

## PLUG AND ABANDONMENT PROCEDURE

September 4, 2018

### Cathedral Federal K-27-3-101-S

Proposed P&A  
API #05-103-08587  
NESW, Section 27, T3S, R101W, 6PM  
Lat: 39.75523 / Long: -108.72016 Rio Blanco County,

Note: This procedure may be revised based on COGCC Conditions of Approval. All cement volumes use 10% per 1000' of depth, both inside and outside per Colorado Regulations. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures. All cement will be Class G, mixed at 15.8 ppg with a 1.15 cf/sx yield. Water spacers shall be used both ahead of and behind balanced plug cement slurry to minimize cement contamination by any wellbore fluids that are incompatible with the cement slurry.

1. This project will use an A-Plus steel tank to handle waste fluids circulated from the well and cement wash up.
2. Install and test location rig anchors. Comply with all COGCC, BLM, and Operator safety regulations. MOL and RU daylight pulling unit. Conduct safety meeting for all personnel on location. Record casing, tubing and bradenhead pressures. NU relief line and blow down well. Kill well with water as necessary and at least pump tubing capacity of water down the tubing. ND wellhead and NU BOP. Function test BOP.
3. Rods: Yes\_\_\_\_, No X, Unknown\_\_\_\_.  
Tubing: Yes X, No\_\_\_\_, Unknown\_\_\_\_, Size 2-3/8", Length 434'.  
Packer: Yes\_\_\_\_, No X, Unknown\_\_\_\_, Type \_\_\_\_\_.
4. **Plug #1 (Mancos perforations & Mancos top, 3985' – 3885')**: R/T 4.5" gauge ring or mill to 3985'. RIH and tag existing 4.5" bridge plug set at 3985'. Pressure test tubing to 1000#. Attempt to pressure test casing to 800#. If casing does not test, then spot or tag subsequent plugs as necessary. Mix and pump 12 sxs Class G cement and spot a balanced plug inside casing above CIBP to isolate the Mancos perforations and Mancos top. TOH.
5. **Plug #2 (7" Surface casing shoe and Surface, 233' - Surface)**: Attempt to pressure test the bradenhead annulus to 300 PSI; note the volume to load. If the BH annulus holds pressure, then establish circulation out casing valve with water. Mix approximately 19 sxs cement and spot a balanced plug from 233' to surface, circulate good cement out casing valve. TOH and LD tubing. Shut well in and WOC. If the BH annulus does not test, then perforate at the appropriate depth and attempt to circulate cement to surface filling the casing and annulus from the squeeze holes to surface. Shut in well and WOC.
6. ND cementing valves and cut off wellhead. Fill annuli with cement as necessary. Install P&A marker to comply with regulations. Record GPS coordinate for P&A marker on tower report. Photograph P&A marker in place. RD, MOL and cut off anchors. Restore location per BLM stipulations.

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Lat: 39.75523 / Long: -108.72016 Rio Blanco County, CO

**Today's Date: 9/4/18**

Spud: 12/4/80

Completed: 12/15/80

Elevation: 7966' KB

