

Phelps A-32CHZ (API 05-123-37682)

Operational History

Initial Construction & Completion

The Phelps A-32CHZ was spud on 1/7/2014 by Synergy Resources Corporation. Well was drilled, cased and cemented successfully with the configuration seen below.

Surface Casing

- 9-5/8" 36# J-55 set at 1199'
- 425 sx of cement from 1199' to surface

Intermediate Casing

- 7" 26# P-110 set at 8049' (90° inc.)
- 480 sx of cement from 8049' to 3730' (CBL)

Production Liner

- 4-1/2" 13.5# P-110 set 12,114' with liner top at 7738' (62° inc.)
- 300 sx of cement from 12,114' to 7738'

Stimulation began in April 2014 and a bradenhead pressure event was experienced with a starting pressure of 0 psi and a maximum pressure of 428 psi. Immediately the stimulation was stopped, and the pressure event was reported to the COGCC 4/4/14. Pressure was isolated on 4/4/14 by setting one CIBP in the production liner at 7775' and one in the 7" casing above the liner top at 7718'.

Intermediate Casing Repair

A caliper inspection was ran on the 7" intermediate casing and showed the casing to be parted at 1800'. Notice on intent was submitted and approved on 5/23/2014 with the repair plan being:

1. Pull casing above part at 1800'
2. Dress casing stub and re-run 7" intermediate with overshot casing patch
3. Install 4-1/2" frac string that would latch into the production liner top to surface
4. Resume frac through the frac string

Repair operations were conducted as noted below:

1. Pulled casing above part at 1800'
2. Dressed casing stub and re-ran 7" intermediate with overshot casing patch
 - a. Casing patch did not hold positive pressure test
 - b. Decision made to cement 4-1/2" frac string in place to seal off casing patch and annulus
3. Installed 4-1/2" 13.5# P-110 frac string and cemented 7" x 4-1/2" annular space to surface with 690 sx of cement to surface
 - a. Cement confirmed from 7738' to surface with CBL on 6/12/2014
4. Pressure tested with positive results and removed isolation plugs
5. Casing repair completed

Final Completion

Frac operations resumed 9/26/2014 with the 26 stage frac successfully being completed on 10/1/14. Both the 4-1/2" x 7" annulus and bradenhead pressure were continuously monitored and trended

throughout the frac with no pressure increases observed. Well had first production on 10/5/2014 and is currently still on production today.

Bradenhead Tests

Form 17 performed 4/11/2016 had 7 psi of initial bradenhead pressure and blew down to 0 psi in under 5 min. 4-1/2" x 7" annulus had 25 psi that remained at 25 psi after bradenhead blew down to zero.

2019 Bradenhead NTO test performed 6/9/2019 showed 0 psi on the bradenhead.