



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

April 22, 1996

Marathon Oil Company
P. O. Box 552
Midland, Texas 79702
Attention: Walter J. Dueease

Administrative Order DD-131-A

Dear Mr. Dueease:

Under the provisions of Rules 111.D and E of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10388, issued by the Oil Conservation Commission in Case 11,274 on June 13, 1995, Marathon Oil Company made application to the New Mexico Oil Conservation Division on January 30, 1996 for authorization to directional drill its proposed North Indian Basin Unit Well No. 27, Eddy County, New Mexico.

The Division Director Finds That:

- (1) The operator proposes to locate said well at an unorthodox surface location 2340 feet from the South line and 255 feet from the West line (Unit L) of Section 11, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, drill vertically to a depth of approximately 5,000 feet, kickoff in a southeasterly direction and directionally drill to an estimated true vertical depth of 8,100 feet within the South Dagger Draw-Upper Pennsylvanian Associated Pool at a standard subsurface oil well location within the NW/4 SW/4 (Unit L) of said Section 11;
- (2) An existing 320-acre standard spacing and proration unit comprising the W/2 of said Section 11 is to be dedicated to said well;
- (3) By Order No. R-5353, as amended by supplemental Orders "A", "L", and "L-1", the Division promulgated "*Special Rules and Regulations For The South Dagger Draw-Upper Pennsylvanian Associated Pool*", which includes provisions for 320-acre spacing and proration units for both oil and gas and well location requirements which provides that wells be no closer than 660 feet to the outer boundary of a 320-acre spacing unit and not closer than 330 feet to any quarter-quarter section

line or subdivision inner boundary thereon;

- (4) It is necessary for the operator to directionally drill the Indian Basin Unit Well No 24 in the above-described manner in order to satisfy the United States Bureau of Land Management surface use restrictions and to obtain an acceptable subsurface location for this well;
- (5) The applicable drilling window or "producing area" for said wellbore should include that area within the NW/4 SW/4 (Unit L) of said Section 11 that is no closer than 660 feet to the West line of said Section 11 nor closer than 330 feet to any internal quarter-quarter section line; and,
- (6) It appearing the applicant has satisfied all of the appropriate requirements prescribed in said Rule 111.D and E, the subject application should be approved and the well should be governed by the provisions contained within this order and all other applicable provisions of Division General Rule 111.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Marathon Oil Company, is hereby authorized to drill its North Indian Basin Unit Well No. 27 at an unorthodox surface location 2340 feet from the South line and 255 feet from the West line (Unit L) of Section 11, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico and directional drill in a southeasterly direction in such a manner as to bottom said well within the South Dagger Draw-Upper Pennsylvanian Associated Pool at a standard subsurface well location within the NW/4 SW/4 (Unit L) of said Section 11 that is no closer than 660 feet to the West line of said Section 11 nor closer than 330 feet to any internal quarter-quarter section line.

PROVIDED HOWEVER THAT prior to commencing directional drilling operations in said wellbore, the applicant shall establish the location of the kick-off point by means of a directional survey acceptable to the Division.

PROVIDED FURTHER THAT during or upon completion of directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to total depth in order that the subsurface bottomhole location, as well as the wellbore's true depth and course, may be determined.

(2) The applicant shall notify the supervisor of the Artesia district office of the Division of the date and time said wellbore surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore surveys to the Santa Fe and Artesia offices

of the Division upon completion.

(3) The existing 320-acre standard spacing and proration unit comprising the W/2 of said Section 11 shall be dedicated to said well.

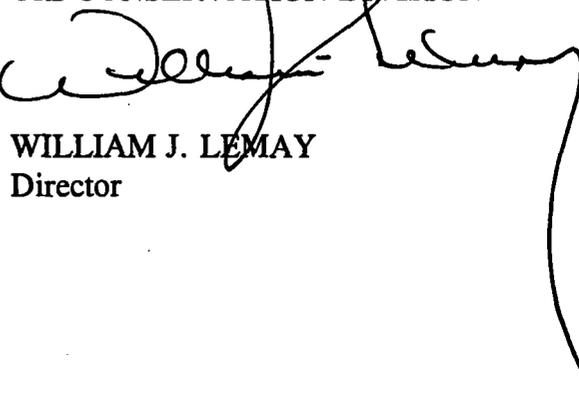
(4) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F.

(5) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depths.

(6) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

WJL/MES/kv

cc: Oil Conservation Division - Artesia
U. S. Bureau of Land Management - Carlsbad
File: DD-131

DD-131A

Rec. 3/21/96

Susp: 4/10/96

Released: 4/22/96

April 22, 1996

Marathon Oil Company
P. O. Box 552
Midland, Texas 79702

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Administrative Order DD-131-A
Marathon Oil Company
April 22, 1996
Page No. 3

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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

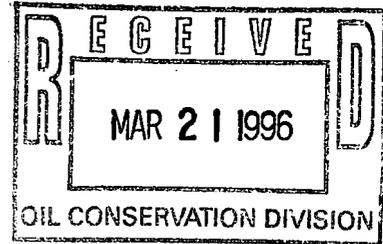
WJL/MES/kv

cc: Oil Conservation Division - Artesia
U. S. Bureau of Land Management - Carlsbad
File: DD-131



P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

March 18, 1996



State of New Mexico
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505
Attn: Mr. M. E. Stogner

RE: North Indian Basin Unit No. 27
SHL: 2340' FSL & 255' FWL
BHL: 2151' FSL & 842' FWL
Sec. 11, T-21-S, R-23-E
Eddy County, New Mexico

Dear Mr. Stogner:

Marathon Oil Company respectfully requests administrative approval to directionally drill and complete the above referenced well in the South Dagger Draw Upper Pennsylvanian Oil Pool.

Marathon has made numerous attempts to locate an orthodox drillsite in the NW/4, SW/4 of Section 11, but due to topographical and archaeological considerations, a directional well from an unorthodox surface hole location is the only possibility to test the Upper Penn.

Onsite inspection of the area with Mr. Barry Hunt, Surface Use Specialist, Carlsbad Resource Area of Bureau of Land Management, resulted in their encouragement of locating the drilling pad away from areas requiring excessive cut and fill requirements and damage to the drainage of Bone Tank Draw. An extensive cultural survey performed by Archaeological Survey Consultants, Inc. of Roswell, New Mexico revealed that a significant site encompasses virtually all of the possible orthodox locations in the NW/4, SW/4 of Section 11.

PAGE -2-

Through onsite investigation, the BLM and archaeologists have recommended a site that will result in a minimum of surface and cultural damage to the area, yet is an unorthodox surface hole location.

The following items are being submitted in support of this request:

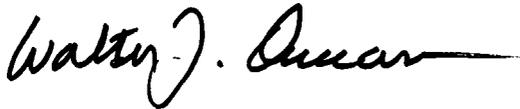
1. Form 3160-3 Application for Permit to Drill
2. Location Plat
3. Vertical Plan View
4. Horizontal Plan View
5. Type Log
6. Copy of signed waiver letter from offset operator

A copy of this letter and attachments is being furnished to the offset operators by certified mail as notice of this application

Marathon Oil Company requests that this request to directionally drill from an unorthodox surface hole location to an orthodox bottom hole location be administratively approved. Due to rig scheduling difficulties, we anticipate spudding this well by April 15, 1996.

Please feel free to contact me at (800) 351-1417 if you have any questions.

Respectfully,

A handwritten signature in black ink that reads "Walter J. Dueease". The signature is written in a cursive style with a long horizontal flourish at the end.

Walter J. Dueease
MARATHON OIL COMPANY

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

5. LEASE DESIGNATION AND SERIAL NO.
NM05551

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
NORTH INDIAN BASIN

8. FARM OR LEASE NAME, WELL NO.
N. INDIAN BASIN UNIT

9. API WELL NO.
27

10. FIELD AND POOL, OR WILDCAT
S. DAGGER DRAW, U. PENN, ASSOC.

11. SEC., T., R., M., OR B.L.K.
AND SURVEY OR AREA
SEC. 11, T-21-S, R-23-E

12. COUNTY OR PARISH
EDDY,

13. STATE
N.M.

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

Marathon Oil Company

ATTN: W.J. DUEASE

3. ADDRESS AND TELEPHONE NO.

P.O. Box 552, Midland, TX 79702

915/682-1626

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

At surface

2340' FSL & 255' FWL

At proposed prod. zone

2151' FSL & 842' FWL

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

10 MILES WEST OF LAKEWOOD, NM.

15. DISTANCE FROM PROPOSED*

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

SEE BELOW

16. NO. OF ACRES IN LEASE

4160'

17. NO. OF ACRES ASSIGNED TO THIS WELL

320 - W/2

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

SEE BLOW

19. PROPOSED DEPTH

+8160 MD, 8100TVD

20. ROTARY OR CABLE TOOLS

ROTARY

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

3764' GL, 3775' KB

22. APPROX. DATE WORK WILL START*

ASAP

23. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	48#	40'	CONDUCTOR-REDI MIX TO SURFACE
12 1/4"	9 5/8"	36#	1200'	800 - CIRCULATE
8 3/4"	7"	23#, 26#	8000'	1100 SX, CIRC. TO SURFACE

WELL WAS ORIGINALLY STAKED AT 2310' FSL & 660' FWL, DUE TO THE PROXIMITY OF BONE TANK DRAW AND A SIGNIFICANT ARCHAEOLOGICAL SITE, THE SURFACE HOLE LOCATION MUST BE MOVED TO AN UNORTHODOX LOCATION. THIS WELL WILL BE DIRECTIONALLY DRILLED TO AN ORTHODOX BOTTOM HOLE LOCATION.

AN APPLICATION TO DIRECTIONALLY DRILL THIS WELL HAS BEEN MADE WITH THE NMOCD UNDER RULE 111 (D).

SEE ATTACHED MULTIPOINT FOR DETAIL.

#15 - SHL - 255', BHL - 842'

#18 - 1314' (BHL) DISTANCE TO NIBU #21 @ 2245' FNL & 1815' FWL.

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 W.J. Duease FOR DPN TITLE DRILLING SUPERINTENDENT DATE 01-17-96

(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:

APPROVED BY _____ TITLE _____ DATE _____

***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.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

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

OIL CONSERVATION DIVISION
P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 15475	Pool Name S. DAGGER DRAW (U. PENN, ASSOC)
Property Code 6411	Property Name NORTH INDIAN BASIN UNIT	Well Number 27
OGRID No. 014021	Operator Name MARATHON OIL COMPANY	Elevation 3764

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	11	21 S	23 E		2340	SOUTH	255	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	11	21 S	23 E		2151	SOUTH	842	WEST	EDDY

Dedicated Acres 320 W/2	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>W.J. DUEEAM FORDA</i> Signature</p> <p>D. P. NORDT Printed Name</p> <p>DRILLING SUPERINTENDENT Title</p> <p>2/2/96 Date</p>
	<p>SURVEYOR CERTIFICATION</p> <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 belief.</p> <p>DECEMBER 5, 1995</p> <p>Date Surveyed</p> <p>Signature & Seal of Professional Surveyor</p> <p><i>Donald L. Edson</i> 12-11-95</p> <p>D.W.O. 95-11710</p> <p>Certificate No. JOHN R. WEST 676 DONALD L. EDSON 1338 PROFESSIONAL SURVEYOR EDSON 1264</p>

Thirteen Point Surface Use Plan
MARATHON OIL COMPANY

North Indian Basin #27
Sec. 11, T-21-S, R-23-E
Eddy County, New Mexico

1. **Existing Roads:** Refer to Vicinity Lease Map.
 - a. The proposed wellsite is staked and the surveyor's plat is attached.
 - b. To reach the location from Carlsbad, New Mexico: Follow Hwy 285 North of Carlsbad 14 miles. Turn West on Queen's highway (NM 137) for 8.8 miles. Turn right on NM 401 for 3.7 miles. Turn right on Grey Oak Road (NM 403) for 2 miles. Turn West .2 miles, then South .2 miles into proposed location.
 - c. Existing roads within a one-mile radius (refer to Vicinity Lease Map).
 - d. The existing road will be maintained as necessary to provide access during the drilling operation.

2. **Planned Access Road:** Refer to Vicinity Lease Map.

Access will be by existing lease roads. Construction plans will require blading and rolling the road and pad. An access road of approximately 1,000' will be constructed. The access road will enter the drilling pad on the southwest corner. The drilling location will have a V-door facing east.

3. **Location of Existing Wells:** See Vicinity Lease Map.

4. **Location of Existing and Proposed Production Facilities within a one-mile radius:**
 - a. **Existing:** There are six gas wells operated by Marathon Oil Company within a one-mile radius of the proposed location. These locations have production facilities including separators, condensate storage tanks and location drips. Marathon and Conoco operate a variety of dehydrators, meter runs, and several gathering lines in the one-mile radius.
 - b. **New Facilities:** The proposed location will have a separator and gas sales line. The actual equipment and its configuration will be determined after the well is completed. An archaeological survey has been performed and construction will commence upon approval.
 - c. Rehabilitation of disturbed areas no longer needed for operations will be accomplished by grading, leveling and seeding as recommended.

**A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit #27**

5. Location and Type of Water Supply:

- a. **Source: Indian Basin Gas Plant, SW/4, NE/4, Sec. 23, T-21-S, R-23-E.**
- b. **The water will be pumped thru 3" plastic line over existing roads to the well location. No new construction will be required on/along the water route.**
- c. **No water well will be drilled on this location.**

6. Source of Construction Materials:

- a. **Construction materials will be obtained from a pit in Sec. 35, T-20-S, R-24-E.**
- b. **If production is obtained, native materials will be used on the location and for installation of production facilities.**
- c. **On-site inspection may dictate any changes in location construction.**

7. Methods of Handling Waste Material Disposal:

- a. **Cuttings - will be deposited in the reserve pit.**
- b. **Drilling fluids - contained in reserve pit and allowed to evaporate. Free water will be removed and transported to an approved disposal site to accelerate pit drying.**
- c. **Produced fluids - none anticipated.**
- d. **A portable chemical toilet will be provided.**
- e. **Garbage and other waste material - garbage and trash will be stored in a receptacle on location and periodically hauled to an approved sanitary landfill.**
- f. **After the rig moves out, all materials not necessary for operations will be removed. Pits will be backfilled and leveled. The location will be cleaned of all trash and debris.**

8. Ancillary Facilities: Camp facilities will not be required. Portable trailers will be on location to house a company drilling foreman and contract toolpusher.

9. Wellsite Layout:

- a. **The wellpad layout shows the drillsite layout as staked. Cross-sections have been drafted to visualize the planned cuts and fills across the location. Topsoil will be stockpiled per specifications.**
- b. **The reserve pit will be fenced on three sides before drilling begins. The fourth side will be fenced when the drilling rig leaves location.**
- c. **The reserve pit will be lined (8 mil material).**

**A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit #27**

10. Plans for Restoration of the Surface:

- a. Backfilling, leveling, and contouring are planned as soon as all pits have dried. Waste disposal and spoiled materials will be buried or hauled away immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.
- b. The soil banked material will be spread over the area. Revegetation will be accomplished by planting mixed grasses as per formula by BLM. Revegetation is recommended for road area, as well as around the drill pad.
- c. The reserve pit will be fenced during drilling operations. Fencing will be maintained until leveling and cleanup are accomplished.
- d. If any oil is in the pits and is not immediately removed after operations cease, the pit containing the oil or other adverse substances will be flagged overhead or covered with mesh.
- e. The rehabilitation operations will begin after the drilling rig is removed. Removal of oil or other adverse substances will begin immediately or area will be flagged and fenced. Other cleanup will be done as needed. Planting and Revegetation will be done between July 15 and September 15.

11. Other Information:

- a. An archaeological site has been identified at this location. The SHPO and BLM archaeologists have agreed to a test for significance at this site. A cultural resource survey was performed by Archaeological Consultants Inc. of Roswell.
- b. General topography: Shown on Vicinity Lease Map. The terrain at the wellsite is gently rolling hills. Vegetation is primarily sage brush and natural grasses.
- c. Animal life: Prairie dogs, domestic livestock, rabbits and native rodents and predators.
- d. Dwellings (nearest): Approximately 4-1/2 miles.
- e. General location: Approximately 8.5 miles west of Lakewood, New Mexico.
- f. Drainage: Bone Tank Draw, CA. 500' East.
- g. Surface Owner: The surface is owned by the United State Government and leased to the Forrest Lee Residuary Trust.

A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit #27

12. Operator Representatives:

David Nordt
Drilling, Completion, & Workover Superintendent
P. O. Box 552
Midland, TX 79702
800/351-1417
915/682-1626

13. Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge and belief, 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.

2/7-96

Date

W. J. Amicare FOR DPN
D. F. Nordt

**DRILLING PROGRAM
MARATHON OIL COMPANY**

North Indian Basin Unit #27

1. **Estimated KB Elevation: 3775'**

FORMATION	-----TOP-----		-----BASE-----		FLUID
	MEASURED	SUBSEA MEASURED	SUBSEA	CONTENT	
Queen	Surface	+3775'	650'	+3125'	water
San Andres	650'	3125'	2250'	1525'	water
Glorietta	2250'	1525'	2355'	475'	
Delaware	3300'	475'	4300'	-525'	
Bone Spring	4300'	-525'	5950'	-2175'	oil gas
Wolfcamp	5950'	-2175'	7520'	-3745'	oil gas
B/Permian Shell	7520'	-3745'	7530'	-3755'	
U. Penn	7530'	-3755'	7550'	-3775'	gas, oil, water
Penn Dolomite	7550'	-3775'	8000'	-4225'	gas, oil, water

FORMATION	---EST	SBHP---	EST SBHT	H2S	---SIGNIFICANCE---
	PSIG	PPG EMW	DEG f PPM	(obj. marker, etc.)	
Bone Springs	1210	8.5		500	marker
Wolfcamp	1680	9.0			marker
B/Permian Shale	1810	9.0			marker
U. Penn	2050	9.0		5000	objective pay
Penn Dolomite	2164	9.0		5000	objective

2. See (1) above.

If any unexpected water or mineral bearing zones are encountered, they will be reported, evaluated, and protected as circumstances and regulations require.

3. **Pressure Control Equipment:**

9 5/8" Surface: 11" 3M annular tested to 200#/2000#, 11" 3M dual rams, choke manifold and mud cross, tested to 300#/3000#.

Auxiliary Equipment:

Surface Hole: Annular or rotating head w/air rig.

Intermediate Hole: N/A

Production Hole: Flow indicator, PVT, H₂S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers and casing will be pressure tested before drilling casing cement plugs.

Upper and lower kelly cocks with valve handle and safety valve and subs to fit all drillstring connections in use will be available on rig floor.

**A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit #27**

Test Frequency

1. When installed.
2. Anytime a pressure seal is broken (test confined only to affected equipment).
3. At least every 20 days.
4. Blind and pipe rams shall be activated each trip but not more than once/day.

4. Casing and Cement Program:

<u>--DEPTH--</u> <u>FROM TO</u>	<u>SECTION</u> <u>LENGTH</u>	<u>HOLE</u> <u>SIZE</u>	<u>CSG</u> <u>SIZE</u>	<u>WT.</u> <u>PPF</u>	<u>GRADE</u>	<u>THREADS</u> <u>COUPLINGS</u>	<u>NEW</u> <u>USED</u>
0 1200'	1200'	12.25"	9.625"	36	K-55	8rd, STC	New
0 2800'	2800'	8.75"	7"	23	K-55	8rd, LTC	New
2800' 8160'	5360'	8.75"	7"	26	K-55	8rd, LTC	New

<u>CASING</u> <u>STRING</u>	<u>DV</u> <u>DPTH</u>	<u>STG</u>	<u>LEAD</u> <u>TAIL</u>	<u>AMT</u> <u>SXS</u>	<u>TYPE</u> <u>CEMENT</u>	<u>YIELD</u> <u>CF/SX</u>	<u>WT.</u> <u>PPG.</u>	<u>TOC</u>	<u>ADDITIVES</u>
9.625"	None	1	L	600	"C" Lite	1.99	12.4	Surf	10#/SK.Gilsonite, 3% CACl ₂ , 1/4# cello
9.625"			T	200	"C" Neat	1.32	14.8	Surf	2% CACl, 1/4# cello
7"	±5600'	1	L	500	"C" Lite	1.8	13.6	5600'	8 pps Silica, .6% Halad 9, 3% salt, 5 pps Gilsonite
7"		2	L	675	"C" Lite	1.91	12.8	5500'	5 pps, salt, 5 pps Gilsonite, 1/4 pps Cello
7"		2	T	100	"C" Neat	1.32	14.8	±1000'	

Each stage will be preceded by an appropriate mud flush. Actual production hole volumes will be based on the caliper volume plus 15% excess.

Centralizer Program:

9 5/8" Conventional centralizers. Bottom 3 joints and every fourth joint to surface.

7" Conventional centralizers middle of 1st joint, then every joint to 7500', and 1 centralizer every 4th joint thereafter to 1100'.

**A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit #27**

5. Mud Program:

<u>--DEPTH--</u>		<u>MUD TYPE</u>	<u>WEIGHT</u>		<u>WL</u>	<u>ADDITIVES</u>	<u>VISUAL</u>
<u>FROM</u>	<u>TO</u>		<u>(PPG)</u>	<u>VIS</u>			
0	1200'	air/mist	N/A	N/A	N/A	Soap for mist	Reserve
1200'	5000'	fresh	8.5	28-32	N/C	Gel, caustic, H ₂ S Scavenger	Reserve
5000'	7200'	cut brine	9.0	32-36	N/C	Saturated brine	Reserve
7200'	±8100'	cut brine	9.0	32-36	<20	Salt gel, starch, caustic	Steel Pits

Sufficient quantities of additives will be on location to maintain above mud properties for any anticipated well conditions.

6. Logging, Testing & Coring Programs:

<u>LOG/TEST/CORE/MUDLOG/OTHER</u>	<u>--INTERVAL--</u>		<u>REMARKS</u>
	<u>FROM</u>	<u>TO</u>	
DLL/MSFL/GR	TD	5000'	
LDT/CNL/GR/CAL	TD	surf casing	
MUD LOGGER			ROP, Lithology, Gas Analysis, Chromatograph
NO CORES OR DST'S			

7. Abnormal Pressures, Temperatures or Potential Hazards:

None anticipated. Possible H₂S in Cisco & Upper penn. See H₂S Drilling Operations Plan.

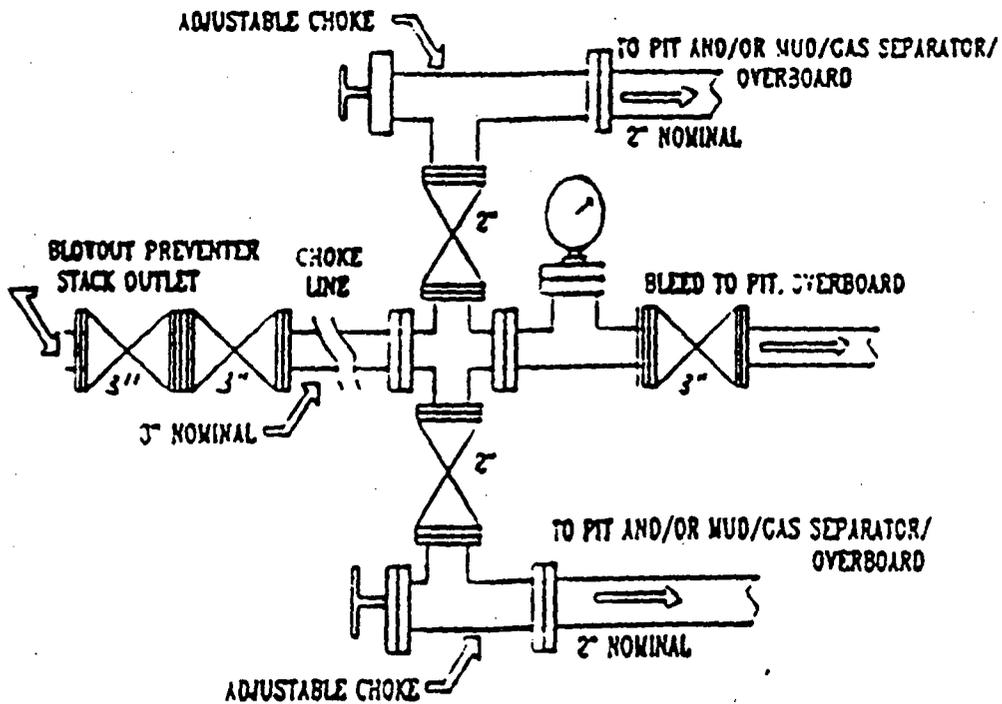
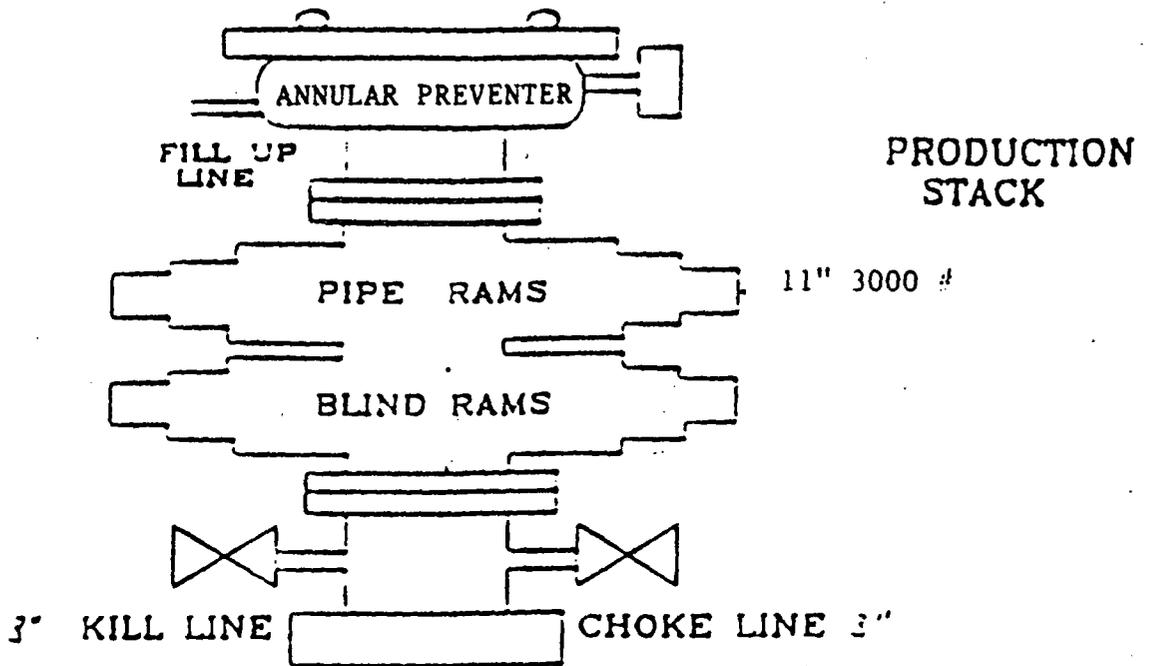
8. Other Information:

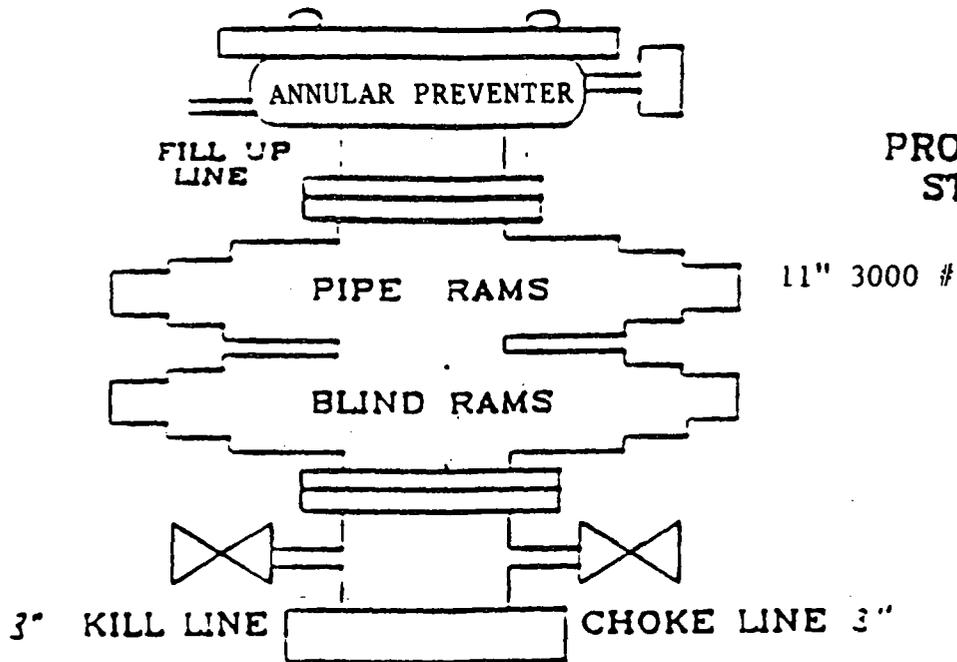
Anticipated Starting Date: As soon as possible.

Duration of Well: drilling - 18 days, completion - 10 days.

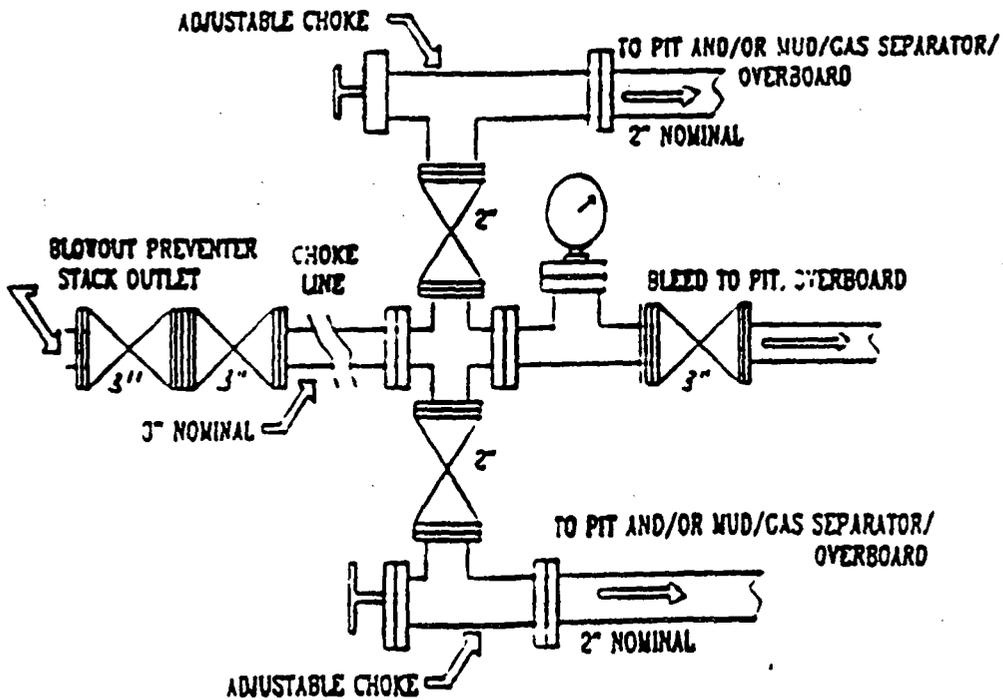
9. See attached directional drilling proposal for vertical and horizontal plan views.

Proposed KOP - 5,000', build rate 3 deg./100', EOB @ 5400' MD.





PRODUCTION
STACK

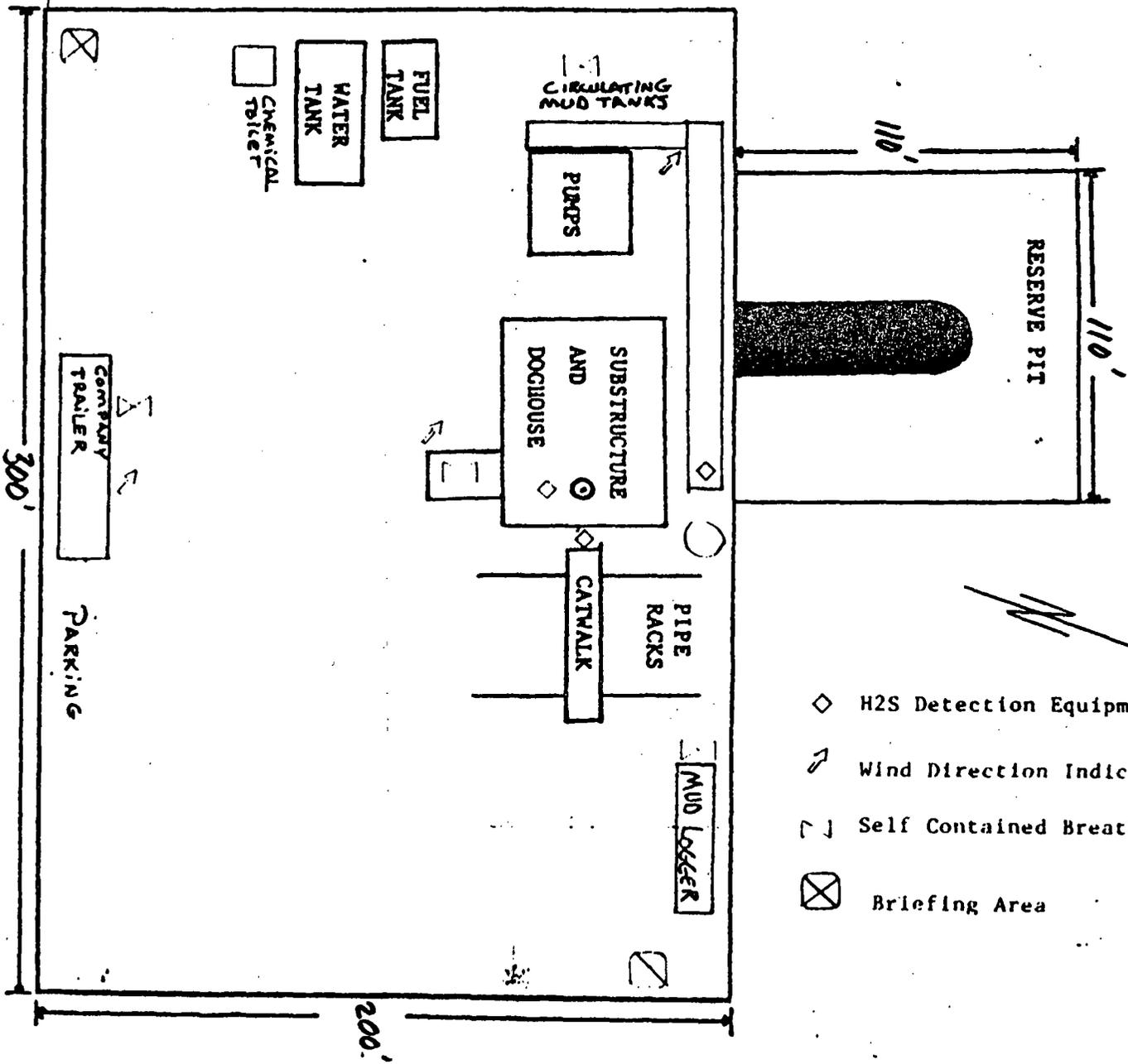


PROPOSED PAD
NIRU # 27

PROPOSED ACCESS
± 1000'

Prevailing Wind Direction
Southwest

Foot-path for emergency
egress



- ◇ H2S Detection Equipment
- ↖ Wind Direction Indicator
- Self Contained Breathing Equip.
- ⊗ Briefing Area

MARATHON OIL COMPANY

H2S DRILLING OPERATIONS PLAN

I. HYDROGEN SULFIDE TRAINING

All contractors and subcontractors employed by Marathon Oil Company will receive or have received training from a qualified instructor within the last twelve months in the following areas prior to commencing drilling operations on this well.

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. Safety precautions
3. Operations of safety equipment and life support systems

In addition, contractor supervisory personnel will be trained or prepared in the following areas:

1. The effect of H₂S on metal components in the system. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-down procedures when drilling or reworking a well, blowout prevention and well control procedures, if the nature of work performed involves these items.
3. The contents and requirements of the contingency plan when such plan is required.

All personnel will be required to carry documentation of the above training on their person.

II. H2S EQUIPMENT AND SYSTEMS

1. Safety Equipment

The following safety equipment will be on location.

- A. Wind direction indicators as seen in attached diagram.
- B. Automatic H₂S detection alarm equipment (both audio and visual).
- C. Clearly visible warning signs as seen on the attached diagram. Signs will use the words "POISON GAS" and "CAUTION" with a strong color contrast.
- D. Protective breathing equipment will be located in the dog house and at briefing areas as seen in the attached diagram.

2. WELL CONTROL SYSTEMS

A. Blowout Prevention Equipment

Equipment includes but is not limited to:

- a. pipe rams to accomodate all pipe sizes
- b. blind rams
- c. choke manifold
- d. closing unit

Auxillary equipment added as appropriate includes:

- a. annular preventor _____
- b. rotating head _____
- c. mud- gas separator _____
- d. flare line and means of ignition _____
- e. remote operated choke _____

B. Communication

The rig contractor will be required to have two-way communication capability. Marathon Oil Company will have either land-line or mobile telephone capabilities.

C. Mud Program

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices, and the use of H₂S scavengers when appropriate will minimize hazards when penetrating H₂S bearing zones.

D. Drill Stem Test intervals are as follows:

DST No. 1	_____ ft. to _____ ft.
DST No. 2	_____ ft. to _____ ft.
DST No. 3	_____ ft. to _____ ft.

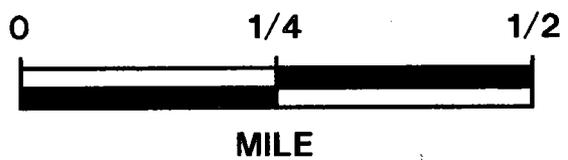
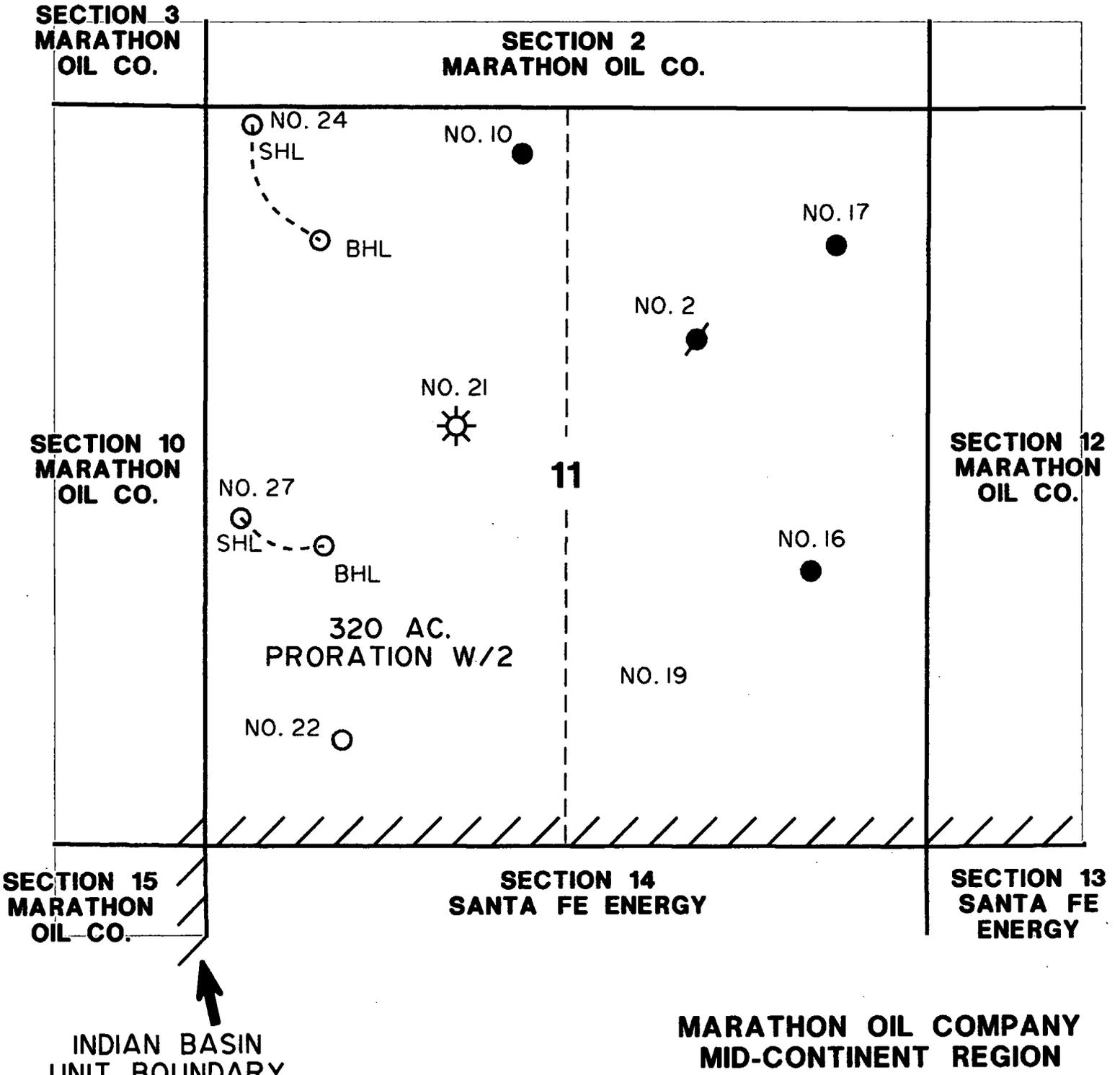
Drill Stem Testing Safety Rules are attached.

III. WELL SITE DIAGRAM

A complete well site diagram including the following information is attached.

1. Rig orientation
2. Terrain
3. Briefing areas
4. Ingress and egress
5. Pits and flare lines
6. Caution and danger signs
7. Wind indicators and prevailing wind direction

T-21-S, R-23-E EDDY CO., NEW MEXICO SOUTH DAGGER DRAW UPPER PENN. ASSOCIATED POOL



Mid-Continent Region
Production United States



P.O. Box 552
Midland, Texas 79702
Telephone 915/882-1828

WAIVER

Marathon Oil Company
P O Box 552
Midland, Texas 79702-0552
Attn: Walter Duease

RE: Directional Well Application
North Indian Basin Unit #27
SHL: 2340' FSL & 255' FWL
BHL: 2151' FSL & 842' FWL
Sec. 11, T-21-S, R-23-E
South Dagger Draw, Upper Penn Assoc.
Eddy County, New Mexico

We the undersigned, have been furnished a copy of Marathon Oil Company's application to directionally drill and complete the subject well to an orthodox bottom hole location under the provisions of Rule 111 (D). Please be informed that we, as offset operator, have no objection to the drilling and completion of this well as set forth in Marathon's application.

Respectfully,

COMPANY Santa Fe Energy Resources, Inc

REPRESENTATIVE D. D. DeGallo

SIGNATURE [Signature]

TITLE Division Mgr - Prod

DATE 3/7/96

G:\MIDOPS\SEGROUP\WJD\96003.WPD

MARATHON

Structure : NIBU NO.27

Field : INDIAN BASIN

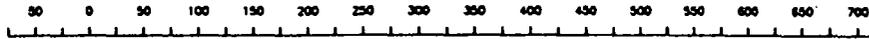
Location : EDDY COUNTY, NEW MEXICO

WELL PROFILE DATA

Point	MD	Inc	Dr	TVD	North	East	Dep/100
KOP	5000	0.00	107.80	5000	0	0	0.00
End of Build	5400	12.01	107.80	5397	-13	40	3.00
Target	7243	12.01	107.80	7200	-130	405	0.00
End of Hole	8163	12.01	107.80	8100	-188	587	0.00

Scale 1 : 25.00

East -->



SURFACE LOCATION
2340' FSL & 255' FWL
SEC 11, T21S, R23E
EDDY COUNTY, TEXAS

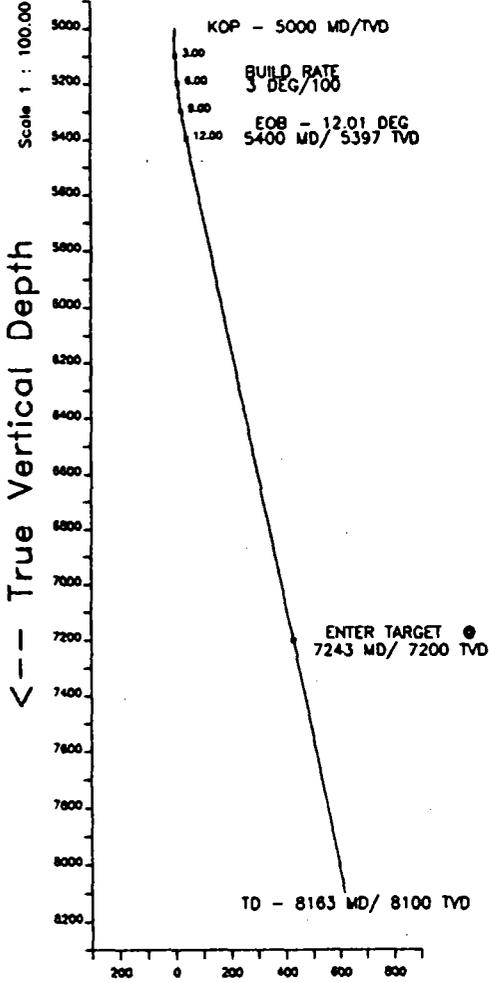
HARDLINE - 2310 FSL

HARDLINE - 660 FWL

ENTER TARGET ●
2210 FSL & 660 FWL
SEC 11, T21S, R23E
EDDY COUNTY, NEW MEXICO
130 S & 405 E OF SURFACE

BOTTOM HOLE LOCATION
2151 FSL & 842 FWL
SEC 11, T21S, R23E
EDDY COUNTY, NEW MEXICO
189' S. & 587' E. OF SURFACE

Scale 1 : 25.00
South -->



TRUE



Scale 1 : 100.00

Vertical Scale is 100.00 feet, with intervals 200, 400, 600, 800

MARATHON
 NIBU NO.27,slot #1
 INDIAN BASIN,EDDY COUNTY, NEW MEXICO

PROPOSAL LISTING Page 1
 Your ref :
 Last revised : 12-Jan-96

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
5000.00	0.00	107.80	5000.00	0.00 N	0.00 E	0.00	0.00
5100.00	3.00	107.80	5099.95	0.80 S	2.49 E	3.00	2.62
5200.00	6.00	107.80	5199.63	3.20 S	9.96 E	3.00	10.46
5300.00	9.00	107.80	5298.77	7.19 S	22.39 E	3.00	23.51
5400.00	12.00	107.80	5397.08	12.76 S	39.74 E	3.00	41.74
5400.40	12.01	107.80	5397.47	12.78 S	39.82 E	3.00	41.82
5500.00	12.01	107.80	5494.89	19.12 S	59.55 E	0.00	62.55
6000.00	12.01	107.80	5983.94	50.92 S	158.63 E	0.00	166.60
6500.00	12.01	107.80	6473.00	82.72 S	257.71 E	0.00	270.66
7000.00	12.01	107.80	6962.05	114.52 S	356.79 E	0.00	374.72
7243.28	12.01	107.80	7200.00	130.00 S	405.00 E	0.00	425.35
7500.00	12.01	107.80	7451.10	146.33 S	455.87 E	0.00	478.78
8000.00	12.01	107.80	7940.15	178.13 S	554.95 E	0.00	582.84
8163.43	12.01	107.80	8100.00	188.53 S	587.34 E	0.00	616.85

All data is in feet unless otherwise stated
 Coordinates from structure and TVD from wellhead.
 Vertical section is from wellhead on azimuth 107.80 degrees.
 Declination is 0.00 degrees, Convergence is 0.00 degrees.
 Calculation uses the minimum curvature method.
 Presented by Baker Hughes INTEQ

SOUTH DAGGER DRAW

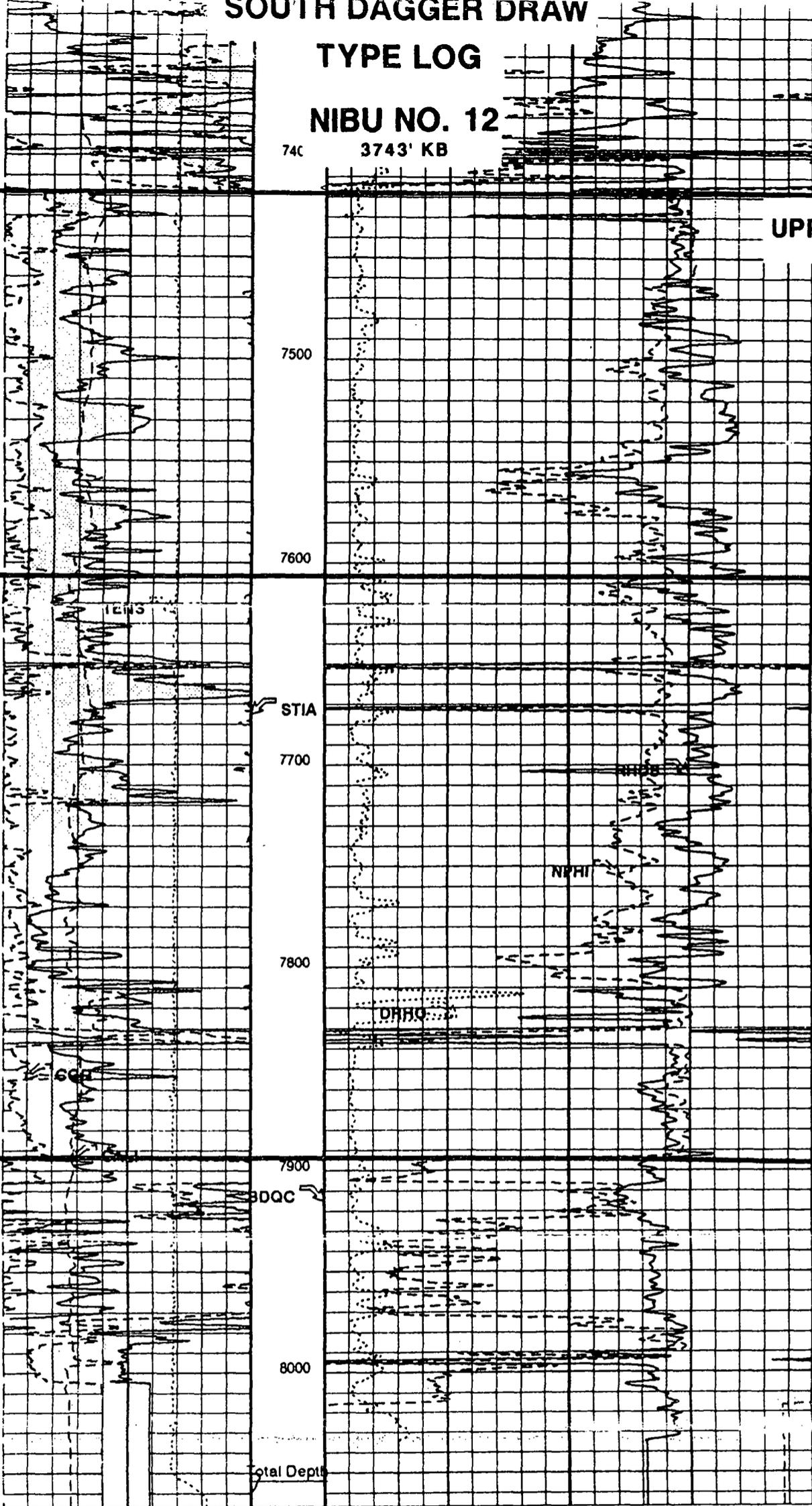
TYPE LOG

NIBU NO. 12

74C 3743' KB

UPPER PENN

SOUTH DAGGER DRAW OIL POOL



Caliper (CAL) (IN)	Bulk Density Quality Curve (BDOC)	Bulk Density Correction (DRHO) (G/C3)	Neutron Porosity (NPHI) (%V)	Bulk Density (RHOB) (G/C3)
6 ----- 18	10 (----) 0	-0.05 ----- 0.45	0.3 ----- -0.1	2 ----- 3
Computed Gamma Ray (GAP)				
0 ----- 100				
Spectroscopy Gamma Ray (SGR)				
0 ----- 100				