

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

U.S. DEPT. OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
HOBBS, NEW MEXICO
SUBMIT IN TRIPPLICATE
(Other instructions on
Form 3160-3)

30-025-32150
Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1A. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>			5. LEASE DESIGNATION AND SERIAL NO. NM-32411		
B. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME		
2. NAME OF OPERATOR Pogo Producing Company 017891			7. UNIT AGREEMENT NAME 9331		
3. ADDRESS OF OPERATOR P.O. Box 10340, Midland, Texas 79702			8. FARM OR LEASE NAME 013061 East Livingston Ridge Unit		
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements *) At surface 330' FNL & 1980' FEL of Section 18, T-22S, R-32E At proposed prod. zone Same			9. WELL NO. 4		
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 30 miles east of Carlsbad, New Mexico			10. FIELD AND POOL, OR WILDCAT East Livingston Ridge Delaware		
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 330'		16. NO. OF ACRES IN LEASE 703.55	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. 1320'		19. PROPOSED DEPTH 8700	20. ROTARY OR CABLE TOOLS Rotary		
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 36.88.7' Ground Level			22. APPROX. DATE WORK WILL START* Upon Approval of Application		

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"	54.4#	850'	Sufficient to Circulate
12 1/4"	8 5/8"	32#	4500'	Sufficient to Circulate
7 7/8"	5 1/2"	15.5# & 17#	8700'	1200 sx

After setting production casing, pay zone will be perforated and stimulated as necessary.

See attached for: Supplemental Drilling Data
BOP Sketch
Surface Use and Operations Plan



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 <u>James M.C. Ritchie, Jr.</u> TITLE <u>Agent</u> DATE <u>July 11, 1993</u>	
(This space for Federal or State office use)	
PERMIT NO. <u>61</u>	APPROVAL DATE <u>7-28-93</u>
APPROVED BY <u>Scott Powers</u> TITLE <u>AREA MANAGER</u>	DATE <u>7-28-93</u>
CONDITIONS OF APPROVAL, IF ANY:	

*See Instructions On Reverse Side

03-14-00134

SUPPLEMENTAL DRILLING DATA

POGO PRODUCING COMPANY

E. LIVINGSTON RIDGE UNIT NO. 4

1. SURFACE FORMATION: Quaternary.

2. ESTIMATED TOPS OF GEOLOGIC MARKERS:

Rustler Anhydrite	800'
Delaware Lime	4600'
Cherry Canyon	5600'
Brushy Canyon	7300'

3. ANTICIPATED POSSIBLE HYDROCARBON BEARING ZONE:

Delaware	Oil
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4. PROPOSED CASING AND CEMENTING PROGRAM:

<u>CASING SIZE</u>	<u>SETTING DEPTH</u>		<u>WEIGHT</u>	<u>GRADE</u>	<u>JOINT</u>
	<u>FROM</u>	<u>TO</u>			
13 3/8"	0	850'	54.5#	J-55	STC
8 5/8"	0	1000'	32#	J-55	STC
"	1000'	2200'	24#	J-55	STC
"	2200'	4500'	32#	J-55	STC
5 1/2"	0	1000'	17#	J-55	LTC
"	1000'	6000'	15.5#	J-55	LTC
"	6000'	8700'	17#	N-80	LTC

MINIMUM DESIGN FACTORS: Collapse 1.125 Burst 1.1 Tension 1.7

13 3/8" casing is to be set at approximately 850' in 17-1/2" hole. Casing to be cemented with 500 sacks of Light cement tailed in with 200 sacks of Class "C". Cement to circulate.

8 5/8" casing is to be set at approximately 4500' in 11" hole. Casing is to be cemented with 1200 sacks of Light cement tailed in with 200 sacks of Class "C". Cement to circulate.

5 1/2" casing is to be set at 8700' in 7 7/8" hole. Casing is to be cemented with 600 sacks of Class "H" cement tailed in with 700 sx Class "C". Cement to tie back to 8 5/8" casing.

5. PRESSURE CONTROL EQUIPMENT:

Blowout prevention equipment, while drilling the 11" hole, will be either a 3000 psi working pressure double ram type preventer or a 3000 psi working pressure annular type preventer.

6. CIRCULATING MEDIUM:

<u>Surface to 850 feet:</u>	Fresh water spud mud. Viscosity 30 to 36 as required for hole cleaning.
<u>850 feet to 4500 feet:</u>	Brine conditioned as necessary for control of viscosity. Weight 9.8 to 10.0. PH 9 to 10. Viscosity 32 to 36.
<u>4500 feet to T.D.:</u>	Water based drilling fluid conditioned as necessary for control of weight, viscosity, ph and water-loss. Weight 9 to 10. Viscosity 38 - 45. ph 9-10. Filtrate while drilling pay zone 6-15.

7. AUXILIARY EQUIPMENT:

A mudlogging trailer will be used while drilling below intermediate casing.

8. TESTING, LOGGING, AND CORING PROGRAMS:

Drill Stem tests will be made when well data indicate a test is warranted.

It is planned that electric logs will include GR-CNL- Density logs and GR-DLL logs.

No coring is planned.

9. ABNORMAL PRESSURES, TEMPERATURES, OR HYDROGEN SULFIDE GAS:

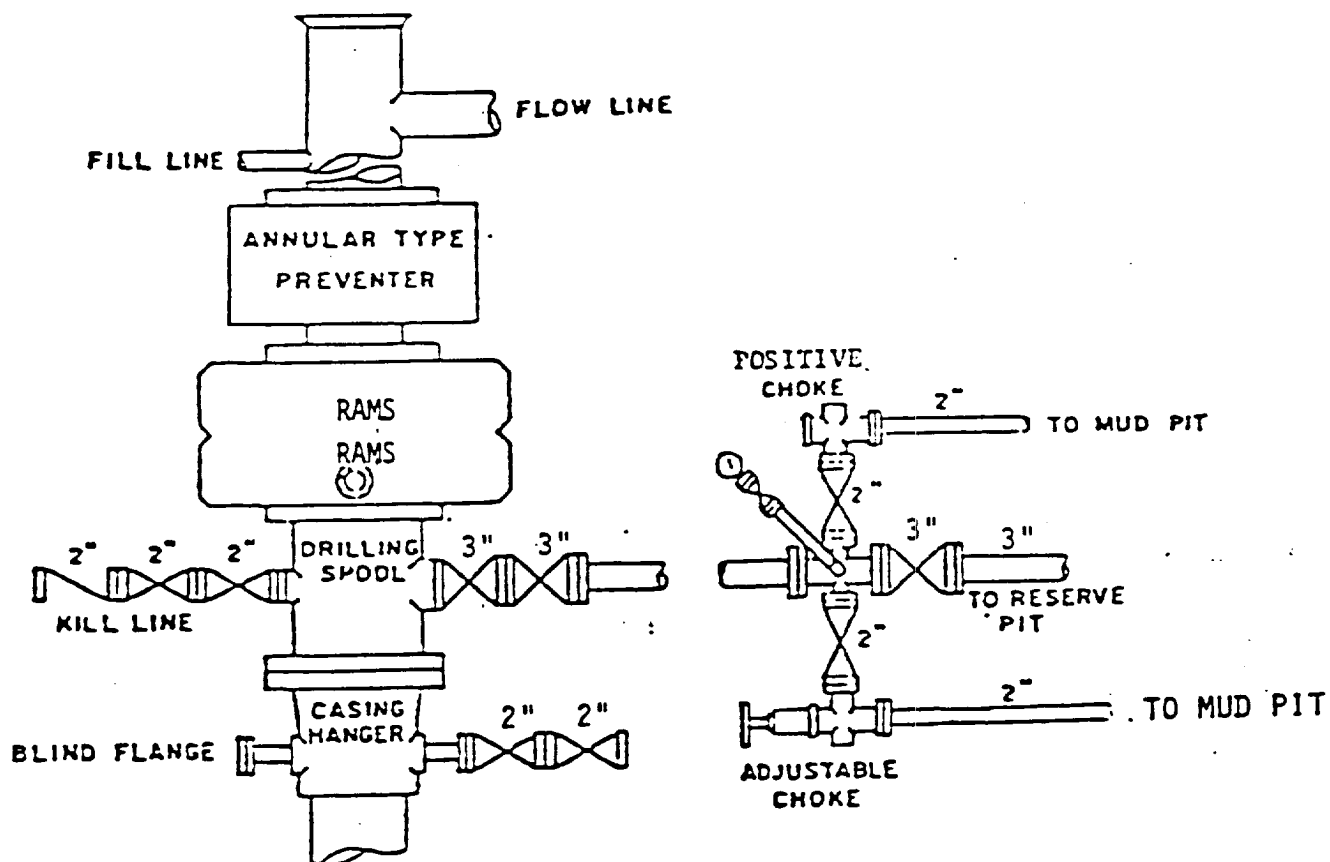
None anticipated.

Expected bottom hole pressure is approximately 3700 psi.

Expected bottom hole temperature is approximately 130 degrees Fahr

10. ANTICIPATED STARTING DATE:

It is planned that operations will commence upon approval of this application, with drilling and completion operations lasting about 30 days.



BOP STACK

3000 PSI WORKING PRESSURE

BOP ARRANGEMENT