COPY TO O. & G.

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

30-025-27104

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: LC 031695 (6)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL ☑ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER — SINGLE ZONE ☑ MULTIPLE ZONE ☐

7. UNIT AGREEMENT NAME: NMFU

8. FARM OR LEASE NAME: Warren Unit

2. NAME OF OPERATOR: CONOCO INC.

9. WELL NO.: 87

3. ADDRESS OF OPERATOR: P. O. Box 460, Hobbs, N.M. 88240

RECEIVED
OCT 1980
U. S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

10. FIELD AND POOL, OR WILDCAT: Warren McKee

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 660' FSL & 990' FEL
At proposed prod. zone: Same

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 29 T-20S R-38E

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

12. COUNTY OR PARISH: Lea — 13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
		40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
	9510'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3521' GR

22. APPROX. DATE WORK WILL START*: January 15, 1981

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	54.5 #	1480'	1153 sx. - Circ.
12 1/4"	9 5/8"	36 #	3200'	956 sx. - Circ.
8 3/4"	7"	26 #	9510'	1160 sx.

It is proposed to drill a straight hole to a TD of 9510' & Complete it as a Warren McKee oil well.
See attachments for 10-point well plan, 13-point surface use plan, & BOP specs

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED D. E. Bingham TITLE Administrative Supervisor DATE 9-22-80

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

USGS-6
NMFU-4
FILE
Rel. Folder - 2

*See Instructions On Reverse Side

N MEXICO OIL CONSERVATION COMMISS I

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Conoco Inc.	Warren Unit	87

Unit Letter	Section	Township	Range	County
P	29	20 south	38 east	Lea

Actual Footage Location of Well: 660 feet from the south line and 990 feet from the east line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3521	McKee	Warren McKee	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

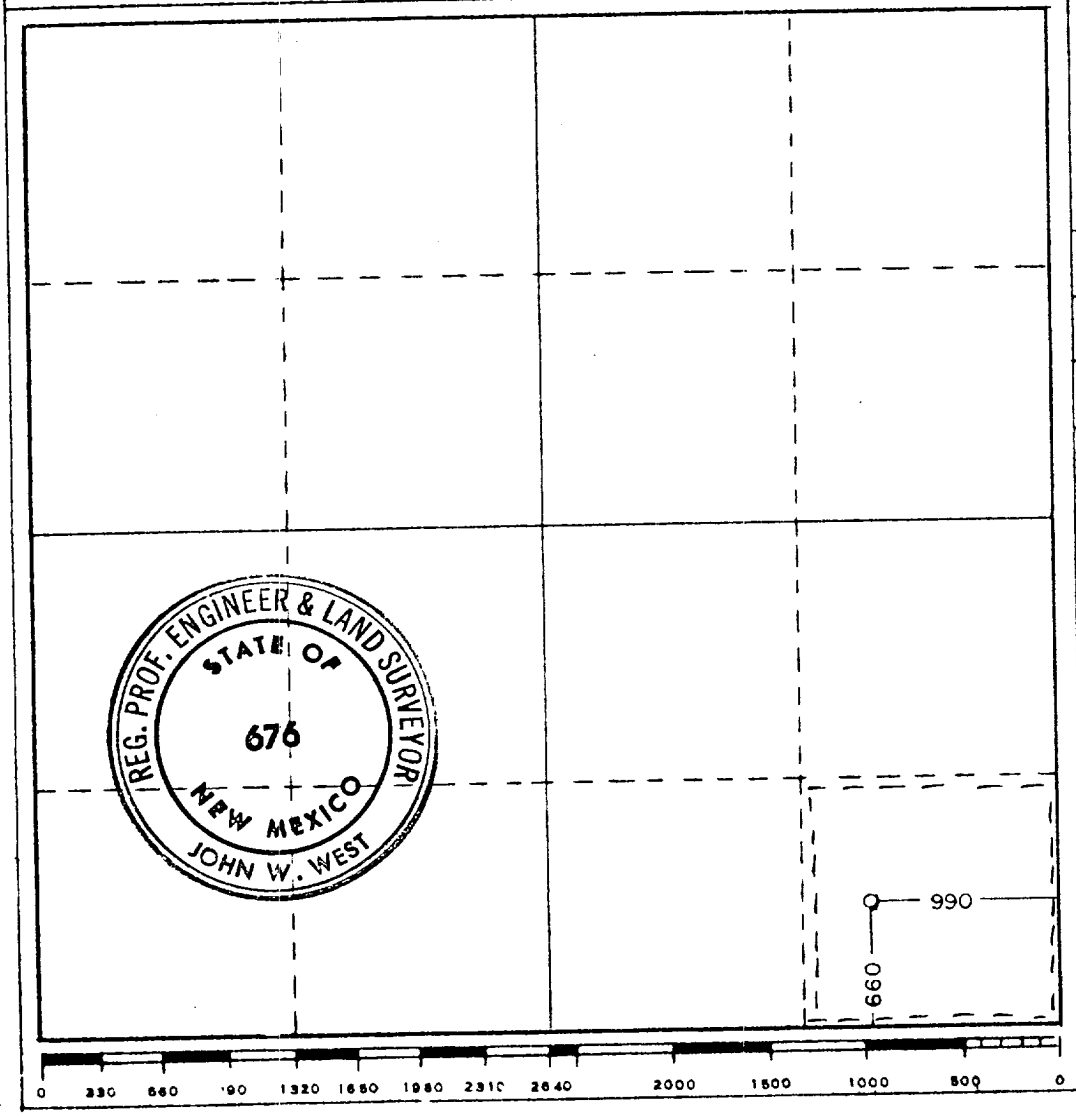
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



REG. PROF. ENGINEER & LAND SURVEYOR
STATE OF
676
NEW MEXICO
JOHN W. WEST

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: D. E. Bingham

Position: ADMIN SUPERVISOR

Company: Conoco Inc.

Date: 9-22-80

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 9-8-80

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. JOHN W. WEST 676
PATRICK A. ROMERO 6663
Ronald J. Eidson 3239

ATTACHMENT TO FORM 9-331 C
APPLICATION FOR PERMIT TO DRILL

Conoco Inc.
Warren Unit No. 87
Sec. 29, T-20S, R-38E
Lea County, New Mexico

1. The geologic name of the surface formation is Pleistocene Sand.

2. The estimated tops of important geologic markers are shown on the attached Proposed Well Plan.

3. The estimated depths at which anticipated water, oil, gas or other mineral-bearing formations to be encountered are shown on attached Proposed Well Plan.

4. The proposed casing program is as follows:

0' - 1480'	13 3/8",	54.5#, K-55,	STC
0' - 3200'	9 5/8",	36#, K-55,	STC
0' - 9510'	7",	26#, K-55 & N-80,	LTC & BRTC

5. A drawing of an API Series 900 Blowout Preventer Specification is attached. Pipe rams and blinds will be checked to 1,000 PSI for 30 minutes when BOP is installed. BOP will be checked when casing string is set and operated daily for checks.

6. The proposed mud program is as follows:

0' - 1480'	8.5 - 9.0 ppg	spud mud
1480' - 9510'	9.0 - 10.0 ppg	salt gel

7. The auxiliary equipment to be used is:

   (1) kelly cocks
   (2) floats at the bit

8. It is proposed to run GR CAL CNL FDC PDC logs at selected intervals.

9. No abnormal pressures or temperatures are expected to be encountered in this well.

10. The anticipated starting date is January 15, 1981, with a duration of approximately 45 days.

PROPOSED WELL PLAN OUTLINE

WELL NAME: WARREN UNIT MCKEE #87 COUNTY: LEA

LOCATION: 660' FSL & 990' FEL STATE: NM
Sec. 29, T-20S, R-38E EST. KB: 3525'
EST. GL: 3514'

DEPTH	FORMATION TOPS & TYPE	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE (IN)	CASING SIZE (IN)	CASING DEPTH (FT)	(PPG) FRACTURE GRADIENT	(PPG) FORMATION PRESSURE GRADIENT	MUD (PPG) WEIGHT	MUD TYP
	PLEISTOCENE									
	WATER SS.	90'-170'	GEOLOGRAPH DEVIATION 0-TD							
1000					54.5# K-55 STC					
	RUSTLER ANHY.	1430'		17-1/2	13-3/8	1480'	11.0-12.0	8.3-8.5	8.5-9.0	SPUD
	SALADO SALT	1520'								
2000		POSSIBLE WATER FLOWS 2400'-3000'								
	BASE SALADO	2590'			36# K-55 STC			less than		
3000				12-1/4	9-5/8	3200	12.0-13.0	8.5	9.0-10.0	SALT GEL
	PENROSE SS.	3710'								
4000										
5000										
	GLORIETA SS.	5460'								
6000	BLINEBRY MKR.	5930'								
	TUBB FM. SS.	6430'								
	DRINKARD DOLO.	6720'								
7000	ABO DOLO.	7000'								
8000	DEVONIAN DOLO.	7970'			26# K-55 BTRC.	2000'				
	MONTOYA DOLO.	8620'	DLL-GR FDC-CNL-GR-CAL 2" & 5" Scales 6400'-9510' CALIPER TD-3200' PDC 6400'-9510'		26# K-55 LTC	6300'				
	SIMPSON SS.	8800'								
9000	MCKEE SS.	9080'			26# N-80 LTC	1210'		less than		
	CONNELL SS.	9420'					14.9-15.1	8.5	9.0-10.0	SALT GEL
	ELLENBURGER DOLO.	9480'		8-3/4	7"	9510'				
	TD - 9510'									
10,000										

WELL NAME WARREN UNIT MCKEE #87 FIELD NMFU DATE 8/8/80

ELEVATION EST. GRD 3514' KB 3525' PROPOSED T.D. 9510'

LOCATION (SURFACE) 660' FSL & 990' FEL OF SECTION 29 T-20S R- 38E

COUNTY LEA STATE NM SPACING

GEOLOGICAL ESTIMATES

ZONE	TOP	CONTENT (O=Oil, G=Gas, W=Water)
WATER SS.	90'-170'	Fresh water
RUSTLER ANHY.	1430'	-
SALADO SALT	1520'	- McKEE SS 9080' O,W,G
BASE SALADO	2590'	- CONNELL SS 9420' O,W,G
PENROSE SS.	3710'	ELLENBURGER SS.
GLORIETA SS.	5460'	O,W,G 9480' O,W,G
BLINEBRY MKR.	5930'	O,W,G
TUBB FM. SS	6430'	O,W,G
DRINKARD DOLO.	6720'	O,W,G
ABO DOLO.	7000'	O,W,G
DEVONIAN DOLO.	7970'	O,W,G
MONTOYA DOLO.	8620'	O,W,G
SIMPSON SS.	8800'	O,W,G

WELL SURVEYS - (List types by code numbers as follows: Directional and/or Deviation (1); Deflection (2); Caliper (3); Temperature (4); Electrical (5); Radioactive (6); Geolograph (7) Photoclinometer (8); Mudlogging (9); Other (10) and name of that type)

DEPTH POINTS	TYPE	HOLE SIZE	REMARKS
0'-9510'	(1) Deviation	17-1/2, 12-1/4, 8-3/4"	1 every 250' to 2590' & 1 every 500' thereafter
0'-9510'	(7) Geolograph	17-1/2, 12-1/4, 8-3/4"	
6400'-9510'	(5) DLL-GR	8-3/4"	2" & 5" Scales
6400'-9510'	(6) FDC-CNL-GR-CAL	8-3/4"	2" & 5" Scales
6400'-9510'	(6) PDC (GR-COLLAR)	7" casing	Depth Control
0'-9510'	(4) Temperature	7" casing	Determine top of cement

CONOCO TO FURNISH WATER, CONTRACTOR TO FURNISH FUEL.

PROPOSED WELL PLAN

WELL NAME WARREN UNIT MCKEE NO. 87 FIELD NMFU

ATTACHMENT	NO.	REQUIRED	NOT REQUIRED
CASING CENTRALIZERS, SCRATCHERS	____	X	____
CEMENTING	____	X	____
MUD PROGRAM	____	X	____
WELL PLAN OUTLINE	____	X	____
PORE PRESSURE - FRAC GRADIENT	____	____	____
PROJECTED PROGRESS	____	____	____
CROSS SECTION OR WELL COURSE	____	____	____
HYDRAULICS PROGRAM	____	____	____
BIT PROGRAM	____	____	____
VENDER USAGE LIST	____	____	____

DRILLING AND COMPLETION PROCEDURE

1. 0'- 1480' - Drill a 17-1/2" hole. Run and cement 13-3/8" OD casing (see casing and cement programs). WOC 18 hours. Pressure test casing to 600 psi for 30 minutes.

2. 1480'-3200' - Drill a 12-1/4" hole. Drill out shoe and pressure test formation to 300 psi. Run and cement 9-5/8" OD casing. (see cement and casing programs). WOC 18 hours. Pressure test casing to 600 psi for 30 minutes.

3. 3200'- 9510' - Drill an 8-3/4" hole. Drill out shoe and pressure test formation to 500 psi. Run open hole logs, run and cement casing. (see casing and cement programs)

4. Detailed completion procedure to be prepared after open hole logs are analyzed. Anticipate a McKee producing well completion.

:ST TYPE OF STRING BY CODE LETTERS, i.e. CONDUCTOR (C); SURFACE (S); INTERMEDIATE (I); PRODUCTION (P); LINER (L); :RFORATIONS (PP)

'PE OF STRINGS & TERVAL (FT) OM-TO	OD	DRIFT ID	WT PER FT	GRADE	THREAD	AMT	WT. IN AIR, 1000 LBS	WT. IN MUD 1000 LBS	REMARKS
) 0'-1480'	13-3/8"	12.459"	54.5#	K-55	STC	1480'	80.7		
) 0'-3200'	9-5/8"	8.765"	36#	K-55	STC	3200'	115.2		D.V. Tool @ 1450'
) 0'-9510'	7"	6.151"	26#	K-55	BTRC.	2000'	52		Sandblast bottom 600'
	7"	6.151"	26#	K-55	LTC	6300'	163.8		D.V. Tool @ 6000'
	7"	6.151"	26#	N-80	LTC	1210'	31.2		

'PE OF STRING	CENTRALIZERS NO.	CENTRALIZERS INTERVAL FROM-TO	SCRATCHER NO.	SCRATCHER INTERVAL FROM-TO	OTHER ACCESSORY EQUIPMENT (SUCH AS DEGASSERS, MUD, CENTRIFUGE FLOAT COLLARS, ETC. - SPECIFY)	REMARKS
rface	(15)	0'- 1480'	None		Guide shoe and float collar	Centralizers - 100' spacing
termediate	(18)	1400'-3200'	None		Float shoe, float collar, & D.V. tool @ 1450' w/2 metal petal baskets below it.	Centralizers - 100' spacing
oduction	(2)	3100'-3200'	(15)	9080'-9305'	Float shoe, float collar, D.V. Tool @ 6000' w/2 metal petal baskets below it.	Centralizers - 40' spacing Scratchers - 15' spacing
	(25)	8510'-9510'				

MUD PROGRAM

DEPTH INTERVAL FROM-TO	WEIGHT LBS/GAL	TYPE	OIL %	pH	WATER LOSS (cc)	VIS. (sec.)	YEILD POINT	THINNING AGENTS	WATER LOSS AGENTS
(S) 0'-1480'	8.5-9.0	SPUD							As needed
(I) 1480'-3200'	9.0-10.0	Salt gel							As needed
(P) 3200'-9000'	9.0-10.0	Salt gel							As needed
(P) *9000'-9510'	9.0-10.0	Salt gel			10-15	34-36			As needed

REMARKS

1. Below 1480', drill w/saturated brine to keep hole enlargement to a minimum.
2. Add gelling agents as required to carry cuttings.
3. Keep pressure surges to a minimum below 1480'.
4. *Begin reducing water loss and increasing viscosity at 9000' to achieve above properties at T.D.

CEMENT

TYPE OF STRING INTERVAL (FT) FROM-TO TYPE MIX	GEL%	SALT%	CaCl2	SLURRY WEIGHT LB./GAL	SLURRY YIELD CF/SKX	TOTAL AMT. REQUIRED SKX/CF	FILL UP	BHT	SIZE	REMARKS
(S) 0'- 1480'										
Class 'C'	4%	-	2%	13.05	1.88	953/1792	Circ.	75°	17-1/2"	100% excess
Class 'C'	-	-	2%	14.80	1.32	200/264				
(I) 0'-3200'										
Around shoe										
Class 'C' Light	-	18%	-	13.20	1.92	433/832	1450'	85°	12-1/4"	100% excess
Class 'C'	-	-	2%	14.80	1.32	200/264				
Thru D.V. Tool @ 1450'										
Class 'C' Light	-	-	-	12.70	1.84	223/410	Circ.	75°	12-1/4"	20% excess
Class 'C'	-	-	2%	14.80	1.32	100/132				
(P) 0'-9510'										
Around shoe										
Class 'C' Light	-	-	-	12.70	1.84	430/791	6000'	120°	8-3/4"	100% excess
Class 'C'	-	3#/sx.	2%	14.80	1.32	200/264				
Thru D.V. Tool @ 6000'										
Class 'C' Light	-	-	-	12.70	1.84	330/607	3100'	95°	8-3/4"	100% excess
Class 'C'	-	3#/sx.	2%	14.80	1.32	200/264				

NOTE:

- Add 1/4#/sack Flocele to cement if necessary for lost circulation.
- Reciprocate production casing while cementing.
- Preceed cement with 500 gallons mud flush.
- Re-calculate cement volumes for production casing after open hole caliper is run.
- Lab test liner and production casing cement slurries prior to cementing.
- Utilize top and bottom plugs. Pump top plug with TFW.
- Condition mud to have low plastic viscosity and yield strength.