

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

b. TYPE OF WELL

OIL  
WELL ☒

GAS  
WELL ☐

OTHER

SINGLE  
ZONE ☒

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR

Bettis Brothers, Inc.

3. ADDRESS AND TELEPHONE NO.

500 West Texas, Suite 830, Midland, TX 79701

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

At surface

330' FSL & 330' FEL of Sec. 6.

At proposed prod. zone

Same

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

13 miles Northeast of Carlsbad, NM

15. DISTANCE FROM PROPOSED\*

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

330'

18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

700'

16. NO. OF ACRES IN LEASE

601.56

19. PROPOSED DEPTH

6900'

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

20. ROTARY OR CABLE TOOLS

Rotary

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

3414.3' GR

22. APPROX. DATE WORK WILL START\*

Following BLM approval

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17.5"	40/J-55 13.375"	48-61#	600'	450 sx CIRCULATE
12.25"	J-55 8.625"	24-32#	3000'	450 sx (tieback)
7.875"	J-55 5.5"	15.5-17#	6900'	650 sx (tieback)

Operator proposes to drill to the Delaware formation to test for possible commercial production of oil. If productive, a 5.5" string of casing will be set from surface to TD. If non-productive, the well will be plugged and abandoned in a manner consistent with Federal and State regulations and according to good engineering practice. Specific programs according to Onshore Oil & Gas Order #1 are outlined in the following attachments:

1. Well Location and Acreage Dedication Plat

2. Drilling Program

Exhibit #1 - Blowout Preventers (Also #1A)

3. Surface Use and Operating Plan

Exhibit #2 - Existing Roads

Exhibit #2A - Planned Access Roads

Exhibit #3 - One Mile Radius Map with Lease Boundary

Exhibit #3A - Well Status Within One Mile

Exhibit #4 - Drilling Rig Layout

Exhibit #5 - Production Facilities Layout

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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

*[Signature]*

TITLE

Agent

DATE

3/4/93

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
CONDITIONS OF APPROVAL, IF ANY:

(ORIG. SCD.) RICHARD L. MANIE

APPROVED BY

TITLE

DATE

4-15-93

\*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

OIL CONSERVATION DIVISION

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

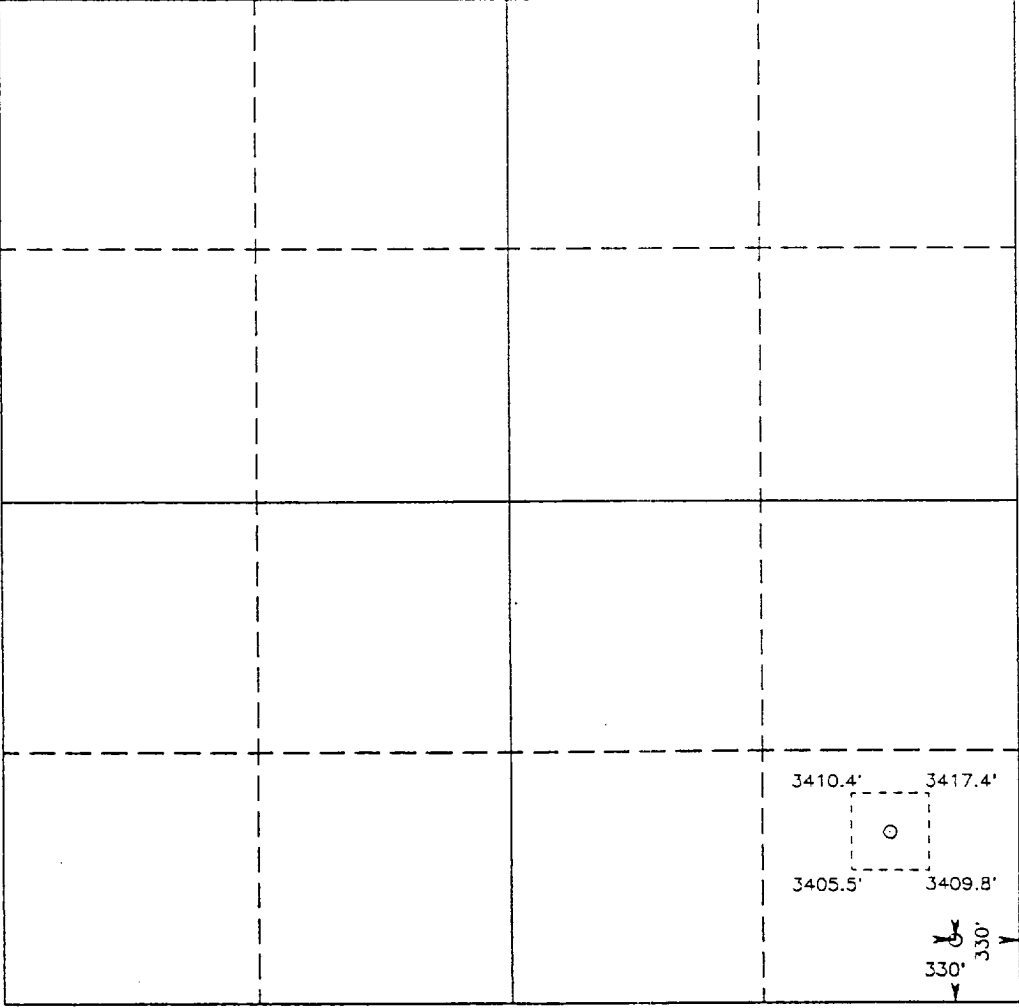
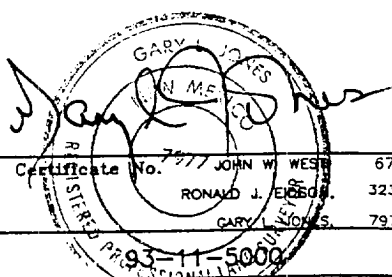
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator <b>BETTIS BROTHERS</b>		Lease <b>HARRIS FEDERAL 6</b>		Well No. <b>2</b>	
Unit Letter <b>P</b>	Section <b>6</b>	Township <b>21 SOUTH</b>	Range <b>29 EAST</b>	County <b>NMPM EDDY</b>	
Actual Footage Location of Well: <b>330</b> feet from the <b>SOUTH</b> line and <b>330</b> feet from the <b>EAST</b> line					
Ground Level Elev. <b>3414.3'</b>	Producing Formation <b>Delaware</b>		Pool <b>Golden Lane</b>		Dedicated Acreage: <b>40 Acres</b>
<p>1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.</p> <p>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).</p> <p>3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.? <input type="checkbox"/> Yes <input type="checkbox"/> No If answer is "yes" type of consolidation _____</p> <p>If answer is "no" list of owners and tract descriptions which have actually been consolidated. (Use reverse side of this form necessary. _____)</p> <p>No allowable will be assigned to the well unit all interests have been consolidated (by communitization, unitization, forced-pooling, otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.</p>					
				<b>OPERATOR CERTIFICATION</b>  I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.  Signature <i>G. Thane Akins</i> Printed Name <b>G. Thane Akins</b> Position <b>Agent</b> Company <b>Bettis Brothers, Inc.</b> Date <b>March 4, 1993</b>	
				<b>SURVEYOR CERTIFICATION</b>  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 <b>FEBRUARY 25, 1993</b>  Signature & Seal of Professional Surveyor  Certificate No. <b>7977</b> JOHN W. WEST 676 <b>RONALD J. ECKSTEDT</b> 3239 <b>GARY L. JONES</b> 7977	

## DRILLING PROGRAM

BETTIS BROTHERS  
HARRIS FEDERAL 6 WELL NO. 2

330' FSL & 330' FEL Sec. 6, T21S, R29E, Eddy County, NM

The following information is filed in accordance with New Mexico Oil Conservation Rules and Regulations:

1. SURFACE FORMATION: Quaternary
2. ESTIMATED TOPS OF GEOLOGIC MARKERS:

Rustler	280'	Capitan Reef	1930'
Anhydrite	830'	Delaware	3750'
Yates	1794'		
3. ESTIMATED DEPTH TO FRESH WATER:  
Possible fresh water 100'-300'.

### ANTICIPATED POSSIBLE HYDROCARBON BEARING ZONES:

Delaware (below 2700') Oil

No other formations are anticipated to give up commercial quantities of hydrocarbons.

The fresh water sands will be protected by setting 13 3/8" casing at 600' and circulating cement back to surface. A 8 5/8" intermediate string will be run to 3000' and cemented back to surface. A 5 1/2" production string will be run to 6900' and cemented in two stages to circulate back to the surface.

### 4. PROPOSED CASING AND CEMENTING PROGRAM:

#### Casing:

<u>Hole Size</u>	<u>Interval</u>	<u>Casing OD</u>	<u>Weight, Grade, Joint, Condition</u>
17.5"	0-600'	13.375"	48-61#, H-40/J-55, ST&C New
12.25"	0-3000'	8.625"	24-32#, J-55, ST&C, New
7.875"	0-6900'	5.5"	15.5 -17#, J-55, LT&C, New

#### Cement:

13 3/8" Surface:	Cemented with 450 sacks of Premium Plus cement with 2% CaCl <sub>2</sub> to circulate.
8 5/8" Intermediate:	Cemented with 450 sacks of Premium Plus cement with 2% CaCl <sub>2</sub> to circulate.
5 1/2" Production Casing:	Cement with 400 sacks of Howco Lite cement, 2.4# salt/sk, 2 % CaCl, 8# Silicalite/sk, in first stage with DV tool set at 4200' circulate to surface; cement with 250 sacks of Class C with 6# salt/sk & 6% gel, 2% CaCl.

### 5. PRESSURE CONTROL EQUIPMENT:

Blowout prevention equipment, while drilling below surface casing will be a 1500 psi working pressure BOP stack. The BOP sketches are shown as Exhibit 1 & 1A.

6. CIRCULATING MEDIUM:

Surface to 600' : Fresh water spud mud - Viscosity 30 to 36 as required for hole cleaning.  
600' to 3000' : 10# brine system circulating reserve pit. Weight 9.5-10#, pH 9-10, viscosity 30-36, with mud sweeps as required.  
3000' to TD : Brine, wt 9.1-10#, LCM and mud sweeps as needed. Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- A. An upper kelly cock will be used.
- B. The drilling fluids system will be visually monitored at all times.
- C. A mud-logging unit will monitor drilling penetration rate and hydrocarbon shows from 2800'.

8. TESTING, LOGGING, AND CORING PROGRAMS:

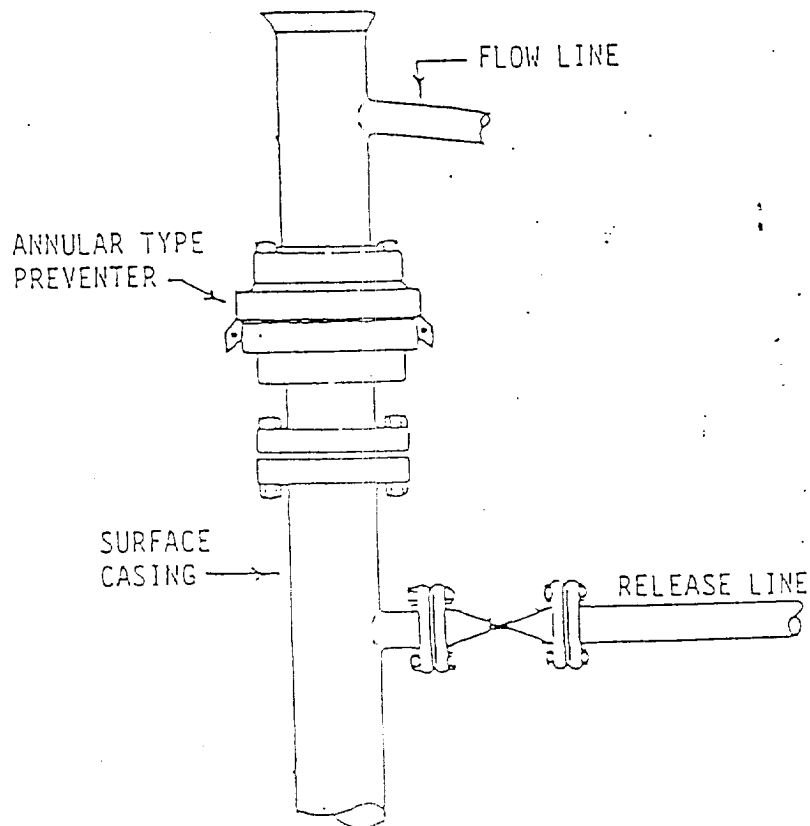
- A. Two drill stem tests are planned in the Delaware.
- B. Compensated Neutron/LDT Log - GR and Dual Laterolog w/ MSFL. The Gamma Ray log will be continued back to surface.
- C. Mud-logging unit will be used below 2800'.
- D. Other testing procedures may be used after the production casing has been set depending on shows and other testing indicators.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES, & POTENTIAL HAZARDS:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature (BHT) at TD is 140 F and the estimated maximum bottom hole pressure (BHP) is about 3000 psi. No hydrogen sulphide (H<sub>2</sub>S) or other hazardous fluids are known to exist at this depth and area. No lost circulation zones are anticipated.

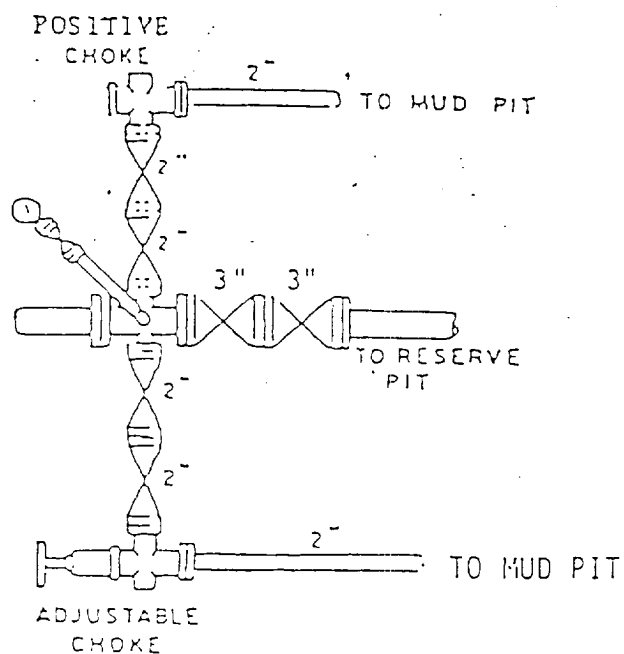
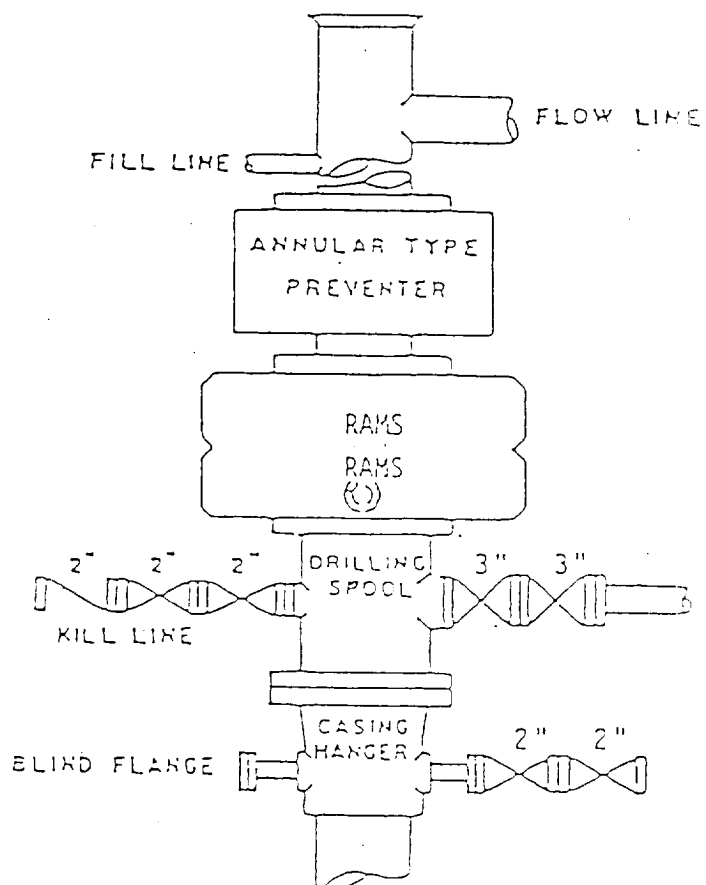
10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

It is planned that operations will commence shortly after approval of this application, with drilling and completion operations lasting about 30 days. A decision as to design and installation of permanent facilities will be made after adequate testing of the well.



1500 PSI WORKING PRESSURE

IN USE WHILE DRILLING BELOW  
SURFACE CASING



# BOP STACK

3000 PSI WORKING PRESSURE

IN USE WHILE DRILLING BELOW  
8-5/8" CASING SEAT

Exhibit No. 1A  
BOP ARRANGEMENT

BETTIS BROTHERS HARRIS FED. 6 #2

SURFACE USE AND OPERATIONS PLAN  
FOR  
BETTIS BROTHERS  
HARRIS FEDERAL 6 WELL NO. 2  
330' FSL & 330' FEL SEC. 6, T.21 S., R.29 E.  
EDDY COUNTY, NEW MEXICO

LOCATED: 12 miles northeast of Carlsbad, NM

FEDERAL LEASE NUMBER: NM 029588

ACRES IN LEASE: 601.56

TERM: two years from 7/1/91

LESSEE: Bettis Brothers, Inc.

SURFACE OWNERSHIP: Cliff Key  
P.O. Box 355  
Lovington, NM 88260  
(505) 398-64574

GRAZING PERMITTEE: Same

POOL: Golden Lane

POOL RULES: Statewide Rules - 40-acre spacing for oil

EXHIBITS: 2. Existing roads  
2A. Planned access roads  
3. One-Mile Radius Map showing lease boundary and wells  
3A. Well Status  
4. Drilling Rig Layout  
5. Production Facilities Layout

Page 2 - Surface Use and Operating Plan  
Bettis Brothers Harris Federal 6 No. 2

1. EXISTING ROADS:

- A. Exhibit No. 2 is a portion of a road map showing the location of the proposed well as staked.
- B. Exhibit No. 2A is a topo map showing existing pertinent roads in the vicinity of the proposed well site.

2. PLANNED ACCESS ROAD:

- A. Length and Width: The lease road to be constructed will be about 3000' long and about 12' wide.
- B. Surfacing Material: Caliche, watered, compacted and graded.
- C. Maximum Grade: Less than three per cent (3%).
- D. Turnouts: None necessary.
- E. Drainage Design: Any new road will be crowned with drainage to the side.
- F. Culverts: None needed.
- G. Cuts and Fills: Very little necessary.
- H. Gates and Cattleguards: None will be necessary.
- I. Portions of the existing access roads to the proposed wellsite will be used in their present state. Off-lease access approval will be executed under the Harris Federal 6 No. 1 location.

3. LOCATION OF EXISTING WELLS:

- A. Existing wells within a one-mile radius are shown on Exhibit No. 3. There are no disposal, injection, and/or observation wells.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. Necessary production facilities for this proposed well will be located on the well pad. A layout of the production facilities is shown in Exhibit No. 5.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is not planned that a water supply well will be drilled. Water necessary for drilling operations will be purchased and trucked from commercial water stations to the well site, or will be moved to the well site by temporary pipeline laid on the ground alongside existing and proposed roads.

6. SOURCE OF CONSTRUCTION MATERIALS:

- A. Caliche needed for construction work will be taken, if present, from a pit opened on-site within the 400' X 450' work area.



7. METHODS OF HANDLING WASTE MATERIAL:

- 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. After the well is permanently placed on production, produced water will be collected in fiberglass or steel tanks until hauled by transport to an approved disposal system.
- D. Oil produced during tests will be stored in test tanks until sold.
- E. Trash, waste paper, garbage and junk will be stored in a covered, above-ground container. All waste material will be contained to prevent scattering by the wind. Location of the trash container is shown on Exhibit No. 4. No toxic waste or hazardous chemicals will be produced by this operation. The container will be emptied when full and taken to an authorized disposal facility.
- F. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations. No adverse materials will be left on location. The unused portion of the well site will be leveled and restored to BLM specifications. Only that part of the pad required for production facilities will be kept in use. In the event of a dry hole, only a dry hole marker will remain.
- G. If required, a portable, chemical toilet will be provided on the location for human waste during the drilling and completion operations.

8. ANCILLARY FACILITIES:

- A. No airstrip, campsite, or other facilities will be built as a result of the operations of this well.

9. WELL SITE LAYOUT:

- A. Exhibit No. 4 shows the relative location and dimensions of the well pad, mud pits, reserve pit, and the location and orientation of major drilling rig components. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling and completion operations.
- B. Clearing and levelling of the well site will be required. Top soil, if available, will be stockpiled per BLM specifications as determined at the on-site inspection. No major cuts will be required.
- C. The pad and pit area are 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 from the well site. The location will also be levelled and cleaned of all trash and junk to leave the well site in an as aesthetically pleasing condition as possible. Any part of the pad not needed for production facilities will have the top soil re-placed and reseeded.
- B. Unguarded pits containing fluids, if any, will be fenced.
- C. After abandonment, all equipment, trash, and junk will be removed and the well site will be cleaned. Any special rehabilitation requirements of the surface management agency will be complied with and accomplished as rapidly as possible.

11. OTHER INFORMATION:

- A. Topography - The land surface in the area is fairly level. In the immediate area of the well site, land slope is medium up to the north.
- B. Soil - Top soil at the well site is a very sandy with some dune development to the north.
- C. Flora and Fauna - The vegetation cover is medium and includes shinners oak, sand sage, plains yucca, various weeds, and range grasses. Wildlife in the area is that typical of semi-arid desert land and includes coyotes, rabbits, rodents, reptiles, dove and quail.
- D. Ponds and Streams - No lakes, ponds, or streams are in the area.
- E. Residences and other Structures - There are no occupied dwellings or other structures, other than oil field related equipment, within a mile of the proposed well site.
- F. Archaeological, Historical, and Cultural Sites - None observed. However, an archaeological reconnaissance will be done and a report furnished.
- G. Land Use - Oil and gas production, grazing and wildlife habitat.
- H. Surface Ownership - Federal with a grazing lease.

12. OPERATOR'S REPRESENTATIVE:


James F. O'Briant  
O'Briant Engineering  
P.O. Box 10487  
Midland, TX 79702  
Telephone: (915) 683-5511

13. CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently 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 Bettis Brothers, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date: \_\_\_\_\_

3/1/93

  
\_\_\_\_\_  
G. Thane Akins, P.E.  
Agent for Bettis Brothers, Inc.

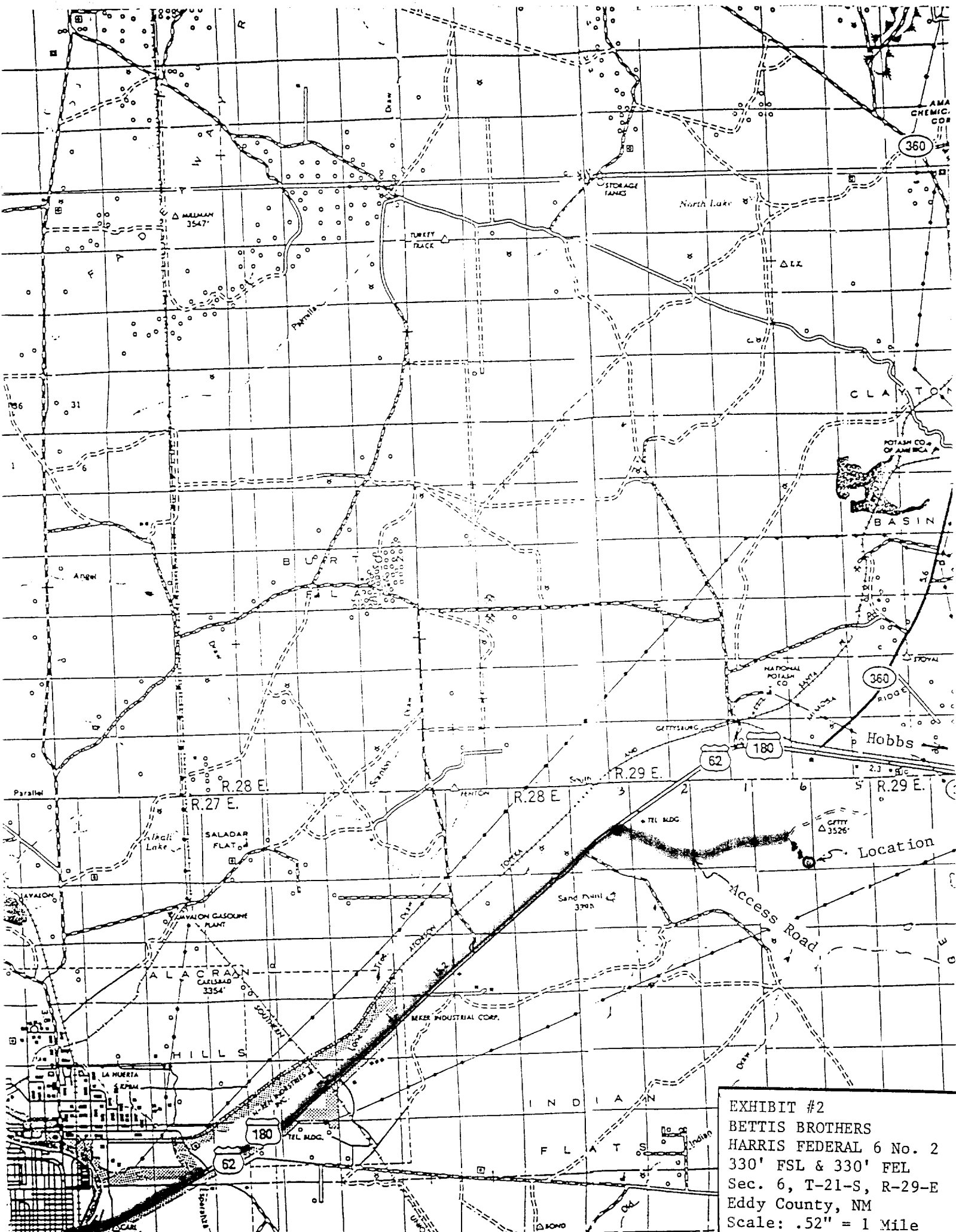


EXHIBIT #2  
 BETTIS BROTHERS  
 HARRIS FEDERAL 6 No. 2  
 330' FSL & 330' FEL  
 Sec. 6, T-21-S, R-29-E  
 Eddy County, NM  
 Scale: .52" = 1 Mile

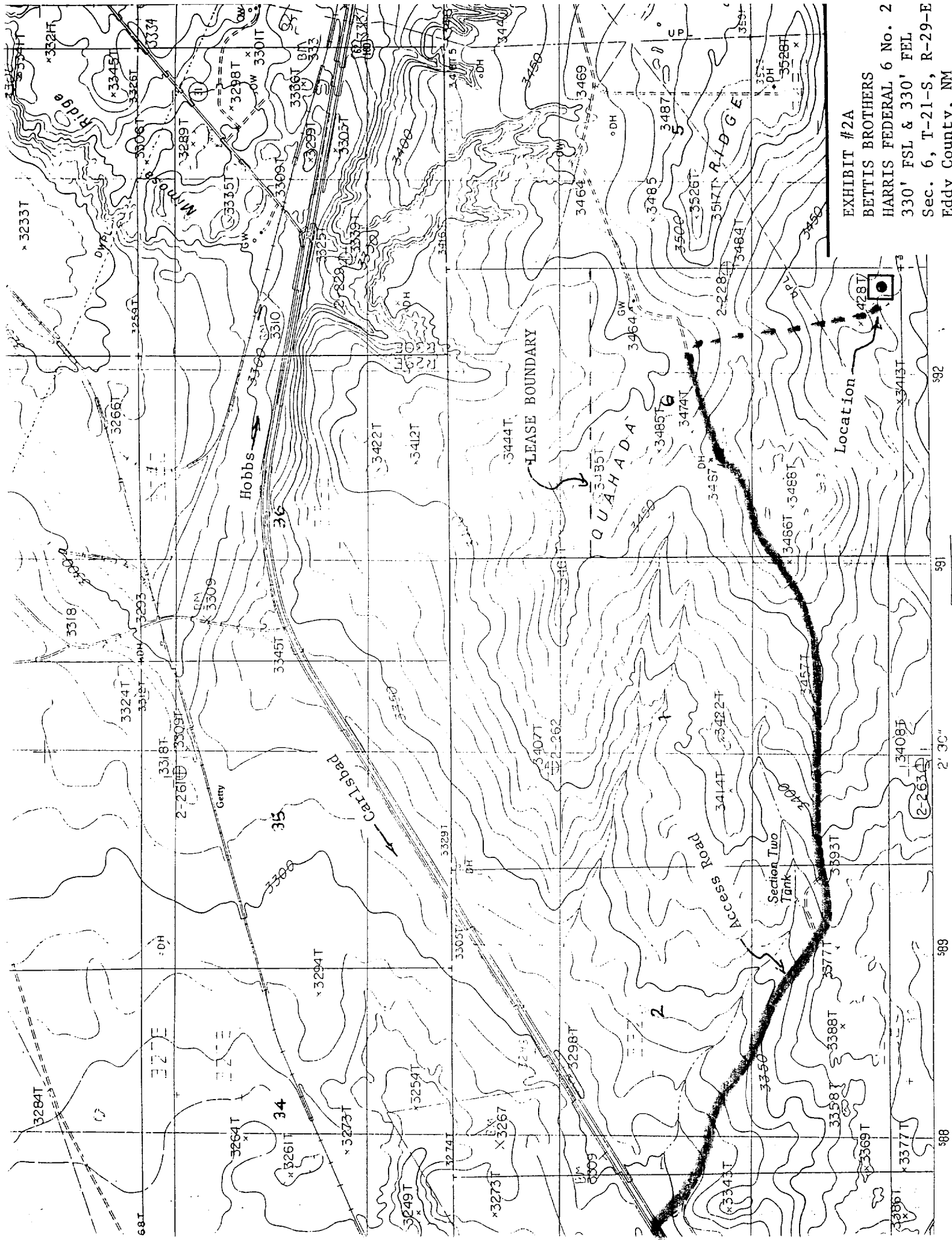


EXHIBIT #2A  
BETTIS BROTHERS  
HARRIS FEDERAL 6 No. 2  
330' FSL & 330' FEL  
Sec. 6, T-21-S, R-29-E  
Eddy County, NM  
Scale: 1" = 2000'

SCALE 1:24,000

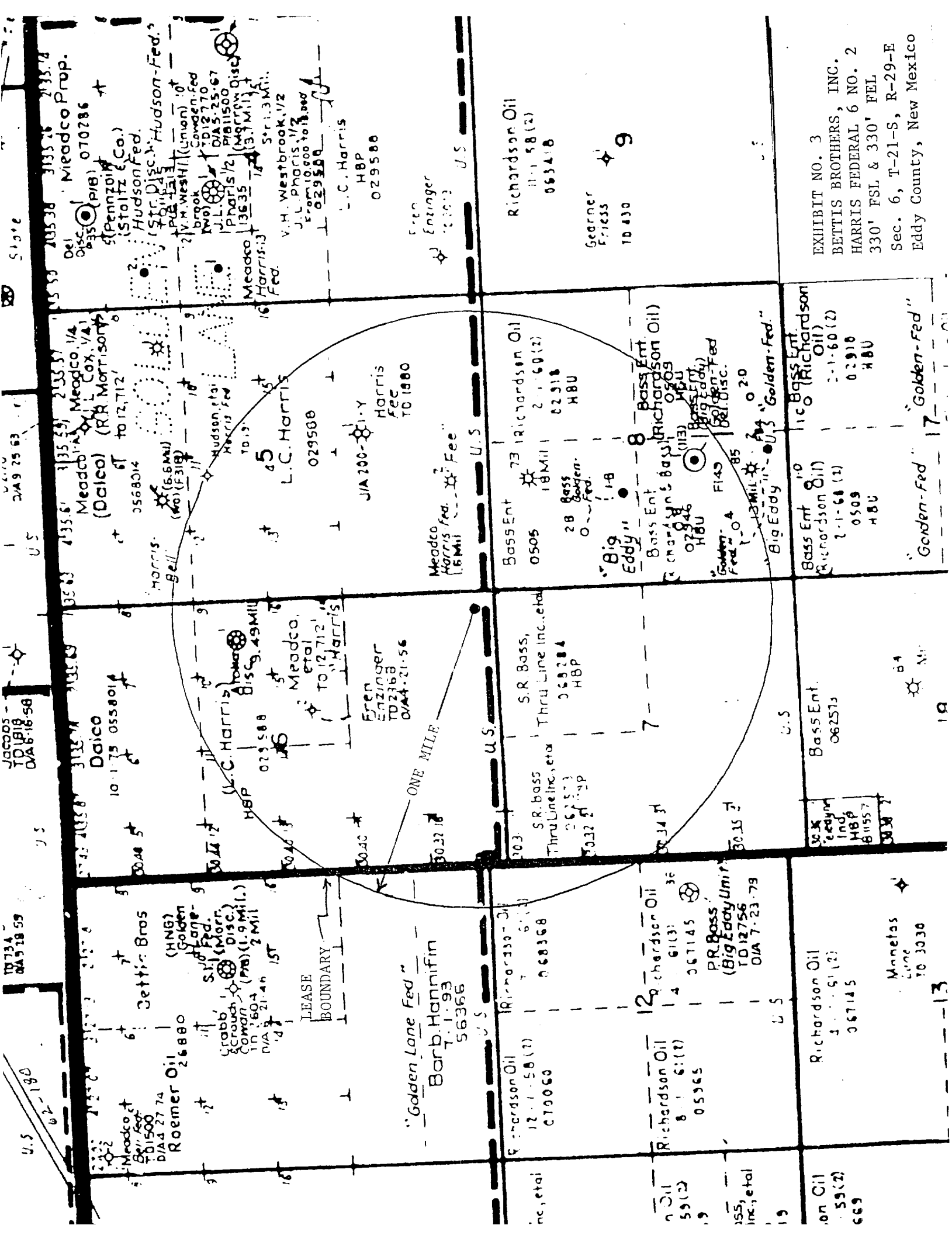
589

2' 30"

591

592

INTERIOR-1



# EXHIBIT NO. 3A

## STATUS OF WELLS WITHIN ONE-MILE RADIUS Bettis Brothers Harris Federal 6 No. 2 Well Sec. 6, T21S, R29E, Eddy County, NM

### T21S, R29E

#### Sec. 5

Meadco Harris Fed. #2	660' FS & 1980' FW	12796' TD Morrow Producer
Hudson Fed. Harris #1	4950' FS & 2310' FW	1911' TD Dry Hole D&A 5/57
L.C. Harris Harris #1-Y	2233' FS & 2310' FE	1860' TD Dry Hole D&A 3/71
" " #1	2310' FS & 2310' FE	200' J&A 3/71

#### Sec. 6

Meadco Harris 6 #1	3147' FN & 660' FE,	12712' TD Atoka Disc.
Fern Enzinger Fed. #2	3300' FS & 3300' FW,	2368' TD Dry Hole, D&A 4/56

#### Sec. 8

Bass Big Eddy Unit #73	660' FN & 1980' FW	12825' TD Morrow Gas
" " " " #113	1650' FS & 2180' FW	6800' TD Delaware Oil
" Golden 8 Fed. #1	2310' FN & 1650' FW	4510' TD " "

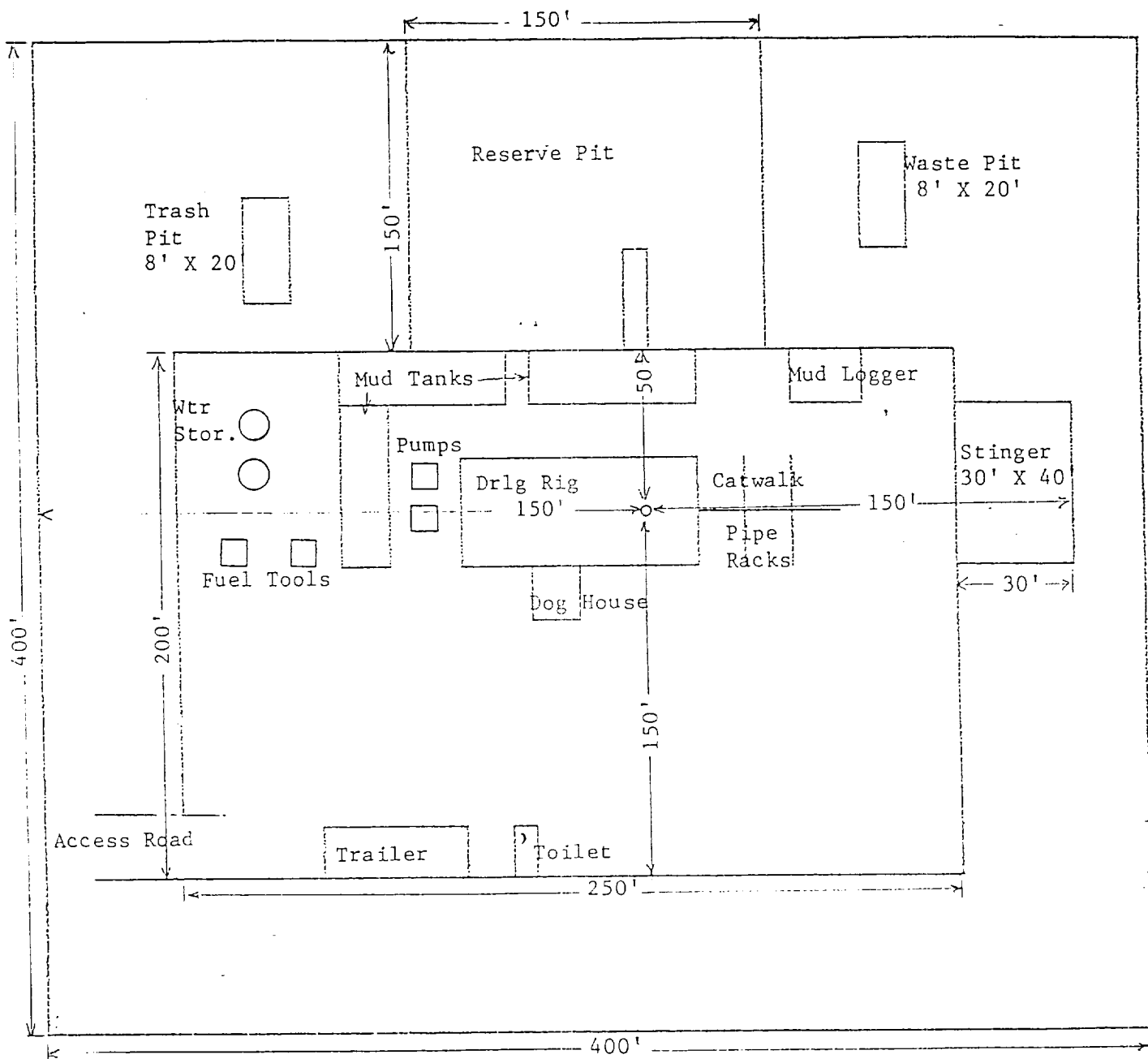


EXHIBIT NO. 4

# DRILLING RIG LAYOUT

BETTIS BROTHERS, INC. HARRIS FEDERAL 6 NO. 2

Eddy County, New Mexico

Scale: None



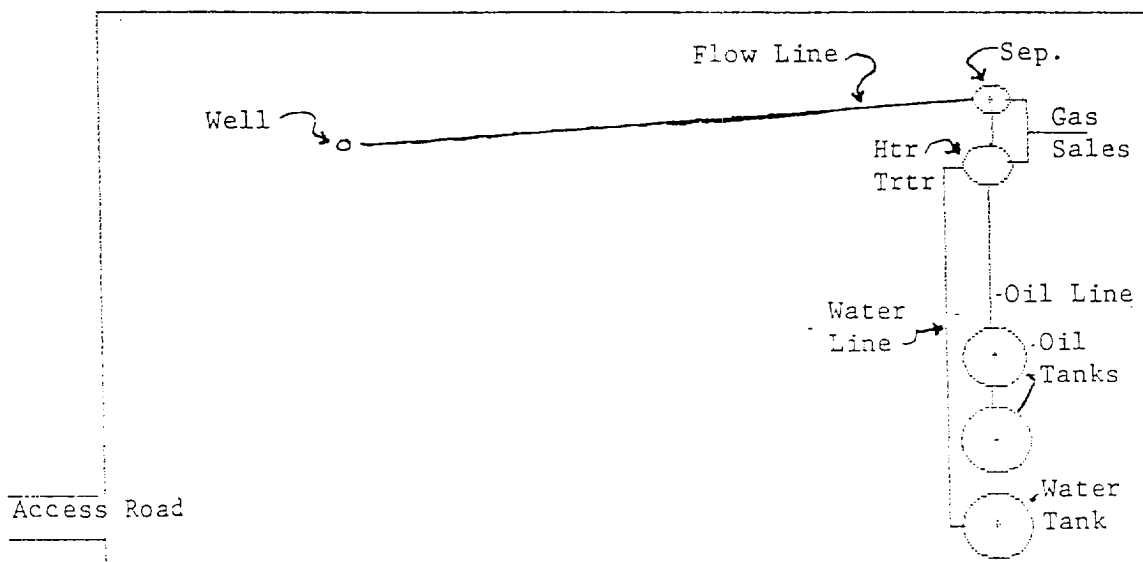


EXHIBIT NO. 5

PRODUCTION FACILITIES LAYOUT

BETTIS BROTHERS, INC. HARRIS FEDERAL 6 NO. 2

EDDY COUNTY, NEW MEXICO

Scale: None