


Cement Job Log

C&J ENERGY SERVICES												
Customer: PDC ENERGY				Date: 2/2/2019				Serv. Supervisor: Sam Cheal				
Cust. Rep.: John Fallon				Ticket #: BCO-1902-0002				Serv. Center Brighton - 3021				
Lease: Harold 6Y-214				API Well #: 05-123-45754				County: Weld		State: CO		
Well Type: Oil				Rig: Ensign 161				Type of Job: Production Casing				
Materials Furnished by C&J ENERGY SERVICES												
Plugs		Casing Hardware				Physical Slurry Properties						
						Sacks of Cement	Fluid Dens (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbbls)	Mix Water (bbbls)
0												
0												
150 bbls ppg Weighted Spacer - 150 bbls of 12		+10.0 PPB CJ890+222.16 PPB CJ300+1.0 PPB CJ209+0.5 PPB CJX157011+8.1 PPB CJ801					12.5				150.00	
C&J Non Latex Lead 1-1		50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011				25	14		1.37	5.98	6.08	4
C&J Latex Lead 1-1		50 % CJ914+50 % CJ010-74 +2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011+1.0 GPS CJ550L+0.2 GPS CJ891				1290	14		1.37	4.71	313.80	145
C&J Tail 1-1		65 % CJ914+35 % CJ010-74 +0.3 % CJ704+0.15 % CJ210K+0.5 % CJ511				905	14.5		1.22	5.41	195.95	117
Displacement											260.29	
50 % CJ914+50 % CJ010-74+2.0 % CJ020+0.4												
Displacement Chemicals:												
OPEN HOLE DATA				TUBULAR DATA								
8.5 in. O.H. (2,579 to 11,779 ft)		5.5 in. 20# (0 to 11,779 ft)		SIZE WEIGHT	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)		
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS				
9.625 in. 36# (0 to 2,579 ft)		TOP		BTM	SPF	SIZE	SHOE	Ball Seat	STAGE	ACP		
							11759	11721	N/A	N/A		
WELL FLUID		DISPLACEMENT FLUID		DIFF PRESS (psi)		CSG LIFT (psi)	MAX PRESS (psi)		WATER ON LOC (bbbl)			
TYPE	DENSITY	VOLUME	TYPE	DENSITY								
Mud	10.6 ppg	260.2 bbl	Water	8.3 ppg					1,200			
Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg. Press. (psi)	Ann. Press. (psi)	Stg. Vol. (bbl)	Cum. Vol. (bbl)	Stage Details					
5:00 PM							0 ARRIVE ON LOCATION					
5:10 PM							0 SPOT EQUIPMENT					
5:30 PM							0 RIG UP IRON AND HOSES					
6:00 PM							0 MIX LATEX MIX WATER					
10:00 PM							0 PRE JOB SAFETY MEETING					
10:20 AM	4	500					5 LOAD LINES TO TEST					
10:23 AM		5000					5 TEST PUMP AND LINES TO 5,000 PSI					
10:25 AM	8.1	550			150	155	MIX / PUMP WEIGHTED SPACER @12.5PPG					
10:52 AM	8.1	560			6	161	MIX / PUMP NON-LATEX LEAD CEMENT @14.0PPG					
10:53 AM	8.1	580			314.7	475.7	MIX / PUMP LATEX CEMENT @14.0PPG					
11:40 AM	7.5	500			196.6	672.3	MIX / PUMP TAIL CEMENT @14.5PPG					
12:40 AM		0				672.3	SHUTDOWN / WASH PUMP UNIT / DROP PLUG					
12:50 AM	8	2600			260.2	932.5	DISPLACE WITH TREATED FRESH WATER					
1:12 AM	4	3500				932.5	BUMP PLUG					
1:17 AM		3670				932.5	HOLD PRESSURE					
1:19 AM	1.5	3845			1.5	934	PRESSURE UP WELL TO OPEN WSS					
1:20 AM	4	25			5	939	DISPLACE WITH TREATED FRESH WATER					
1:21 AM		35					SHUTDOWN / CHECK FLOATS					
1:30 AM							RIG OUT					
1:55 PM							AAR / DISCUSS LEAVING LOCATION					
2:00 AM							LEAVE LOCATION					
Left Yard		2/2/19 4:00 PM		Left Loc.		2/3/19 2:00 AM		Start Pump		2/2/19 10:30 PM		
Arrived Loc.		2/2/19 5:00 PM		Returned Yd.		2/3/19 3:00 AM		End Pump		2/3/19 12:30 AM		
Bumped Plug (psi)	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Standby Charged (hrs)	Casing Reciprocation		
		Yes	N/A	16bbbls	0ft	Yes	5,000	N/A	N/A	N/A		
<div style="text-align: right;">  Service Supervisor </div>												
Date												

Drop 1st plugFill line with **5 bbls** fresh waterPressure test 5,000 psi (job max **5,000 psi**)Pump **150 bbls** **Weighted Spacer**Mix / pump **6 bbls** of Lead 1 cement @ 14.0 ppgMix / pump **314.7 bbls** of Latex cement @ 14.0 ppgMix / pump **196.6 bbls** of Tail cement @ 14.5 ppg

Shutdown / wash pump / clear line

Drop 2nd plugDisplace **260.2 bbls** with treated fresh water to bump(last **20 bbls** slowdown to **5 bbl/min**)**Bump Plug**Hold for **5min.**

Pressure up to 3,500 psi – 4,500 psi..

When pressure drops, displace **5 bbls** of fresh water @ **4 bbl/min**

Check floats

RTFO

Expect **weighted spacer** back to surface @ **96.8 bbls** away on displacementExpect **cement** back to surface @ **246.8 bbls** away on displacementEstimated top of **LEAD** cement @ **0ft.** Estimated top of **TAIL** cement @ **6,941ft.**

Weighted Spacer		Lead 1		Latex		Tail	
D	12.5	D	14.0	D	14.0	D	14.5
Y	3.14	Y	1.37	Y	1.37	Y	1.22
WR	18.98	WR	6.06	WR	4.71	WR	5.41
SW	135.0	SW	93.22	SW	93.22	SW	86.76

Job supervisor: Sam Cheal

Served from the Brighton, Colorado facility.

For customer service call (720) 408-9201