

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

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

## 1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

## b. TYPE OF WELL

OIL  
WELL ☐GAS  
WELL ☒

OTHER

RECEIVED  
ZONEMULTIPLE  
ZONE ☐

## 2. NAME OF OPERATOR

The Superior Oil Company

JAN 31 1980

## 3. ADDRESS OF OPERATOR

P. O. Box 71, Conroe, Texas 77301

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

At surface

1980' FNL &amp; 660' FEL of Section 29, T22S-R31E

At proposed prod. zone

Straight

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

35 miles ESE of Carlsbad

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

660' FEL of Sec. 29

## 16. NO. OF ACRES IN LEASE

480

## 17. NO. OF ACRES ASSIGNED TO THIS WELL

320

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

None

## 19. PROPOSED DEPTH

14,900'

## 20. ROTARY OR CABLE TOOLS

Rotary

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

3405 GR

## 22. APPROX. DATE WORK WILL START\*

ASAP

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
	20"		40'	See Exhibit "F"
17-1/2"	13-3/8"	48#	650'	
12-1/4"	10-3/4"	40.5 & 45#	4,100'	
9-1/2"	7-5/8"	26.4 & 29.7#	12,100'	
6-1/2"	5-1/2" liner	20#	11800-14900' TD	

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Mud Program: See Exhibit "G"

U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

BOP Program: Series 1500 BOP See Exhibit "E"

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 F. H. Speers TITLE Regulatory Engineer Spec. DATE 12-4-79

(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_

APPROVAL DATE 1-30-80

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 1-1-75

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

Operator <b>The Superior Oil Company</b>			Lease <b>Government O</b>		Well No. <b>1</b>
Unit Letter <b>H</b>	Section <b>29</b>	Township <b>22 South</b>	Range <b>31 East</b>	County <b>Eddy</b>	
Actual Footage Location of Well: <b>1980</b> feet from the <b>North</b> line and <b>660</b> feet from the <b>East</b> line					
Ground Level Elev. <b>3405.3</b>	Producing Formation <b>Morrow</b>		Pool <b>Wildcat</b>	Dedicated Acreage: <b>320</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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?

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JAN 31 1980

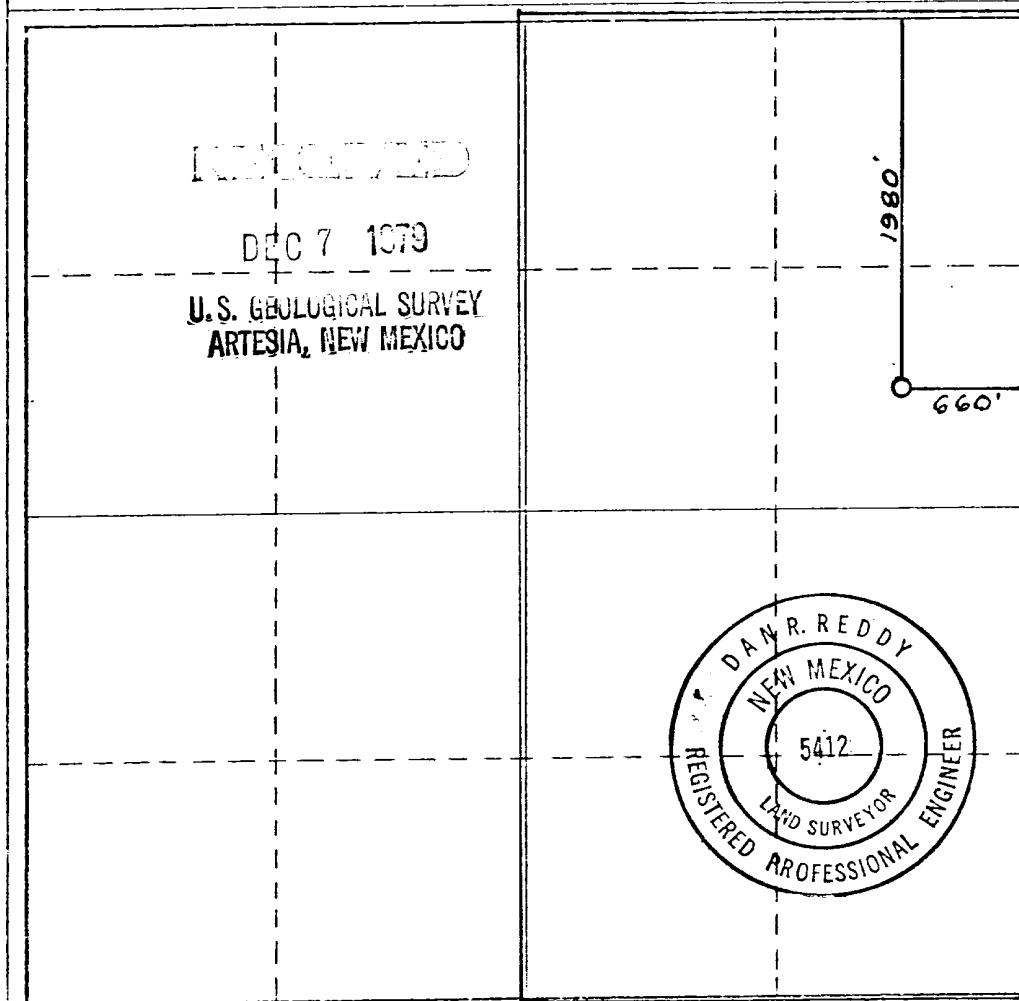
O. C. D.

ARTESIA, OFFICE

☐ 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.

Name **F.H. Speers**  
Position **Regulatory Eng. Specialist**

Company **The Superior Oil Company**

Date **November 27, 1979**

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 **Oct. 19, 1979**

Registered Professional Engineer and/or Land Surveyor

**Dan R. Reddy**  
Certificate No.

**NNPE&LS 5412**

0 300 600 900 1200 1500 1800 2100 2400 2700 3000 3300 3600



# United States Department of the Interior

## GEOLOGICAL SURVEY

P. O. Box 26124  
Albuquerque, New Mexico 87125

JAN 30 1980

RECEIVED

JAN 31 1980

O. C. D.  
ARTESIA, OFFICE

The Superior Oil Company  
P. O. Box 71  
Conroe, Texas 77301

Gentlemen:

SUPERIOR OIL COMPANY  
Government "O" No. 1  
1980 FNL 660 FEL Sec. 29 T.22S R.31E  
Eddy County Lease No. NM 21774

Above Data Required on Well Sign

Your APPLICATION FOR PERMIT TO DRILL the above-described well in the Secretary's Oil-Potash Area to a depth of 14,900 feet to test the Morrow is hereby approved subject to compliance with the OIL AND GAS OPERATING REGULATIONS (30 CFR 221) and the following conditions:

1. Drilling operations authorized are subject to compliance with the attached General Requirements for Oil and Gas Operations on Federal Leases, dated July 1, 1978.
2. Prior to commencing construction of road, pad, or other associated developments, operator will provide the dirt contractor with a copy of the Surface Use Plan and these Conditions of Approval including the attached General Requirements.
3. Submit a Daily Report of Operations from spud date until the well is completed and the Well Completion Report (form 9-330) is filed. The report should not be less than 8" x 5" in size and each page should identify the well.
4. All permanent above-ground structures and equipment shall be painted in accordance with the attached Painting Guidelines. The color used should simulate Sandstone Brown (Federal Standard No. 595A, color 20318 or 30318).
5. Before drilling below the 10-3/4" casing, the blowout preventer assembly will consist of a minimum of one annular type and two ram type preventers.
6. A kelly cock will be installed and maintained in operable condition.



7. After setting the 10-3/4" casing string and before drilling into the Wolfcamp formation, the blowout preventers and related control equipment shall be pressure tested to rated working pressures by an independent service company. Any equipment failing to test satisfactorily shall be repaired or replaced. This office should be notified in sufficient time for a representative to witness the tests and shall be furnished a copy of the pressure test report.
8. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be installed and operating before drilling into the Wolfcamp formation and used until production casing is run and cemented. Monitoring equipment shall consist of the following:
  - (1) A recording pit level indicator to determine pit volume gains and losses.
  - (2) A mud volume measuring device for accurately determining mud volume necessary to fill the hole on trips.
  - (3) A flow sensor on the flow-line to warn of any abnormal mud returns from the well.
9. Notify the Survey in sufficient time to witness the cementing of the 13-3/8" and 10-3/4" casing.
10. Cement behind the 20", 13-3/8", and 10-3/4" casing must be circulated.
11. It is required that a Gamma-Ray-Neutron Log be run in open hole from the base of Salado to the surface at a speed not to exceed 30 feet per minute.
12. Please have anyone contacting the Survey in regard to this well to identify the well with all of the information required above for the well sign.

Sincerely yours,

(ORIG. SGD.) JAMES W. SUTHERLAND

Area Oil and Gas Supervisor

Enclosure

cc:

Regional Manager, Denver

Mining Branch (2)

BLM, Roswell (w/cy Notice)

NMOCD, Artesia (2) (w/2 cys Notice)

Artesia

Roswell (w/cy Notice)

Area (potash)

Area (chrono.)

District (potash)

District (chrono)

## APPLICATION FOR DRILLING

The Superior Oil Company  
Government "O" Well No. 1  
1980' FNL & 660' FEL  
Section 29, T22S, R31E  
Eddy County, New Mexico

In conjunction with form 9-331C, Application for Permit to drill subject well, The Superior Oil Company submits the following 10 items of pertinent information in accordance with USGS requirements.

- 1) The geological surface formation is "Permian".
- 2) The estimated tops of geologic markers are as follows:

Delaware	4,060'
Strawn	12,670'
Morrow	14,380'

- 3) The estimated depths at which anticipated water, gas, or oil formations are expected to be encountered:

Water: Approximately 300 - 500'  
Oil or Gas: Morrow

- 4) Proposed Casing Program: See form 9-331C and Exhibit "F"
- 5) Pressure Control Equipment: See form 9-331C and Exhibit "E"
- 6) Mud Program: See Exhibit "G"
- 7) Auxiliary Equipment: See Exhibit "H"
- 8) Testing, Logging, and Coring Programs:

A) 2 DST's may be taken in Morrow near T.D.

B) Logging:

Mud logging unit will be used from 4,100 - T.D.  
Electric Logging Program:

(A)	630 - 4,100'	G/R - Sonic
(B)	4,100 - 12,000'	G/R - Sonic, Dual Laterolog w/ G/R & Rxo
(C)	12,000 - T.D.	G/R-FDC-CNL, Dual Laterolog w/ G/R & Rxo

- 9) No abnormal pressures or temperatures are anticipated.
- 10) Anticipated starting date: As Soon As Possible

# MULTI-POINT SURFACE USE & OPERATIONS PLAN

THE SUPERIOR OIL COMPANY

GOVERNMENT "O" WELL NO. 1  
1980' FNL & 660' FEL  
SECTION 29, T22S, R31E  
EDDY COUNTY, NEW MEXICO

DEPARTMENT OF THE INTERIOR

DEC 7 1970

U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

This plan is submitted with Form 9-331C, Application for Permit to Drill, for the above referenced well. The plan describes the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the necessary surface disturbance involved, and the procedures to be followed in rehabilitating the surface after completing the operations, so that a complete appraisal can be made.

## 1. EXISTING ROADS

- A. Exhibit A is a composite route map showing Superiors leased areas in yellow, and our proposed Gov't "O" location 35 miles from Carlsbad via the existing road system in red.
- B. Exhibit B is a portion of a USGS topographic map on a scale of approximately 1/6" to the mile, showing the proposed wellsite location, and existing access roads in the vicinity colored in red.

### DIRECTIONS:

- 1. From Carlsbad proceed southeast on U. S. Highway 285 approximately 11½ miles to the town of Levine.
- 2. Turn east on NM State Highway 31 and go due east for 2 miles, thence due north for 1½ miles and thence northeast 4½ miles to the junction of NM State Highways 31 and 128.
- 3. Go east on NM State Hwy. 128 for 10 miles to the junction of the WIPP (Waste Isolation Pilot Project) road on the north side of NMSH 128. Proceed due north and east on WIPP road for approximately 4 miles.
- 4. The proposed entrance road to the well location will start at this point on the left and continue 660' west to the wellsite.

## 2. PLANNED ACCESS ROAD

- A. The proposed new access (entrance) road will be approximately, 500' in length from point of origin at the WIPP road to the edge of the 400' square location work area.
- B. The new road will be 12' wide (driving surface) except at the point of origin, adjacent to the existing WIPP road, at which point enough additional width will be provided to allow heavy trucks and equipment to turn.
- C. The new road will be covered with whatever caliche is required and crowned to assure ample drainage on both sides. No turnouts will be necessary. The Caliche will be trucked in from the nearest existing pits.

- D. The center lines of the new road has been staked and flagged so that the route is clearly visible.

### 3. LOCATION OF EXISTING WELLS

- A. The well locations in the vicinity of the proposed well are shown in Exhibit C. There are no wells within a one mile radius.

### 4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

- A. There is no producing well on this lease at the present time.
- B. In the event that the well is productive, the necessary production facilities will be installed on the 400' square drilling pad, including if required, a self-contained generator to provide the necessary electric power.
- C. The attached topographic map labelled LAND USE PLAN is on a scale of approximately 1/6" to the mile, and shows the proposed flow lines to a central production facility if required in the SW corner of Sec. 28, T22S, R31E. An archeological survey will be conducted over the 300' X 300' (2.1 Acre) battery site and flow line routes indicated before obtaining the necessary USGS approval of this central facility. The central battery will be proposed if all four of our wells are completed as commerical gas producers.

### 5. LOCATION AND TYPE OF WATER SUPPLY

- A. We will drill the proposed well using fresh water mud. The water will be obtained from a shallow water well to be drilled on the location site; or, if such a well is unproductive, we will truck water to the proposed location from the nearest available (and approved) source over existing roads.

### 6. SOURCES OF CONSTRUCTION MATERIAL

- A. The material to be used on drill pad and service roads will be native caliche obtained from an USGS approved caliche pit and hauled by truck over existing roads. The pit is on the ACCESS ROAD AND LAND USE Map enclosed and is located in the NE corner of Sec. 32, T22S, R31E.

### 7. METHODS OF HANDLING WASTE DISPOSAL

- A. Drill cuttings will be disposed of in the reserve pit located within the 400' X 400' drill site area shown on Exhibit D.
- B. Drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry. The pit will then be backfilled and restored as near as possible to the original surface conditions.

- C. Water produced during operations will be collected in steel tanks until hauled to an approved disposal system; or else a separate disposal application will be submitted to the USGS for appropriate approval.
- D. Oil produced during operations will be stored in steel tanks at the drill site.
- E. All laws and regulations governing human waste disposal will be complied with.
- F. Trash, waste paper, garbage and junk will be buried in a separate trash pit and covered with a minimum of 24" of dirt. All waste material will be contained to prevent scattering by the wind.
- G. All trash and debris will be buried or removed from the well site within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES

- A. None required at this time - See Item 4-C.

9. WELLSITE LAYOUT

- A. Exhibit D shows the dimensions of the well pad and reserve pits, and the location of major rig components.
- B. The ground surface at the drilling location is sloping down toward the south west. The pad area will be levelled and covered with at least six inches of compacted caliche.
- C. The reserve pits will be plastic lined.
- D. The pad and pit area has been staked and flagged.

10. PLANS FOR RESTORATION OF THE SURFACE

- A. After finishing drilling and/or completion operations all equipment and other material not needed for further operations will be removed. The location will be cleared of all trash and junk, to leave the wellsite in as aesthetically pleasing a condition as possible.
- B. Unguarded pits, if any, containing fluids will be fenced off until they have been backfilled.



## 11. TOPOGRAPHY

- A. The wellsite and access route are located on an undulating plain that regionally slopes gently to the southwest area.
- B. The top soil at the wellsite is sandy loam.
- C. The vegetation cover at the wellsite is moderately sparse, with prairie grasses, some yucca, and miscellaneous weeds.
- D. No wildlife was observed but it is likely that rabbits, lizards, insects, and rodents traverse the area. The area is used for cattle grazing.
- E. There are no ponds, lakes, streams, or rivers within several miles of the wellsite.
- F. The wellsite is located on federal surface.
- G. There is no evidence of any archaeological, historical, or cultural sites in the vicinity of the location.

## 12. OPERATOR'S REPRESENTATIVES

- A. The field representatives responsible for assuring compliance with the approved surface use plan are:

Division Drilling Supt.  
The Superior Oil Company  
Bob True  
Carlsbad, New Mexico  
Phone 505-887-7633 (Home &  
Office)

Drilling Engineer  
The Superior Oil Company  
Larry Ivie  
Conroe, Texas 77301  
Phone 713-539-1771 (Office)  
Phone 713-376-3291 (Home)

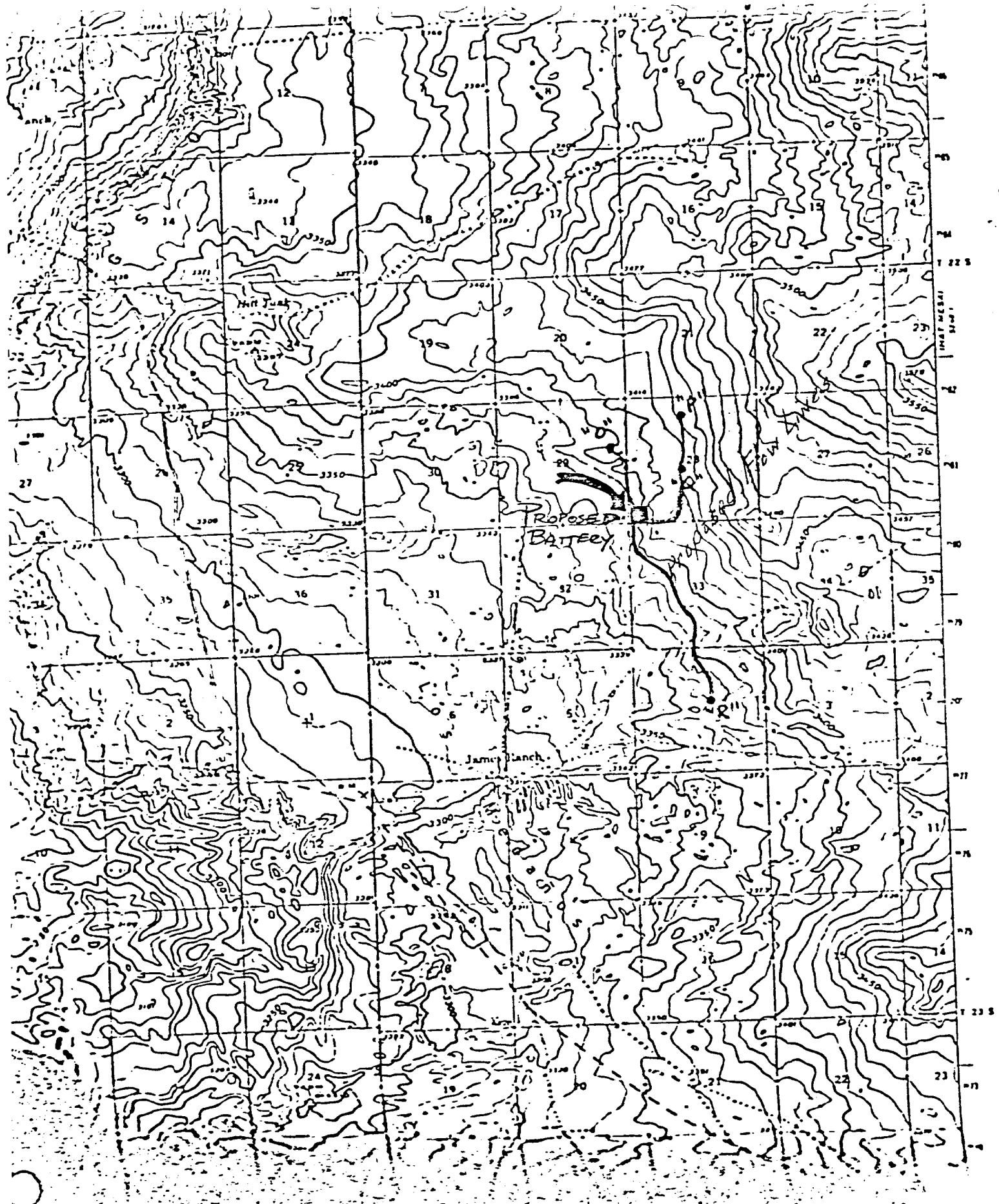
District Geologist  
The Superior Oil Company  
George Gail  
Midland, Texas 79701  
Phone 915-683-5251 (Office)

## 13. CERTIFICATION

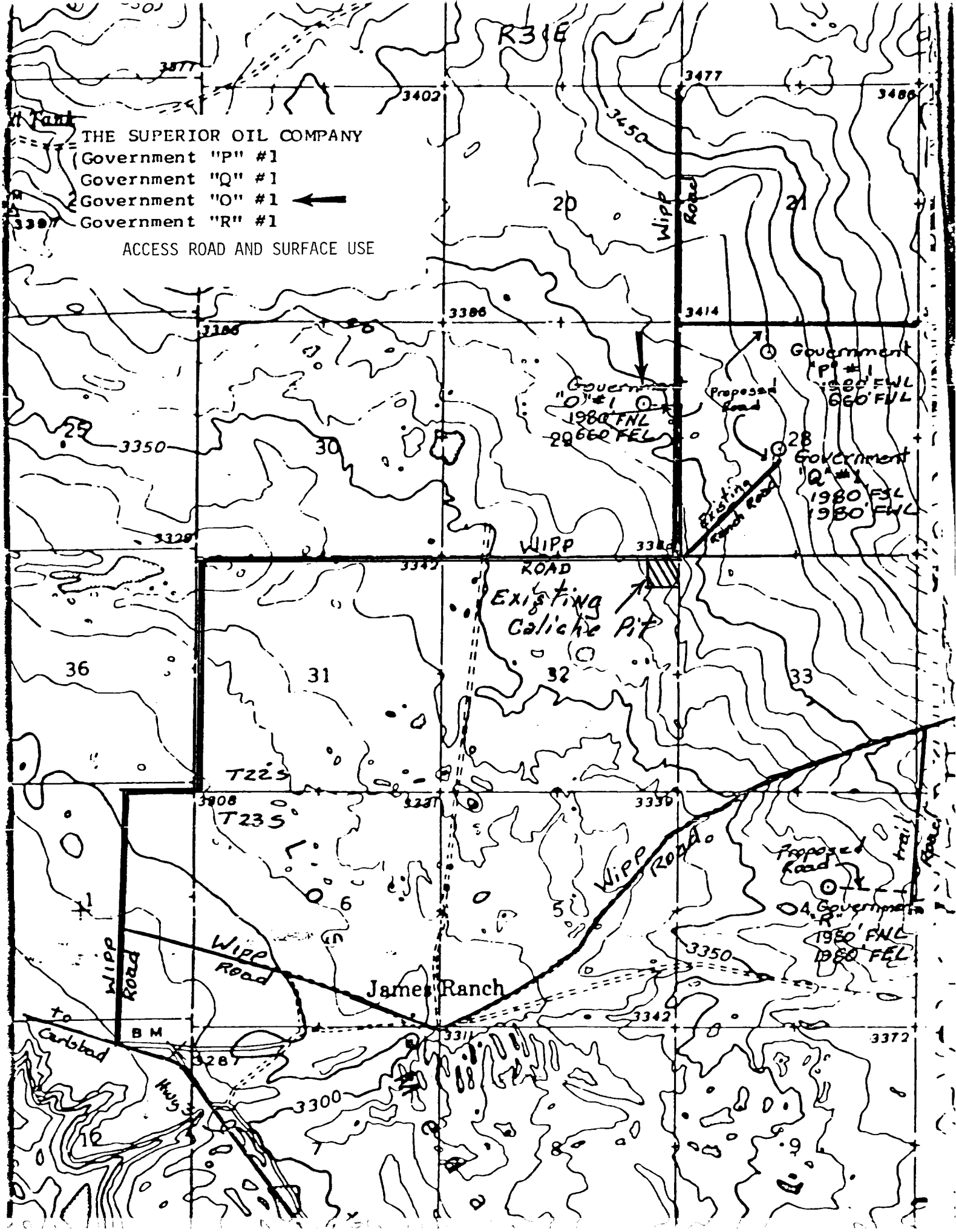
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Sabine Production Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

12/4/79  
DATE





LAND USE PLAN



THE SUPERIOR OIL COMPANY

Government "P" #1

Government "Q" #1

Government "O" #1 ←

Government "R" #1

ACCESS ROAD AND SURFACE USE

R31E

Wipp Road

WIPP ROAD

Existing Caliche Pit

James Ranch

Wipp Road

Wipp Road

Wipp Road

Proposed Road

Government "P" #1  
1980 FNL  
1980 FEL

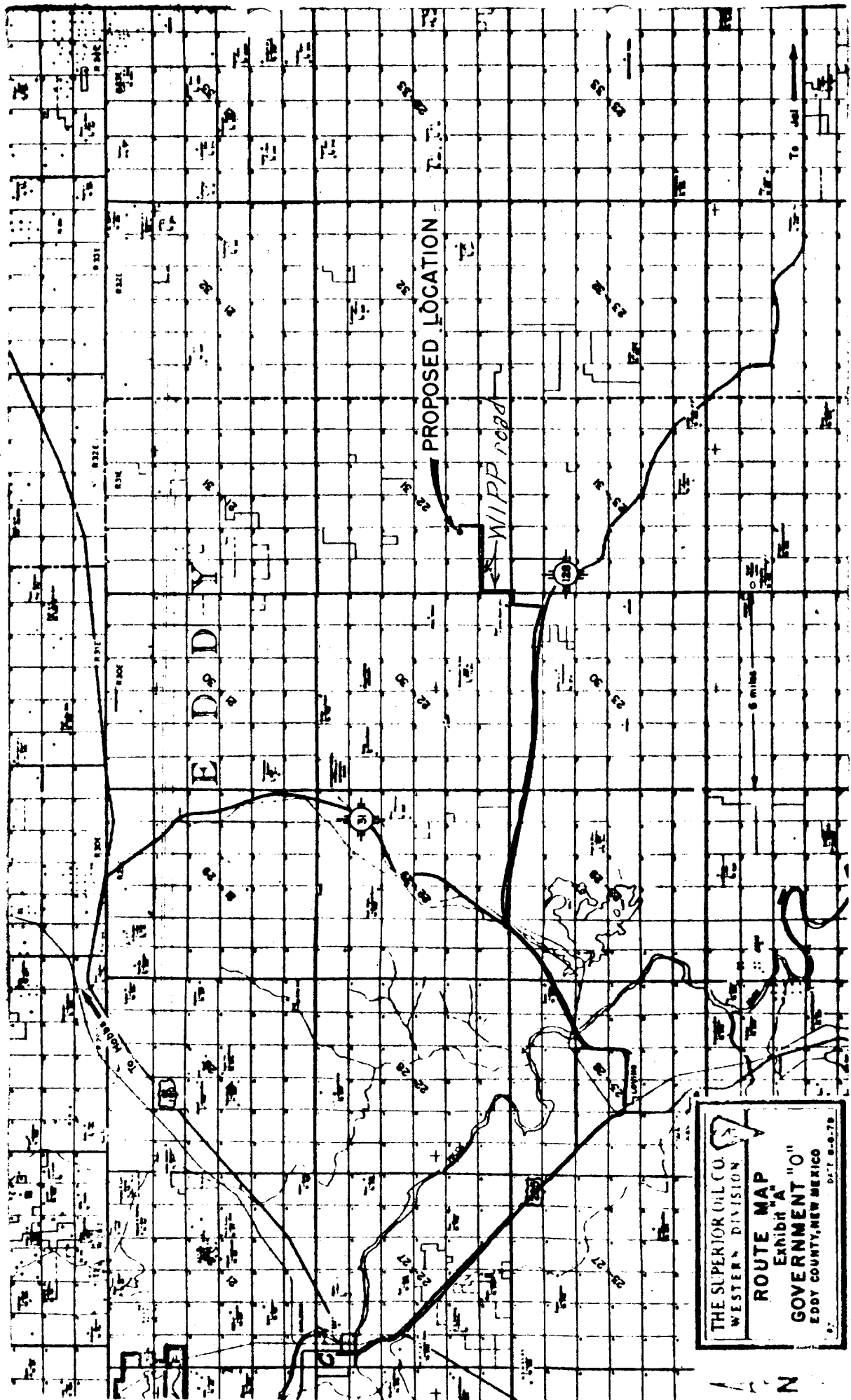
Government "Q" #1  
1980 FNL  
1980 FEL

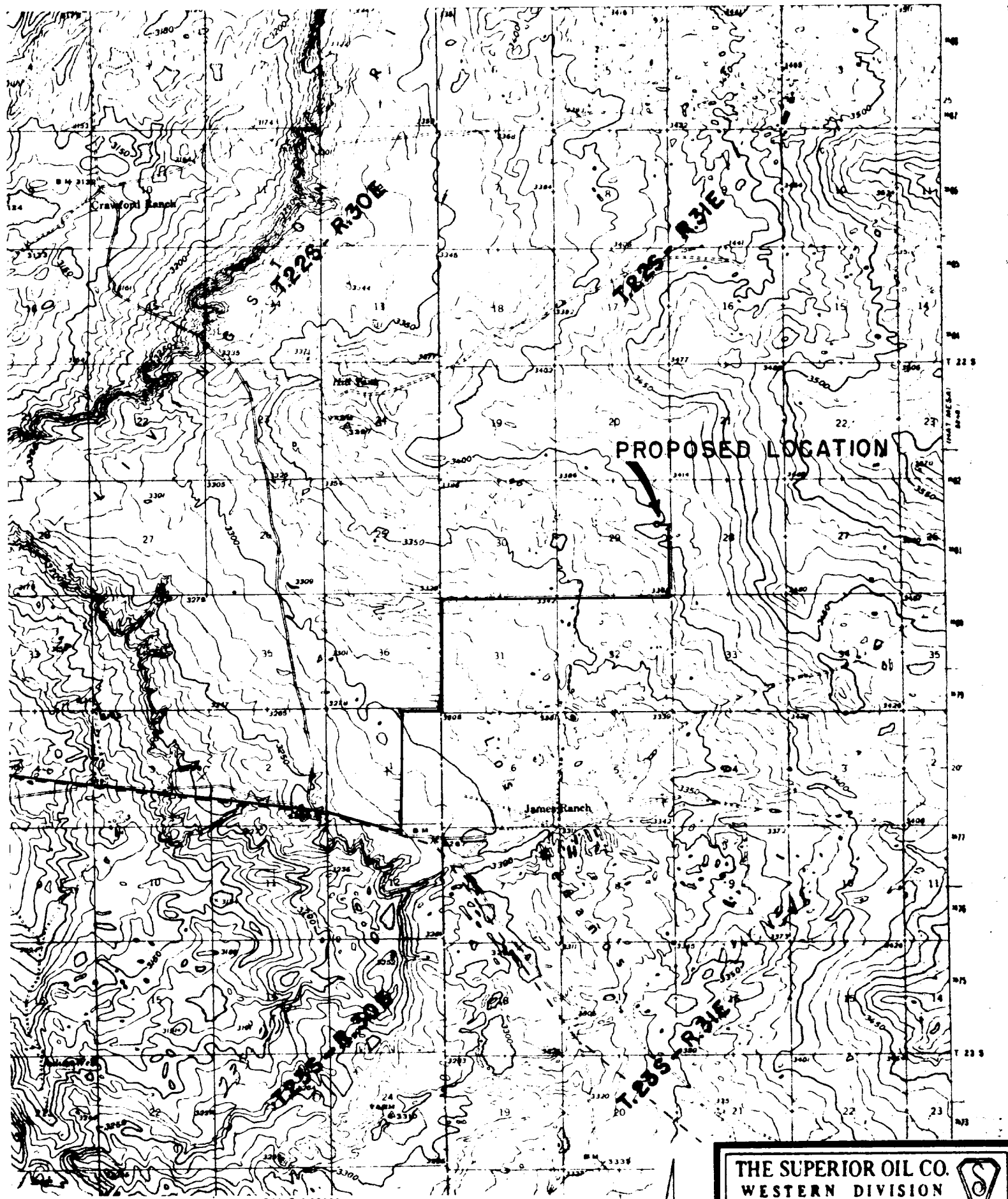
Government "R" #1  
1980 FNL  
1980 FEL

B M

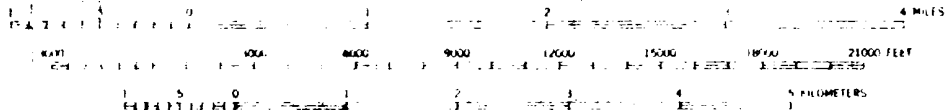
July 31

To Carlsbad





SCALE 1:62,500



Contour interval 10 feet  
Datum is mean sea level

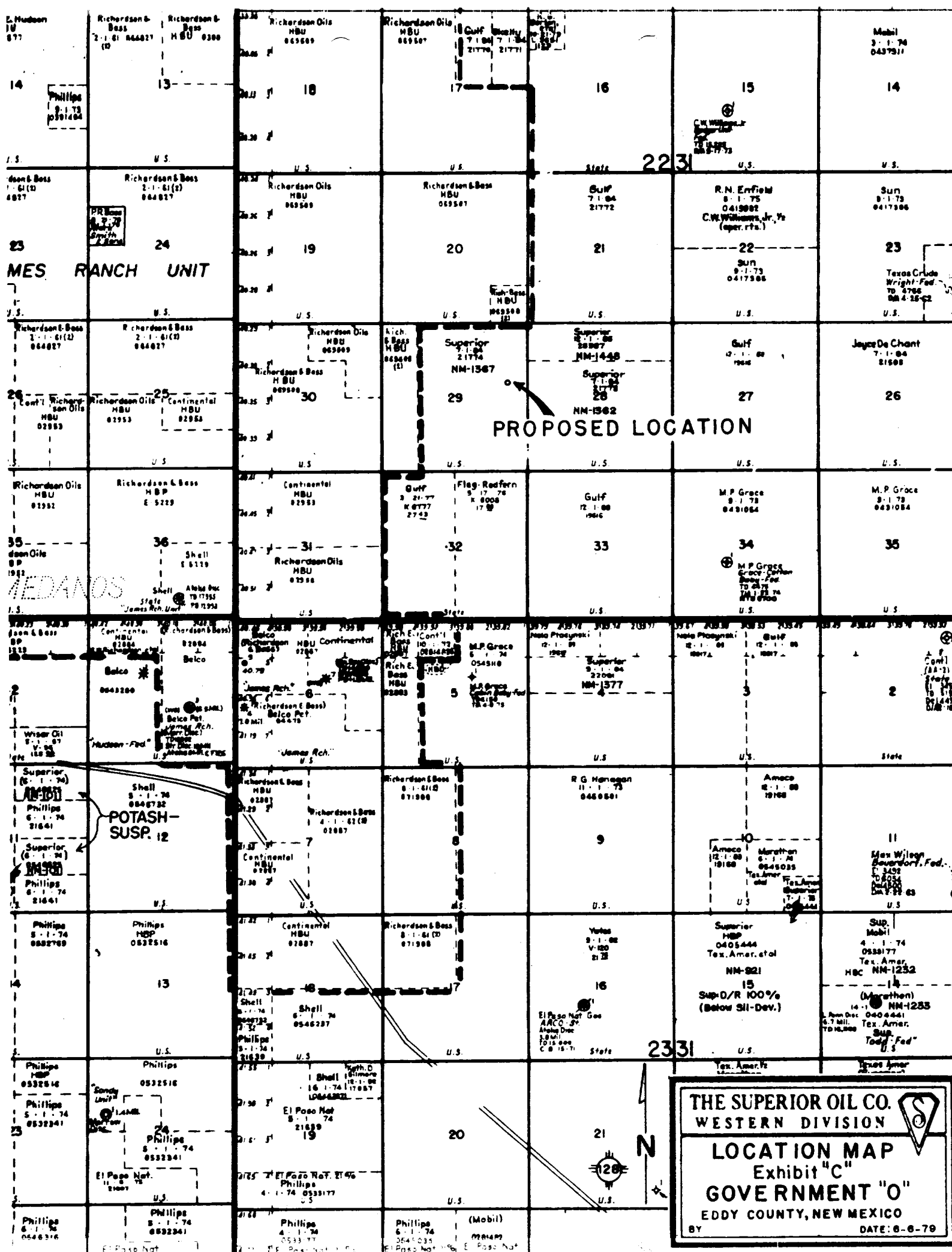
THE SUPERIOR OIL CO.  
WESTERN DIVISION

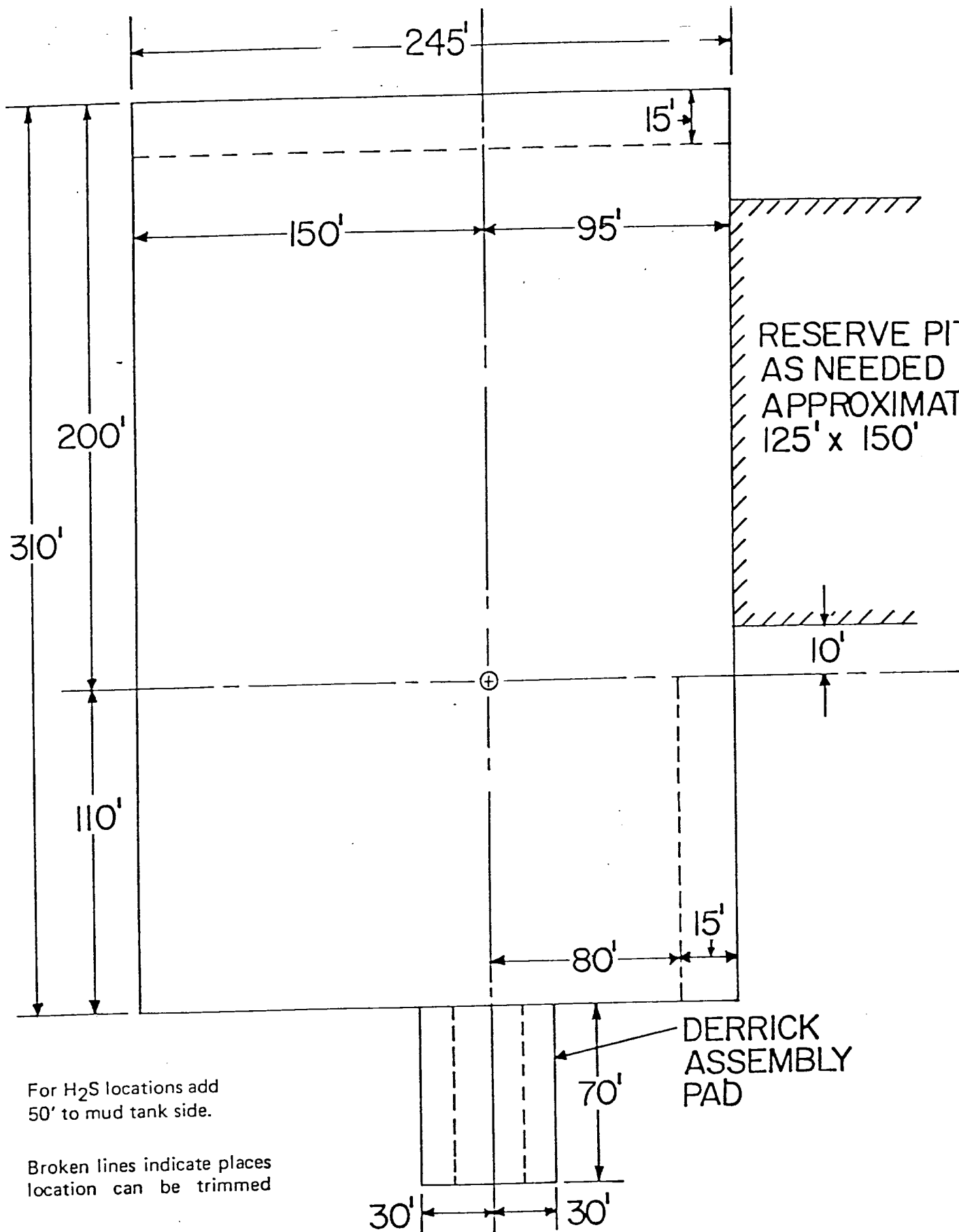
**TOPOGRAPHIC MAP**

Exhibit "B"  
**GOVERNMENT "O"**

EDDY COUNTY, NEW MEXICO

DATE: 8-6-79





LOCATION DIMENSIONS  
RIG 36  
EXHIBIT D

- 1 SER. 1500 HYDRAUL CK
- 2 SER. 1500 HAM-TYPE BOP (8)
- 3 3" SER. 1500 VALVE
- 4 SER. 1500 DRILLING SPOOL
- 5 3" SER. 1500 X 2" SER. 1500 STEEL TEE
- 6 2" SER. 1500 VALVE
- 7 2" MUD PRESSURE GAUGE
- 8 3" SER. 1500 X 2" SER. 1500 STEEL CROSS
- 9 2" SER. 1500 ADJ. CIOKE
- 10 2" SER. 1500 ADJ. CIOKE ON 2" SER. 1500 RISEN VALVE ON SIDE OUTLET OF 2" SER. 1500 STEEL TEE
- 11 ADAPTER, 2" SER. 1500 X 10,000 LB WP FLANGE MATING 13 INLET
- 12 10,000 LB WP REMOTE CIOKE
- 13 HYDRAULIC CIOKE, 2500 LB WP OR BETTER
- 14 3" SER. 1500 CHECK VALVE

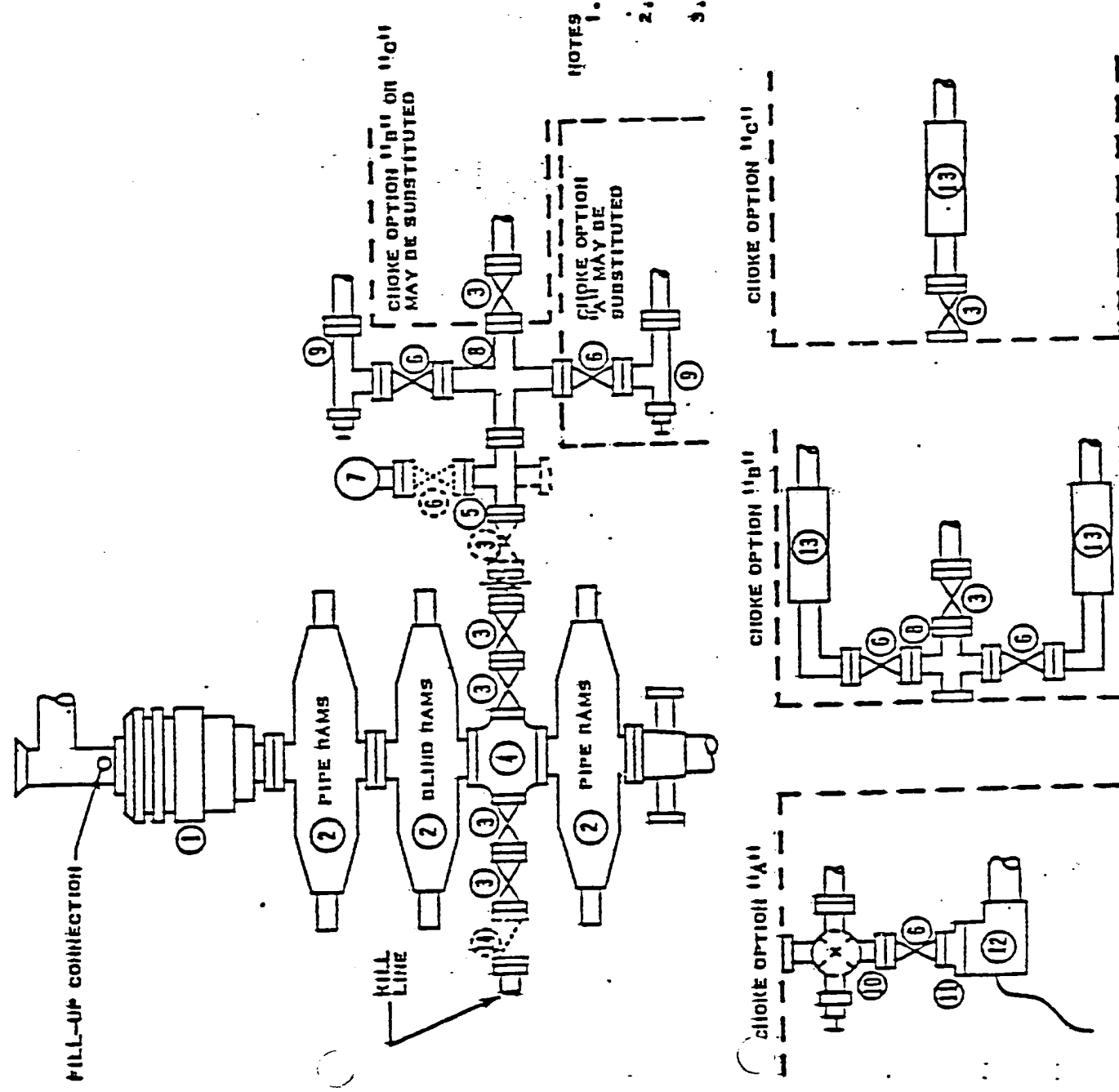
5000 PSI WP OR BETTER CLAMP UNDS MAY BE SUBSTITUTED FOR FLANGES

ONE ADJUSTABLE CIOKE MAY BE REPLACED WITH A POSITIVE CIOKE

VALVES MAY BE EITHER HAND OR POWER OPERATED BUT, IF POWER OPERATED, THE VALVES FLANGED TO THE BOP MUST BE CAPABLE OF BEING OPENED AND CLOSED MANUALLY OR CLOSE ON POWER FAILURE AND BE CAPABLE OF BEING OPENED MANUALLY

5000 PSI WORKING PRESSURE  
BLOWOUT PREVENTER HOOK-UP  
(SERIES 1500 FLANGES OR BETTER)

EXHIBIT E



NOTES

- 1.
- 2.
- 3.



## EXHIBIT F

### Government "O" Well No. 1

#### HOLE SIZE AND CASING PROGRAM

##### 20" Casing to 40'±

Set 40'± of 20" casing using rat hole equipment. Cement to surface with Redi-Mix cement.

##### 17-1/2" Hole to 650'

Drill a 17-1/2" to 650'. Run 13-3/8", 48#, H-40 ST&C. Cement to surface with 275 sxs Halliburton light (water ratio - 8.9 gallons/sx, slurry weight - 12.7 ppg, slurry volume - 1.84 cf/sx), followed by 300 sxs Class "C" + 2% CaCl<sub>2</sub> (water ratio - 6.3 gallons/sx, slurry weight - 14.8 ppg, slurry volume - 1.32 cf/sx). Cement volume based on 100% open hole excess. NU BOP's. Test casing to 500# and BOP's to 2000#.

##### 12-1/4" Hole to 4,100'± (50' into Delaware)

Have lost circulation material on location before drilling out of 13-3/8" casing. Drill 12-1/4" hole to 4,100' ± (50' into Delaware). Anticipate lost circulation with possibility of dry drilling. Run G/R - BHC log. Run 10-3/4", 40.5 & 45.5#, K-55 & S-80 ST&C casing. Cement to surface with 575 sxs of Halliburton light + 8# salt/sx + 1/4#/sx FLOCELE + 5#/sx gilsonite (water ratio - 9.9 gallons/sx, slurry weight - 12.7 ppg, slurry volume - 1.92 cf/sx), followed by 350 sxs Class "C" neat cement (water ratio - 6.3 gallons/sx, slurry weight - 12.7 ppg, slurry volume - 1.32 cf/sx). Cement volume based on 100% open hole excess. NU 5000# BOP's. Test rams to 5000#, Hydril to 3500#, and casing to 1500#.

##### 9-1/2" Hole to 12,100'± (1000' into Wolfcamp)

Drill 9-1/2" hole to 12,100'±. Log as per program. Run 7-5/8", 26.4 & 29.7#, S-95 LT&C casing. Cement with 125 sxs Trinity Lite Wate, 0.5% CFR-2, 0.25#/sx FLOCELE (water ratio - 8.55 gallons/sx, slurry weight - 12.44 ppg, slurry volume 1.57 cf/sx), followed by 300 sxs Class "H" with 0.5% CFR-2 (water ratio - 5.2 gallons/sx, slurry weight - 15.6 ppg, slurry volume - 1.18 cf/sx). Cement volume based on 2000' of cement at 25% open hole excess. NU 5000# BOPs. Pressure test rams to 5000#, Hydril to 3500#, and casing to 3000". Install rotating head.

##### 6-1/2" Hole to 14,900' (200'± into lower Morrow)

Drill 6-1/2" hole to T.D. Run logs as per program. Run 5-1/2" 20#, S-95 Triple Seal casing as liner from 11,800' to 14,900 TD. Cement with 200 sxs Class "H" with 5% KCL, 0.6% CFR-2, 0.6% HALAD-22A + retarder as necessary (water ratio - 5.2 gallons/sx, slurry weight - 15.6 ppg, slurry volume - 1.18 cf/sx). Cement volume based on 35% open hole excess. Test liner top to 3000#. Squeeze top of liner, if necessary, with Class "H" mixed with fresh water + retarder.

# EXHIBIT G

MUD RECOMMENDATIONS				CASING	FORMATION TOPS
Depth ft	Mud Weight ppg	Viscosity sec/qt	API Filtrate ml		
0-650	8.4-9.5	35-45	No Control	2000'	
Spud. Consisting of Del Gel, flocculated with lime. Use paper and cotton seed hulls to control seepage and loss circulation.					
650-4100	8.8-10	29-30	No Control	4000'	Deleware line
Drill out with brine water treated with Ben-Ex and Drilling Detergent to prevent solids build up. Circulate controlled section of reserve pit. Use paper for seepage loss and also paper and Del-S-Gel to sweep hole. Maintain pH with Caustic Soda.				6000'	Cherry Canyon
4100-12100	8.6-9.2	30-32	No Control	8000'	Brushy Canyon
Drill out with fresh water and circulate a controlled section of reserve pit. Use Ben-Ex and Drilling Detergent to prevent solids build up. Use paper to control seepage and also paper and Del-S-Gel to sweep hole. Use caustic for pH.				10000'	Bone Springs
Note: Mud up usually not necessary in this interval but if hole conditions warrant, it may be necessary to mud up prior to running casing. If so, suggest mud up with Sea Mud/Del-S-Gel for viscosity of 32-34 and DRispac and Starlose for fluid loss of 10-15cc. Also should pressure be encountered prior to setting pipe, mud up with Del-S-Gel/Sea Mud and Drispac using Del Bar for weight material and return fluid to steel pits.				12000'	3rd. Bone Springs
12100-14900	10-12.7	34-36	5 cc	14000'	Wolfcamp
Displace hole with 10 lb. brine and circulate thru steel pits. Add 3%-5% KCL and treat out hardness with Soda Ash. Mud up with Drispac (1 lb./bbl.) and Starlose (4 lb./bbl.) for base mud. When additional fluid density is required use Sea Mud (8 lb./bbl. $\pm$ ) and Del-S-Gel (5-6 lb./bbl.) Use Del-Bar to raise weight as needed. Maintain pH with Caustic Soda and use Nut Plug or Mica for seepage control.				T.D. 14900	Strawn
					Atoka
					Morrow

EXHIBIT H  
AUXILIARY EQUIPMENT

DRAWWORKS

Emsco C-2 type III, 2000 HP  
Grooved for 1-3/8" drill line  
Parmac model 481 Hydromatic Brake

DERRICK

Ideco Fullview mast  
143 ft. high  
750,000 lb. static hook load

SUBSTRUCTURE

Ideco  
24 ft. high  
800,000 lb. casing capacity simultaneous with 400,000 lb. setback capacity

POWER SOURCE

3 - Caterpillar D-398 TA (diesel)  
Horsepower - 2331

PUMPS

Emsco, model D-1000, 8" X 18", 1000 HP  
National, 10P 130 triplex 1300 HP  
High volume - low pressure mud mixing system

DRILL STRING

12,000 - 4-1/2" O.D., 16.6#/ft, Gr. E, 4-1/2" XH by 6" O.D. tool joints  
Other grades of pipe available  
Standard size collars available through 8"

PREVENTERS

1 - Hydril, model GK, 10" 5000 psi  
1 - Cameron, model U-single, 1-Cameron, Model U-double, 11", 10,000 psi  
1 - Payne Accumulator, 80 gallon capacity with 5 stations

OTHER EQUIPMENT

Crown block - Ideco, model 1024-2,500 ton capacity  
Traveling block - Nationa, 450 ton capacity  
Hood - Nationa, 450 ton capacity  
Lightplants - 2, Capterpillar, 420 KW, 230/460 volts, A.C.  
Swivel - Bethlehem, B-24  
Mud tanks - three, 7' X 6' X 48'  
Lights - Snelson, vapor proof  
Desander - Thompson, 3 cone  
Rotary table - Ideco, 27½"  
Bunk house - 10' X 60', wheeled trailer  
Shale shaker - Link Belt, model NRM-145  
Radio - General Electric, 100 watt  
Crown-O-Matic