

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Roger Acuna	FORMATION	NIOBRARA
CLIENT FIELD REPRESENTATIVE	Josh Kliesen	RIG	True 33
DISTRICT	Cheyenne, WY	COUNTY	ADAMS
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	OD (in)	ID (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)
Casing	5.50	4.78	20.00	12,229.00	7,374.00	
Previous Casing	9.63	8.92	36.00	1,545.00	1,545.00	
Open Hole	0.00	8.50	0.00	12,244.00	7,374.00	0.00

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	12,186.00
Bottom Plug Size	5.500	Max Casing Pressure - Rated (psi)	12640.00
Top Plug Used?	Yes	Max Casing Pressure - Operated (psi)	3200.00
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	5.500	Job Pumped Through	Manifold
Centralizers Used	Yes	Top Connection Thread	BTC
Centralizers Quantity	155.00	Top Connection Size	5.5
Centralizers Type	Rigid	Landing Collar Depth (ft)	12,186

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	YP Mud In	10
Circulation Prior to Job	Yes	Solids Present at End of Circulation	No
Circulation Time (min)	180.00	10 sec SGS	6
Circulation Rate (bpm)	9.00	10 min SGS	14
Circulation Volume (bbls)	1620.00	30 min SGS	18
Lost Circulation Prior to Cement Job	No	Flare Prior to / during the Cement Job	No
Mud Density In (ppg)	10.40	Gas Present	Yes
PV Mud In	10.40		

TEMPERATURE

Ambient Temperature (°F)	20.00	Slurry Cement Temperature (°F)	55.00
Mix Water Temperature (°F)	55.00		

FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Fresh Water	8.3300					20.0000
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	12.0000					60.0000
Lead Slurry	BJCem P100.3.01C	12.5000	2.1565	12.22	800	1615.0000	306.0000
Tail Slurry	BJCem P50.6.02C	13.5000	1.7509	8.71	715	1260.0000	224.3000
Displacement 2	Retarded Water	8.3337			0	0.0000	20.0000
Displacement Final	Displacement Final (Water)	8.3308				0.0000	254.0000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	SPACER SURFACTANT, SS-247	0.5000	GPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-31	0.5000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	IntegraGuard GW-86	1.2000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	WEIGHTING ADDITIVE, W-11	243.6000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-7C	2.0000	PPB
Lead Slurry	BJCem P100.3.01C	FLUID LOSS, FL-24	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	IntegraGuard GW-86	0.2000	BWOB
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C	RETARDER, SR-20	0.7000	BWOB
Lead Slurry	BJCem P100.3.01C	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01C	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	IntegraSeal POLI	0.1300	LBS/SK
Lead Slurry	BJCem P100.3.01C	EXTENDER, BENTONITE	4.0000	BWOB
Tail Slurry	BJCem P50.6.02C	SAND, S-8, Silica Flour, 200 Mesh	20.0000	BWOB
Tail Slurry	BJCem P50.6.02C	CEMENT, CLASS G	50.0000	PCT
Tail Slurry	BJCem P50.6.02C	FLUID LOSS, FL-66	0.4000	BWOB
Tail Slurry	BJCem P50.6.02C	Flyash (Rockies)	50.0000	PCT
Tail Slurry	BJCem P50.6.02C	IntegraGuard GW-86	0.1000	BWOB
Tail Slurry	BJCem P50.6.02C	EXTENDER, BENTONITE	2.0000	BWOB
Tail Slurry	BJCem P50.6.02C	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem P50.6.02C	RETARDER, SR-20	0.1000	BWOB
Displacement 2	Retarded Water	ResCare CS-2	0.0800	GPB
Displacement 2	Retarded Water	RETARDER, SR-61L	0.1000	GPB
Displacement 2	Retarded Water	BIOCIDE, BIOC11139W	0.0100	GPB
Displacement Final	Displacement Final (Water)	ResCare CS-2	0.0800	GPB
Displacement Final	Displacement Final (Water)	BIOCIDE, BIOC11139W	0.0100	GPB

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	0.00
Calculated Displacement Vol (bbls)	280.50	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	274.00	Amt of Spacer to Surface	80.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	3.00
Bump Plug Pressure (psi)	3200.00	Total Volume Pumped (bbls)	884.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Full	Lost Circulation During Cement Job	No

BJ Cementing Event Log

Long String - Cheyenne, WY - Roger Acuna

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	02/08/2019 04:00	Callout					CALLED OUT RTS 0930
2	02/08/2019 06:00	Depart for Location					DEPART CHEYENNE WY CAMP
3	02/08/2019 08:45	Arrive on Location					ARRIVE TO LOCATION, CHECK IN WITH COMPANY MAN
4	02/08/2019 09:00	STEACS Briefing					STEACS RIG UP
5	02/08/2019 09:15	Rig Up					RIG UP IRON AND HOSES
6	02/08/2019 10:30	Rig					WAITING ON RIG TO FINISH CIRCULATING
7	02/08/2019 14:00	STEACS Briefing					PRE-JOB SAFETY MEETING TO DISCUSS JOB PROCEDURES
8	02/08/2019 14:11	Pump Spacer	8.3300	3.00	3.00	300.00	FILL LINES 3BBLS FRESH WATER
9	02/08/2019 14:14	Pressure Test				5000.00	TEST LINES
10	02/08/2019 14:17	Pump Spacer	8.3300	4.00	17.00	500.00	PUMP 17BBLS FRESH WATER FLUSH
11	02/08/2019 14:24	Pump Spacer	12.0000	4.00	20.00	400.00	PUMP 20BBLS INTEGRAGUARD SPACER @ 12PPG W/SURFACTANT
12	02/08/2019 14:31	Pump Spacer	11.5000	4.00	20.00	400.00	PUMP 20BBLS INTEGRAGUARD SPACER @ 11.5PPG W/SURFACTANT
13	02/08/2019 14:36	Pump Spacer	11.0000	4.00	20.00	400.00	PUMP 20BBLS INTEGRAGUARD SPACER @ 11PPG W/SURFACTANT
14	02/08/2019 14:42	Pump Lead Cement	12.5000	7.00	306.00	600.00	PUMP 306BBLS BJCEMP100.301C @ 12.5PPG (800SKS 2.16YLD 12.22GPS)
15	02/08/2019 15:33	Pump Tail Cement	13.5000	7.00	224.00	400.00	PUMP 224BBLS BJCEM P50.6.02C @ 13.5PPG (715SKS 1.75YLD 8.71GPS) CALCULATED TOP 6765'
16	02/08/2019 16:08	End Pumping					SHUTDOWN, WASH PUMP AND LINES TO THE PIT
17	02/08/2019 16:11	Drop Bottom Plug					DROP BOTTOM PLUG
18	02/08/2019 16:18	Pump Displacement	8.3300	8.00	10.00	200.00	PUMP 10BBLS FRESH WATER W/ SR-61L
19	02/08/2019 16:20	Drop Top Plug					DROP TOP PLUG
20	02/08/2019 16:22	Pump Displacement	8.4000	8.00	240.00	2500.00	PUMP 240BBLS FRESH WATER W/BIOCIDE AND RESCARE
21	02/08/2019 16:51	Spacer Back-to-Surface					SPACER TO SURFACE @ 210BBLS INTO DISPLACEMENT
22	02/08/2019 16:57	Pump Displacement	8.4000	3.00	13.00	2000.00	SLOW RATE PUMP FRESH WATER TO LAND PLUG
23	02/08/2019 16:59	Land Plug				3000.00	LAND PLUG FIRST PLUG BURST @ 3000PSI

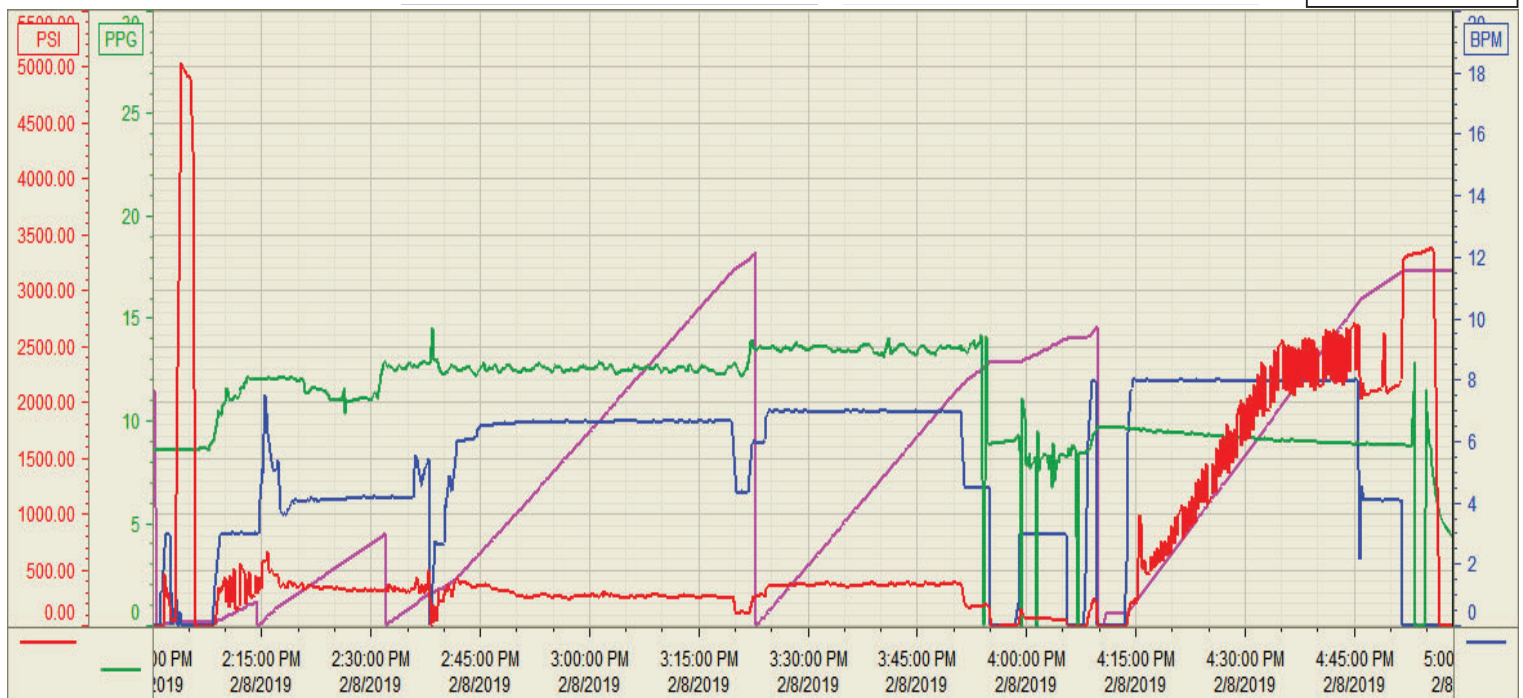
24	02/08/2019 17:00	Pump Displacement	8.4000	4.00	11.00	2200.00	PUMP WET SHOE
25	02/08/2019 17:02	Land Plug				3200.00	LAND PLUG 1000PSI OVER FINAL CIRCULATING PRESSURE
26	02/08/2019 17:06	Check Floats					CHECK FLOATS, FLOATS HELD GETTING 3BBLs BACK TO THE PUMP
27	02/08/2019 17:07	End Pumping					END JOB
28	02/08/2019 17:07	STEACS Briefing					STEACS RIG DOWN
29	02/08/2019 17:15	Rig Down					RIG DOWN IRON AND HOSES
30	02/08/2019 18:30	Leave Location					DEPART LOCATION

Customer: Petro
Well Number: 19
Lease Info: BEF West



Print Date/Time

2/8/2019 5:53:12 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	-4.6 i.	2/8/2019 4:58:30 PM i.	CementenDS_DISCHARGE_PRESS_DIAL
2	Recirc - Density (PPG)	4.3	2/8/2019 4:58:33 PM	CementenDENSITY_ACTUAL_RATE
3	Combined Rate (BPM)	0.00	2/8/2019 4:58:33 PM	CementenFlow_Combined
4	Down Hole Total (BBLs)	289	2/8/2019 4:58:33 PM	CementenDOWNHOLE_FLOW_TOTAL
5				
6				

Source: Control1 5:53:06 PM