



CITIES SERVICE COMPANY
ENERGY RESOURCES GROUP

Box 1919
Midland, Texas 79702
(915) 684-7131

July 8, 1980

United States Department of the Interior
Geological Survey
P.O. Box 959
Farmington, New Mexico 87401

Re: Application for Permit to Drill
Federal "M" No. 1
McKinley County, New Mexico

Gentlemen:

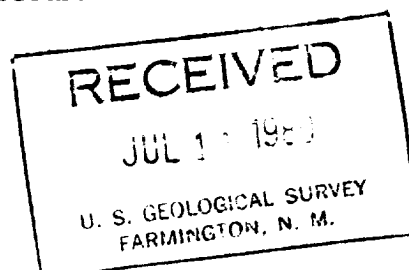
Cities Service Company respectfully requests permission to drill our Federal "M" No. 1, located 330 feet from the south line and 990' from the east line of Section 21-19N-5W, McKinley County, New Mexico, Federal Lease No. NM 26658.

The location, work area and access road have been staked. It is approximately 40 miles by road to Cuba and about 85 miles by road to Bloomfield, New Mexico.

In accordance with requirements stipulated in the National Environmental Policy Act, as stated in NTL-6 Section IIB, our application for permission to drill and supporting evidence is hereby submitted:

I. Application for Permit to Drill:

1. Form 9-331C
2. Form C-102 Location and Acreage Dedication Plat certified by Fred Kerr, Registered Land Surveyor #3950 in the State of New Mexico.
3. The elevation of the unprepared ground is 6690 feet above sea level.
4. The geologic name of the surface is Lewis Formation in the Cretaceous.



5. Rotary drilling equipment will be utilized to drill the well to TD 5450' and run casing. This equipment will then be rigged down and the well will be completed with a pulling unit.
6. Proposed total depth is 5450 feet.
7. Estimated tops of important geologic markers:

| | Near Surface |
|------------------|--------------|
| Mesa Verde Group | |
| Point Lookout SS | 2000' |
| Mancos Sh. | 2110' |
| Gallup Ss. | 2910' |
| Greenhorn Ls. | 3905' |
| Dakota Ss. | 4150' |
| Morrison Fm. | 4240' |
| Todilto | 5135' |
| Entrada Ss. | 5149' |
| Carmel Fm. | 5400' |
| TD | 5450' |

8. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered.

- A. Primary objective Entrada Ss (Jurassic) Top 5149'.
- B. Secondary objective Dakota Ss (Cretaceous) Top 4150'.

9. The proposed casing program is as follows:

Surface: 9-5/8" OD 32.3# H4D ST&C new casing
Production: 7" OD 20# & 23# K55 ST&C new casing

10. Casing setting depth and cementing program:

- A. 9-5/8" OD surface pipe set at 200'. Circulate cement with 300 sax Class "B" w/3% CaCl.
- B. 7" OD production casing set at 5450', with DV tool at 2700'. Cement first stage with 500 sax 50/50 Class B Pozmix w/2% Gel, 6-1/4# Gilsonite and 6# salt per sack. Cement 2nd stage with 400 sax Halliburton Lite with 6-1/4# Gilsonite per sack.

11. Pressure Control Equipment:

| | |
|-------------|---|
| 0 - 200' | None |
| 200 - 5450' | 10"/300# hydraulic BOP with blind and pipe rams with floor and remote operating stations. |

Blowout prevention equipment will be installed, tested and in working order before drilling below the surface casing and shall be maintained ready for use until drilling operations are completed.

A kill line will be properly installed and will not be used as a fill-up line.

Drill string safety valve(s) to fit all pipe in the drill string to be maintained on the rig floor while drilling operations are in progress.

The pipe rams will be activated once each 24 hours and the blind rams each time the pipe is out of the hole to assure the equipment is operational and each crew is properly trained to carry out emergency duties.

Auxiliary equipment is an upper kelly cock and a drill pipe float.

12. Mud Program:

| | |
|-------------|--|
| 0 - 200' | Spud mud. Gel flocculated with Lime. Maintain 45-60 Sec Viscosity. |
| 200 - 5450' | Drill out with a fresh water low solids, non-dispersed mud maintaining the following properties: |

| | | |
|------------|-----------|--------|
| Mud Weight | 8.6 - 8.8 | Lb/Gal |
| Viscosity | 32 - 34 | cc |
| Water Loss | 8 - 10 | cc |

Prior to drilling the Gallup sandstone, pre-treat mud with 10% LCM reducing to 5% LCM from the Dakota sandstone to TD.

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13. Testing, Logging and Coring Program
 - A. No drillstem tests.
 - B. Mud Logging Program. One man unit 1500' - TD 5450'.
 - C. Electric Logging Program. CNL-FDC, Dual Induction Laterolog, BHC Sonic - GR, Proximity Microlog-Caliper. Dipmeta to be determined later (Schlumberger).
 - D. Coring Program - None.
14. No abnormal temperature, pressures or H₂S gas is anticipated.
15. Anticipated starting date is one week to the month after approval of this application by the Geological Survey, depending upon rig availability.
16. The Multi Point Surface Use and Operation Plan for submission to the Bureau of Land Management is attached.

Yours very truly,



E. Y. Wilder
Region Operations Manager
Southwest Region
E & P Division

EYW/dtd

attachments