



# Crestone Peak Resources Operating

Herren 1H-33H-H367

API # 05-123-47732

## Production

01/01/2019

Quote #: 25037

Execution #: 14445



# Crestone Peak Resources Operating

Attention: Mr. Jerry Thorstad | (303) 829-8179 | [Jerry.Thorstad@Crestonepr.com](mailto:Jerry.Thorstad@Crestonepr.com)

Crestone Peak Resources Operating | 10188 E I25 Frontage Rd. | Firestone, CO. 80504

---

Dear Mr. Jerry Thorstad,

Thank you for the opportunity to provide cementing services on this well. BJ Services strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact BJ Services at any time.

Sincerely,  
Jason Creel  
Field Engineer I | (307) 256-0306 | [Jason.Creel@bjservices.com](mailto:Jason.Creel@bjservices.com)

Field Office 1716 East Allison Rd., Cheyenne WY, 82007  
Phone: (307) 638-5585

Sales Office 999 18th St. Suite 1200 Denver, CO 80202  
Phone: (281) 408-2361

---

# BJ Cementing Treatment Report

SERVICE SUPERVISOR	Zachary Hyde	FORMATION	NIOBRARA
CLIENT FIELD REPRESENTATIVE	Buddy	RIG	Ensign 153
DISTRICT	Cheyenne, WY	COUNTY	WELD
SERVICE	Cementing	STATE / PROVINCE	CO

## WELL GEOMETRY

TYPE	OD (in)	ID (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)
Open Hole	0.00	8.50	0.00	12,001.00	7,339.00	10.00
Previous Casing	9.63	8.84	40.00	1,959.00	1,959.00	
Casing	5.50	4.78	20.00	12,006.00	7,339.00	

## HARDWARE

Bottom Plug Used?	No	Centralizers Type	Rigid
Top Plug Used?	Yes	Landing Collar Depth (ft)	12,030
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	5.500	Job Pumped Through	No Manifold
Centralizers Used	Yes	Top Connection Thread	BTC
Centralizers Quantity	214.00	Top Connection Size	5.5

## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	PV Mud Out	14
Circulation Prior to Job	Yes	YP Mud In	8
Circulation Time (min)	120.00	YP Mud Out	8
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)	10.80	30 min SGS	7
Mud Density Out (ppg)	10.80	Flare Prior to / during the Cement Job	No
PV Mud In	14	Gas Present	No

## TEMPERATURE

Ambient Temperature (°F)	5.00	Slurry Cement Temperature (°F)	70.00
Mix Water Temperature (°F)	70.00	Flow Line Temperature (°F)	78.00

## 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	13.0000	1.9311	10.44	715	1374.0000	244.7000
Tail Slurry	BJCem P50.6.02C	13.5000	1.7523	8.70	970	1691.0000	301.1000
Displacement 1	Retarded Water	8.3300				0.0000	10.0000
Displacement Final	Displacement Final (Water)	8.3308				0.0000	256.8000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	WEIGHTING ADDITIVE, W-11	243.6000	PPB
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
Lead Slurry	BJCem P100.3.01C	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	EXTENDER, BENTONITE	4.0000	BWOB
Lead Slurry	BJCem P100.3.01C	XCem-05	0.5000	BWOB
Lead Slurry	BJCem P100.3.01C	IntegraGuard GW-86	0.1000	BWOB
Lead Slurry	BJCem P100.3.01C	FLUID LOSS, FL-24	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C	RETARDER, SR-20	0.6000	BWOB
Lead Slurry	BJCem P100.3.01C	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	CEMENT, CLASS G	50.0000	PCT
Tail Slurry	BJCem P50.6.02C	SAND, S-8, Silica Flour, 200 Mesh	20.0000	BWOB
Tail Slurry	BJCem P50.6.02C	IntegraGuard GW-86	0.1000	BWOB
Tail Slurry	BJCem P50.6.02C	FLUID LOSS, FL-66	0.6000	BWOB
Tail Slurry	BJCem P50.6.02C	RETARDER, R-6	0.2000	BWOB

## DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	75.00
Calculated Displacement Vol (bbls)	265.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	265.00	Amt of Spacer to Surface	90.00
Did Float Hold?	No	Pressure Left on Casing (psi)	2200.00
Bump Plug	Yes	Total Volume Pumped (bbls)	901.00
Bump Plug Pressure (psi)	2200.00	Top Out Cement Spotted	No
Were Returns Planned at Surface	Yes	Lost Circulation During Cement Job	No
Cement Returns During Job	Full		

**Client Name:** Crestone Peak Resources  
Operating

**Well:** HERREN 1H-33H-H367

**Well API:** 05-123-47732

**Start Date:** 1/1/2018

**End Date:** 1/1/2018

**Field Ticket #:**



# BJ Cementing Event Log

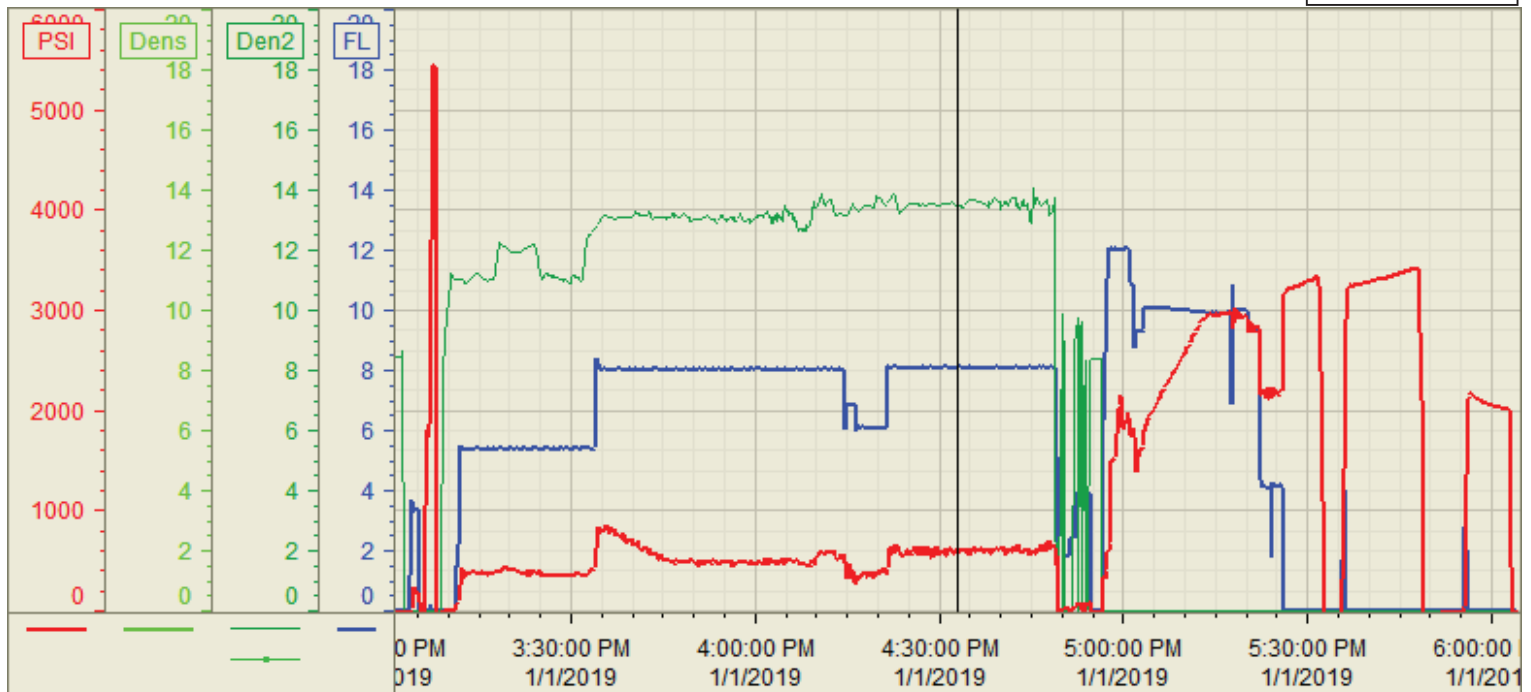
Long String - Cheyenne, WY - Zachary Hyde

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	01/01/2019 07:50	Callout					Crew gets called out requested time 1200
2	01/01/2019 08:00	Arrive on Location					Crew arrives on location
3	01/01/2019 11:00	Spot Units					Crew spots units
4	01/01/2019 11:10	Rig Up					Crew rigs up iron and hoses needed for job
5	01/01/2019 13:00	Rig					Crew waits for rig to finish circulating
6	01/01/2019 14:55	STEACS Briefing					Crew has a briefing with rig crew and company man discussing the job
7	01/01/2019 15:03	Prime Up	8.3300	3.00	5.00	250.00	Filled lines 5 bbls
8	01/01/2019 15:06	Pressure Test					Pressure tested pump and lines to 5500 psi
9	01/01/2019 15:11	Pump Spacer	11.0000	6.00	30.00	300.00	Pump 30 bbls of Spacer at 11 ppg
10	01/01/2019 15:17	Pump Spacer	12.0000	6.00	30.00	400.00	Pump 30 bbls of Spacer at 12 ppg
11	01/01/2019 15:24	Pump Spacer	11.0000	6.00	30.00	400.00	Pump 30 bbls of Spacer at 11 ppg
12	01/01/2019 15:32	Pump Lead Cement	13.0000	8.00	244.00	800.00	Pump 244 bbls of Lead at 13 ppg (715sks, 1.93 yld, 10.44 gal/sk)
13	01/01/2019 16:02	Pump Tail Cement	13.5000	8.00	301.00	400.00	Pump 301 bbls of Tail at 13.5 ppg (970 sks, 1.75yld, 8.7 gal/sk)
14	01/01/2019 16:49	End Pumping					Shutdown
15	01/01/2019 16:49	Wash Pumps and Lines					Wash pump and lines to pit
16	01/01/2019 16:54	Drop Top Plug					Pumped the first 20 bbls of displacement with fresh water with retarder
17	01/01/2019 16:54	Pump Displacement	8.3300	12.00	20.00	1800.00	Pumped the first 20 bbls of displacement with fresh water with retarder
18	01/01/2019 16:56	Pump Displacement	8.4000	10.00	216.00	2800.00	Pumped 226 bbls with displacement water
19	01/01/2019 17:22	Pump Displacement	8.3300	4.00	30.00	2200.00	Last 20 bbls swapped back to fresh water and slowed rate to 4bpm to land the plug
20	01/01/2019 17:26	Land Plug					Landed plug went 1000 psi over FCP FCP was 2200 psi brought it up to 3200 psi
21	01/01/2019 17:31	Check Floats					Checked floats. Floats did not hold
22	01/01/2019 17:35	Land Plug					Pressured back up to 3500 psi
23	01/01/2019 17:45	Check Floats					Checked floats. Floats did not hold
24	01/01/2019 17:45	Other (See comment)					Left 2200 psi on the head and shut in the well. Got 75 bbls of cement to surface and 90 bbls of Spacer
25	01/01/2019 17:45	Rig Down					Crew rigs down iron and hoses

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



Print Date/Time  
1/1/2019 6:47:02 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	587.2	1/1/2019 4:32:59 PM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	Recirc - Density (PPG)	13.49 i.	1/1/2019 4:33:00 PM i.	Cementer\DENSITY_ACTUAL_RATE
3	DH Density (PPG)	-29.63 i.	1/1/2019 4:33:00 PM i.	Cementer\DENSITY2_ACTUAL_RATE
4	Combined pump rate	8.08	1/1/2019 4:33:01 PM	Cementer\Flow_Combined
5	Trend 1			
				Source: Control1 6:47:03 PM