

Drilling Program
D. K. Boyd Oil & Gas Company, Inc.
Littman 8-1
Lea County, New Mexico

1. Geologic Name of Surface Formation: Permian

2. Estimated Tops of Important Geologic Makers:

Anhydrite	1600'
Top of Salt	1700'
Yates	2900'
Tubb	6600'
ABO	7150'

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

Upper Permian Sands	100'	fresh water
San Andres	4300'	oil
ABO	7150'	oil

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 8 5/8" casing at 1600' and circulating cement to the surface. Any shallower zones above T. D. which contain commercial quantities of oil and/or gas will have cement circulated across them.

4. Casing Program:

Hole Size	Interval	OD Casing	Weight Grade
12 1/4"	0 - 1600'	8 5/8"	24#, J-55
7 7/8"	0 - 7,700'	5 1/2"	15.5 & 17#, J-55

5. Cement Program:

A. 8 5/8 surface casing: Cemented to surface with 825 sxs. "C" with 4% gel with 2% cacl and 1/2#/sx Flocele.

B. 5 1/2" production casing: Cemented with 75 sxs. "C" 3% SMS with 1/4#/sx. Flocele, plus 700 sxs. "H" 0.8% FL-62 with .2% CD32 and .2% SMS. Deviation tool may be set @ 7,000'.

6. Minimum Specifications for Pressure Control: The B. O. P. shown on Exhibit 1 will consist of a double ram-type (3000 psi WP) preventer and a bag-type (hydril) preventer (3000 psi WP). Both will be operated hydraulically and the ram-type preventor will be equipped with blind rams on top and 4 1/2" drill pipe rams on bottom. Both B. O. P.s will be nipped up on the 8 5/8" surface casing and used continuously until T. D. is reached. The B. O. P.s and accessory equipment will be tested to 1000 psi before drilling out surface casing. Before drilling out intermediate casing, the ram-type B. O. P. and accessory equipment will be tested to 3000 psi and the hydril to 70% (2100 psi) of rated working pressure.