

CONFIDENTIAL - TIGHT HOLE

OPER. OGRID NO. 16751
PROPERTY NO. 17382
POOL CODE 96086
EFF. DATE 8/18/95
API NO. 3D-025-33062

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL ☒ DEEPEN ☐ PLUG BACK ☐

1b. TYPE OF WELL

OIL WELL ☒ GAS WELL ☒ OTHER ☐

SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR 214/750-3800

DALEN Resources Oil & Gas Co.

6688 N. Central Expressway,

Suite 1000 Dallas, TX 75206

3. ADDRESS OF OPERATOR 303/452-8888

PERMITCO INC. - Agent

13585 Jackson Drive

Denver, CO 80241

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)

At Surface 1980' FSL and 1980' FWL

At proposed Prod. Zone NE SW Sec. 28, T26N - R33E

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME

Rattlesnake Federal 28

9. WELL NO.

"28" No. 1

10. FIELD AND POOL OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK.

AND SURVEY OR AREA

Sec. 28, T26N - R33E

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

Approx. 62 miles southeast of Carlsbad, NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)

1980'

16. NO. OF ACRES IN LEASE

240 acres

17. NO. OF ACRES ASSIGNED TO THIS WELL

80

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

None

19. PROPOSED DEPTH

12,170'

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DP, RT, GR, etc.)

3222'

22. APPROX. DATE WORK WILL START*

Upon Approval of this Application

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT/FOOT	SETTING DEPTH	QUANTITY OF CEMENT
<u>17-1/2"</u>	<u>13-3/8"</u>	<u>54.5#</u>	<u>800'</u>	<u>620 sx circ to surf</u>
<u>12-1/4"</u>	<u>8-5/8"</u>	<u>24#</u>	<u>5000'</u>	<u>stages 1 & 2 - 700 sx, 1290 sx circ to surf</u>
<u>7-7/8"</u>	<u>5-1/2"</u>	<u>17#</u>	<u>12,500'</u>	<u>495 sx circ to surf</u>

DALEN Resources Oil & Gas Company proposes to drill a well to 12,500' to test the 3rd Bone Spring Sands and Wolfcamp formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of New Mexico requirements.

See Onshore Order No. 1 attached.

CONFIDENTIAL - TIGHT HOLE

Please be advised that DALEN Resources Oil & Gas Co. is considered to be the Operator of the above mentioned well. DALEN Resources Oil & Gas Co. agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the lease lands.

Bond coverage for this well is provided by DALEN's Nationwide Bond No. U-187011. The principal is DALEN Resources Oil & Gas Co. via surety consent as provided for in 43 CFR 3104.2.

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 [Signature]

Consultant for:

TITLE DALEN Res. Oil & Gas

DATE 07/24/95

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY [Signature]

TITLE _____

DATE _____

AUG 10 1995

CONDITIONS OF APPROVAL, IF ANY:

Approval Subject to
General Requirements and
Special Stipulations

*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 United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

State of New Mexico
Energy, Minerals and Natural Resources Department

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

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

DISTRICT IV
PO BOX 2088, SANTA FE, NM 87504-2088

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-33062	Pool Code 96053/96086	Pool Name 3rd Bone Spring Sands and Wolfcamp
Property Code 17382	Property Name RATTLESNAKE FEDERAL "28"	Well Number 1
OGRID No. 16751	Operator Name DALEN RESOURCES OIL & GAS CO.	Elevation 3222

Surface Location

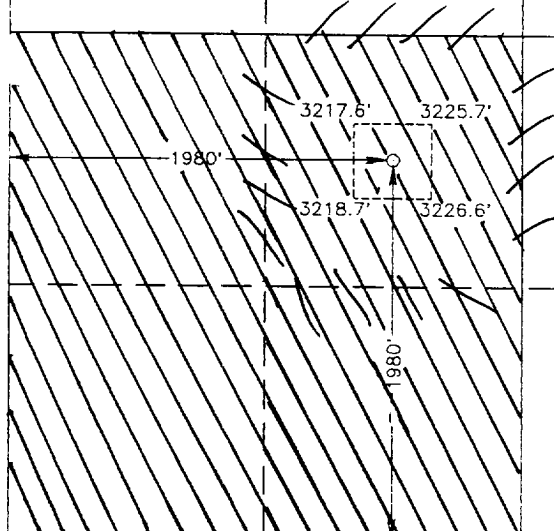

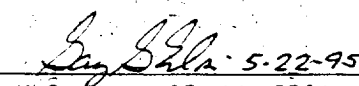
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	28	26 S	33 E		1980	SOUTH	1980	WEST	LEA

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
	40								

Dedicated Acres 80.160	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

WI owners: DALEN = 100%			
<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> Signature</p> <p>Lisa L. Smith Printed Name</p> <p>Authorized Agent for:</p> <p>Title Dalen Resources Oil & Gas</p> <p>Date July 24, 1995</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>MAY 17, 1995</p> <p>Date Surveyed SJA</p> <p>Signature & Seal of Professional Surveyor</p> <p> W.Q. Num. 95-11-0801</p> <p>Certificate No. JOHN W. WEST 676 RONALD J. EDISON 3239 GARY EDISON 12641</p>			

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 1

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Order No. 1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished the field representative to insure compliance.

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>
B/Castille	4889'	-1641'
Bell Canyon	4928'	-1680'
Cherry Canyon	6157'	-2909'
Brushy Canyon	7449'	-4201'
Basal Brushy Canyon	8859'	-5611'
Bone Spring	9054'	-5806'
1st Bone Spring Sand	10084'	-6836'
2nd Bone Spring Sand	10668'	-7420'
3rd Bone Spring Sand	11558'	-8310'
War Wink Zone	11833'	-8585'
Basal 3rd Bone Spring Sand	11911'	-8663'
Wolfcamp	11977'	-8729'
B/Wolfcamp "B" Sand	12170'	-8922'
T.D.	12500'	

2. ESTIMATED DEPTH OF OIL, GAS, WATER & OTHER MINERALS ZONES

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:



Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program

Page 2

<u>Substance</u>	<u>Formation</u>	<u>Depth</u>
Oil	1st Bone Spring Sand	10,084'
Oil	2nd Bone Spring Sand	10,668'
Oil	3rd Bone Spring Sand	11,558'
Oil	Wolfcamp Sand	11,977'

All fresh water and prospectively valuable minerals encountered during drilling, will be recorded by depth and adequately protected. All oil and gas shows will be tested to determine commercial potential.

If noticeable water flows are detected, samples will be submitted to the BLM along with any water analyses conducted.

3. BOP EQUIPMENT

DALEN Resources Oil & Gas Co.'s minimum specifications for pressure control equipment are as follows:

Ram Type: 10" Hydraulic double, 3000 psi w.p.

Ram type preventers and associated equipment shall be tested to approved stack working pressure if isolated by test plug or to 70 percent of internal yield pressure of casing. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer. If a test plug is utilized, no bleed-off pressure is acceptable. For a test not utilizing a test plug, if a decline in pressure of more than 10 percent in 30 minutes occurs, the test shall be considered to have failed. Valve on casing head below test plug shall be open during test of BOP stack.

Annular type preventers (if used) shall be tested to 50 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

As a minimum, the above test shall be performed:

- a. when initially installed;

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 3

- b. whenever any seal subject to test pressure is broken
- c. following related repairs; and
- d. at 30-day intervals

Valves shall be tested from working pressure side during BOPE tests with all down stream valves open.

When testing the kill line valve(s) the check valve shall be held open or the ball removed.

Annular preventers ^{AG} ~~(if used)~~ shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip, however, this function need not be performed more than once a day.

A BOPE pit level drill shall be conducted weekly for each drilling crew.

The BOP and related equipment shall meet the minimum requirements of Onshore Oil and Gas Order No. 2 for equipment and testing requirements, procedures, etc., and individual components shall be operable as designed.

Pressure tests shall apply to all related well control equipment.

All of the above described tests and/or drills shall be recorded in the drilling log.
Pressure tests shall apply to all related well control equipment.

BOP systems shall be consistent with API RP53. Pressure tests will be conducted before drilling out from under casing strings which have been set and cemented in place. Blowout preventer controls will be installed 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 will be recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.



Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 4

- a. The size and rating of the BOP stack is shown on the attached diagram. Although a rig has not been chosen to drill this well, most of the equipment for this depth of hole in the area use a 10", 3000 psi working pressure blowout preventor.
- b. A choke line and a kill line are to be properly installed. The kill line is not to be used as a fill-up line.
- c. The accumulator system shall have a pressure capacity to provide for repeated operation of hydraulic preventers.
- d. Drill string safety valve(s), to fit all tools in the drill string, are to be maintained on the rig floor while drilling operations are in progress.

4. CASING AND CEMENTING PROGRAMS

- a. The BLM in Carlsbad, New Mexico shall be notified at least 24 hours prior to the running and cementing of all casing strings, in order to have a BLM representative on location while running and cementing all casing strings.
- b. The proposed casing and cementing program shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. Determination of casing setting depth shall be based on all relevant factors, including; presence/absence of hydrocarbons; fracture gradients; usable water zones; formation pressures; lost circulation zones; other minerals; or other unusual characteristics. All indications of usable water shall be reported.
- c. Casing design shall assume formation pressure gradients of 0.44 to 0.50 psi per foot for exploratory wells (lacking better data).



Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 5

- d. Casing design shall assume fracture gradients from 0.70 to 1.00 psi per foot for exploratory wells (lacking better data)
- e. Casing collars shall have a minimum clearance of 0.422 inches of all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.
- f. All waiting on cement times shall be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.
- g. All casing except the conductor casing, shall be new or reconditioned and tested used casing that meets or exceeds API standards for new casing.
- h. The surface casing shall be cemented back to surface either during the primary cement job or by remedial cementing.
- i. Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a suitable preflush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.
- j. All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.
- k. On all exploratory wells, and on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 6

- l. The proposed casing program will be as follows:

<u>Purpose</u>	<u>Depth</u>	<u>Hole Size</u>	<u>O.D.</u>	<u>Weight</u>	<u>Grade</u>	<u>Type</u>	<u>New or Used</u>
Surface	0-800'	17-1/2"	13-3/8"	54.5#	J-55	ST&C	New
Interm.	0-5000'	12-1/4"	8-5/8"	24.0#	J-55	ST&C	New
Produc.	0-12,500'	7-7/8"	5-1/2"	17.0#	N-80	LT&C	New

- m. Casing design subject to revision based on geologic conditions encountered.

- n. The cement program will be as follows:

Surface

Type and Amount

Lead: 370 sx - Class "C" w/4% gel, 3% salt (13.2 ppg, 1.87 cubic ft./sk)
Tail: 250 sx Class C 2% CaCl₂ (14.8 ppg, 1.35 cubic ft./sk)

Intermediate

Type and Amount

Stage 1:

Lead: 450 sx Class "C" w/6% gel + 5 lb/sk salt, (12.5 ppg; 2.03 cubic ft./sk).
Tail: 250 sx Class C w/1% CaCl₂ (14.8 ppg, 1.33 cubic ft./sk)

Stage 2:

Lead: 1140 sx Pacesetter Lite w/6% gel, + 5 lb./sk salt. (12.5 ppg, 2.03 cubic ft./sk).
Tail: 150 sx Class C w/2% CaCl₂ (14.8 ppg, 1.34 cubic ft./sk)
DV Tool @ 3400'.

Production

Type and Amount

Lead: 225 sx Super "H" + additives (12.48 ppg, 1.88 cubic ft./sk)
Tail: 270 sx Class "H" + additives (14.0 ppg, 1.62 cubic ft./sk)



Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 7

- o. DALEN Resources Oil & Gas Co. will meet all requirements set forth under NTL-FRA 90-1. The following procedure will insure adequate protection of all useable waters encountered during the drilling of this well.
 - 1. A chronological log keeping record of the pump rate, pump pressure, slurry density, and slurry volume, will be submitted to the BLM in Sundry form pending completion of the job.
- p. The BLM in Carlsbad, New Mexico should be notified, with sufficient lead time, in order to have a BLM representative on location while running all casing strings and cementing.
- q. After cementing but before commencing any test, the casing string shall stand cemented until the cement has reached a compressive strength of at least 500 psi at the shoe. WOC time shall be recorded in the driller's log.
- r. The following reports shall be filed with the District Manager within 30 days after the work is completed.
 - 1. Progress reports, Form 3160-5 (formerly 9-331) "Sundry Notices and Reports on Wells", must include complete information concerning:
 - a. Setting of each string of casing, showing the size, grade, weight of casing set, hole size, setting depth, amounts and type of cement used, whether cement circulated or the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date work was done. Show the spud date on the first reports submitted.
 - b. Temperature or bond logs must be submitted for each well where the casing cement was not circulated to the surface.
- s. Auxiliary equipment to be used is as follows:
 - 1. Kelly cock
 - 2. No bit float is deemed necessary.
 - 3. A sub with a full opening valve.

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 8

5. MUD PROGRAM

- a. The proposed circulating mediums to be employed in drilling are as follows:

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>F/L</u>	<u>PH</u>
0-800'	Gel/Lime Spud Mud	8.7-9.4	26-40	N/C	100-105
800-5000'	Brine Water	10.0	26-28	N/C	9.5-10.0
5000-12,500'	LSND	8.6-9.2	32-34	10-15 cc	9.0-9.5

There will be sufficient mud on location to control a blowout should one occur.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, static filtration loss, and Ph.

- b. Mud monitoring equipment to be used is as follows:
1. Periodic checks will be made each tour of the mud system. The mud level will be checked visually.
- c. Hazardous substances specifically listed by the EPA as a hazardous waste or demonstrating a characteristic of a hazardous waste will not be used in drilling, testing or completion operations.

6. EVALUATION PROGRAM

The anticipated type and amount of testing, logging and coring are as follows:

- a. Two drill stem tests are anticipated. If DST's are run, the following requirements will be adhered to:

Initial opening of drill stem test tools shall be restricted to daylight hours unless specific approval to start during other hours is obtained from the authorized officer. However, DST's may be allowed to continue at night if the test was initiated during daylight hours and the rate of flow is stabilized and if adequate lighting is available (i.e. lighting which is adequate for

ONSHORE ORDER NO. 1
DALEN RESOURCES OIL & GAS CO.
Rattlesnake Federal "28" No. 1
1980' FSL and 1980' FWL
NE SW Sec. 28, T26S - R33E
Lea County, New Mexico

CONFIDENTIAL - TIGHT HOLE

Lease No. NM-84898

Drilling Program
Page 9

visibility and vapor-proof for safe operations). Packers can be released, but tripping shall not begin before daylight, unless prior approval is obtained from the authorized officer. Closed chamber DSTs may be accomplished day or night.

A DST that flows to the surface with evidence of hydrocarbons shall be either reversed out of the testing string under controlled surface conditions. This would involve provided some means for reverse circulation.

Separation equipment required for the anticipated recovery shall be properly installed before a test starts.

All engines within 100 feet of the wellbore that are required to "run" during the test shall have spark arresters or water cooled exhausts.

- b. The logging program will consist of a Long Spaced Sonic/GR, a DIL/GR, and a LDT/CNL/GR from 4900' to T.D.
- c. Rotary sidewall cores are anticipated.
- d. Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analyses, well-test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the authorized officer (AO).
- e. The anticipated completion program is as follows:

Perforate zones of interest. Frac and acidize as necessary and place on production.

Typical BOP Equipment. Actual Configuration May Vary Slightly But Will Conform With Onshore Order No. 2

THREE PREVENTER HOOKUP
CLASS III
(MEETS 43 CFR, PARTS 3160, 3M SPECIFICATIONS)

