

## Shaklee Gas Unit #1

1. Provide notice to COGCC prior to MIRU per Form 6 COA.
2. Call foreman or Lead Operator before rig up to isolate and remove automation and production equipment. Install fence if needed.
3. Notify CDC when rig moves on location to generate work order for flowline removal and one call for line locates.
4. No gyro ran, previous ran on 1/25/2013.
5. MIRU slickline services. Pull bumper spring and tag for fill. POOH. RDMO slickline services.
6. Place cement services on will call when rig moves on location, providing expected volumes of cement needed. (~75 sx plug #1; ~675 sx plug #2; ~310 sx plug #3)
7. MIRU WO rig. Kill well, as necessary, with water containing biocide. ND wellhead. NU BOP's. Unseat landing joint and lay down.
8. TOOH and stand back 2-3/8" tbg.
9. PU and TIH with casing scraper & bit for 4.5 casing. Scrape casing to ~7560'. Circulate hole clean. TOOH and lay down scraper and bit and stand back tubing.
10. MIRU wireline services. PU 4-1/2" CIBP and RIH to 7550', set CIBP. POOH.
11. PU cement bailer. RIH to CIBP and dump bail 2 sx of cement on top of CIBP. POOH and LD bailer.
12. Pressure test plug to 1500 psi for 15 min.
13. PU CBL. RIH and record CBL from top of CIBP (~7550') – Surface. RDMO wireline services.
14. CONTACT APC ENGINEER WITH DEPTHS OF CEMENT COVERAGE AND CHANGE CEMENT PLUG ACCORDINGLY.
15. TIH w/ 2-3/8" tbg hydrotesting to 3000 psi to CIBP @ 7550'.
16. Circulate Hole, filling with at least 9 ppg mud.
17. MIRU cementing services. Mix and Pump 75 sx of Class "G" w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 to achieve 2:30 pump time. (yield 1.38 ft<sup>3</sup>/sx, 15.8 ppg, ~18 bbl slurry). Pump balanced plug from CIBP (~7550) – 6450'.
18. PUH 64 jts (~2016') to 5039' laying down tubing and circulate hole with at least 9 ppg mud w/ biocide to remove any cement. RDMO cementing services. TOOH and stand back 4100' of tbg, lay down remaining tubing.
19. MIRU wireline services. PU perf gun loaded with 1' of 3 spf, 0.6" EHD, 7" penetration, 120 phasing. RIH to 5423' and shoot perfs. POOH.
20. PU 4-1/2" CICR and RIH to 4100'. Set CICR. POOH RDMO wireline services.
21. TIH w/ 2-3/8" tbg to 4100' and sting into CICR. Establish circulation through CICR.
22. MIRU cementing services. Preflush with 5 bbl H<sub>2</sub>O, 20 bbl of sodium metasilicate, 5 bbl H<sub>2</sub>O.
23. Mix and Pump 675 sx of Class "G" cement with ¼ #/sx cello-flake, 0.4% CD-32 and 0.4% ASA-301 through CICR (yield 1.15 ft<sup>3</sup>/sx, 15.8 ppg, ~138 bbl slurry). Pump cement through CICR. Underdisplace cement by 1 bbl; leaving 1 bbl of cement on top of CICR.

24. PUH 96 jts (~3024') to 1076' laying down tubing and circulate hole with at least 9 ppg mud to remove any cement. RDMO cementing services. TOOH and stand back 950' of tbg, lay down remaining tubing.
25. MIRU wireline services. Shoot off casing @ 850'. RDMO wireline services.
26. NDBOP NDTH. Unland casing from slips.
27. NU BOP on casing head. Install 4-1/2" pipe rams.
28. PU casing and conventionally circulate 150 bbl of mud. If circulation cannot be established contact engineer and COGCC for change in procedure.
29. TOOH with 4-1/2" casing and lay down.
30. PU 2-3/8" tbg and TIH into casing stub to 950'.
31. MIRU cementing services. Mix and pump 310 sx of Type III cement from 950' to 100' (yield 1.53 ft<sup>3</sup>/sx, 14 ppg, ~84.5 bbl slurry). Displace cement. RDMO cementing services.
32. TOOH to 100' laying down tubing. Circulate 10 bbl of mud to remove any cement. WOC 4 hrs or overnight.
33. TIH and tag cement plug, NOTE: DEPTH OF PLUG IN OPENWELLS. If plug top is above 113' TOOH and lay down tubing.
34. MIRU wireline services. PU 8-5/8" CIBP and RIH to 100'. Set CIBP and POOH. Pressure test CIBP to 1000 psi for 15 minutes. RDMO wireline services.
35. RDMO WO Rig.
36. Wellsite supervisor turn all paper copies of cementing reports/invoices and logs in to Sabrina Frantz. NOTE: During the job, wellsite supervisor should instruct the logging and cementing contractors to e-mail all logs, job reports/invoices to Sabrina Frantz.
37. Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
38. Check top of cement inside 8-5/8" surface casing., place redi-mix cementer on will call. (6.5 bbl)
39. Excavate hole around surface casing of sufficient size and depth to allow welder to cut off 8-5/8" surface casing and at least 5' below ground level.
40. Have welder cut off 8-5/8" surface casing at least 5' below ground level.
41. MIRU ready cement mixer. Use 4,500 psi compressive strength redi-mix cement (sand and cement only, no gravel) to finish filling surface casing and production casing to top of cut off.
42. Have welder spot weld steel marker plate on top of surface casing. (Note: marker shall be labeled with well name and number, legal location (¼ ¼ description) and API number.
43. Properly abandon flowlines as per Rule 1103.
44. Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
45. Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.

Well is a 1975 J-Sand. Production has reached economic limit. HZ's are planned for 2013 in this area and remedial cement will be needed over the NB. Propose to P&A wellbore instead of completing remedial work due to value of well. P&L average of previous 6 months (\$64)