

HORSESHOE GALLUP UNIT, Well #286
Unit Ltr. "J", Sec. 30-31N-16W
San Juan County, New Mexico

7-13-74 70 MI Surf. hole rig. Spudded @ 12:01 PM 7-12-74.
Loc: Unit J - 2540' f/South line & 2570' f/East line
Sec. 30-31N-16W, San Juan Co., New Mexico.
Elev: 5546' GL, ungraded. Signal Drilling Co - Contrac.

14 123 WORT - Drld 12 1/4" hole to 123' - Ran 4 Jts (121') 8-5/8" OD 24#
J-55 ST&C Csg. set at 123' w/90 Sx. Cl A cement w/2% CaCl2.
Cem. Circ. Job comp @ 2:30 PM 7-13-74.

7-15 - 7/22 WORT

7-23-74 123 RURT. Signal Oilfield Service, Inc. - Contr.

7/24/74 925 Drilling shale, water. 1/4 @ 300' 3/4 @ 600'. RU Signal Oilfield Service.
Nip'd up head & BOP. Tested 8-5/8" casing & BOP @ 800# f/ 30 min, held O.K..
Started drlg soft cmt @ 76' @ 3 pm 7/23/74.

7/25/74 1269 Coring #3. Gel-Chem 8.6#, 38 vis, 8 WL. 1° @ 1245
Drld 7-7/8" hole to 1245'. Ran Loomis press containing core bbl w/ 6-1/8" dia
bit. Core #1, 1245-55', Gallup, ball valve failed to close, rec'd 9', no des.
Reran, Core #2, 1255-65', Gallup, recorded pressure inside core bbl 300#.
Reamed core hole 1245-1265'. Started core #3 @ 1265'.

7/26/74 1380 Laying dn core #5 Gel-Chem: 9.0#, 40 vis, 5.4 WL
Core #3, 1265-75', Gallup, press retaining valve did not close. Rec'd 10'.
Ran bit, reamed core hole, drilled to 1360'. Top Lower Gallup @ 1358. Cut
core #4 f/1360-69 1/2', valve did not close. Rec'd 9' 1" gray sandstone w/few
minor shale laminations, good por & odor thruout. Cut core #5, 1369 1/2 to 79 1/2'
dropped ball & core bbl did not shift. Pulled core #5, pulled wet.

7/27/74 1427 Logging Gel-Chem: 8.6#, 57 vis, 4.0 WL.
Reamed core hole to 1380'. Ran Loomis pressure retaining core bbl. Core #6,
Gallup, 1380-88'. Pulled out. Valve closed. Barrel recorded 50# press.
Valve leaking when packing core in dry ice. Removed core f/ bbl. Rec'd 8':
3' sand & 5' shale. Ran 7-7/8" bit, reamed core hole, drld to 1427', cond
mud, pulled out. Ran Density w/ GR-cal, Dual Ind LL-8 w/ SP and Proximity
logs. WLTD 1427'.

7/28/74 1427 WOC. Finished running logs. Ran bit, cond hole. LD DP. Ran 45 jts,
1416', 5-1/2" OD 14 1/2 J-55 ST&C casing w/ Baker float collar & guide shoe,
set at 1427'KB, cmtd w/ 80 sx HOWCO lite followed w/ 90 sx Class "B" neat
cement, complete returns thruout, Plug down 3:30 pm 7/27. Hung 5-1/2" casing
on OCT C-21 hanger. Rig rel. 6 p.m. 7/27/74.

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| 7/29 - 8/4/74 1427 | TD - WO completion |
| 8/5/74 1398 | PB - Prep run pmpg equip. MI & RU Allen Construction Company. Ran casing scraper on 1 1/4 jts 2-7/8" tbg. Rev circ w/ 50 BW w/ 1% ARCO Chem D-600. Ran GR-Correl & collar log, and CBL. Perf'd Gallup 1364-82' w/ 2 jets/rt. Job comp 12:30 a.m. 8/5/74. SDON. This a.m., 35#. |
| 8/6/74 1398 | PB - WO pumping equip. Yest a.m. 35#, bled down. Ran 2-7/8" tbg, 2-1/4" tubing pump & 3/4" rods. Rel rig 4 p.m. 8/5/74. |
| 8/7 1398 | PB - WP pmpg equip |
| 8/8/74 1398 | PB - Conn'g electricity. MI & set pmpg unit. |
| 8/9/74 1398 | PB - Conn'g elec @ well. |
| 8/10/74 1398 | PB - Pumping for test. On pump 3:30 p.m. 8/9/74. 2-7/8" OD EUE tubing @ 1390', 2-1/2" tubing pump, 16 - 64" SPM. |
| 8/11/74 1398 | PB - Pumped 22 BO & 64 BW in 16 hrs. |
| 8/12/74 1398 | PB - Pumped 13 BO & 55 BW in 24 hrs. |
| 8/13/74 1398 | PB - Pumped 17 BO & 52 BW in 24 hrs f/Gallup perfs 1364-82', 2-1/4" tbg pmp, 16 - 64" SPM. |
| 8/14/74 1398 | PB - Pumped 14 BO & 50 BW in 24 hrs. |
| 8/15/74 1398 | PB - Pumped 14 BO & 47 BW in 24 hrs. |
| 8/16/74 1398 | PB - Pumped 14 BO & 48 BW in 24 hrs. |
| 8/17/74 1398 | PB - Pmpg f/ test, 14 BO & 48 BW 24 hrs. |
| 8/18/74 1398 | PB - Pmpg f/ test, 14 BO & 42 BW 24 hrs. |
| 8/19/74 1398 | PB - Pmpg f/ test, 14 BO & 44 BW 24 hrs |
| 8/20/74 1398 | PB - Pmpg f/ test, 15 BO & 43 BW 24 hrs |
| 8/21/74 1398 | PB - Pumped 12 BO & 43 BW in 24 hrs. |
| 8/22/74 1398 | PB - Pumped 14 BO & 45 BW in 24 hrs. |
| 8/23/74 1398 | PB - Pumped 12 BO & 45 BW in 24 hrs. |
| 8/24/74 1398 | PB - Pumped 12 BO & 44 BW in 24 hrs. |
| 8/25/74 1398 | PB - Pumped 11 BO & 45 BW in 24 hrs. |
| 8/26/74 1398 | PB - Pumped 11 BO & 43 BW in 24 hrs. |
| 8/27/74 1398 | PB - Pumped 24 hrs, 10 BO & 43 BW. Prep to acidize |
| 8/28/74 1398 | PB - Pumped 11 BO & 43 BW in 24 hrs (carried 1 day late). Acidized Gallup perfs 1364-82' dn annulus w/2500 gal 15% HCl w/ clay stabilizer, iron sequestrant, J-237 diverting agen, surfactant and inhibitor. Erk fall 100#-650# @ 1/8 BPM, MTP 750#, avg 700# @ 1/4 BPM, ISIP 550#, 5 min 525#, left SI 15 min & returned to pumping. This a.m., pmpg f/ test, no ga. |
| 8/29/74 1398 | PB - Pmp 18 hrs after acid, 9 BO & 49 BW in 18 hrs. |
| 8/30/74 1398 | PB - Pmp 24 hrs, 2 BO & 35 BW |
| 8/31/74 1398 | PB - Pmp 24 hrs, 6 BO, 32 BW |
| 9/1/74 1398 | PB - Pmp 24 hrs, 4 BO & 30 BW |
| 9/2/74 1398 | PB - Pmp 24 hrs, 6 BP & 32 BW |

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| 9/3/74 | 1398 | PB - Pmp 24 hrs, 5 BO & 31 BW |
| 9/4/74 | 1398 | PB - Pmp 24 hrs, 6 BO & 31 BW |
| 9/5/74 | 1398 | PB - Pmp 24 hrs, 6 BO & 30 BW. Prep to reperf & acidize. |
| 9/6/74 | 1398 | PB - Prep to run tbg, pump & rods. Pmp 20 hrs, 5 BO, 30 BW (Carried day late) MI & RU service unit. Pld 3/4" rods & 2-1/4" plunger. Filled hole w/D-600 water. tag bottom w/ tbg, no fill, pld tubing. & pump bbl.. Removed pmp bbl. ran tbg below perfs. Pmp down tbg w/ 200 gal acetic acid fol w/ 3 BW. Pld tubing. Ran 4" perf'g gun & re-perf'd Gallup 1364-82' w/ 4 shots/ft. Lost perf'g gun out of rope socket. Ran overshot on tbg, 2 trips, no rec'y. ran different overshot. Rec'd gun. Acidized down casing w/ 1500 gal 15% HCl w/ additives, overflushed w/ 30 BW + D-600. MP & avg 575# @ 2 BPM. ISIP 475#. |
| 9/7/74 | 1398 | PB - Pmpg f/ test, no ga. Ran tbg & rods w/ 2-1/4" pump. |
| 9/8/74 | 1398 | PB - Pmp 19 hrs after re-perf & acid, 5 BO & 49 BW |
| 9/9/74 | 1398 | PB - Pumped 24 hrs, 8 BO & 41 BW. |
| 9/10/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 36 BW |
| 9/11/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 36 BW. |
| 9/12/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 35 BW |
| 9/13/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 35 BW |
| 9/14/74 | 1398 | PB - Pumped 24 hrs, 8 BO & 35 BW |
| 9/15/74 | 1398 | PB - Pumped 24 hrs, 9 BO, 35 BW |
| 9/16/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 28 BW |
| 9/17/74 | 1398 | PB - Pumped 24 hrs, 9 BO, 20 BW |
| 9/18/74 | 1398 | PB - Pumped 24 hrs, 7 BO & 20 BW |
| 9/19/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 23 BW |
| 9/20/74 | 1398 | PB - Pumped 24 hrs, 7 BO, 24 BW |
| 9/21/74 | 1398 | PB - Pumped 24 hrs, 6 BO, 27 BW |
| 9/22/74 | 1398 | PB - Pumped 24 hrs, 7 BO, 25 BW |
| 9/23/74 | 1398 | PB - Pumped 24 hrs, 7 BO, 23 BW |
| 9/24/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 28 BW |
| 9/25/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 22 BW |
| 9/26/74 | 1398 | PB - Pumped 24 hrs, 9 BO, 33 BW |
| 9/27/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 33 BW |
| 9/28/74 | 1398 | PB - Pumped 24 hrs, 9 BO, 33 BW |
| 9/29/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 32 BW |
| 9/30/74 | 1398 | PB - Pumped 24 hrs, 8 BO, 32 BW |
| 10/1/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 33 BW |
| 10/2/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 33 BW |
| 10/3/74 | 1398 | PB - Pmp 24 hrs, 9 BO, 27 BW |
| 10/4/74 | 1398 | PB - Pmp 24 hrs, 7 BO, 33 BW |
| 10/5/74 | 1398 | PB - Pmp 24 hrs, 9 BO, 35 BW |
| 10/6/74 | 1398 | PB - Pmp 24 hrs, 9 BO, 33 BW |
| 10/7/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 28 BW |
| 10/8/74 | 1398 | PB - Pmp 24 hrs, 4 BO, 14 BW, about 1/2 fluid, to check |

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|----------|------|---|
| 10/9/74 | 1398 | PB - Pmp 24 hrs, 4 BO, 15 EW. Prep pull pump |
| 10/10/74 | 1398 | PB - Pmp 24 hrs, 10 BO, 21 EW |
| 10/11/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 25 EW |
| 10/12/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 29 EW |
| 10/13/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 26 EW |
| 10/14/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 36 EW |
| 10/15/74 | 1398 | PB - Pmp 24 hrs, 8 BO, 36 BW |
| 10/16/74 | 1398 | PB - Pmp 24 hrs, 6 BO, 37 BW (carried day late). Pulled rods & tbg. Prep to frac. |
| 10/17/74 | 1398 | PB - Frac'd Gallup perfs 1364-82' w/64,000# 20-40 sand, & 40,000 gal gelled wtr; Pmp 2000 gal pad @ 20 BPM, 4000 gal gelled wtr w/1/2# 20-40 sand/gal @ 20 BPM, 6000 gal gelled wtr w/1# 20-40 sand/gal @ 20 BPM, 28000 gal gelled wtr w/2# 20-40 sand/gal @ 20 BPM, MP 1000#, min pr 900#, avg 950# @ 20 BPM, ISIP 650#, 15 min 600#, 4 hr 390#. Ran temp survey. Frac job comp 7:05 pm 10/16. |
| 10/18/74 | 1398 | PB - Pmpg on test, no ga. On vac yest a.m.. CO 18' sand. Ran 2-7/8"OD tbg, 3/4" rods, 2-1/4" bore tubg pump. OP 1:45 pm 10/17. 16 - 64" SPM |
| 10/19/74 | 1398 | PB - Pmpg on test. Quit pumping. Bumped down & started. Pumped 28 BO, 147 BLW in 8 hrs. -853 BLW |
| 10/20/74 | 1398 | PB - Pmp 36 BO, 211 BLW in 24 hrs, -642 BLW |
| 10/21/74 | 1398 | PB - Pmp 38 BO, 136 BW in 24 hrs, -479 BLW |
| 10/22/74 | 1398 | PB - Pmp 39 BO, 155 BLW in 24 hrs, -324 BLW |
| 10/23/74 | 1398 | PB - Pmp 35 BO, 126 BLW in 24 hrs -198 BLW |
| 10/24/74 | 1398 | PB - Pmp 34 BO, 96 BLW in 24 hrs -102 BLW |
| 10/25/74 | 1398 | PB - Pmp 31 BO, 102 BLW & 17 BfmW + 17 BW |
| 10/26/74 | 1398 | PB - Pmp 30 BO, 112 BW in 24 hrs. |
| 10/27/74 | 1398 | PB - Pmp 29 BO, 98 BW in 24 hrs. |
| 10/28/74 | 1398 | PB - Pmp 29 BO, 112 BW in 24 hrs. |
| 10/29/74 | 1398 | PB - Pmp 29 BO, 104 BW in 24 hrs. |
| 10/30/74 | 1398 | PB - COMPLETED OIL WELL 10/30/74. Pumped 27 BO and 112 BW in 24 hrs f/Gallup perfs 1364-82', 2-1/4" bore pump, 16-64" SPM. |