OPER. OGRID NO. 13837
PROPERTY NO. 20026
POOL CODE 62620
EFF. DATE 12/20/96
API NO. 30-005-21146

orm 3160-3
(December 1990)

UNITE
DEPARTMENT
BUREAU OF L

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on

Form approved.
Budget Bureau No. 1004-0136
Expires: December 31, 1991

APPLICATION FOR PER

D

NOV 22 1996
OIL CON. DIV.
DIST. 2

1a. TYPE OF WORK
DRILL ☒ DEEPEN ☐

b. TYPE OF WELL
OIL WELL ☐ Gas Well ☒ OTHER SINGLE ZONE ☒ MULTIPLE

2. NAME OF OPERATOR
MACK ENERGY CORPORATION

3. ADDRESS AND TELEPHONE NO
P.O. BOX 960, ARTESIA, NM 88211-0960 (505) 748-1288

4. LOCATION OF WELL (Report location clearly and in accordance with any state requirement.*)
At surface
1980 FSL 1650 FWL
At proposed prod. zone
1980 FSL 1650 FWL Unit K

5. LEASE DESIGNATION AND SERIAL NO.
NM-0554963

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO
INDIANHEAD FEDERAL #1

9. API WELL NO

10. FIELD AND POOL, OR WILDCAT
WILDCAT QUEEN

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
SEC 3 T15S R30E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
18.25 MILES NORTH OF LOCO HILLS

12. COUNTY OR PARISH
CHAVES

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 IN LEASE TO THIS WELL
1650	~~160~~ 562.090	160
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**
NONE	2550	ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
4005 GR

22. APPROX. DATE WORK WILL START*
11-1-96

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4	J-55, 8 5/8	24	720	CIRC TO SURFACE
7 7/8	J-55, 4 1/2	10.5	2550	SUFF. TO CIRC

Mack Energy proposes to drill to a depth sufficient to test the Queen formation for gas. If productive, 4 1/2" casing will be cemented. If non-productive, the well will be plugged and abandoned in a manner consistent with federal regulation. Specific programs as per Onshore Oil and Gas Order #1 are outlined in the following attachments:

Drilling Program

Surface Use & Operating Plan
Exhibit #1 & 1A - Blowout Preventer Equip
Exhibit #2 - Location and Elevation Plat
Exhibit #3 - Planned Access Road
Exhibit #4 - One-mile Radius Map
Exhibit #5 - Production Facilities Layout
Exhibit #6 - Location Layout

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

24.
SIGNED Robert C. Cha TITLE Vice President DATE 10-16-96

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED B Earl Smith TITLE Acting Area Mgr. DAT 11-18-96

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

DRILLING PROGRAM

Attached to Form 3160-3
Mack Energy Corporation
Indianhead Federal #1
1980 FSL 1650 FWL
NE/4 SW/4, Sec 3 T15S R30E
Chaves County, NM

1. Geologic Name of Surface Formation:

   Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	810'
Base of Salt	1520'
Yates	1686'
Seven Rivers	1821'
Queen	2411'

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150'	Fresh Water
Queen	2411'	Oil/Gas

   No other formations are expected to give up oil, gas or fresh water in measurable quantities. The surface fresh water sand will be protected by setting 8 5/8" casing to 720' and circulating cement back to surface. Salt will be protected by setting 4 1/2" casing to 2500' and circulating cement back to surface. Any shallower zones above TD which contain commercial quantities of oil and/or gas will have cement circulated across them by cementing 4 1/2" production casing which will be run at TD.

4. Casing Program:

Hole Size	Interval	OD Casing	Weight, Grade, Jt, Cond., Type
12 1/4"	0-720'	8 5/8"	24#, K-55, ST&C, NEW, R-3
7 7/8"	0-TD	4 1/2"	10.5#, J-55, ST&C, NEW, R-3

   Cement Program:

   8 5/8" Surface Casing: Cement to Surface with Class C w/2% CaCl2.

   4 1/2" Production Casing: Cement Casing with Class C w/6# Salt & 2/10 of 1% CFR-3 per sack. We will run a Hole caliper and run sufficient cement to tie back to 8 5/8" Casing.

5. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (2000 psi WP) preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The BOP will be nippled up on the 8 5/8" surface casing and used continuously until TD is reached. All BOP's and accessory equipment will be tested to ~~1000 psi~~ 2000 psi before drilling out of surface casing. ~~Before drilling out of intermediate casing, the ram type BOP and accessory equipment will be tested to 2000 psi~~. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a kelly cock and floor safety valve and choke lines and choke manifold with 2000 psi WF rating.

6. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-720'	Fresh Water	8.5	28	N.C.
720-2550'	Brine	10	30	N.C.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

7. Auxiliary Well Control and Monitoring Equipment:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe stabbing valve with proper drill pipe connections will be on the rig floor at all times.

8. Logging, Testing and Coring Program:

(A) The electric logging program will consist of GR-Dual Laterolog, Spectral Density Dual Spaced Neutron CSNG Log from TD to Base Salt.

(B) Drillstem test is anticipated.

(C) No conventional coring is anticipated.

(D) Further testing procedures will be determined after the 4 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

9. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and estimated maximum bottom hole pressure is 2300 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered while drilling of the wells in this area. No major loss of circulation zones have been reported in offsetting wells.

10. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is Nov. 1, 1996. Once commenced, the drilling operation should be finished in approximately 10 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

MINIMUM BLOWOUT PREVENTER REQUIREMENTS

2,000 psi Working Pressure

2 MWP

MACK ENERGY CORPORATION

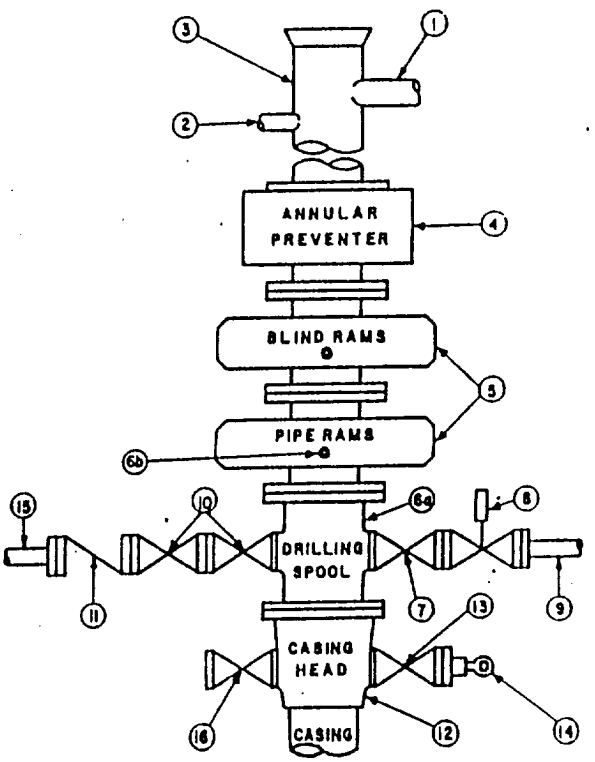
Exhibit #1-A
INDIANHEAD FEDERAL #1
1980FSL 1650FWL
Sec 3 T15S R30E

STACK REQUIREMENTS

No.	Item	Min. I.D.	Min. Nominal
1	Flowline		
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
	—— or ——		
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above.)		
7	Valve Gate ☐ Plug ☐	3-1/8"	
8	Gate valve—power operated	3-1/8"	
9	Line to choke manifold		3"
10	Valves Gate ☐ Plug ☐	2-1/16"	
11	Check valve	2-1/16"	
12	Casing head		
13	Valve Gate ☐ Plug ☐	1-13/16"	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL			
16	Flanged valve	1-13/16"	

CONFIGURATION A



CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2,000 psi, minimum.
2. Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers position.
4. Kelly equipped with Kelly cock.
5. Inside blowout prevventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casinghead and side valves.
2. Wear bushing, if required.

GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke. Valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position.
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with handwheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2,000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Do not use kill line for routine fill-up operations.

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

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

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

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

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

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-005-21146	62620	~~Wildcat~~ West Ranch Queen Assoc

Property Code	Property Name	Well Number
20020	INDIANHEAD FEDERAL	1

OGRID No.	Operator Name	Elevation
013837	MACK ENERGY CORPORATION	4005'

Surface Location

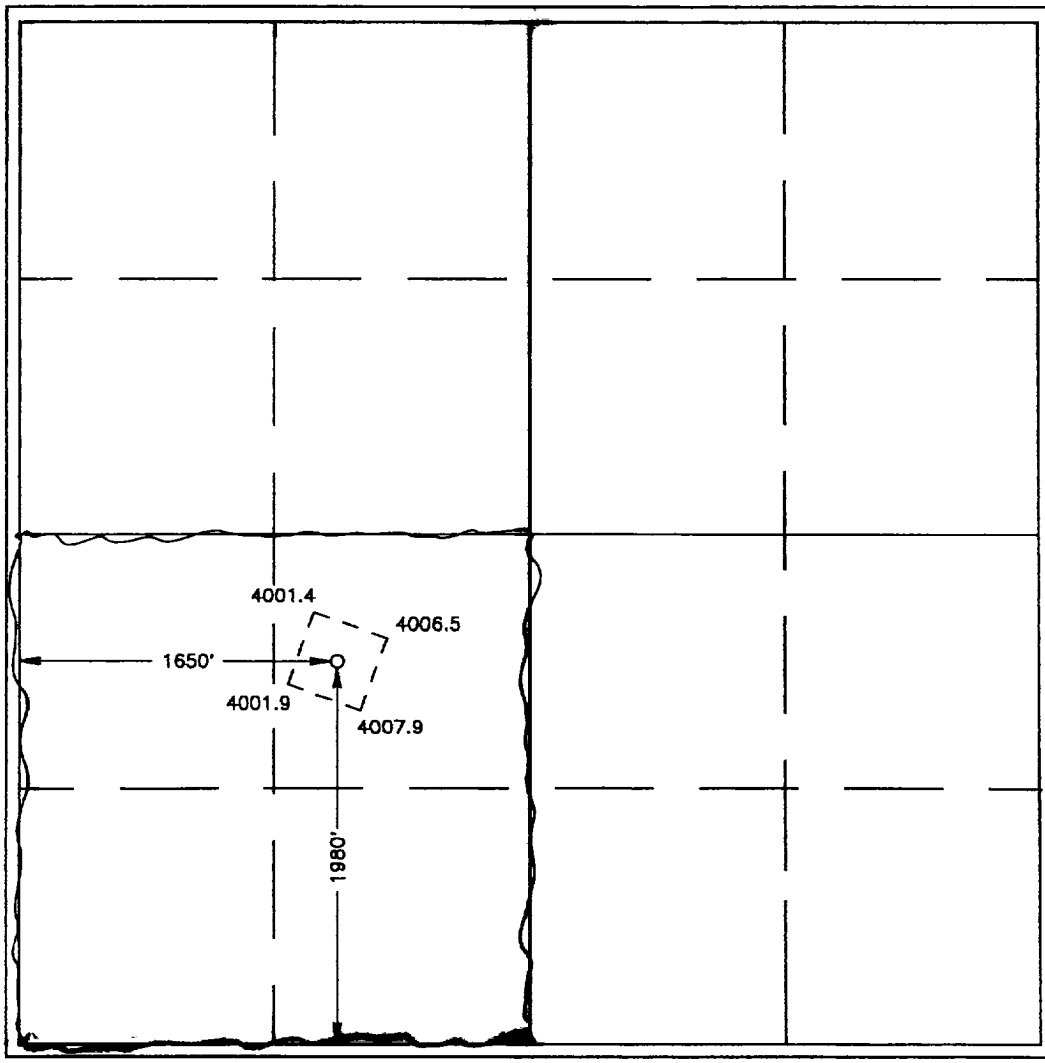
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	3	15 S	30 E		1980	SOUTH	1650	WEST	CHAVES

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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 contained herein is true and complete to the best of my knowledge and belief.

Robert C. Chase
Signature

Robert C. Chase
Printed Name

Vice President
Title

10-16-96
Date

SURVEYOR CERTIFICATION

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 supervison, and that the same is true and correct to the best of my belief.

SEPTEMBER 25, 1996
Date Surveyed

Signature & Seal of Professional Surveyor

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

RES

9-27-96

W.O. Num. 96-11-1235

Certificate No. JOHN W. WEST 676
RONALD J. EIDSON 3239
GARY EIDSON 12641