



Exploration and Production

Casing Remediation Procedure

Wellname: **RWF 331-18**

Location: **SENW 18 6S 94W**

Field: **North Parachute**

API: **05-045-10693**

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Revision Date:

3/15/2016

Surface Casing: 9-5/8" 32.3# set @ 1128-ft

Production Casing: 4-1/2" 11.6# set @ 8,913-ft

Tubing: 2-3/8" tbg @ 8,351-ft

MV Completions: 6,584 - 8,271.5- ft

Cameo Completions: 8,330 - 8,766.5-ft

TOC/Correlate Logs: 6,400-ft / HAL Cement Bond Log 11/26/06

Purpose: Remediate corroded casing

Remediation completed 2/29/2016

Actual Procedure:

- 1 MIRU service rig, POOH w/ 2-3/8" tbg
- 2 RIH with RBP, set at 6480' with 2 sks sand to isolate perforations.
- 3 Prior casing tests showed possible holes from 4879'-5757', Caliper log showed no large holes or parts in casing.
- 4 RIH with wireline and perforate 4.5" casing at 5875', 6 shots/ft, 60 degree phasing. TOOH with wireline.
- 5 Circulate well clean at 6480', getting LCM and mud in returns. Spot 2 sx of sand on TS-RBP, tagged at 6472' (8' of sand on TS-RBP).
- 6 RIH with 2-3/8" with cement retainer. Set cement retainer at 5517'.
- 7 Establish injection rate, 1 BPM at 1400 psi, Csg pressure increased 900 psi. Suicide squeeze will be pumped.
- 8 Pump 80 sx squeeze cement with HES. Class G with fluid loss additive. 15.8 ppg, 1.15 ft³/sx.
- 9 Bleed off 750 psi casing pressure and sting out of cement retainer.
- 10 RD HES, TOOH with 2-3/8" tubing, P/U HD packer, RIH with packer. WOC
- 11 Tag hard cement at 5455'.
- 12 Set packer 5445' to test down tubing. Test fails. Injection rate below packer 2.5 BPM 1500 psi, injection rate above the packer 1 BPM 1800 psi
- 13 TOOH with packer to 4703', Test casing from packer to surface if more holes are present above packer. Tested good.
- 14 RIH with packer to 4813', casing tested above packer. Achieved injection rate of 2.5 BPM at 1658 psi.
- 15 Pump 200 sx squeeze cement with HES, 15.8 ppg, 1.15 ft³/sk, balanced plug.
- 16 TOOH 5' to reverse circulate, RD HES, trap 1000 psi on well, WOC.

- 17** Drill out cement and testing casing to 1000 psi every connection. Drilled out 4814' to 5462'.
- 18** Fell through cement at 5462' and tested casing to 1000 psi, test failed, pressure leaked off 100 psi in 5 minutes.
- 19** Circulate well clean to drill out cement retainer. Drill out CICR 5517' to 5520'.
- 20** Drilled out cement from 5520' to 5917', tested casing every connection test failed every connection still leaking off 150 psi in 5 minutes.
- 21** TOOH with bit. RIH with TS-RBP. Set RBP at 5517'. Circulate 3 sx of sand on RBP.
- 22** Pump 50 sx squeeze cement with HES. 12.8 ppg Cemfine cement, .88 ft³/sk. Balanced Plug
- 23** RD HES. Trap 1086 psi on well. WOC
- 24** TOOH with tubing and RIH with bit.
- 25** Tag hard cement at 5048'
- 26** Drilled out cement from 5048' to 5489', testing casing to 1000 psi every connection. No holes found.
- 27** Cleaned out sand from RBP and tested casing to 1000 psi, tested good.
- 28** TOOH with bit. RIH to retrieve TS-RBP at 5517'.
- 29** TOOH with TS-RBP and RIH to retrieve TS-RBP at 6480'.
- 30** Circulate sand off TS-RBP at 6480', TOOH with TS-RBP
- 31** RIH with 2 3/8" tubing while hydrotesting to 8712'
- 32** Cleaned out wellbore, re-landed tubing at 8538' and returned to production. Remediation completed 2/29/2016.
- 33** Submit subsequent report