

ML _____
MTG _____
Approved _____

PLUG AND ABANDONMENT PROCEDURE (AFE#1401269)

Hill Ranch 16-09VX

February 3, 2014

Surface: 3,354' FNL, 521' FEL, Section 16, T35S, R67W, Las Animas, CO
API 05-071-09275

Note: All cement volumes use 100% excess outside pipe and 50' excess inside. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures. All cement will be Class B, mixed at 15.6 ppg with a 1.18 cf/sx yield.

1. Install and test location rig anchors. 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.
2. Rods: Yes X , No _____, Unknown_____.
Tubing: Yes X , No _____, Unknown_____, Size 2.875" , Length 2,128'.
Packer: Yes_____, No X , Unknown_____, Type _____.
If this well has rods or a packer, then modify the work sequence in step #2 as appropriate.
3. **Plug #1 (Vermejo, 1,788' – 1,738')**: Round trip 5.5" gauge ring to 1,788' or as deep as possible. RIH and set 5.5" cement retainer at 1,788'. Pressure test tubing to 1000 PSI. Mix and pump 12 sxs Class B cement and spot a balanced plug inside casing to cover the Vermejo top. PUH.
4. **Plug #2 (Surface Casing Shoe, 533' – Surface)**: TIH with tbg to 533'. 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 and pump 61 sxs Class B cement to cover the casing shoe and cement to surface. TOH. Shut well in and WOC.
5. **Plug #3 (8-5/8" X 5-1/2" annulus, 100'-surface)**: ND BOP and cut off WH and BH. TIH with 1" PVC to 100' down 8-5/8" X 5-1/2" annulus. Pump 17 sxs Class B cement and circulate cement to surface.
6. Install P&A marker with cement to comply with regulations. RD, move off location, cut off anchors and restore location.

Tops:

Casing shoe	483'
Vermejo Coal	1,788'