

Williams 7-20

- 1 Level location for base beam equipped rig.
- 2 Call Foreman or Field Coordinator before rig up to catch plunger, isolate production equipment, and ask if replacement parts/equipment are requested. Operations need to hook up the Bradenhead through hardline to a tank and bleed off the pressure before the rig gets on location.
- 3 Check and report surface casing pressure prior to bleeding off. If surface casing is not accessible at ground level, re-plumb so valve is at ground level.
- 4 If the tubing head is not rated to 5000 psi then replace the wellhead and all the valves and fittings to make the tubinghead good to 5000 psi.
- 5 Spot a minimum of **12** jts of **2-3/8"**, **4.7#**, **J-55**, **EUE tbg** and **173** jts 1-1/4", 2.33#/ft, J-55, 10rd IJ for annular cement job.
- 6 MIRU WO rig. Kill well, as necessary, with freshwater treated with biocide. ND wellhead. NU BOP.
- 7 MIRU slickline. Fish plunger if necessary and tag for PBTD (should be at **8418'**). RDMO slickline.
- 8 PUH with tubing string to break any possible sand bridges, unseat landing joint and lay down. Do not exceed 80% of tubing tensile strength or **57,384** lbs.
- 9 MIRU "EMI". TOOH with **2-3/8"** tubing. EMI tubing while TOOH. Lay down joints with wall loss or penetrations >35%. Replace joints as necessary. **Keep yellow & blue band tubing. Note joint number and depth of tubing leak(s) on PRODUCTION EQUIPMENT FAILURE REPORT IN OPEN WELLS. Clearly mark all junk (red band) tubing sent to the yard.
- 10 TIH with **2-3/8"** tbg and 4.5" RBP, (**4.5" csg 11.6#,I-80**). Set RBP @ **+/-6130'**, (**collars are at 6106' and ±6146'**). Pressure test the RBP and casing to **3000** psi for 15 minutes. (Bad cement) Spot 2 sx of sand on top of RBP and TOOH. (Bad cement below TOC)
- 11 ND BOP's. ND wellhead. Un-land 4 1/2" casing string. NU double entry flange. NU BOP.
- 12 PU 1-1/4" 2.3#/ft J-55 10rd IJ tubing, and TIH outside 4-1/2" casing in open hole to **5070'** (Top of existing cement @ **5082'**). MIRU cement services and water truck containing fresh water for cementing. Circulate on bottom with freshwater treated with biocide until returns clean up with rig pump.
- 13 Rig up cement trucks.
- 14 Circulate **180** bbl of drilling mud. Commence pumping cement job consisting of 20 Bbls Sodium Metasilicate followed by **190** sx 15.8 ppg neat Class G cement with 1/4 #/sx cello-flake. The cement to be retarded for 125 degree Fahrenheit for six hour pump time. (Attempt to cement from **5082'** to **4320'**).
- 15 TOH with **40 joints to 3870'** and reverse circulate 2 times the tubing volume with drilling mud or until the cement cleans up.
- 16 Rig down cementing company.
- 17 Trip out of the hole with 1-1/4" and SB tubing and shut well in overnight.
- 18 Rig up wireline truck and run a CCL-GR-CBL-VDL from **5200'** to **3800'** or the top of cement. If cement isn't above **4320'** then get with the Engineer on further cement work.
- 19 RDMO Wireline
- 20 PU and TIH with 1-1/4" 2.3#/ft J55 to **1550'**. MIRU cement services and water truck containing fresh water for cementing. Circulate on bottom with fresh water treated with biocide until returns clean up with rig pump.

- 21 Rig up cement trucks
- 22 Circulate **30** bbl of drilling mud. Commence pumping cement job consisting of 20 bbls Sodium Metasilicate followed by **195** sx of 15.8 pgg neat Class G cement with ½#/sx cello-flake. The cement to be retarded for 125 F degree Farenheit for a six hour pump time (Attempt to cement from **1550** to **771'**)
- 23 Rig up wireline truck and run a CCL-GR-CBL-VDL from **1600' to 500'** or the top of cement. If cement isn't above **771'** then get with the Engineer on further cement work.
- 24 RDMO Wireline
- 25 TOH with **38 joints to 400'** and reverse circulate 2 times the tubing volume with drilling mud or until the cement cleans up.
- 26 ND BOP. ND double entry flange and crossover. Pick up and land 4-1/2" casing in slips. NU tubing head. NU BOP SDFN to WOC.
- 27 PU and TIH with 2-3/8" tbg and retrieving head. Circulate sand off RBP at @ +/-**6130'**. TOOH with RBP and stand back tubing.
- 28 Bail if the need be.
- 29 TIH 2-3/8" SN, and 2-3/8" 6.5# J-55 EUE 8rd tubing. Land tubing at +/- **7833** or 1 joint above the top **Codell perforation (7863-7881)**.
- 30 Broach tubing to seating. ND BOPs. NU master valve and tubing head adaptor and install 3' pup joint above master valve. Hydrotest tubinghead assembly to **5000** psi for 15 mins.
- 31 RDMO WO Rig.
- 32 Clean location and swab well back to production, if necessary. Notify Foreman/Field Coordinator of finished work and turn well over to production team.

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KERR-MCGEE OIL AND GAS ONSHORE LP

WILLIAMS 7-20

NW SE 20 2N 68W 1,608' FSL 1,497' FEL

LAT: 40.12130 LONG: -105.02310

WELD,COLORADO

09/12/2013

AREA: S2 ROUTE: S22 Spud: 05/01/2009 WINS No.: 00319 AFE/WO#: 88414680 API#: 0512328044

GL: 4901 KB: 4916 MTD: 8465 TVD: 8093 LOG MD: 8453 PBMD: 8418 PBTVD: 8047

Directions: WCR 20 & WCR 7, W 2/10, SW 3/4 & NW INTO

TUBULARS	Tool Type	Joints	Size	Weight	Grade	Thread	Condition	Top D	Bottom D
SURFACE CASING									
	Casing	16	8.63	24.00	J-55	STC	NEW	15	726
	Baffle	1	0.00					726	726
	Shoe Joint	1	8.63	24.00	J-55	STC	NEW	726	770
	Casing Guide Shoe	1	8.63					770	771
PRODUCTION CASING									
	Casing	201	4.50	11.60	I-80	LTC	NEW	15	8418
	Latch Down Baffle	1	4.50					8418	8418
	Casing	1	4.50	11.60	I-80	LTC	NEW	8418	8452
	Casing Float Shoe	1	4.50					8452	8454
PRODUCTION TUBING									
	Tubing		2.38	4.70	J-55	8RD EUE		15	7817
	Seating Nipple		2.38					7817	7819
	Notched Collar							7819	7819

CEMENT TYPE	Stage	Sacks	Cement Type		Top D	Btm D	cbj	est	Comments
SURFACE CASING CEMENT									
	PRIM CMT 1ST STAGE	490	LEAD	TYPE 3	15	780	No		
PRODUCTION CASING CEMENT									
	PRIM CMT 1ST STAGE	520	LEAD	ECONOCEM	5182	7150	Yes	No	
	PRIM CMT 1ST STAGE	230	TAIL	FRACCHEM	7150	8454	Yes	No	

PERFORATIONS									
Formation	Zone	Top	Btm	spf	Shots	Date	Reason	Comments	Producing
NIOBRARA	A	7576	7580	3	12	09/23/2009	PRODUCTION		Yes
NIOBRARA	B	7643	7655	3	36	09/23/2009	PRODUCTION		Yes
NIOBRARA	C	7740	7746	3	18	09/23/2009	PRODUCTION		Yes
CODELL		7863	7881	3	54	09/22/2009	PRODUCTION		Yes

Comments:

Proposed Completion Procedure

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Proposed Perforation Intervals

Top	Btm	Zone	Comments

Engineer: AARON HOLTEN: 970-330-1070

Foreman: BRIAN WALLS: 970-301-1544

Lead Pumper: TONY KERN: 970-301-1594

Authorized By: CORY EIKENBERG: 970-590-6234