

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

30-015-23774

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. NM-036194
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME --
2. NAME OF OPERATOR HARLAN OIL COMPANY (Ph. 505-746-3692)			7. UNIT AGREEMENT NAME --
3. ADDRESS OF OPERATOR P. O. Box 668, Artesia, New Mexico 88210			8. FARM OR LEASE NAME WELCH-FEDERAL
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At surface 989' FNL & 1629' FWL of Sec. 22-19S-28E At proposed prod. zone same			9. WELL NO. 3
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 20 air miles southeast of Artesia, New Mexico			10. FIELD AND POOL, OR WILDCAT East Millman, Q-Gb.
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 330'			11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA 14-C SEC 22-19S-28E
16. NO. OF ACRES IN LEASE 80			12. COUNTY OR PARISH Eddy
17. NO. OF ACRES ASSIGNED TO THIS WELL 40			13. STATE N. M.
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 933'			19. PROPOSED DEPTH 2400' Grayburg
20. ROTARY OR CABLE TOOLS Rotary			21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3419 G. L.
22. APPROX. DATE WORK WILL START* 5-15-81 (Spud)			

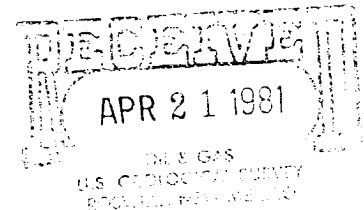
23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
11	8 5/8	23#	300'	Circulate cement to surface
7 7/8	4 1/2	9.5#	2400'	200 sacks

Well will be drilled to the Grayburg pay zone and all potential zones will be evaluated. If commercial production is indicated, well will be selectively perforated and stimulated.

Attached are:

1. Well Location and Acreage Dedication Plat
2. Ten-Point Supplemental Drilling Data
3. Surface Use Plan



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 <i>[Signature]</i> James A. Gillham (This space for Federal or State office use)		TITLE Agent	DATE April 17, 1981
PERMIT NO. <i>[Stamp: APR 27 1981]</i> <i>(Orig. 241) GEORGE H. STEWART</i>		APPROVAL DATE	
APPROVED BY FOR JAMES A. GILLHAM DISTRICT SUPERVISOR		TITLE	DATE

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.

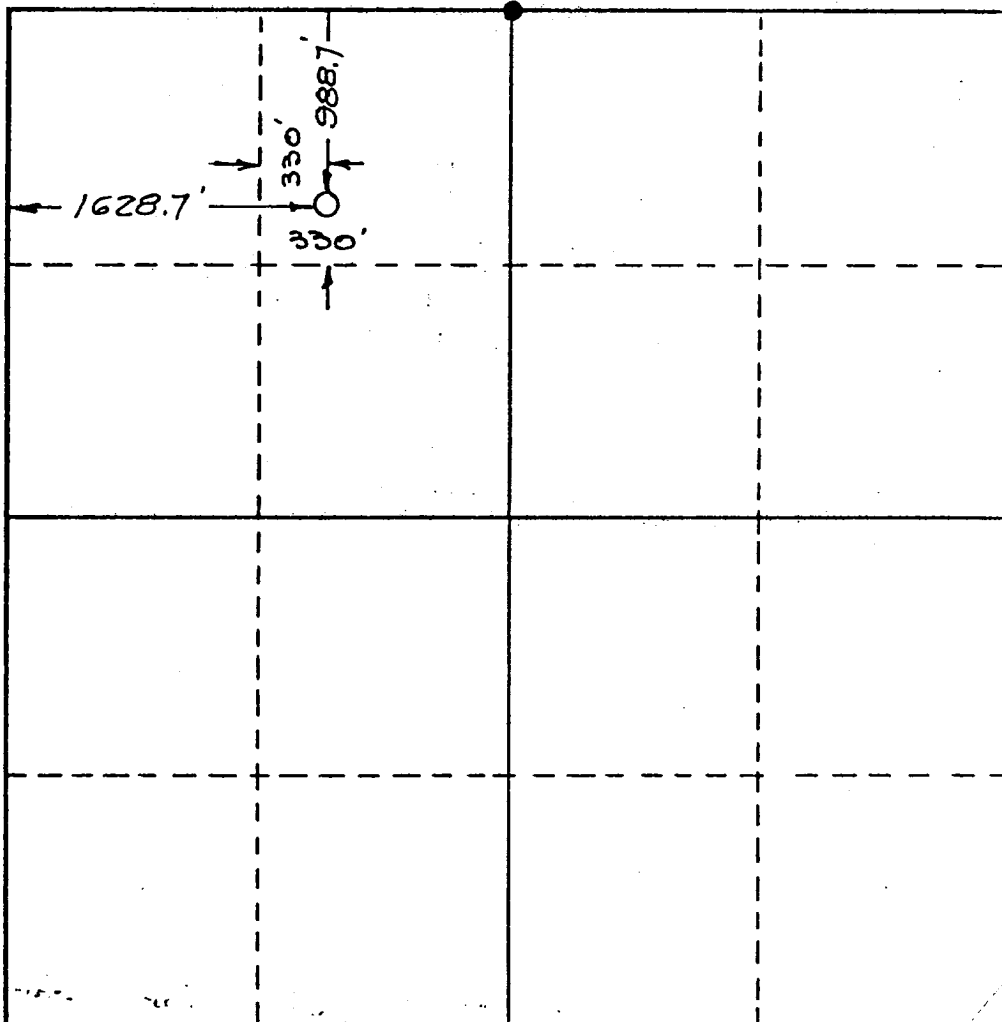
Operator HARLAN OIL COMPANY			Lease WELCH - FEDERAL		Well No. 3
Unit Letter C	Section 22	Township 19 South	Range 28 East	County EDDY	
Actual Footage Location of Well: 988.8 feet from the North line and 1628.7 feet from the West line					
Ground Level Elev. 3419	Producing Formation Queen, Grayburg		Pool East Millman		Dedicated Acreage: 40 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?

☐ 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

James A. Knauf

Position

Agent

Company

HARLAN OIL COMPANY

Date

April 17, 1981

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.

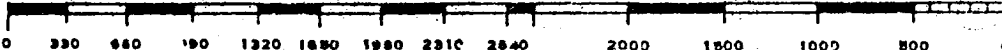
Date Surveyed

March 30, 1981

Registered Professional Engineer and/or Land Surveyor

Certificate No.

1559



SUPPLEMENTAL DRILLING DATA

HARLAN OIL COMPANY
WELL #3 WELCH-FEDERAL
989' FNL & 1629' FWL SEC 22-19S-28E

1. SURFACE FORMATION: Quaternary.

2. ESTIMATED TOPS OF GEOLOGIC MARKERS:

Salt	390'	Queen	1615'
Base Salt	545'	Grayburg	1935'
Seven Rivers	1080'	San Andres	2480'

3. ANTICIPATED POROSITY ZONES:

Water	Above 175'
Oil	1120'
Oil	1790'
Oil	2180'

4. CASING DESIGN:

<u>Size</u>	<u>Interval</u>	<u>Weight</u>	<u>Grade</u>	<u>Joint</u>	<u>Condition</u>
8 5/8"	0 - 300'	23 #	X-42	STC	New
4 1/2"	0 - 2400'	9.5#	K-55	STC	New

5. PRESSURE CONTROL EQUIPMENT: Double Ram-Type Preventer (600 Series).

6. CIRCULATING MEDIUM:

0 - 300' Fresh water mud with gel or lime as needed for viscosity control.

300 - 2400' Salt water mud, conditioned as necessary for control of viscosity and water loss. At 100' above TD, sweep hole with salt water gel, conditioning mud to 36 viscosity.

7. AUXILIARY EQUIPMENT: Drill string safety valve.

8. TESTING, LOGGING AND CORING PROGRAMS: No coring or DST's are planned. Electric logs will include a CNL-FDC w/GR.

9. ABNORMAL PRESSURES, TEMPERATURES OR HYDROGEN SULFIDE GAS: None anticipated.

10. ANTICIPATED STARTING DATE:

- A. Road and pad construction: May 11, 1981
- B. Spudding well: May 15, 1981
- C. Duration of drilling and completion operations should be 10 to 30 days.

SURFACE USE PLAN
FOR
DRILLING, COMPLETING AND PRODUCING

HARLAN OIL COMPANY
WELL #3 WELCH-FEDERAL
989' FNL & 1629' FWL SEC 22-19S-28E
EDDY COUNTY, NEW MEXICO

LOCATED: 20 air miles southeast of Artesia, N. M.

FEDERAL LEASE NUMBER: NM-036194

LEASE ISSUED: 9-1-58 for a primary term of 5 years and is
in its extended term by production.

RECORD LESSEE: Southland Royalty Company

OPERATOR'S AUTHORITY: Operating Agreement (Down to 3100') approved
by BLM.

BOND COVERAGE: Harlan's \$25,000 Statewide Bond

ACRES IN LEASE: 80

SURFACE OWNERSHIP: State of New Mexico

GRAZING PERMITTEE: Billy J. Evans
Route 5, Box 949, Midland, Texas 79701

POOL: East Millman-Queen, Grayburg (40-acre spacing)

EXHIBITS:

- A. Portion of Eddy County Road Map
- B. Portion of Oil City Topo Map
- C. Portion of USGS Lease Map #16
- D. Sketch of Well Pad
- E. State Land Restoration Requirements

ROAD LOG TO PROPOSED DRILLSITE

STARTING POINT is $9\frac{1}{2}$ miles east of Artesia, New Mexico on Federal Highway US-82 at Mile Post 117.25.

- 0.00 Turn right (south) at Amoco Plant Sign and proceed on paved county road in a southeasterly direction for a distance of 3.45 miles to a STOP sign.
- 3.45 Turn right (south) on a paved North-South county road and proceed in a southerly direction for a distance of 4.40 miles. (At mileage 4.42 road passes Phillips Plant. At mileage 7.53, road passes black top road to Loco Hills.)
- 7.85 Turn left (southeast) on a paved county road and proceed in a southeasterly direction for a distance of 3.10 miles to a fork in the road.
- 10.95 Take right fork (southeast) and proceed on paved county road in southeasterly direction for a distance of 1.43 miles to end of pavement.
- 12.38 Continue on unpaved county road for a distance of 0.46 miles.
- 12.84 Turn right (southwest) and proceed on lease road for a distance of 0.60 mile to Depco Water Plant.
- 13.44 Turn right (around south side of Well #167) and proceed on a lease road in a westerly direction for a distance of 0.48 miles to Harlan's #1 Welch Well.
- 13.92 Circle around north side of well and proceed in a southerly direction for a distance of 0.15 mile.
- 14.07 New Road starts at this point. Turn right (west) and proceed in a westerly direction for a distance of 0.08 mile to the east side of proposed well pad.
- 14.15 PROPOSED DRILLSITE (Well #3 Welch).

THIRTEEN POINT PROGRAM

1. EXISTING ROADS:

- A. Existing roads, which lead to the proposed drillsite, are shown on Exhibits "A" & "C".

2. PROPOSED NEW ACCESS ROAD:

- A. Dimensions: Proposed new road is shown on Exhibit "C" and will be 12' wide and 400' in length. It will originate at mileage 14.07 on the road log and will terminate at the east side of the proposed well pad. The center of the proposed new road has been staked and flagged.
- B. Surfacing Material: The new road will be surfaced with caliche.
- C. Maximum Grade: Less than one percent.
- D. Turnouts: None planned.
- E. Drainage Design: New road will be crowned with drainage to the side.
- F. Culverts: None required.
- G. Gates, Cattleguards: None required.

3. LOCATION OF EXISTING WELLS:

- A. Existing wells in the vicinity of the proposed drillsite are shown on Exhibit "C".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. New Mexico 036194 is a producing lease and Harlan has an existing tank battery about 650' northeast of the drillsite.
- B. If the well is productive, a flowline will be laid on top of the ground to the tank battery.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is not planned to drill a water supply well. Water for leasehold operations will be purchased from a commercial water hauler.

6. SOURCE OF CONSTRUCTION MATERIALS:

- A. Material for construction of the road and well pad will be obtained from a pit located on State land in the SW-NW 23-19S-28E.

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 the pits are dry.
- C. Water produced during tests will be disposed of in the drilling pits.
- D. Oil produced during tests will be produced into temporary test tanks.
- E. Trash, waste paper, garbage, and junk will be buried in a 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 the 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 each drilling and/or completion operation.

8. ANCILLARY FACILITIES:

- A. None anticipated.

9. WELLSITE LAYOUT:

- A. The wellsite has been surveyed and a 400' x 400' area has been staked and flagged.
- B. The dimensions and relative location of the drill pad, mud pit, and trash pit with respect to the well bore are shown on Exhibit "D".
- C. The well pad area slopes to the west. There will be about 12 inches of cut on the east side and about 18 inches of fill on the west side.
- D. The well pad will be surfaced with caliche.

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 the location cleaned of all trash and junk to leave the wellsite in as aesthetically pleasing condition as possible.

- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. After abandonment, all equipment, trash and junk will be removed and the location cleaned. Well pad and 400 feet of dead-end road will be ripped.

11. OTHER INFORMATION:

- A. Topography: Location is in an area of small sandy hummocks sloping to the west. Area slope is southeast toward Palmilla Draw.
- B. Soil: Loamy sands.
- C. Flora and Fauna: The vicinity surrounding the drillsite is semi-arid desert rangeland. Vegetative cover is sparse. Flora consists of mesquite, greasewood, javalina, and other desert plants with some grass. No wildlife was observed, but fauna for this type of habitat consists mostly of quail, dove, rabbits, rodents, coyotes, and skunks.
- D. Ponds and Streams: None.
- E. Residences and Other Structures: Nearest occupied dwelling is 3 miles to the northeast. Nearest water well is 2 miles to the south.
- F. Archaeological, Historical and Other Cultural Sites: An archaeological reconnaissance of the well pad and road areas was made by New Mexico Archaeological Services, Inc. on April 7, 1981 and no cultural properties were observed.
- G. Land Use: Grazing and occasional hunting.

12. OPERATOR'S REPRESENTATIVE:

Representative responsible for assuring compliance with the approved Surface Use Plan:

Mack Chase
P. O. Box 668
Artesia, New Mexico 88210
Office 505-746-3692
Home 505-746-4877

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 HARLAN OIL COMPANY and its sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

4-17-81

Date



James A. Knauf, Agent
HARLAN OIL COMPANY

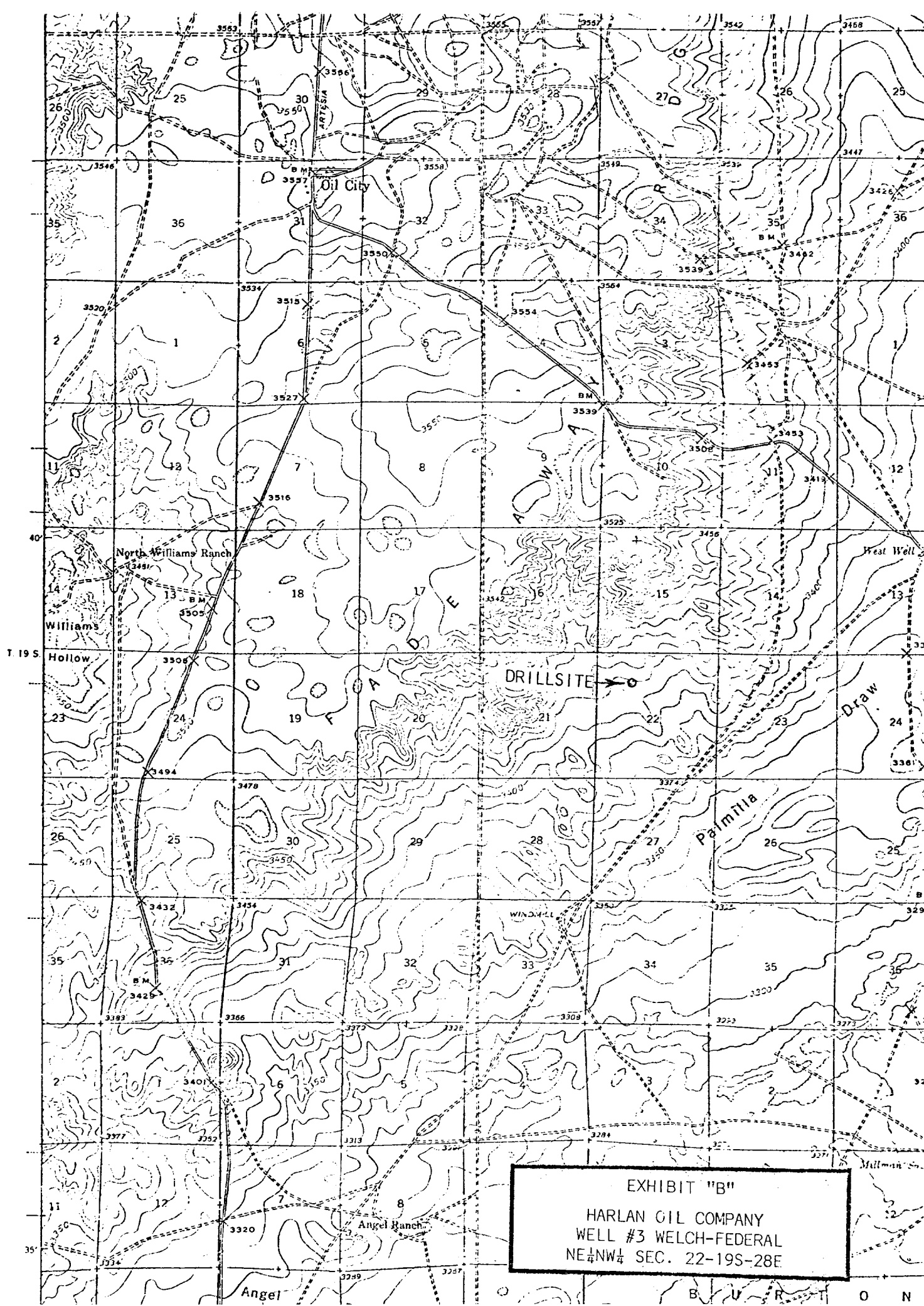
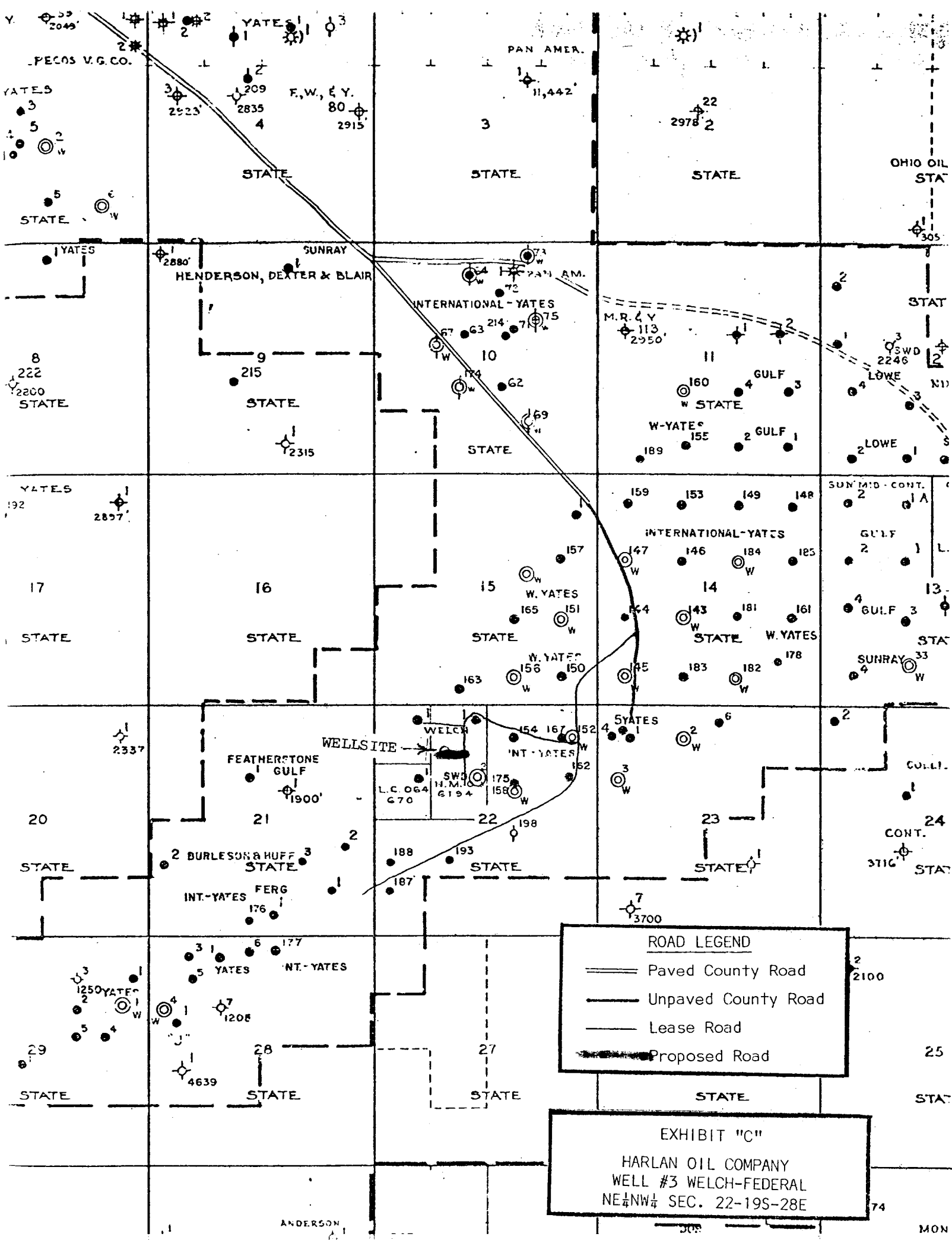


EXHIBIT "B"

HARLAN GIL COMPANY
WELL #3 WELCH-FEDERAL
NE 1/4 NW 1/4 SEC. 22-19S-28E



ROAD LEGEND

- == Paved County Road
- Unpaved County Road
- - - Lease Road
- ... Proposed Road

EXHIBIT "C"
HARLAN OIL COMPANY
WELL #3 WELCH-FEDERAL
NE $\frac{1}{4}$ NW $\frac{1}{4}$ SEC. 22-19S-28E

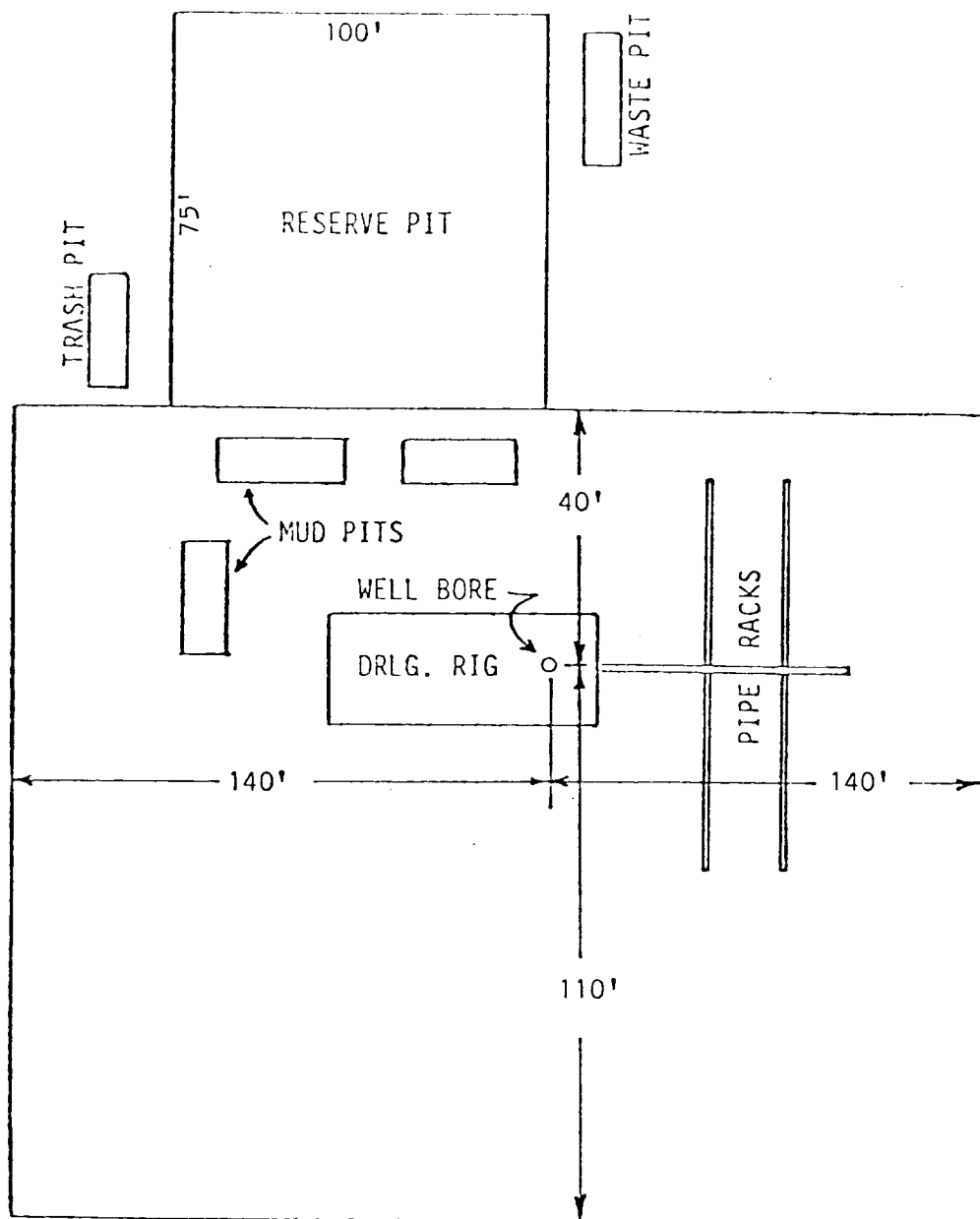


EXHIBIT "D"

HARLAN OIL COMPANY
WELL #3 WELCH-FEDERAL
NE $\frac{1}{4}$ NW $\frac{1}{4}$ SEC. 22-19S-28E

ARTHUR R. BROWN
101 E. Marland
Hobbs, New Mexico 88240
Office (505) 397-2767
Home (505) 392-5642

PETROLEUM
ENGINEERING & REGULATORY
SERVICES

1501 W. Missouri
Artesia, New Mexico 88210

JAMES A. KNAUF
1501 W. Missouri
Artesia, New Mexico 88210
Phone (505) 746-4138

April 17, 1981

District Oil & Gas Supervisor
U. S. Geological Survey
P. O. Drawer 1857
Roswell, New Mexico 88201

Re: Federal APD on Non-Federal Land

Dear Sir:

This refers to Harlan Oil Company's Application For Permit To Drill Well No. 3 Welch-Federal in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 22, T. 19 S., R. 28 E., Eddy County, New Mexico, under Federal oil and gas lease NM-036194.

The well location is on mineral reserve land which is owned by the State of New Mexico. Mr. Roy Renfroe with the New Mexico State Land Office at Carlsbad, New Mexico was contacted on April 16, 1981, concerning the drilling of this well.

Mr. Renfroe advised that they have no "special" restoration requirements for this area. General surface requirements for abandoning oil and gas wells on New Mexico rangeland is that the well pad and any dead-end roads be ripped and that all pits be filled.

Sincerely,



James A. Knauf, Agent
Harlan Oil Company

EXHIBIT "E"

HARLAN OIL COMPANY
WELL #3 WELCH-FEDERAL
NE $\frac{1}{4}$ NW $\frac{1}{4}$ SEC. 22-19S-28E