PLUG AND ABANDONMENT PROCEDURE

Lisa Denke - 970-339-1019

SENG 33-7

Step	Description of Work
1	Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Call Automation Removal Group at least 24 hr prior to rig move. Request they catch and remove plunger, isolate production equipment and remove any automation prior to rig MIRU.
2	Well already has a gyro.
3	MIRU slickline services and pressure bomb services. Pull bumper spring and tag bottom. Run pressure bomb survey and obtain pressure gradient survey from surface to 7397' making gradient stops every 1000'. Forward pressure bomb results to Evans Engineering. RDMO slickline services.
4	Prepare location for base beam equipped rig. Install perimeter fence as needed.
5	Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
6	MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt, LD.
7	TOH and stand back 2-3/8" production tubing (228 joints landed at 7378'.)
8	MIRU WL. Run gauge ring for 4-1/2", 11.6 ppf casing to 7350'. RIH 4-1/2" CIBP and set at 7310' to abandon Codell perfs. Test CIBP and 4-1/2" casing to 1000 psi for 15 minutes.
9	RIH with 2-3/8" tubing to 7300' while hydrotesting to 3000 psi.
10	RU Cementers. Pump Niobrara/Codell balanced plug:
11	RU cementers and equalize a balanced plug from 7300' to 6660' as follows: 50 sx (69 cf of slurry) Class “G” w/20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 to achieve 2:30 pump time, mixed at 15.8 ppg and 1.38 cuft/sk.
12	Pull and lay down tbg to 6500'. Circulate clean with water containing biocide.
13	Pull and LD tubing to 4670'.
14	RU cementers and equalize a balanced plug across the Sussex from 4670' to 4270' as follows: 30 sx (35 cf of slurry) “G” with 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cuft/sk.
15	Pull and LD tbg to 4100'. Circulate clean with water containing biocide.
16	WOC per cementing company recommendation.
17	Tag cement @ 4270'. POH, lay down tubing.

18 RU WL. Crack coupling or cut casing at ±1610'. RDMO WL. Circulate bottoms up through 4-1/2" casing at cut, and continue circulating to remove any gas from wellbore.

19 ND BOP and wellhead. Install BOP on surface casing head with 4-1/2" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.

20 TOOH and LD 1610' of 4-1/2'' casing.

21 Change BOP rams for 2-3/8" tubing.

22 RIH w/ 2-3/8" tbg to 1710' (100' past 4-1/2" csg stub).

23 RU cementers. Pump 10 bbl SAPP (Sodium Acid Pyrophosphate) followed by 20 bbl (min) fresh water spacer immediately preceding cement.

24 Pump a balanced stub plug 1710' to 960': 250 sx (333 cuft.) Type III cement w/ 0.25 pps cello flake and CaCl2 as deemed necessary mixed at 14.8 ppg and 1.33 cf/sk. Cement volume to fill 100' in 4-1/2", 11.6 ppf casing, 440' in 8.25'' OH with 40% excess, 9' in 12.25" OH with 40% excess, and 200' in 8-5/8", 24 ppf surface casing.

25 Pull up hole to 800' and circulate clean.

26 POH and WOC per cementing company recommendation. Tag plug; TOC should be at 1050' or higher. If not, Consult Evans engineering before proceeding.

27 MIRU WL. RIH 8-5/8" CIBP to 80'. Set and PT to 1000 psi for 15 min. If casing tests, RDMO WL and WO rig.

28 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hrs of completion of the job.

29 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.

30 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.

31 Excavate hole around surface casing enough to allow welder to cut casing minimum 5’ below ground level.

32 Welder cut casing minimum 5' below ground level.

33 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).

34 Spot weld on steel marker plate. Marker shall contain well name, well number, legal location (1/4 1/4 descriptor) and API number.

35 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.

36 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.

37 Back fill hole with fill. Clean location, level.

38 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.