

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

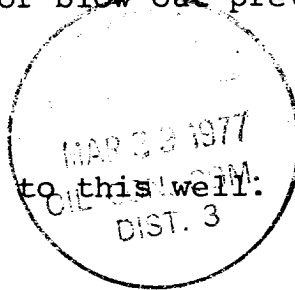
1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. SF 078416A	
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR El Paso Natural Gas Company		7. UNIT AGREEMENT NAME	
3. ADDRESS OF OPERATOR PO Box 990, Farmington, NM 87401		8. FARM OR LEASE NAME Hardie	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*) At surface 1600'S, 1800'E At proposed prod. zone		9. WELL NO. 1A	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*		10. FIELD AND POOL, OR WILDCAT Blanco Mesa Verde	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 26, T-29-N, R-8-W NMPM	
16. NO. OF ACRES IN LEASE		12. COUNTY OR PARISH San Juan	
17. NO. OF ACRES ASSIGNED TO THIS WELL 320.00		13. STATE NM	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.		20. ROTARY OR CABLE TOOLS Rotary	
19. PROPOSED DEPTH 5607'		22. APPROX. DATE WORK WILL START*	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 6357' GL			
23. PROPOSED CASING AND CEMENTING PROGRAM			
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH
13 3/4"	9 5/8"	32.3#	200'
8 3/4"	7"	20.0#	3275'
6 1/4"	4 1/2"	10.5#	3125-5607'
QUANTITY OF CEMENT			
224 cu.ft. to circulate			
282cu.ft. to cover Ojo Alamo			
432 cu.ft. to fill to 3125'			

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 26 is dedicated to this well.



RECEIVED

MAR 25 1977

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 M. G. Busco TITLE Drilling Clerk DATE March 25, 1977
(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

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.

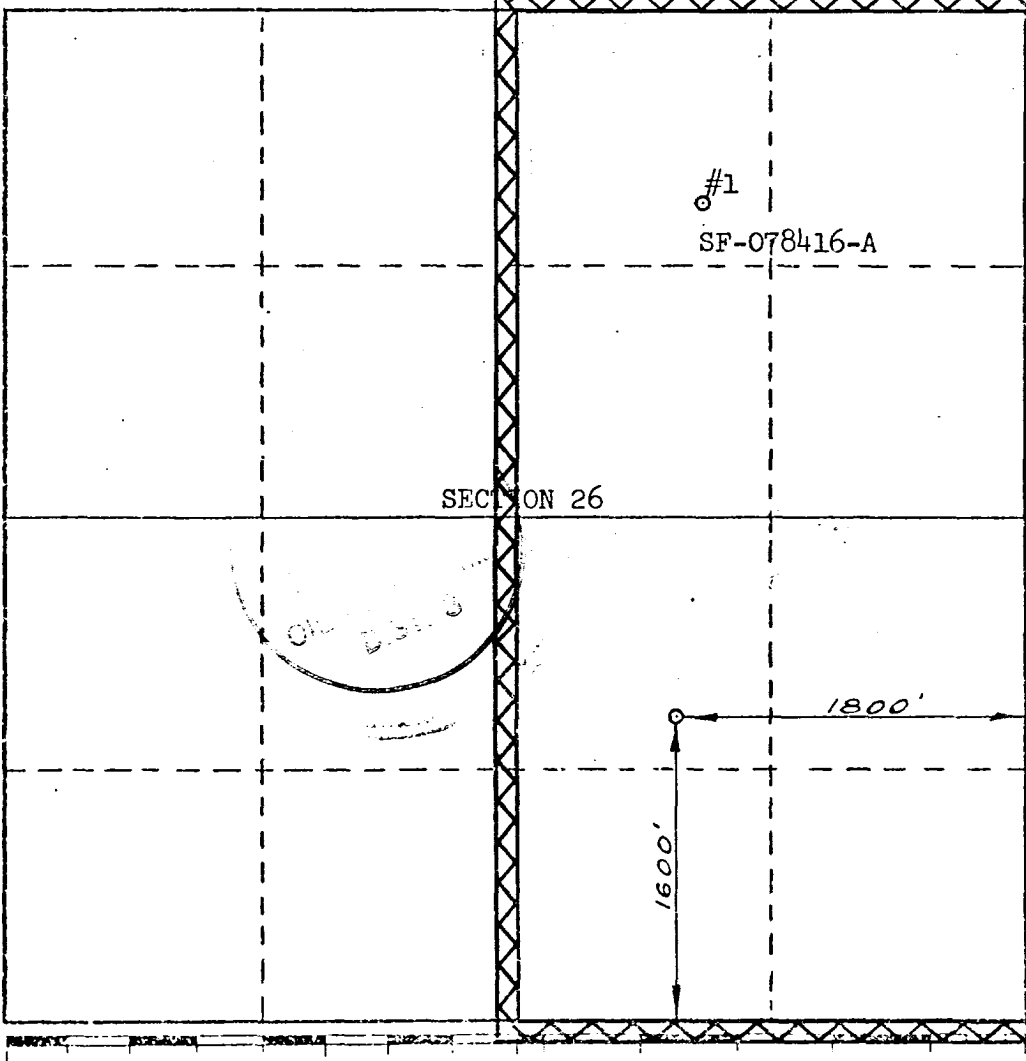
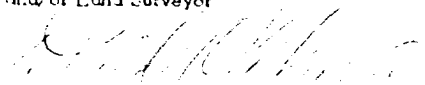
Operator EL PASO NATURAL GAS COMPANY			Lease HARDIE (SF-078416-A)		Well No. 1A
Unit Letter J	Section 26	Township 29-N	Range 8-W	County SAN JUAN	
Actual Footage Location of Well: 1600 feet from the SOUTH line and 1800 feet from the EAST line					
Ground Level Elev. 6357	Producing Formation MESA VERDE		Pool BLANCO MESA VERDE	Dedicated Acreage: 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. Original Signed by D. G. Brisco
	Name _____
	Position Drilling Clerk
	Company El Paso Natural Gas
	Date March 25, 1977
	 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 MARCH 21, 1977 Registered Professional Engineer and/or Land Surveyor 
	Certificate No. 1760

Multi-Point Surface Use Plan
Hardie #1A

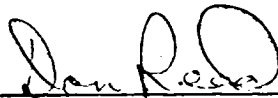
1. Existing Road - Please refer to Map No. 1 which shows the existing roads. New roads which will be required have been marked on this map. All existing and new roads will be properly maintained during the duration of this project.
2. Planned Access Roads - Please refer to Map No. 1. The grade of the access roads will be consistent with that of the local terrain. The road surface will not exceed thirty feet (30') 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 well located Section 9, T-29-N, R-8-W (Manzaneras Mesa 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 #2 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 green (Federal Standard #595-34127)
11. Other Information - The terrain is rolling hills and sandstone ledges covered with cedar and sagebrush. 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.

March 25, 1977



D. R. Read
Division Drilling Engineer

DRR:pb

March 25, 1977

Operations Plan
Hardie #1A

I. Location: 1600'S, 1800'E, Section 26, T-29-N, R-8-W, San Juan County, NM

Field: Blanco Mesa Verde

Elevation: 6367'

II. Geology:

A. Formation Tops:	Surface	San Jose	Lewis	3076'
	Ojo Alamo	2020'	Mesa Verde	4607'
	Kirtland	2150'	Menefee	4673'
	Fruitland	2705'	Point Lookout	5207'
	Pic.Cliffs	3000'	Total Depth	5607'

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

C. Coring Program: none

D. Natural Gauges: 4673', 5207' 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 3275'. Gas from intermediate casing to Total Depth.

IV. Materials:

A. Casing Program:	<u>Hole Size</u>	<u>Depth</u>	<u>Casing Size</u>	<u>Wt.&Grade</u>
	13 3/4"	200'	9 5/8"	32.3# H-40
	8 3/4"	3275'	7"	20.0# K-55
	6 1/4"	3125-5607'	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 - T.I.W. liner hanger with neoprene packoff. Larkin geyser shoe (fig. 222) and Larkin flapper type float collar (fig. 404 M&F).

C. Tubing: 5607' 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.

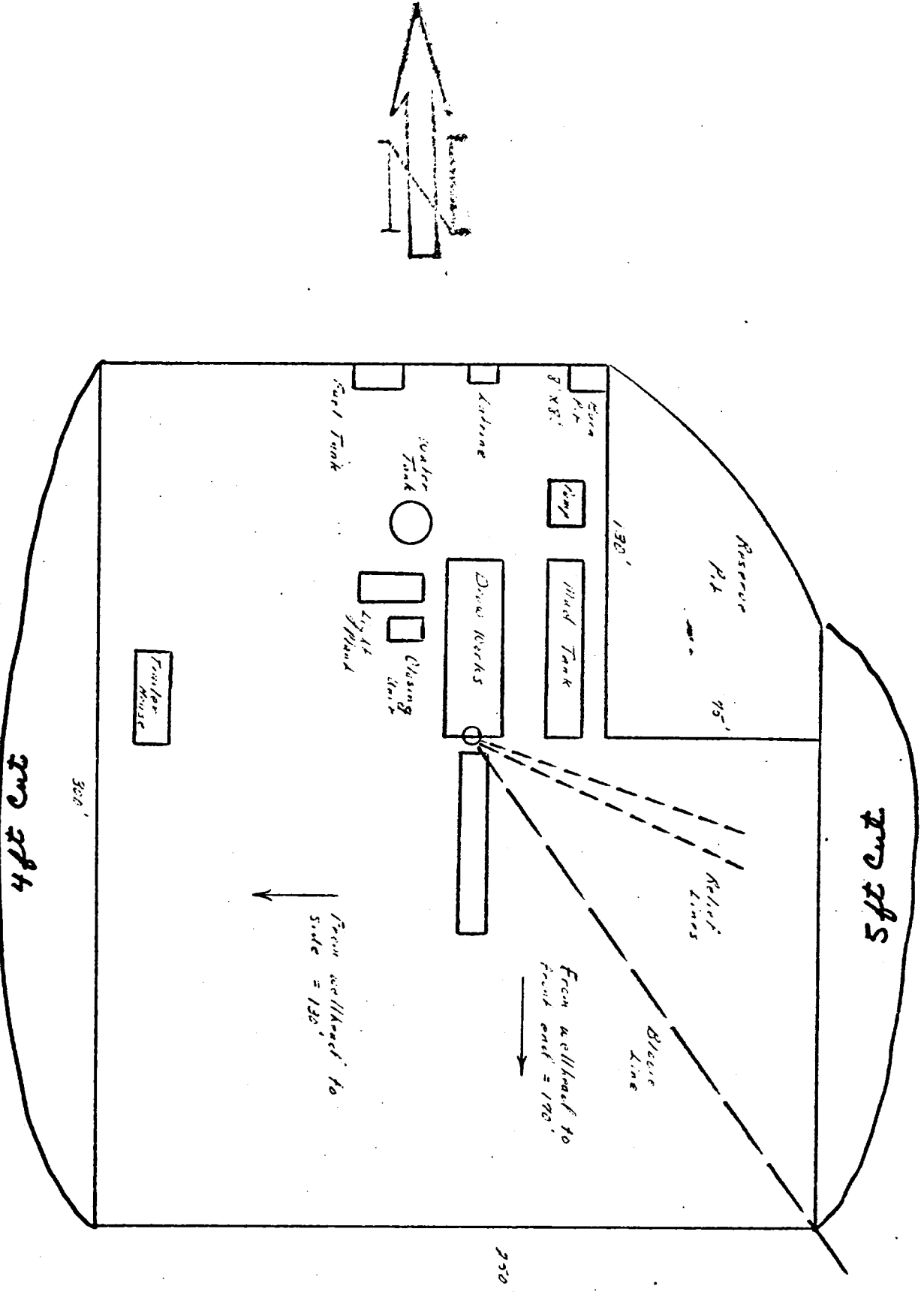
V. Cementing:

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.

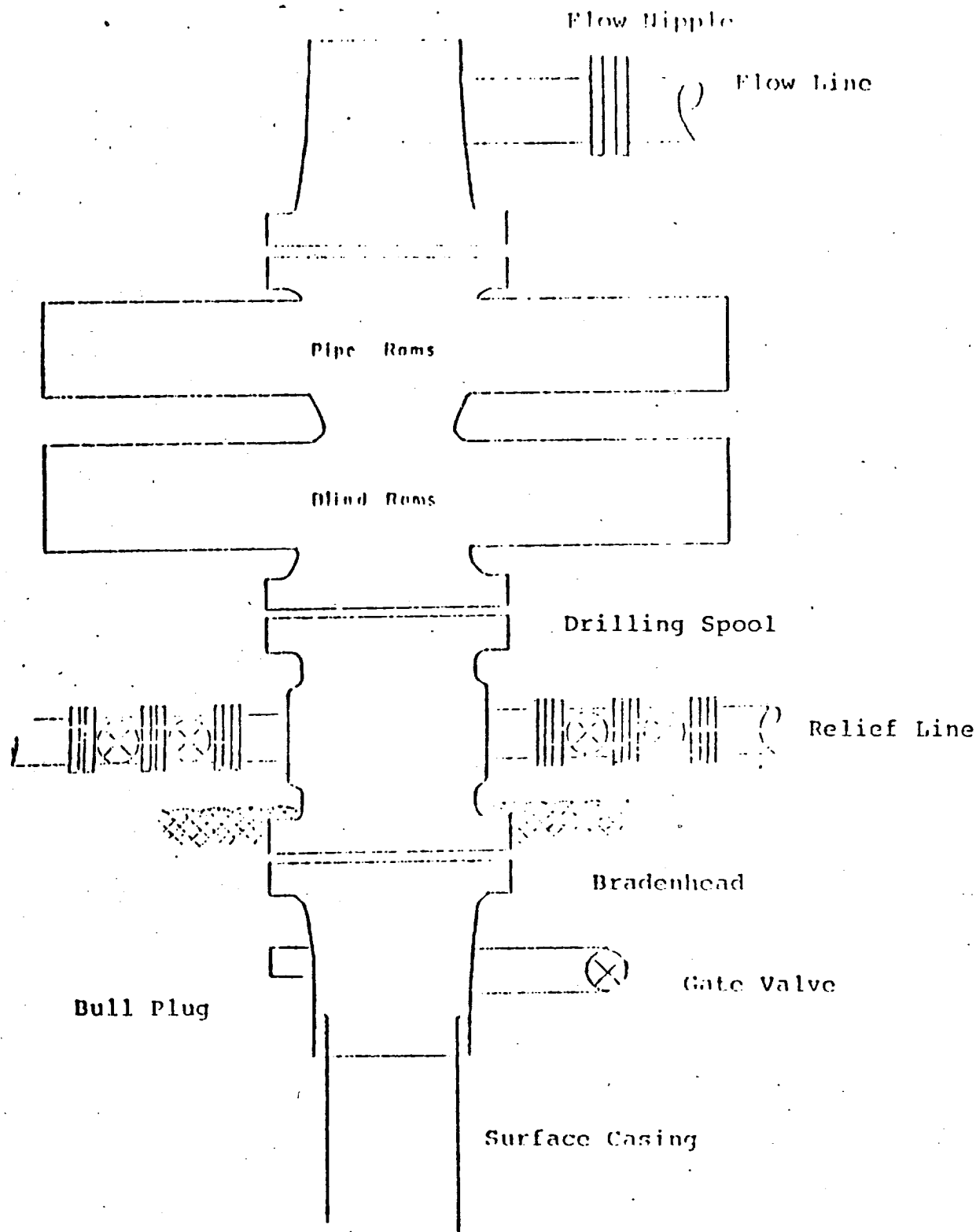
7" intermediate casing - use 63 sks. of 65/35 Class "B" Poz with 12% gel (15.52 gallons of water per sack) followed by 100 sks. of Class "B" with 2% calcium chloride (282 cu.ft. of slurry, 50% excess to cover Ojo Alamo). Run temperature survey at 8 hours. WOC 12 hours. Test casing to 1200#/30 minutes.

4 1/2" liner - precede cement with 20 barrels of gel water (2 sks. gel) Cement with 240 sks. of Class "B" cement with 4% gel, 1/4 cu.ft. of fine gilsonite per sack and 0.6% Halad-9 (432 cu.ft. of slurry, 70% excess to circulate liner).

El Paso Natural Gas Company Typical location plat for Mesa Verde and Dakota Wells



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

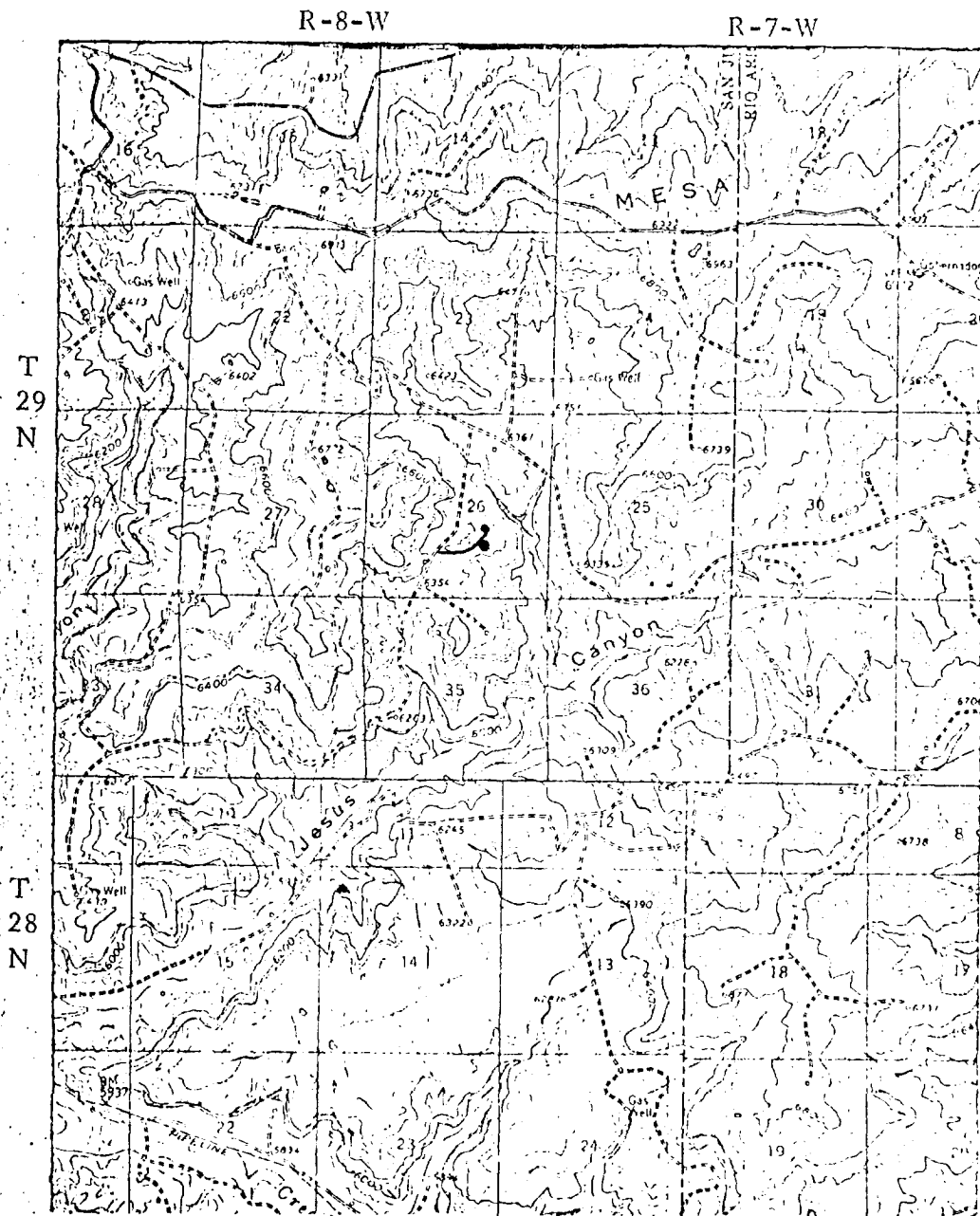


Series 900 Double Gate BOP, rated
at 3000 psi Working Pressure
When gas drilling operations begin a Shaffer type 50
or equivalent rotating head is installed on top of the
flow nipple and the flow line is converted into a blowie line

EL PASO NATURAL GAS COMPANY

HARDIE #1A

SE 26-29-8

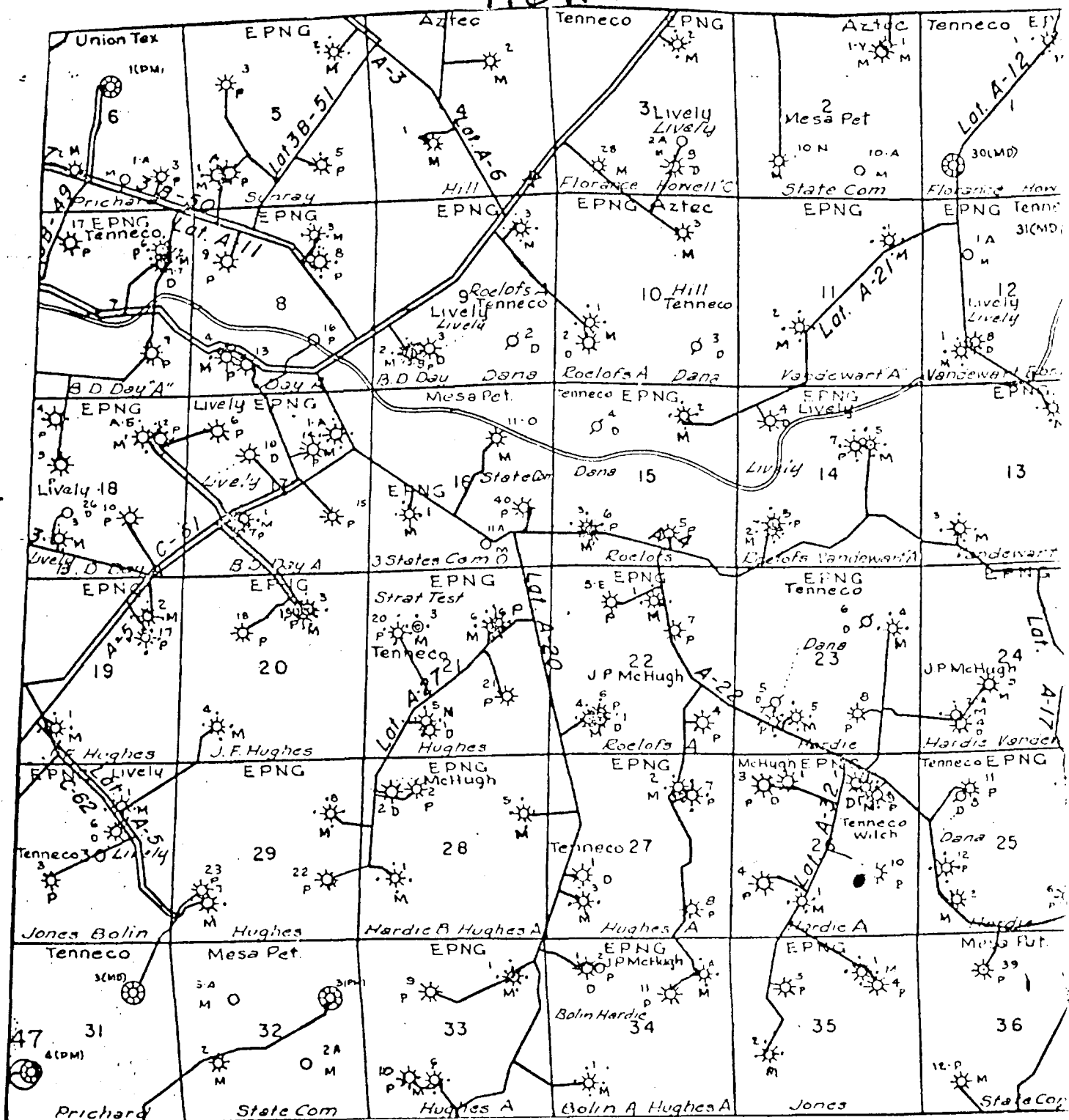


MAP #1

LEGEND OF RIGHT-OF-WAYS

EXISTING ROADS	— — — — —
EXISTING PIPELINES	+ + +
EXISTING ROAD & PIPELINE	+ — — — — +
PROPOSED ROADS	— — — — —
PROPOSED PIPELINES	+ + +

SE 26-29-8

ROW.

Proposed Location