

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒XDEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☒GAS
WELL ☐OTHER ☐SINGLE
ZONE ☒MULTIPLE
ZONE ☐

2. NAME OF OPERATOR

PETROLEUM DEVELOPMENT CORPORATION

3. ADDRESS OF OPERATOR

9720B Candelaria, NE, Albuquerque, NM 87112

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)

At surface
1980' from the East Line, 1980' from the South 1/4 Sec. 26,
T9S, R32E.
At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

10 miles northeast of Caprock, New Mexico

15. DISTANCE FROM PROPOSED*
LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)

660'

16. NO. OF ACRES IN LEASE

160

17. NO. OF ACRES ASSIGNED
TO THIS WELL

40

18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

None

19. PROPOSED DEPTH

12000

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DE, BT, GR, etc.)

4320 G.L.

22. APPROX. DATE WORK WILL START*

Dec. 1, 1978

23. DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"
PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	54.5#	400	400 sx.
11"	8-5/8"	24#	3500'	1800 c.f.
7-7/8"	5 1/2" or 4 1/2"	17# or 11.6#	11500'	200 sx.

Set 13-3/8" casing at approximately 400; circulate cement to surface. WOC 8 hrs. Test BOP and surface casing to 500# for 30 min. before drilling out. Drill 11" hole to approximately 3500'; set and cement 8-5/8" intermed. casing, bringing top of cement at least back to base of surface casing. WOC 12 hrs. Test 8-5/8" casing and BOP to 3000#.

Drill 7-7/8" hole to 12000', testing all significant shows of oil or gas.

Set production casing at approximately 12000'. See attached mud program. Complete by jet perforating indicated pay intervals and acidizing or fracturing, as need is indicated.

A 1500-Series BOP and Hydrill with remote controls will be used. A rotating drilling head, PVT and flow sensors will be used for drilling Wolfcamp and below. See attached supplemental multi-point drilling plan; mud program, Exhibit "E". See attached preventor layout, Exhibit "D".

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

Lloyd S. Wayne

TITLE

Vice President

DATE

11-14-78

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
AS AMENDEDDEC 5 1978
James F. Sims
JAMES F. SIMS
DISTRICT ENGINEER

*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

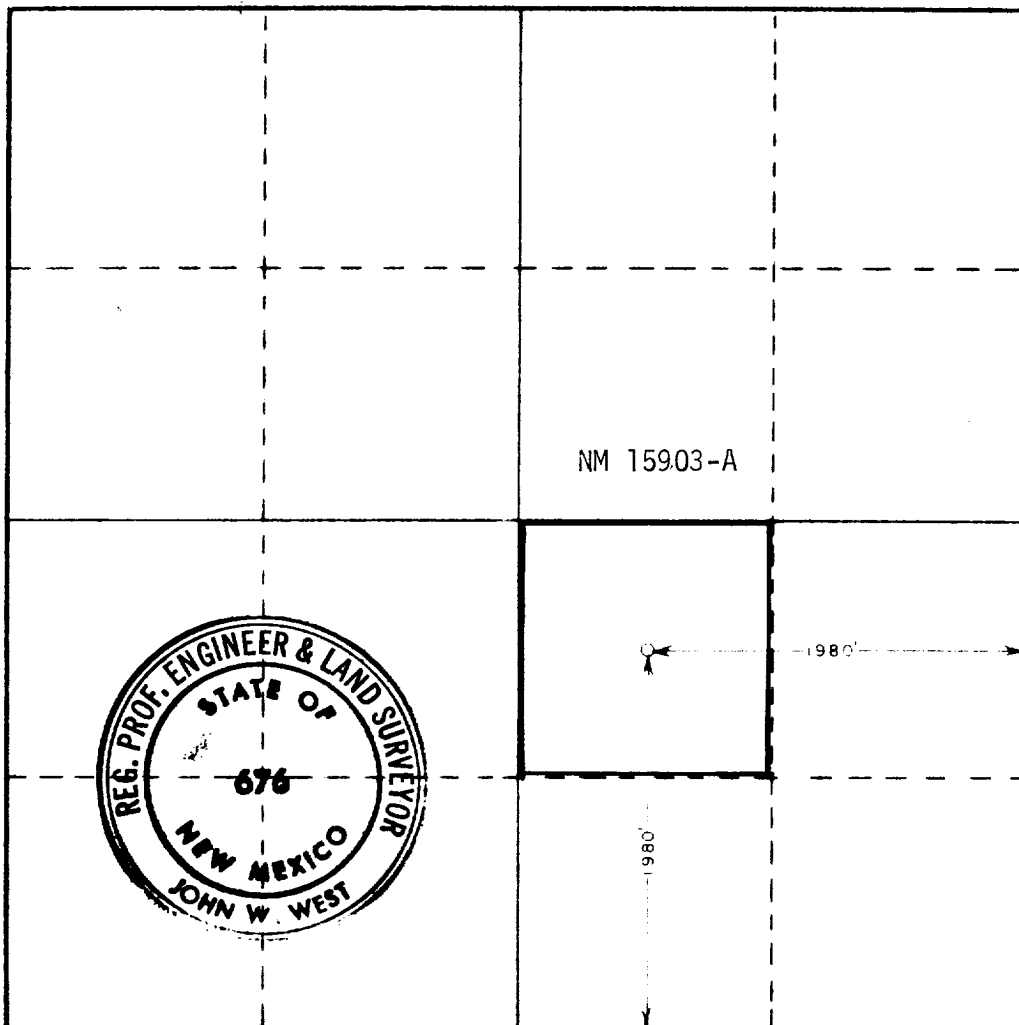
Operator PETROLEUM DEVELOPMENT CORP.			Lease FLYING M-MCKAY FEDERAL		Well No. 1
Unit Letter J	Section 26	Township 9 SOUTH	Range 32 EAST	County LEA	
Actual Footage Location of Well: 1980 feet from the SOUTH line and 1980 feet from the EAST line					
Ground Level Elev. 4319.7	Producing Formation Devonian	Pool Wildcat		Dedicated Acreage: 40 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

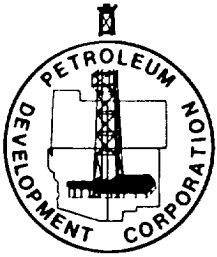
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Lloyd G. Wayne

Name Lloyd G. Wayne
Position Vice President
Company PETROLEUM DEVELOPMENT CORP.
Date 11-21-78

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 7, 1978
Registered Professional Engineer and/or Land Surveyor <i>John W. West</i>
Certificate No. John W. West 676 Ronald J. Eidson 3239



PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

MULTI-POINT DRILLING PLAN

Petroleum Development Corporation
Flying M-McKay Federal
1980' FEL, 1980' FSL, Sec. 26, T9S, R32E
Lea County, New Mexico
Lease: NM 15903-A
(160 acres)

This supplemental plan is submitted with the Application to Drill the above-described well in compliance with NTL-6 of the United States Department of the Interior.

1. The surface is composed of fine-grained sand, quaternary in age.
2. Estimated top of primary geologic markers are:

Rustler	1630	(+2709)
Yates	2235	(+2104)
San Andres	3460	(+ 879)
Glorietta	4900	(- 561)
Tubb	6350	(-2011)
Abo	7200	(-2861)
Wolfcamp	8350	(-4011)
Bough "C"	8940	(-4601)
Strawn	9830	(-5491)
Atoka	10100	(-5761)
Mississippian	10700	(-6361)
Devonian	11200	(-6861)

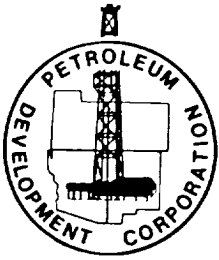
Estimated KB Elevation: 4339

3. The estimated depths at which anticipated water, oil or gas bearing formations are to be encountered are:

4200-4500'	oil	San Andres
8900-9000'	oil	Bough "C"
9800-9900'	oil	Strawn Lime
10700-10800'	gas	Atoka Sand
	oil	Devonian

4. Proposed casing program: See Form 9-331C.
5. Pressure control equipment: See schematic, Exhibit "D". Before drilling the Wolfcamp formation, the BOP and related control equipment shall be pressure-tested to rated working pressures by an independent service company. The district office shall be notified in time to witness the tests. Pipe rams and the annular-type preventer shall be actuated at least once each 24 hrs. and the blind rams each time the drill pipe is

5. (continued)
out of the hole. Accumulators shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. Blowout prevention drills shall be conducted as necessary to insure that each drilling crew is properly trained to carry out emergency duties.
6. Mud program: See Exhibit "E".
7. Auxiliary equipment to be used:
 - (1) Kelly cock.
 - (2) Bit float.
 - (3) Pit volume totalizer system before reaching Wolfcamp.
 - (4) Flow line flow sensor before reaching Wolfcamp.
 - (5) Mud gas separator before reaching Wolfcamp.
 - (6) Rotating head before reaching Wolfcamp.
 - (7) Full-opening drill string safety valve on floor at all times before reaching Wolfcamp (valve in "open" position).
8. Testing, coring and logging program:
 - (1) All significant shows of oil or gas will be drill-stem tested. Testing procedure will involve use of dual packers, jars and safety joint. Duration of test, shut-in times, etc. will be determined by company engineer in charge.
 - (2) No coring is anticipated.
 - (3) The following logs will be run:
 - a. CNL - density log with gamma ray.
 - b. Dual laterolog.
9. No abnormal pressures are expected. The Devonian formation can be controlled with a 9.0#/gallon mud. No abnormal temperatures or free hydrogen sulfide gases are known to exist in the area.
10. Anticipated spud date is December 1, 1978. Drilling operations will require approximately 50 days; completion operations will require an additional two to three weeks.



PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

Petroleum Development Corporation
Flying M-McKay Federal #1
1980' FEL & 1980' FSL, Sec. 26, T9S, R32E
Lea County, New Mexico
(40 acres)
Lease: NM 15903-A (160 acres)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed in rehabilitating the surface after completion of the operation so that a complete appraisal can be made of the environmental effects associated with the operation.

1. EXISTING ROADS:

- A. Exhibit "A" is a portion of a highway map showing the location of the proposed well, as staked. A paved county road runs north-south, .75 miles west of the location of this well, along the west side of Sec. 26. The paved road connects 10 miles south with Highway 380, 3 miles southeast of Caprock. An existing lease road junctures with the paved county road in the northwest quarter of Section 26, T9S, R32E, goes easterly approximately 1/2 mile to Lario Amerada Federal #1, which is the juncture point for the new road.
- B. Exhibit "B" is a plat showing all existing roads within a one-mile radius of the wellsite and the planned access.
- C. The existing lease road is serviceable. Minor repairs and periodic grading will maintain the caliche topping. See Exhibits "A" and "B".

2. PLANNED ACCESS ROADS:

- A. Length and width: The access road, from the existing lease road, will be 12' wide and 1900' long. See Exhibit "C".
- B. Surfacing material: eight inches of caliche; watered, compacted and graded.
- C. Maximum grade: three percent.
- D. Turnouts: two equally-spaced passing turnouts will be used.
- E. Drainage design: new road will have a drop of six inches from center line on each side.
- F. Culverts: none necessary.

2. PLANNED ACCESS ROADS (continued):

- G. Cuts and fills: none required; only general leveling of sand rolls.
- H. Gates, cattleguards: None required.

3. LOCATION OF EXISTING WELLS:

- A. Location of existing wells within a one-mile radius are shown on Exhibit "B".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. Existing tank batteries are located at the Marg B Com. #1 well, located at C36, T9S, R32E, the Marg A Com. #1 well, located at K26, T9S, R32E, and Marg C Com. #1 well, located at N24, T9S, R32E.
- B. If the well is productive, the tank battery and flow lines will be located on the well pad and no additional surface disturbance will occur.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. Water will be purchased and trucked to the wellsite over the existing and proposed roads shown on Exhibits "A" and "B".

6. SOURCE OF CONSTRUCTION MATERIALS:

- A. Caliche for surfacing the road and well pad will be obtained from existing pits on BLM land in Section 11, T10S, R32E.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be disposed of in the drilling pits.
- B. Drilling fluids will be allowed to evaporate in the drilling pits until pits are dry.
- C. Water produced during tests will be disposed of in the drilling pits. Oil produced during tests will be stored in test tanks until sold.
- D. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- E. Trash, waste paper, garbage, and junk will be buried in a separate trash pit and covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind. Location of trash pit is shown on Exhibit "D".
- F. All trash and debris will be buried or removed from the wellsite within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

A. None required.

9. WELLSITE LAYOUT:

A. Exhibit "D" shows the relative location and dimensions of the well pad, mud pits, reserve pit, trash pit, and location of major rig components.

B. Only minor levelling of the wellsite will be required. No significant cuts and fills will be necessary.

C. The reserve pit will be plastic-lined.

D. The pad and pit area has been staked and flagged.

10. PLANS FOR RESTORATION OF THE SURFACE:

A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. Pits will be filled and location cleaned of all trash and junk to leave the wellsite in an aesthetically pleasing condition as possible.

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. After abandonment of the well, any special rehabilitation and/or revegetation requirements of the surface management agency will be complied with and accomplished as expeditiously as possible. All pits will be filled and levelled within 90 days after abandonment.

11. OTHER INFORMATION:

A. Topography: Land surface is undulating to gently rolling and dunny. From an elevation of 4320 feet at the wellsite, the land surface slopes gently toward the south at about 50 feet per mile.

B. Soil: Soil is a deep fine sand and underlain by caliche.

C. Flora and Fauna: The vegetative cover is generally sparse and consists of mesquite, yucca, shinnery oak, sandsage and perennial native range grasses. Wildlife in the area is that typical of semi-arid desert land and includes coyotes, rabbits, rodents, reptiles, dove, quail and an occasional antelope.

D. Ponds and Streams: There are no rivers, streams, lakes or ponds in the area.

E. Residences and Other Structures: The nearest occupied dwelling is a Ranch Home 2 miles southeast of the wellsite. The nearest water well is a windmill .75 miles northeast.

11. OTHER INFORMATION (continued):

- F. Archeological, Historical and Cultural Sites: None observed in the area.
- G. Land Use: Grazing and hunting in season.
- H. Surface Ownership: Wellsite and the access road in NW $\frac{1}{4}$ of the SE $\frac{1}{2}$ of Section 26 is on John McGuffin's Ranch. The access road running from the county road through the NW $\frac{1}{4}$ of Section 26 is owned by Yeager and Armstrong.

12. OPERATOR'S REPRESENTATIVES:

The field representatives responsible for assuring compliance with the approved surface use and operations plan are as follows:

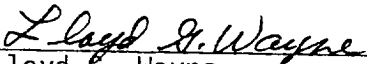
Charles W. Sanders
3204 Candlelight Drive, NE
Albuquerque, New Mexico 87111
Office Phone: (505) 293-4044
Residence: (505) 294-7538

Lloyd G. Wayne
3834 Westerfeld Drive, NE
Albuquerque, New Mexico 87111
Office Phone: (505) 293-4044
Residence: (505) 298-1081

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 statement 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 Petroleum Development Corporation and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

November 14, 1978

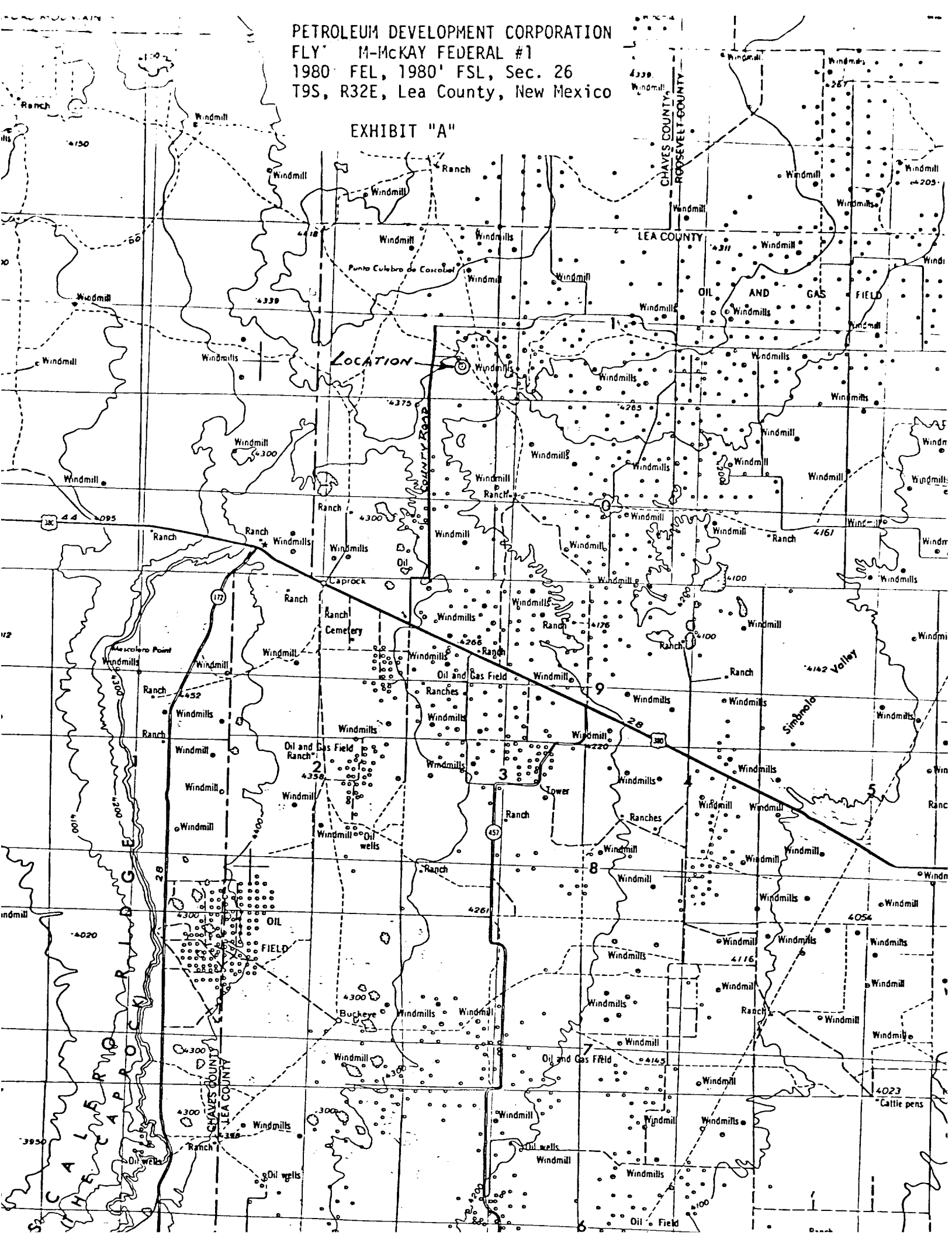


Lloyd G. Wayne
Vice President

LGW/pb

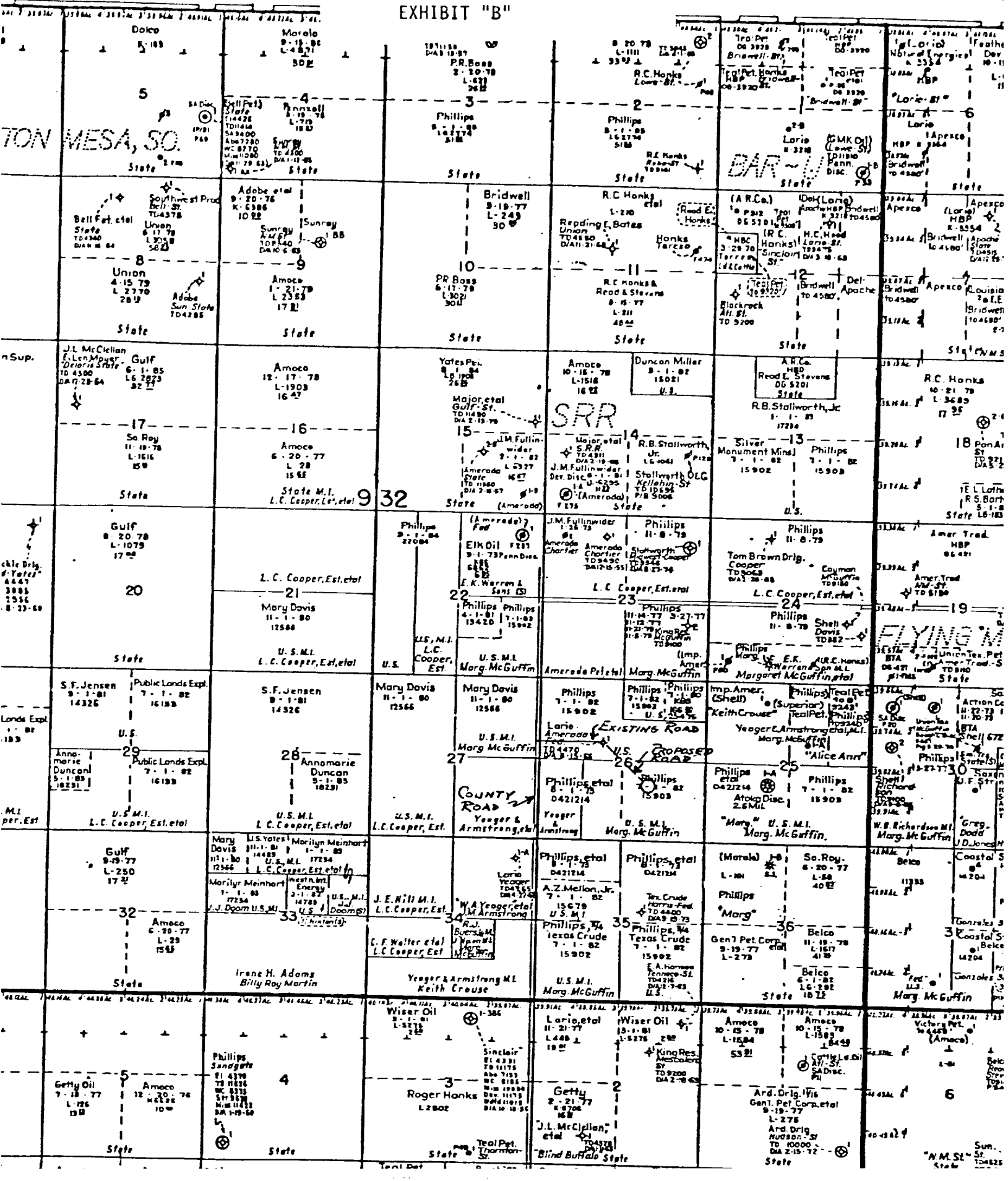
PETROLEUM DEVELOPMENT CORPORATION
FLY' M-McKAY FEDERAL #1
1980' FEL, 1980' FSL, Sec. 26
T9S, R32E, Lea County, New Mexico

EXHIBIT "A"



A V E S

TON MESA, SO.



PETROLEUM DEVELOPMENT CORPORATION
FLYING M-McKAY FEDERAL #1
1980' FEL, 1980' FSL, Sec. 26
T9S, R32E, Lea County, New Mexico
EXHIBIT "C"

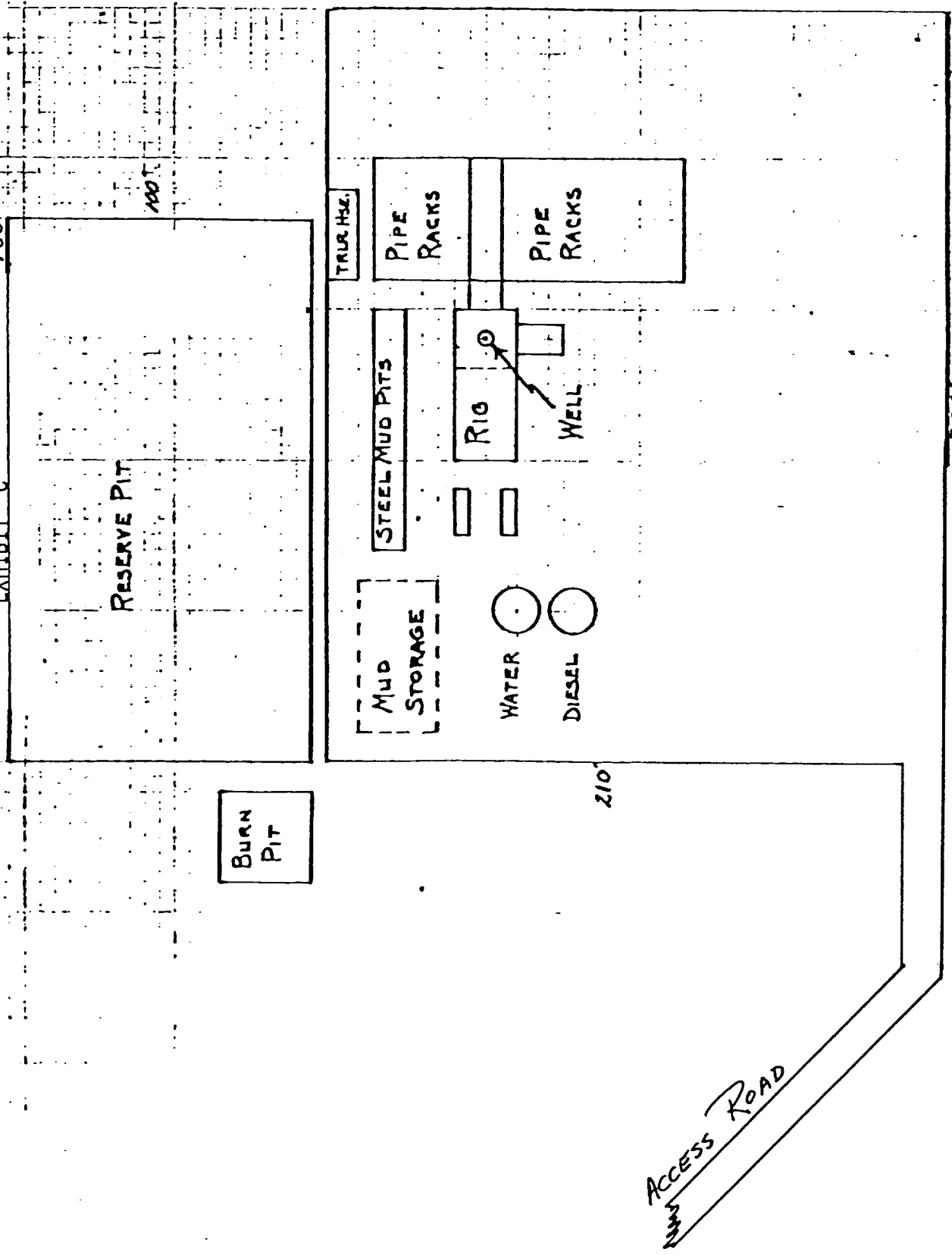


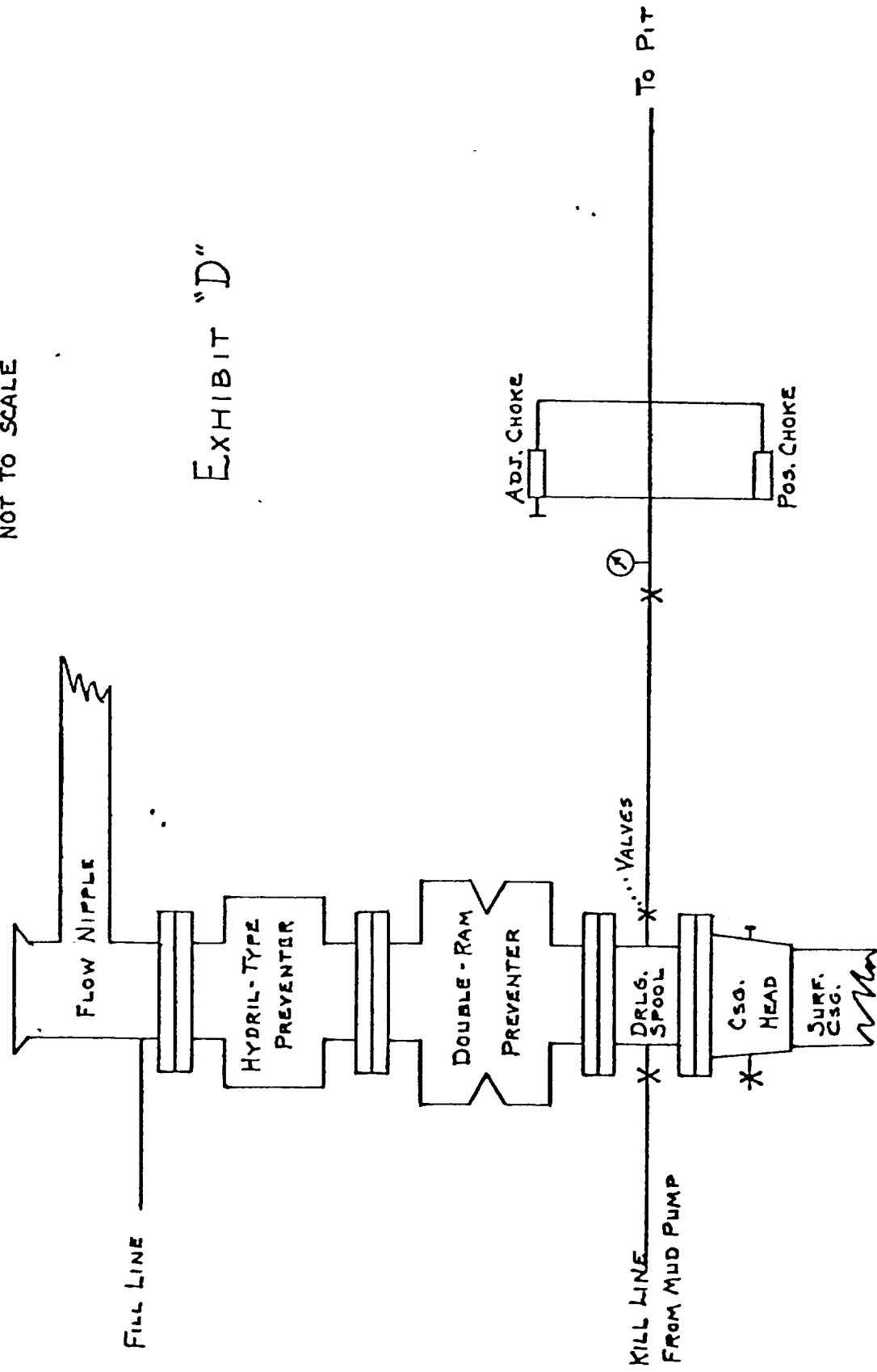
EXHIBIT "C"

PETROLEUM DEVELOPMENT CORP.
FLYING M-MCKAY FEDERAL #1
1980'FEL, 1980'FSL, Sec. 26
T9S, R32E, Lea County, NM

B.O.P. & CHOKE MANIFOLD SCHEMATIC
SERIES 1500
TO MEET SPECS. OF API BUL. D-13

NOT TO SCALE

EXHIBIT "D"



PETROLEUM DEVELOPMENT CORPORATION
FLYING M-McKAY FEDERAL #1
1980' FEL, 1980' FSL, Sec. 26
T9S, R32E, Lea County, New Mexico

EXHIBIT "E"

M U D P R O G R A M

Surface: 0-400'. Fresh water gel and lime spud mud. No problems anticipated.

Intermediate: 400-3500'. Drill 50' into San Andres Formation for setting 8-5/8" intermediate casing. Use the surface "spud mud", converting to a native mud as drilling progresses. Maintain 33-35 second viscosity because of troublesome redbed section. Add Mud Seal (paper) and 3-4% oil to the system. For any unexpected hole trouble, fishing or testing, take fluid loss control and maintain mud as follows:

Weight: 10.0 - 10.4#/gal.
Visc.: 34 - 37 sec.
Water Loss: 15 cc. or less

Production: 3500-12,000'. Drill out below intermediate casing with fresh water. Circulate the reserve pit, use Caustic Soda for pH control of 10-10.5. At 7000' (about 150' above Abo) mud up with low solids salt gel drilling fluid with following characteristics:

Weight: 8.9 - 10.0#/gal.
Visc.: 38-40 sec.
Water Loss: No Control
Oil Content: 5-7%

At about 8700' (or 200' above Bough "C") take water loss control and increase viscosity, the mud to have the following characteristics:

Weight: 9.0-10.0#/gal.
Visc.: 45-50 sec.
Water Loss: 10 cc. or less
Oil Content: 5-7%
Preservative Content: 1/4#/bbl.

Circulate the reserve pit until 8700', use steel pits after mudding up at 8700'. After drilling the Bough "C" and its shale sections, allow water loss to drift back to the 25-30 cc. range. Again, at about 10,000' and 11,100' water loss should be reduced as before for drilling the Atoka and Devonian. Water loss can be allowed to drift back to the 25-30 cc. range after drilling the Pennsylvanian shales.