Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

30-045-22810

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## GEOLOGICAL SURVEY

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: El Paso Natural Gas Company

3. ADDRESS OF OPERATOR: PO Box 990, Farmington, NM 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 800'S, 815'E
At proposed prod. zone:

5. LEASE DESIGNATION AND SERIAL NO.: SF 078416-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Hardie

9. WELL NO.: 4A

10. FIELD AND POOL, OR WILDCAT: Blanco Mesa Verde

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec.23,T-29-N,R-8-W NMPM

12. COUNTY OR PARISH: San Juan | 13. STATE: NM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 10 miles East of Blanco, NM

| 15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) | 16. NO. OF ACRES IN LEASE | 17. NO. OF ACRES ASSIGNED TO THIS WELL |
|---|---|---|
| 800' | 1600 | 320 |
| **18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.** | **19. PROPOSED DEPTH** | **20. ROTARY OR CABLE TOOLS** |
| 800' | 5685' | Rotary |

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 6379'GR

22. APPROX. DATE WORK WILL START*:

23. PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|---|---|---|---|---|
| 13 3/4" | 9 5/8" | 32.3# | 200' | 224 cu.ft. to circulate |
| 8 3/4" | 7" | 20.0# | 3345' | 304 cu.ft.to cover Ojo Alamo |
| 6 1/4" | 4 1/2"liner | 10.5# | 3195-5685' | 440 cu.ft.to fill to 395' |

Selectively perforate and sandwater fracture the Mesa Verde formation.

A 3000 psi WP and 6000 psi test double gate preventer equipped with blind and pipe rams will be used for blow out prevention on this well.

This gas is dedicated.

The E/2 of Section 23 is dedicated to this well.

DEC 13 1977
OIL CON. COM.
DIST. 3

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED A. G. Grace TITLE Drilling Clerk DATE December 8, 1977

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Oral

DEC 13 1977

*See Instructions On Reverse Side

NEW MEXICO OIL CONSERVATION COMMISSION

# WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
*Supersedes C-128*
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

| Operator | Lease | Well No. |
|---|---|---|
| El Paso Natural Gas Company | Hardie (SF-078416-A) | 4A |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| P | 23 | 29N | 8W | San Juan |

Actual Footage Location of Well:
800 feet from the South line and 815 feet from the East line

| Ground Level Elev. | Producing Formation | Pool | Dedicated Acreage: |
|---|---|---|---|
| 6379 | Mesa Verde | Blanco Mesa Verde | 320.00 Acres |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

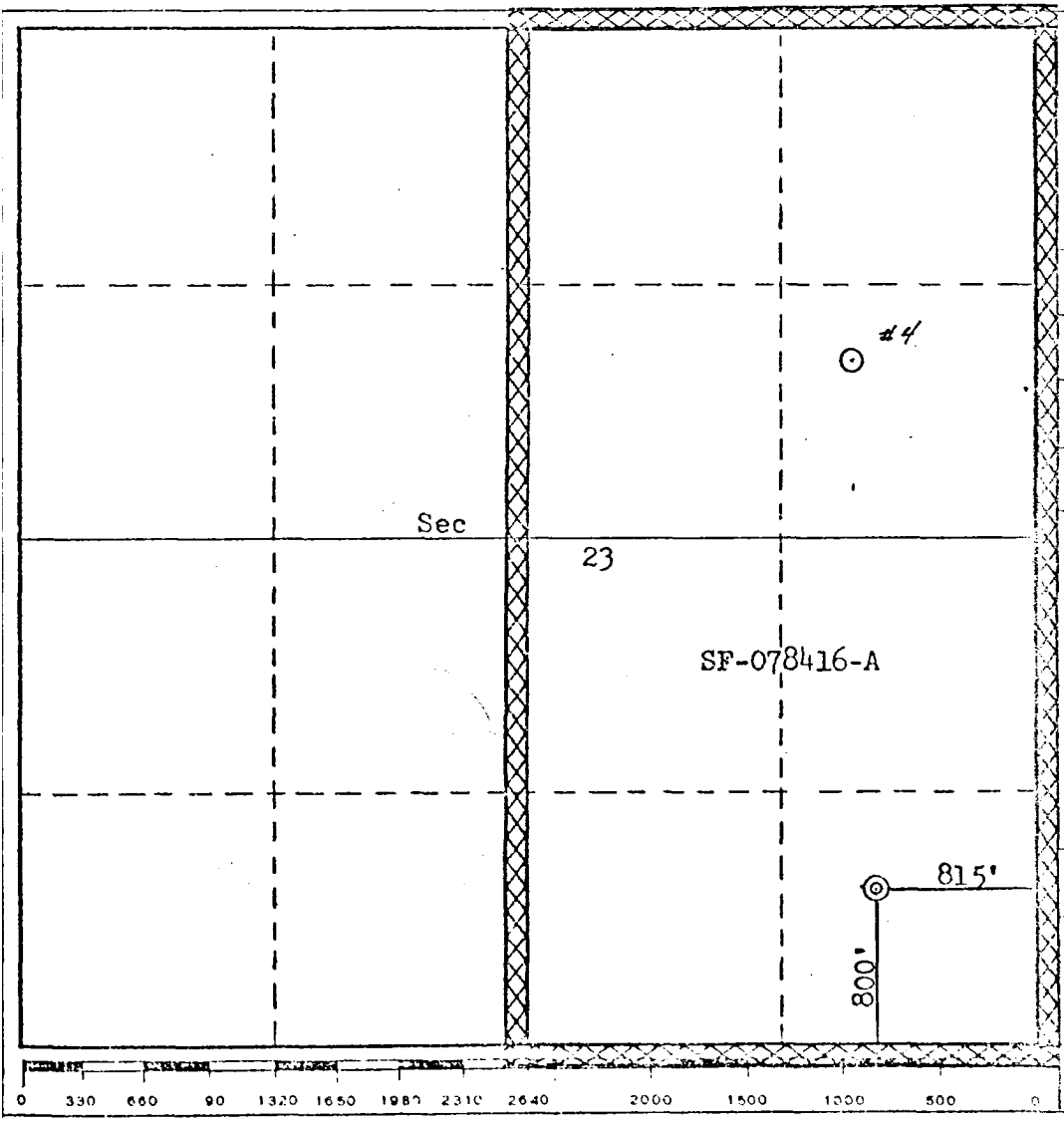
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. 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 _____

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, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.




CERTIFICATION

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

D. G. Lucas

Name: Drilling Clerk

Position: El Paso Natural Gas Co.

Company: December 8, 1977

Date:

*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.*

Date Surveyed: November 13, 1977

Registered Professional Engineer and/or Land Surveyor

Fred B. Kerr Jr.

Certificate No. 3950

El Paso NATURAL GAS COMPANY

P. O. BOX 990
FARMINGTON, NEW MEXICO 87401

PHONE: 505-325-2841

# Multi-Point Surface Use Plan
## Hardie #4A

1. Existing Road - Please refer to Map No. 1 which shows the existing roads. New roads which will be required have been marked on this map. All existing and new roads will be properly maintained during the duration of this project.

2. Planned Access Roads - Please refer to Map No. 1. The grade of the access roads will be consistent with that of the local terrain. The road surface will not exceed twenty feet (20') in width. Upon completion of the project, the access road will be adequately drained to control soil erosion. Drainage facilities may include ditches, water bars, culverts or any other measure deemed necessary by trained Company personnel to insure proper drainage. Gates and/or cattleguards will be installed if necessary.

3. Location of Existing Wells - Please refer to Map No. 2

4. Location of Tank Batteries, Production Facilities, and Production Gathering and Service Lines - Please refer to Maps No. 1 and No. 2. Map No. 2 shows the existing gas gathering lines. Map No. 1 shows the existing roads and new proposed access roads. All known production facilities are shown on these two maps.

5. Location and Type of Water Supply - Water for the proposed project will be obtained from a water hole located Manzaneras Water Well.

6. Source of Construction Materials - No additional materials will be required to build either the access road or the proposed location.

7. Methods of Handling Waste Materials - All garbage and trash materials will be put into a burn pit shown on the attached Location Plat No. 1. When clean-up operations are begun on the proposed project, the burn pit with its refuse will be buried to a depth of at least three feet (3'). A latrine, the location of which is also shown on Plat No. 1 will be provided for human waste. If large amounts of 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 any of these materials into the watershed. No earthen pit will be located on natural drainages; all earthen pits will be so constructed as to prevent leakage from occurring.

8. Ancillary Facilities - No camps or airstrips will be associated with this project.

9. Wellsite Layout - Please refer to the attached Plat No. 1.

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 #1 will be used. The reseeding operation will be performed during the time period set forth by the regulatory body. The location production equipment will be painted Sage Gray (Federal #595-36357)

11. Other Information - The terrain is sandstone ledges covered with railed pinon and cedar. Cattle graze the proposed project site.

12. Operator's Representative - W. D. Dawson, Post Office Box 990, Farmington, New Mexico 87401

13. Certification - I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite 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 El Paso Natural Gas Company and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

December 8, 1977

D. R. Read
Division Drilling Engineer

DRR:pb

December 9,1977

# Operations Plan
# Hardie #4A

I. Location: 800'S, 815'E, Section 23, T-29-N, R-8-W, San Juan County, NM

Field: Blanco Mesa Verde Elevation: 6379'GL

II. Geology:

A. Formation Tops:

| | | | |
|---|---|---|---|
| Surface | San Jose | Lewis | 3145' |
| Ojo Alamo | 2015' | Mesa Verde | 4675' |
| Kirtland | 2195' | Menefee | 4830' |
| Fruitland | 2720' | Point Lookout | 5234' |
| Pic.Cliffs | 3040' | Total Depth | 5685' |

B. Logging Program: GR-Ind. and GR-Density at Total Depth.

C. Coring Program: none

D. Natural Gauges: 4665', 4820', 5225' and at Total Depth. Also gauge any noticeable increase in gas. Record all gauges in daily drilling report and on morning report.

III. Drilling:

A. Mud Program: mud from surface to 3345'. Gas from intermediate casing to Total Depth.

IV. Materials:

A. Casing Program:

| Hole Size | Depth | Casing Size | Wt.&Grade |
|---|---|---|---|
| 13 3/4" | 200' | 9 5/8" | 32.3# H-40 |
| 8 3/4" | 3345' | 7" | 20.0# K-55 |
| 6 1/4" | 3195-5685' | 4 1/2" | 10.5# K-55 |

B. Float Equipment: 9 5/8" surface casing - Larkin guide shoe (fig. 102)

7" intermediate casing - Dowell guide shoe (fig. 50101) and Dowell self-fill insert float valve (fig. 53003), 5 B&W stabilizers (Prod. No. 637085) every other joint above shoe. Run float two joints above shoe.

4 1/2" liner - 4 1/2" liner hanger with neoprene packoff. Larkin geyser shoe (fig. 222) and Larkin flapper type float collar (fig. 404 M&F).

C. Tubing: 5685' of 2 3/8", 4.7#, J-55 8rd EUE tubing with a common pump seating nipple above perforated pup joint with bull plugged full joint for mud anchor on bottom.

D. Wellhead Equipment: 10" 900 x 9 5/8" casing head. 10" 900 x 6" 900 xmas tree.

V. Cementing:

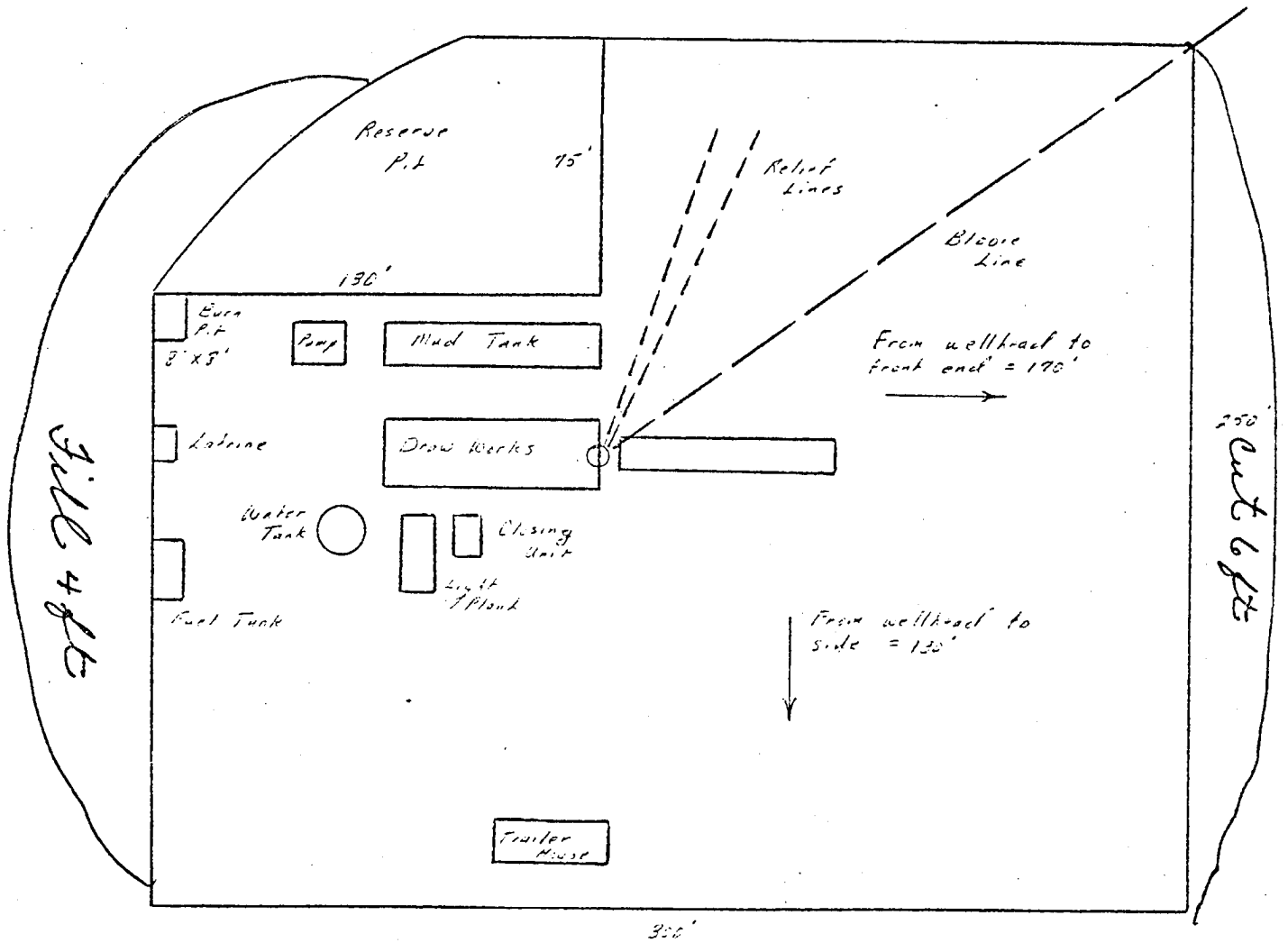
9 5/8" surface casing - use 190 sks. of Class "B" cement with 1/4# gel-flake per sack and 3% calcium chloride (224 cu.ft. of slurry, 100% excess to circulate to surface). WOC 12 hours. Test casing to 600#/30 minutes.

7" intermediate casing - use 115 sks. of 65/35 Class "B" Poz with 6% gel and 2% calcium chloride (8.3 gallons of water per sack) followed by 100 sks. of Class "B" with 2% calcium chloride (304 cu.ft. of slurry, 50% excess to cover Ojo Alamo). Run temperature survey at 8 hours. WOC 12 hours. Test casing to 1200#/30 minutes.

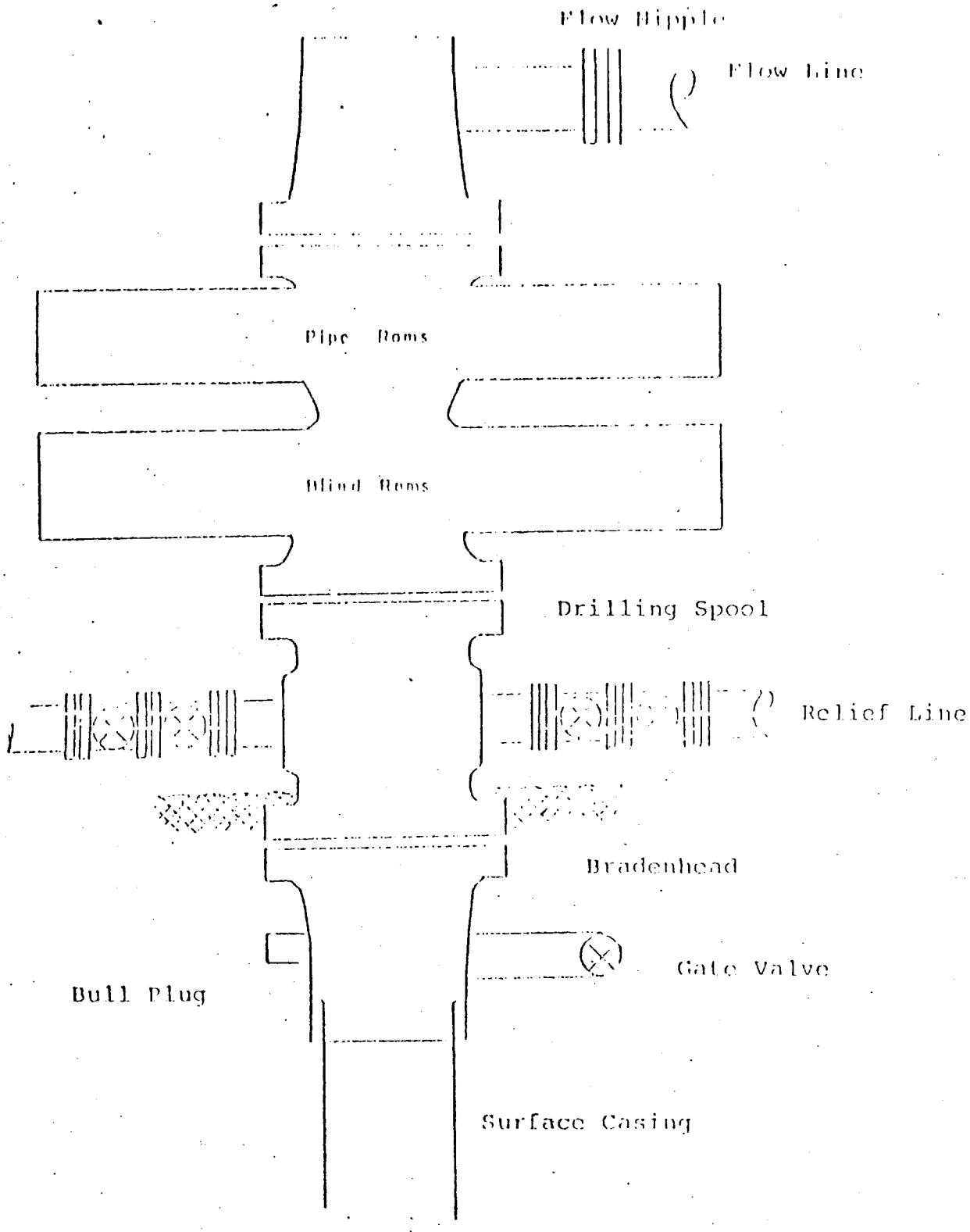
4 1/2" liner - precede cement with 20 barrels of gel water (2 sks. gel) Cement with 250sks. of Class "B" cement with 4% gel, 1/4 cu.ft. of fine gilsonite per sack and 0.6% Halad-9 (440 cu.ft. of slurry, 70% excess to circulate liner). WOC 18 hours.

El Paso Natural Gas Company

Typical Location Plat for Mesa Verde and Dakota Wells

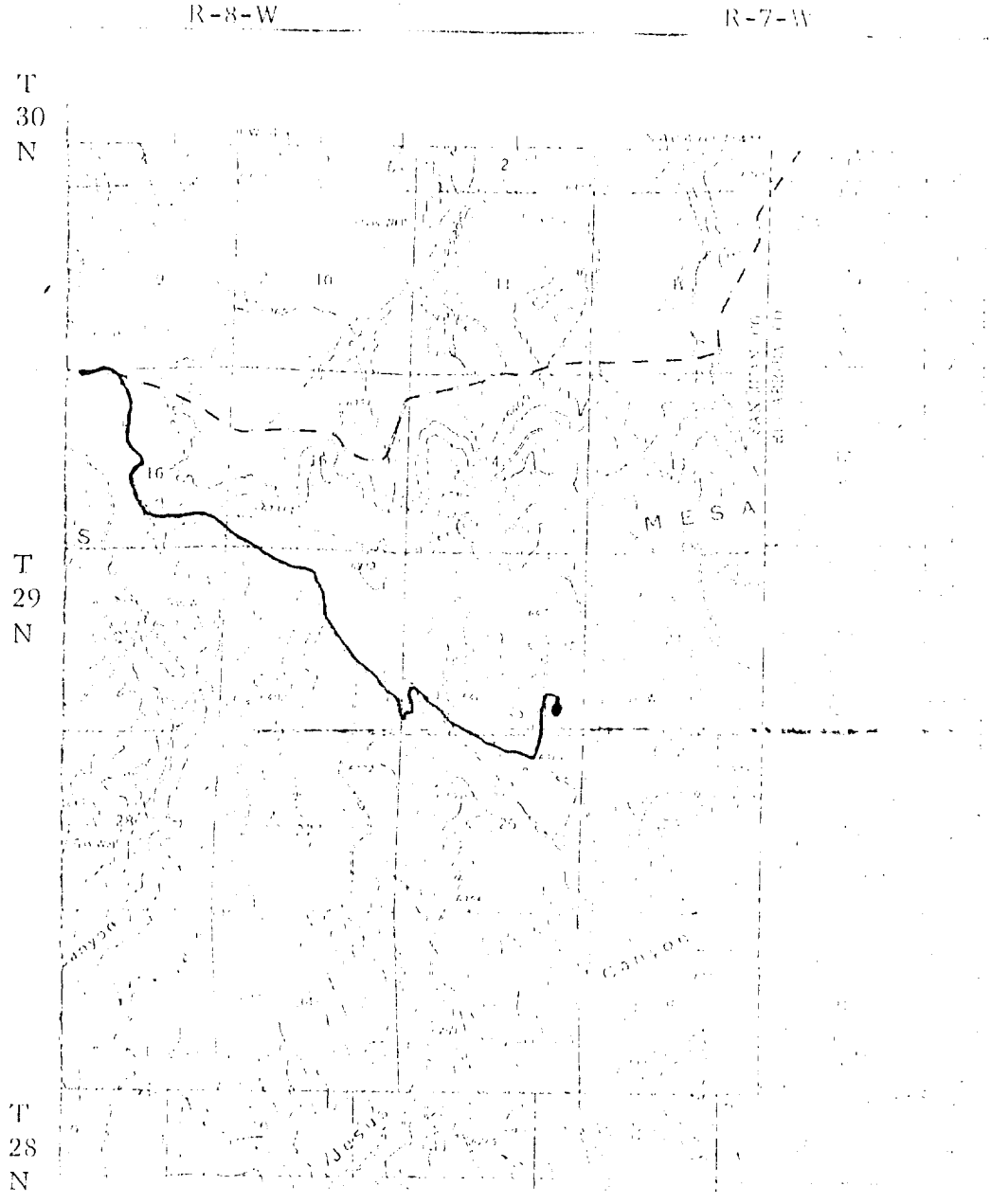


Typical B.O.P. Installation
for Mesa Verde Well



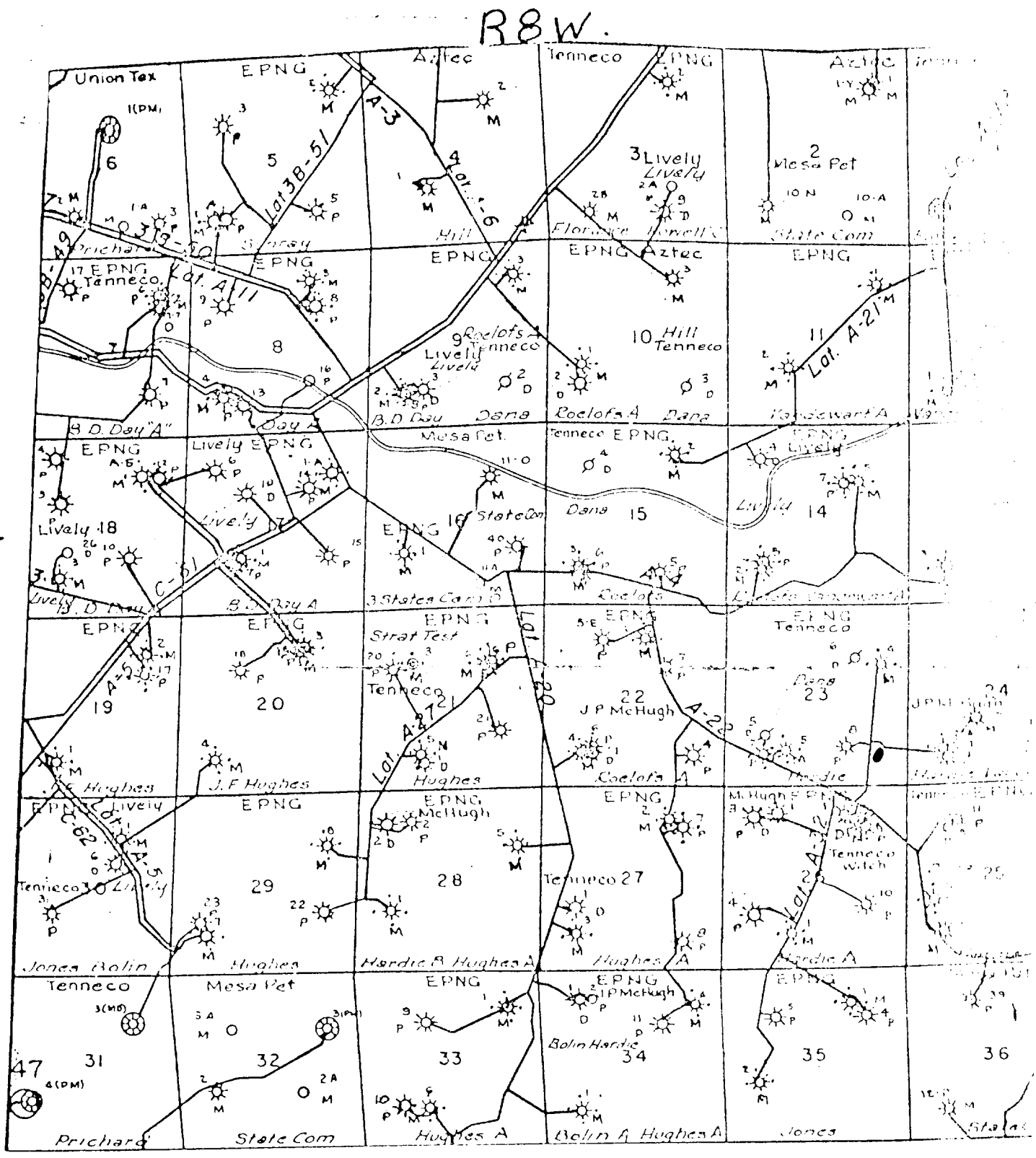

Series 900 Double Gate BOP, rated
at 3000 psi Working Pressure
When gas drilling operations begin a Shaffer type 50
or equivalent rotating head is installed on top of the
flow nipple and the flow line is converted into a blowie line

El Paso Natural Gas Company
Hardie #1A
NESE 1-29-8




MAP #1

EL PASO NATUR L GAS COMPANY.
Hardi #4A
NESE 21-29-8




Proposed Location ●

MAP #2