

# MERIDIAN OIL

OIL CONSERVATION DIVISION  
RECEIVED

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June 4, 1993

Sent Federal Express

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

Re: Meridian Oil Inc. San Juan 28-4 Unit #226  
2030'FSL, 1570'FWL Section 17, T-28-N, R-4-W  
Rio Arriba County, New Mexico

Dear Mr. LeMay:

Meridian Oil Inc. is applying for administrative approval of a non-standard location for the above location in the Basin Fruitland Coal and Choza Mesa Pictured Cliffs formations. This well is planned as a Basin Fruitland Coal/Choza Mesa Pictured Cliffs commingled completion, and application will be made to the New Mexico Oil Conservation Division for the commingling.

This application for the referenced location is at the request of the Carson National Forest Service for proximity to an existing location and due to terrain and archaeology as shown on the enclosed maps.

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. Meridian Oil is the operator of the San Juan 28-4 Unit.
4. 7.5 minute topographic map showing the orthodox windows for the south half dedication for the Fruitland Coal and the southwest quarter dedication for the Pictured Cliffs. Also included is an 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 \$250,000.

Sincerely,



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<br>DRILL  | 5. Lease Number<br>SF-079729  |                 |
| 1b. Type of Well<br>GAS  | 6. If Indian, All. or Tribe   |                 |
| 2. Operator<br><b>MERIDIAN OIL</b>   | 7. Unit Agreement Name<br>San Juan 28-4 Unit  |                 |
| 3. Address & Phone No. of Operator<br>PO Box 4289, Farmington, NM 87499<br><br>(505) 326-9700  | 8. Farm or Lease Name<br>San Juan 28-4 Unit<br>9. Well Number<br>226  |                 |
| 4. Location of Well<br>2030'FSL, 1570'FWL<br><br>Latitude 36° 39' 35", Longitude 107° 16' 36"  | 10. Field, Pool, Wildcat<br>Basin Ft Coal<br>Choza Mesa PC<br>11. Sec., Twn, Rge, Mer.<br>Sec 17, T-28-N, R-4-W<br>NMPM |                 |
| 14. Distance in Miles from Nearest Town<br>6 miles to Gobernador, NM   | 12. County<br>Rio Arriba  | 13. State<br>NM |
| 15. Distance from Proposed Location to Nearest Property or Lease Line<br>1570'   | 17. Acres Assigned to Well<br>S/2 320<br>SW/4 160   |                 |
| 18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease<br>110'                               | 20. Rotary or Cable Tools<br>Rotary   |                 |
| 19. Proposed Depth<br>4570'  | 22. Approx. Date Work will Start<br>2nd quarter 1993  |                 |
| 23. Proposed Casing and Cementing Program<br>See Operations Plan attached  |   |                 |
| 24. Authorized by: <br>Regional Drilling Engineer | Date <u>5/25/93</u>   |                 |

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

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

Archaeological Report to be submitted  
Threatened and Endangered Species Report done by Forest Service

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

Schedule to Acceptance  
 District Office  
 State Lease - 4 copies  
 Fee 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 00, Artesa, NM 88210

DISTRICT III  
 1000 Rio Brazos 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 28-4 Unit Well No. 226

Unit Letter: K Section: 17 Township: 28 North Range: 4 West County: RIO ARRIBA

Across Footage Location of Well: 2030 feet from the South line and 1570 feet from the West line

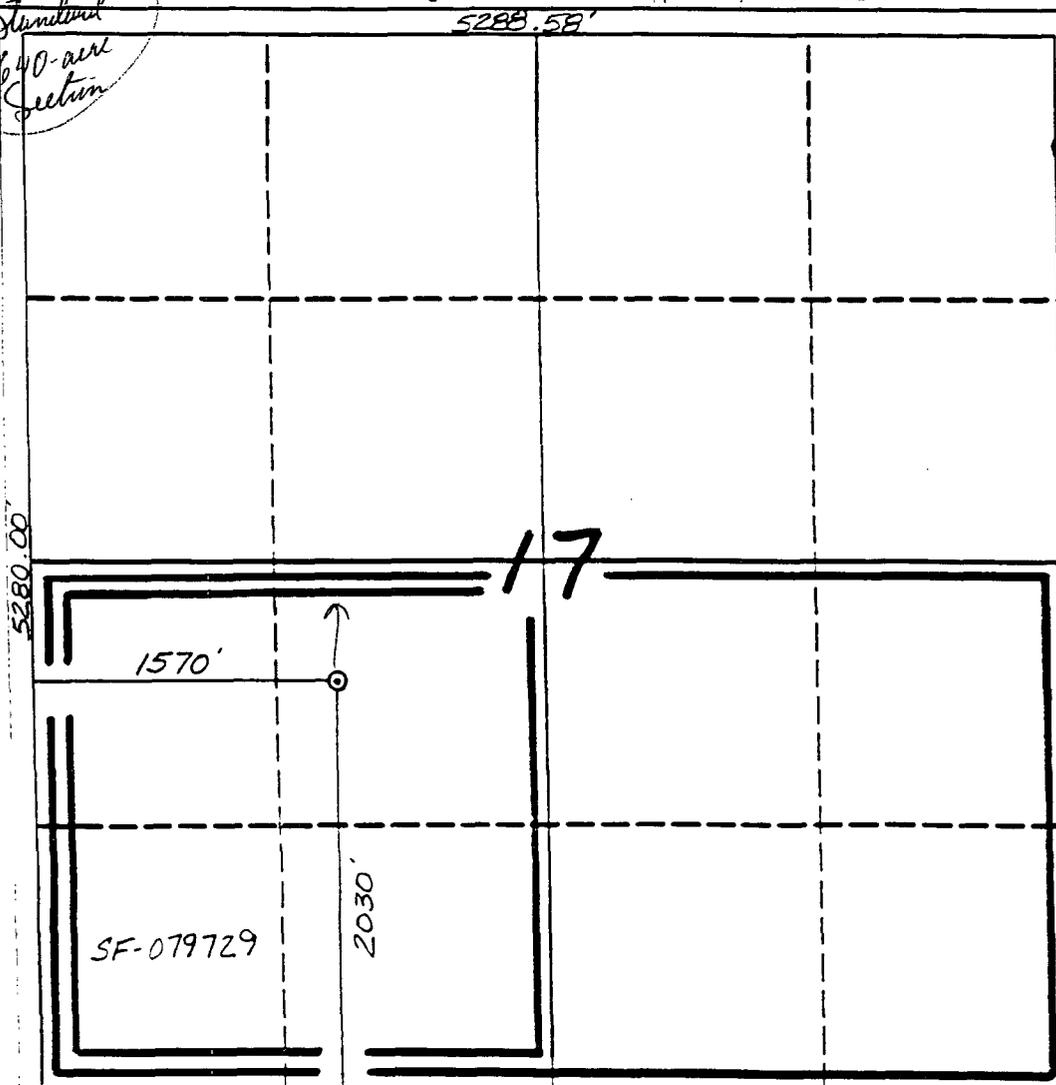
Ground level Elev. 7429' Producing Formation Fruitland Coal/Pic. Cliffs Pool Basin/Choza Mesa Dedicated Acreage: 320/160 Acres

- Outline the acreage dedicated to the subject well by colored pencil or ink 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 interests 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) and a non-standard unit, eliminating such interest, has been approved by the Division.

*Standard 640-acre Section*



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 Affairs  
 Position

Meridian Oil Inc.  
 Company

5-25-93  
 Date

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of 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. 4-14-93

*C. EDWARDS*  
 Name of Surveyor

*C. Edwards*  
 Signature of Surveyor

Professional Surveyor

3257  
 Certificate No.



OPERATIONS PLAN

**Well Name:** San Juan 28-4 Unit #226  
**Location:** 2030'FSL, 1570'FWL Section 17, T-28-N, R-04-W  
 Rio Arriba County, New Mexico  
 Latitude 36° 39' 35", Longitude 107° 16' 36"  
**Formation:** Basin Fruitland Coal/Choza Mesa Pictured Cliffs  
**Elevation:** 7429'GL

| <b>Formation:</b>  | <b>Top</b> | <b>Bottom</b> | <b>Contents</b> |
|--------------------|------------|---------------|-----------------|
| Surface            | San Jose   | 3765'         |                 |
| Ojo Alamo          | 3765'      | 3925'         | aquifer         |
| Kirtland           | 3925'      | 4160'         |                 |
| Fruitland          | 4160'      | 4310'         |                 |
| Fruitland Coal Top | 4235'      | 4390'         | gas             |
| Pictured Cliffs    | 4310'      | 4570'         | gas             |
| Total Depth        | 4570'      |               |                 |

**Logging Program:** Mud logs from 4100' to Total Depth.  
 DIL, CNL-LDT, ML, NGT, HR Density -surface to TD.

**Mud Program:**

| <u>Interval</u> | <u>Type</u>   | <u>Weight</u> | <u>Vis.</u> | <u>Fluid Loss</u> |
|-----------------|---------------|---------------|-------------|-------------------|
| 0- 200'         | Spud          | 8.4-8.9       | 40-50       | no control        |
| 200-4570'       | Non-dispersed | 8.4-9.5       | 30-60       | no control        |

**Casing Program:**

| <u>Hole Size</u> | <u>Depth Interval</u> | <u>Csg.Size</u> | <u>Wt.</u> | <u>Grade</u> |
|------------------|-----------------------|-----------------|------------|--------------|
| 12 1/4"          | 0 - 200'              | 8 5/8"          | 24.0#      | K-40         |
| 7 7/8"           | 0 - 4570'             | 4 1/2"          | 10.5#      | K-55         |

**Tubing Program:**

|           |        |      |      |
|-----------|--------|------|------|
| 0 - 4570' | 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 @ 3925'. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 3925'. 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.

San Juan 28-4 Unit #226

**Cementing:**

8 5/8" surface casing - cement with 235 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (298 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 - lead w/54 sx Class "B" 65/35 Poz w/6% gel, 2% calcium chloride, 6.25# gilsonite/sx and 1/4# flocele/sx (96 cu.ft. of slurry), tail w/100 sx Class "B" w/2% calcium chloride, 6.25#/sx gilsonite, 0.25#/sx celloflake (118 cu.ft.), 100% excess to circulate stage tool @ 4100').

Second stage - lead w/1039 sx of Class "B" 65/35 Poz w/6% gel, 2% calcium chloride, 6.25# gilsonite/sx and 1/4# flocele/sx (1839 cu.ft.). Tail w/25 sx Class "B" w/2% calcium chloride (118 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.

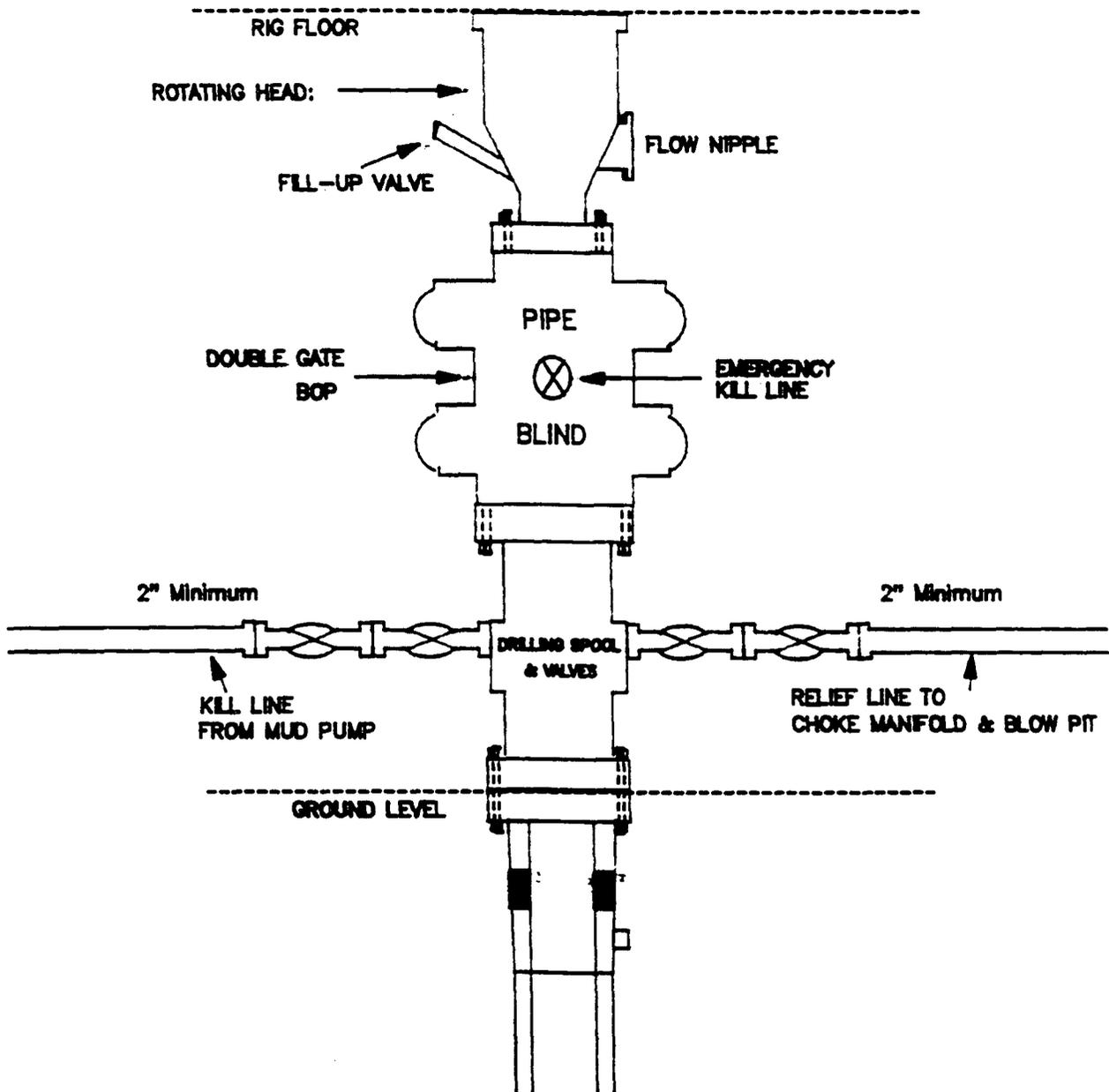
From surface to TD - choke manifold (Reference Figure #3).

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.
- \* This south half of Section 17 is dedicated to the Fruitland Coal and the southwest 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.

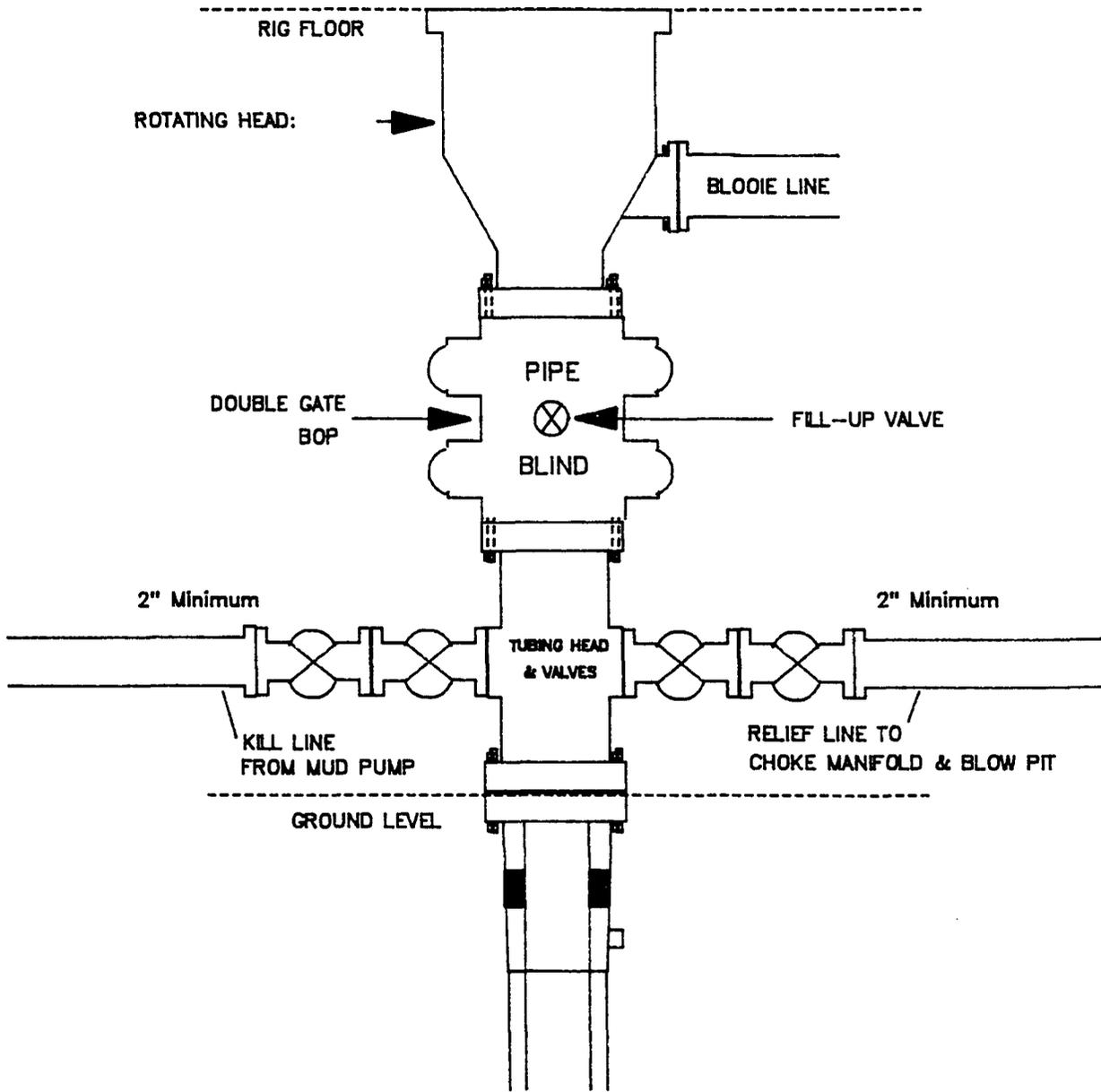
MERIDIAN OIL INC.  
 Drilling Rig  
 BOP Configuration



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**

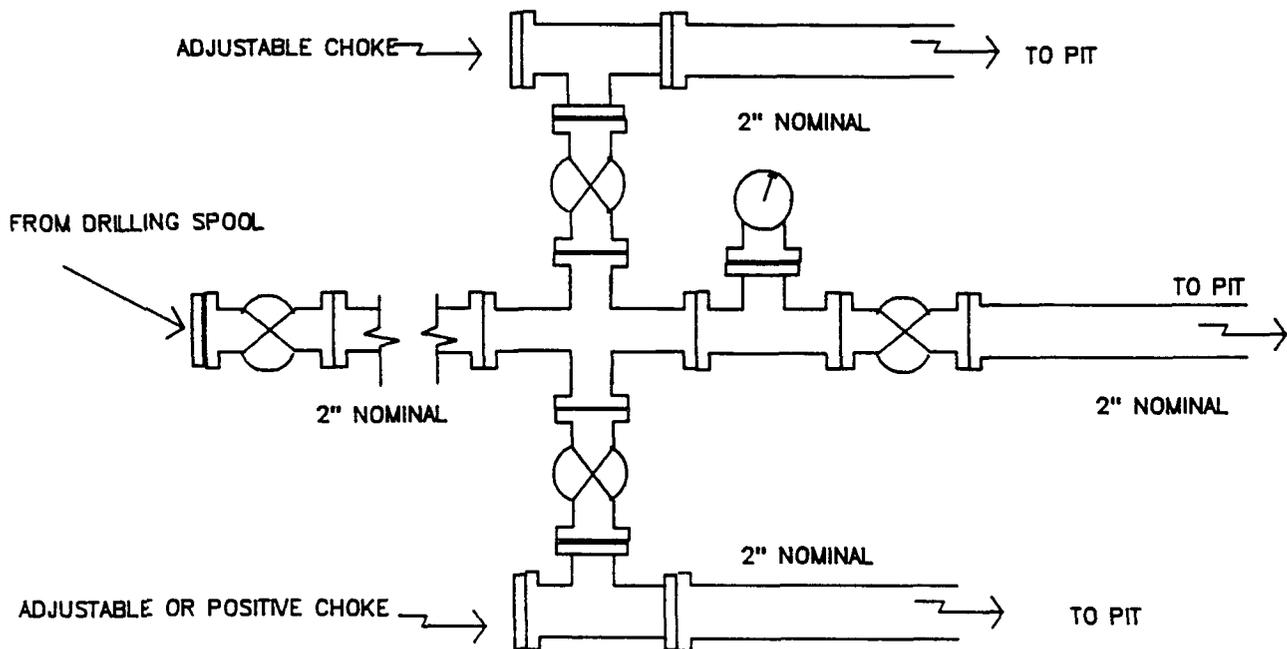
**MERIDIAN OIL INC.**  
Completion Rig  
BOP Configuration



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 28-4 Unit #226  
Multi-Point Surface Use Plan

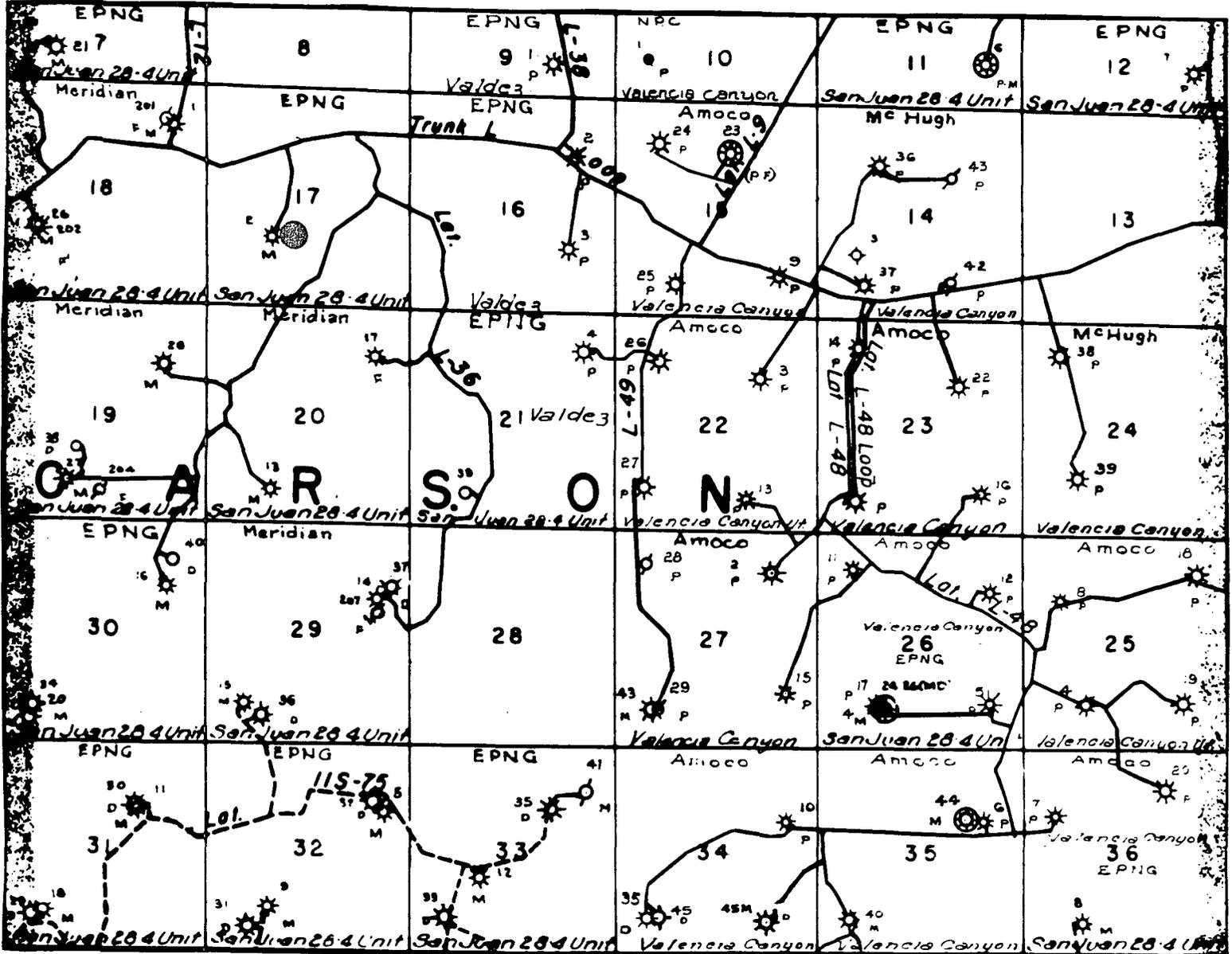
1. Existing Roads - Refer to Map No. 1. Existing roads used to access the proposed location will be properly maintained for the duration of the project. Bureau of Land Management right-of-way has been applied for as shown on Map No. 1.
2. Planned Access Road - Refer to Map No. 1. None required.
3. Location 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.

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 reseeding operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeding 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 - Carson National Forest.
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

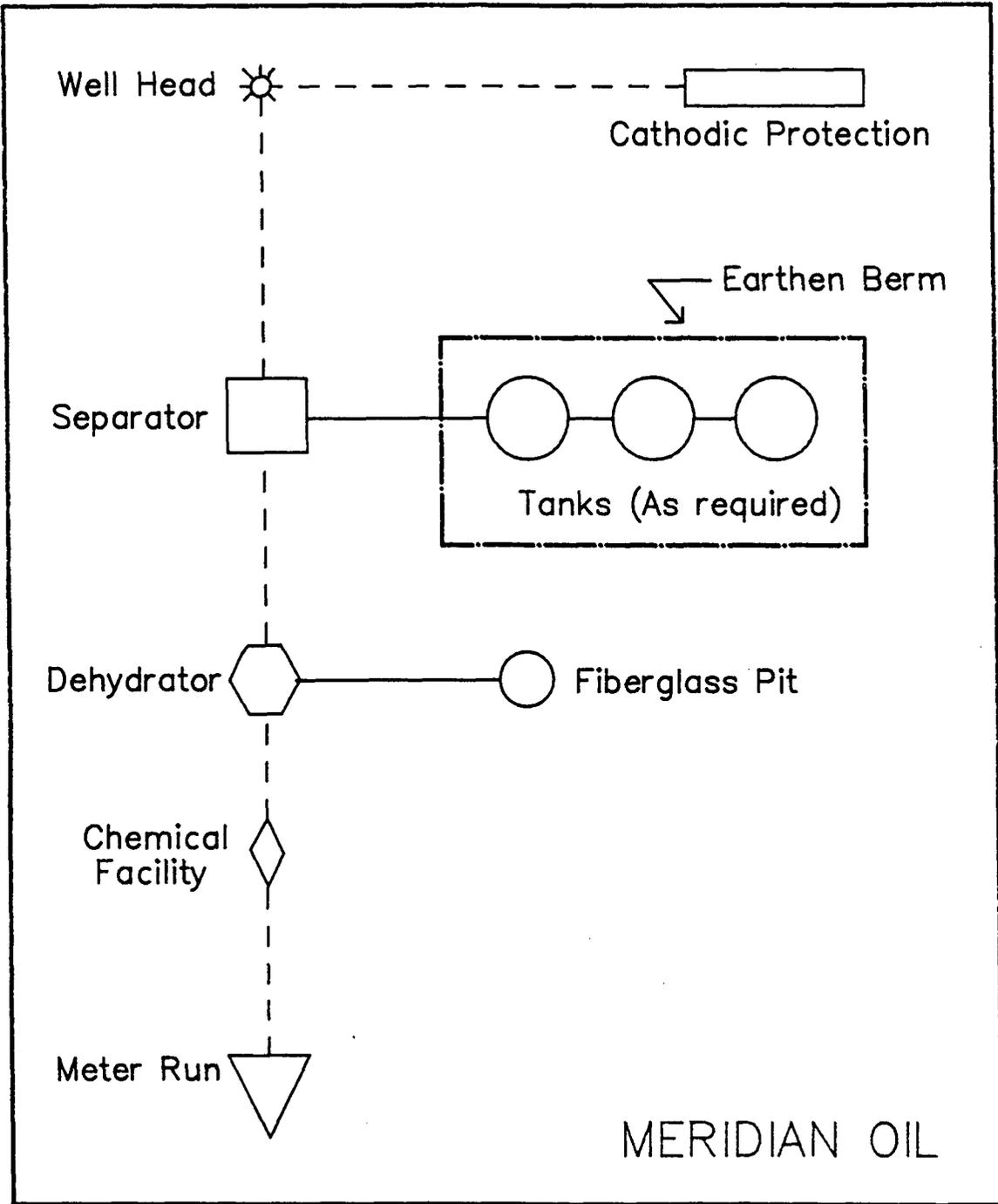
\_\_\_\_\_  
Date

JWC:pb



MERIDIAN OIL INC.  
 Pipeline Map  
 T-28-N, R-04-W  
 San Juan County, New Mexico  
 San Juan 28-4 Unit #226  
 Map #1A

Well Pad Boundary

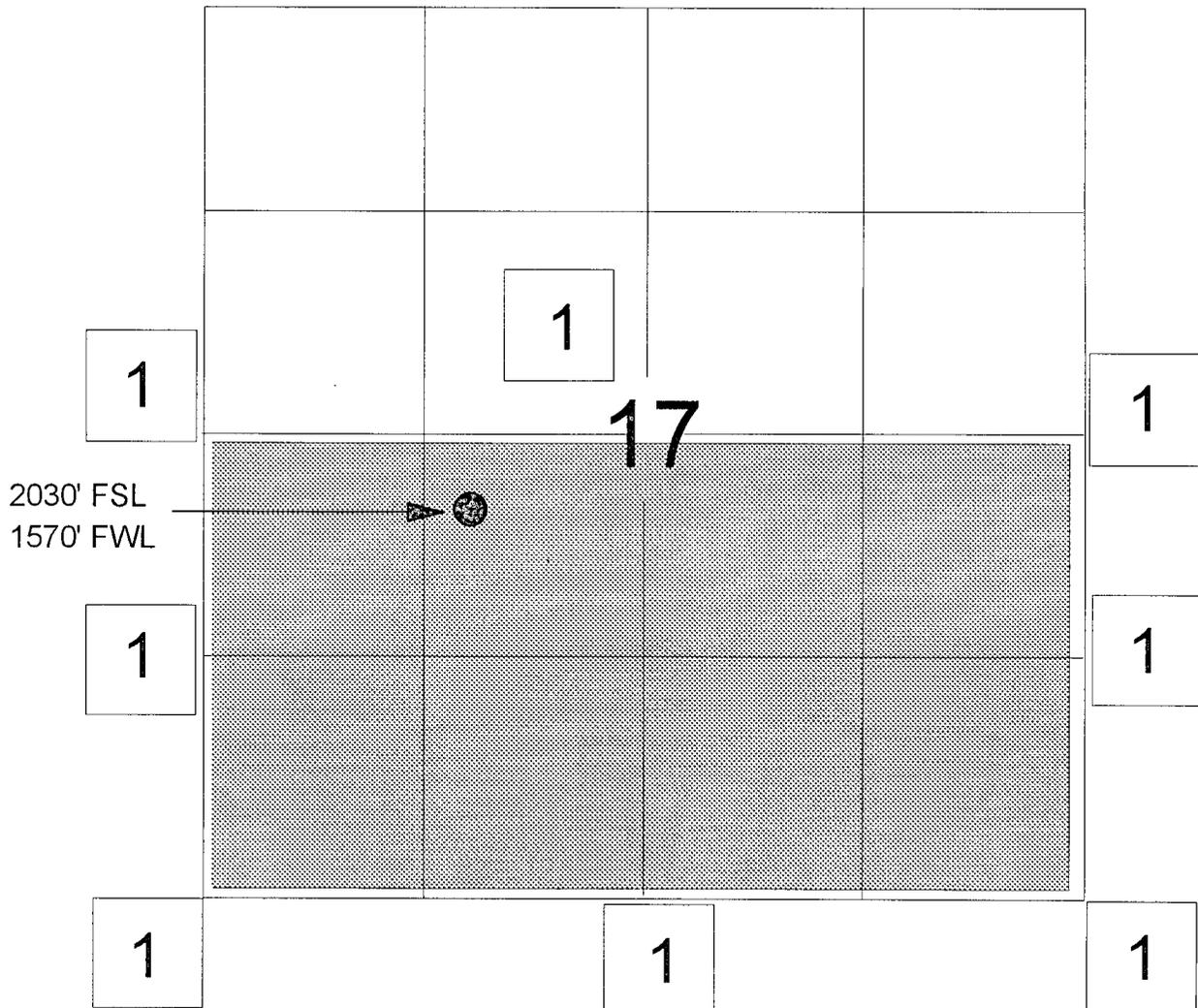


ANTICIPATED  
PRODUCTION FACILITIES  
FOR A  
FRUITLAND COAL/PICTURED CLIFFS COMMINGLED WELL



# MERIDIAN OIL INC.

OFFSET OPERATOR/OWNER PLAT  
Non-Standard Location  
Pictured Cliffs-Fruitland Commingle  
San Juan 28-4 Unit #226  
NE SW Section 17, T28N, R4W  
Rio Arriba County, New Mexico



1) Meridian Oil Inc., Operator, 3535 East 30th St., P.O. Box 4289, Farmington, New Mexico  
87499-4289

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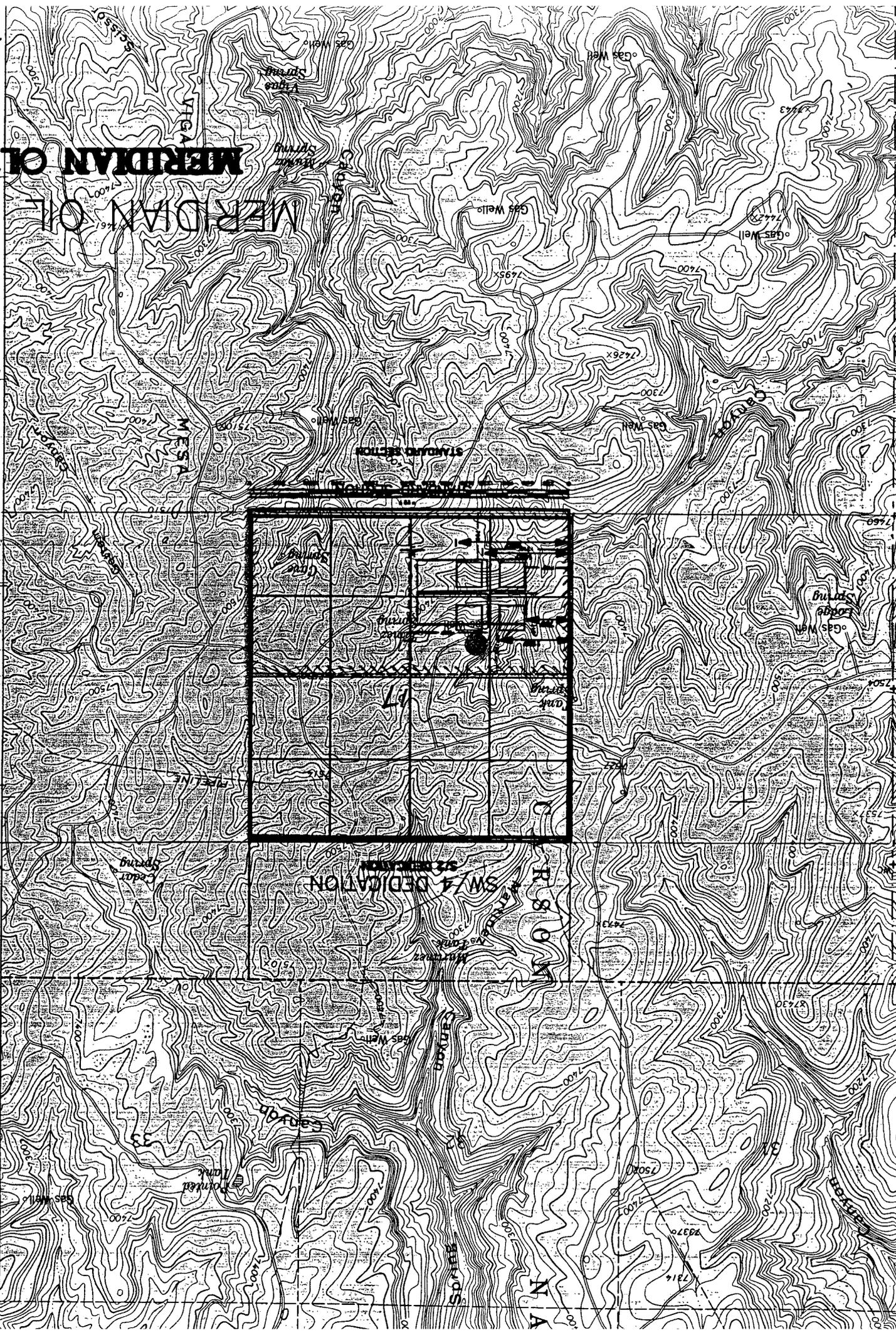
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T. 28 N.  
T. 29 N.  
ALEXANDRO CANYON  
4557 11 NW



SM-4 DEDICATION

F. S. O. M.

N. A.

STANDARD SECTION

MESA

Cedar Spring

Gas Well







HONOLULU

COUNTY

EAST BLANCO  
PICTURED CLIFFS

Goboboro

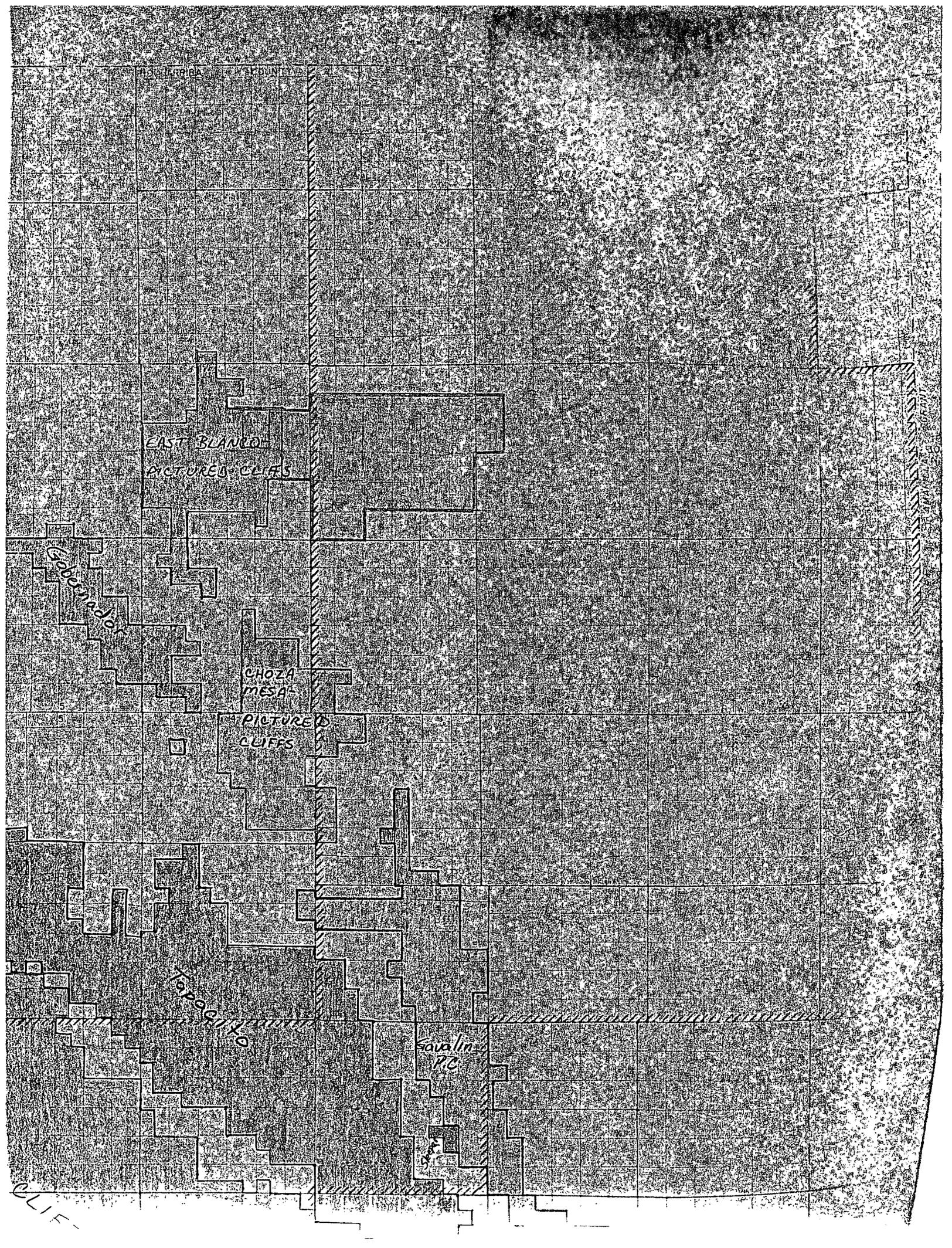
CHOZA  
MESA

PICTURED  
CLIFFS

Goboboro

Sovalin  
RC

CLIFF







STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
RECEIVED AZTEC DISTRICT OFFICE

1100 THE PLAZAS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-0170

REY CAPROTHERS  
GOVERNOR

'93 JUN 18 AM 8 56

Date: 6-16-93

*Attn: Mike Stogner*

Oil Conservation Division  
P.O. Box 2000  
Santa Fe, NM 87504-2000

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

Gentlemen:

I have examined the application dated 6-7-93

for the Mexican Oil Inc. S.J. 28-4 Unit # 226  
Operator Lease & Well No.

K-17-28N-4w and my recommendations are as follows:  
Unit, S-T-R

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

Yours truly,

James Bond