

# Cementing Treatment



<b>Start Date</b>	11/12/2017	<b>Well</b>	33-9-3L Buford
<b>End Date</b>	11/12/2017	<b>County</b>	WELD
<b>Client</b>	Confluence DJ LLC	<b>State/Province</b>	CO
<b>Client Field Rep</b>		<b>API</b>	05-123-45544
<b>Service Supervisor</b>	Wesley Bell	<b>Formation</b>	
<b>Field Ticket No.</b>		<b>Rig</b>	
<b>District</b>	Cheyenne, WY	<b>Type of Job</b>	Long String

## WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Previous Casing	8.92	9.63	36.00	1,546.00	1,546.00			
Open Hole	8.50			17,367.00	7,334.00	9.70		
Casing	4.78	5.50	20.00	17,358.00	7,334.00			

**Shoe Length (ft):** 15

## HARDWARE

<b>Bottom Plug Used?</b>	Yes	<b>Max Casing Pressure - Rated (psi)</b>	12630
<b>Bottom Plug Provided By</b>	Customer	<b>Max Casing Pressure - Operated (psi)</b>	3000
<b>Bottom Plug Size</b>	5.5"	<b>Pipe Movement</b>	No
<b>Top Plug Used?</b>	Yes	<b>Job Pumped Through</b>	Casing
<b>Top Plug Provided By</b>	Customer	<b>Top Connection Thread</b>	Butress
<b>Top Plug Size</b>	5.5"	<b>Top Connection Size</b>	5.5"
<b>Centralizers Used</b>	Yes		
<b>Landing Collar Depth (ft)</b>	17,343		

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## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	10 sec SGS	8
Circulation Time (min)	3hrs	10 min SGS	9
Lost Circulation Prior to Cement Job	No	30 min SGS	11
Mud Density In (ppg)	10.75	Flare Prior to/during the Cement Job	No
Mud Density Out (ppg)	10.75	Gas Present	No
PV Mud In	22		
PV Mud Out	22		
YP Mud In	13		
YP Mud Out	13		

## TEMPERATURE

Ambient Temperature (°F)	50	Slurry Cement Temperature (°F)	50
Mix Water Temperature (°F)	48	Flow Line Temperature (°F)	84

## 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	11.0000					80.0000
Lead Slurry	P100-X2	12.5000	2.0761	11.84	850	1,737.0000	313.3000
Tail Slurry	P50-X1	13.5000	1.4774	7.45	1,800	2,659.0000	472.7000
Displacement 1	MMCR Water	8.3337				0.0000	10.0000
Displacement Final	Biocide and Clay Protection	8.3331				0.0000	375.1000

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Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	CD Spacer	GELLANT WATER, GW-86	0.80	PPB
Spacer / Pre Flush / Flush	CD Spacer	SAND, S-8, Silica Flour, 200 Mesh	100.00	PCT
Spacer / Pre Flush / Flush	CD Spacer	SURFACTANT, SS-267, (BJS ONLY)	0.50	GPB
Spacer / Pre Flush / Flush	CD Spacer	Spacer Surfactant, SS-247, (BJS Only)	0.50	GPB
Lead Slurry	P100-X2	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Lead Slurry	P100-X2	IntegraSeal CELLO	0.13	LBS/SK
Lead Slurry	P100-X2	SPECIAL ADDITIVE, MPA-300	0.10	BWOB
Lead Slurry	P100-X2	CEMENT, ASTM TYPE III	100.00	PCT
Lead Slurry	P100-X2	FLUID LOSS, FL-24, (BJS Only)	0.30	BWOB
Lead Slurry	P100-X2	RETARDER, HIGH TEMP, R-31 (BJS Only)	0.20	BWOB
Lead Slurry	P100-X2	BONDING AGENT, BA-60	0.40	BWOB
Tail Slurry	P50-X1	FLUID LOSS, FL-66	0.20	BWOB
Tail Slurry	P50-X1	CEMENT, CLASS G	50.00	PCT
Tail Slurry	P50-X1	Flyash (Rockies)	50.00	PCT
Tail Slurry	P50-X1	FP-25, Dry Foam Preventer (BJS Only)	0.30	BWOB
Tail Slurry	P50-X1	GELLANT WATER, GW-86	0.10	BWOB
Tail Slurry	P50-X1	EXTENDER, BENTONITE	2.00	BWOB
Tail Slurry	P50-X1	AR-20	0.10	BWOB
Displacement 1	MMCR Water	AR-61	0.10	GPB
Displacement Final	Biocide and Clay Protection	BIOCIDE, ALPHA 544	0.01	GPB
Displacement Final	Biocide and Clay Protection	ASF-50	0.08	GPB

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## TREATMENT SUMMARY

Fluid	Rate (bpm)	Fluid Vol. (bbls)
CD Spacer	0.00	80.00
P100-X2	0.00	309.20
P50-X1	0.00	473.50
MMCR Water	0.00	10.00
Biocide and Clay Protection	0.00	374.10

	Min	Max	Avg
Pressure (psi)	0	3000	1500
Rate (bpm)	0	6.3	3.15

## DISPLACEMENT AND END OF JOB SUMMARY

<b>Displaced By</b>	BJ Services	<b>Amount of Cement Returned/Reversed</b>	80bbls
<b>Calculated Displacement Volume (bbls)</b>	385	<b>Method Used to Verify Returns</b>	Visual
<b>Actual Displacement Volume (bbls)</b>	377	<b>Amount of Spacer to Surface</b>	80bbls
<b>Did Float Hold?</b>	Yes	<b>Pressure Left on Casing (psi)</b>	0
<b>Bump Plug</b>	Yes	<b>Amount Bled Back After Job</b>	4bbls
<b>Bump Plug Pressure (psi)</b>	2800	<b>Total Volume Pumped (bbls)</b>	1253bbls
<b>Were Returns Planned at Surface</b>	Yes	<b>Top Out Cement Spotted</b>	No
<b>Cement returns During Job</b>	Yes	<b>Lost Circulation During Cement Job</b>	No

## CEMENT PLUG

<b>Bottom of Cement Plug?</b>	No	<b>Wiper Balls Used?</b>	No
		<b>Plug Catcher</b>	No

Customer Name Confluence Resources  
 Well Name Buford 33-9-3L  
 Job Type Long String

District Cheyenne  
 Supervisor Wesley Bell  
 Engineer Jason Creel



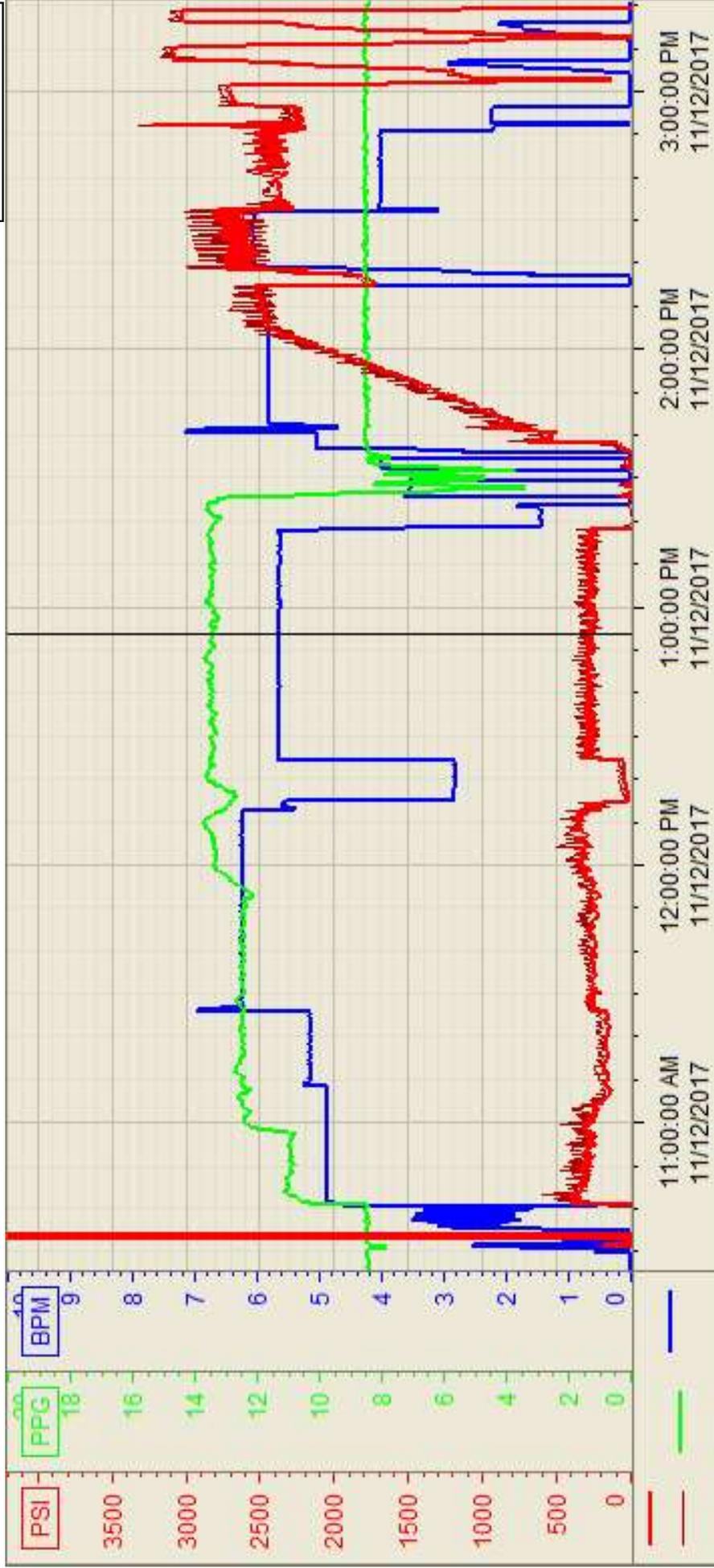
Seq No.	Start Date/Time	Category	Event	Equipment	Event ID	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	11/12/2017 7:30	Mobilization	Arrive on Location		48					Arrive on location, requested time was 09:00
2	11/12/2017 7:40	Operational	Rig Up		50					Spot and rig in bulk unit, pump unit, and compressor trailer. Run all water, bulk, air, and iron.
3	11/12/2017 9:00	StandBy	Customer		85					Wait for rig to finish circulating the well
4	11/12/2017 10:00	Operational	Safety Meeting		53					Hold pre job STEACS with rig crew and pump crew. Review job procedure and hazards
5	11/12/2017 10:42	Operational	Start Pumping	Cement Pump Truck		8.34	2	2	150	Fill lines with fresh water
6	11/12/2012 10:45	Operational	Pressure Test	Cement Pump Truck	54	8.34	0.5		5000	Test lines, no leaks
7	11/12/2012 10:54	Operational	Pump Spacer	Cement Pump Truck	56	11	5	80	150	Pump 80bbls of spacer at 11ppg
8	11/12/2012 11:11	Operational	Pump Lead Cement	Cement Pump Truck	58	12.5	5	73.5	200	Pump 73.5bbls of Lead 1 cement at 12.5ppg. 200sks, Y: 2.06, WR: 11.77
9	11/12/2012 11:24	Operational	Pump Lead Cement	Cement Pump Truck	58	12.5	6.3	239.8	250	Pump 239.8bbls of Lead 2 cement at 12.5ppg, 650sks, Y: 2.07, WR: 11.81, Extra retarder added into mix water
10	11/12/2012 12:10	Operational	Pump Tail Cement	Cement Pump Truck	60	13.5	5.6	472.7	350	Pump 472.7bbls of Tail cement at 13.5ppg, 1800sks, Y: 1.47, WR: 7.43.
11	11/12/2012 13:36	Operational	End Pumping	Cement Pump Truck	69					Finish mixing cement, clean pumps and lines to open top tanks
12	11/12/2012 13:44	Operational	Drop Bottom Plug	Cement Pump Truck	57	8.34	4	10	200	Drop bottom 5.5" plug, displace 10bbls of water with 1gal AR-61
13	11/12/2012 13:48	Operational	Drop Top Plug	Cement Pump Truck	63	8.34	5			Drop top 5.5" rubber plug
14	11/12/2012 13:50	Operational	Pump Displacement	Cement Pump Truck	64	8.34	6	300	2600	Displace with fresh water, Spacer to surface at 210 away(not counting 10bbls below top plug), shut down briefly to swap returns to open top tanks
15	11/12/2012 14:44	Operational	Other (See comments)	Cement Pump Truck	76	8.34	4	0	2500	Slow rate, cement to surface at 290away
16	11/12/2012 15:03	Operational	Other (See comments)	Cement Pump Truck	76	8.34	2	65	2300	Slow rate for last 20bbls
17	11/12/2012 15:05	Operational	Land Plug	Cement Pump Truck	67	8.34	2	3	2100	Land bottom plug, burst at 3100psi
18	11/12/2012 15:10	Operational	Land Plug	Cement Pump Truck	67	8.34	2	10	2200	Land Top plug, Bump up to 2800psi, hold for 3min
19	11/12/2012 15:14	Operational	Check Floats	Cement Pump Truck	68	8.34				Floats did not hold on first 2attempts, on third attempt floats held, 4bbls back to pump
20	11/12/2012 15:32	Operational	Rig Down	Cement Pump Truck	73					Rig down all BJ lines and units
21	11/12/2012 17:00	Mobilization	Leave Location		74					All BJ equipment and crew leave location



Print Date/Time

11/12/2017 3:50:00 PM

Customer: Confluence Resources  
 Well Number: 33-9-3L  
 Lease Info: Buford



Name	Y value	X value/time stamp	Tag name Y
1 DS - Press (PSI)	243.4	11/12/2017 12:53:37 PM	CementerDS_DISCHARGE_PRESS_DIAL
2 PS - Press (PSI)	221.4	11/12/2017 12:53:33 PM	CementerPS_DISCHARGE_PRESS_DIAL
3 DH - Density (PPG)	13.40	11/12/2017 12:53:31 PM	CementerDENSITY2_ACTUAL_RATE
4 Combined Rate	5.64	11/12/2017 12:53:41 PM	CementerFlow_Combined
5			

Source: Control1 3:49:55 PM