	2/20/96		- KV	- NSL
		ABOVE THIS LINE FOR DIVISION USE O		······································
		NEW MEXICO OIL CONSERVA - Engineering Bureau -	TION DIVISION	
	·····	ADMINISTRATIVE APPLICATION	ON COVERSHEE	T
<b>A</b>	THIS CO	VERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FO	R EXCEPTIONS TO DIVISION RULES A	ND REGULATIONS
Арри	Cation Acronyms: [DHC [! [EOR	NSP-Non-Standard Proration Unit] [NSL-M [DD-Directional Drilling] [SD-Simulta -Downhole Commingling] [CTB-Lease Comminglin PC-Pool Commingling] [OLS - Off-Lease Storage] [WFX-Waterflood Expansion] [PMX-Pressure [SWD-Salt Water Disposal] [IPI-Injection R-Qualified Enhanced Oil Recovery Certification] [I	Ion-Standard Location) neous Dedication) ug] [PLC-Pool/Lease Com [OLM-Off-Lease Measure Maintenance Expansion] Pressure Increase} PPR-Positive Production Re	esponse] Marather
<b>F 1</b> 3	TUDE OF	DBI ICATION Charle There Willich Apply		PVED.
[1]	[A]	Location - Spacing Unit - Directional Drillin	ng PEC 2	0 1996
	Chec [B]	k One Only for [B] or [C] Commingling - Storage - Measurement DHC CTB PLC PC		
	[C]	Injection - Disposal - Pressure Increase - En	hanced Oil Recovery	
[2]	NOTIFICA [A]	<b>TION REQUIRED TO:</b> - Check Those Whic Working, Royalty or Overriding Royalty	h Apply, or 🗳 <u>Does No</u> Interest Owners	t Apply
	[B]	Offset Operators, Leaseholders or Surface	e Owner	
	[C]	Application is One Which Requires Publ	ished Legal Notice	
	[D]	Notification and/or Concurrent Approval U.S. Bureau of Land Management - Commissioner of Pul	by BLM or SLO blic Lands, State Land Office	
	[E]	G For all of the above, Proof of Notification	n or Publication is Attac	hed, and/or,
	[F]	U Waivers are Attached		
[3]	INFORMAT	FION / DATA SUBMITTED IS COMPLET	E - Statement of Under	standing

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I further verify that all applicable API Numbers are included. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Walter J. Quuan

Drilling Superintendent Title

<u>12/18/96</u> Date

Dueease Print or Type Name



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

December 19, 1996

Energy Minerals and Natural Resources Dept. Oil Conservation Division 2040 South Pacheo Santa Fe, NM 87505 Attn: Mr. M. E. Stogner

Re: Application for Administrative Approval For Non-Standard Location North Indian Basin Unit #34 660' FSL & 660' FEL Sec. 4, T-21-S, R-23-E Eddy County, New Mexico



Dear Mr. Stogner:

Administrative approval is requested for an Upper Penn and Morrow test in the NIBU 34. The well is staked at 660' from the South line and 660' from the East line of Section 4, T-21-S, R-23-E and is an unorthodox location for the Upper Penn. The location is selected based on the geological constraints in the Upper Penn. This location is orthodox for the Morrow.

The Indian Basin field is bounded to the Northwest by limestone, non-reservoir rock. This is shown by the tan colored area on the Canyon structure map in Exhibit 1. The gas field produces from dolomite reservoir rock to the East and South. Section 4, T-21-S, R-23-E is located along the limestone/dolomite transition. The unorthodox location for the NIBU 34 is needed to maximize the potential to intersect reservoir dolomite and develop the reserves in Section 4.

Exhibit 2 illustrates the limestone-dolomite transition in cross section. Cross section A-A' shows that two wells drilled in Section 8, T-21-S, R-23-E intersected all limestone. A third well drilled to the East across the Limestone/Dolomite transition intersected reservoir dolomite (refer to Exhibit 1). A similar case can be made for the NIBU 34 and is illustrated by cross section B-B'on Exhibit 2. The orthodox well, NIBU Gas Com. No. 6, encountered limestone. The interpreted limestone/dolomite transition is to the Southeast of NIBU Gas Com. No. 6 as shown on the Canyon structure map of Exhibit 1. A well located in the SE/SE of Section 4 will have the best probability to encounter dolomite and develop the reserves on the Section 4 lease.

Oil Conservation Divison December 19, 1996 Page 2

The NIBU 34, Section 4, T-21-S, R-23-E, is unorthodox to three Marathon Oil Company operated North Indian Basin Unit leases, S/2 Section 3, Section 9, and Section 10, T-21-S, R-23-E. Marathon is its only affected offset operator to this proposed non-standard location.

Also enclosed please find an approved Application to Drill and Lease plat indicating all affected offset acreage. If anything additional is needed, please feel free to call me at 800/351-1417.

Very truly yours,

Ivalter 7

Walter J. Dueease MARATHON OIL COMPANY

WJD/dt h:\dueease\nibu34.ltr



21 S

MILE

STRUCTURE C.L.: 100'

R 23 E



- UPPER PENN. OIL WELL
- ☆ UPPER PENN. GAS WELL
- BORROW GAS WELL



MARATHON OIL COMPANY MID-CONTINENT REGION

INDIAN BASIN FIELD AREA EDDY COUNTY, NEW MEXICO

Form 3160-3 (July 1992)	UNI <sup>-</sup> DEPARTME BUREAU OF	OPCIAL TED STATI NT OF THE LAND MANAG	ES E INTE GEMEN		N TRIPLICA instructions ( vorso sido)	TE• on	FORM APPR OMB NO. 10 Expires: Febru LEASE DESIGNATION AN NMO5607	OVED 004-0136 ary 28, 1995 D SERIAL NO.	
APPL	ICATION FOR		O DRI	L OR DE	EPEN	6	IF INDIAN, ALLOTTEE OI	R TRIBE NAME	
•. TYPE OF WORK		DEEPEN [			-	7	UNIT AGREEMENT NAMI	B ASIN	
OIL X WELL X 2. NAME OF OPERATOR Marathon Oil Co	GAS OTHER		30 7		MULTIPLE		I. FARM OR LEASE NAME, N. INDIAN BAS D. APIWELL NO.	WELL NO. IN U. #34	
P.O. Box 552, N	е NO. Aidland, TX 79702	<u></u>		915/	687-83	27	0. FIELD AND POOL OR W	/ILDCAT	
A LOCATION OF WELL (Rep At surface 660' FSL & 660	ort location clearly and in account of FEL	rdance with any State i	requirement	.•)		/	I. JNDIAN BASIN 11. SEC., T., R., M., OR BLA AND BURVEY OR AREA	(MONADW, U.P.F.	
660' FSL & 660	' FEL						SEC. 4, T21S, 1	R <b>23E</b>	
14. DISTANCE IN MILES AND 10 MILES S.W.	OF LAKEWOOD, NM	OWN OR POST OFFICE					12. COUNTY OR PARISH	13. STATE NM	
13. DISTANCE FROM PROPOS LOCATION TO NEAREST PROPERTY OR LEASE LII (Also to nearest drig, un	NE PT. it line if any 1980'		16. NO. 0	P ACRES IN LEASE	17	NO. OF AC	ELL 640	1	
18. DISTANCE FROM PROPO TO NEAREST WELL, DRI	SED LOCATION.		19. PROPO	NED DEPTH	20	ROTARY	IRY OR CABLE TOOLS		
21. ELEVATIONS (Show whe 3862' G.L.	other DF,RT, GR, etc.)				<u>l</u> _		22. APPROX. DATE WOR	K WULL START*	
23.		PROPOSED CASIN	IG AND CE	MENTING PROGRA	AM		d water ba	5199	
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FO	от	SETTING DEPT	TH C		QUANTITY OF CEMENT		
12 1/4"	9 5/8"	36		1800'		1000 -	CIRCULATE TO SU	RFACE	
8 3/4"	7"	23,26		9,600'		1300 -	CIRCULATE TO SU	RFACE	
See attached M WELL IS PROPOS #18 DISTANCE T DISTANCE TO THIS PROPOSED AN APPLICATION	Iultipoint and Drilling SED INDIAN BASIN O MORROW WELL 5: U. PENN WELL - 29 WELL IS A NON STAI WILL BE FILED WITH COMPACE APPRO EXATE	Program for a (MORROW) 280' - NIBU #3 50' - NIBU GAS NDARD LOCATK H THE NMOCD.	specific , INDIAN 30 IN NE S COM # ON FOR QPPR QEFE OPEC	details. BASIN (UPPE /4, NE/4 SEC 3 @ NE/4, SV THE UPPER PI MAT SUBJECT MAT SUBJECT MAT REQUIRES ML CTI <u>BULAT</u>	R PENN) C. 10 W/4 SEC ENN. ENN. ENN. AENTS A	) TEST. C. 3	Nov 12 9 47 AN 196	00000 mg	
FOP IN ABOVE SPACE DESCF deepen directionally, give p	UNORTHODE X UBE PROPOSED PROGRAM: ortinent data on subsurface loca	ILCATION If proposal is to de tions and measured an	oopon, give o id true vertic	Witti Lata on present produ al depths. Give blow	uctive zone a vout prevent	and propose er program,	d new productive zone. If if any. 11/6/	proposal is to drill or	
24. SIGNED Walker (This space for Federa	J. UUUUU [						DATE		

APPROVED BY

•

.

Jony L Ferguson ADM Minerala TITLE 0

\_\_\_ DATE \_\_\_\_\_\_\_\_

"See instructions On Reverse Side Title 18 U.S.C. Soction 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.

DIS	TR	ICT	1		
r.0.	Box	1950.	Habbe,	NM	88241-1980

DISTRICT III

DISTRICT IV

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# 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

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DISTRICT II P.O. Drawer DD, Artenia, NM 88211-0710

1000 Rio Brazos Rd , Artec, NM 87410

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

12	OIL GONSERVATION	DIVISION
	P.O. Box 2088	

RECEIVED

NOV

Santa Fe, New Mexico 87504-2088

□ AMENDED REPORT

County

EDDY

# WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Cade	Pool Name							
		North Ind:	ian	Basin	(Morrow,	North	Indian	Basin	
Property Code	Prop NORTH INDI	erty Name AN BASIN	UNI	Γ			Well Num	ber 4	
OGRID Na.	<sup>oper</sup> MARATHON	ator Name OIL COMP	AN'Y				Elevatio 3862	n )'	

#### Surface Location UL or lot No. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line SOUTH P 21 S EAST 4 23 E 660 <del>6</del>60

			Bottom	Hole Loo	cation If Diffe	erent From Sur	face		
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acre	a Joint o	r infill	Consolidation	Code Or	der No.				
640	4	4							

#### 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

				OPERATOR CERTIFICATION
LOT 4 40.32 AC.	LOT 3 40.28 AC.	LOT 2 40.24 AC.	LOT 1 40.20 AC.	/ hereby certify the the information contained herein is true and complete to the best of my knowledge and beklet.
				Walter Dunan
				D. P. Nordt Printed Name Drilling Superintendent
				November 7, 1996 Date
	 			SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of
	1			actual surveys made by me or under my supervison, and that the same is true and correct to the best of my boligf.
	 			Date Surrey CDG Signification States
			3864. <u>8'</u> 3855.0' ↓ ♀ <del>=  </del> -660'-	Bans (2) 198 18 10 -31.21
			3869.1'	CAPTURICALO NO. COM NOTE

# Thirteen Point Surface Use Plan MARATHON OIL COMPANY

North Indian Basin Unit #34 Sec. 4, T·21-S, R·23-E Eddy County, New Mexico

- 1. <u>Existing Roads</u>: 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. Follow NM 401 2.2 miles then left 1.4 miles on existing lease road then north .1 miles into 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. <u>Planned Access Road</u>: 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 300' will be required. The access road will enter the drilling pad on the Southeast 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 and Santa Fe within a onemile radius of the proposed location. These locations have production facilities including separators, condensate, oil, water starage tanks. Marathon and Santa Fe operates a variety of dehydrators, meter runs, and several gathering lines in the onemile radius.
  - b. <u>New Facilities</u>: 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.
  - c. Rehabilitation of disturbed areas no longer needed for operations will be accomplished by grading, leveling and seeding as recommended.



#### 5. Location and Type of Water Supply:

- a. <u>Source</u>: Indian Basin Gas Plant, SW/4, NE/4, Sec. 23, T-21-S, R-23-E.
- b. The water will be trucked by a contractor 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. <u>Source of Construction Materials</u>:

- a. Construction materials will be obtained from the construction site.
- 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. <u>Methods of Handling Waste Material Disposal</u>:

- 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. <u>Ancillary Facilities</u>: Camp facilities will not be required. Portable trailers will be on location to house a company drilling foreman and contract toolpusher.

# 9. <u>Wellsite Lavout</u>:

- 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).

## 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. <u>Other Information</u>:

- a. There are no significant archaeological or cultural sites visible in the area of disturbance. 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: Internal
- g. Surface Owner: The surface is owned by the Federal Government, the surface is leased for grazing to the Forrest Lee Residuary Trust.

# 12. <u>Operator Representatives</u>:

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.

Queen

## DRILLING PROGRAM MARATHON OIL COMPANY

# North Indian Basin Unit #34

# 1. Estimated KB Elevation: 3878

	T	OP		BASE		FLUID
FORMATION	<u>MEASUR</u>	ED SUB	SEA M	EASURED	SUBSEA	CONTENT
Queen	Surface	+38	78' 6	50'	+3228'	water
San Andres	650'	+32	28' 22	250'	+1628'	water
Glorietta	2250'	+16	28' 2	355'	+578'	
Delaware	3300'	+5	78' 4	300'	-422'	
Bone Spring	4300'	-4	22' 5	950'	-2072'	oil gas
Wolfcamp	5950'	-20	72' 7	520'	-3642'	oil gas
B/Permian Shale	7520'.	-36	42' 7	530'	-3652'	
U. Penn	7530'	-36	52' 7'	550'	-3672'	gas, oll, water
Penn Dolomite	7550'	-36	72' 8	500'	-4272'	gas oil water
T/Strawn	8150'	-42	72' 8	800'	-4922'	3, traici
T/Atoka	8800'	-49	22' 9	050'	-5172'	
T/Morrow	9050'	-51	72' 9	500'	-5622'	
FORMATION	EST <u>PSIG</u>	SBHP <u>PPG EMW</u>	E <b>ST</b> SBHT DEG f	H2S <u>PPM</u>	SIGNIFICANCE (obi. marker, et	<u>c.)</u>
Bone Springs	1210	8.5		500	marker	
Wolfcamp	1680	9. <b>0</b>			marker	
B/Permian Shale		1 <b>810</b> 9. <b>0</b>			marker	
U. Penn	2050	9. <b>0</b>		5000	o <b>bjective pay</b>	
Penn Dolomite	2164	9. <b>0</b>		5000	objective	
Morrow	3460	9. <b>2</b>			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**:

<u>9.5/8" Surface:</u> 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, H<sub>2</sub>S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and tested 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.

# 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. <u>Casing and Cement Program</u>:

DEPTI FROM	н <u>то</u>	SECTIO LENGTI	N 1	HOLE <u>SIZE</u>	C <b>SG</b> SIZE	WT. PPE	GRADE	THREA COUPLI	DS NGS	NEW <u>USED</u>	
0 0 2 <b>800'</b>	1 800' 2 800' 9600'	1 800' 2 800' 6 800'		12.25" 8.75" 8.75"	9. <b>625"</b> 7 <b>"</b> 7"	36 23 26	K-55 K-55 K-55	8rd, ST( 8rd, LT( 8rd, LT(		New New New	
CASING STRING		DV DPTH	STG	LEAD TAIL	AMT <u>SXS</u>	TYPE <u>CEMEN</u>	L	YIELD <u>CE/SX</u>	WТ. <u>Р<b>Р</b></u> .	<u>10C</u>	ADDITIVES
9.625	None	1	L	700	"C" Lite		1.99	12.4	Surf	10#/SK CACI <sub>2</sub> , 3	.Gilsonite, 3% I/4# cello
9.625*			т	300	"C" Nea	t	1.32	14.8	Surf	2 <b>% C</b> AC	i, 1/4# cello
7*	±5600'	1	L	500	"C" Lite		1.8	13.6	5 <b>600'</b>	8 pps S salt, 5 p	ilica, .6% Halad 9, 3% pps Gilsonite
7"		2	L	675	"C" Lite		1.91	12.8	5 <b>500'</b>	5 pps, s 1/4 pps	alt, 5 p <b>ps Glisonite,</b> 5 Cello
7"		2	т	100	"C" Nea	t	1.32	14.8	±1000'		

Each stage will be preceded by an appropriate mud flush. Actual production hole volumes will be based on the callper 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'.

# 5. <u>Mud Program</u>:

DEPT	H		WEIGH	г	WL		VISUAL
<u>FROM</u>	<u>TO</u>	MUD TYPE	(PPG)	<u>VIS</u>	<u>CC</u>	ADDITIVES	MONTR.
0	1800'	air/mist		N/A	N/A	N/A Soap for mist	Reserve
1800'	5 <b>000'</b>	fresh	8.5	2 <b>8-3</b> 2	N/C	Gel, caustic, H <sub>2</sub> S Scavenger	Reserve
5000'	7200'	cut brine	9.0	32-36	N/C	Saturated brine	Reserve
7200'	9 <b>600'</b>	c <b>ut brine</b>	9. <b>0</b>	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:

INTEF	RVAL		
LOG/TEST/CORE/MUDLOG/OTHER	FROM	TO	REMARKS
DLL/MSFL/GR/CNL/LDT/CAL	TD	5 <b>00</b> 0'	
LDT/CNL/GR/CAL	TD	surf c <b>as</b> ing	
MUD LOGGER	6000'	TD Chroma	ROP, Lithology, Gas Analysis, atograph

# NO CORES OR DST'S

# 7. Abnormal Pressures. Temperatures or Potential Hazards:

None anticipated. Possible H<sub>2</sub>S in Cisco & Upper Penn. See H<sub>2</sub>S Drilling Operations Plan.

# 8. <u>Other Information</u>:

Anticipated Starting Date: As soon as possible.

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





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# 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

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# 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: N/A

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



#### SPECIAL DRILLING STIPULATIONS

#### THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

OPERATOR'S	NAME MARATHON	N OIL COMPANY	WELL NO. & NAME # 34 N INDIAN BASIN U	nit
LOCATION	660 F S	L& 660 F E L	SEC. 4 , T. 215., R. 23E .	
LEASE NO.	NM-05607	COUNTY EDDY	STATE NM	

The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

#### I. SPECIAL ENVIRONMENT REQUIREMENTS

( ) Lesser Prairie Chicken (Stips attached)
 ( ) San Simon Swale (Stips attached)
 ( ) Other

#### II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

(7) The BLM will monitor construction of this drill site. Notify the (7) Carlsbad Resource Area Office at (505) 887-6544 ( ) Hobbs Office at (505) 393-3612, at least 3 working days prior to commencing construction.

( $\mathcal J$  Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

() Other

#### III. WELL COMPLETION REQUIREMENTS

() A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

( $\checkmark$  Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and reseeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Side (PLS), per acre.

( ) A. Seed Mixture 1 (Loamy Site)	( ) B. Seed Mixture 2 (Sandy Sites)
Lehmanns Lovegrass (Eragrostis lehmannlana) 1.0	Sand Dropseed (Sporobolus cryptandrus) 1.0
Side Oats Grass (Bouteloua curtipendula) 5.0	Sand Lovegrass (Eragrostis trichodes) 1.0
Sand Dropseed (Sporobolus cryptandrus) 1.0	Plains Bristlegrass (Setaria magrostachya) 2.0
() C. Seed Mixture 3 (Shallow Sites)	( ) D. Seed Mixture 4 ("Gyp" Sites)
Sideoats Grama (Boute curtipendula) 1.0	Alkali Sacaton (Sporobolus airoides) 1.0
Lehmanns Lovegrass (Eragrostis lenmanniana) 1.0	Four-Wing Saltbush (Atriplex canescens) 5.0
or Boar Lovegrass (E. chloromalas)	

Seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

() Other

#### RESERVE PIT\_CONSTRUCTION\_STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

<u>Reclamation</u>: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

#### OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

1) Lined as specified above and,

2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and is capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

#### CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to proceed by BLM.

#### TRASH PIT STIPS

All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted. Operator's Name: <u>Marathon Oil Company</u> Well No. <u>34 - North Indian Basin Unit</u> Location: <u>660' FSL & 660' FEL</u> sec. <u>4</u>, T. <u>21 S.</u>, R. <u>23 E.</u> Lease: <u>NM-05607</u>

I. DRILLING OPERATIONS REQUIREMENTS:

The Bureau of Land Management (BLM) is to be notified at (505) 887-6544 in sufficient time for a representative to witness:

#### 1. Spudding

2. Cementing casing: <u>9-5/8</u> inch <u>7</u> inch

3. Include the API No. assigned to well by NMOCD on the subsequent report of setting the first casing string.

#### II. CASING:

1. <u>9-5/8</u> inch surface casing should be set <u>at 1800 feet</u>, below usable water and circulate cement to the surface. If cement does not circulate to the surface this BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. Minimum required fill of cement behind the  $\underline{7}$  inch production casing is <u>sufficient to tie back 200 feet into the 9-5/8 inch surface casing set at 1800 feet.</u>

#### III. PRESSURE CONTROL:

1. Before drilling below the <u>9-5/8</u> inch surface casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be <u>3000</u> psi.

3. After setting the 9-5/8 inch intermediate casing string and before drilling into the <u>Wolfcamp</u> formation, the BOPE shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

4. The results of the test will be reported to the BLM Carlsbad Resource Area office at 620 East Greene Street, Carlsbad, New Mexico 88220-6292.

#### IV. OTHER:

1. A Hydrogen Sulfide Contingency Plan should be activated prior to drilling in the <u>Cisco</u> formation. A copy of the plan shall be posted at the drilling site.

2. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval of this office.

#### EXHIBIT A

BLM Serial Number: NM-05607 Company Reference: # 34 N. INDIAN BASIN CONFT

#### STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS THE ROSWELL DISTRICT, BLM

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

#### GENERAL REQUIREMENTS

The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

Holder agrees to comply with the following stipulations:

1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

/\_\_/ Those segments of road where grade is in excess of 10% for more than 300
feet shall be designed by a professional engineer.

#### 2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

 $\frac{\sqrt{1}}{\sqrt{1}}$  Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

/\_\_/ Flat-blading is authorized on segment(s) delineated on the attached map.

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#### 3. DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

SPACING	IN	TERVAL	FOR	TURNOUT	DI	TCHES
Perce	ent	slope		Spacing	ir	nterval
0	-	48		400'	-	150'
48	-	68		250'	-	125'
68	-	88		200'	-	100'
88	-	10%		150'	-	75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

/\_\_/ 400 foot intervals.

/\_/ \_\_\_ foot intervals.

/\_\_/ locations staked in the field as per spacing intervals above.

/\_\_/ locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

spacing interval = 400' + 100'
road slope in %

Example: 4% slope: spacing interval =  $\frac{400}{4}$  + 100 = 200 feet

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#### 4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



STANDARD TURNOUT - PLAN VIEW

#### 5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

#### 6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

#### 7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

#### 8. PUBLIC ACCESS

•

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

#### 9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

10. SPECIAL STIPULATIONS:  $\mathcal{N}\mathcal{U}\mathcal{E}$ .

# FIGURE 1: CROSS-SECTIONS AND PLANS FOR TYPICAL ROAD CONSTRUCTION REPRESENTATIVE OF BLM RESOURCE, AND HIGHER CLASS, ROADS.

(Travel way, top width, driving surface, and travel surface are synonomous.)



# **INTENTIONAL OMISSIONS**

The following document(s) have been intentionally omitted from this file due to the indicated reasons.

<u>sl 3759</u> FILE #

# **DESCRIPTION OF OMITTED DOCUMENTS**

OMITTED DOCUMENT

**REASON OMITTED** 

EXHIBIT 8 Logs, MAPS, graphs Ζ.

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APP			O DR	ILL OR DEEPI	EN	6. IP INDIAN, ALLOTTE	E OR TRIBE NAME	
14. TYPE OF WORK		DEEPEN				7. UNIT AGREEMENT N	AME RASIN	
		-D			u []	8. FARM OR LEASE NAM	AE, WELL NO.	
2. NAME OF OPERATOR Marathon Oil Co	ompany	<u>x</u>				N. INDIAN 34 9. API WELL NO.	SIN U. #34	
3. ADDRESS AND TELEPHO P.O. Box 552,	NE NO. Midland, TX 7970	)2		915/687-	8327	10. FIELD AND POOL O	RWILDCAT	
AL ENCATION OF WELL (RE AL ENTING 660' FSL & 660	pport location clearly and in 0' FEL	accordance with any State	requireme	nts.*)		N. INDIAN BASI	MOAROW, U. PE	
At proposed prod. zone 660° FSL & 660	0' FEL					SEC. 4, T215	, R <b>23E</b>	
14. DISTANCE IN MILES AN 10 MILES S.W.	D DIRECTION FROM NEARE	st town or post office IM	,			12. COUNTY OR PARLES	IS. STATE NM	
13. DISTANCE FROM PROP LOCATION TO NEARES PROPERTY OR LEASE L (Also to nearest drig. u	OSED* T INE, PT. Init line, if any) <b>1980'</b>	<u></u>	16. NO. 57	OF ACRES IN LEASE 60	17. NO. OF A TO THIS V	ACRES ASSIGNED WELL 640		
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. SEE BELOW				Posed depth 600'	20. ROTARY ROTA	ROTARY OR CABLE TOOLS		
21. ELEVATIONS (Show w 3862' G.L.	hether DF,RT, GR, etc.)					22. APPROX. DATE W	ORK WILL START.	
23.		PROPOSED CASIN	IG AND C	EMENTING PROGRAM		id water u	asin	
SIZE OF HOLE	GRADE, SIZE OF CAS	ENG WEIGHT PER PO	ют	SETTING DEPTH	CONDUC	QUANTITY OF C	TO SURFACE	
12 1/4"	9 5/8"	36		1800'	1000 -	- CIRCULATE TO SURFACE		
8 3/4"	7"	23,26		9,600'	1300 –	CIRCULATE TO	SURFACE	
See attached   WELL IS PROPC #18 DISTANCE TO DISTANCE TO	Multipoint and Dri DSED INDIAN BASIN TO MORROW WELL U. PENN WELL -	ling Program for (MORROW) L 5280' – NIBU #3 2950' – NIBU GA3	specifi ), INDIA 30 IN N 5 COM	C detalls. N BASIN (UPPER PE E/4, NE/4 SEC. 10 #3 @ NE/4, SW/4	NN) TEST. SEC. 3	NUN 12		
THIS PROPOSED AN APPLICATION	WELL IS A NON S N WILL BE FILED N	STANDARD LOCATION NITH THE NMOCD.	on for	THE UPPER PENN.		·		
	oresect Like Appi By State	TO Roval	3997 0814 0255	NORME RUBBERT FO ERAL REQUIREMENT NAL UN <u>EULANONS</u>	S 1.1242		· · · · · · · · · · · · · · · · · · ·	
IN ABOVE SPACE DESC deepen directionally, give	K UNCRTICPC CRIBE PROPOSED PROGR portinent data on subsurface	X LCCATICN IAM: If proposal is to do a locations and measured an	eepen, giv nd true ver	s data on present productive z tical depths. Give blowout pre	one and propos venter program	ed new productive zone n, if any.	. If proposal is to drill or	
24. SIGNED Walke	2. Quuan	FORDAN	TITLE	rilling Superintende	ont	DATE11/	6/96	
(This space for Feder	ral or State office use)			<u></u>				
PERMIT NO				APPROVAL DATE		· · · · · · · · · · · · · · · · · · ·		
Application approval do CONDITIONS OF APP	os not warrant or certify that the s ROVAL, IF ANY:	pplicent holds legal or equitable	title to tho <b>se</b>	rights in the subject lease which we	uid ontitle the appi	licent to conduct operations (	herean.	
APPROVED BY	Jony L7	líguson.	т <b>п</b> Lе	ADM Miner	ala	_ DATE 12/12	196	

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\*See Instructions On Reverse Side Title 18 U.S.C. Soction 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.

DIS	<b>TR</b>	ICT	I		
P.O.	Box	1050.	Hobbe,	NM	88241-1980

DISTRICT IV

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#### State of New Mexico

Energy, Minerais and Natural Resources Department

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

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

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

DISTRICT III NON 12 OIL 6 CONSERVATION DIVISION

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REGERVED

Santa Fe, New Mexico 87504-2088

□ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code		Pool Name	Pool Name		
		North Indian Basir	n (Morrow,	North	Indian	Basin
Property Code	Prop NORTH INDI		Well Numb 34	)er		
OGRID No.	oper MARATHON	ator Name DIL COMPANY			Elevation 3862	, ,

#### Surface Location North/South line UL or lot No. Feet from the Feet from the Section Township Range Lot Idn East/West line County Р SOUTH 4 21 S 23 F 660 560 FAST EDDY

Bottom Hole Location If Different From Surface

UL or Iol No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 640	Joint o	r Infill C	onsolidation (	ode Or	der No.			•	

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

					OPERATOR CERTIFICATION
					I hereby certify the the information
	LOT 4	LOT 3	LOT 2	LOT 1	contained herein is true and complete to the best of my knowledge and bellaf.
	40. <b>32</b> AC.	40.28 AC.	40.24 AC.	40.20 AC.	
					lualy A
					Watter Juffar
			-		D. P. Nordt
K					Printed Name
		I		1	Drilling Superintendent
		1		1	Title
N					November 7, 1996
		·			SURVEYOR CERTIFICATION
K		1			I hereby certify that the wall location shown
					on this plat was plotted from field notes of
					supervisor, and that the same is true and
				、	correct to the best of my bollef.
					OCTOBER 25, 1996
					Date Surragest CDG
<b>A</b>	·		-		Signature & Boal B
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				Q <del></del> 660'-	- 10.31.96
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		í.			Curilicia to No. 10 N W VEST 676 ONALD EIDSON 3239
	$\langle \rangle$		$\mathbf{X}$	$\langle \langle \chi \rangle$	POFESSION 12641

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# Thirteen Point Surface Use Plan MARATHON OIL COMPANY

# North Indian Basin Unit #34 Sec. 4, T-21-S, R-23-E Eddy County, New Mexico

- 1. <u>Existing Roads</u>: 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. Follow NM 401 2.2 miles then left 1.4 miles on existing lease road then north .1 miles into 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. <u>Planned Access Road</u>: 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 300' will be required. The access road will enter the drilling pad on the Southeast 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 and Santa Fe within a onemile radius of the proposed location. These locations have production facilities including separators, condensate, oil, water starage tanks. Marathon and Santa Fe operates a variety of dehydrators, meter runs, and several gathering lines in the onemile radius.
  - b. <u>New Facilities</u>: 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.
  - c. Rehabilitation of disturbed areas no longer needed for operations will be accomplished by grading, leveling and seeding as recommended.

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- 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 trucked by a contractor 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 the construction site.
- 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. <u>Ancillary Facilities</u>: Camp facilities will not be required. Portable trailers will be on location to house a company drilling foreman and contract toolpusher.

# 9. <u>Wellsite Layout</u>:

- 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).

#### 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. <u>Other Information</u>:

- a. There are no significant archaeological or cultural sites visible in the area of disturbance. 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: Internal
- g. Surface Owner: The surface is owned by the Federal Government, the surface is leased for grazing to the Forrest Lee Residuary Trust.

#### 12. Operator Representatives:

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

#### 13. <u>Certification</u>:

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.

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# DRILLING PROGRAM MARATHON OIL COMPANY

# North Indian Basin Unit #34

# 1. Estimated KB Elevation: 3878

	TOP-		BAS	E	FLUID
FORMATION	MEASURED	<u>SUBSEA</u>	MEASURED	SUBSEA	CONTENT
Queen	Surface	+3878'	650'	+3228'	water
San Andres	650'	+3228'	2250'	+1628'	water
Glorietta	2250'	+1628'	2355'	+578'	
Delaware	3300'	+578'	4300'	-422'	
Bone Spring	4300'	-422'	5950'	-2072'	oil gas
Wolfcamp	5950'	-2072'	7520'	-3642'	oil gas
B/Permian Shale	7520'.	-3642'	7530'	-3652'	··· <b>J</b>
U. Penn	7530'	-3652'	7550'	-3672'	gas, oll, water
Penn Dolomite	7550'	-3672'	8500'	-4272'	gas, oil, water
T/Strawn	8150'	-4272'	8800'	-4922'	j,,
T/Atoka	8800'	-4922'	9050'	-5172'	
T/Morrow	9050'	-5172'	9500'	-5622'	
FORMATION	EST SBH <u>PSIG PPC</u>	IP EMW	EST SBHT H2 DEG f PP	SSIGNIFICA M <u>(obi. marke</u>	NCE r. etc.)
Bone Springs Wolfcamp B/Permian Shale	1210 8.5 1680 9.0	0 90	50	0 marker marker	rkar
U. Penn Penn Dolomite Morrow	2050 9.0 2164 9.0 3460 9.2	0 9.0	50 50	00 objective pa 00 objective Objective	lý

# 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**:

<u>9 5/8" Surface:</u> 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, H<sub>2</sub>S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and tested 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.

#### 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. <u>Casing and Cement Program</u>:

DEPTI <u>FROM</u>	H TQ	SECTIO LENGTH	N 1	HOLE <u>SIZE</u>	C <b>SG</b> Size	wт. Р <b>ре</b>	GRADE	THREA COUPLI	DS NGS	NEW USED	
0 0 2 <b>800'</b>	1 800' 2 800' 9600'	1 800' 2 800' 6 800'		12.25" 8.75" 8.75"	9.625" 7" 7"	36 23 26	K-55 K-55 K-55	8rd, STC 8rd, LTC 8rd, LTC		New New New	
CASING STRING	;	DV DPTH	<u>stg</u>	LEAD <u>TAIL</u>	A <b>MT</b> <u>SXS</u>	TYPE <u>CEMEN</u>	L	YIELD <u>CE/SX</u>	WТ. <u>РР</u> G.	<u>10C</u>	ADDITIVES
9. <b>62</b> 5"	None	1	L	700	"C" Lite		1.99	12.4	Surf	10#/SK CACI <sub>2</sub> , 1	.Gilsonite, 3% I/4# cello
9.625"			т	300	"C" Nea	t	1.32	14.8	Surf	2 <b>% C</b> AC	l, 1/4# cello
7"	±5600'	1	L	500	"C" Lite		1.8	13.6	5 <b>600'</b>	8 pps S salt, 5 p	ilica, .6% Hal <mark>ad 9, 3%</mark> ops Gilsonite
7"		2	L	675	"C" Lite		1.91	12.8	5 <b>500'</b>	5 pps, s 1/4 pps	salt, 5 pp <mark>s Gilsonite,</mark> s Cello
7 <b>"</b>		2	т	100	"C" Nea	t	1.32	1 <b>4.8</b>	±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'.

# 5. <u>Mud Program</u>:

DEPTH		WEIGH	WEIGHT			VISUAL	
FROM	<u>T0</u>	MUD TYPE	<u>(PPG)</u>	<u>VIS</u>	<u>CC</u>	ADDITIVES	MONTR.
0	1800'	air/mist		N/A	N/A	N/A Soap for mist	Reserve
1800'	5 <b>000'</b>	fresh	8.5	2 <b>8-3</b> 2	N/C	Gel, caustic, H <sub>2</sub> S Scavenger	Reserve
5000'	7200'	c <b>ut brine</b>	9. <b>0</b>	32-36	N/C	Saturated brine	Reserve
7200'	9 <b>600'</b>	c <b>ut brine</b>	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:

INTEF	RVAL-	то	REMARKS
DLL/MSEL/GR/CNL/LDT/CAL	TD	5000'	
LDT/CNL/GR/CAL	TD	surf	
MUD LOGGER	6000'	TD	ROP, Lithology, Gas Analysis,
		Chrom	atograph

# NO CORES OR DST'S

7. Abnormal Pressures. Temperatures or Potential Hazards:

None anticipated. Possible H<sub>2</sub>S in Cisco & Upper Penn. See H<sub>2</sub>S Drilling Operations Plan.

# 8. <u>Other Information</u>:

Anticipated Starting Date: As soon as possible.

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





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# 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: N/A

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

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



#### SPECIAL DRILLING STIPULATIONS

#### THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

OPERATOR'S	NAME MARATHON	N OIL COMPANY	WELL NO. & NAME #_34 N INDI	AN RASTN UN. +
LOCATION	660 F S	L& 660'F E L	SEC. 4 , T. 215., R. 23E	
LEASE NO.	NM-05607	COUNTY EDDY	STATE NM	

The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

#### I. SPECIAL ENVIRONMENT REQUIREMENTS

( ) Lesser Prairie Chicken (Stips attached)
 ( ) Floodplain (Stips attached)
 ( ) Other

#### II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

( $\mathcal{N}$  The BLM will monitor construction of this drill site. Notify the (,) Carlsbad Resource Area Office at (505) 887-6544 () Hobbs Office at (505) 393-3612, at least 3 working days prior to commencing construction.

() Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

() All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately \_\_\_\_\_\_\_\_\_ inches in depth. Approximately \_\_\_\_\_\_\_ cubic yards of topsoil material will be

stockpiled for reclamation.

() Other

#### III. WELL COMPLETION REQUIREMENTS

() A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

(1) Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Side (PLS), per acre.

( ) A. Seed Mixture 1 (Loamy Site)	( ) B. Seed Mixture 2 (Sandy Sites)
Lehmanns Lovegrass (Eragrostis lehmannlana) 1.0	Sand Dropseed (Sporobolus cryptandrus) 1.0
Side Oats Grass (Bouteloua curtipendula) 5.0	Sand Lovegrass (Eragrostis trichodes) 1.0
Sapd Dropseed (Sporobolus cryptandrus) 1.0	Plains Bristlegrass (Setaria magrostachya) 2.0
()/C. Seed Mixture 3 (Shallow Sites)	( ) D. Seed Mixture 4 ("Gyp" Sites)
Sideoats Grama (Boute curtipendula) 1.0	Alkali Sacaton (Sporobolus airoides) 1.0
Lehmanns Lovegrass (Eragrostis lenmanniana) 1.0	Four-Wing Saltbush (Atriplex canescens) 5.0
or Boar Lovegrass (E. chloromalas)	

Seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

() Other

#### RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

<u>Reclamation</u>: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

#### OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

1) Lined as specified above and,

2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and is capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

#### CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to proceed by BLM.

#### TRASH PIT STIPS

All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted. Operator's Name: <u>Marathon Oil Company</u> Well No. <u>34</u> - <u>North Indian Basin Unit</u> Location: <u>660' FSL & 660' FEL</u> sec. <u>4</u>, T. <u>21 S.</u>, R. <u>23 E.</u> Lease: <u>NM-05607</u>

# I. DRILLING OPERATIONS REQUIREMENTS: ROOMEN CONTROLLED MARKED MARKED

The Bureau of Land Management (BLM) is to be notified at (505) 887-6544 in sufficient time for a representative to witness:

#### 1. Spudding

2. Cementing casing: <u>9-5/8</u> inch <u>7</u> inch

3. Include the API No. assigned to well by NMOCD on the subsequent report of setting the first casing string.

#### II. CASING:

1. <u>9-5/8</u> inch surface casing should be set <u>at 1800 feet</u>, below usable water and circulate cement to the surface. If cement does not circulate to the surface this BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. Minimum required fill of cement behind the  $\underline{7}$  inch production casing is sufficient to tie back 200 feet into the 9-5/8 inch surface casing set at 1800 feet.

#### III. PRESSURE CONTROL:

1. Before drilling below the 9-5/8 inch surface casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be <u>3000</u> psi.

3. After setting the 9-5/8 inch intermediate casing string and before drilling into the <u>Wolfcamp</u> formation, the BOPE shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

4. The results of the test will be reported to the BLM Carlsbad Resource Area office at 620 East Greene Street, Carlsbad, New Mexico 88220-6292.

#### IV. OTHER:

1. A Hydrogen Sulfide Contingency Plan should be activated prior to drilling in the <u>Cisco</u> formation. A copy of the plan shall be posted at the drilling site.

2. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval of this office.

BLM Serial Number: NM-05607

Company Reference: # 34 N. INDIAN BASIN ant

#### STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS THE ROSWELL DISTRICT, BLM

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

#### GENERAL REQUIREMENTS

The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

Holder agrees to comply with the following stipulations:

#### 1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

/\_\_/ Those segments of road where grade is in excess of 10% for more than 300
feet shall be designed by a professional engineer.

#### 2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

 $\frac{1}{\sqrt{2}}$  Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

/\_\_/ Flat-blading is authorized on segment(s) delineated on the attached map.

Page 2 of 4

#### 3. DRAINAGE

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Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

SPACING	IN	TERVAL	FOR	TURNOUT	DI	TCHES
Perce	ent	slope		Spacing	ir	nterval
0	-	48		400'	-	150'
48	-	68		250'	-	125'
68	-	88		200'	-	100'
88	-	10%		150'	-	75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

/\_\_/ 400 foot intervals.

/\_\_/ \_\_\_ foot intervals.

/\_\_/ locations staked in the field as per spacing intervals above.

/\_\_/ locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

spacing interval = \_\_\_\_\_400' + 100'
road slope in %

Example: 4% slope: spacing interval =  $\frac{400}{4}$  + 100 = 200 feet

Page 3 of 4

#### 4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



STANDARD TURNOUT - PLAN VIEW

#### 5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

#### 6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

#### 7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

#### 8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

#### 9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

# 10. SPECIAL STIPULATIONS: $\mathcal{N}\mathcal{U}\mathcal{C}$

# FIGURE 1: CROSS-SECTIONS AND PLANS FOR TYPICAL ROAD CONSTRUCTION REPRESENTATIVE OF BLM RESOURCE, AND HIGHER CLASS, ROADS.

(Travel way, top width, driving surface, and travel surface are synonomous.)



CMD : OG6C101	D: ONGARD C101-APPLICATION FOR PERMIT TO DRILL									
OGRID Idn Opr Name, Ad	: 14021 A dr: MARATHON PO BOX 5 MIDLAND,	PI Well No: 30 OIL CO 52 FX 79702	15 29296	APD Status(A/C Aprvl/Cncl Date	/P): A e : 12-12-1996					
Prop Idn:	5411 NORTH IN	DIAN BASIN UNI	Т	W	ell No: 34					
	U/L Sec To	ownship Range	Lot Idn N	lorth/South	East/West					
Surface Locn OCD U/L	: P 4 2: : P API Co	1S 23E Dunty: 15	 F	TG 660 F S I	FTG 660 F E					
Work typ(N/E, Lease typ(F/S	/D/P/A) : S/P/N/J/U/I):	N Well typ(O/ F Ground Leve	G/M/I/S/W/C l Elevation	2): G Cable/Ro 1 : 3862	otary (C/R) : R					
State Lease M Prpsd Depth	No: : 9600 Prp:	Multiple Com sd Frmtn : M	NP (Y/N) IORROW	: N						
E0009 PF01 HELP PF07	9: Enter data PF02 PF08	to modify rec PF03 EXIT PF09 PRINT	ord PF04 GoTo PF10 C102	PF05 PF11 HISTORY	PF06 CONFIRM PF12					

CMD : OG6IWCM

API Well No : 30 15 29296 Eff Date : 01-17-1997 WC Status : Pool Idn : OGRID Idn : Prop Idn : Well No : GL Elevation: U/L Sec Township Range North/South East/West Prop/Act(P/A) B.H. Locn : FTG F FTG F Lot Identifier: Dedicated Acre: Lease Type : F Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

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# ONGARD INQUIRE LAND BY SECTION

Sec : 04 Twp : 21S Rng : 23E Section Type : NORMAL

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E		i 	F		G		   H	
40.00			40.00		40.00		40.00	
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PF07 BKWD	PF08	FWD	PF09 PRINT	PF	10 SDIV	PF11	PF12	

ľ 32 28 .24 .20 1.04

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# CMD : OG5*S*ECT

# ONGARD INQUIRE LAND BY SECTION

01/21/97 09:04:38 OGOMES -EMDO PAGE NO: 2

# Sec : 04 Twp : 21S Rng : 23E Section Type : NORMAL

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PF01 HELP	PF02	PF03 EXIT	PF04 GoTo PF	05 PF06
PF07 BKWD	PF08 FWD	PF09 PRINT	PF10 SDIV PF	11 PF12

ONGARD 01/21/97 09:05:02 CMD : C105-WELL COMPLETION OR RECOMP CASING LOG OGOMES -EMDO OG6CLOG OGRID Identifier : 14021 MARATHON OIL CO Prop Identifier : 6413 NORTH INDIAN BASIN UNIT GAS COM A API Well Identifier : 30 15 20061 Well No : 006 Surface Locn - UL : J Sec : 4 Twp : 21S Range : 23E Lot Idn : Multple comp (S/M/C): S TVD Depth (Feet) : 99999 MVD Depth (Feet): P/A Date : Spud Date : Casing/Linear Record: \_\_\_\_\_ S Size Grade Weight Depth(ft) Depth(ft) Hole Size Cement ---- TOC ----(inches) (lb/ft) Top-Liner Bot-Liner (inches) (Sacks) (feet) Code \_\_\_\_\_ 99.000 99.0 99999.0 99999.0 99.000 9999 99999 C

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PF07		PF08		PF09	COMMENT	r pf10	TLOG	PF11	PF12	

01/21/97 09:05:09 ONGARD CMD : INQUIRE WELL COMPLETIONS OGOMES - EMDO OG6IWCM API Well No : 30 15 20061 Eff Date : 04-30-1991 WC Status : P Pool Idn : 79040 INDIAN BASIN; UPPER PENN (PRO GAS) OGRID Idn : 14021 MARATHON OIL CO Prop Idn : 6413 NORTH INDIAN BASIN UNIT GAS COM A Well No : 006 GL Elevation: 3843 U/L Sec Township Range North/South East/West Prop/Act(P/A) B.H. Locn : J 4 21S 23E FTG 999 F S FTG 999 F E P Lot Identifier: Dedicated Acre: Lease Type : F Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

M0025: Enter PF keys to scrollPF01 HELPPF02PF03 EXITPF04 GoToPF05PF06PF07PF08PF09PF10 NEXT-WCPF11 HISTORYPF12 NXTREC

CMD : ONGARD 01/17/97 16:06:34 OGOMES -EMFK OG6CLOG C105-WELL COMPLETION OR RECOMP CASING LOG OGRID Identifier : 14021 MARATHON OIL CO Prop Identifier : 6411 NORTH INDIAN BASIN UNIT API Well Identifier : 30 15 29296 Well No : 34 Surface Locn - UL : P Sec : 4 Twp : 21S Range : 23E Lot Idn : Multple comp (S/M/C): N TVD Depth (Feet) : MVD Depth (Feet): Spud Date : P/A Date : Casing/Linear Record: \_\_\_\_\_ S Size Grade Weight Depth(ft) Depth(ft) Hole Size Cement ---- TOC ----(lb/ft) Top-Liner Bot-Liner (inches) (Sacks) (feet) Code (inches) \_\_\_\_\_

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