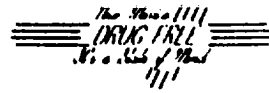




STATE OF NEW MEXICO  
ENERGY, MINERALS and NATURAL RESOURCES DIVISION  
OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE



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 DHC <u>X</u> _____
Proposed NSL _____	Proposed SWD _____
Proposed WFX _____	Proposed PMX _____
Proposed NSP _____	Proposed DD _____

Gentlemen:

I have examined the application received on 1/17/94  
for the Meridian Large Federal #1A  
OPERATOR LEASE & WELL NO.

C-234-29N-9W and my recommendations are as follows:  
UL-S-T-R

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

Yours truly,

S. J. G.

# MERIDIAN OIL

January 11, 1995

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

RECEIVED  
JAN 17 1995  
OIL CON. DIV.  
DIST. 3

RE: **Largo Federal # 1A**  
Unit C, Section 34, T29N, R09W  
San Juan 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 Blanco Mesaverde and Aztec Pictured Cliffs pools. The ownership of the producing intervals to be commingled is common, 100 % Meridian Oil. The Bureau of Land Management and Amoco Production, the sole offset operator, will receive notification of this downhole commingling request.

The subject well was drilled and dual completed in the Mesaverde and Pictured Cliffs formations in 1979 with Mesaverde production up 1-1/2" tubing below a packer and the Pictured Cliffs production up 1-1/4" tubing. This well has failed its packer leakage test dated March 14, 1994. Downhole commingled production will allow for both of these marginally economic zones to remain in a long term productive status.

The Largo Federal # 1A Mesaverde has produced 141 MMCF and 0 MBO while the Pictured Cliffs has produced 216 MMCF and 0 MBO to date. Stabilized production from Mesaverde is 20 MCFD & 0 BOPD, while the Pictured Cliffs produces 55 MCFD & 0 BOPD. With administrative approval allowing commingling, both formations can be more efficiently produced up a single 1-1/2" tubing string; an increase of 50 MCFD, to a combined commingled rate of 125 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. Upgraded surface facilities will allow for better liquid recovery and lower line pressure from tie-in to the existing Pictured Cliffs sales meter will allow for better production.

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 two zones has been authorized and successfully completed by Meridian Oil Inc. in the San Juan # 20 (Unit K, Section 35, T29N, R09W, Order # R-DHC-449) dated January 12, 1984. All produced hydrocarbon liquids will be allocated to the Mesaverde.

Due to the communication, current pressure data must be estimated from prior year information. Original surface shut-in pressures were 657 psi for the Mesaverde and 755 psi for the Pictured Cliffs. The 1984 deliverability pressure data on the Largo Federal # 1A demonstrates the similar shut-in surface pressures for the respective zones to be 461 psi for the Mesaverde and 347 psi for the Pictured Cliffs. Pressure data from 1984 to 1994 on the Pictured Cliffs is unavailable. Surface pressure of 442 psi is recorded for the Mesaverde in October of 1991. The most recent packer leakage test pressures are shown to be 300 psi +/-.

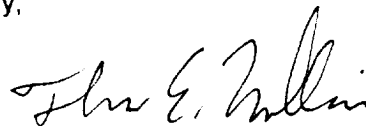
New Mexico Oil Conservation Division  
Mr. Bill Lemay  
Largo Federal # 1A - Downhole Commingling Request  
01/11/95

Based upon 14 years of Pictured Cliffs production data, estimated remaining reserves, and the increased production anticipated from the workover, the following allocation formula is submitted for approval. Remaining Pictured Cliffs reserves are estimated at 379 MMCF+/- and the remaining Mesaverde reserves are estimated to be 403 MMCF+/-, (203 MMCF+/- from the current interval with 200 MMCF+/- available from additional Mesaverde perforated interval).

	Oil		Gas	
Aztec Pictured Cliffs Pool:	0	%	50	%
Blanco Mesaverde Pool:	100	%	50	%

Approval of this commingling application and allocation formula 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 and Pictured Cliffs, copies of letters to the BLM and the offset operator, Largo Federal # 1A 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,



Thomas E. Mullins  
Production Engineer

TEM  
attachments

cc: Oil Conservation Division, Aztec District  
Bureau of Land Management, Farmington District.  
Peggy Bradfield  
TDS  
Well File

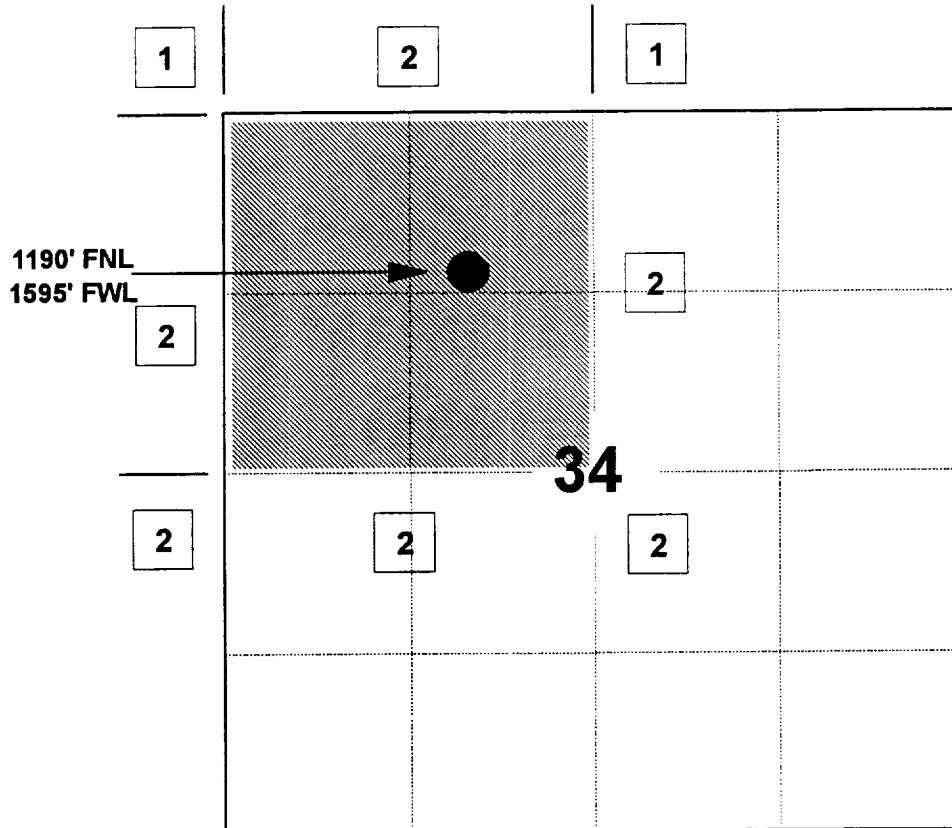
# MERIDIAN OIL INC

## LARGO FEDERAL #1A

OFFSET OPERATOR \ OWNER PLAT

Mesaverde / Pictured Cliffs Commingle Well

Township 29 North, Range 9 West



1) Meridian Oil Inc

2) Amoco Production Co

PO Box 800, Denver, CO 80201

Pictured Cliffs Formation

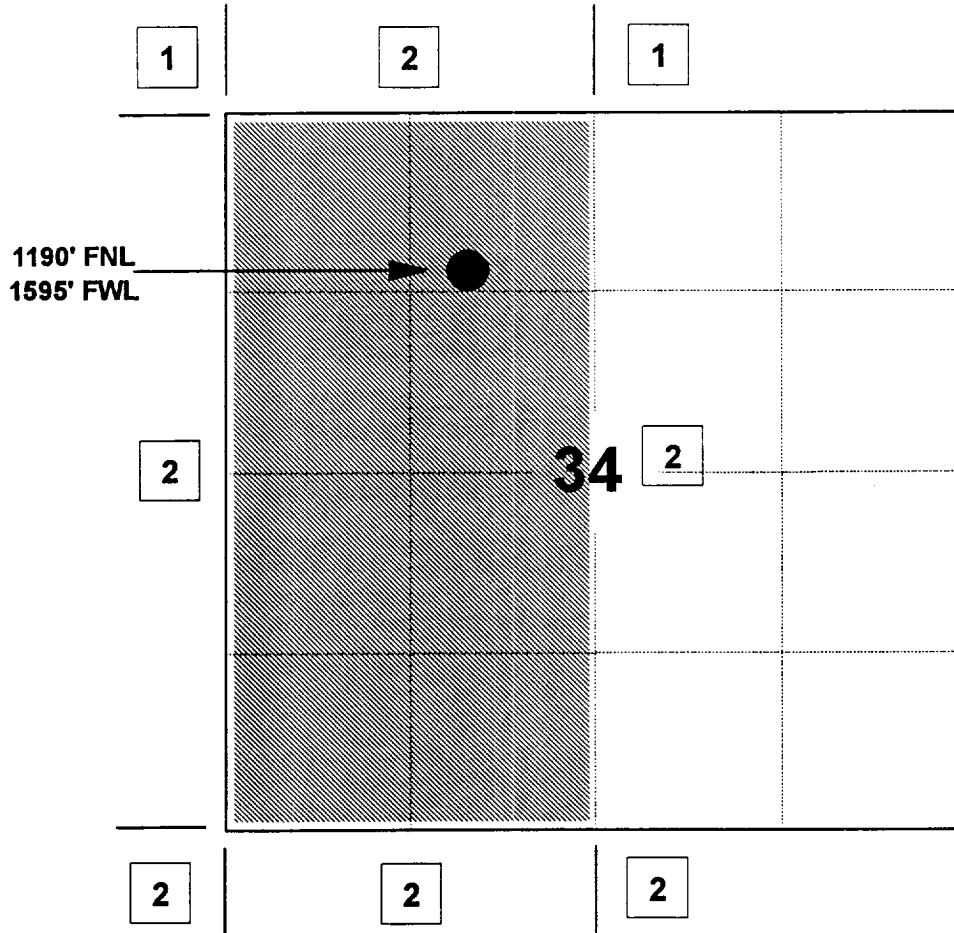
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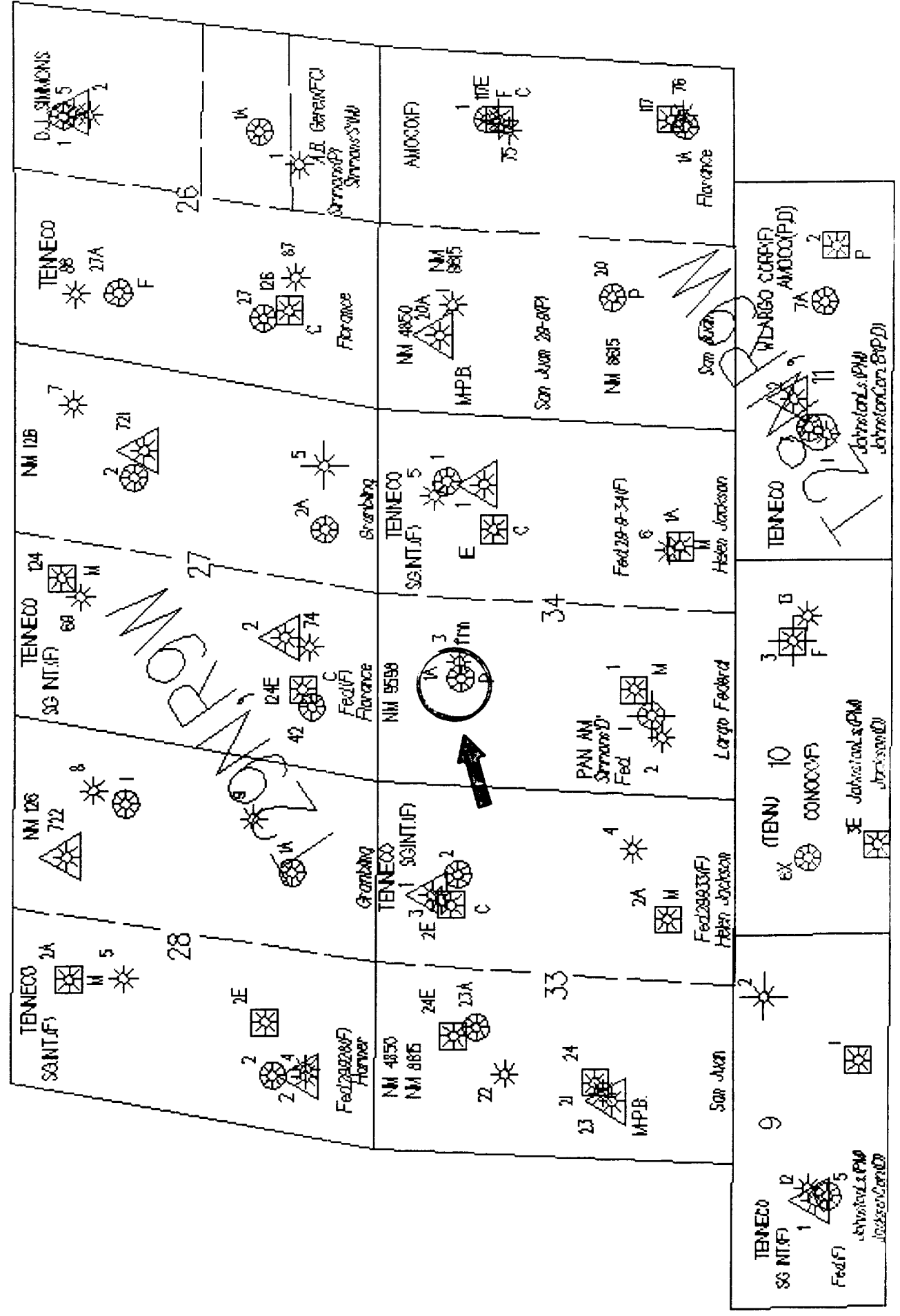
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Mesaverde Formation

# Largo Federal #1A

NW/4 Sec. 34, T29N, R9W

San Juan County, New Mexico



# MERIDIAN OIL

January 11, 1995

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

RE: **Downhole Commingling**  
Largo Federal # 1A  
Unit C, Section 34, T29N, R09W  
San Juan County, New Mexico

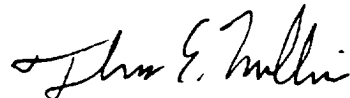
Gentlemen:

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 and Aztec Pictured Cliffs gas pools in the referenced well.

This well currently has failed its packer leakage test. The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling request, 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

There is no objection to this downhole commingle.

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

TEM

# MERIDIAN OIL

January 11, 1995

Amoco Production Co.  
Attn: Manzaneres Team  
P.O. Box # 800  
Denver, CO 80201

RE: **Downhole Commingling**  
Largo Federal # 1A  
Unit C, Section 34, T29N, R09W  
San Juan County, New Mexico

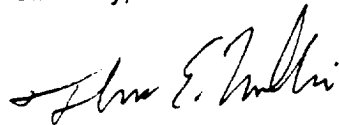
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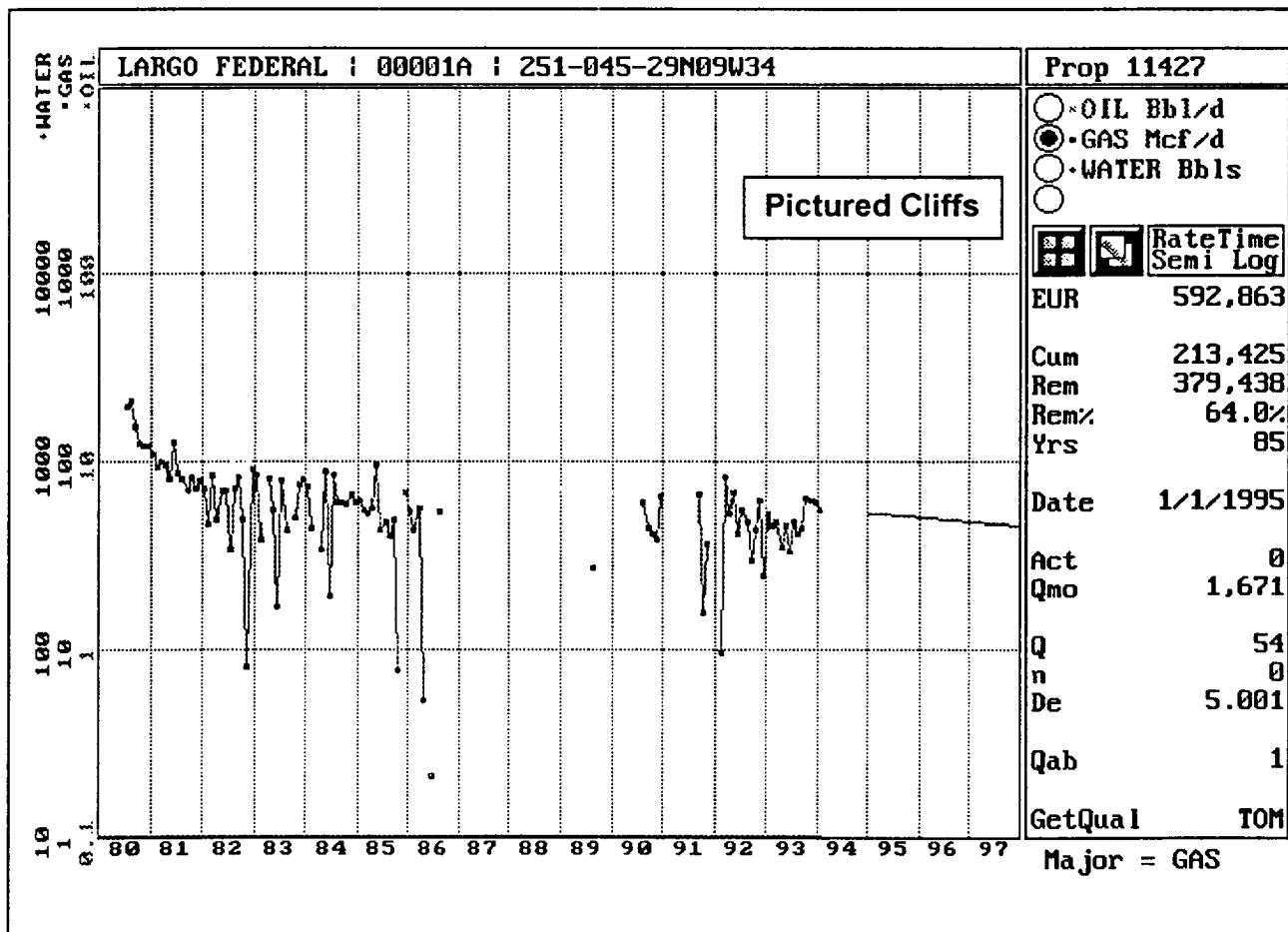
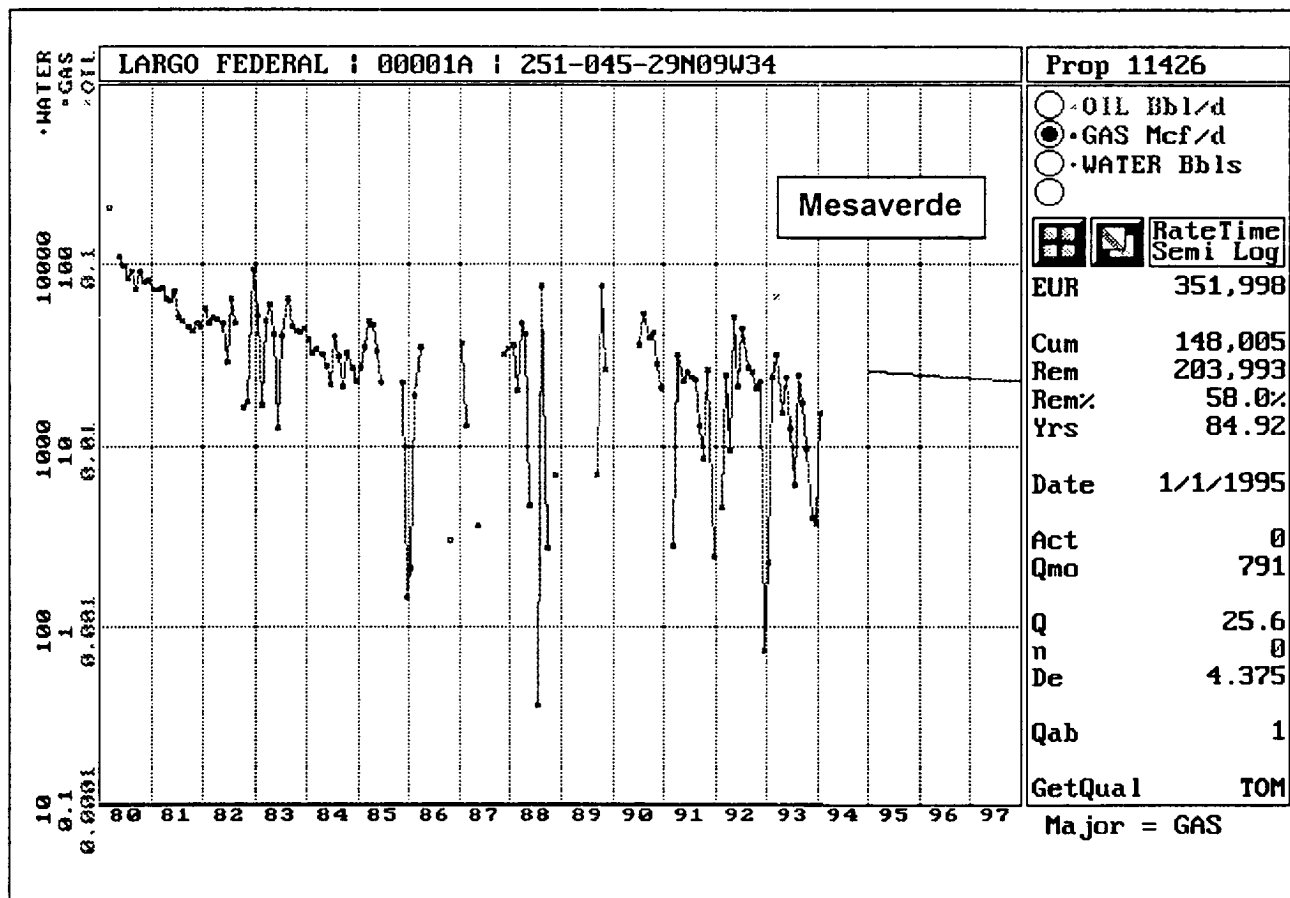
Thomas E. Mullins  
Production Engineer

There is no objection to this downhole commingle.

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

TEM





# PERTINENT DATA SHEET

<b>WELLNAME:</b> Largo Federal #1-A PC/MV Dual	<b>DP NUMBER:</b> PC 15255A MV 15256A																																																																
<b>WELL TYPE:</b> Aztec Pictured Cliffs/Blanco Mesa Verde	<b>ELEVATION:</b> GL: 5790' KB: 5799'																																																																
<b>LOCATION:</b> 1190' FNL 1595' FWL NW Sec. 34, T29N, R09W San Juan County, New Mexico	<b>INITIAL POTENTIAL:</b> PC AOF 87 MCF/D MV AOF 85 MCF/D  <b>SICP:</b> PC 2/84 347 PSIG MV 10/94 442 PSIG																																																																
<b>OWNERSHIP:</b> GWI: 100.0000% NRI: 87.5000%	<b>DRILLING:</b> SPUD DATE: 07-24-79 COMPLETED: 08-03-79 TOTAL DEPTH: 4768' PBD: 4734' COTD: 4734'																																																																
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# Largo Federal #1-A

CURRENT

PC/MV Dual

1190' FNL, 1595' FWL,  
NW Section 34, T-29-N, R-09-W, San Juan County, NM

Today's Date: 10-24-94

Spud: 7-24-79

Completed: 8-3-79

Ojo Alamo @ 1080'

Kirtland @ 1230'

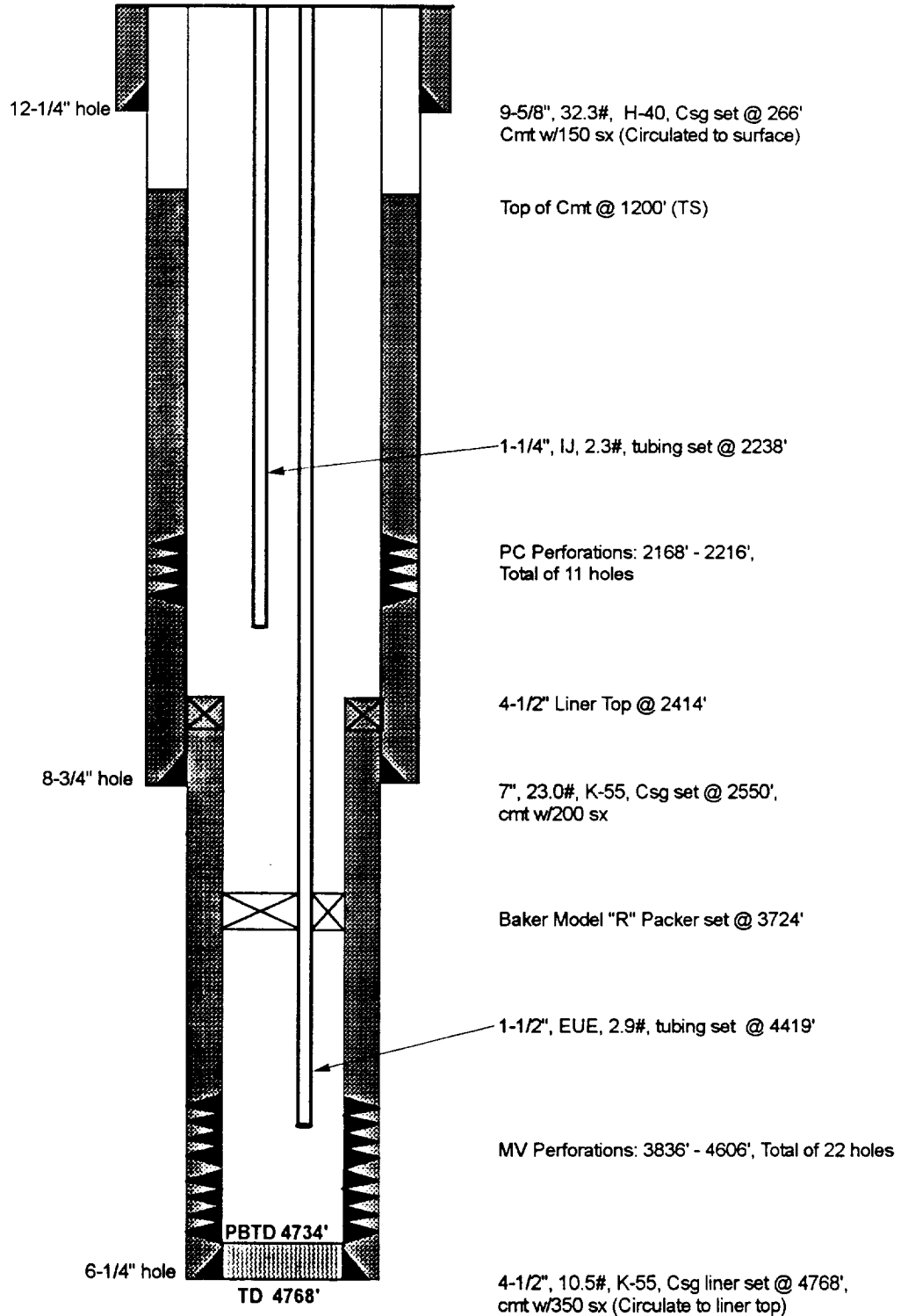
Fruitland @ 1950'

Pictured Cliffs @ 2137'

Chacra @ 3142'

Cliff House @ 3823'

Point Lookout @ 4421'



# Largo Federal #1-A

PROPOSED

PC/MV

COMMINGLE

1190' FNL, 1595' FWL,

NW Section 34, T-29-N, R-09-W, San Juan County, NM

Today's Date: 10-24-94

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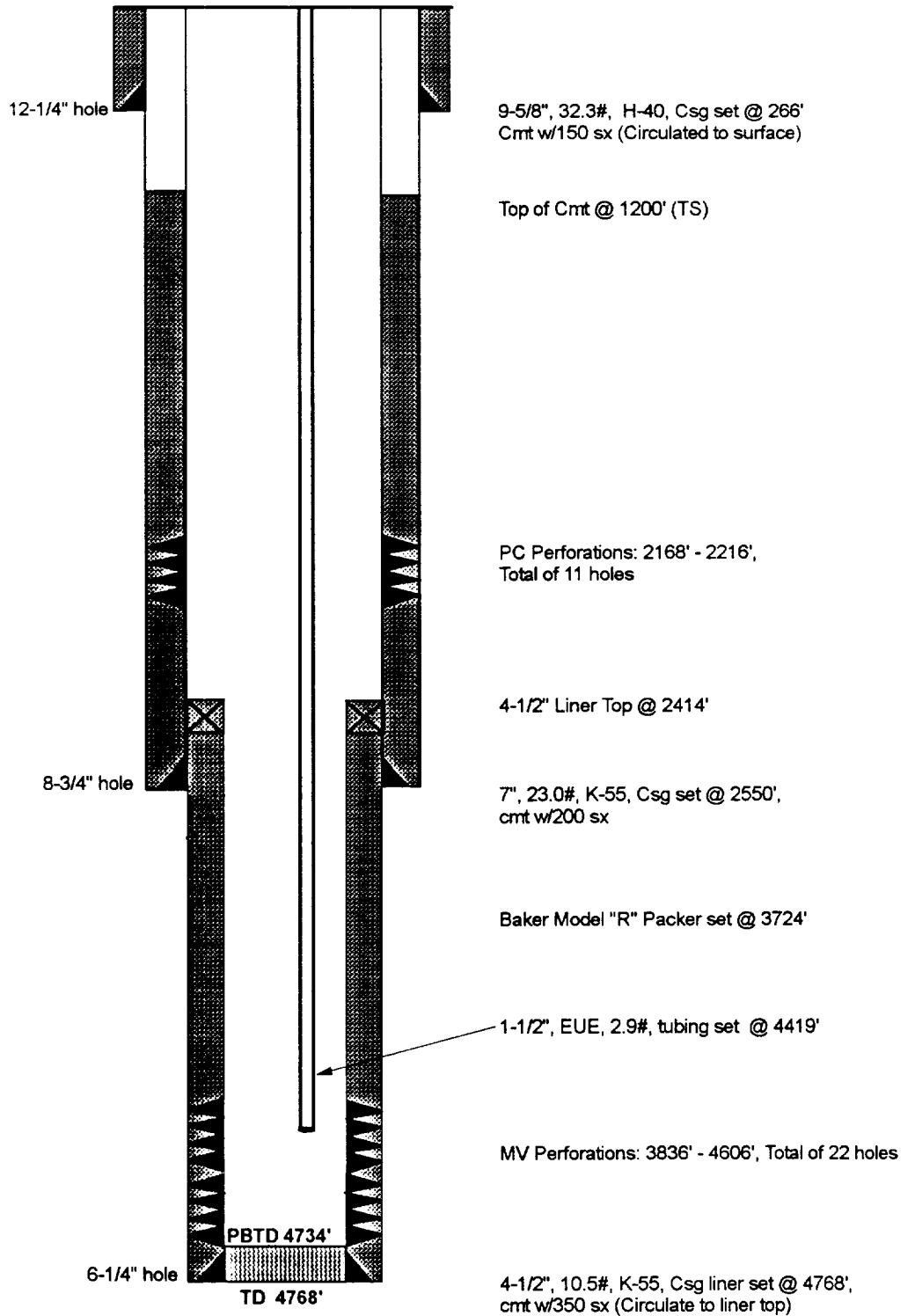
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Workover & Commingle Procedure  
**Largo Federal # 1-A**  
Aztec Pictured Cliffs / Blanco Mesaverde  
Unit C, Section 34, T29N, R09W

Comply with all BLM, NMOCD, and Meridian Oil rules and regulations. Test & verify rig anchors. Build & fence small blow pit.

- 5000' Of 2-3/8" 4.7# J-55 tubing required for workstring.
- Six (6) 3-1/8" Drill Collars required.
- Install EPNG Drill Gas Unit for cleaning out and evaporating water. Use yellow-dog.
- Spot and fill two (2) 400 bbl tanks at rig tank location with 1% KCl water, pH=7.0, filtered to 2 microns. No other tanks will be necessary for work.

1. Move in workover rig. Obtain and record on report current well status, tubing, casing, bradenhead, and line pressures. Install manifold and blow down lines. Contact Wellhead company to ensure proper pulling and hanging procedure. Blow well down. Follow by killing Mesaverde string with 20 bbls 1% KCl water. Kill PC with 20 bbls 1% KCl water. ND WH. NU BOP, offset spool(if required), stripping head, and blooie line.

2. TOOH laying down Pictured Cliffs 1-1/4" IJ tubing from 2338'. PU and release Model R-3 packer at 3724' on the 1-1/2" tubing. Do not pull over 15K above string weight if possible to release. TOOH standing back 1-1/2" Mesaverde tubing from 4419'. LD PKR.

3. RU wireline. Run 4-1/2" gage ring to PBTD (4734'). Note fill and slow for liner top at 2414'. POOH. Run GR-CCL from PBTD to 3750', and from 2300' to 2100'. Utilize this log and correlate with attached open-hole log sections. Prepare to perforate additional Mesaverde and Pictured Cliffs intervals utilizing a 3-1/8" HSC gun and Owen 302 10 gram 0.41" dia hole (inside 4-1/2") charges select fire 2 SPF phased at 180 degrees. Perforate in 3 gun runs if possible from bottom-up.

**4640' 4604' 4572' 4552' 4544' 4525' 4521' 4507' 4484' 4469'**

**4461' 4451' 4443' 4440' 4414' 4362' 4335' 4330' 4321' 4299'**

**4280' 4275' 4271' 4263' 4256' 4197' 4193' 4143' 4139' 4134'**

**4119' 4101' 4098' 4088' 4073' 4070' 4058' 4053' 4019' 4013'**

**3994' 3977' 3971' (43 settings, 86 new perforations + 22 old = 108 total MV)**

**2226' 2217' 2214' 2205' 2202' 2199' 2189' 2182' 2171' 2168'**

**(10 settings, 20 new perforations + 11 old = 31 total PC)**

4. Run and wireline set a 4-1/2" RBP at 3750'+/- above top MV perforation. Pump 20 bbls 1% KCl water down casing to fill hole above RBP inside pipe.

5. PU and TIH with 7" casing scraper to liner top on 2-3/8". TOOH.

6. PU 7" RBP and 7" PKR combination on 2-3/8" tubing. TIH to above liner top/below PC perfs and set 7" PKR. Test liner top and 4-1/2" RBP to 750 psi. Hold and record pressure for 10 minutes. Release pressure, pull tools above PC perforations. Set 7" RBP at 2050'+/- above perforations. Test casing from surface via BOP to 750 psi. Hold and record pressure 10 minutes. If test does not hold use PKR to test 7" RBP / annulus. Locate failure if present (none suspected). Engineering will design cementing squeeze program if needed. TOOH with PKR. (Place 50 lbs sand on 7" RBP only if squeeze work is necessary.)
7. Run GR-CBL-CCL from 2050' to surface. Ensure hole is full of water so that 500 psi pressure may be used if necessary to demonstrate bond. Important to get full bond log in case near surface behind pipe bridges are present.
8. TIH with retrieving head on 2-3/8". Equalize, release, & TOOH with 7" RBP at 2050'.
9. TIH with retrieving head on 2-3/8". Equalize and release 4-1/2" RBP at 3750'+/-. TOOH.
10. RU stimulation pump truck & acid equipment, ensure an accurate flowmeter can be used while pumping both acid and water. 2400 gallons 7.5% HCl acid with 2 gal/1000 corrosion inhibitor and 1 gal/1000 iron control. TIH with 4-1/2" full opening PKR on 2-3/8" tubing. Set PKR at 4390'+/- note location of nearby perforations.
11. Establish maximum rate below packer with 1% KCl water. Prepare to acidize first zone from 4640' to 4414' (226', 38 perforations) as follows at maximum rate available. Maximum pressure is 3000 psi. Ball sealers used will be 7/8" 1.3 specific gravity. Establish rate pump 800 gallons 1% KCl water, drop 6 ball sealers evenly, pump 400 gallons 7.5% HCl acid, drop 4 balls evenly, pump 800 gallons 1% KCl water, drop 4 ball sealers evenly, pump 400 gallons 7.5% HCl acid, drop 10 balls evenly, pump 800 gallons 1% KCl water, drop 10 balls evenly, pump 800 gallons water with 20 balls evenly spaced. Displace with 1% KCl water and ball off. Attempt to ball off entire interval to 3000 psi. Hold pressure, Surge balls off and ball off for second time. Total acid = 800 gallons, Total balls = 54, Total water = 3200 gallons +/- . Release pressure. TOOH with PKR.
12. PU 4-1/2" CIBP with collar locator and setting tool on 2-3/8". Set CIBP at 4390'. TOOH, laying down setting tool.
13. TIH with 4-1/2" full opening PKR on 2-3/8" tubing. Set PKR at 4385'+/- above CIBP and test CIBP to 3000 psi. Pull PKR uphole and set at 4170'+/-, note location of nearby perforations. Establish maximum rate below packer with 1% KCl water. Prepare to acidize second zone from 4362' to 4192' (170', 31 perforations) as follows at maximum rate available. Maximum pressure is 3000 psi. Ball sealers used will be 7/8" 1.3 specific gravity. Establish rate pump 800 gallons 1% KCl water, drop 4 ball sealers evenly, pump 400 gallons 7.5% HCl acid, drop 4 balls evenly, pump 800 gallons 1% KCl water, drop 4 ball sealers evenly, pump 400 gallons 7.5% HCl acid, drop 10 balls evenly, pump 800 gallons 1% KCl water, drop 10 balls evenly, pump 800 gallons water with 20 balls evenly spaced. Displace with 1% KCl water and ball off. Attempt to ball off entire interval to 3000 psi. Hold pressure, Surge balls off and ball off for second time. Total acid = 800 gallons, Total balls = 52, Total water = 3200 gallons +/- . Release pressure. TOOH with PKR.
14. PU 4-1/2" CIBP with collar locator and setting tool on 2-3/8". Set CIBP at 4170'+/-. TOOH, laying down setting tool.

15. TIH with 4-1/2" full opening PKR on 2-3/8" tubing. Set PKR at 4170'+/- above CIBP and test CIBP to 3000 psi. Pull PKR uphole and set at 3950'+/-, note location of nearby perforations. Establish maximum rate below packer with 1% KCl water. Prepare to acidize upper third zone from 4144' to 3970' (174', 32 perforations) as follows at maximum rate available. Maximum pressure is 3000 psi. Ball sealers used will be 7/8" 1.3 specific gravity. Establish rate pump 800 gallons 1% KCl water, drop 4 ball sealers evenly, pump 400 gallons 7.5% HCl acid, drop 4 balls evenly, pump 800 gallons 1% KCl water, drop 4 ball sealers evenly, pump 400 gallons 7.5% HCl acid, drop 10 balls evenly, pump 800 gallons 1% KCl water, drop 10 balls evenly, pump 800 gallons water with 20 balls evenly spaced. Displace with 1% KCl water and ball off. Attempt to ball off entire interval to 3000 psi. Hold pressure, Surge balls off and ball off for second time. Total acid = 800 gallons, Total balls = 52, Total water = 3200 gallons +/- . Release pressure. TOOH with PKR.

16. PU 3-7/8" bit, float, & six (6) drill collars on 2-3/8". Use EPNG drill gas to cleanout. Drill CIBP @ 4170' and CIBP @ 4390'. Push to PBTD of 4734'+/- . Flow well and blow well alternating until well will flow lifting some liquids. TOOH and LD all tools.

17. Prepare to land 1-1/2" 2.9# EUE production tubing string. Run one joint OE, Fnipple expendable check, and remaining tubing. Land tubing at 4650'+/- . ND BOP. NU WH. Pump off check with gas. Flow well up tubing ensuring check has been pumped.

18. RD and release rig to next location.

19. Operations will remanifold wellhead and lines to flow commingled sales through Mesaverde separator equipment and Pictured Cliffs low pressure pipeline sales meter. Ensure Marketing has all appropriate paperwork prior to beginning work. Return well to sales.

Approved:

\_\_\_\_\_  
Drilling Superintendent

TEM   
Suggested Vendors:

Remedial Cement	Dowell Schlumberger	325-5096
Stimulation(acid & pumps)	Dowell Schlumberger	325-5096
Perforating/setting plugs	Basin Perforators	327-5244
Engineering	T. E. Mullins	326-9546-w
		327-8692-pager

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

APRIL 8, 1994

MS SUSAN DOLAN  
MERIDIAN OIL CO  
PO BOX 4289  
FARMINGTON NM 87499

RE: LARGO FEDERAL 1-A C-34-29N-9W  
BALARD 11 D-15-26N-9W

DEAR SUSAN

The 1994 Packer Leakage Tests on the referenced wells indicate communication between the producible zones. In order to comply with Rule 112-A, you are hereby directed to initiate immediate remedial activity.

Yours Truly

Charles Gholson  
Deputy Oil & Gas Inspector

CG/cs

xc: Well Files



## DEPARTMENT

This form is not to  
be used for reporting  
packer leakage tests  
in Southeast New Mexico

## OIL CONSERVATION DIVISION

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Revised 10/01/78

## NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Meridian Oil Inc. Lease Largo Federal Well No. 1A

Location of Well: Unit C Sec. 34 Twp. 29N Rge. 009W County San Juan

	NAME OF RESERVOIR OR POOL	TYPE OF PROD. (Oil or Gas)	METHOD OF PROD. (Flow or Art. Lift)	PROD. MEDIUM (Tbg. or Csg.)
Upper Completion	<u>Pictured Cliffs</u>	<u>Gas</u>	<u>Flow</u>	<u>Tbg</u>
Lower Completion	<u>Mesaverde</u>	<u>Gas</u>	<u>Flow</u>	<u>Tbg</u>

## PRE-FLOW SHUT-IN PRESSURE DATA

Upper Completion	Hour, date shut-in <u>3-14-94</u>	Length of time shut-in <u>3 days</u>	SI press. psig <u>295</u>	Stabilized? (Yes or No)
Lower Completion	<u>3-14-94</u>	<u>3 days</u>	<u>300</u>	

## FLOW TEST NO. 1

Commenced at (hour,date)*		03-17-94		Zone producing (Upper or Lower)		Lower
TIME (hour,date)	LAPSED TIME SINCE*	PRESSURE		PROD. ZONE	REMARKS	
		Upper Completion	Lower Completion	TEMP		
15-Mar		280	280		Packer leakage	
16-Mar		285	290		Indicated	
17-Mar		295	300			
18-Mar		243	220			
19-Mar		213	215			

Production rate during test

Oil: \_\_\_\_\_ BOPD based on \_\_\_\_\_ Bbls. in \_\_\_\_\_ Hours. \_\_\_\_\_ Grav. \_\_\_\_\_ GOR \_\_\_\_\_

Gas: \_\_\_\_\_ MCFPD; Tested thru (Orifice or Meter): \_\_\_\_\_

## MID-TEST SHUT-IN PRESSURE DATA

Upper Completion	Hour, date shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
Lower Completion	Hour, date shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)

(Continue on reverse side)