



## Procedure to Plug & Abandon Well Prior to Offset HZ Fracs COA for Desha DSU

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### Haskins 1

05-001-08831  
1090' FSL, 990' FWL  
SWSW Sec 4, T1S, R65W  
Adams County, CO

### Proposed Work:

#### *Pull Tubing – Verify Production Casing Top, and Cement Bond*

- 1.) MIRU workover rig, pump and tank. Blow down wellhead, rig up and pump 10-20 bbls lease water down tubing to control well.
- 2.) ND wellhead, NU BOP. Make up 2-3/8" pump joint and TIW to tubing string. PU on tubing, unland tubing and tubing hanger.
- 3.) Inspect via Tuboscope while TOO H w/ 7934' 2-3/8" tubing string. Lay down 1 joint.
- 4.) MIRU Wireline. RIH with Gyro Survey and CBL. Log well. Evaluate TOC of primary job and Fox Hills squeeze.

#### *Plug Well*

- 5.) RIH Wireline, set CIBP @ +/- 7,816', ~50' above top perf as long as CBL shows TOC above 7,816'.
- 6.) Dump 2 sacks cement on CIBP. Test casing to 500 psi.
- 7.) If test ok, RIH on Wireline a 1', 2 spf perf gun. Shoot @ +/- 6,000'. RD Wireline.
- 8.) RIH with tubing set 4-1/2" x 2-3/8" cement retainer, 2-3/8" stinger and 2-3/8" tubing. Set cement retainer @ +/- 5,990'.
- 9.) **RU cements. Squeeze 265 sxs of 15.8 ppg Class G 'neat' cement down tubing/ retainer and into squeeze holes.**

#### Calculated Sacks for > 400' Niobrara Coverage - Squeeze 1 Re-Entry

Assume Class G Neat

Desired Coverage From 6000' to 5500' = 500' (> 400' Coverage above Nio)

4-1/2" in 7-7/8" Open hole 50% Excess

Yield : 1.15 cu ft / sx

$$500 \text{ lin ft} * \frac{0.2278 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} * 150\% = \text{265 Sacks Cement}$$

- 10.) Sting out of cement retainer with 5 sacks in tubing and spot cement on top of retainer. PU 75' and circulate hole clean, TOO H with 2-3/8" tubing. Note any cement while circulating hole. WOC.

- 11.) RU wireline. Run CBL across squeeze. Confirm >400' cement coverage. If coverage is not adequate, repeat steps 7 – 9, shooting perf holes @ about TOC per CBL.
- 12.) Once adequate cement in annular of 4-1/2" production string is achieved, move to next.
- 13.) RIH with 2-3/8" tubing and mule shoe to 1,410', 100' below Fox Hills.
- 14.) RU cementers. Pump 44 sx balanced plug of 15.8 ppg Class G 'neat' cement across Fox Hills.**

**Calculated Sacks for balanced Plug in Casing across Fox Hills - Plug 2 Re-Entry**

Assume Class G Neat

Desired Coverage From 1410' to 835' = 575' (100 below Fox Hills to 100' above)

All 4-1/2" casing

Yield : 1.15 cu ft / sx

$$575 \text{ lin ft} \quad * \quad \frac{0.0872 \text{ cu ft}}{1 \text{ lin ft}} \quad * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} \quad = \quad \mathbf{44 \text{ Sacks Cement}}$$

- 15.) POOH 2-3/8" tubing laying down. WOC.
- 16.) MIRU Wireline. Tag TOC to confirm height. If confirmed, then PU and shoot 2 squeeze holes at 311'.
- 17.) RU cementers to 4-1/2" casing. Pump 97 sx of 15.8 ppg Class G 'neat' for surface plug down casing and up annulus to surface.**

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

Assume Class G Neat

Desired Coverage From 311' to 0' = 311' (50 below Shoe to Surface)

Assume all 8-5/8" Casing - will slightly overestimate volume

Yield : 1.15 cu ft / sx

$$311 \text{ lin ft} \quad * \quad \frac{0.3575 \text{ cu ft}}{1 \text{ lin ft}} \quad * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} \quad = \quad \mathbf{97 \text{ Sacks Cement}}$$

- 18.) RDMO.

*Reclaim*

- 19.) Excavate around wellhead to 8' below grade, cut off 4-1/2" casing and 8-5/8" casing, weld on cap.
- 20.) Obtain GPS location data as per COGCC Rule 215.
- 21.) Backfill hole and reclaim surface to original conditions.