

Cementing Treatment



Start Date 11/21/2017 **Well** Ward W-20-19HC
End Date 11/22/2017 **County** WELD
Client BAYSWATER EXPLORATION & PRODUCTION, LLC **State/Province** CO
Client Field Rep Craig **API** 05-123-43654
Service Supervisor Roger Acuna **Rig** True 38
Field Ticket No. FT-01143-B5Q8W00202-70466 **Type of Job** Long String
District Cheyenne, WY

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)
Previous Casing	8.92	9.63	36.00	1,549.00	1,549.00	
Open Hole	8.50			17,799.00	7,084.00	5.00
Casing	4.78	5.50	20.00	17,792.00	7,084.00	

HARDWARE

Bottom Plug Used? No **Tool Type** N/A
Top Plug Used? Yes **Tool Depth (ft)** N/A
Top Plug Provided By Rig **Max Casing Pressure - Rated (psi)** 10112
Top Plug Size 5.5 **Max Casing Pressure - Operated (psi)** 5000
Centralizers Used Yes **Pipe Movement** No
Centralizers Quantity 145 and 62 **Job Pumped Through** Casing
Centralizers Type Matrix and Hydro **Top Connection Thread** Buttress
Landing Collar Depth (ft) 17,793' **Top Connection Size** 5.5

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	10 sec SGS	6
Circulation Time (min)	180	10 min SGS	10
Circulation Rate (bpm)	10	30 min SGS	13
Circulation Volume (bbls)	1800	Flare Prior to/during the Cement Job	Yes
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	10.4	Gas Units	450
Mud Density Out (ppg)	10.4		
PV Mud In	22		
PV Mud Out	22		
YP Mud In	7		
YP Mud Out	7		

TEMPERATURE

Ambient Temperature (°F)	30
Mix Water Temperature (°F)	65

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	CD Spacer	12.0000					80.0000
Lead Slurry	P100-X2 (Lead)	13.2000	1.8257	9.88	880	1,606.0000	286.0000
Tail Slurry	P50-X1 (Tail)	13.5000	1.4777	7.45	1,850	2,723.0000	484.9000
Displacement Final	Water w/ Clay Protection & Biocide	8.3331					386.0000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	CD Spacer	ASF-80	0.50	PPB
Spacer / Pre Flush / Flush	CD Spacer	SAND, S-8, Silica Flour, 200 Mesh	247.52	PPB
Spacer / Pre Flush / Flush	CD Spacer	ASF-20	0.50	PPB
Spacer / Pre Flush / Flush	CD Spacer	AVS-10	1.00	PPB
Lead Slurry	P100-X2 (Lead)	SPECIAL ADDITIVE, MPA-300	0.10	BWOB
Lead Slurry	P100-X2 (Lead)	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Lead Slurry	P100-X2 (Lead)	BONDING AGENT, EC-2	3.00	BWOB
Lead Slurry	P100-X2 (Lead)	RETARDER, HIGH TEMP, R-31 (BJS Only)	0.17	BWOB
Lead Slurry	P100-X2 (Lead)	CEMENT, ASTM TYPE III	100.00	PCT
Lead Slurry	P100-X2 (Lead)	FLUID LOSS, FL-66	0.50	BWOB
Tail Slurry	P50-X1 (Tail)	CEMENT, CLASS G	50.00	PCT
Tail Slurry	P50-X1 (Tail)	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Tail Slurry	P50-X1 (Tail)	GELLANT WATER, GW-86	0.10	BWOB
Tail Slurry	P50-X1 (Tail)	EXTENDER, BENTONITE	2.00	BWOB
Tail Slurry	P50-X1 (Tail)	AR-20	0.15	BWOB
Tail Slurry	P50-X1 (Tail)	FLUID LOSS, FL-66	0.20	BWOB
Tail Slurry	P50-X1 (Tail)	Flyash (Rockies)	50.00	PCT
Displacement Final	Water w/ Clay Protection & Biocide	BIOCIDE, ALPHA 1427	0.01	GPB
Displacement Final	Water w/ Clay Protection & Biocide	ASF-50	0.08	GPB

Cementing Treatment



TREATMENT SUMMARY

Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
CD Spacer	6.00	80.00	250
P100-X2 (Lead)	6.00	286.00	400
P50-X1 (Tail)	6.00	484.90	500
Water w/ Clay Protection & Biocide	8.00	386.00	2250

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ Services	Amount of Cement Returned/Reversed	46bbls
Calculated Displacement Volume (bbls)	392bbls	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	386bbls	Amount of Spacer to Surface	80bbls
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0
Bump Plug	Yes	Amount Bled Back After Job	4.5bbls
Bump Plug Pressure (psi)	2750psi	Total Volume Pumped (bbls)	1237bbls
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Yes	Lost Circulation During Cement Job	No

Customer Name BAYSWATER
 Well Name WARD W 20-19HC
 Job Type Long String

District Cheyenne
 Supervisor Roger Acuna
 Engineer Oscar



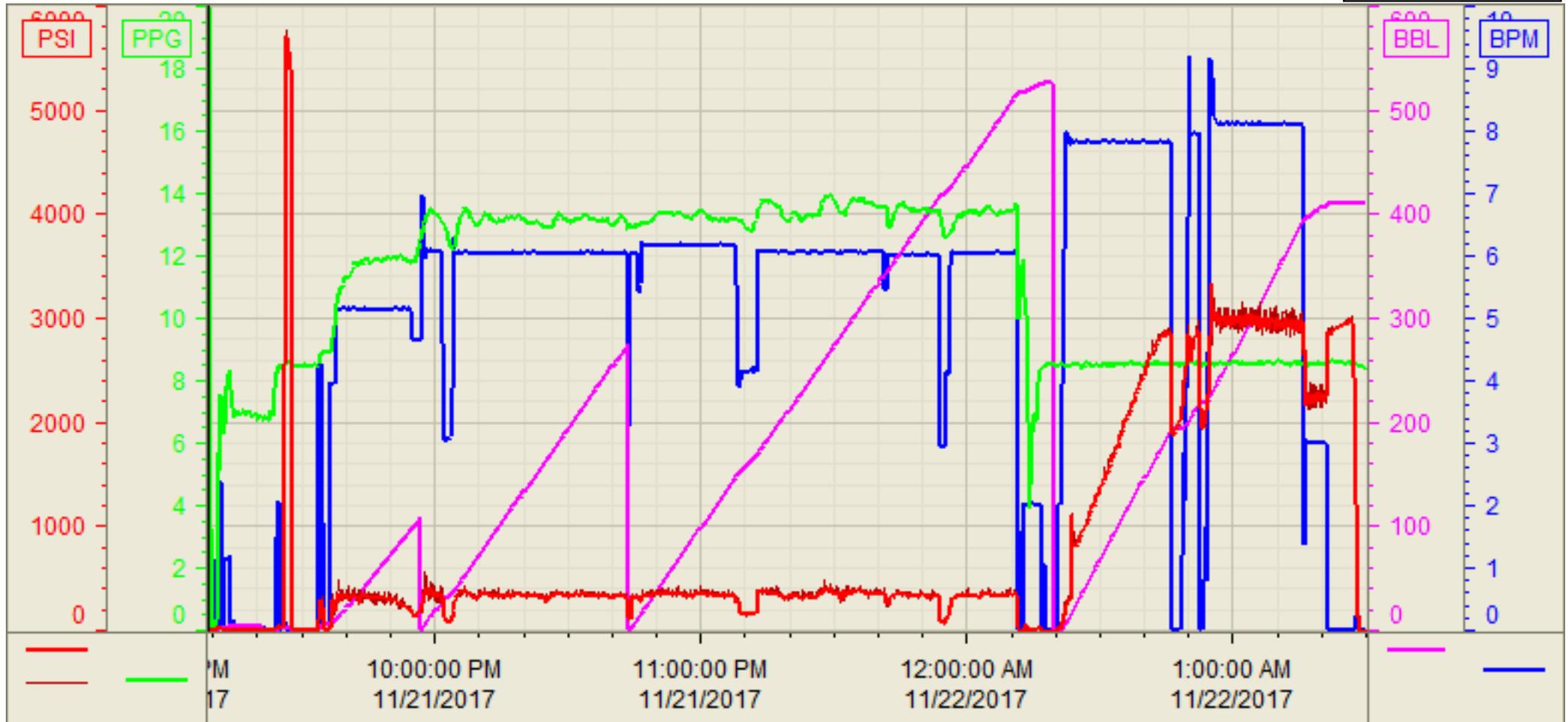
Start Date/Time	Event	Event ID	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
11/21/2017 16:00	CALLED OUT						CALLED OUT TO BE ON LOCATION 2100
11/21/2017 17:00	JOURNEY MANAGEMENT						STEACS JOURNEY MANAGEMENT
11/21/2017 17:15	DEPART CAMP						DEPART CHEYENNE WY
11/21/2017 19:00	ARRIVE TO LOCATION						ARRIVED TO LOCATION EARLY, CHECK IN WITH COMPANY MAN, 8.5" OH, 5.5" 20PPF CSG TO 17793', 9.626" PCSG TO 1549";
11/21/2017 19:15	STEACS						STEACS MEETING WITH CREW ABOUT SPOTTING AND RIGGING UP
11/21/2017 19:30	RIG UP						RIG UP IRON AND HOSES
11/21/2017 21:00	STEACS						STEACS MEETING WITH BJ CREW, RIG CREW, AND COMPANY MAN
11/21/2017 21:21	START JOB						START JOB
11/21/2017 21:22	FILL LINES		8.33	2	2	34	FILL LINES 2BBLs FRESH WATER
11/21/2017 21:24	TEST LINES					5200	TEST LINES 5200 PSI TEST GOOD
11/21/2017 21:31	PUMP SPACER	56	12	6	80	250	PUMP CD SPACER @ 12PPG WITH SURFACTANTS, TOTAL PUMPED 80BBLs
11/21/2017 21:45	PUMP LEAD		13.2	6	285	400	PUMP LEAD CEMENT @ 13.2PPG, P110-X2 (880SKS 1.82YLD 9.89GPS) TOTAL PUMPED 285BBLs
11/21/2017 22:49	PUMP TAIL		13.5	6	484	500	PUMP TAIL CEMENT @ 13.5PPG, P50-X1 (1850SKS 1.47YLD 7.43GPS) TOTAL PUMPED 484BBLs
11/22/2017 0:09	SHUTDOWN						SHUTDOWN
11/22/2017 0:17	DROP PLUGS						DROP PLUGS
11/22/2017 0:18	START DISPLACEMENT		8.33	8	180	1500	START DISPLACEMENT TOTAL PUMPED 180BBLs
11/22/2017 1:00	SHUTDOWN						SHUTDOWN SO THE RIG COULD CLOSE ANNULAR
11/22/2017 1:01	DISPLACEMENT		8.33	8	30	3000	DISPLACEMENT TOTAL PUMPED 210BBLs
11/22/2017 1:06	SHUTDOWN						SHUTDOWN DUE TO RIG HOSE LEAKING
11/22/2017 1:08	DISPLACEMENT		8.33	8	160	3000	DISPLACEMENT TOTAL PUMPED 370BBLs
11/22/2017 1:12	SPACER TO SURFACE						80BBLs SPACER TO SURFACE
11/22/2017 1:25	CEMENT TO SURFACE						46BBLs CEMENT TO SURFACE
11/22/2017 1:29	SLOW RATE		8.33	3	16	2250	
11/22/2017 1:34	BUMP PLUG		8.33			2250	BUMP PLUG 2250 BROUGHT TO 2750PSI HELD FOR 5 MIN
11/22/2017 1:39	CHECK FLOATS	68					CHECK FLOATS, FLOATS HELD GETTING 4.5BBLs BACK TO THE PUMP
11/22/2017 1:40	END JOB						END JOB
11/22/2017 1:45	STEACS						STEACS MEETING WITH CREW ABOUT RIGGING DOWN
11/22/2017 2:00	RIG DOWN	73					RIG DOWN IRON
11/22/2017 3:15	JOURNEY MANAGEMENT						STEACS JOURNEY MANAGEMENT
11/22/2017 3:30	DEPART LOCATION						DEPART LOCATION

Customer: Bayswater
 Well Number: 20-19HC
 Lease Info: Ward W



Print Date/Time

11/22/2017 2:33:44 AM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	0.0 i.	11/21/2017 9:09:00 PM i.	Cementer\DS_DISCHARGE_PRESS_DIAL
2	PS - Press (PSI)	-1.1	11/21/2017 9:08:53 PM	Cementer\PS_DISCHARGE_PRESS_DIAL
3	DH - Density (PPG)	20.03	11/21/2017 9:08:57 PM	Cementer\DENSITY2_ACTUAL_RATE
4	Down Hole Total (BBL)	-0	11/21/2017 9:08:57 PM	Cementer\DOWNHOLE_FLOW_TOTAL
5	Combined Rate	0.00	11/21/2017 9:08:57 PM	Cementer\Flow_Combined

Source: Control1 2:33:38 AM