OIL CONSERVENUE DIVISION RECEIVED

· 양부 SE- 1 3 위한 8 50 September 8, 1994

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 # 6 Unit L, 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, B. S. Mesa Gallup, and Basin Dakota fields. The ownership of the zones to be commingled is common. The Bureau of Land Management and offset operators will receive notification of this downhole commingling.

The subject well was drilled and dual completed in the Mesaverde (Cliffhouse only) and Dakota formations in 1969 with production up two separate 1-1/2" tubing strings. The Gallup zone is prospective in the subject well and several successful completions are evident in the surrounding offset wellbores. In addition to the Gallup potential, the Point Lookout and Meneffee intervals of the Mesaverde group have not been completed in the wellbore.

The Jicarilla G # 6 Mesaverde has produced 1,580 MMCF and 0.2 MBO while the Dakota has produced 1,170 MMCF and 8.0 MBO to date. Current production from Mesaverde is 100 MCFD & 0 BOPD, while the Dakota produces 90 MCFD & 0.5 BOPD. With administrative approval allowing completion of the additional Gallup zone in the referenced well, all three (3) formations can be more efficiently produced up a single 2-3/8" tubing string; an initial increase of 350 MCFD is anticipated. Downhole commingle will allow for more efficient liquid removal from the wellbore thereby increasing the ultimate hydrocarbon reserve recovery from each formation.

The reservoir characteristics 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-DHC-8321) and Jicarilla G # 8 (NE/4, Section 02, T26N, R05W, Order # R-DHC-959).

The latest Jicarilla G # 6 21-day shut-in bottom hole pressures for the respective zones are 455 psi for the Mesaverde at 5100' and 1,060 psi for the Dakota at 7500' taken August 22, 1994. Correcting these pressures to a common datum confirm that current zone pressures are within 50% of the highest pressure zone. The Gallup formation is anticipated to have a reservoir pressure of 1,350 psi +/- while the additional Mesaverde intervals are anticipated to have a reservoir pressure of 1,200 psi +/-. The Mesaverde, Gallup, and Dakota bottom-hole pressures all range from 1,000 psi to 1,350 psi.

New Mexico Oil Conservation Division Mr. Bill Lemay Jicarilla G # 6 - Downhole Commingling Request 09/08/94

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 # 6. The twenty-five (25) years of production data from the Dakota and Mesaverde will also be utilized in finalizing the allocation formula. Meridian Oil 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 copies of letters to the BLM and offset operators, Jicarilla G # 6 production curves, a wellbore diagram, a pertinent data sheet, and the proposed workover procedure. I appreciate your consideration of this proposal. I can be reached by phone at (505) 326-9546 to answer any concerns.

Sincerely,

The G. hilli

Thomas E. Mullins Production Engineer

TEM attachments

cc: Frank Chavez - Oil Conservation Division, Aztec District Shirley Mondy - Bureau of Land Management, Rio Puerco District Peggy Bradfield- Regulatory Well File

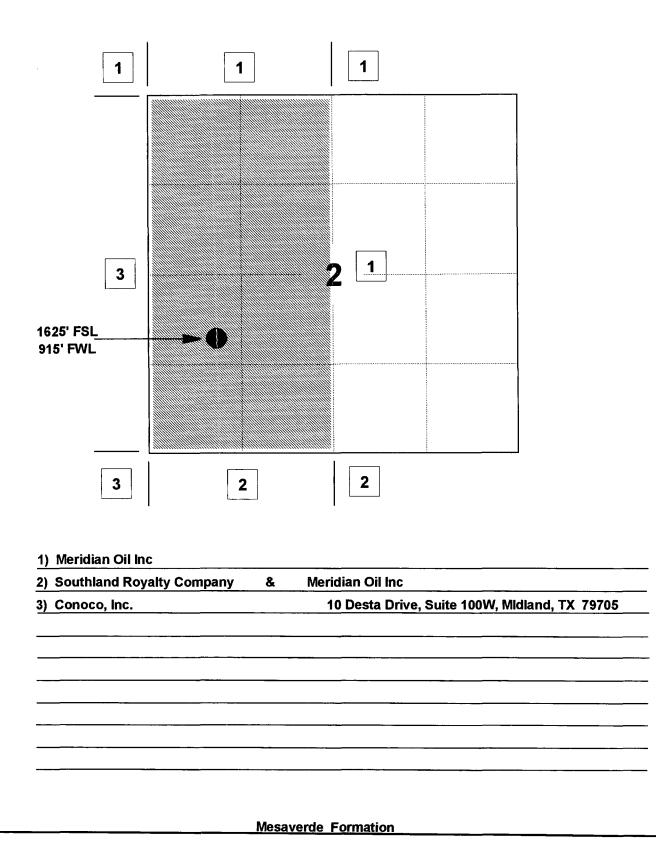
MERIDIAN OIL INC

JICARILLA G #6

OFFSET OPERATOR \ OWNER PLAT

Dakota / Mesaverde / Gallup Commingle Well

Township 26 North, Range 5 West



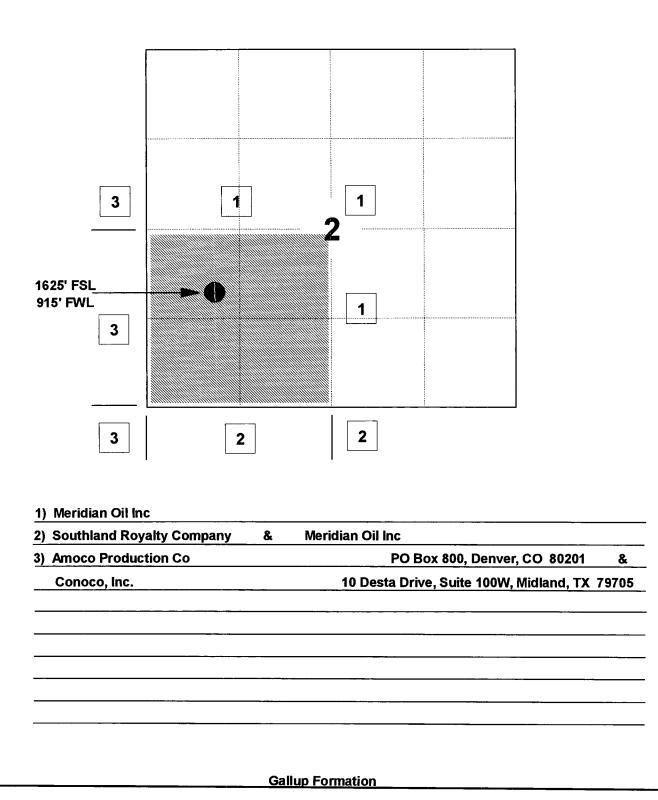
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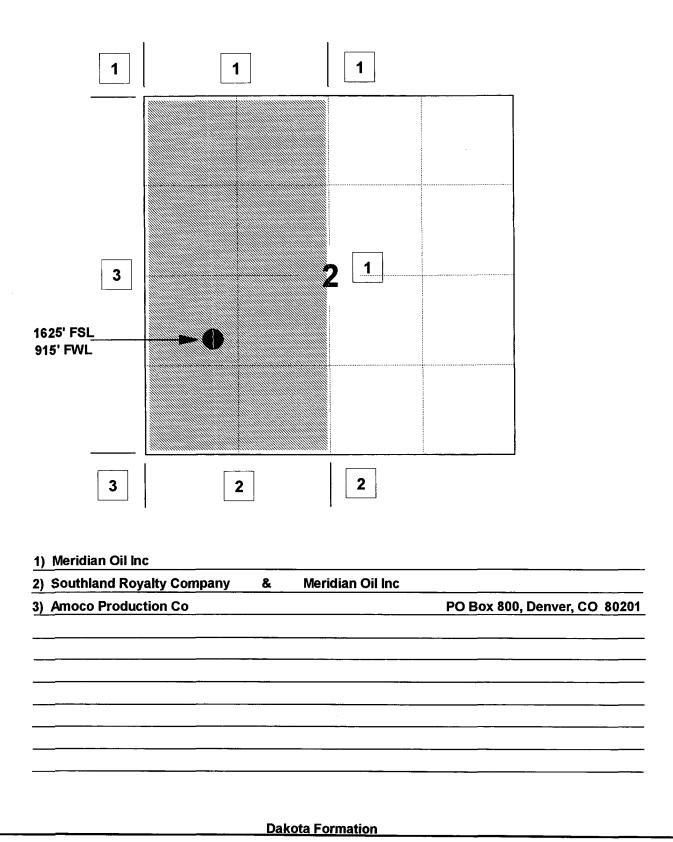
MERIDIAN OIL INC

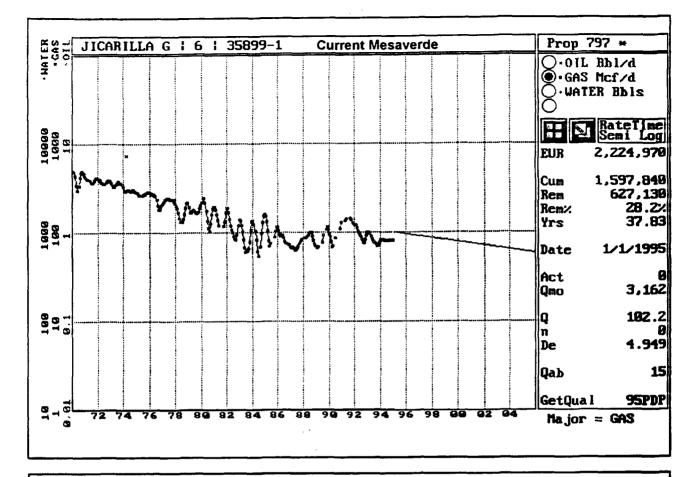
JICARILLA G #6

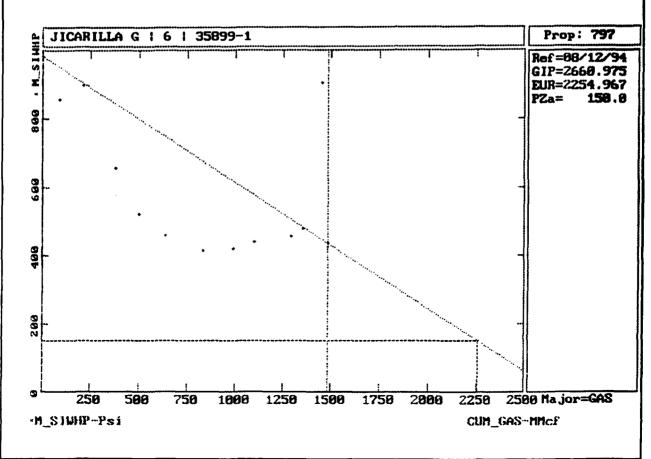
OFFSET OPERATOR \ OWNER PLAT

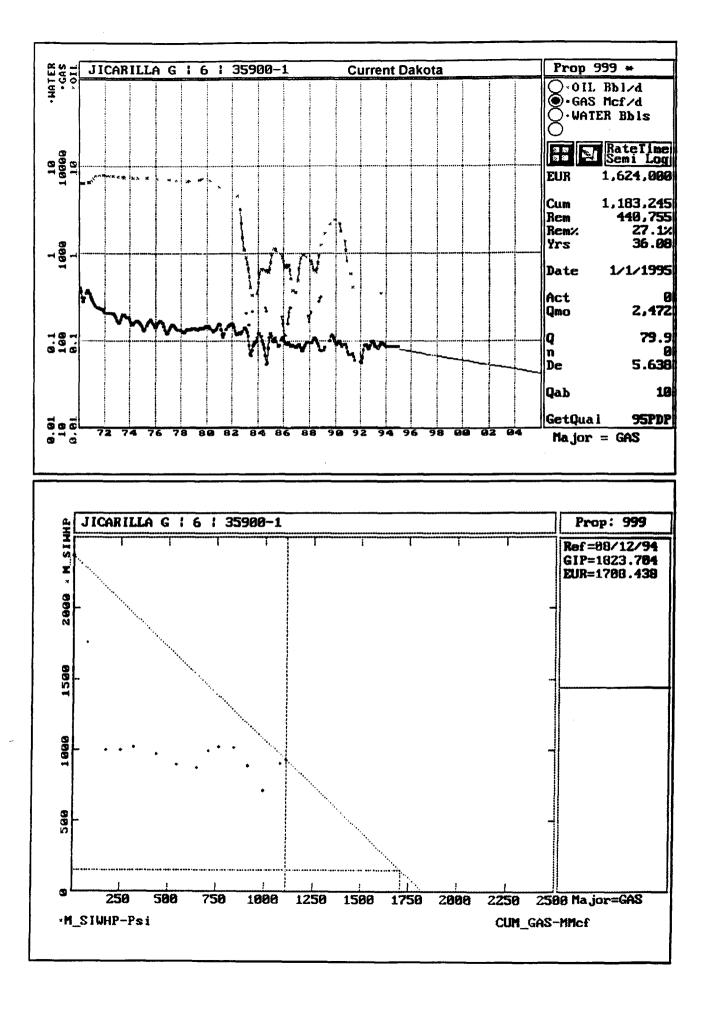
Dakota / Mesaverde / Gallup Commingle Well

Township 26 North, Range 5 West

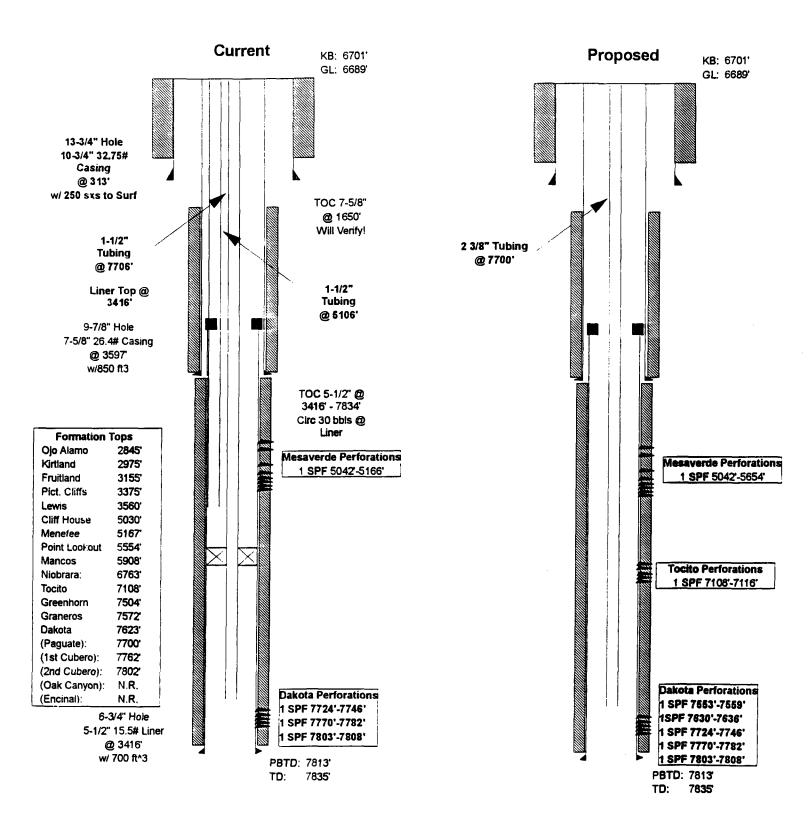








Jicarilla G # 6 T26NR05W02L Recompletion & Commingle



Pertinent Data Sheet-Jicarilla G # 6

Location:	Unit L Section 02, T26N-R05W 1625' FSL, 915' FWL				Rio Arrit	Rio Arriba County, New Mexico		
<u>Field:</u>	Blanco Mesave Basin Dakota		Order M	C-1889	Elevatio		6689' GL <u>TD:</u> 7835' 6701' KB <u>PBTD:</u> 7813'	
	Dusin Dinkolu			• • • • • •		Note: po	ssible KB Difference	
Completed:	9/9/69				DP #:	35899 (MV		
Spud:	7/27/69				GWI :	62.5000 %	62.5000 %	
					NRI:	54.6875 %	54.68 75 %	
Casing Record:								
<u>Hole Size</u>	<u>Casing Size</u>	Wt & Grade	Depth S		<u>xs Cement</u>	TOC	-	
13-3/4"	10-3/4"	32.75# H-40	313'		250 sxs	Surface	Circulated good cmt	
9-7/8"	7-5/8"	26.40# J-55	3597'		850 ft3	1650'	Need to verify!	
6-3/4"	5-1/2" Liner	15.5# J- 55	3416'-78		700 ft3	3416'	Circ 30 bbls @ Liner	
		1	Model 'D' I	PKR @	7532' (No fl	lapper!)	Liner Top SQZ 100sxs	
Tubing & R								
Tubing Size			epth Set					
1-1/2" DK			7706'	J 1 5 -			6" blast jts from 5012'-5152'	
1-1/2" MV	2.75# IJ	10 rd	5106'	1 jt, 15	5 jts. F nipp	ole MV @ 50)98', F nipple DK @ 7700'	
Formation_T	one.							
	<u></u>			Niobra	nra:	67	63'	
Ojo Alamo:		2845'		Tocito		71	08'	
Kirtland:		2975'		Green			04'	
Fruitland:		3155'		Grane	ros:	75	72'	
Pictured Cliff		3375'		Dakota	a (Two Wells	s): 76	23'	
Lewis:	-	3560'		(Pagua	•		00'	
Cliff House:	5030'			(1st Cubero):		77	62'	
Menefee:		5167'		•	Cubero):	78	02'	
Point Lookou				(Oak Canyon):		N .	R.	
Mancos:		5908'		(Encin	•	N .	R.	
Logging Rec	ord: Te	mp, IEL, Densi	ty. GR-CCL	. CBL d	iate 9/3/69.	BOND okay	for Completion!	

 Stimulation:
 PT Csg. Failed. Test Liner Top. Sqz Liner top /100 sxs. DO. Test 3500 okay. Perf 1st Stage

 Dakota 1 SPF (0.52" holes) 7724'-7746', 7770'-7782', 7803'-7808' (42 holes total) Frac w/ 73,000 gal

 water & 50,000# 20/40, 10,000# 10/20, 1000# 12/20 glass at 65 BPM 3400 psi, 2500 ISIP CIBP @ 7680

 Perf 2nd Stage Dakota (0.52" holes) 7624'-7640' (17 holes total) Frac w/41,800 gal water & 20,000#

 20/40, 10,000# 10/20, 500# 12/20 glass at 64 BPM 3500, 2600 ISIP CIBP @ 5180' Perf Cliffhouse

 (0.52" holes) 5032'-5046', 5086'-5104', 5110'-5128', 5134'-5139', 5144'-5146', 5160'-5166' (64 holes

 total) Frac w/62,500 gal water & 30,000# 20/40 50,000# 10/20 at 92 BPM 2800, drop balls 700 ISIP

Workover History: None

Production History:

·	Cum Gas MCF	Cum Oil bbls	Rem Gas MCF	Pipeline Pressure:	200-220 psi
Mesaverde:	1,597,000	225	627,000	Current Rates:	80 mcfd / 0.5 bopd
Dakota:	1,181,000	8046	442,000	Current Rates:	
Transporter:					
	Oil	/Condensate:	Meridian Oil Inc.		
	Ga	S:	Gas Compar		

PROCEDURE FOR WORKOVER Jicarilla G # 6 Unit L,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/ 2% KCl water filtered 5 micron

1. Move on Location. <u>Call Tefteller to remove wireline during wellhead removal! (325-1731)</u>. Obtain & Record Bradenhead, Casing, & Both Tubing String Pressures on Report. Lay manifold & all lines. Pump 25 bbls 2% KCI water down DK tubing, pump 25 bbls 2% KCI down MV tubing. ND WH. NU Offset Spool, BOP & stripping rubber. Open well on blooie line.

2. TOOH & LD 1-1/2" 2.75# IJ 10rd Mesaverde tubing from 5106'. SN @ 5098'. Tubing may be crimped at 3000' +/- Contact Engineering if tubing is stuck, before pulling.

3. Swivel Spool. TOOH & LD 1-1/2" 2.90# EUE 10rd Dakota tubing from 7706'. (NOTE: 2-1/16" Blast Joints) DO NOT PULL OVER 20,000# + STRING WT. Pull seal assembly out from MODEL 'D' Production PKR @ 7532', Seven (7)-2-1/16" blast joints in string. Wireline should work free once weight is removed from tubing.

4. Change out rams to 2-3/8". Remove Offset Spool when possible. PU "44-26" CJ Milling tool, 3-1/8" Collars and 2-3/8" 4.7# J-55 tubing. TIH & mill top slips on PKR @ 7532'. Retreive PKR, TOOH.

5. PU 4-3/4" mill, 3-1/8" collars, float, on 2-3/8". TIH and clean well out to PBTD of 7813' +/-. TOOH.

6. RU wireline. Run 5-1/2" 15.5# casing gauge ring to 7813'. POOH. Run GR-CCL from PBTD to 3350'. Prepare to re-perforate additional Dakota Pay under full lubricator with 4" HSC gun GOEX-116 19 gram charge 0.44" dia holes 4 SPF 90 degree phasing (Total of 116 holes) bottom-up in a single gun run if possible. Correlate with attached log sections and GR-CCL. Note Liner top @ 3469'.

7 8 03'	to	7 8 08'	(5'	@ 4 SPF)	20 holes
7770'	to	7776'	(6'	@ 4 SPF)	24 holes
7724'	to	7730'	(6'	@ 4 SPF)	24 holes
7630'	to	7636'	(6'	@ 4 SPF)	24 holes
7553'	to	7559'	(6'	@ 4 SPF)	24 holes (Greenhorn)

7. Run 5-1/2" wireline set RBP. Set RBP#1 @ 7500'. <u>Note Liner top @ 3469'</u>. Make additonal run with dump bailer. Place 2 sxs sand on top of RBP#1.

8. PU 5-1/2" RBP & 5-1/2" Fullbore PKR assembly and TIH on 2-3/8" tubing. TIH to first RBP @ 75\$0'. Pump 50 bbls 2% KCI water to fill hole to Mesaverde. Set PKR and test RBP#1 @ 7500' & tubing to 3500 psi for 10 min.

9. 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 2% KCI water, approx 200 bbls to remove any gas pockets. TOOH. Fill hole full prior to logging. Change out remaining tubing head to one which will accomodate a single string of 2-3/8" tubing.

10. 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 squeezes, none are anticipated.

11. TIH w/ retreivinghead on 2-3/8". Engage RBP#2 @ 5000', equalize pressure, & TOOH with RBP#2.

12. Prepare to Perforate Tocito Gallup as follows: w/ 4" HSC gun GOEX-116 19 gram charges 0.44" dia holes 4 SPF 90 degree phase.

Holes from 7108' to 7116' (8' total of 32 holes).

13. 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' +/-Stimulate Tocito Gallup Interval per attached schedule. STAGE # 1. Nitrogen Foam & 55,000# 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.

14. Flow well back until returns of sand & liquid are minimal. Release PKR, TOOH & 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.

15. RU wireline. Run 5-1/2" wireline set RBP. Set RBP @ 5715'+/-. Make additonal run with dump bailer. Place 2 sxs sand on top of RBP. Note Plug has not been tested!

16. 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 28 holes).

5654', 5648', 5644', 5630', 5613', 5603', 5597', 5588', 5577', 5571',

5566', 5561', 5556', 5532', 5507', 5487', 5479', 5474', 5419', 5390',

5382', 5376', 5373', 5304', 5288', 5284', 5289', 5255'

17. Run 5-1/2" retreivamatic PKR, profile nipple, & 3-1/2" 9.3# N-80 Frac String. TiH with Frac string to 5700'. <u>TEST RBP to 3500 psi prior to stimulation for 10 min.</u> Pull up & set PKR @ 5200' on pipe with good bond. Breakdown Point Lookout & Meneffee Interval w/ 1000 gallons 10% HCl w/ 2gal/1000 corrosion inhibitor, 1 gal/1000 surfactant, & 5 gal/1000 iron control. Drop 50 - 7/8" RCN 1.3 sp gravity ball sealers in sets of 10 every 200 gallons. Flush with water at 20 BPM or max rate under 3500 psi. Ball off perforations to 3500 psi. Release Pressure, surge, displace. TIH and knock balls off perforations. Pull up and reset PKR @ 5200'.

18. **STAGE # 2** Frac well per attached schedule. 2% KCl water & friction reducer & 100,000# 20/40 brady @ 40 BPM. Max Pressure is 6000 psi. Sand will be tagged w/ 0.3mc/1000# lr-192.

19. Flow well back until returns of sand & liquid are minimal. Release PKR, TOOH & 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.

20. TIH w/ 4-3/4" notch collar, float, & 2-3/8" tubing. Clean hole out to RBP @ 5715' with gas, Flare well. Clean well up and obtain good pitot gauge on entire Mesaverde. Record 15 min, 30 min, 45 min, & 1 hr. TOOH once water rate drops to less than 6 BPH.

21. PU one jt 2-3/8" openended, SN, 6' perf sub, 5-1/2" PKR, & remaining 2-3/8" tubing. Set PKR @ 5200'. Set slips, close pipe rams. Continue to flow test well. Obtain good pitot gauge on Point Lookout & Meneffee.

22. 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 & TOOH w/ 2-3/8".

23. PU retreiving head. TIH on 2-3/8" and engage RBP @ 5715'. Equalize pressure & TOOH with RBP.

24. TIH w/ 4-3/4" notch collar, float, & 2-3/8" tubing. Clean hole out to RBP @ 7500' with gas, Flare well. Clean well up and obtain good pitot gauge on Mesaverde & Tocito. Record 15 min, 30 min, 45 min, & 1 hr. TOOH.

25. 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 Tocito. Obtain good pitot gauge on Tocito.

26. 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 & TOOH w/ 2-3/8".

27. PU retreiving head. TIH on 2-3/8" and engage RBP @ 7500'. Equalize pressure & TOOH with RBP.

28. PU 4-3/4" bit, float, & four (4) 3-1/8" drill collars on 2-3/8" tubing. Clean well out to 7813' with gas. Flare well. Pull above Dakota Perforations & pitot test well. Record 15 min, 30 min, 45 min, & 1 hr. TOOH.

29. RU wireline. Run After-Frac Gamma-Ray Log across all new zones. POOH.

30. PU & TIH w/5-1/2" PKR and 2-3/8" tubing. Set PKR @ 7500' on good bonded pipe. Establish rate below PKR w/ 2% KCI water. MAXIMUM PRESSURE IS 4000 PSI. Pump 1000 gallons 10% Acetic acid, followed by 1000 gallons 2% KCI water, followed by 1000 gallons 10% Acetic acid, flush with 2% KCI water. Run Nitrogen assist at 500 SCF/BBL in all fluid but flush. Ball off entire Dakota interval by dropping 250 - 1" RCN 1.30 specific gravity ballsealers in ten sets of twenty-five (25) balls (175 total perforations). Pump at maximum rate & maximum pressure. Release PKR, TOOH w/ PKR. Do not knock balls off perfs!

31. PU notched collar, float, & TIH w/ 2-3/8" tubing clean well out (note 1" balls) with gas to 7813'. Pull above Dakota and obtain good pitot gauge on entire well. Record 15 min, 30 min, 45 min, & 1 hr. Continue to clean well out until liquid returns are minimal, let well flow when possible. TOOH.

Jicarilla G # 6 Commingle Workover MO1 - 08/26/94

32. RU hydrotesters. TIH rabbiting & HYDROTESTING TUBING TO 2000 psi 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, <u>one (1) 20' 3.062" blast joint for Tocito</u>, & remaining two-hundred-twenty-nine (229) 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. Swab in if necessary. RD and release rig to next location. No blast joints are run on Mesaverde Interval.

33. Production Engineering will finalize Commingle Allocation Formula and submit it to the Aztec NMOCD office. SI well 7 days, run dip-in pressue bomb, perform deliverability test. Notify marketing that well will be restored to production. Allocation Formula will be determined with assistance of sales line production for a minimum of 3 months. This stabilized production is necessary to accurately validate the allocation formula.

Approved:

Drilling Superintendent

TEM

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

Western Co. North America Petro Wireline Tefteller Inc. Baker Service Tools Cave Enterprises Protechnics Intl T. E. Mullins

327-6222 326-6669 325-1731 325-0216 325-3401 326-7133 326-9546-W 327-8692-pager

September 8, 1994

Bureau of Land Management Attn: Shirley Mondy 435 Montano NE Albugurgue, New Mexico 87107

> RE: Downhole Commingling Request Jicarilla G # 6 Unit L, 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, B. S. 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

Waiver approval:

Date:

TEM

September 8, 1994

Conoco, Inc. 10 Desta Drive, Suite # 100W Midland, TX 79705

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September 8, 1994

Amoco Production Company Attn.: Jicarilla Team P O Box # 800 Denver, CO 80201

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