

# BJ Cementing Treatment Report

SERVICE SUPERVISOR	Chad Johnson	FORMATION	NIOBRARA
DISTRICT	Cheyenne, WY	RIG	Ensign 153
SERVICE	Cementing	COUNTY	WELD
		STATE / PROVINCE	CO

## WELL GEOMETRY

TYPE	OD (in)	ID (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)
Previous Casing	9.63	8.84	40.00	1,987.00	1,955.00	
Casing	5.50	4.78	20.00	12,005.00	7,207.00	
Open Hole	0.00	8.50	0.00	12,014.00	7,207.00	10.00

## HARDWARE

Top Plug Used?	Yes	Landing Collar Depth (ft)	11,992
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 Type	Rigid	Top Connection Size	5.5

## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	PV Mud Out	15
Circulation Prior to Job	Yes	YP Mud In	7
Circulation Time (min)	120.00	YP Mud Out	7
Circulation Rate (bpm)	10.00	Solids Present at End of Circulation	No
Circulation Volume (bbls)	1200.00	10 sec SGS	4
Lost Circulation Prior to Cement Job	No	10 min SGS	5
Mud Density In (ppg)	10.30	30 min SGS	6
Mud Density Out (ppg)	10.30	Flare Prior to / during the Cement Job	No
PV Mud In	15	Gas Present	No

## TEMPERATURE

Ambient Temperature (°F)	32.00	Mix Water Temperature (°F)	70.00
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## FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H <sub>2</sub> O REQ (gals/sk)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	12.0000					90.0000
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	12.5000	2.1576	12.21	283	610.0000	108.6000
Lead Slurry	BJCem P100.3.01C (latex Lead)	13.0000	1.9262	9.46	317	618.0000	109.9000
Tail Slurry	BJCem P50.6.02C	13.5000	1.7523	8.70	1053	1845.0000	328.4000
Displacement 1	Retarded Water	8.3300				0.0000	10.0000
Displacement Final	Displacement Final (Water)	8.3308				0.0000	257.4000



FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	IntegraGuard GW-86	1.2000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-7C	2.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-31	0.5000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	SPACER SURFACTANT, SS-267	1.0000	GPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	WEIGHTING ADDITIVE, W-11	243.6000	PPB
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	EXTENDER, BENTONITE	4.0000	BWOB
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	FLUID LOSS, FL-66	0.5000	BWOB
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	RETARDER, SR-20	0.2500	BWOB
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	FLUID LOSS, FL-24	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C (Conventional Lead)	IntegraGuard GW-86	0.2000	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	FLUID LOSS, FL-24	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	BONDING AGENT, BA-86L	1.0000	GALS/SK
Lead Slurry	BJCem P100.3.01C (latex Lead)	IntegraGuard GW-86	0.0500	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	RETARDER, SR-20	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	FLUID LOSS, FL-66	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	EXTENDER, BENTONITE	4.0000	BWOB
Lead Slurry	BJCem P100.3.01C (latex Lead)	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem P50.6.02C	FLUID LOSS, FL-66	0.6000	BWOB
Tail Slurry	BJCem P50.6.02C	Flyash (Rockies)	50.0000	PCT
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	SAND, S-8, Silica Flour, 200 Mesh	20.0000	BWOB
Tail Slurry	BJCem P50.6.02C	RETARDER, R-6	0.2000	BWOB
Tail Slurry	BJCem P50.6.02C	CEMENT, CLASS G	50.0000	PCT
Tail Slurry	BJCem P50.6.02C	IntegraGuard GW-86	0.1000	BWOB



## DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	46.00
Calculated Displacement Vol (bbls)	266.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	266.00	Amt of Spacer to Surface	90.00
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)	2000.00	Total Volume Pumped (bbls)	900.00
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 - Chad Johnson

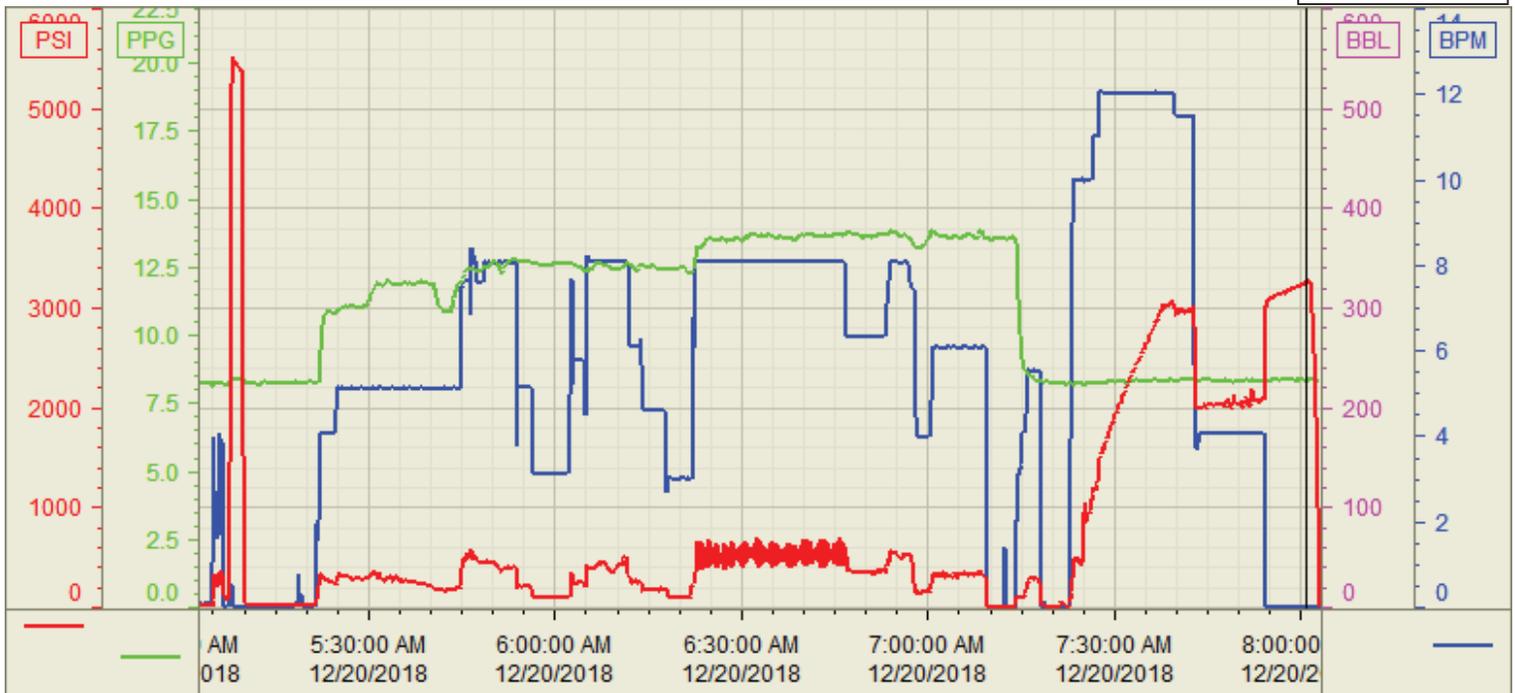
SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	12/19/2018 18:00	Callout					Crew called out requested on location at 0000
2	12/19/2018 20:00	Arrive on Location					Crew arrived on location
3	12/19/2018 20:15	STEACS Briefing					Safety meeting
4	12/19/2018 20:30	Spot Units					Spotted all units
5	12/19/2018 20:45	Rig Up					Rigged up all equipment
6	12/19/2018 22:30	Client					Waiting on rig to finish running casing and circulate the well
7	12/20/2018 02:00	STEACS Briefing					Safety meeting
8	12/20/2018 02:30	Prime Up	8.3300	3.00	5.00	300.00	Fill lines with 5 bbls fresh water
9	12/20/2018 05:08	Pressure Test					Pressure test lines to 5000 psi
10	12/20/2018 05:22	Pump Spacer	11.0000	5.00	90.00	400.00	Pump 30 bbls spacer at 11 ppg, 30 bbls spacer at 12 ppg, 30 bbls spacer at 11 ppg
11	12/20/2018 05:46	Pump Lead Cement	12.5000	8.00	109.00	400.00	Pump 109 bbls lead cement at 12.5 ppg (283 sks, 2.16 Y, 12.21 gal/sk)
12	12/20/2018 06:04	Pump Lead Cement	13.0000	8.00	109.00	450.00	Pump 109 bbls lead cement at 13 ppg (317 sks, 1.93 Y, 9.46 gal/sk)
13	12/20/2018 06:24	Pump Tail Cement	13.5000	8.00	328.00	400.00	Pump 328 bbls tail cement at 13.5 ppg (1053 sks, 1.75 Y, 8.70 gal/sk)
14	12/20/2018 07:10	Other (See comment)					Shutdown
15	12/20/2018 07:12	Wash Pumps and Lines					Clean pumps and lines to pit
16	12/20/2018 07:22	Drop Top Plug					Drop top plug
17	12/20/2018 07:23	Pump Displacement	8.3400	12.00	220.00	2500.00	Pump 266 bbls displacement
18	12/20/2018 07:35	Spacer Back-to-Surface					Spacer to surface at 120 bbls away, 90 bbls spacer to surface
19	12/20/2018 07:44	Other (See comment)	8.3400	4.00	46.00	2000.00	Slow pump rate to 4 bpm at bbls away
20	12/20/2018 07:45	Cement Back-to-Surface					Cement back to surface at 220 bbls away, 46 bbls cement to surface
21	12/20/2018 07:52	Land Plug					Land plug at 2000 psi took to 3000 psi
22	12/20/2018 07:57	Check Floats					Check floats, floats holding, 3 bbls back
23	12/20/2018 08:10	STEACS Briefing					Safety meeting
24	12/20/2018 08:30	Rig Down					Rigged down all equipment
25	12/20/2018 10:00	Leave Location					Crew departed location



Customer: Crestone Peak  
 Well Number: 1E-33H-H367  
 Lease Info: Herren



Print Date/Time  
 12/20/2018 8:25:00 AM



Name	Y value	X value/time stamp	Tag name Y
1 DS - Press (PSI)	3255.2	12/20/2018 8:00:46 AM	Cementer\DS_DISCHARGE_PRESS_DIAL
2 DH - Density (PPG)	8.32	12/20/2018 8:00:52 AM	Cementer\DENSITY2_ACTUAL_RATE
3 Combined Rate	0.00	12/20/2018 8:00:46 AM	Cementer\Flow_Combined
4			
5			

Source: Control1 8:24:55 AM