

Minimum Design Factors: Collapse 1.125, Burst 1.1, Tension 1.7

8-5/8" surface casing set at 1300'

Centralize the bottom 3 joints.

Cement to surface with 685 sx of Class C with 4% gel, 5% salt, 1/4# FC (12.8 ppg, 1.94 ft³/sx).

5-1/2" production casing set at TD'

Centralize every joint from TD to 1300'

Cement to tie back into 8-5/8" casing at least 200'.

Stage 1: 485 sx Class C Neat with 2% gel, 5% salt, 1/4# FC (14.2 ppg, 1.34 ft³/sx).

5. **Minimum Specifications for Pressure Control:**

7-7/8" hole

The following BOP equipment will be nipped up on the 8-5/8" casing and used continuously until TD is reached for the 7-7/8" hole.

The blowout preventer equipment (BOP) shown in Exhibit E will consist of a 3000 psi WP double ram type preventer and a 3M annular (bag type) preventer with rotating head. Both BOP's will be hydraulically operated. At the drilling contractor's option, 5M BOP's may be substituted. H2S trim will not be required.

Before drilling out from under the 8-5/8" intermediate casing, all BOP's and accessory equipment will be tested to 1000 psi with the rig pump. 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.

BLM method to calculate minimum BOP requirements:

$(.052)(8.4 \text{ ppg})(4000') - (0.22 \text{ psi/ft})(4000') = 867 \text{ psi}$

Minimum BOP requirements: 2M BOP stack and manifold system