOH w/RBP. TIH w/overshot, work over fish. Push fish to PBTD. Blow clean.  
01-25-94 TOOH, LD fish (ggs ring) and overshot. CO & blow well. Ran after frac log 7550-7000'. Perf Dakota 7513-7826' w/2 spf, 116 holes).  
01-26-94 Set FBP @7794'. Spot 400 gal 15% HCl. Set pkr @ 7418'. Est rate. Spot 2000 gal 15% HCl and 1500 gal 1% KCl. Dropped tbg and fished.  
01-27-94 CO and blow well. Ran 2 3/8", 4.7#, J-55 tbg landed @ 7706'. ND BOP. NU WH. Released rig.

*Alice Jr* *Q*



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

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

*1-8658*



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

**ADMINISTRATIVE ORDER DHC-959**

Meridian Oil, Inc.  
P.O. Box 4289  
Farmington, NM 87401

Attention: Thomas E. Mullins

**RECEIVED**  
**DEC 27 1993**  
**OIL CON. D.**  
**DIST. 3**

*Jicarilla "G" Well No. 8*  
*Unit G, Section 2, Township 26 North, Range 5 West, NMPM,*  
*Rio Arriba County, New Mexico.*  
*Blanco Mesaverde, ~~Blanco South Mesa~~ Gallup and Basin Dakota Pools*

Dear Mr. Mullins:

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 three 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 50 barrels per day, and total water production shall not exceed 100 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.

In accordance with the provisions of Rule 303-C, the supervisor of the Aztec District Office of the Oil Conservation Division shall determine the proper allocation of production from the subject well following its completion.

*Administrative Order DHC-959*  
*Meridian Oil, Inc.*  
*December 21, 1993*  
*Page 2*

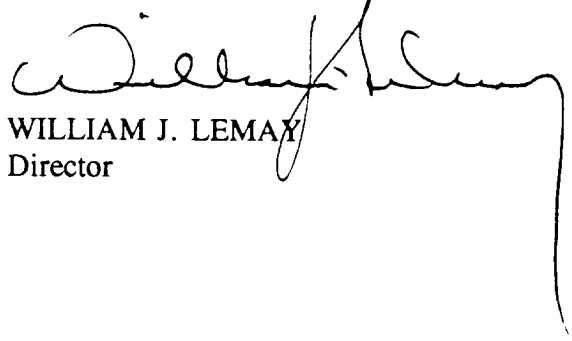
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FURTHER: The operator shall notify the Aztec District Office of the Division upon implementation of the commingling process.

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 21st day of December, 1993.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director

S E A L

WJL/BES/amg

cc: Oil Conservation Division - Aztec  
Oil Conservation Division - Data Processing  
Bureau of Land Management - Farmington

# MERIDIAN OIL

**RECEIVED**

November 23, 1993

NOV 24 1993

CON  
DIST. 3

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

RE: Jicarilla G # 8  
Unit G, Section 02, T26N, R05W  
Rio Arriba County, New Mexico  
Downhole Commingling Request

Dear Mr. Lemay:

Meridian Oil Inc. is applying for an administrative downhole commingling order (3 zones) for the referenced well in the Blanco Mesaverde, Blanco South Mesa Gallup, and Basin Dakota fields. The ownership of the zones to be commingled is common. Meridian holds all offset acreage to this well. The Bureau of Land Management will receive notification of this downhole commingling.

The subject well was drilled and dual completed in the Mesaverde and Dakota zones in 1970. In March 1989, downhole commingling of the Mesaverde & Dakota zones was approved per NMOCD Order #R-8658 per 1-1/2" tubing in the Jicarilla G # 8. The Gallup zone is prospective in the subject well and several successful completions are evident in the surrounding offsets. The Jicarilla G # 8 Mesaverde has produced 1,026 MMCF and 1.1 MBO while the Dakota has produced 1,669 MMCF and 7.5 MBO to date. Current production from this commingled wellbore is approximately 225 MCFD & 2 BOPD. With administrative approval of the additional Gallup zone in the referenced well, all three (3) zones may be efficiently produced up a single 2-3/8" tubing string, an initial increase of 340 MCFD is anticipated.

The reservoir characteristics of each of the subject zones are such that underground waste will not be caused by the proposed commingling. The fluids in these reservoirs are compatible and no precipitates will be formed to cause damage to any reservoir. Commingle of these three (3) zones has been authorized and successfully completed in the Jicarilla G # 9 (NE/4, Section 01, T26N, R05W, Order #R-8321). The latest 7-day shut-in surface casing pressure of the commingled Mesaverde and Dakota in the Jicarilla G # 8 is 588 psi taken September 2, 1993.

The Gallup production in offsets is quite erratic, therefore it is requested that a minimum of three (3) months actual sales line production combined with pressure and production data gathered during workover operations be utilized in developing the allocation formula for the Jicarilla G # 8. Meridian will consult with the district supervisor of the Aztec NMOCD office for approval of this allocation.

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 the Mesaverde, Gallup, and Dakota, a copy of the letter to the BLM, a wellbore diagram, a pertinent data sheet, and the proposed workover procedure.

(See following page)

New Mexico Oil Conservation Division  
Mr. Bill Lemay  
Jicarilla G # 8 - Downhole Commingling Request  
11/23/93

Sincerely,



Thomas E. Mullins  
Production Engineer

TEM  
attachments

cc: Frank Chavez - NMOCD/Aztec  
Well File

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NOV 24 1993  
OIL CON. DIV.  
DIST 3

# MERIDIAN OIL

November 23, 1993

Bureau of Land Management  
1235 La Plata Highway  
Farmington, New Mexico 87401

RE: **Downhole Commingling Request**  
Jicarilla G # 8  
Unit G, Section 02, T26N, R05W  
Rio Arriba County, New Mexico


Gentlemen:

- - -  
Meridian Oil Inc. is applying to the New Mexico Oil Conservation Division for administrative approval as per Rule 303 C to downhole commingle production from the Blanco Mesaverde, Blanco South Mesa Gallup, and Basin Dakota pools in the referenced well.

= = =  
The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling order, please sign the attached copy of this letter and return it to this office.

Your prompt attention to this matter would be appreciated.

Sincerely,



Thomas E. Mullins  
Production Engineer

The above downhole commingling request is hereby approved:

\_\_\_\_\_  
Date: \_\_\_\_\_

TEM

**R E C E I V E D**

NOV 24 1993

**OIL CON. DIV.**  
**\ DIST. 3**



# MERIDIAN OIL INC

JICARILLA G #8

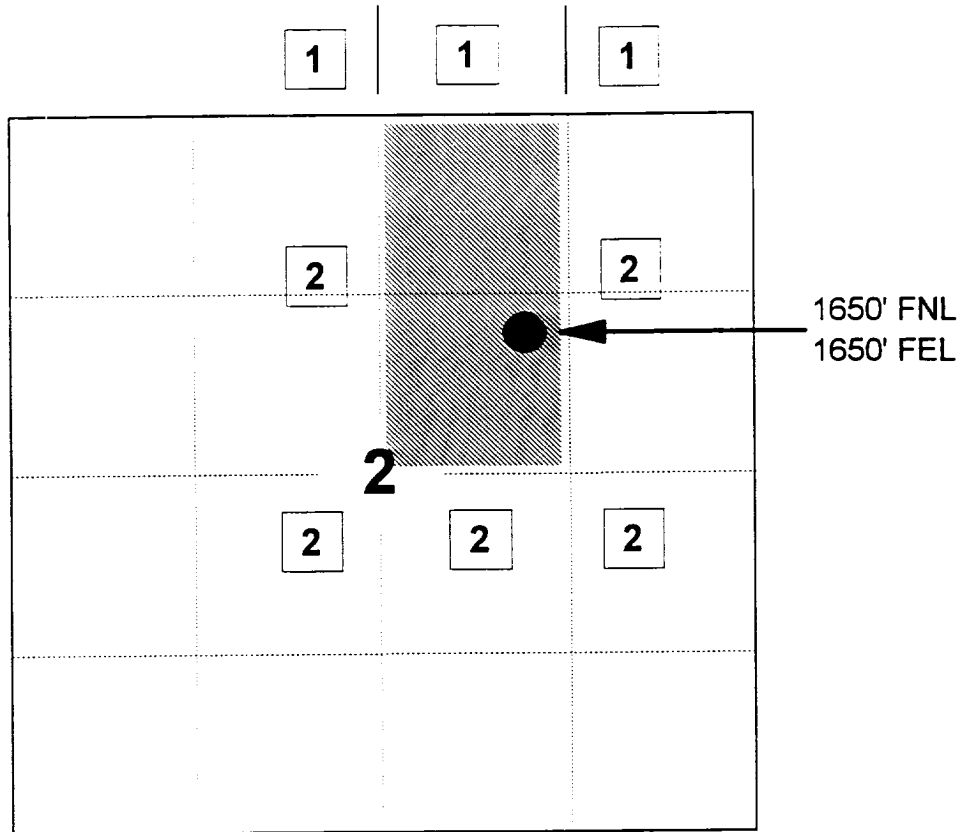
OFFSET OPERATOR \ OWNER PLAT

Mesaverde, Dakota & Gallup Commingle Well

Township 26 North, Range 5 West

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**OIL CON**  
**DIS**



1) Meridian Oil Inc

2) Meridian Oil Inc & Southland Royalty Company

# MERIDIAN OIL INC

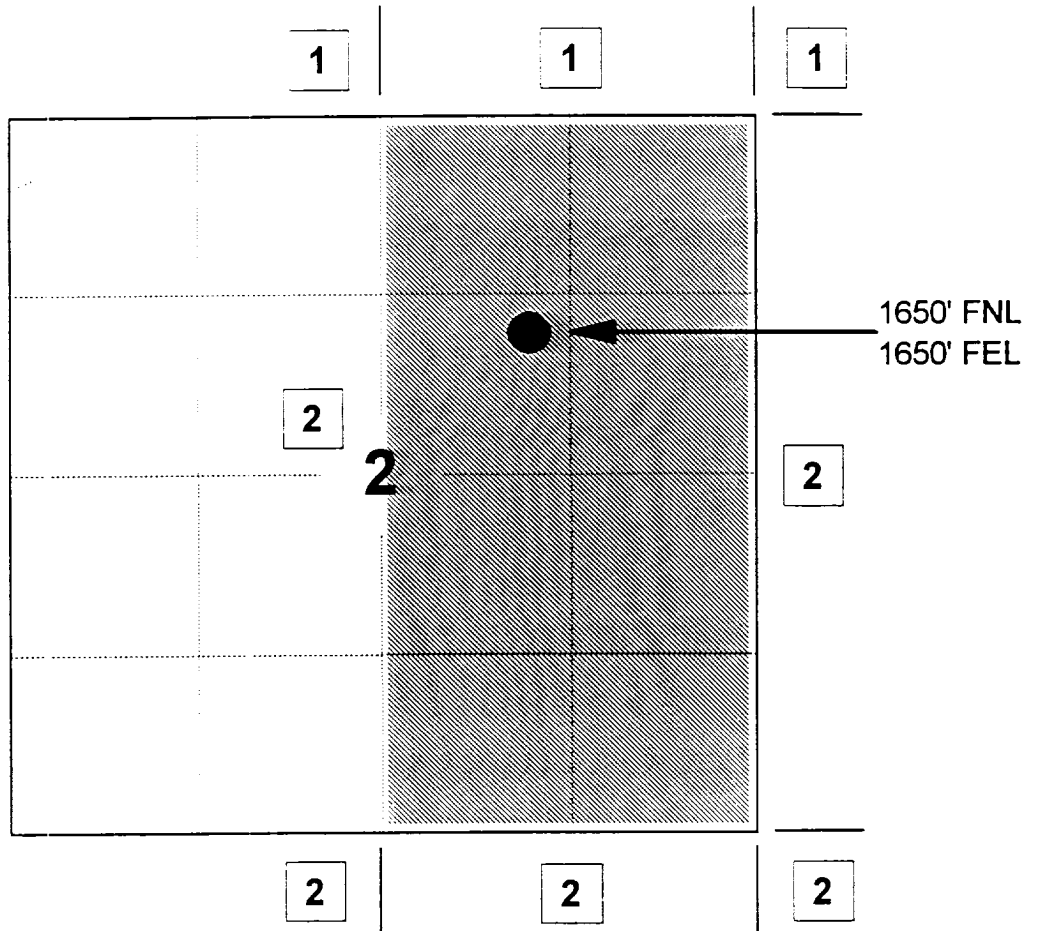
## JICARILLA G #8

### OFFSET OPERATOR \ OWNER PLAT

### Mesaverde, Dakota & Gallup Commingle Well

Township 26 North, Range 5 West

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UNIT. 3



1) Meridian Oil Inc

2) Meridian Oil Inc & Southland Royalty Company

24m  
Meridian Oil Inc.  
11/08/93

**Pertinent Data Sheet-Jicarilla G # 8**

**Location:** Unit G Section 02, T25N-R05W Rio Arriba County, New Mexico  
1650' FNL, 1650' FEL  
**Field:** Blanco Mesaverde **Elevations:** 6671' GL **TD:** 7869'  
Basin Dakota (Commingle) DHC # R-8658 6685' KB **PBTD:** 7833'  
**Completed:** 09-29-70 **DP #:** 35903 (MV) 35904 (DK)  
**Spud:** 09-12-70 **GWI:** 62.5000 % 62.5000 %  
**NRI:** 54.6875 % 54.6875 %

**Casing Record:**

<u>Hole Size</u>	<u>Casing Size</u>	<u>Wt &amp; Grade</u>	<u>Depth Set</u>	<u>Sxs Cement</u>	<u>TOC</u>	
13-3/4"	10-3/4"	32.75# H-40	307'	250 sxs	Surface	Circulated good cmt
9-7/8"	7-5/8"	26.40# K-55	3600'	1050 sxs	Surface	Need to verify!
6-3/4"	5-1/2" Liner	15.5# K-55	3469'-7869'	700ft3	3469'	Circ 10 bbls

**Tubing & Rod Record:**

<u>Tubing Size:</u>	<u>Wt &amp; Grade</u>	<u>Depth Set</u>	
1-1/2"	2.90# EUE	7696'	1 jt, standard SN, 79 jts, 8 blast jts, 160 jts. SN @ 7664' Blast Joints from 5026'-5188'

**Formation Tops:**

Ojo Alamo:	2667'	Mancos:	6700'
Kirtland:	3005'	Tocito:	6997'
Fruitland:	3145'	Greenhorn:	7500'
Pictured Cliffs:	3405'	Graneros:	7553'
Lewis:	3574'	Dakota (Two Wells):	7600'
Cliff House:	5040'	(Paguete):	7692'
Menefee:	5178'	(1st Cubero):	7730'
Point Lookout:	5554'	(2nd Cubero):	7766'
		(Oak Canyon):	7812'
		(Encino):	7835'

**Logging Record:** Dens, Temp, IND, CBL 09-25-70

**Stimulation:** Perf 1st Stage Dakota 1 SPF (0.48" holes) 7694'-7716', 7740'-7750', 7774'-7784' (45 holes total)  
Frac w/ 86,520 gal water & 50,000# 20/40, 20,000# 10/20, 500# 12/20 glass at 52 BPM 3500 psi, 2500  
ISIP Perf 2nd Stage Dakota (0.48" holes) 7596'-7614' (19 holes total) Frac w/46,600 gal water & 20,000#  
20/40, 10,000# 10/20 at 41 BPM 3300, 2700 ISIP Perf Cliffhouse (0.48" holes) 5042'-5060', 5076'-  
5088', 5106'-5118', 5124'-5142', 5148'-5156', 5160'-5166' (80 holes total) Frac w/72,724 gal water &  
20,000# 20/40 60,000# 10/20 at 77 BPM 2000, drop 50 balls 1000 ISIP

**Workover History:**

03/1988 Applied for Commingle. DHC # R-8658  
10/1988 Pulled MV 1-1/2", Pulled DK 1-1/2", Milled Model 'D' @ 7490', POOH, Ran tubing as above.  
03/21/89 Allocation formula approved Mesaverde: 33% Gas, 22% Oil Dakota: 67% Gas, 78% Oil

**Production History:**

	<u>Cum Gas MCF</u>	<u>Cum Oil bbls</u>	<u>Rem Gas MCF</u>	<u>Pipeline Pressure:</u>	<u>200 psi</u>
Mesaverde:	1,026,888	1,175	1,327,465	<u>Current Rate Gas:</u>	225 MCFD
Dakota:	1,669,183	7,530	785,716	<u>Current Rate Oil:</u>	2 BOPD

**Transporter:**

Oil/Condensate:  
Gas:

Meridian Oil Inc.  
Gas Company of New Mexico

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OIL CON. DIST. 3

Jicarilla G # 8  
T26NR05W02G  
Recompletion & Commingle

NOV 2 4 1993

OIL CON. DIV  
DIST. 3

Current

KB: 6685'  
GL: 6671'

Proposed

KB: 6685'  
GL: 6671'

13-3/4" Hole  
10-3/4" 32.75#  
Casing  
@ 307'  
w/ 250 sxs to Surf

1-1/2" Tubing  
@ 7696'

Liner Top @ 3469'

9-7/8" Hole  
7-5/8" 26.4# Casing  
@ 3800'  
w/1050 sxs

TOC 7-5/8" @ surface  
Will Verify!

2-3/8" Tubing  
@ 7700'

TOC 5-1/2" @ 3469'  
Will Verify!

Formation Tops

Ojo Alamo	2687'
Kirtland	3005'
Fruitland	3145'
Pict. Cliffs	3405'
Lewis	3574'
Cliff House	5040'
Mesaverde	5178'
Point Lookout	5554'
Mancos	6700'
Tocito	6997'
Greenhorn	7500'
Graneros	7553'
Dakota	7600'

Mesaverde Perforations  
1 SPF 5042'-5166'

Mesaverde Perforations  
1 SPF 5042'-5166'  
1 SPF 5268'-5719'

Tocito Gallup Perforations  
4 SPF 7106'-7115'

Dakota Perforations  
1 SPF 7596'-7614'  
1 SPF 7694'-7784'

Dakota Perforations  
2 & 1 SPF 7513'-7614'  
2 & 1 SPF 7694'-7784'

6-3/4" Hole  
5-1/2" 15.5# Liner  
@ 7869'  
w/ 700 ft^3

PBTD: 7833'  
TD: 7869'

PBTD: 7833'  
TD: 7869'

Production was commingled per DHC # R-8658  
in the Mesaverde & Dakota in 1988.

Above demonstrates the tri-mingled production wellbore  
schematic for the Mesaverde, Tocito Gallup, & Dakota.

ILM  
11-16-93

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NOV 24 1993  
**OIL CON. DIV.**  
**DIST. 3**

**PROCEDURE FOR WORKOVER**

**Jicarilla G # 8**

**Unit G, Sec 02-T26N-R05W**

**Mesaverde/Dakota**

**Add Point Lookout, Meneffee, & Tocito to Wellbore & Commingle**

Prior to Starting Operation. Inspect Location. Dig & Fence Work Pit. Test & Install Anchors if necessary. Contact Gas Company of New Mexico to obtain Drill Gas Meter for workover operation. Comply with all BLM, NMOCD & MOI rules and regulations. **Always Hold Safety Meetings!**

- 
- \*\*\*\* Require Two-hundred-fifty-five (255) joints 2-3/8" 4.7# J-55 EUE tubing on location.
  - \*\*\*\* Require Four (4) 3-1/8" Drill collars, all changeovers, floats, & subs.
  - \*\*\*\* Require (7500') 3-1/2" 9.3# N-80 Upset Frac Tubing String on location for Frac.
  - \*\*\*\* Five (5) -400 bbl Frac Tanks & one (1) 400 bbl rig tank w/ 1% KCl water filtered 25 micron
- 

1. Move on Location. Obtain & Record Bradenhead, Casing, & Tubing Pressure on Report. Lay manifold & all lines. Pump 50 bbls 1% KCl water down casing, followed by 20 bbls 1% KCl water down tubing. ND WH. NU BOP & stripping rubber. Open well on blooie line.
2. TOOH & LD 1-1/2" 2.9# EUE tubing from 7696'. (NOTE: 2-1/16" Blast Joints) Set plug in SN @ 7664' if necessary to TOOH. Contact Engineering if tubing is stuck.
3. RU wireline. Run 5-1/2" 15.5# casing gauge ring to 7550'. POOH. Run 5-1/2" wireline set RBP. Set RBP#1 @ 7550'. Note Liner top @ 3469'. Make additional run with dump bailer. Place 2 sxs sand on top of RBP#1.
4. PU 5-1/2" RBP & 5-1/2" Fullbore PKR assembly and TIH on 2-3/8" tubing. TIH to first RBP @ 7550'. Pump 55 bbls 1% KCl water to fill hole to Mesaverde. Set PKR and test RBP#1 @ 7550' & tubing to 3500 psi for 10 min. Pull tubing uphole and reset PKR @ 5200'. Test 5-1/2" casing from 5200' to 7550' to 3000 psi for 10 min.
5. Pull tubing uphole. w/2-3/8" tubing, set RBP#2 @ 5000' (approx 50' above top MV perf). w/ PKR set above RBP. Test RBP#2 & tubing to 3500 psi. Hold and record pressure 10 minutes. Release pressure. Fill hole from bottom with 1% KCl water, approx 200 bbls to remove any gas pockets. TOOH. Fill hole full prior to logging.
6. RU wireline. Under Packoff, Run GR-CCL-CBL from RBP#2 to surface with 500 psi pressure. No Gaps. Record all cement tops on Report. When out of hole, pressure test casing from surface to 1000 psi. Hold pressure for 10 minutes. Engineering will evaluate Bond for potential squeeze.
7. TIH w/ retrievinghead on 2-3/8". Engage RBP#2 @ 5000', equalize pressure, & TOOH with RBP#2 & standback tubing.
8. RU wireline. Under Packoff, Run GR-CCL-CBL from 7550' to 5000'. Note: Hole should be full from RBP#1 to 5200'. POOH. Under Packoff, Run GR-Dual Spaced Cased Hole Neutron from 7550' to 5200'. POOH. Supply all logs to Production Engineering prior to perforating, to verify zones.
9. Prepare to Perforate Tocito Gallup as follows: w/ 4" HSC gun GOEX-116 19 gram charges 0.44" dia holes 4 SPF.

Holes from 7106' to 7115' (9' total of 36 holes).

10. Change out rams, elevators, & rubbers. PU 5-1/2" fullbore PKR, (2.75" ID) 'F' nipple, & 3-1/2" 9.3# N-80 Upset Frac String (2.992" ID, 3.75" OD). TIH with Frac string to 7000' Set PKR @ 7000' +/- on pipe with good bond. Stimulate Tociito Gallup Interval per attached schedule. **STAGE # 1.** Nitrogen Foam & 63,000# 20/40 brady @ 15 BPM. All sand will be tagged w/ 0.3mc/1000# Ir-192. Max Pressure is 6000 psi. Flow well until closure on 1/8" choke. Release Stimulation Company.

11. Flow well back until returns of sand & liquid are minimal. Release PKR, TOO H & stand back 3-1/2" frac tubing string. MINIMIZE FLUID PUMPED DOWN TUBING TO COME OUT OF HOLE. Set plug in profile nipple if necessary.

12. RU wireline. Run 5-1/2" wireline set RBP. Set RBP @ 5750'. Make additional run with dump bailer. Place 2 sxs sand on top of RBP. Note Plug has not been tested!

13. Prepare to Perforate Point Lookout & Meneffee under a full lubricator as follows: w/ 3-1/8" HSC gun select fire GOEX-116 12 gram charges 0.30" dia holes 1 SPF bottom up. (Total of 26 holes).

**5719', 5734', 5697', 5661', 5652', 5600', 5585', 5583', 5582', 5579', 5577', 5575', 5569',  
5550', 5536', 5530', 5497', 5481', 5475', 5400', 5557', 5331', 5295', 5291', 5283', 5268'**

14. Run 5-1/2" fullbore PKR, profile nipple, & 3-1/2" 9.3# N-80 Frac String. TIH with Frac string to 5730'. TEST RBP to 3500 psi prior to stimulation for 10 min. Pull up & set PKR @ 5200' on pipe with good bond. Breakdown Point Lookout & Meneffee Interval w/ 1000 gallons 15% HCl w/ 2gal/1000 corrosion inhibitor, 1gal/1000 surfactant, & 1gal/1000 iron control. Drop 50-7/8" RCN 1.3 sp gravity ball sealers in sets of 10 every 200 gallons. Ball off perforations to 3500 psi. Release Pressure, TIH and knock balls off perforations. Pull up and reset PKR @ 5200'.

15. **STAGE # 2** Frac well per attached schedule. .1% KCl water & friction reducer & 93,000# 20/40 brady @ 40 BPM. Max Pressure is 6000 psi. Sand will be tagged w/ 0.3mc/1000# Ir-192.

16. Flow well back until returns of sand & liquid are minimal. Release PKR, TOO H & LD 3-1/2" frac tubing string. MINIMIZE FLUID PUMPED DOWN TUBING TO COME OUT OF HOLE. Set plug in profile nipple if necessary. Change out rams, elevators, & rubbers.

17. TIH w/ 4-3/4" bit, float, & 2-3/8" tubing. Clean hole out to RBP @ 5750' with gas. Flare well. Clean well up and obtain good pitot gauge on entire Mesaverde. Record 15 min, 30 min, 45 min, & 1 hr. TOO H.

18. PU one jt 2-3/8" openended, SN, 6' perf sub, 5-1/2" PKR, & remaining 2-3/8" tubing. Set PKR @ 5250'. Set slips, close pipe rams. Continue to flow test well. Obtain good pitot gauge on Point Lookout & Meneffee.

19. RU wireline. Run 24hr digital pressure bomb. Set bomb in SN. Flow well 2 hrs, followed by shut-in for 22 hrs. Pull bomb from well. Release PKR & TOO H w/ 2-3/8".

20. PU retrieving head. TIH on 2-3/8" and engage RBP @ 5750'. Equalize pressure & TOO H with RBP.

21. TIH w/ 4-3/4" bit, float, & 2-3/8" tubing. Clean hole out to RBP @ 7550' with gas. Flare well. Clean well up and obtain good pitot gauge on Mesaverde & Tociito. Record 15 min, 30 min, 45 min, & 1 hr. TOO H.

22. PU one jt 2-3/8" openended, SN, 6' perf sub, 5-1/2" PKR, & remaining 2-3/8" tubing. Set PKR @ 7050'. Set slips, close pipe rams. Continue to flow test Tociito. Obtain good pitot gauge on Tociito.

23. RU wireline. Run 24 hr digital pressure bomb. Set bomb in SN. Flow well 2 hrs, followed by shut-in for 22 hrs. Pull bomb from well. Release PKR & TOO H w/ 2-3/8".

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24. PU retrieving head. TIH on 2-3/8" and engage RBP @ 7550'. Equalize pressure & TOOH with RBP.

25. PU 4-3/4" bit, float, & four (4) 3-1/8" drill collars on 2-3/8" tubing. Clean well out to 7833' with gas. Flare well. Pull above Dakota Perforations & pitot test well. Record 15 min, 30 min, 45 min, & 1 hr. TOOH.

26. RU wireline. Run After-Frac Gamma-Ray Log across New Zones. POOH. Prepare to Re-perforate Dakota as follows under full lubricator: w/ 4" HSC gun GOEX-116 19 gram charges 0.44" dia holes 2 SPF. (Total of 116 holes).

7513'-7535' (22'-44 holes)  
7696'-7709' (13'-26 holes)

7818'-7826' (8'-16 holes)  
7628'-7630' (2'-4 holes)

7775'-7780' (5'-10 holes)  
7600'-7608' (8'-16 holes)

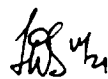
27. PU 5-1/2" fullbore PKR & TIH on 2-3/8" tubing. Set PKR @ 7800'. Establish Rate below PKR & pump 400 gallons 15% HCl acid w/ 2gal/1000 corrosion inhibitor, 1gal/1000 iron sequestering agent, 3 gal/1000 acetic acid & drop 20-7/8" RCN 1.30 sp gravity ball sealers in two sets of ten (10) balls. Pump @ maximum rate and pressure. Ball off Perforations & displace acid. Max pressure 3500 psi. Release Pressure & PKR. DO NOT KNOCK BALL SEALERS OFF YET.

28. Pull tubing uphole & Reset PKR @ 7400' on good bonded pipe. Establish rate below PKR w/ 1% KCl water. Pump 1000 gallons 15% HCl acid, followed by 1500 gallons 1% KCl water, followed by 1000 gallons 15% HCl acid, flush with 1% KCl water. Ball off entire Dakota interval by dropping 350 -7/8" RCN 1.30 specific gravity ballsealers in fourteen sets of twenty-five (25) balls. Pump at maximum rate & maximum pressure. Release PKR, and run in w/ PKR to 7800', knocking balls off of perforations. DO NOT GO BELOW 7800' w/ PKR. TOOH w/ PKR.

29. PU notched collar, float, & TIH w/ 2-3/8" tubing clean well out with gas to 7833'. Pull above Dakota and obtain good pitot gauge on entire well. Record 15 min, 30 min, 45 min, & 1 hr. TOOH.

30. TIH rabbiting tubing with production string as follows. One (1) jt 2-3/8" tubing openended, expendable check 'F' nipple (1.81" ID), eighteen (18) joints 2-3/8" tubing, One (1) 20' 3.062" blast joint for Tocito, forty-eight (48) joints 2-3/8" tubing, Four (4) 20' blast joints for Mesaverde, & remaining one-hundred-seventy-eight (178) jts 2-3/8" tubing. Land tubing @ 7700'. ND BOP, NU WH. Pump off expendable check and obtain final pitot test up 2-3/8" tubing for 15 min, 30 min, 45 min, & 1 hr. RD and release rig to next location.

31. Production Engineering will finalize Commingle Allocation Formula and submit it to the NMOCD. With Well shut-in, RU wireline and set 7day dip-in btm hole bomb in nipple. Recover bomb. Notify marketing that well will be restored to production.

  
TDS

Approved:

  
Drilling Superintendent

**Suggested Vendors:**

Stimulation Work:  
Logging/Perforating  
Pressure Bombs  
BP/PKR/Blast jts  
3-1/2" Frac String  
Radioactive Tagging  
Engineering

Western Co. North America 327-6222  
Petro Wireline 326-6669  
Tefteller Inc. 325-1731  
Baker Service Tools 325-0216  
Cave Enterprises 325-3401  
Protechnics Intl 326-7133  
T. E. Mullins 326-9546-H  
325-9361-W

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DIST 3