Exploration and Production

Injection Perforation Expansation

Wellname: **Ryan Gulch 397-41-16** Prepared By: Tyler Bittner Date: 3/9/12
Location: **NWNE 16-3S-97W** office phone: 970-263-2771
Field: **Ryan Gulch**
API: **05-103-11517-00**

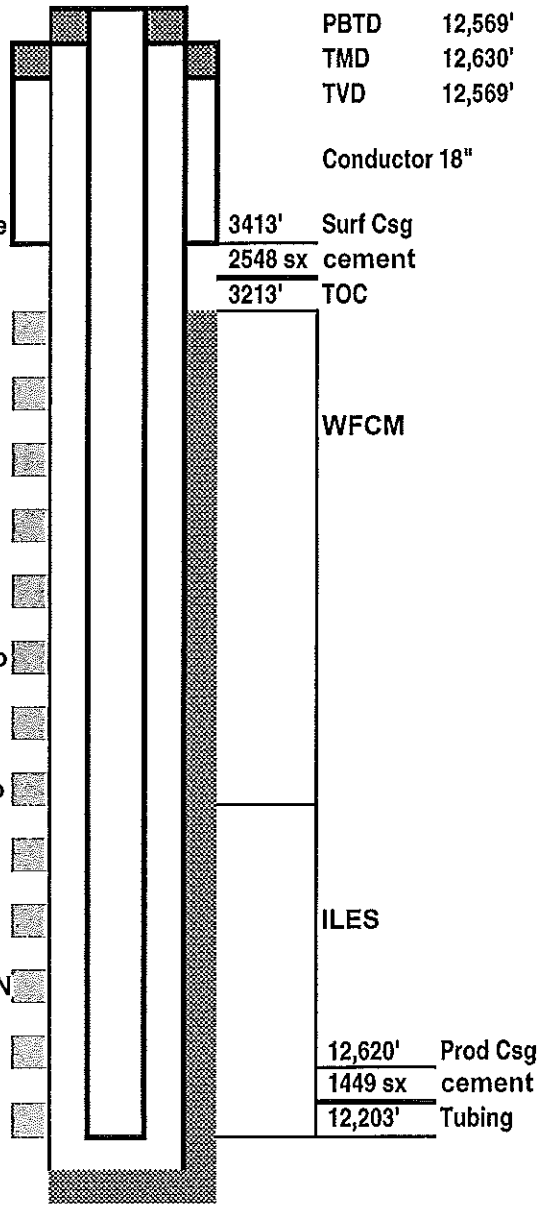
Surface Casing:	9-5/8" 35# set @ 3,413-ft
Production Casing:	4-1/2" 11.6# set @ 12,620-ft
PBTD:	12,620-ft
TOC:	2550-ft
Tubing:	2-3/8" tbg @ 12,203-ft
ISLES Completions:	lower Sego-CRCRN 11,664-12,384-ft
Correlate Log:	

Purpose: Test Isle for potential injection

Proposed Procedure:

1 MIRU pulling unit, NU and P-Test BOPs, ensure all tanks are clean and water filtered to 10 micron
2 Establish circulation and fill hole down tbg
3 With well dead RIH w/ tbg and clean out any sand fill to 12,420 ft
4 MIRU Acid pumping crew
5 Pickle tubing with 150 gal of 15% HCL+ additives
6 Reverse pickle acid to surface
7 Circulate 15% HCL to bottom of tbg
8 Wash acid across perfs in 3 stages to ensure access to reservoir
9 Circulate 15% HCL up annulus out of the hole, 1.5 annular volumes (188bbls)
10 Pull Tbg and land at approximately 11,660 ft
11 MIRU for 10,000 bbl injection test
12 MAIP is 3,900 psi on the annulus dead string. Based on Lower Sego Fg of .76 psi/ft.
13 Injected down tubing and monitor both annulus dead string and tubing pressures
14 Inject a total of 10,000 bbls or for 3 days. Use only filtered water to 1 micron
15 Shut down and rig out equipment, secure wellhead and location
16 Evaluate data to determine next step.
17 Submit required paper work to State and BLM

Williams Production Ryan Gulch LLC
Federal RGU 41-16-397
API# 05-103-11517-00
1263 FNL, 1459' FEL; NWNE Sec. 16-T3S-R97W 6 PM — Surface
793' FNL, 676' FEL; Sec. 16-T3S-R97W 6 PM — Top of Prod.
800' FNL, 692' FEL; Sec. 16-T3S-R97W 6 PM — BHL
Rio Blanco County, CO



Completed Intervals

Top Perf	Bottom Perf	Shots	Frac
11,664	11,810	17	CRCRN
11,870	11,998	17	L CRCRN
12,060	12,193	15	U SEGO
12,264	12,384	22	L SEGO
	Total Shots:	71	