



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
 OIL CONSERVATION DIVISION  
 AZTEC DISTRICT OFFICE

IREY CAPRUTHERS  
 GOVERNOR

1000 RIO HAZOS ROAD  
 AZTEC, NEW MEXICO 87410  
 (505) 334-0178

Date: 5-28-93

*Attn: Mike Segner*

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

Re: Proposed HC \_\_\_\_\_  
 Proposed DHC \_\_\_\_\_  
 Proposed NSL X \_\_\_\_\_  
 Proposed SWD \_\_\_\_\_  
 Proposed WFX \_\_\_\_\_  
 Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated 4-30-93

for the Meridian Oil Inc. S.T. 28-5 Unit # 200  
 Operator Lease & Well No.

H-14-28N-5W and my recommendations are as follows:  
 Unit, S-T-R

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

Yours truly,

*Emil Busch*

MERIDIAN OIL

NSL

April 29, 1993

Mr. William LeMay  
New Mexico Oil Conservation Division  
Post Office Box 2088  
Santa Fe, New Mexico 87501

RECEIVED  
APR 30 1993  
OIL CON. DIV.  
DIST. 3

Re: NSL-2689 dated August 23, 1989  
Meridian Oil Inc. San Juan 28-5 Unit #200  
Revised location at 1995'FNL, 885'FEL Section 14, T-28-N, R-05-W  
Rio Arriba County, New Mexico

Dear Mr. LeMay:

Meridian Oil Inc. is applying for revised administrative approval of a non-standard location for the above location in both the Fruitland Coal and Pictured Cliffs formations. This well is planned as a Basin Fruitland Coal/South Blanco Pictured Cliffs commingled completion.

Administrative Order NSL-2689 was issued for this well at 1475'FNL, 490'FEL dated August 23, 1989 for the Fruitland Coal formation. The well was not drilled at that time, and the application for permit to drill from the Bureau of Land Management rescinded.

It is now planned to drill and complete this well at 1995'FNL, 885'FEL of Section 14, T-28-N, R-5-W, Rio Arriba County, New Mexico as a Basin Fruitland Coal/South Blanco Pictured Cliffs commingled well. Application for commingling will also be made by Meridian Oil.

This revised application for the referenced location is due to terrain and archaeology. The following attachments are for your review:

1. Application for Permit to Drill.
2. Completed C-102 at referenced location.
3. Offset operators/owners plat for both formations. All lands surrounding this proration unit are within the San Juan 28-5 Unit boundaries with Meridian Oil as operator of the unit.
4. 7.5 minute topographic map showing the orthodox windows for the north half dedication, the orthodox windows for the northeast quarter, and enlargement of the map to define topographic features.
5. If the well were directionally drilled to a standard bottom hole location, the economics would be severely burdened due to the incremental directional drilling costs of \$130,000.

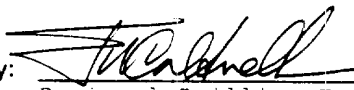
Sincerely,

*Peggy Bradfield*  
Peggy Bradfield  
Regulatory/Compliance Representative

encs.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number SF-079250
1b. Type of Well GAS	6. If Indian, All. or Tribe
2. Operator <b>MERIDIAN OIL</b>	7. Unit Agreement Name San Juan 28-5 Unit
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499  (505) 326-9700	8. Farm or Lease Name San Juan 28-5 Unit 9. Well Number 200
4. Location of Well 1995'FNL, 885'FEL  Latitude 36° 39' 47", Longitude 107° 19' 19"	10. Field, Pool, Wildcat S. Blanco Pic. Cliffs/ Basin Ft Coal 11. Sec., Twn, Rge, Mer. Sec 14, T-28-N, R-5-W NMPM
14. Distance in Miles from Nearest Town 4 miles to Gobernador, NM	12. County Rio Arriba
15. Distance from Proposed Location to Nearest Property or Lease Line 885'	13. State NM
16. Acres in Lease 2453.70	17. Acres Assigned to Well 320/160 N/2 NE/4
18. Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease 70'	
19. Proposed Depth 4440'	20. Rotary or Cable Tools Rotary
21. Elevations (DF, FT, GR, Etc.) 7292'GR	22. Approx. Date Work will Start 2nd quarter 1993
23. Proposed Casing and Cementing Program See Operations Plan attached	
24. Authorized by:  Regional Drilling Engineer	Date 4/13/93

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OIL CON. DIV.  
DIST. 3

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Archaeological Report to be submitted  
Threatened and Endangered Species Report to be submitted  
NOTE: This format is issued in lieu of U.S. BLM Form 3160-3  
APD for this well at 1475'FNL, 490'FEL approved 8-28-89 and rescinded 9-24-91.

Submit to Appropriate District Office  
 State License - 4 copies  
 Fee License - 3 copies

State of New Mexico  
 Energy, Minerals and Natural Resources Department

Form C-182  
 Revised 1-1-89

**OIL CONSERVATION DIVISION**  
 P.O. Box 2088  
 Santa Fe, New Mexico 87504-2088

DISTRICT I  
 P.O. Box 1980, Hobbs, NM 88240

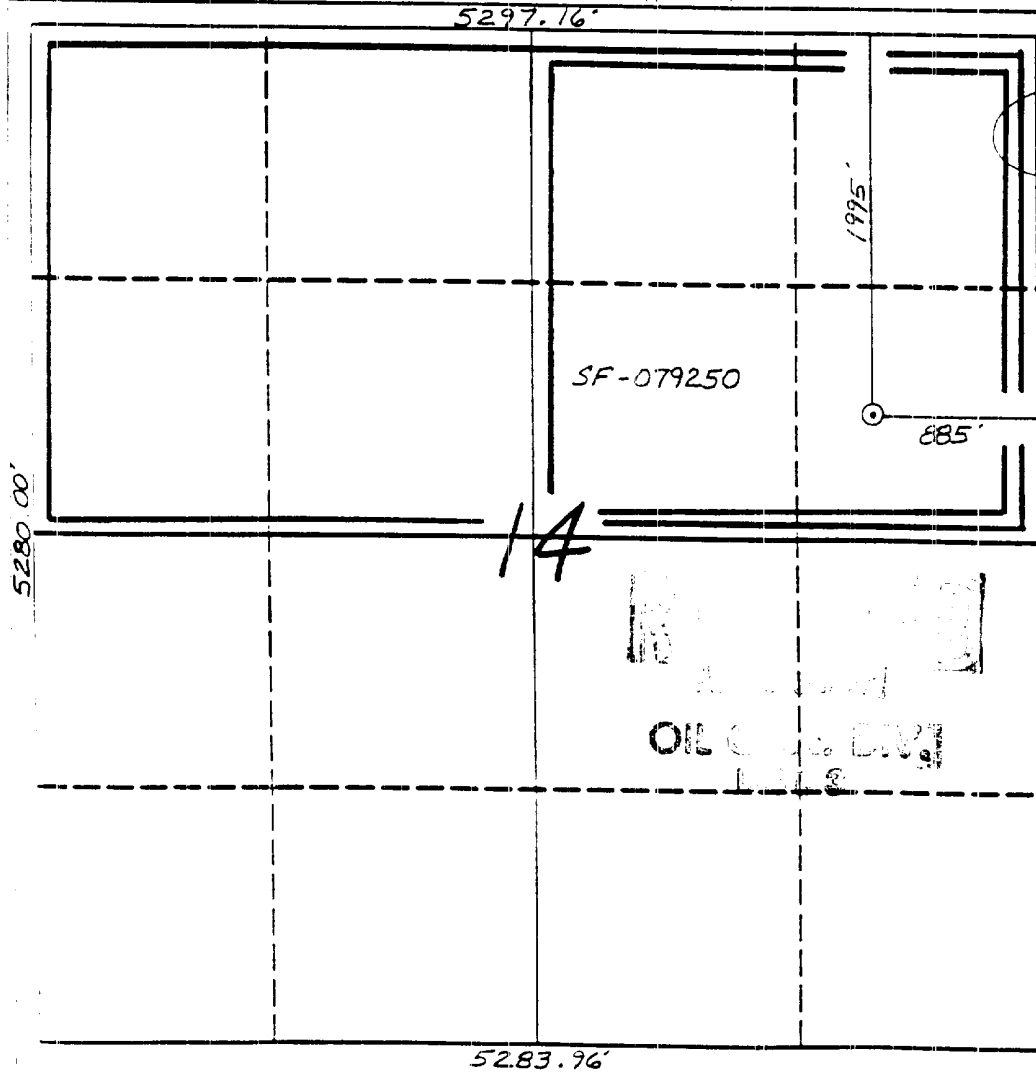
DISTRICT II  
 P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
 1000 Rio Blanco Rd., Aztec, NM 87410

**WELL LOCATION AND ACREAGE DEDICATION PLAT**  
 All Distances must be from the outer boundaries of the section

Operator	Meridian Oil Inc.			Lease	San Juan 28-5 Unit		Well No.	200	
Unit Letter	H	Section	14	Township	28 North		Range	5 West	
							County	Rio Arriba	
Actual Footage Location of Well:									
	1995	feet from the	North	line and	885	feet from the	East	line	
Geologic Level Elev.	7292'	Producing Formation	Fruitland Coal/Pic. Cliffs		Pool	Basin/So. Blanco		Dedicated Acreage:	320/160
									Acres

- Outline the acreage dedicated to the subject well by colored pencil or lacquer marks on the plat below.
  - If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
  - If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
    - Yes  No If answer is "yes" type of consolidation \_\_\_\_\_ unitization \_\_\_\_\_
- If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)
- No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, force-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



**OPERATOR CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*Peggy Bradfield*  
 Signature  
 Peggy Bradfield  
 Printed Name  
 Regulatory Rep.  
 Position  
 Meridian Oil Inc.  
 Company  
 4-13-93  
 Date

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes or actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

3-9-93

Date Surveyed  
 Neal W. Edwards  
 Signature  
 Professional Surveyor  
 8857  
 State of New Mexico  
 Surveyors Board

April 13, 1993

OPERATIONS PLAN

Well Name: San Juan 28-5 Unit #200  
 Location: 1995'FNL, 885'FEL Section 14, T-28-N, R-05-W  
 Rio Arriba County, New Mexico  
 Latitude 36° 39' 47", Longitude 107° 19' 19"  
 Formation: Basin Fruitland Coal/South Blanco Pictured Cliffs  
 Elevation: 7292'GL

Formation:	Top	Bottom	Contents
Surface	San Jose	3520'	
Ojo Alamo	3520'	3740'	aquifer
Kirtland	3740'	4000'	
Fruitland	4000'	4245'	
Fruitland Coal Top	4085'	4240'	gas
Pictured Cliffs	4245'	4470'	gas
Lewis	4470'		
Total Depth	4440'		

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 DIST. 3

Logging Program: Mud logs from 3975' to Total Depth.  
 DIL, CNL-LDT, ML, NGT, HR Density -surface to TD.

**Mud Program:**

Interval	Type	Weight	Vis.	Fluid Loss
0- 200'	Spud	8.4-8.9	40-50	no control
200-4440'	Non-dispersed	8.4-9.5	30-60	no control

**Casing Program:**

Hole Size	Depth Interval	Csg. Size	Wt.	Grade
12 1/4"	0 - 200'	8 5/8"	24.0#	K-40
7 7/8"	0 - 4440'	4 1/2"	10.5#	K-55

**Tubing Program:**

0 - 4440'	2 3/8"	4.7#	J-55
-----------	--------	------	------

Float Equipment: 8 5/8" surface casing - saw tooth guide shoe.  
 Centralizers will be run in accordance with Onshore Order #2.

4 1/2" production casing - float shoe on bottom. Three centralizers run every other joint above shoe. Four centralizers run every 3rd joint to the base of the Ojo Alamo @ 3740'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 3740'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

Wellhead Equipment: 8 5/8" x 4 1/2" x 2 3/8" x 11" 3000 psi xmas tree assembly.

April 13, 1993

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DIST. 3

**Cementing:**

8 5/8" surface casing - cement with 235 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (293 cu.ft. of slurry, 200% excess to circulate to surface). WOC 12 hrs. Test casing to 600 psi for 30 minutes.

4 1/2" production casing -

First stage - cement with 247 sx Class "B" cement with 2% calcium chloride, 6.25# gilsonite/sx and 1/4# flocele/sx (292 cu.ft. of slurry, 100% excess to circulate stage tool @ 3800').

Second stage - lead w/962 sx of 65/35 Class "B" pcz w/6% gel, 2% calcium chloride, 5# gilsonite/sx and 1/4# flocele/sx. Tail w/25 sx Class "B" w/2% calcium chloride (1732 cu.ft. of slurry, 100% excess to circulate to surface). WOC 12 hrs. If cement does not circulate to surface, a temperature log will be run after 8 hours to determine TOC. Test casing to 1500 psi/minutes.

**BOP and tests:**

Surface to TD - 11" 2000 psi (minimum double gate BOP stack (Reference Figure #1 and #2). Prior to drilling out surface casing, test rams to 600#/30 min.

Completion - 6" 2000 psi (minimum) double gate BOP stack (Reference Figure #2). Prior to completion operations, test rams to 3000#/15 min.

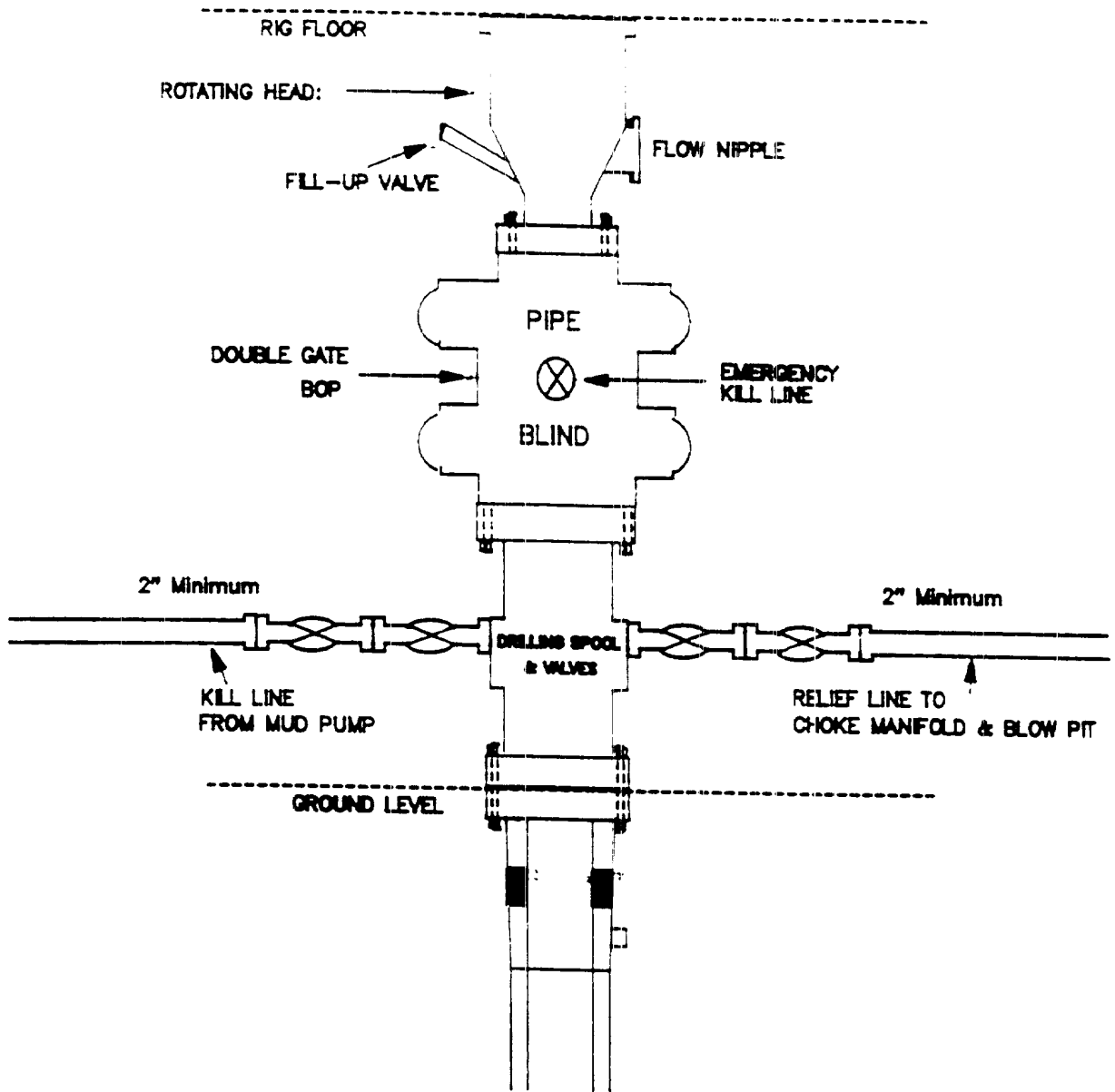
From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated to least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

**Additional information:**

- \* The Fruitland Coal and Pictured Cliffs formations will be completed and commingled per New Mexico Oil Conservation Division order.
- \* Anticipated pore pressure for the Fruitland is 1150 psi and for the Pictured Cliffs is 1150 psi.
- \* This gas is dedicated.
- \* The North half of the section is dedicated to the Fruitland Coal and the Northeast quarter of the section is dedicated to the Pictured Cliffs.
- \* New casing will be utilized.
- \* Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

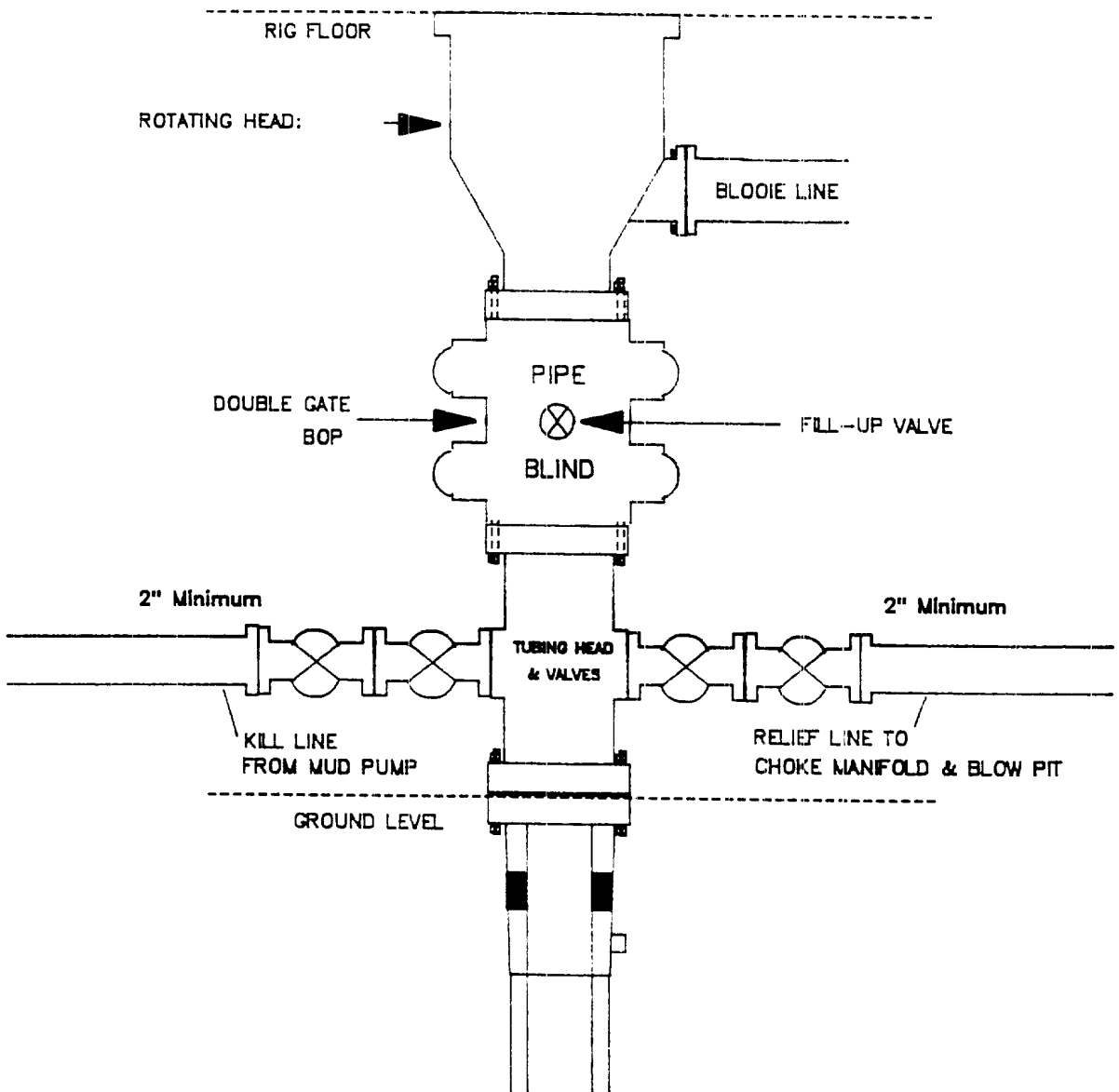
MERIDIAN OIL INC.  
 Drilling Rig  
 BOP Configuration



Minimum BOP installation for a typical Pictured Cliffs well from surface to Total Depth. 11" Bore (10" Nominal), 2000psi minimum working pressure double gate BOP to be equipped with blind and pipe rams. A Schaffer Type 50 or equivalent rotating head to be installed on the top of BOP. All equipment is 2000psi working pressure/or greater.

**Figure #1**

**MERIDIAN OIL INC.**  
Completion Rig  
BOP Configuration



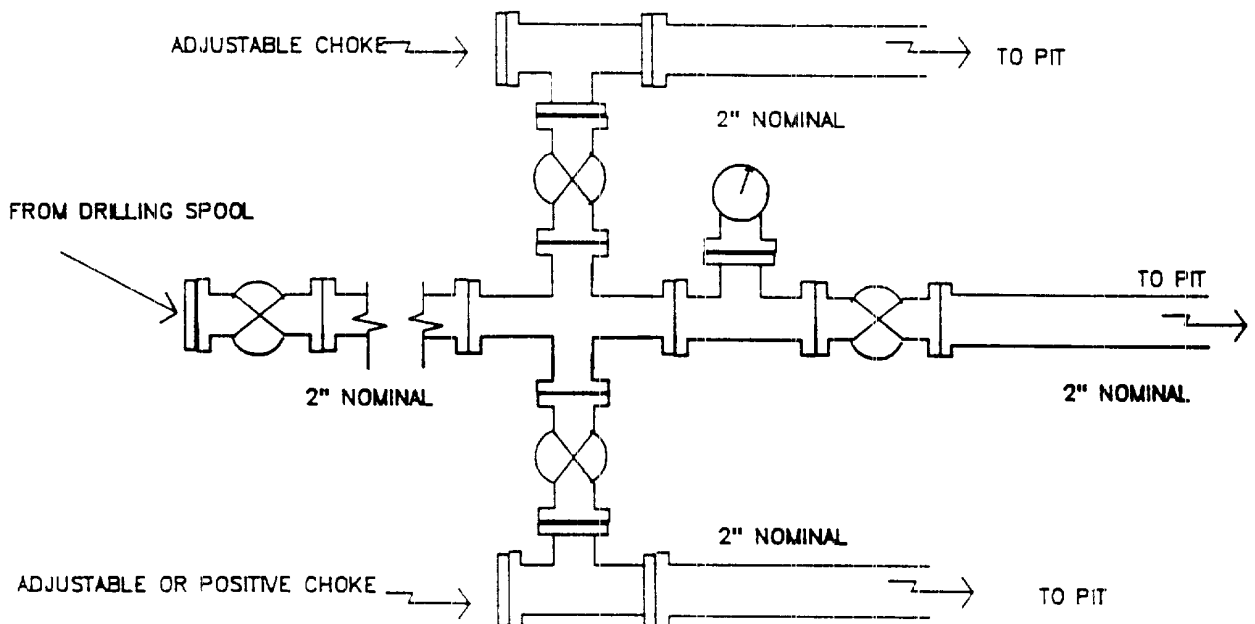
Minimum BOP installation for Completion Operations. 7 1/16" Bore (6" Nominal), 2000psi minimum working pressure double gate BOP to be equipped with blind and pipe rams.

**Figure #2**



# MERIDIAN OIL INC.

## Typical Pictured Cliffs Well Choke Manifold Configuration



Minimum choke manifold installation for a typical Pictured Cliffs well from surface to Total Depth. 2", 2000psi working pressure equipment with two chokes.

**Figure #3**

**MERIDIAN OIL**  
San Juan 28-5 Unit #200  
Multi-Point Surface Use Plan

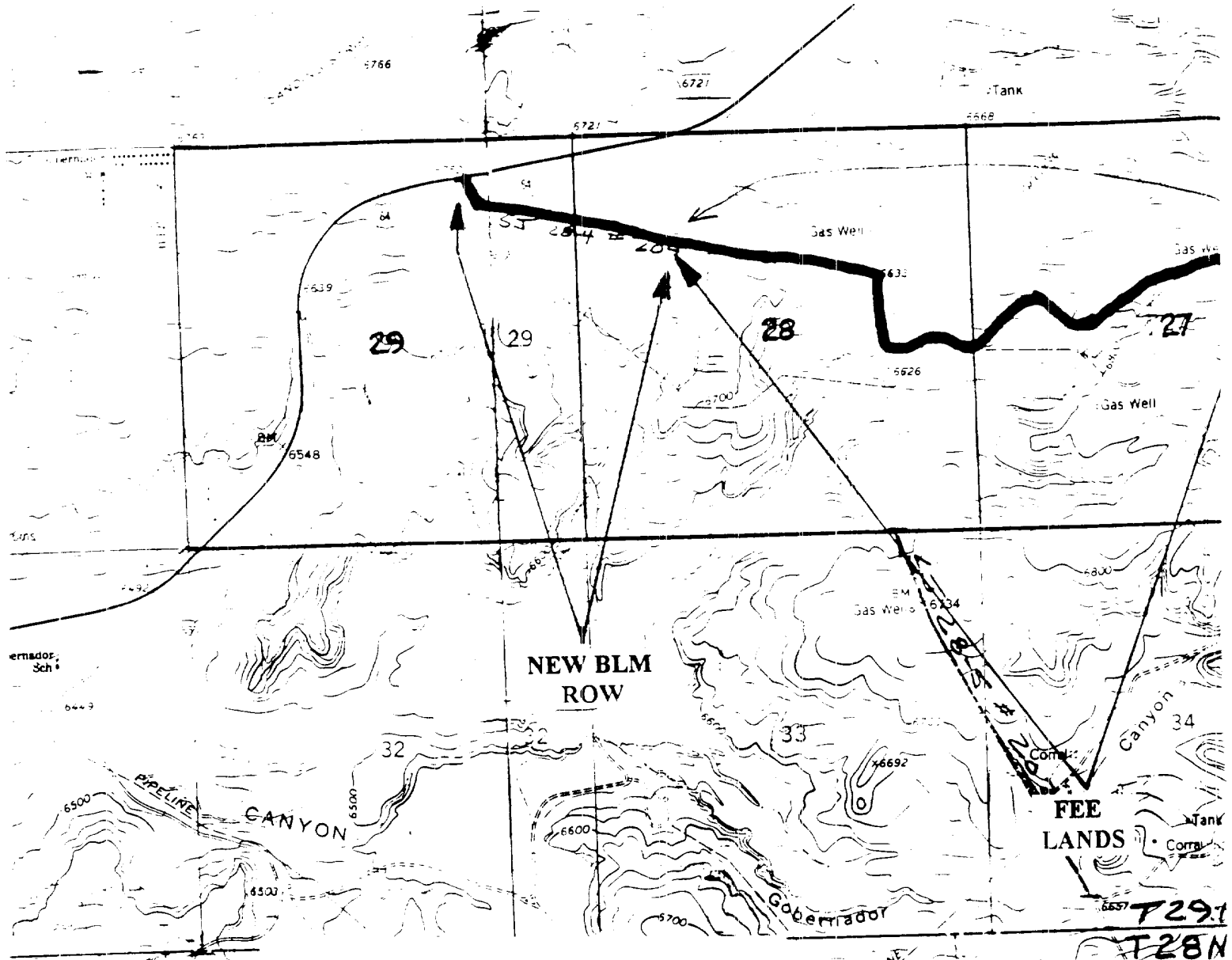
1. Existing Roads - Refer to Map No. 1. Existing roads used to access the proposed location will be properly maintained for the duration of the project. Bureau of Land Management right-of-way has been applied for as shown on Map No. 1.
2. Planned Access Road - Refer to Map No. 1. None required.
3. Location of Existing Wells - Refer to Map No. 1A.
4. Location of Existing and/or Proposed Facilities if Well is Productive -
  - a. On the Well Pad - Refer to Plat No. 1, anticipated production facilities plat.
  - b. Off the Well Pad - Anticipated facilities off the well pad will be applied for as required.
5. Location and Type of Water Supply - Water will be hauled by truck for the proposed project and will be obtained from San Juan 29-6 Water Well #1 in located in SW/4 Section 28, T-29-N, R-6-W, New Mexico.
6. Source of Construction Materials - If construction materials are required for the proposed project, such materials will be obtained from a commercial quarry.
7. **Methods of Handling Waste Materials** - All garbage and trash materials will be removed from the site for proper disposal. A portable toilet will be provided for human waste and serviced in a proper manner. If liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off from carrying waste materials into the watershed. All reserve pits will be lined with 12 mil bio-degradable plastic liner. All earthen pits will be so constructed as to prevent leakage from occurring; no earthen pit will be located on natural drainage. Generation of hazardous waste is not anticipated. Federal regulations will be adhered to regarding handling and disposal of such waste if so generated.
8. Ancillary Facilities - None anticipated.
9. Wellsite Layout - Refer to the location diagram and to the wellsite cut and fill diagram (Figure No. 4). The blow pit will be constructed with a 2'/160' grade to allow positive drainage to the reserve pit and prevent standing liquids in the blow pit.

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DIST. 3

10. Plans for Restoration of the Surface - After completion of the proposed project, the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeded operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeded operations will be performed during the time period set forth by the responsible government agency. The permanent location facilities will be painted as designated by the responsible government agency.
11. Surface Ownership - Bureau of Land Management.
12. Other Information - Environmental stipulations as outlined by the responsible government agency will be adhered to. Refer to the archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
13. Operator's Representative and Certification - Meridian Oil Regional Drilling Manager, Post Office Box 4289, Farmington, NM 87499, telephone (505) 326-9700. I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan, are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Meridian Oil Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

  
Regional Drilling Engineer

4/13/93  
Date



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**MERIDIAN OIL INC**

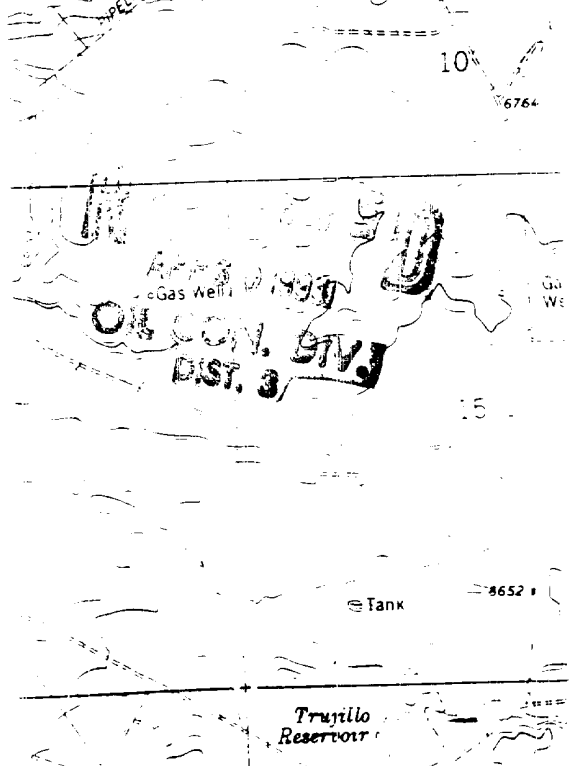
**SAN JUAN 28-5 UNIT #200**

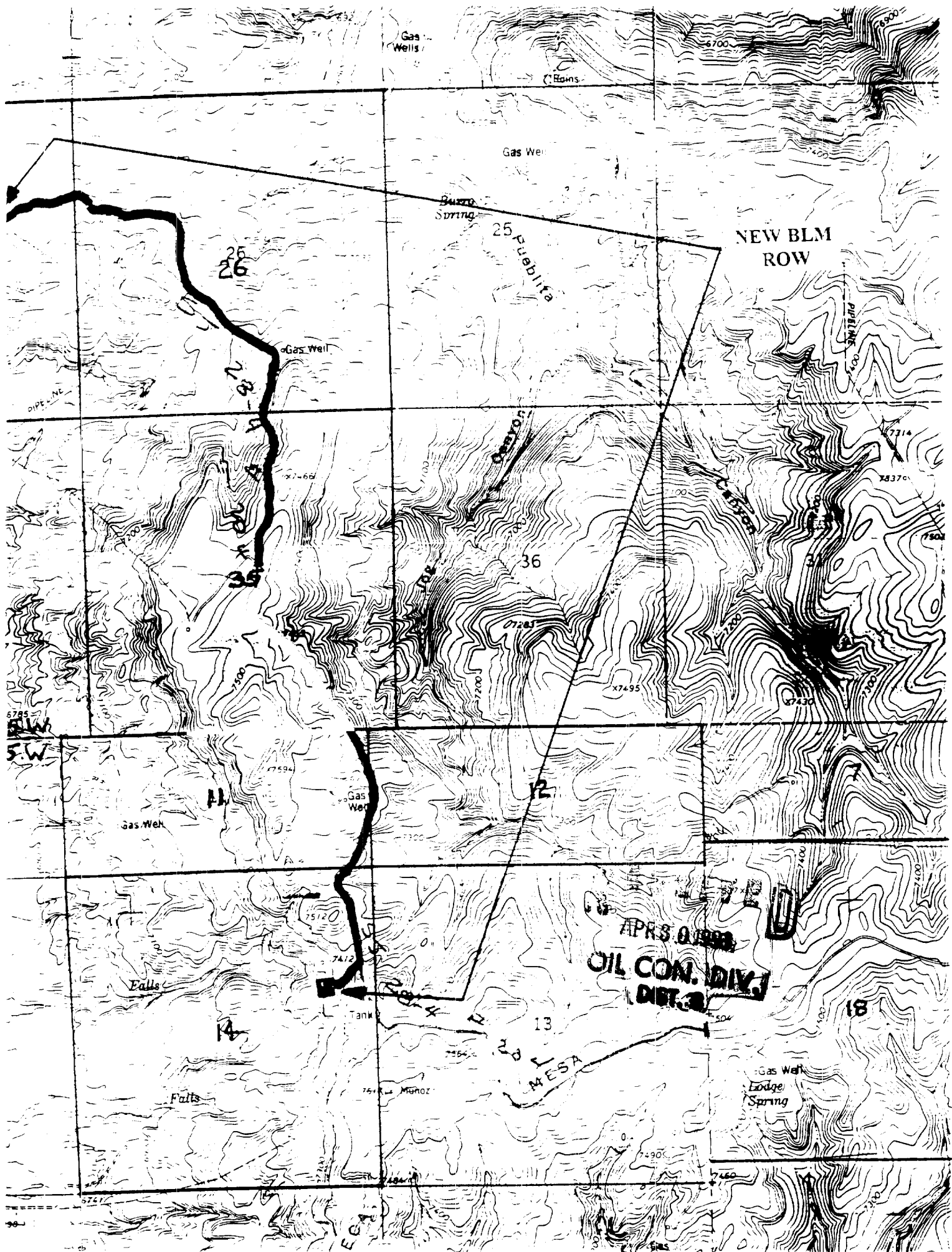
T 28 N, R 05 W

No New Construction

T28N, R5W		
Section 14:	E2NE	2400'
	11: SESE	850'
	NESE	600'
	12: W2SW	500'
T28N, R5W		
Section 35:	SESE	800'
	W2E2	5200'
26:	SWSE	1630'
	NWSE	100'
	NESW	1400'
	S2NW	1900'
27:	SENE	1350'
28:	NWNW	1400'
29:	N2NE	1700'

**APD MAP #1**





Gas Wells

Burre Spring

NEW BLM ROW

25  
26

25 Pueblo

Gas Well

7766

36

PIPE LINE

SW

Gas Well

14

Gas Well

12

Falls

14

Tank

13

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OIL CON. DIV.  
DIST. 3

Falls

14

MUNOZ

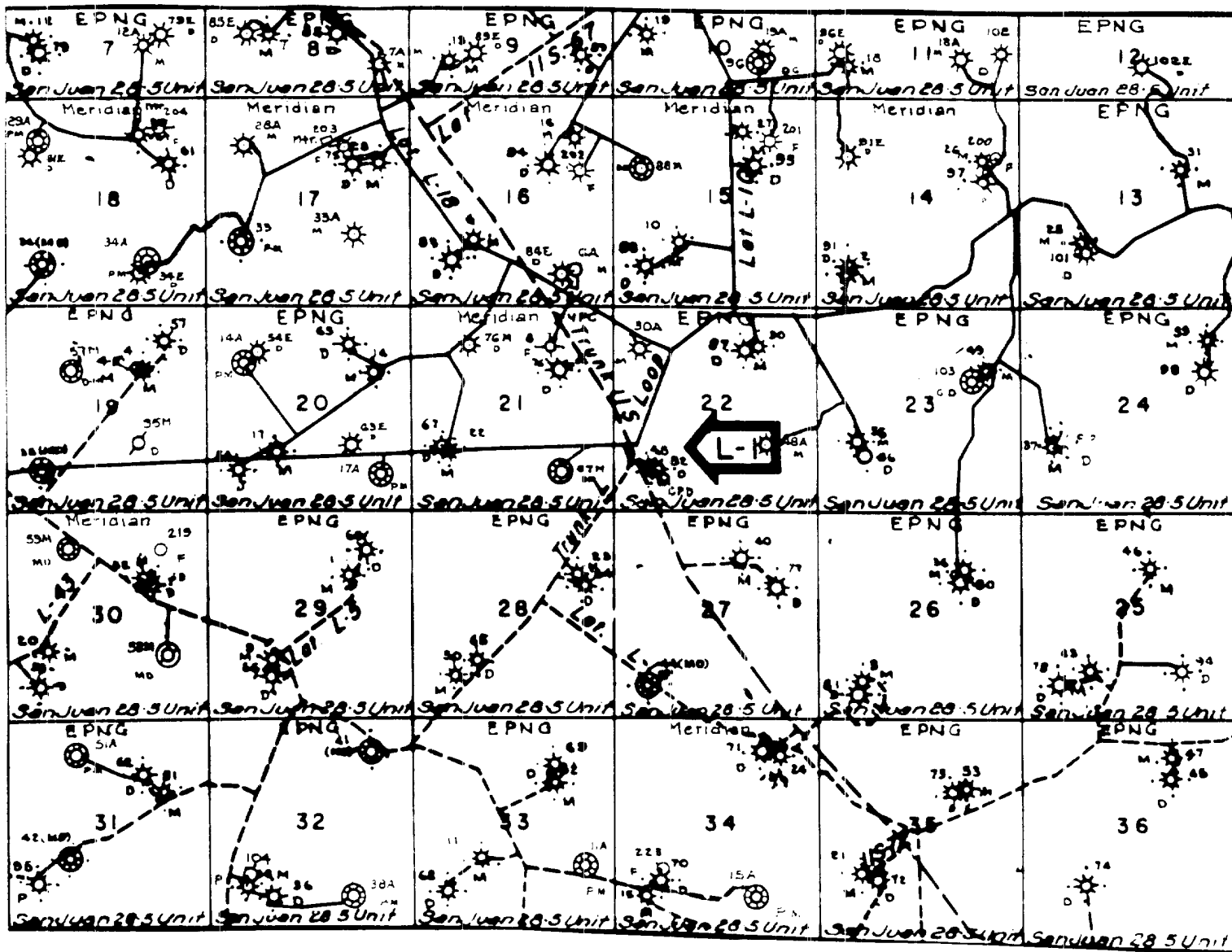
MESA

Gas Well  
Lodge Spring

18

5247

96



RECORDED

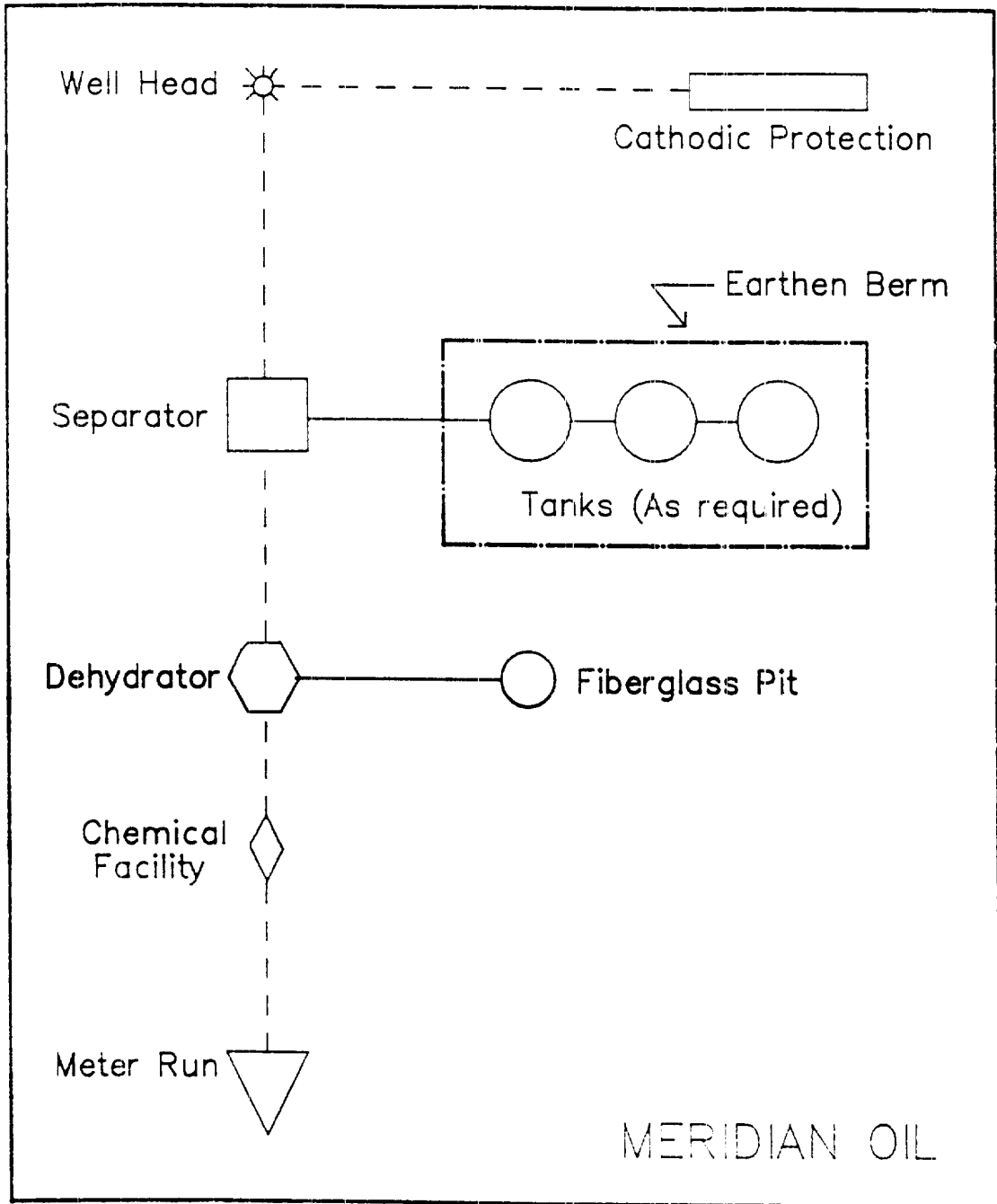
APR 26 1990

OFF. COMM. DIV.  
DIST. 4

MERIDIAN OIL INC.  
Pipeline Map  
T-28-N, R-05-W  
San Juan County, New Mexico  
San Juan 28-5 Unit #200  
Map #1A

3/91 adw/mjb

Well Pad Boundary

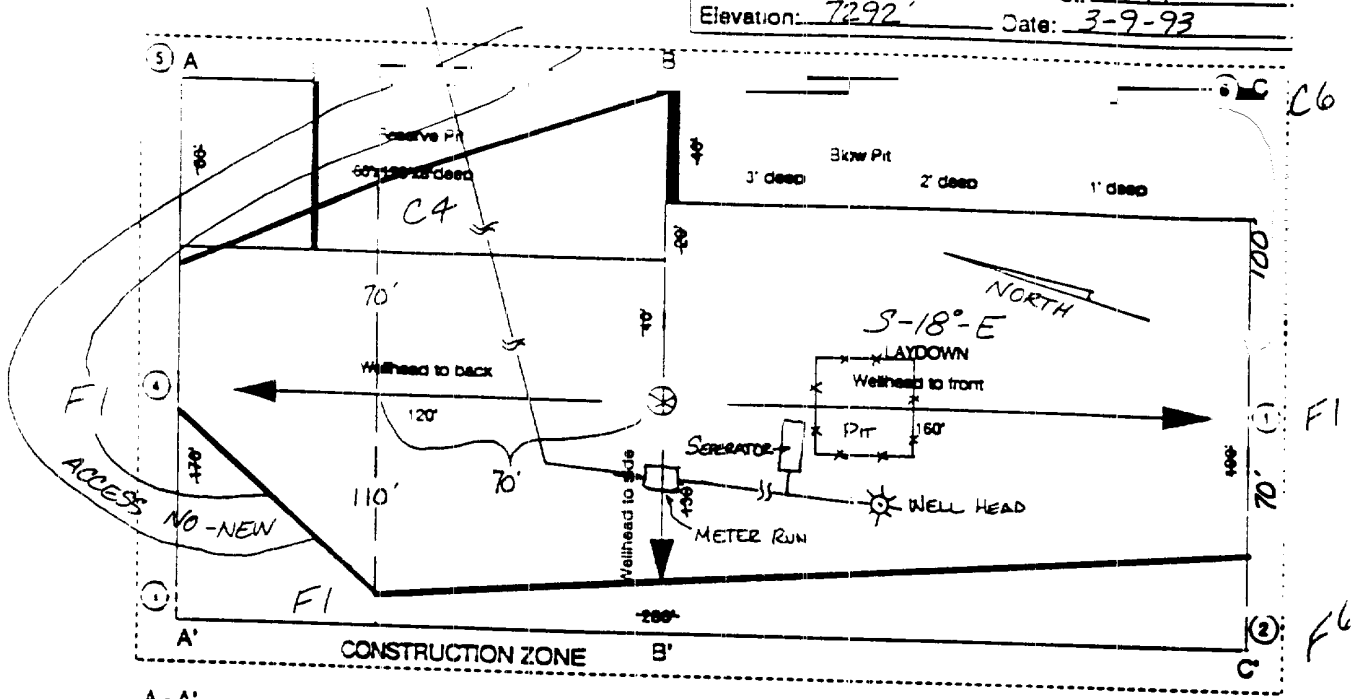


ANTICIPATED  
PRODUCTION FACILITIES  
FOR A  
FRUITLAND COAL/PICTURED CLIFFS COMMINGLED WELL

# MERIDIAN OIL

## Plat 2

Name: MOI SAN JUAN 28-5 UNIT # 200  
 Footage: 1995' FNL 885' FEL  
 Sec 14 - 28 N.R. 5 W NMPM  
 Co. RIO ARRIBA St. N. M.  
 Elevation: 7292' Date: 3-9-93



A-A'		C/L	
7302			
7292			
7282			
B-B'		C/L	
7302			
7292			
7282			
C-C'		C/L	
7302			
7292			
7282			



Subject to Approvals  
District Office  
State Lease - 4 copies  
File Lease - 3 copies

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised 1-1-89

OIL CONSERVATION DIVISION  
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Aramis, NM 88210

DISTRICT III  
1000 Rio Arriba Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT  
All Distances must be from the outer boundaries of the section

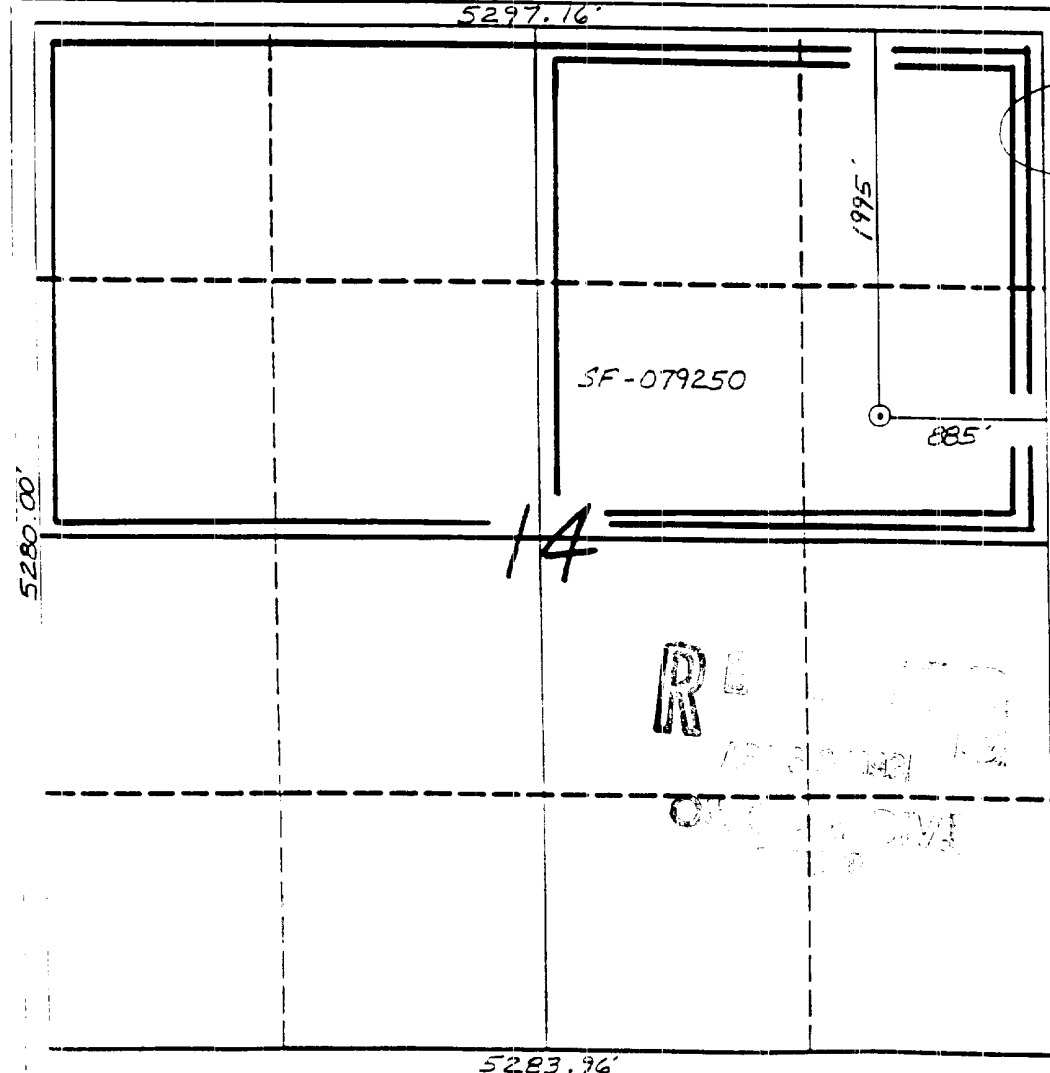
Operator	Meridian Oil Inc.			Lease	San Juan 28-5 Unit		Well No.	200	
Unit Letter	H	Section	14	Township	28 North	Range	5 West	County	Rio Arriba
Actual Footage Location of Well:									
1995	feet from the	North	line and	885	feet from the	East	line		
Ground level Elev.	Producing Formation		Foot	Dedicated Acreage:					
7292'	Fruitland Coal/Pic.Cliffs		Basin/So.Blanco	320/160		Acres			

- Outline the acreage dedicated to the subject well by colored pencil or red-ink marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
 

Yes     No    If answer is "yes" type of consolidation \_\_\_\_\_ unitization \_\_\_\_\_

If answer is "no" list the owners and their descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No acreage will be assigned to the well until all interests have been consolidated (by communitization, unitization, force-pooling, or otherwise) or until a non-standard unit, consolidating such interest, has been approved by the Division.



**OPERATOR CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*Peggy Bradfield*  
Signature  
Peggy Bradfield

Printed Name  
Regulatory Rep.

Company  
Meridian Oil Inc.

County

Date  
4-13-93

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes, actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

3-9-93

Date Surveyed

*Neil C. Edwards*  
Name  
Neil C. Edwards

Signature  
Professional Surveyor

8857

Commission No.  
6857

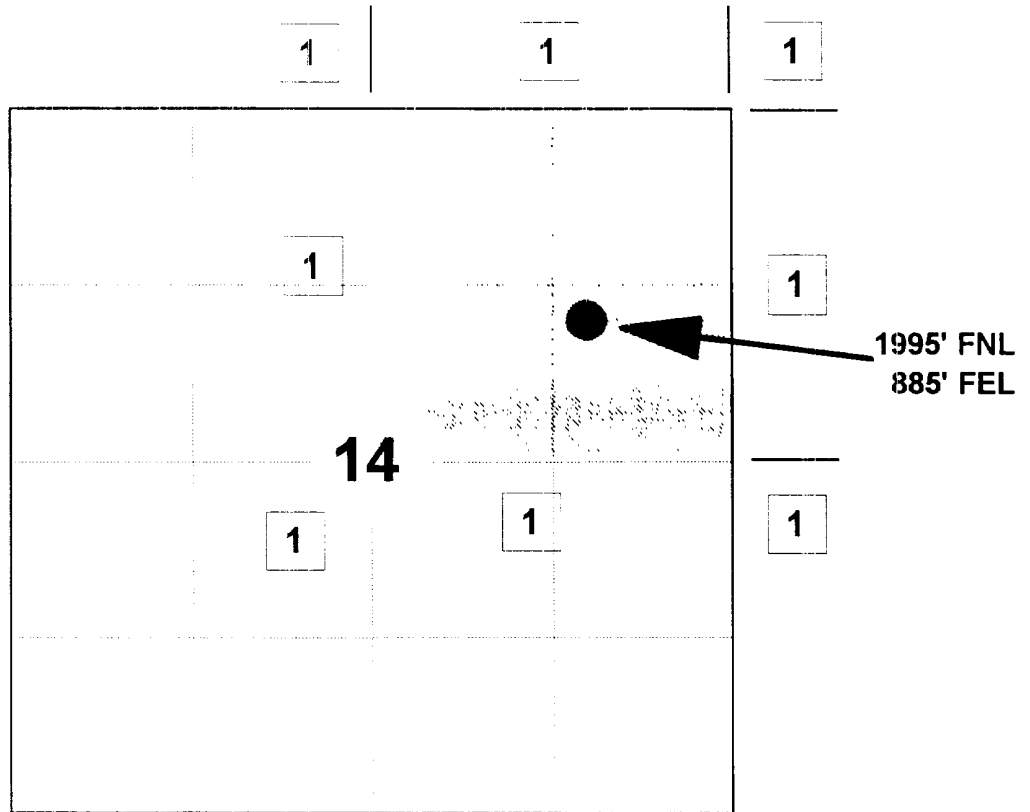
# MERIDIAN OIL INC

## SAN JUAN 28-5 UNIT #200

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Formations Commingle

Township 28 North, Range 05 West



1) Meridian Oil Inc

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Pictured Cliffs Formation

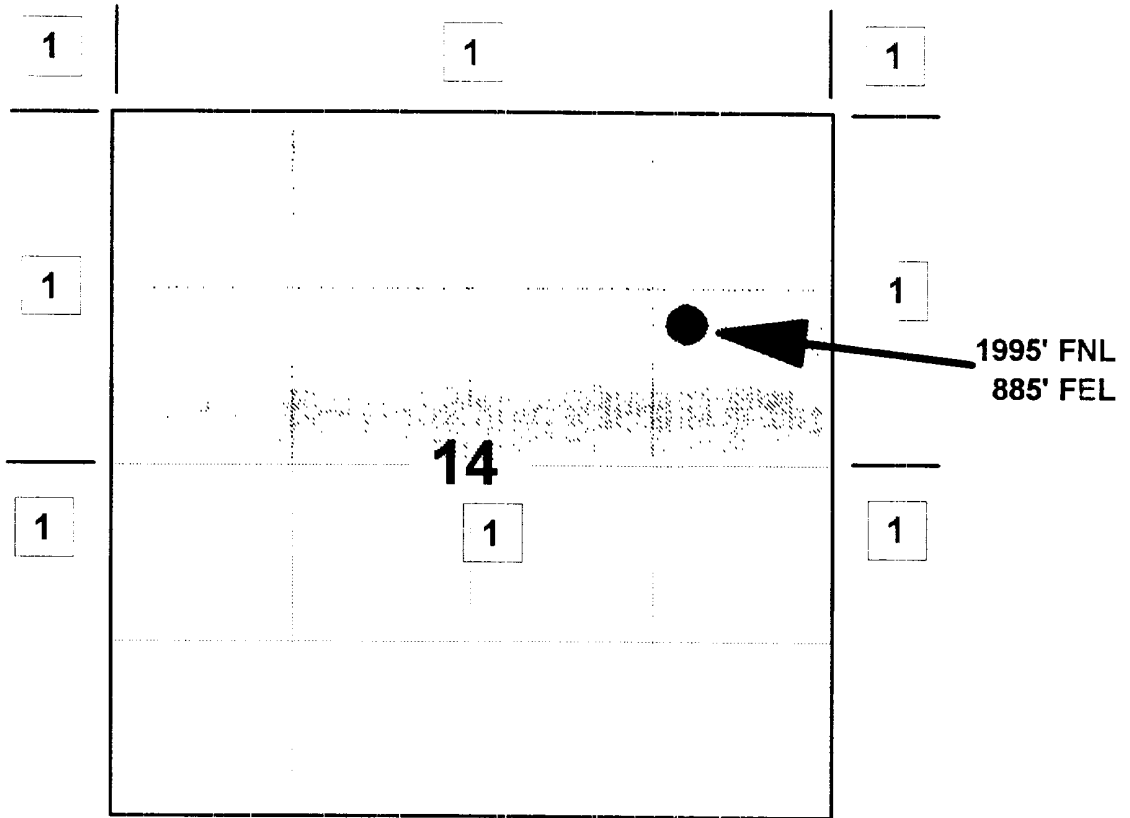
# MERIDIAN OIL INC

## SAN JUAN 28-5 UNIT #200

### OFFSET OPERATOR \ OWNER PLAT

#### Fruitland Coal / Pictured Cliffs Formations Commingle

Township 28 North, Range 05 West



1) Meridian Oil Inc

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Fruitland Formation

734

Carr Canyon

Canyon

Jog

7455

Tank

6657

6785

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APR 30 1993

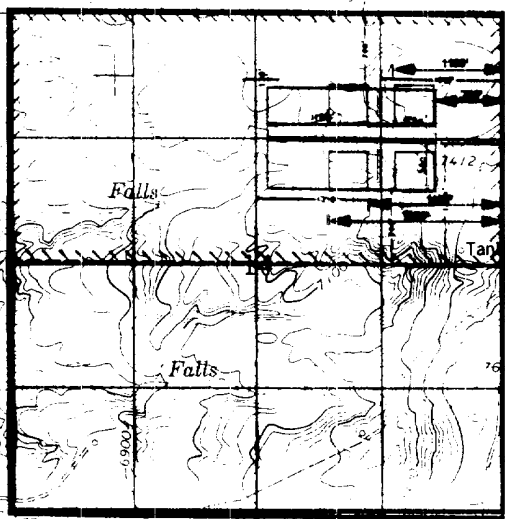
**OIL CON. DIV.**  
**DIST. 3**

11

Gas Well

6764

Gas Well  
**NE 1/4 DEDICATION**  
**N/2 DEDICATION**



15

Gas Wells

13

7564

MESA

Tank

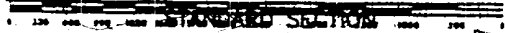
6652

7674 Muñoz

7484

Trujillo Reservoir

6698



STANDARD SECTION

SECA

Gas Wells

Gas Wells

BM 6666

Gas Well

22

23

LAGUNA

Gas Well

MERIDIAN OIL

**MERIDIAN OIL**

OSO

6715

7585 Shydr

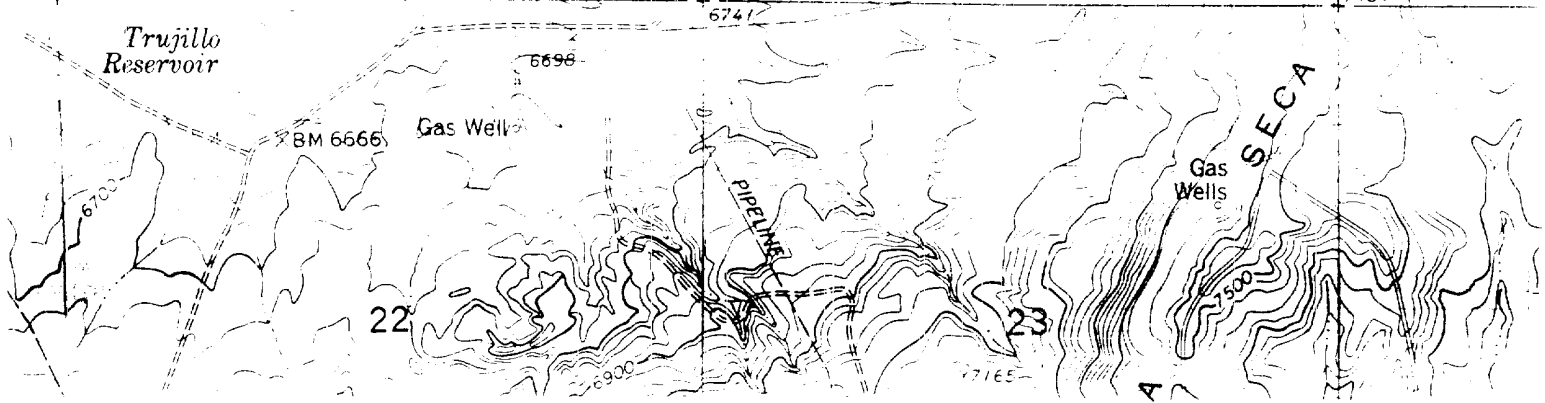
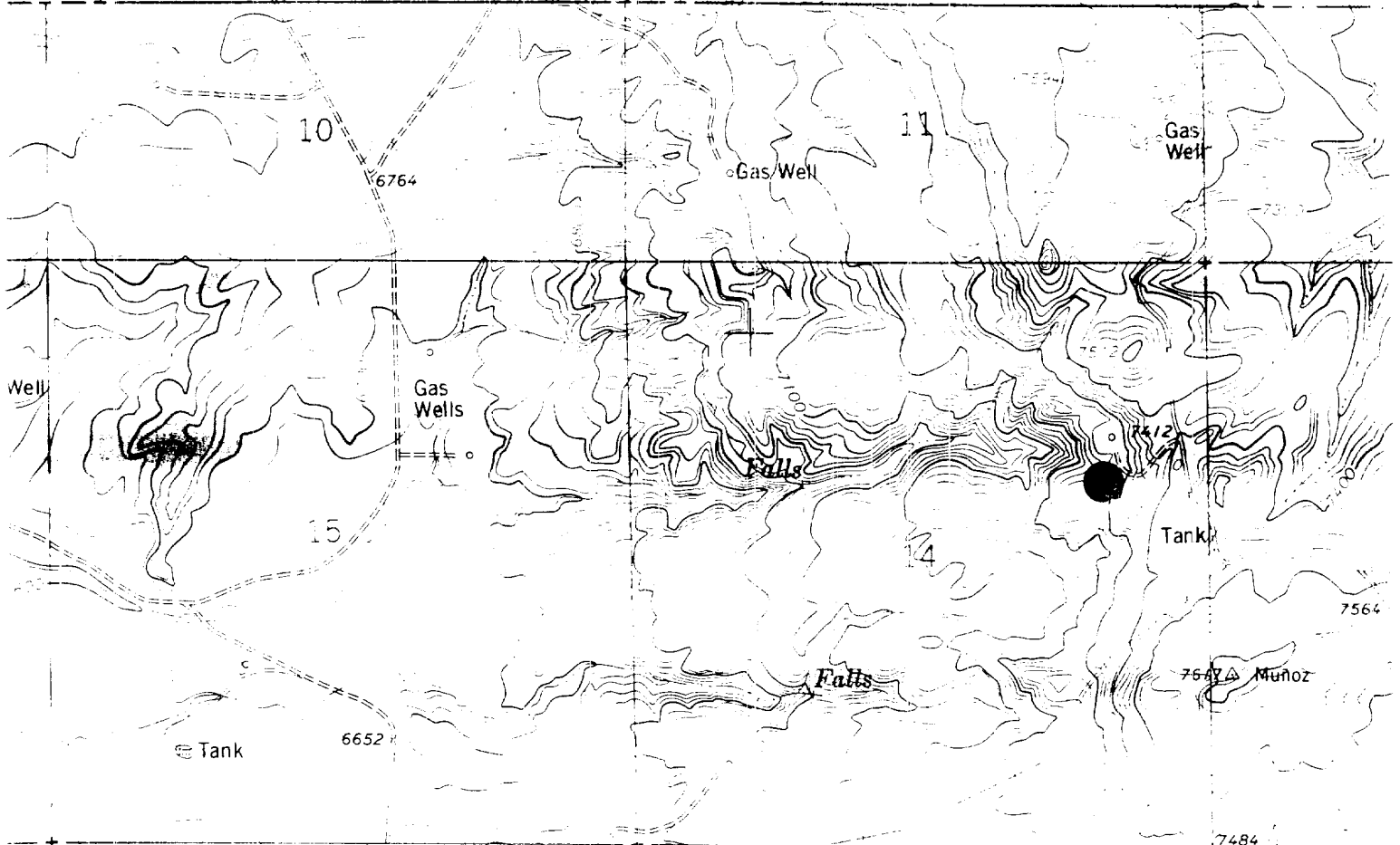
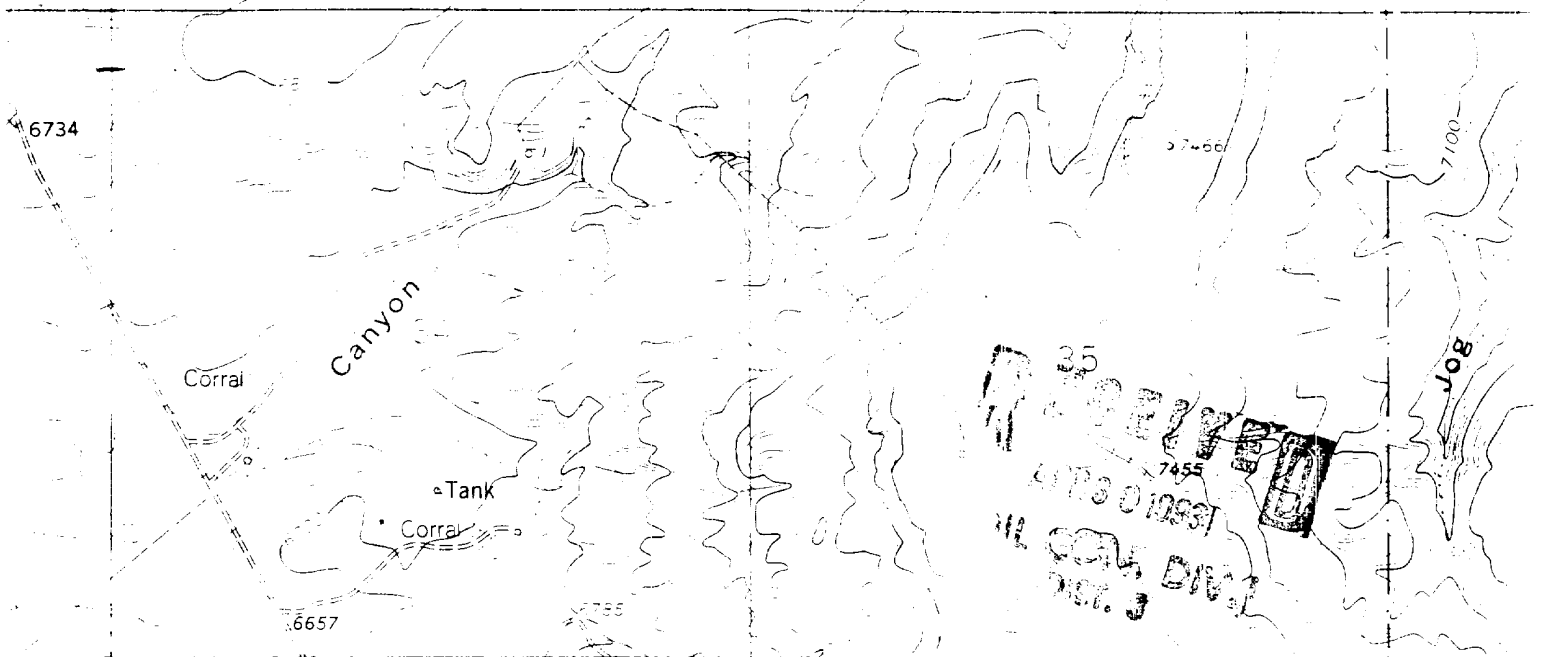
Gas Wells

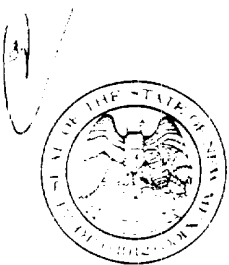
Gas Wells

Dumell Arnold Ranch

27

26





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



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE NEW MEXICO 87504  
(505) 927-5800

**ADMINISTRATIVE ORDER DHC-933**

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

Attention: Arden L. Walker, Jr.

**RECEIVED**  
OCT 6 1993  
OIL CON. DIV.  
DIST. 3

*San Juan 28-5 Unit Well No. 200  
Unit H, Section 14, Township 28 North, Range 5 West, NMPM,  
San Juan County, New Mexico.  
Basin Fruitland Coal and Undesignated Pictured Cliffs Pools*

Dear Mr. Walker:

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.

*Administrative Order DHC-933*

*Meridian Oil Company*

*September 28, 1993*

*Page 2*

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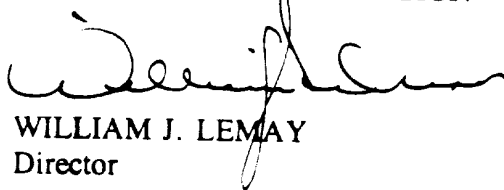
The operator is responsible for reporting the monthly gas production from the subject well to the Division utilizing the allocation formula adopted herein. An annual report shall be submitted by the operator to both the Aztec and Santa Fe offices of the Division showing the complete computations for 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 28th day of September, 1993.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director

S E A L

WJL/BES/amg

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

# SAN JUAN 28-5 UNIT #200

## MONTHLY GAS PRODUCTION ALLOCATION FORMULA

### GENERAL EQUATION

$$Q_t = Q_{ftc} + Q_{pc}$$

WHERE:  $Q_t$  = TOTAL MONTHLY PRODUCTION (MCF/MONTH)  
 $Q_{ftc}$  = FRUITLAND COAL (ftc) MONTHLY PRODUCTION  
 $Q_{pc}$  = PICTURED CLIFFS (pc) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR  $Q_{ftc}$ :

$$Q_{ftc} = Q_t - Q_{pc}$$

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:

$$Q_{pc} = Q_{pci} \times e^{-\{D_{pc}\} \times (t)}$$

WHERE:  $Q_{pci}$  = INITIAL PC MONTHLY FLOW RATE (CALCULATED FROM FLOW TEST)  
 $D_{pc}$  = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM:  
 $D_{pc} = (Q_{pci} - Q_{pcabd}) / N_{p(pc)}$   
See Determination of  $Q_{pci}$  and PC Estimated Ultimate Recovery ( $N_{p(pc)}$ )  
 $Q_{pcabd} = 300$  MCF/M

WHERE:  $N_{p(pc)}$  = PICTURED CLIFFS ESTIMATED ULTIMATE RECOVERY (EUR)  
 $N_{p(pc)} = P \times 0.81 \text{ MMCF/PSI}^{**} \times R_f$   
 $P^*$  = INITIAL RESERVOIR PRESSURE (SIBHP)  
 $R_f$  = RECOVERY (FIELD ANALOGY): = 0.95  
 $**$  DETERMINED FROM MATERIAL BALANCE (FIELD ANALOGY) AND VOLUMETRIC RESERVES (LOG ANALYSIS)

By calculating  $N_{p(pc)}$  from SIBHP and determining  $Q_{pci}$ ,  $D_{pc}$  can then be calculated utilizing the previously described parameters. See derivation of  $D_{pc}$ , item (c) on page 4.

THUS:  $Q_{ftc} = Q_t - Q_{pci} \times e^{-\{D_{pc}\} \times (t)}$   
WHERE: (t) IS IN MONTHS

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