



Procedure to Re-enter & Properly P&A Well Prior to Offset HZ Fracs COA for Desha DSU

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Cimarron-Penrod 2
05-001-08830
1986' FSL, 1984' FWL
NESW Sec 4, T1S, R65W
Adams County, CO

Proposed Work:

Locate Well and Make-Up Wellhead

- 1.) Call Line Locates & Provide 48 hr. Form 42 notice to COGCC prior to 'excavation and rig up.'
- 2.) Survey and locate abandoned well, mark with stake, and take location photos.
- 3.) Excavate to expose top of surface casing.
- 4.) Prepare location surrounding exposed casing as necessary for rig.
- 5.) Set and test deadman anchors as necessary.
- 6.) Weld 2" collar to top of 8-5/8" surface casing cap. Make up to collar, pneumatic drill with non-sparking bit. Drill out cap venting possible trapped gas.
- 7.) Once verified that no gas exists beneath top of surface casing plate, cut off surface casing below plate with torch, dress up smooth.
- 8.) Butt weld 8-5/8" casing to dressed cut, bringing threaded end of casing to ground level.
- 9.) Make up to 8-5/8" casing one 8-5/8" collar, and an 8-5/8" starter well head.
- 10.) NU flange adaptor and 5k BOP, test BOP.

Drill out Old Plug/s and Set New Plugs

- 11.) MU and RIH with 6-1/8" bit, PU 2-7/8" (or 3-1/2") drill collars, 2-7/8" 6.5# tubing, and TIW valve.
- 12.) Drill out 10 sx cement plug (down to 30'), PSI test casing to 300 psi.
- 13.) Drill out 25 sx cement plug @ 150'. Roll hole with kill fluid until well is dead, or blown down.
- 14.) Continue RIH, cleaning out, tag top of Fox Hills plug, +/- 800'. Likely that top is closer to 1,000'.
- 15.) Drill out plug to +/- 1,300'. Continue to cleanout, RIH and clean out with target depth of +/- 6,000'. Circulate hole clean.
- 16.) MIRU Wireline, RIH gyro survey to EOT. POOH
- 17.) TOO 2-7/8" work string, drill collars and bit.
- 18.) PU and RIH with mule shoe and 2-7/8" tubing to +/- 6,000'.
- 19.) RU cementers. Pump 184 sack balance plug of 15.8 ppg Class G 'neat' cement inside 7-7/8" open hole from +/- 6,000' plug up to ~5,500'.



Calculated Sacks for Niobrara Coverage - Plug 1 Re-Entry

Assume Class G Neat

Desired Coverage of 500'

Assume all 7-7/8" Open hole 25% Excess

Yield : 1.15 cu ft / sx

$$500 \text{ lin ft} * \frac{0.3382 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} * 125\% = 184 \text{ Sacks Cement}$$

20.) PU with 2-7/8" tubing to +/- 5,200' (800' above bottom of plug). Roll hole clean, wait on cement.

21.) RIH with 2-7/8" tubing and tag top of cement plug, confirm TOC.

22.) POOH 2-7/8" tubing to +/- 1,300', below Fox Hills.

23.) RU cementers. Pump 221 sack balance plug of 15.8 ppg Class G 'neat' cement inside 7-7/8" open hole from +/- 1,300' plug up to ~700'.

Calculated Sacks for Fox Hill Protection - Plug 2 Re-Entry

Assume Class G Neat

Desired Coverage of 600' (1,500' to 900')

Assume all 7-7/8" Open hole 25% Excess

Yield : 1.15 cu ft / sx

$$600 \text{ lin ft} * \frac{0.3382 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} * 125\% = 221 \text{ Sacks Cement}$$

24.) Pull 2-7/8" tubing to 500'. Roll hole clean, wait on cement.

25.) RIH with 2-7/8" tubing and tag top of cement plug, confirm TOC.

26.) Pull tubing to 250'. RU cementers. Pump 69 sx of 15.8 ppg Class G 'neat' across surface shoe to surface.

Calculated Sacks for Surface Plug in Casing - Plug 3 Re-Entry

Assume Class G Neat

Desired Coverage of 250' (74 below surface shoe to surface)

74' of 7-7/8" Open Hole, + 176' of 8-5/8" Casing

Yield : 1.15 cu ft / sx

$$74 \text{ lin ft} * \frac{0.3382 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} = 15 \text{ Sacks Cement}$$

$$176 \text{ lin ft} * \frac{0.3575 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} = 55 \text{ Sacks Cement}$$

69 Total Sacks Cement

27.) POOH with 2-7/8" tubing. Top off tubing displacement when out of hole. RD cementers.

28.) RDMO.

Reclaim

29.) Excavate around wellhead to 8' below grade, cut off 8-5/8" casing, weld on cap.

30.) Obtain GPS location data as per COGCC Rule 215.

31.) Backfill hole and reclaim surface to original conditions.