

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
OIL WELL GAS WELL OTHER
SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
Continental Oil Company

3. ADDRESS OF OPERATOR
152 N. Durbin St., Casper, Wyoming 82601

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
2217' FSL, 810' FEL, NESE
At proposed prod. zone

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

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
640

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
19. PROPOSED DEPTH
1648' KBM ✓

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
8538' ungraded ground

22. APPROX. DATE WORK WILL START*
June 26, 1978

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8-5/8"	24 lb.	150'	108 sacks
7 7/8"	5-1/2"	14 lb.	1648'	226 sacks

It is proposed to drill Conoco Federal 21 No. 4 as a Pierre "B" oil producer. All appropriate logs will be run. No cores or DST's are planned.

The BOP will be tested daily.

Point 8 of 10 point plan - This well will be completed in the following interval 1548' - 1563' Pierre "B", by perforating the casing and hydraulically fracturing using 25,000 gallons of gelled water and 35,000 pounds of 10-20 sand. The frac layout is shown on the attachment.

USGS (3) COCCC (2) File

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.

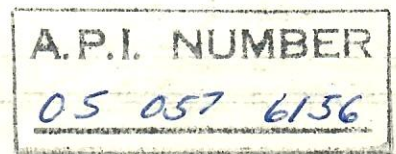
24. SIGNED T. C. Thompson TITLE Administrative Supervisor DATE 5-9-78

(This space for Federal or State office use)

PERMIT NO. 78 451 APPROVAL DATE DIRECTOR

APPROVED BY M. Rogers TITLE D & G CONS. COMM. DATE MAY 19 1978

*See Inst



5. LEASE DESIGNATION AND SERIAL NO.
C-15260

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Conoco Federal MAY 12 1978

9. WELL NO.
4

10. FIELD AND POOL, OR WILDCAT
M & G Cadym - South (field)
Pierre "B"

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
21, T9N, R78W

12. COUNTY OR PARISH | 13. STATE
Jackson ✓ | Colorado

Attachment to Form 9-331C
South McCallum, Conoco Federal 21 No. 4
Jackson County, Colorado
May 9, 1978

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MAY 12 1978

COLORADO OIL AND GAS CONS. COMM.

1. The geologic name of surface formation: Pierre
2. The estimated tops of important geologic markers:

<u>Formations</u>	<u>Drilled Depth</u>	<u>Subsea Depth</u>
Pierre "A" Sand	not present	
Pierre "B" Sand	1548'	+7000'

3. An oil and water bearing zone is expected to be encountered in the Pierre "B" sand. The depth of this formation is listed in (2) above.

4. Proposed casing pattern:

0' - 150' - 8-5/8" OD, 24 lb., K-55, ST&C
0' - 1648' - 5-1/2" OD, 14 lb., K-55, ST&C
(All casing mentioned above will be new.)

5. Specifications for pressure control: Our minimum specifications for pressure equipment will be 3000 pounds. See attached diagram.

6. Proposed circulating medium: (All mud used to kill the well, to log, and to run casing will be inhibited with 2% KCL.)

0' - 150' - Native mud and water with additions of gel and lime for sufficient viscosity to clean hole, land and cement surface casing.

150' - TD - Gelled chemical mud with the following properties:

Density - 9.0 - 9.6 ppg
Viscosity - 40-50 sec./qt.
Filtrate Loss - 15 ml. or less
(reduce to 6 ml. prior to drilling the Pierre "B")

Note: Hole conditions will dictate how closely the mud program will be followed, i.e., tight connections, hole sloughing, excessive rotary torque, excessive fill, lost circulation, abnormal pressure. Sufficient mud will be mixed on location to fill hole volume plus an excess of 200 bbls and sufficient weight to control bottom hole pressures.

7. Auxiliary equipment: We will use kelly cocks, floats at the bit, monitoring equipment on the mud system (if needed), a sub on the floor with a full opening valve and a blooie line.



Attachment to Form 9-331C
South McCallum, Conoco Federal 21 No. 4
Jackson County, Colorado
May 9, 1978
Page 2

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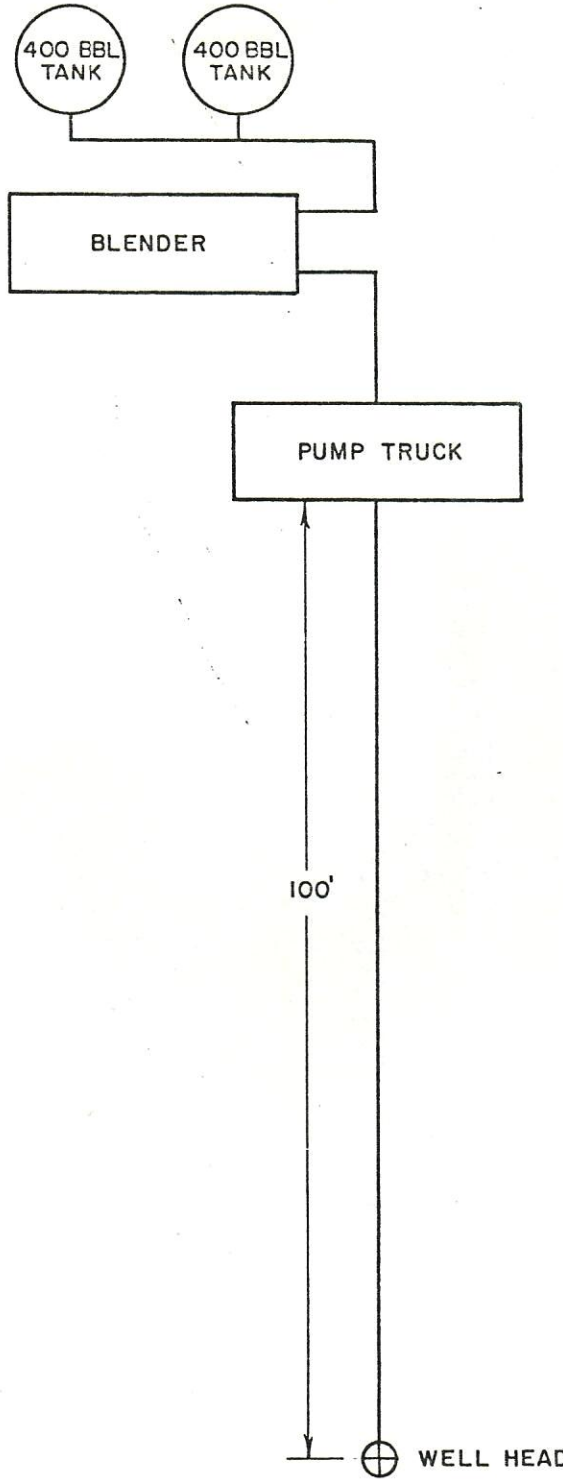
COLORADO OIL & GAS CONS. COMM.

8. Testing, logging and coring: No Drillstem Tests or Cores are planned.
Logging will be as follows:

<u>Tool</u>	<u>Interval</u>
IES	150' - TD
FDC - Caliper - GR	150' - TD

9. Abnormal pressures and temperatures: We do not anticipate encountering any abnormal pressures or temperatures. If encountered, a BOP will be used for control while drilling with mud. Mud weight will be increased if necessary to insure adequate control.
10. Starting date & duration: We plan to spud the well on June 26, 1978, and expect drilling operations to last approximately 5 days.





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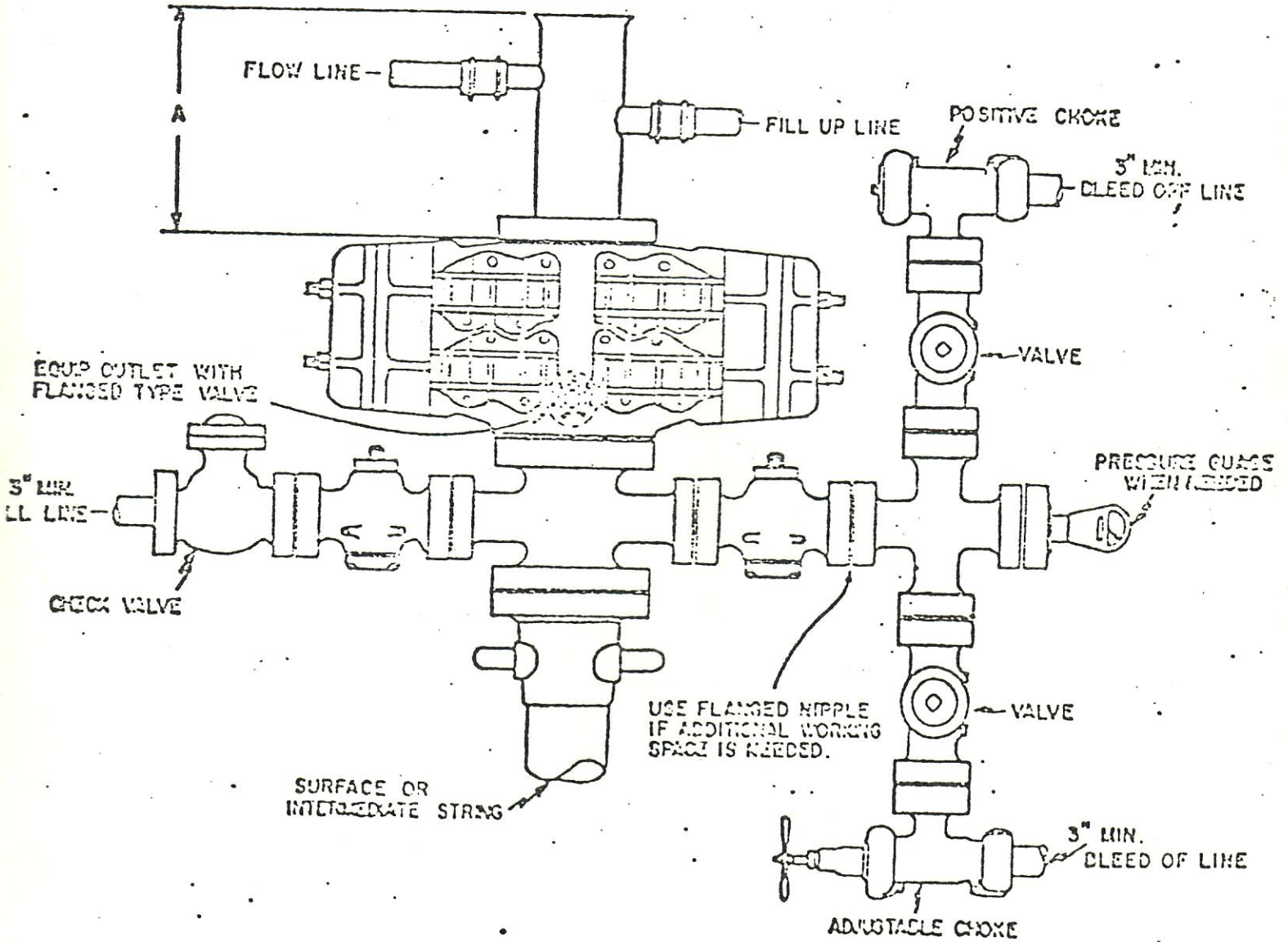


Mc CALLUM WELL FRAC LAYOUT

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Conoco:

Minimum BOP Stack

One Pipe Ram

One Blind Ram

Manifold

Well Head

3000' psi Working Pressure

3000 psi Working Pressure

3000 psi Working Pressure

