#### PLUG AND ABANDONMENT PROCEDURE

February 8, 2010

### Wilmuth #2

Blanco Pictured Cliffs 900' FSL and 1510' FWL, Section 26, T31N, R11W San Juan County, New Mexico / API 30-045-26369 Lat: N / Lat: W

	Lat: N/ Lat: W
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.	This project requires a NMOCD C-144 CLEZ Closed-Loop System Permit for the use of an A-Plus steel tank to handle waste fluids circulated from the well and cement wash up.
2.	Rods: Yes, NoX, Unknown  Tubing: Yes, NoX, Unknown, Size, Length  Packer: Yes, NoX, Unknown, Type  If this well has rods or a packer, then modify the work sequence in step #2 as appropriate.
3.	Open bradenhead valve. Establish rate down 2.875" casing with 20 bbls water, record pump rate and pressure. Monitor bradenhead for flow. If no flow or blow, then pump 6 - 7/8" RCN balls in additional water and monitor pressure, rate and volumes pumped, to confirm perforations are taking water and there is not a casing leak. If the bradenhead flows water or there are other indications of a casing leak, then MO and RU pulling unit to use 1-1/4" IJ tubing workstring to plug this well.
4.	Plug #1 (Pictured Cliffs interval, Fruitland, Kirtland and Ojo Alamo tops, 2470' – 703'): Establish rate into PC perforations with water. Mix and pump total of 64 sxs cement (long plug, 30% excess) and bullhead the down 2.875" casing: first pump 10 sxs cement, then drop 10 RCN balls, then pump 60 sxs cement and do not displace. Double valve and shut in well. WOC. Tag cement 50' above top of Ojo Alamo. TOH and LD tubing.
5.	<b>Plug #2 (Surface, 279' – Surface)</b> : Perforate 3 HSC squeeze holes at 279'. Establish circulation to surface out the 2.875" casing and bradenhead valve, circulate the BH annulus clean. Mix and pump approximately 95 sxs Class B cement down 2.875" casing and circulate good cement out casing and bradenhead valve from 279' to surface. SI well and WOC.

6. ND BOP and cut off wellhead below surface casing flange. Install P&A marker with cement to comply with regulations. RD, MOL and cut off anchors. Restore location per BLM stipulations.

# Wilmuth #2

### Proposed P&A Blanco Pictured Cliffs

900' FSL, 1510'FWL, Section 26, T-31-N, R-11-W,

San Juan County, NM / API #30-045-26369 Lat \_\_\_\_\_ / Long \_\_\_\_\_

Today's Date: 2/8/10

Spud. 5/27/85

Completed: 7/19/85

Elevation: 5689' GL

5701' KB

12 25" hole

8.625" 24#, K-55 Casing set @ 229' Cement with 290 sxs (Circulated to Surface)

Plug #2: 279'~ 0' Class B cement, 95 sxs

TOC @ 600' (T.S.)

Plug #1: 2470'- 703' Class B cement, 64 sxs

Ojo Alamo @ 753'

Kirtland @ 775'

Fruitland @ 1921'

7.875" hole to 1940'

Pictured Cliffs @ 2300'

6.75" hole to TD

TD 2470' **PBTD 2437**' Pictured Cliffs Perforations: 2310' - 2426'

2.875",6 5#, K-55 Casing set @ 2455' Cement with 794 cf

## Wilmuth #2 Current

**Blanco Pictured Cliffs** 900' FSL, 1510'FWL, Section 26, T-31-N, R-11-W,

San Juan County, NM / API #30-045-26369 Lat \_\_\_\_\_ / Long \_\_\_\_

Today's Date: 2/8/10 Spud: 5/27/85 Completed. 7/19/85 Elevation. 5689' GL

Ojo Alamo @ 753'

Kırtland @ 775'

12 25" hole

5701' KB

8.625" 24#, K-55 Casing set @ 229' Cement with 290 sxs (Circulated to Surface)

TOC @ 600' (T.S)

Fruitland @ 1921'

7.875" hole to 1940'

Pictured Cliffs @ 2300'

6 75" hole to TD

Pictured Cliffs Perforations 2310' - 2426'

2 875",6.5#, K-55 Casing set @ 2455' Cement with 794 cf

TD 2470' PBTD 2437'