

13 5/8" 1.5M psi WP BOP w/rotating head to be installed on the 13 3/8" csg. Test to 750 psi before drilling the 13 3/8" casing shoe.

11" 3M psi WP BOP to be installed on the 8 5/8" casing. The BOP stack will consist of one blind ram BOP, one pipe ram BOP, and a rotating head. Tested to 3000 psi before drilling the 8 5/8" casing shoe.

4. The proposed casing program including size, grade, weights, type of thread and coupling, and the setting depth of each string and its condition (new or acceptably reconditioned). For exploratory wells, or for wells as otherwise specified by the authorized officer, the operator shall include the minimum design factors for tensions, burst, and collapse that are incorporated into the casing design. In cases where tapered casing strings are utilized, the operator shall also include and/or setting depths of each portion.

- 17 1/2" hole, 13 3/8" H-40 48# STC csg set @ 850'
- 12 1/4" hole, 3200' 8 5/8" 28# K-55 BTC, 1400' 8 5/8" 32# K-55 LTC csg @ 4600'. ***

7 7/8" hole, 9000' 5 1/2" 17# K-55 LTC csg & 1150' 5 1/2" 17# N-80 LTC set @ 10,100'

***SPECS: 8 5/8" 28# K-55 BTC - ID=8.017", DRIFT=7.892",
BURST=3390 psi, COLLAPSE=1880 psi, and
TENSION=437000 lbs.

5. The amount and type(s) of cement, including anticipated additives to be used in setting each casing string, shall be described. If stage cementing techniques are to be employed, the setting depth of the stage collars and amount and type of cement, including additives, and preflush amounts to be used in each stage, shall be given. The expected linear fill-up of each cemented string, or each stage when utilizing stage-cementing techniques, shall also be given.

- a. 13 3/8" csg: Cmt w/600 sxs Class "C" + 4% gel + 2% CaCl₂ + 1/4 pps Flocele; tail w/200 sxs Class 'C' + 2% CaCl₂ + 1/4 pps Flocele. Circ. to surface.
- b. 8 5/8" csg: Cmt (2 Stages), DV Tool @ +/-2500'. Stage 1: Lead w/600 sxs Class 'C' + 9 pps salt + 5 pps Gilsonite + 1 pps Econolite + 1/4 pps Flocele, tail w/250 sxs 'C' + 2% CaCl₂. Stage 2: Lead w/500 sxs Class 'C' Lite + 9 pps salt + 1/4pps Flocele, tail w/200 sxs Class 'C' + 2 % CaCl₂. Circ. to surface.

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