

Form 3160-3
(December 1990)

New Mexico Oil Conservation Division, District I
1625 N. French Drive
Hobbs, NM 88240

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

309

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK
DRILL ☒ DEEPEN ☐

b. TYPE OF WELL
OIL WELL ☒ Gas Well ☐ OTHER ☐

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 990 FNL & 990 FWL D

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
2 miles south of Maljamar Post Office

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 640

17. NO. OF ACRES IN LEASE TO THIS WELL 40

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED OR APPLIED FOR, ON THIS LEASE, FT. 330

19. PROPOSED DEPTH 7000

20. ROTARY OR CABLE TOOLS Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3966' GR

22. APPROX. DATE WORK WILL START* 2/11/2003

5. LEASE DESIGNATION AND SERIAL NO.
LC-029405-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO.
BC Federal #8

9. API WELL NO.
30-025-36194

10. FIELD AND POOL, OR WILDCAT
Maljamar Paddock

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 20-T17S-R32E

12. COUNTY OR PARISH Lea

13. STATE NM

23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2	J-55, 13 3/8	48	300	Circ
12 1/4	J-55, 8 5/8	24	2100	Sufficient to Circ
7 7/8	J-55, 5 1/2	17	7000	Sufficient to Circ

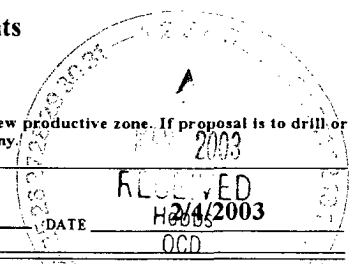
Mack Energy proposes to drill to a depth sufficient to test the Paddock Formation for oil & gas. If productive, 5 1/2" casing will be cemented. If non-productive, plugging and abandoning in a manner consistent with federal regulation. Specific programs as per Onshore Oil and Gas Order #1 are outlined in the following attachments:

1. Surveys
Exhibit #1- Well Location Plat
Exhibit #2- Vicinity Map
Exhibit #3- Location Verification Map
2. Drilling Program
3. Surface Use & Operating Plan
Exhibit #4- One Mile Radius Map
Exhibit #5- Production Facilities Layout
Exhibit #6- Location Layout
4. Certification
5. Hydrogen Sulfide Drilling Operation Plan
Exhibit #7- H2S Warning Sign
Exhibit #8- H2S Safety Equipment
6. Blowout Preventers
Exhibit #9- BOPE Schematic
Exhibit #10- Blowout Preventer Requirements
Exhibit #11- Choke Manifold
7. Responsibility Statement

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

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 Cessa D. Cant TITLE Production Analyst



(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY /s/ JOE G. LARA ACTING FIELD MANAGER

DATE FEB 27 2003

APR 10 9 30 AM

RECEIVED

2003 FEB -5 AM 9:18

BUREAU OF LAND MGMT.
ROSWELL OFFICE

1032 N. PLEASANT BLVD
MESA, AZ 85201
1997 MEXICO CB CONSULTING ENGINEERING

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-36194	Pool Code 44500	Pool Name Maljamar Paddock
Property Code 24936	Property Name BC FEDERAL	Well Number 8
OGRID No. 013837	Operator Name MACK ENERGY CORPORATION	Elevation 3966'

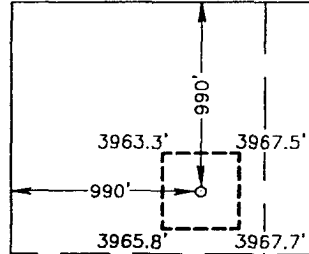
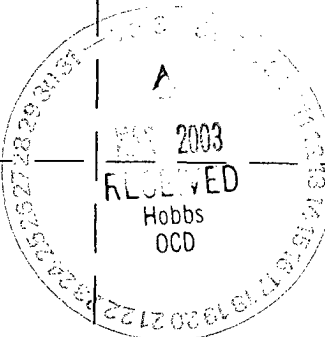
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	20	17-S	32-E		990	NORTH	990	WEST	LEA

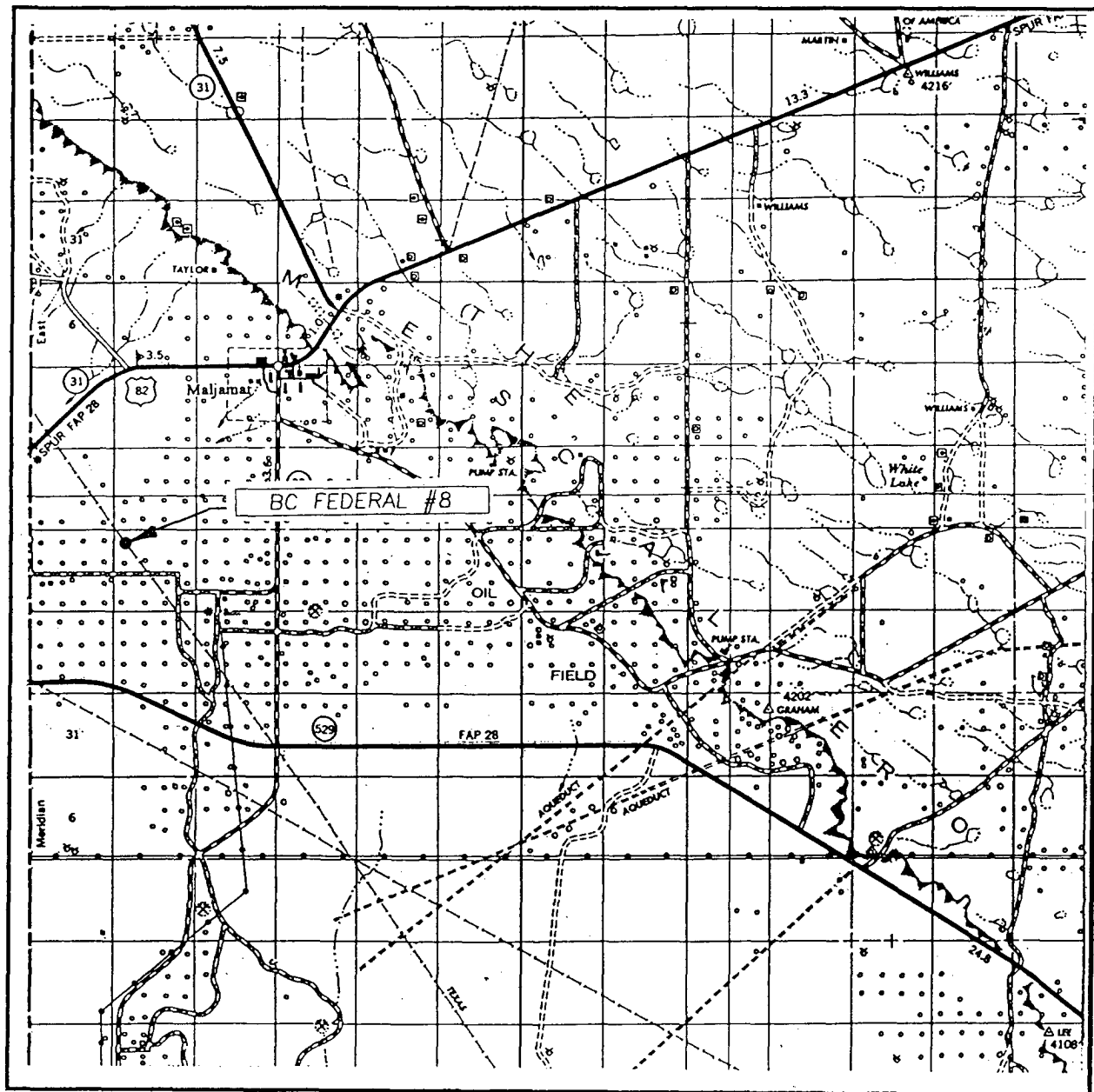
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order 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

		<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Crissa D. Carter</i> Signature</p> <p>Crissa D. Carter Printed Name</p> <p>Production Analyst Title</p> <p>2/4/2003 Date</p>
		<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>JANUARY 10, 2003 Date Surveyed</p> <p>Signature & Seal of Professional Surveyor <i>Ronald J. Eidson</i> 1/10/03 03.14.0019</p> <p>Certificate No. RONALD J. EIDSON 3239 GARY EIDSON 12641</p>

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 20 TWP. 17-S RGE. 32-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 990' FNL & 990' FWL

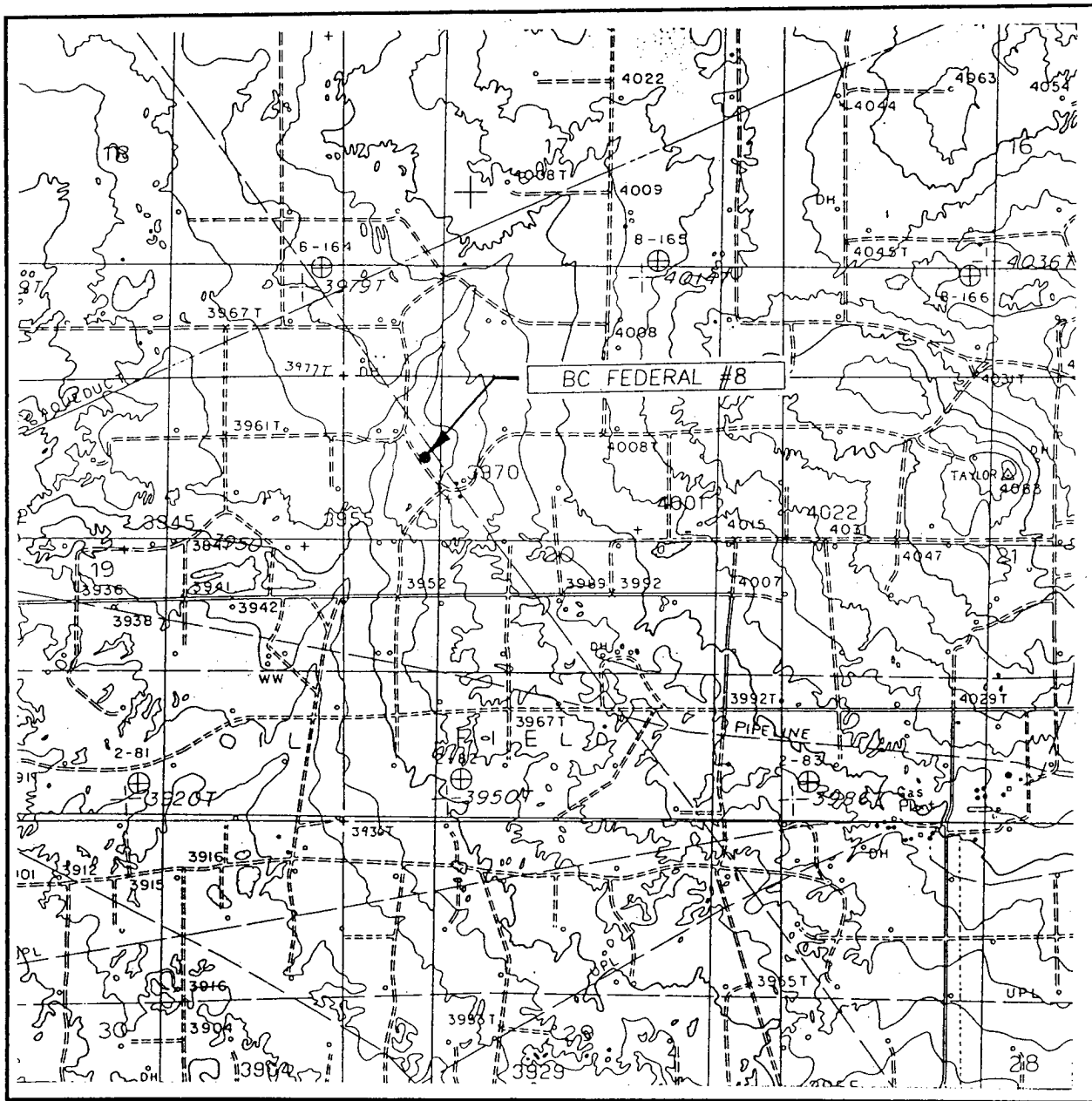
ELEVATION 3966'

OPERATOR MACK ENERGY CORPORATION

LEASE BC FEDERAL

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'
MALJAMAR, N.M.

SEC. 20 TWP. 17-S RGE. 32-E

SURVEY _____ N.M.P.M.

COUNTY _____ LEA

DESCRIPTION 990' FNL & 990' FWL

ELEVATION 3966'

OPERATOR MACK ENERGY CORPORATION

LEASE BC FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
MALJAMAR, N.M.

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505) 393-3117



Attached to Form 3160-3
Mack Energy Corporation
BC Federal #8
990 FNL & 990 FWL
NW/4 NW/4, Sec 20 T17S R32E
Lea County, NM

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	800'
Base of Salt	1800'
Yates	2080'
Queen	3010'
San Andres	3800'
Glorietta	5250'

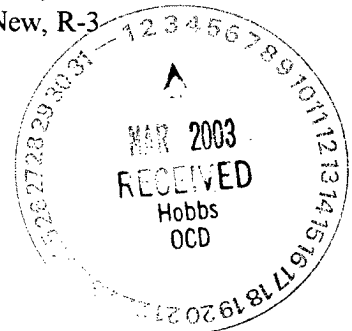
3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150'	Fresh Water
Grayburg	3500'	Oil/Gas
San Andres	3800'	Oil/Gas
Paddock	5330'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 300' and circulating cement back to surface will protect the surface fresh water sand. Salt Section will be protected by setting 8 5/8" casing to 2100' 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 5 1/2" production casing, which will be run at TD.

4. Casing Program:

Hole Size	Interval	OD Casing	Weight, Grade, Jt, Cond., Type
17 1/2"	0-300'	13 3/8"	48#, J-55, ST&C, New, R-3
12 1/4"	0-2100'	8 5/8"	24#, J-55, ST&C, New, R-3
7 7/8"	0-TD	5 1/2"	17#, J-55, LT&C, New, R-3



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990 FNL & 990 FWL
NW/4 NW/4, Sec 20 T17S R32E
Lea County, NM

5. Cement Program:

13 3/8" Surface Casing: Circulate to Surface with Class C w/2% CaCl₂.

8 5/8 Intermediate Casing: Circulate to Surface with Class C W/2% CaCl₂.

5 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 circulate to surface.

6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #9 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 nipped up on the 13 3/8" surface casing and tested to 70% of the internal yield of the 13 3/8" casing. This will be tested with the Drilling Rig Pumps (which can test to 1500 psi). The BOP will then be nipped up on the 8 5/8" intermediate casing and tested by a 3rd party to 2000 psi and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. 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 (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with 2000 psi WP rating.

7. Types and Characteristics of the Proposed Mud System:

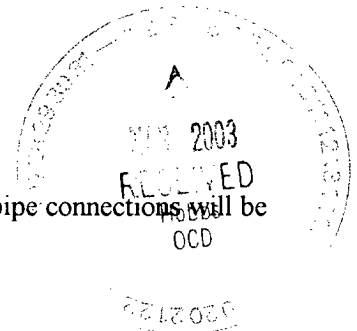
The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-300'	Fresh Water	8.5	28	N.C.
300-2100'	Brine	10	30	N.C.
2100'-TD	Cut Brine	9.1	29	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.

8. Auxiliary Well Control and Monitoring Equipment:

- 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.



Attached to Form 3160-3
Mack Energy Corporation
BC Federal #8
990 FNL & 990 FWL
NW/4 NW/4, Sec 20 T17S R32E
Lea County, NM

9. Logging, Testing and Coring Program:

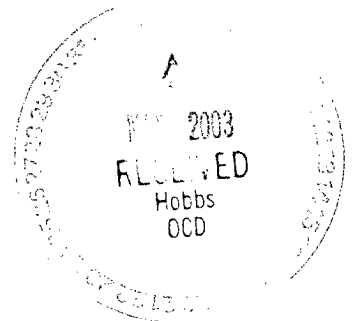
- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. to 8 5/8 casing shoe.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined after the 5 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

10. 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. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations:

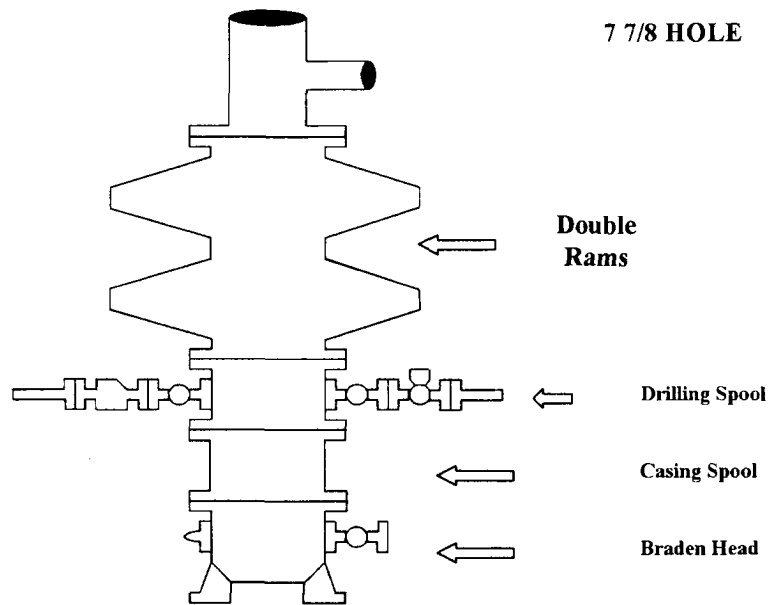
Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is March 1, 2003. Once commenced, the drilling operation should be finished in approximately 10 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.



Mack Energy Corporation

Exhibit #9

BOPE Schematic



Choke Manifold Requirement (2000 psi WP)
No Annular Required

