

**HARDY 36 STATE 1
API #30-025-32128
RECOMPLETE GRAYBURG**

Wellbore Preparation:

- 1) MIRU pulling unit. Kill well.
- 2) Unseat pump. POOH w/rods & pump. LD rods & pump.
- 3) NDWH, NUBOP. Test BOP.
- 4) RU tbg scanners. Release TAC. Scan OOH w/tbg and visually inspect.
- 5) RU tbg hydro-testers. PU & TIH w/bit and scraper. Hydrotest tbg in to 5000#. Release hydro-test services.
- 6) TOOH w/tbg. Stand tbg in derrick.

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Completion:

- 7) PU & RIH w/CBP. Set CBP @ 6,885' (between collars 6863' – 6909').
- 8) Spot cement plug. Displace w/fresh water. Stand down until cement is cured.
- 9) RIH & tag cement.
- 10) RIH w/CBP @4350'.
- 11) Spot cement plug. Displace w/fresh water. Stand down until cement is cured.
- 12) RIH & tag cement.
- 13) CUH to 4,002' and spot 5 bbls of 15% HCL Acid to fill 210' of csg. TOOH w/tbg. Lay down tbg.
- 14) RU wireline services. Perforate intervals at 2 spf (perforating to be done w/lubricator in place)
 - a. 60-degree phasing w/ 4" Titan Slick Gun w/super deep penetrating charges (ch-40g, eh-0.52", pen-52.13")

<u>Grayburg</u>	<u>Feet</u>	<u>Shots</u>
3,912- 4,002'	90	180

- 15) TOOH w/perforating gun and inspect to verify # of shots fired. RD wireline services.
- 16) RU hydrotesters. PU & RIH w/ pkr & 3 ½ L-80 Tbg work st43ring to 3,815' while testing tbg below slips @ 8000#.
- 17) RD hydrotesters. Pump away acid to break down perfs before frac. Record perf break down pressure in Wellview.
- 18) NDBOP. NU full-bore frac valve to 7-1/16" flange.
- 19) RDMO pulling unit.
- 20) RU frac services. Frac well without pulling unit on location.
- 21) Acid BreakDown

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- 22) *Frac-treat Grayburg perforated interval (3912-4002) down 3-1/2", 9.3#, L-80 tbg @ 30 BPM – anticipated treating pressure at 2500# - 3000#*
- 23) *Record: P(max); P(min); ISIP; SITP(5 min); SITP(10 min); SITP(15 min); SITP(20 min)*
- 24) *RDMO frac services.*
- 25) Shut well in for 24 hours to let resin coat cure.
- 26) Open well and flow back well until dead. Max 1 bbl/min
- 27) MIRU pulling unit.
- 28) Release packer. Tag for fill.
- 29) POOH & LD tbg & packer (workstring).
- 30) PU & RIH w/drill bit and 2-7/8", 6.5#, L-80 tbg. Clean out. RIH to PBTD and circulate well clean.
- 31) TOH w/bit and tbg. Lay down bit.
- 32) RIH w/tbg and TAC. Set tbg.
- 33) ND BOP. NU well.
- 34) RIH w/pump and rods. Space pump, hang well off.
- 35) RDMO. Return well to production.