

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

SINGLE
ZONE ☐MULTIPLE
ZONE ☒

2. NAME OF OPERATOR

Marathon Oil Company

3. ADDRESS OF OPERATOR

P.O. Box 2659, Casper, Wyoming 82502

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

At surface

825' FNL & 955' FEL, Unit A

At proposed prod. zone

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

Approximately 10 miles southeast of Counselor, New Mexico

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.

(Also to nearest drlg. unit line, if any)

825'

18. DISTANCE FROM PROPOSED LOCATION*

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

2,800'

16. NO. OF ACRES IN LEASE

640

19. PROPOSED DEPTH

7400 feet

17. NO. OF ACRES ASSIGNED
TO THIS WELL

320

20. ROTARY OR CABLE TOOLS

Rotary

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

6,650' GL

22. APPROX. DATE WORK WILL START*

August 15, 1980

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
Please see Item #4 of 10 Point Program for Complete Casing & Cementing Program				

Please see the following attachments:

1. Surveyor's Plat
2. Ten-Point Drilling Program
3. BOP Schematic
4. Thirteen-Point Surface Plan
5. Maps & Diagrams



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

TITLE District Operations Manager

DATE 6/16/80

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
AS AMENDEDJUL 1 1980
JAMES F. SIMS
DISTRICT ENGINEER

*See Instructions On Reverse Side

NMOCC

KAT

ok Frank
talked to Sims about
cement or loss of circulation

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088
SANTA FE, NEW MEXICO 87501Form C-107
Revised 10-1-78

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

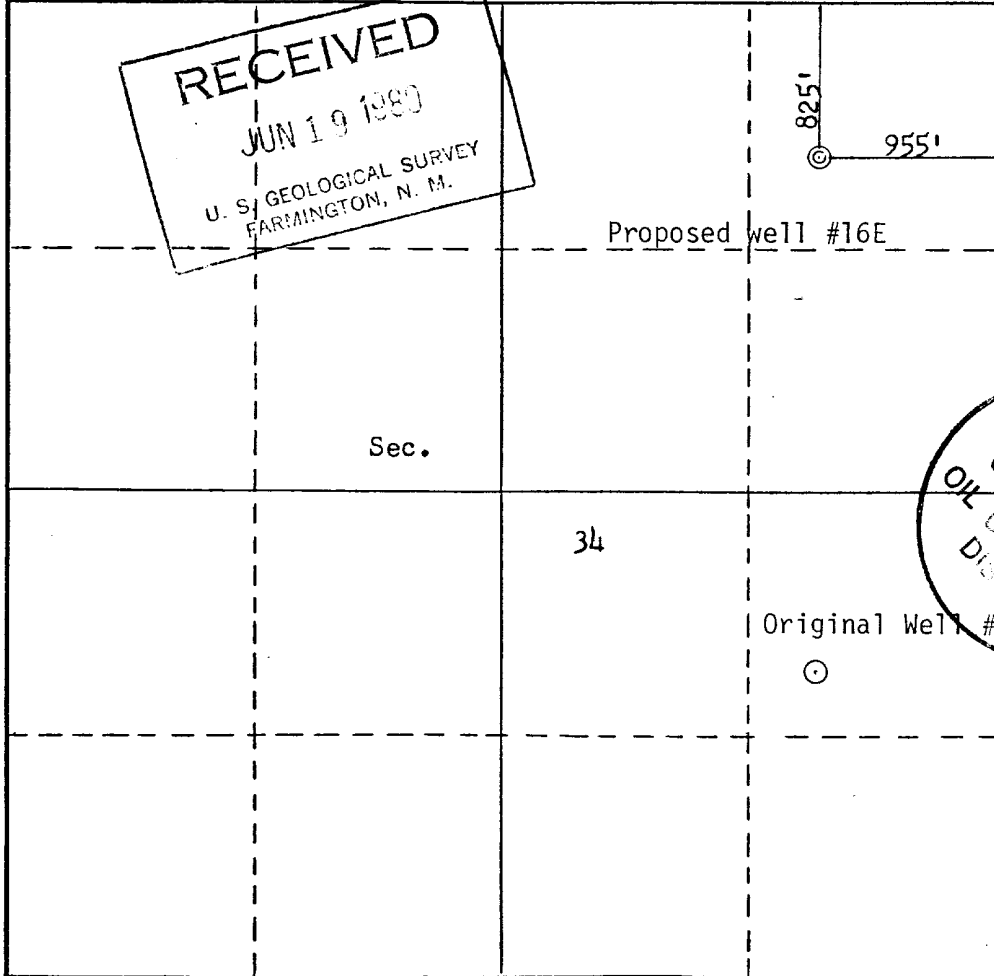
Operator MARATHON OIL COMPANY			Lease JICARILLA APACHE		Well No. 16-E
Unit Letter A	Section 34	Township 26N	Range 5W	County Rio Arriba	
Actual Footage Location of Well: 825 feet from the North line and 955 feet from the East line					
Ground Level Elev. 6650	Producing Formation Dakota		Pool Basin Dakota		Dedicated Acreage: 320 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 N/A

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.

<div data-bbox="178 946 592 1244">RECEIVED JUN 19 1980 U. S. GEOLOGICAL SURVEY FARMINGTON, N. M.</div> <div data-bbox="64 968 1055 1947"></div>	<div data-bbox="1218 968 1396 1000">CERTIFICATION</div> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <div data-bbox="1088 1181 1526 1436"><p>Name Dale T. Caddy</p><p>Position District Operations Manager</p><p>Company Marathon Oil Company</p><p>Date April 11, 1980</p></div> <p>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.</p> <div data-bbox="1088 1755 1526 2000"><p>Date Surveyed March 20, 1980</p><p>Registered Professional Engineer and/or Land Surveyor Fred B. Kerr Jr.</p><p>Certificate No. 39500 B. KERR, JR.</p></div>
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MARATHON OIL COMPANY
DRILLING OPERATIONS PLAN

DATE: June 13, 1980

WELL NAME: Jicarilla Apache #16E

LOCATION: 825' FNL & 955' FEL, Sec. 34, T26N, R5W, Rio Arriba County, New Mexico

1. Geologic name of the surface formation:

Tertiary Undifferentiated

2. Estimated tops of important geological markers:

<u>Formation</u>	<u>*Depth</u>	<u>Datum</u>	<u>Formation</u>	<u>*Depth</u>	<u>Datum</u>
Undifferentiated	Surface		Niobrara	6,382'	+ 258'
Kirtland	2,647'	+3,993'	Basal Niobrara	6,598'	+ 42'
Fruitland	2,833'	+3,807'	Sanastee	6,840'	- 200'
Pictured Cliffs	3,005'	+3,635'	Greenhorn	7,139'	- 499'
Chacra	3,928'	+2,172'	Graneros	7,210'	- 570'
Cliffhouse	4,742'	+1,895'	Dakota	7,310'	- 670'
Mancos	5,430'	+1,210'	T.D.	7,500'	- 860'

* Estimated from K.B. of 6,640'.

3. Estimated depths at which oil, water, gas or other mineral bearing formations are expected to be encountered:

<u>Formation</u>	<u>Depth</u>	<u>Datum</u>	<u>Content</u>
Pictured Cliffs	3,005'	+3,635'	Gas
Chacra	3,928'	+2,712'	Gas
Dakota	7,310'	- 670'	Gas; Primary Objective

4. The Proposed Casing Program:

Casing Design

CASING STRING	HOLE SIZE	INTERVAL	SECTION LENGTH	SIZE (OD)	WEIGHT, GRADE AND JOINT	NEW OR USED	MUD WEIGHT	TENSION LOAD	SF _t	SF _c	SF _b
Conductor	22"	0'-40'	40'	18"	Open	New	NA	NA	NA	NA	NA
Surface	12-1/4"	0'-500'	500'	9-5/8"	36#, K-55	New	8.5-9.0	18,000	23.500	8.178	1.880
Intermediate	8-3/4"	0'-4,950'	3,750'	7"	20#, K-55	New	8.5-9.2	103,000	2.476	1.500	1.709
			1,200'	7"	23#, K-55	New		28,000	1.394	11.196	4.894
Production *	6-1/8"	0'-7,500'	3,100'	4-1/2"	11.6#, K-55	New	Air	82,000	2.069	2.992	1.274
			4,400		10.5#, K-55	New		46,000	3.1602	1.146	1.252

*Note: If the Chacra is found to be productive, a 4-1/2", K-55, 10.5# ST&C liner will be run from 4,750' to 7,500' (200' overlap), and a dual completion of the Chacra and Dakota will be made.

Cement Program:

Surface Casing:

265 sx of Class "B" w/2% CaCl₂. Cement top at surface using 100% excess.
Centralizers: 3
WOC: 12 hours

Intermediate Casing:

190 sx Light cement (Halliburton Light or equivalent) w/2% CaCl₂ followed by 100 sx Class "B" with 2% CaCl₂. Cement top at 2,500' to cover Fruitland, using 20% excess based on calipered hole.
Centralizers: 10
WOC: 12 hours

Production Casing:

90 sx 50-50 Poz-mix w/6% gel, .8% fluid loss reducer (Halliburton Halad-9 or equivalent) and 2#/sack walnut shells (Halliburton Tuf-Plug or equivalent) followed by 100 sx neat Class "B". A sufficient volume of 2% KCl water will be pumped ahead of the slurry to fill the annulus to surface. Cement top 1,000' above Dakota using 20% excess based on calipered hole.
Centralizers: 20
WOC: 12 hours

5. Pressure Control Equipment:

BOP equipment will include a double ram type preventer equipped with pipe and blind rams and a rotating head (API arrangement SRdG). All equipment will have 3,000 psi working pressure or greater. Rams, valves, lines, and choke manifold will be tested to 750 psi before drilling out from under surface casing. Surface casing will be tested to 750 psi before drilling out. After drilling casing shoe and drilling an additional 5' of hole, a leakoff test will be run. After running the 7" intermediate casing, all BOP equipment and casing will be tested to 2,200 psi. After drilling the casing shoe and making 5' of hole, a leakoff test will be run. The accumulator will be of sufficient size to open and close all components of the BOP system. Daily checks of the equipment will be made and the rams will be operated on trips.

6. Drilling Mud Program:

<u>From</u>	<u>To</u>	<u>Type Mud</u>	<u>Weight</u>	<u>% Oil</u>	<u>Water Loss</u>
0'	500'	Native	8.5-9.0	0	No Control
500'	4,950'	Gel	8.5-9.2	0	No Control
4,950'	7,300'	Air	---	---	---

7. Auxillary Equipment Required:

A drilling rate recorder calibrated to record each foot of hole drilled will be available.

A single shot drift indicator will be used

Mud equipment will include a shale shaker, desander, desilter, gas buster, and/or degasser.

<u>From</u>	<u>To</u>	<u>Maximum Distance Between Surveys</u>	<u>Maximum Deviation From Vertical</u>	<u>Maximum Change Per 100' of Depth</u>
0	500'	100'	1°	1°
500'	7,500'	500'	5°	1°

8. Testing, Logging, Coring, and Fracing Program:

Intermediate Casing:

DIL, CAL, CNL & FDC logs will be run from 4,950' to surface casing shoe.

GR log will be run from 4,950' to top of surface casing.

Production Casing:

DIL, GR, FDC, CAL, SNP will be run from 7,500' to intermediate casing shoe.

Samples will be taken every 30' from 500' to T.D.

No DST's or cores are planned.

8. Testing, Logging, Coring and Fracing Program (cont'd):

Fracing Program:

After the casing is run and cemented, the zones of interest will be perforated. If stimulation is necessary, the well will be fraced with gelled water and sand. Fracing with volatile liquids is not planned.

See Diagram "E"

9. Abnormal Conditions:

No abnormal pressures or temperatures are anticipated.

10. Anticipated starting date and duration:

Starting Date: August 15, 1980

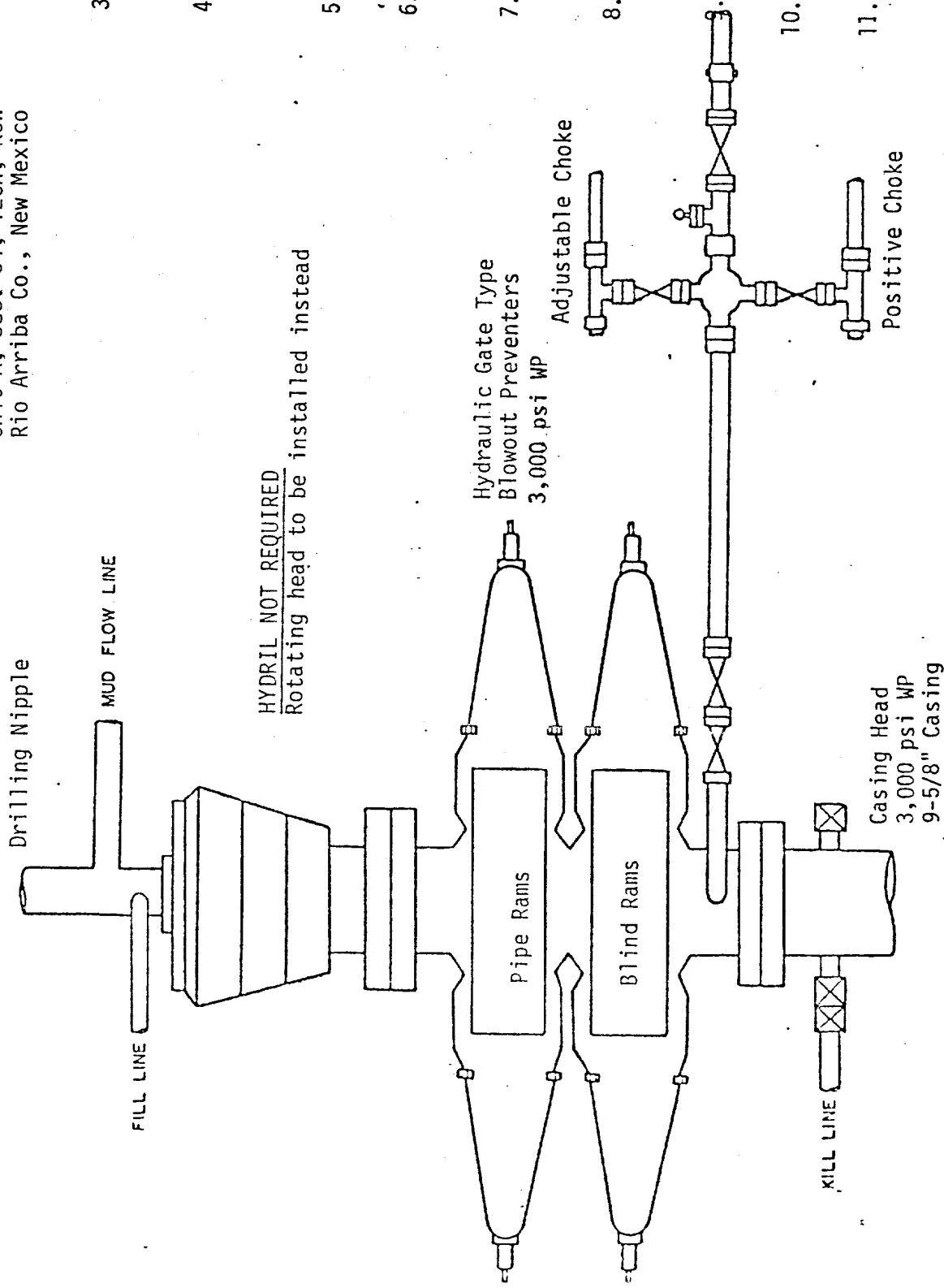
Duration: 9 days

Name W.A. Thomas

Title Drilling Sup't.

Date 6/16/80

Marathon Oil Company
 Jicarilla Apache #16E
 825' FNL and 955' FEL
 Unit A, Sec. 34, T26N, R5W
 Rio Arriba Co., New Mexico



1. Blowout preventers, master valve, plug valve and all fittings must be in good condition. Use new API Seal Rings.
2. All fittings (gates, valves, etc.) to be of equivalent pressure rating as preventers. Valves to be flanged and at least 2" unless otherwise specified. Valves next to BOP to be plug type and nominal 3".
3. Equipment through which bit must pass shall be as large as the inside diameter of the casing that is being drilled through.
4. Safety valve (Omsco or equivalent) must be available on rig floor at all times and with proper connections. The I.D. of safety valves should be as great as I.D. of tool joints on drill pipe.
5. Kelly safety valve installed, same working pressure as BOP's.
6. All lines and controls to preventers must be connected and tested before drilling out of surface pipe.
7. BOP's must be fluid operated, complete with accumulator. Controls may be either on floor or ground near steps from rig floor.
8. Fillup line tied to drilling nipple, the connection must be below and approximately 90° to the flow line.
 Gauge will be installed for testing but removed while drilling.
10. Spool not required, but when side outlet on BOP's is used, it must be below bottom ram.
11. Casinghead and casinghead fittings to be furnished by Marathon Oil Company.

MARATHON OIL COMPANY
SURFACE USE & OPERATIONS PLAN

DATE: June 13, 1980

WELL NAME: Jicarilla Apache #10 E

LOCATION: 825' FNL & 955' FEL, Unit A, Sec. 34, T26N, R5W, Rio Arriba Co., New Mexico

#1 Existing Roads:

- A. Proposed well site as staked. (Actual staking should include two each 200-foot directional reference stakes).

See attached survey plat.

- B. Route and distance from nearest town and locatable reference point to where well access route leaves main road.

See attached map Diagram "A".

- C. Access road(s) to location color-coded or labeled.

See attached map Diagram "A" color coded green.

- D. If exploratory well, all existing roads within a 3-mile radius (including type of surface, conditions, etc.).

Not applicable.

- E. If development well, all existing roads within a 1-mile radius of well site.

See Diagram "A".

- F. Plans for improvement and/or maintenance of existing roads.

Blade and gravel where needed.

#2 Planned Access Roads:

Map showing all necessary access roads to be constructed or reconstructed, showing:

- | | |
|---------------------|----------------------|
| (1) Width | 16' |
| (2) Maximum grades | 0 to 1% |
| (3) Turnouts | None required. |
| (4) Drainage design | Ditched and crowned. |
- (5) Location and size of culverts and brief description of any major cuts and fills.

There will be no cuts, fills or culverts on access road.

- (6) Surfacing material

Gravel where needed.

- (7) Necessary gates, cattleguards, or fence cuts.

None required.

- (8) (New or reconstructed roads are to be center-line flagged at time of location staking).

New access road is center-line flagged w/hot blue & orange flagging material, and walked 40' on each side by Archeologists from San Juan College, Farmington, NM.

#3 Location of Existing Wells:

Two-mile radius map if exploratory, or 1-mile radius map if development well, showing and identifying existing:

- | | |
|--|----------------------|
| (1) Water wells | None |
| (2) Abandoned wells | See map Diagram "A". |
| | |
| (3) Temporary abandoned wells | None |
| | |
| (4) Disposal wells | None |
| (5) Drilling wells | None |
| (6) Producing wells | See map Diagram "A" |
| (7) Shut-in wells | See map Diagram "A" |
| (8) Injection wells | None |
| (9) Monitoring or observation wells for other resources. | None |

#4 Location of Existing and/or Proposed Facilities:

A. Within 1-mile radius of location show the following existing facilities owned or controlled by lessee/operator:

- | | |
|--|---------------------|
| (1) Tank Batteries | See map Diagram "A" |
| (2) Production Facilities | See map Diagram "A" |
| (3) Gathering Lines | None |
| (4) Gas Gathering Lines | None |
| (5) Injection Lines (Indicate if any of the above lines are buried). | None |
| (6) Disposal Lines | None |

B. If new facilities are contemplated, in the event of production, show:

- (1) Proposed location and attendant lines by flagging if off of well pad.

Adjacent to the road and as close to the proposed drill site as possible without setting on any fill.
See Diagram "B".

- (2) Dimensions of Facilities

See Diagram "B".

- (3) Construction methods and materials:

Good engineering practices will be used in the construction of these facilities and materials will be obtained through local vendors and contractors.

- B. If new facilities are contemplated, in the event of production, show:
(cont'd)
- (4) Protective measures and devices to protect livestock and wildlife.
Woven wire fences of the pit areas and flagging, if necessary.

- C. Plans for rehabilitation of disturbed areas no longer needed for operations after construction completed.
Restoration of the drill site and tank battery areas will be reshaped to conform with the topography. The top soil will be redistributed at the proper time. The sites will be reseeded as per the recommended seed mixture.

#5 Location and Type of Water Supply:

- A. Show location and type of water supply either on map or by written description.

Water supply is a water hole on the Tapicito Creek, located in the NW/4 of Sec. 28, T26N, R5W. See map Diagram "A", color coded blue.

- B. State method of transporting water, and show any roads or pipelines needed.

Water will be hauled by truck to the well site. See map Diagram "A" color coded blue for water haul route.

- C. If water well is to be drilled on lease, so state. (No APD for water well necessary, however, unless it will penetrate potential hydrocarbon horizons).

No water well will be drilled.

#6 Source of Construction Materials:

- A. Show information either on map or by written description.

Construction materials will be native soil or purchased from a Jobber and hauled to the well site by same.

- B. Identify if from Federal or Indian Land.

None

- C. Describe where materials, such as sand, gravel, stone and soil material, are to be obtained and used.

Any needed materials will be purchased from a Jobber and hauled to the well site.

- D. Show any needed access roads crossing Federal or Indian Lands under Item 2.

None

#7 Methods of handling Waste Disposal:

Describe methods and location of proposed containment and disposal of waste material, including:

- | | |
|----------------------------------|-------------|
| (1) Cuttings | Reserve Pit |
| (2) Drilling fluids | Reserve Pit |
| (3) Produced fluids (oil, water) | Frac Tanks |

#7 Methods of Handling Waste Disposal: (cont'd)

(4) Sewage Porta Poty

(5) Garbage and other waste material (Trash pits will be completely contained with small mesh wire to prevent wind scattering trash before being burned or buried).

There will be a 10' x 10' burn pit on the drill site, and it will be fenced.

(6) Statement regarding proper cleanup of well site area when rig moves out.

At the completion of drilling; the site and surrounding area will be cleaned up and all burnable material will be put in the burn pit and burned. All foreign material will be buried.

#8 Ancillary Facilities:

Identify all proposed camps and airstrips on a map as to their location, area required and construction methods. (Camp center and airstrip center lines to be staked on the ground).

None

#9 Wellsite Layout:

A plat (not less than 1" = 50') showing:

(1) Cross sections of drill pad with cuts and fills.

See Diagram "C"

(2) Location of mud tanks, reserve, burn and trash pits, pipe racks, living facilities and soil material stockpiles.

See Diagram "D"

(3) Rig orientation, parking areas and access roads.

See Diagram "D"

(4) Statement as to whether pits are to be lined or unlined. (Approval as used in this section means field approval of location. All necessary staking of facilities may be done at time of field inspection). A registered surveyor is not mandatory for such operations.

Pits will not be lined.

#10 Plans for Restoration of Surface:

State restoration program upon completion of operations, including:

(1) Backfilling, leveling, contouring and waste disposal; segregation of spoils materials as needed.

The drill site will be cleaned and waste material will be put in the trash burn pit, which will be covered at the finish of the drilling operation. The reserve pit will be backfilled as soon as it is dry.

(2) Revegetation and rehabilitation - including access roads (normally per BLM recommendations).

The top soil will be redistributed and at the proper season and a seed mixture of BLM requirements will be drilled planted.

#10 Plans for Restoration of Surface: (cont'd)

- (3) Prior to rig release, pits will be fenced and so maintained until cleanup.

The reserve pit will be fenced on 3 sides during drilling. At the completion of the drilling, all pits will be fenced on the one remaining side.

- (4) If oil on pit, remove oil or install overhead flagging.

If there is oil on the reserve pit, it will be removed or flagged with overhead flagging.

- (5) Timetable for commencement and completion of rehabilitation operations.

Depending upon climatic conditions, restoration should be completed from six months to one year after spud date.

#11 Other Information:

General Description of:

- (1) Topography, soil characteristics, geologic features, flora and fauna.

Topo is juniper sage and pinon covered hills, occasionally dissected by drainage features.

Flora is pinon, juniper sage, prickly pear cacti, galleta, Indian rice grass.

Fauna is deer, rabbits, fox, cattle and sheep.

- (2) Other surface use activities and surface ownership of all involved lands.

The drill site and access road are owned by the Jicarilla Apache Nation.

- (3) Proximity of water, occupied dwellings, archeological, historical or cultural sites.

There is no water or occupied dwellings in the area. Archeological services are to be performed by San Juan College, Farmington, NM.

#12 Lessee's or Operator's Representative:

Mr. K.A. Thoma
Marathon Oil Company
P.O. Box 2659
Casper, WY 82602
(307) 235-2511 Ext. 514

#13 Certification: The following statement is to be incorporated in the plan and must be signed by the lessee's or operator's field representative who is identified in item No. 12 of the plan:

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 Marathon Oil Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

6/16/80
Date

K.A. Thoma
Name

Drilling Sup't.
Title

N

DIAGRAM

changed at
r. Harold
Uicarilla
30

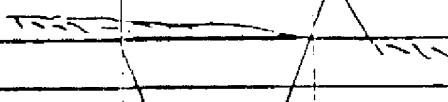
Surveying

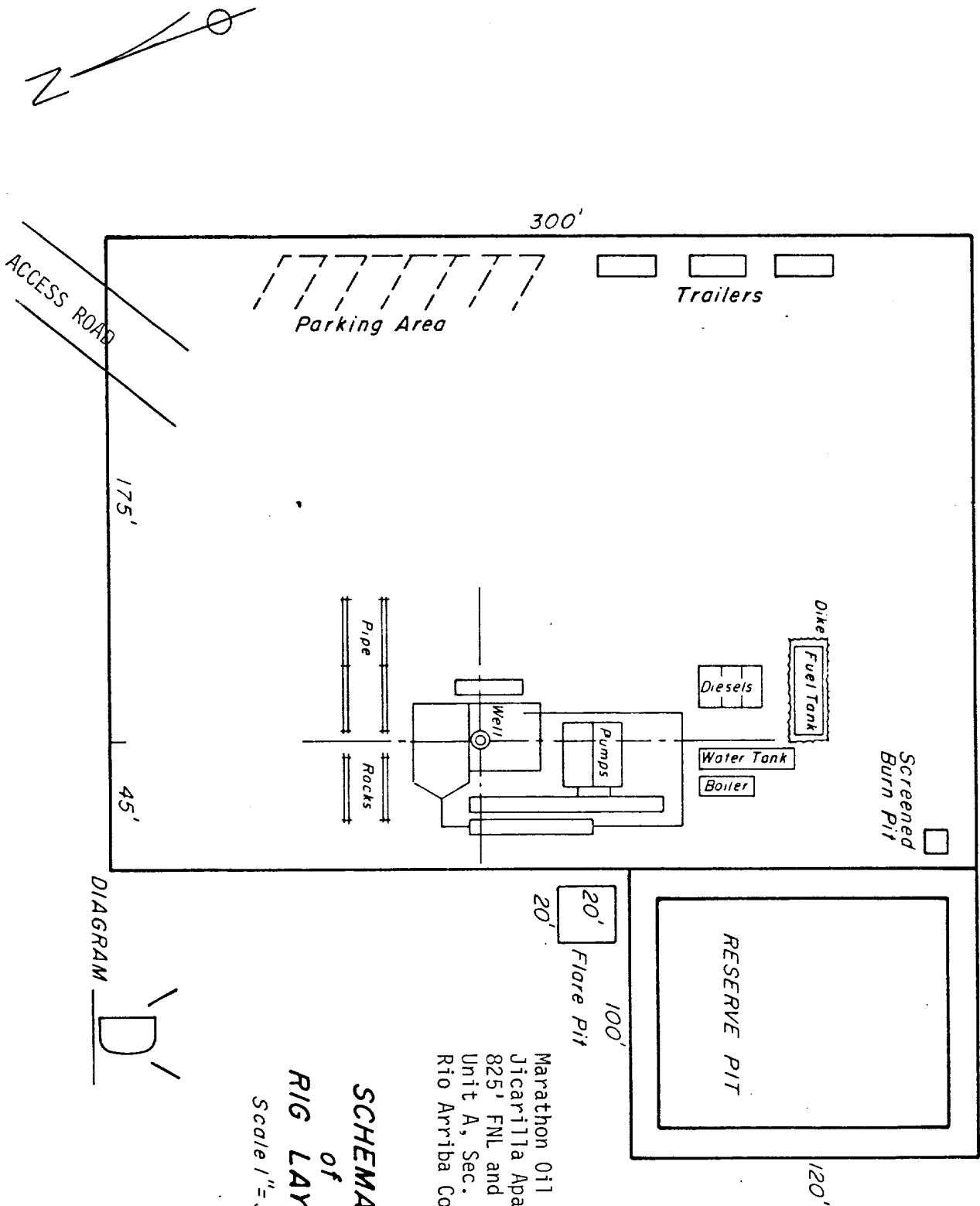
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2nd Year
March 20, 1950
Date

RIO ARriba COUNTY, NEW MEXICO
County and State

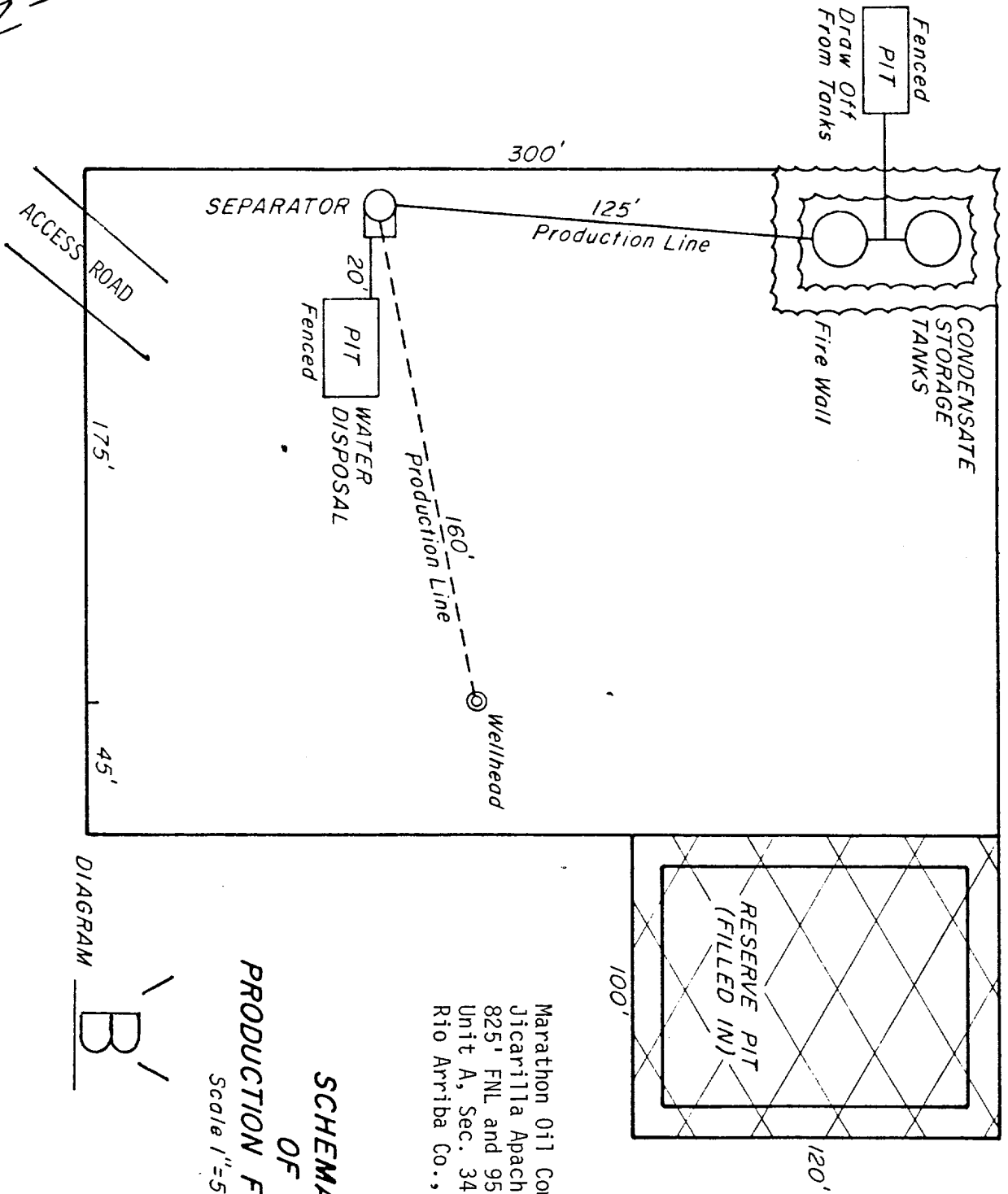
Vertical: 1"=20'	C-C'	Horiz. 1"=100'
6660		
6650		
6640		

	E-E' (Pits)
6660	
6650	
6640	



SCHEMATIC
of
RIG LAYOUT
Scale 1" = 50'

Marathon Oil Company
Jicarilla Apache #16E
825' FNL and 955' FEL
Unit A, Sec. 34, T26N, R5W
Rio Arriba Co., New Mexico



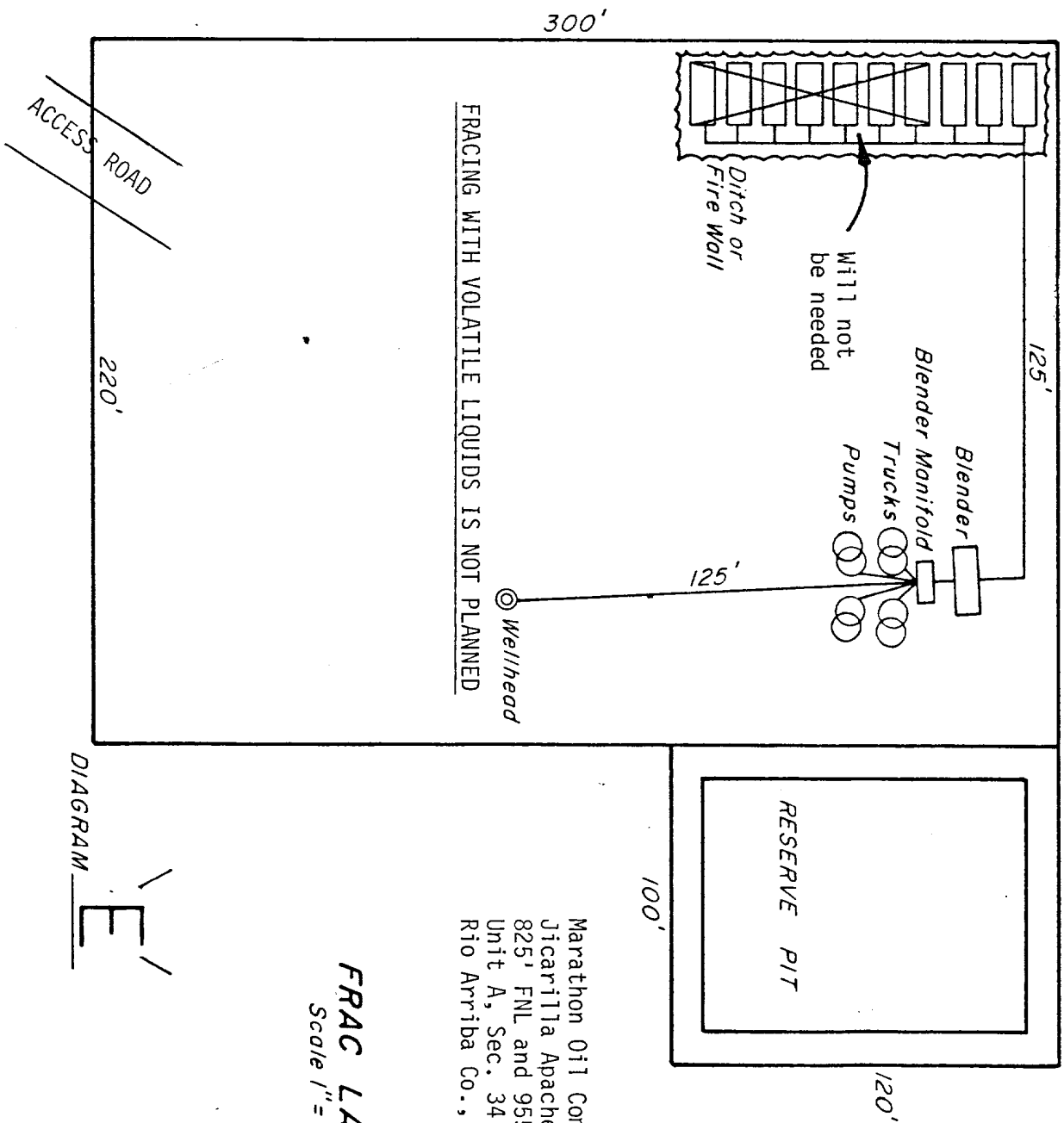
Marathon Oil Company
Jicarilla Apache #16E
825' FNL and 955' FEL
Unit A, Sec. 34, T26N, R5W
Rio Arriba Co., New Mexico

**SCHEMATIC
OF
PRODUCTION FACILITIES**

Scale 1"=50'

DIAGRAM

B

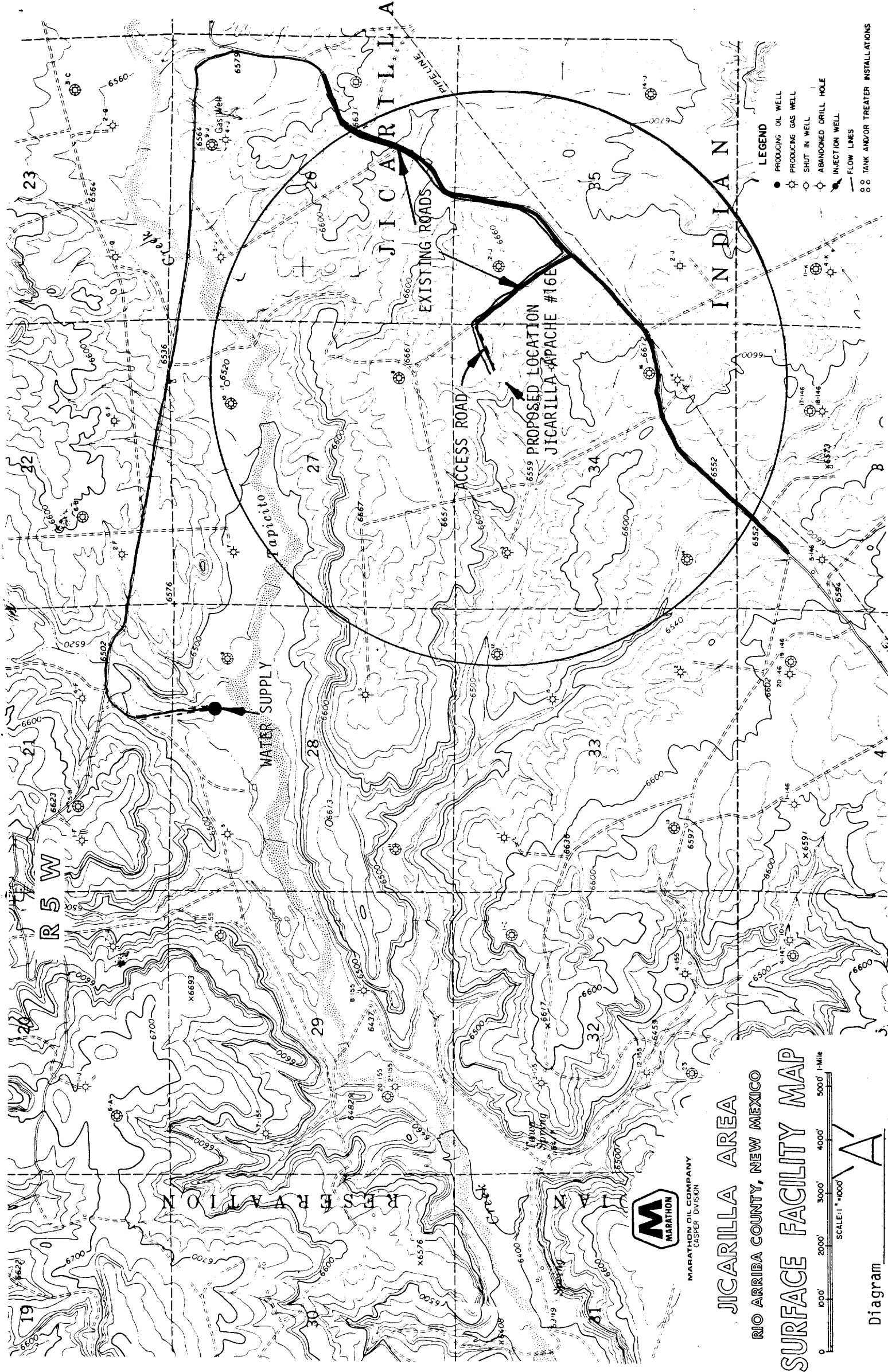


Marathon Oil Company
Jicarilla Apache #16E
825' FNL and 955' FEL
Unit A, Sec. 34, T26N, R5W
Rio Arriba Co., New Mexico

FRAC LAYOUT
Scale 1" = 50'

DIAGRAM



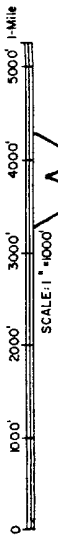


- LEGEND**
- PRODUCING OIL WELL
 - ⊙ PRODUCING GAS WELL
 - SHUT IN WELL
 - ⊕ ABANDONED DRILL HOLE
 - ⬇ INJECTION WELL
 - FLOW LINES
 - TANK AND/OR TREATER INSTALLATIONS

JICARILLA AREA

RIO ARriba COUNTY, NEW MEXICO

SURFACE FACILITY MAP



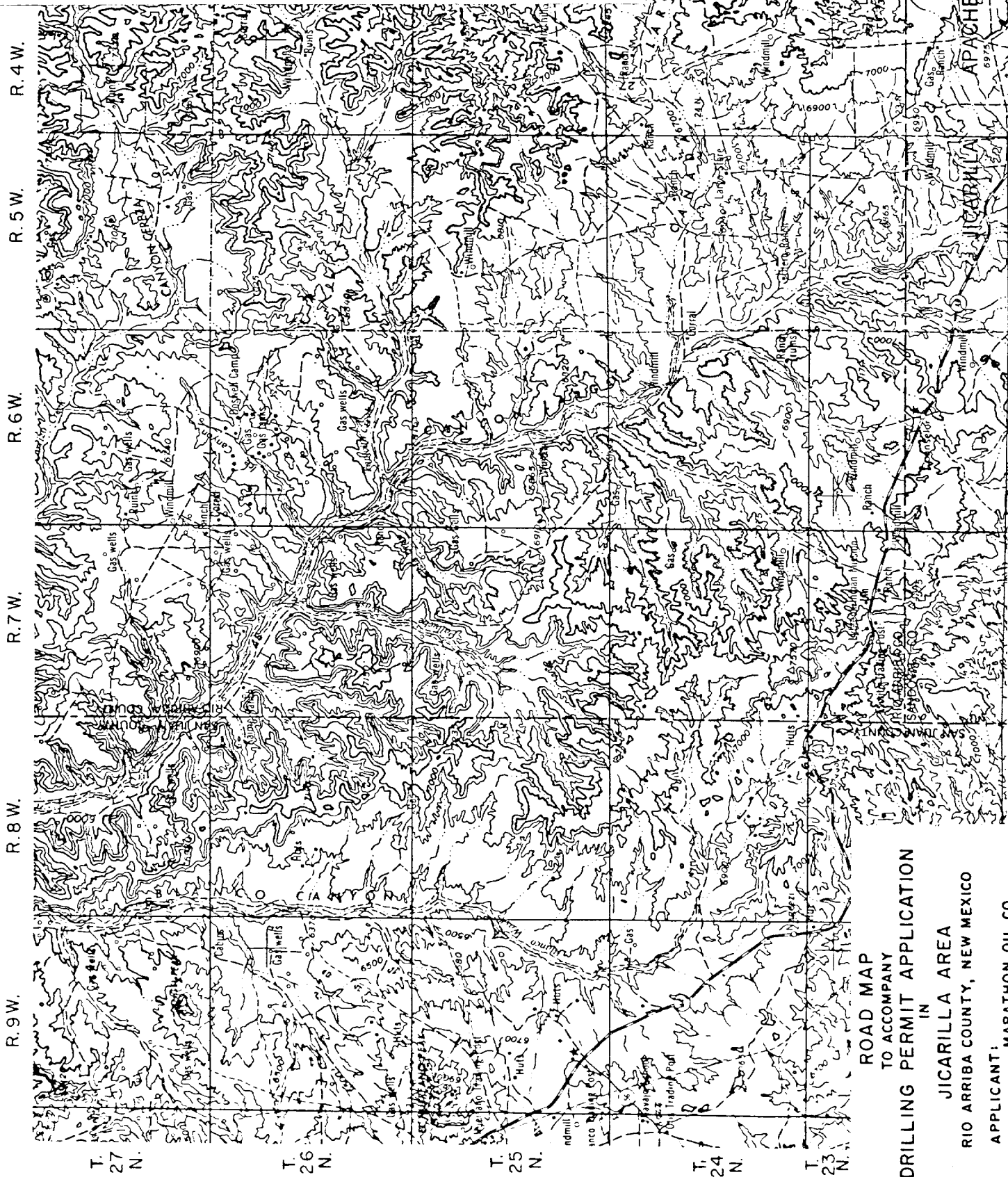
Diagram



MARATHON OIL COMPANY
CASPER DIVISION

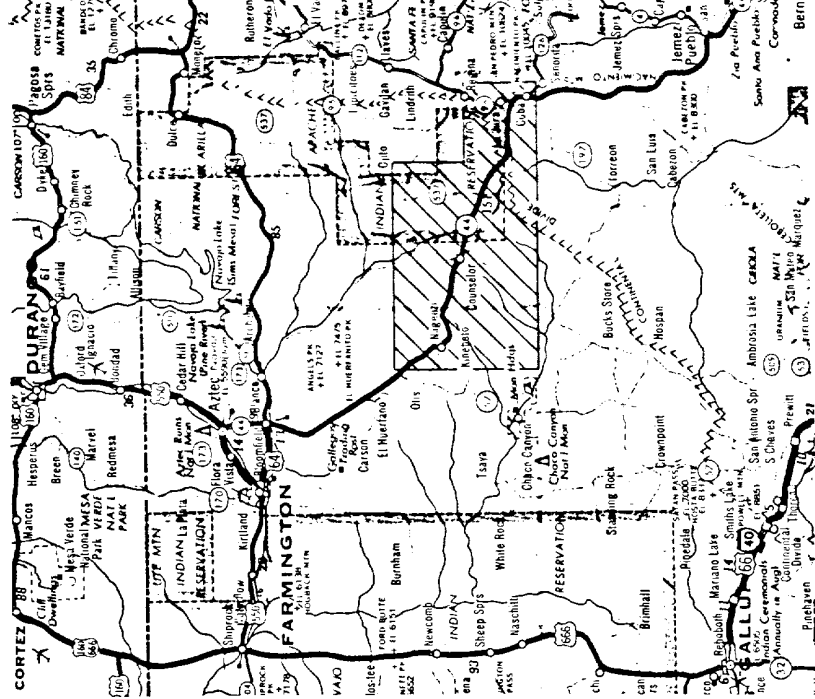
T 26 N

T 25 N



ROAD MAP
TO ACCOMPANY
DRILLING PERMIT APPLICATION
IN
JICARILLA AREA
RIO ARriba COUNTY, NEW MEXICO
APPLICANT: MARATHON OIL CO.
CASPER, WYO. 82601

Part of Diagram



LOCATION MAP