

PLUG AND ABANDONMENT PROCEDURE

June 2, 2008

Federal 1-22 #1

Escrito Gallup
660' FSL & 1980' FWL, SW, Section 22, T24N, R7W
Rio Arriba County, New Mexico, API #30-039-05349

Note: All cement volumes use 100% excess outside pipe and 50' excess inside pipe. 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.

1. Project will require a Pit Permit (C103) from the NMOCD.
2. Install and test location rig anchors. Prepare and line a waste fluid pit. Comply with all NMOCD, 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 ☒, Unknown ☐
Tubing: Yes ☐, No ☒, Unknown ☐, Size 2 7/8, Length 5609'
Packer: Yes ☐, No ☒, Unknown ☐, Type
If well has rods or a packer, then modify the work sequence in Step #2 as appropriate.

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4. **Plug #1 (Gallup perforations and top, 5510' - 5328')**: TIH and set 5.5" cement retainer at 5510'. Pressure test tubing to 1000#. Load casing with water and circulate well clean. Pressure test casing to 800#. *If casing does not test, then spot or tag subsequent plugs as appropriate.* Mix ~~28~~ ²⁸⁹⁵ sxs cement and spot a balanced plug inside casing above CR to isolate the Gallup perforations and top. PUH to 4379'. *2795*
5. **Plug #2 (Mesaverde top, 4379' - 4279')**: Mix ~~18~~ ¹⁸ sxs cement and ~~spot a balanced plug inside casing~~ ^{inside casing} to cover the Mesaverde top. TOH. (note: if the casing leaks, then increase the cement to 25 sxs.)
6. **Plug #3 (Pictured Cliffs and Fruitland top, 2080' - 1765')**: Perforate 3 squeeze holes at 2080'. Attempt to establish rate into squeeze holes if the casing tested. Set 5.5" cement retainer at 2030'. Establish rate into squeeze holes. Mix and pump ~~138~~ ⁴⁸ sxs cement, squeeze ~~95~~ ¹⁶⁰¹ sxs outside the casing and leave ~~48~~ ¹³²⁷ sxs inside casing to cover through the Fruitland top. TOH. *1601*
7. **Plug #4 (Kirtland and Ojo Alamo tops, 1515' - 1255')**: Perforate 3 squeeze holes at ~~1515'~~ ¹⁶⁰¹. Attempt to establish rate into squeeze holes if the casing tested. Set 5.5" cement retainer at ~~1465'~~ ¹³²⁷. Establish rate into squeeze holes. Mix and pump ~~116~~ ¹⁶⁰¹ sxs cement, squeeze ~~78~~ ¹⁶⁰¹ sxs outside the casing and leave ~~37~~ ¹⁶⁰¹ sxs inside casing to cover through the Ojo Alamo top. TOH and LD tubing.
8. **Plug #5 (9.625" Surface casing shoe, 301' - 0')**: Perforate 3 squeeze holes at 301'. Establish circulation out the bradenhead valve with water; circulate the BH annulus clean. Mix and pump approximately 110 sxs cement down the 5.5" casing to circulate good cement out bradenhead valve. Shut well in and WOC.
9. ND BOP and cut off casing below surface casing flange. Install P&A marker with cement to comply with regulations. RD, move off location, cut off anchors and restore location.

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Current

Escrito Gallup

660' FSL & 1980' FWL, Section 22, T-24-N, R-7-W
Rio Arriba County, NM / API #30-039-05349

Today's Date: 6/2/08

Spud: 4/25/58

Comp: 6/2/58

Elevation: 6778' GL
6789' KB

12.25" Hole

9.625" 36# Casing set @ 251'
150 sxs cement, circulated to surface

Ojo Alamo @ 1305' *est

Kirtland @ 1465' *est

Fruitland @ 1815' *est

Pictured Cliffs @ 2030'

Mesaverde @ 4329'

Gallup @ 5376'

Tubing set at unknown depth
(original tubing was 2" at 5609')

Holes in casing 4382' – 4412'
squeeze with total 500 sxs Type H
cement (1984).

Top of Cmt @ 4629' (Calc, 75%)

Note: May or may not have a CIBP
at 5485'. Records do not indicate
one in hole.

Gallup Perforations
5560' – 5590'

5.5" 15.5#, J-55 Casing @ 5651'
Cemented with 200 sxs (236 cf)

7.875" Hole

TD 5651'
PBSD 5609'

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Proposed P&A

Escrito Gallup

660' FSL & 1980' FWL, Section 22, T-24-N, R-7-W

Rio Arriba County, NM / API #30-039-05349

Today's Date: 6/2/08

Spud. 4/25/58

Comp: 6/2/58

Elevation: 6778' GL

6789' KB

12.25" Hole

9.625" 36# Casing set @ 251'
150 sxs cement, circulated to surface

Perforate @ 301'

Plug #5: 301'– 0':
Class G cement, 110 sxs

Ojo Alamo @ 1305' *est

Plug #4: 1515'– 1255':
Class G cement, 116 sxs:
37 inside and 79 outside

Kirtland @ 1465' *est

Cement Retainer @ 1465'

Perforate @ 1515'

Fruitland @ 1815' *est

Cement Retainer @ 2030'

Plug #3: 2080'– 1765':
Class G cement, 138 sxs:
43 inside and 95 outside

Pictured Cliffs @ 2030'

Perforate @ 2080'

Plug #2: 4379'– 4279':
Class G cement, 18 sxs

Mesaverde @ 4329'

Holes in casing 4382' – 4412'
squeeze with total 500 sxs Type H
cement (1984).

Top of Cmt @ 4629' (Calc, 75%)

Gallup @ 5376'

Note: May or may not have a CIBP
at 5485'. Records do not indicate
one in hole.

Set CR @ 5510'

Plug #1: 5510'– 5326':
Class G cement, 28 sxs

Gallup Perforations:
5560' – 5590'

7.875" Hole

5.5" 15.5#, J-55 Casing @ 5651'
Cemented with 200 sxs (236 cf)

TD 5651'
PBTD 5609'

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
FARMINGTON DISTRICT OFFICE
1235 LA PLATA HIGHWAY
FARMINGTON, NEW MEXICO 87401**

Attachment to notice of
Intention to Abandon:

Re: Permanent Abandonment
Well: 1 Federal 1-22

CONDITIONS OF APPROVAL

1. Plugging operations authorized are subject to the attached "General Requirements for Permanent Abandonment of Wells on Federal and Indian Lease."
2. Farmington Office is to be notified at least 24 hours before the plugging operations commence (505) 599-8907.
3. The following modifications to your plugging program are to be made:
 - a) Bring the top of the Gallup plug to 5300'.
 - b) Place the Mesaverde plug from 2898' – 2798' inside and outside the 5 ½" casing.
 - c) Place the Pictured Cliffs/Fruitland plug from 2080' - 1748' inside and outside the 5 ½" casing.
 - d) Place the Kirtland/Ojo Alamo plug from 1601' – 1327' inside and outside the 5 ½" casing.

You are also required to place cement excesses per 4.2 and 4.4 of the attached General Requirements.

Office Hours: 7:45 a.m. to 4:30 p.m.