



Laramie Energy End of Well Cement Report

**Bruton 19-19W 05-077-10374
S:30 T:9S R:93W Mesa CO**

CallSheet #: 936 (Surface), 949 (Production)
Proposal #: 13421



Attention: Mr. Chuck Mallary | (303) 859-3634 | cmallary@laramie-energy.com
Laramie Energy
1401 17th St, Suite 1400 | Denver, CO 80202

Dear Mr. Mallary,

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,

Zen Keith

Technical Specialist-II | (307) 757-7178 | Zen.Keith@bjservices.com

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

Sales Office 475 17th St. Suite 460 Denver Co., 80202
Phone: (303) 296-1158



Table of Contents

Surface Post Job Report	3
1 Job Details & Summary.....	3
1.1 Geometry	3
1.2 Equipment / People	3
1.3 Timing.....	3
1.4 General Job Information	3
1.5 Job Details	3
1.6 Job Details (cont.).....	3
1.7 Circulation	3
1.8 Job Execution Information	4
1.9 Job Fluid Details	4
2 Job Logs.....	5
3 Water Analysis	6
4 Pump Diagrams.....	6
Production Post Job Report	7
1 Job Details & Summary.....	7
1.1 Geometry	7
1.2 Equipment / People	7
1.3 Timing.....	7
1.4 General Job Information	7
1.5 Well Fluid Details	7
1.6 Job Details	7
1.7 Job Details (cont.).....	7
1.8 Circulation	7
1.9 Job Execution Information	8
1.10 Job Fluid Details	8
2 Job Logs.....	9
3 Water Analysis	11
4 Pump Diagrams.....	11

Surface Post Job Report

1 Job Details & Summary

1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Open Hole	Outer	n/a	11	n/a	n/a	60	1546	75
Casing	Inner	8.625	8.097	24	STC	0	1536	0
Casing	Outer	16	15.25	65	n/a	0	60	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Bulk Trailer	503		132
Bulk Trailer	512		
Cement Pump	PPC11250	Nepgen, AJ	132
Light Duty Pickups	2	Staples, Anthony	132
Cement Chemical	403	Soto Jr., Ruben	132

1.3 Timing

Event	Date/Time
Call Out	6/24/2017 14:30
Depart Facility	6/24/2017 16:30
On Location	6/24/2017 18:00
Rig Up Iron	6/24/2017 18:20
Job Started	6/24/2017 21:04
Job Completed	6/24/2017 22:20
Rig Down Iron	6/24/2017 22:40
Depart Location	6/24/2017 23:59

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.4 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	94.96 bbls
Actual Displacement	95 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	19 bbls
Well Topped Out	No

1.5 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.4 lb/gal
Well Fluid Density Out of Well	9.4 lb/gal

1.6 Job Details (cont.)

Metrics	Value
BHCT	82 °F
BHST	106 °F

1.7 Circulation

Lost Circulation Experienced
No



1.8 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	Water	Flush	8.33			42.00		40.00	0
1	2	ALTCem S100-12	Lead	12.00	2.53	14.85		195.00	87.74	0
1	3	ALTCem S100-12	Tail	12.50	2.22	12.58		115.00	45.54	1050
1	4	Water	DisplacementFinal	8.33			42.00		95.00	0

1.9 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Lead	ALTCem S100-12	AC3-10	Cement	100.00	%
1	2	Lead	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	2	Lead	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	2	Lead	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	2	Lead	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk
1	3	Tail	ALTCem S100-12	AC3-10	Cement	100.00	%
1	3	Tail	ALTCem S100-12	ACL-10	Accelerator	2.00	lb/sk
1	3	Tail	ALTCem S100-12	ACL-20	Accelerator	5.00	%BWOB
1	3	Tail	ALTCem S100-12	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	ALTCem S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	3	Tail	ALTCem S100-12	AXE-30	Extender	2.00	lb/sk



2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Yard Call	6/24/2017	14:30					
2	Leave Yard	6/24/2017	16:30					
3	Arrive on Location	6/24/2017	18:00					Rig Running Casing
4	Spot Trucks	6/24/2017	18:10					
5	Pre-Rig Up Safety Meeting	6/24/2017	18:15					
6	Rig Up	6/24/2017	18:20					
7	Pre-Job Safety Meeting	6/24/2017	20:35					
8	Floor Rig Up	6/24/2017	20:45					
9	Load Lines	6/24/2017	21:04	8.34	2	2	34	
10	Pressure Test	6/24/2017	21:06	8.34			3728	
11	Spacer	6/24/2017	21:09	8.34	5	40	200	
12	Lead Cement	6/24/2017	21:17	12	5.4	76	320	Batch, Weigh, and Pump 195sks of 12# Lead Cement (87.7 Bbls)
13	Rate Change	6/24/2017	21:30	12	4	10	160	
14	Tail Cement	6/24/2017	21:33	12.5	5.4	36	340	Pump 115sks of 12.5# Tail Cement (45.5 Bbls)
15	Rate Change	6/24/2017	21:40	12.5	4	9	160	
16	Shut Down Wash Up	6/24/2017	21:43					
17	Drop Plug	6/24/2017	21:50	8.34				
18	Displace	6/24/2017	21:51	8.34	5.5	50	350	At 50 Bbls away
19	Displace	6/24/2017	21:58	8.34	5.5	35	424	At 85 Bbls away
20	Rate Change	6/24/2017	22:04	8.34	2	10	450	Dropped Rate for Final 10 Bbls
21	Bump Plug	6/24/2017	22:09	8.34			1200	Plug Bumped @95 Bbls away. (19Bbls Cement to Surface.
22	Casing Test	6/24/2017	22:10	8.34			2000	
23	Bleed Off/Check Floats	6/24/2017	22:20	8.34				1 Bbl Back
24	Pre-Rig Down Meeting	6/24/2017	22:30					
25	Rig Down	6/24/2017	22:40					
26	Leave Location	6/24/2017	23:59					

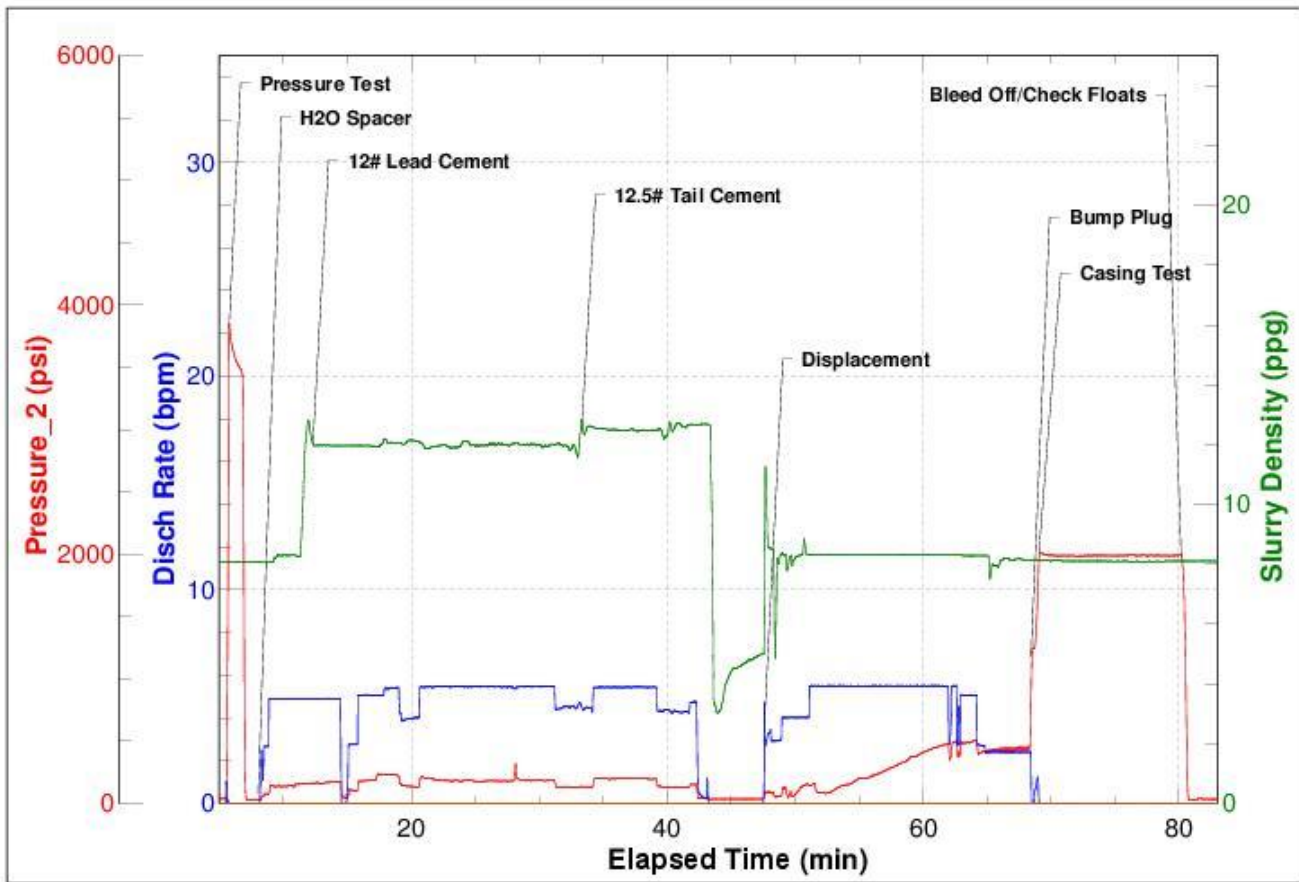
3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	70 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	215 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	1500 mg/L	0-3000 mg/L
Iron	. mg/L	0-300 mg/L

4 Pump Diagrams



JobMaster Program Version 4.02
Job Number: 936
Customer: Laramie
Well Name: Bruton 19-19W



Job Start: Saturday, June 24, 2017

Production Post Job Report

1 Job Details & Summary

1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	8.625	8.097	24	STC	0	1550	0
Casing	Inner	4.5	4	11.6	LTC	0	8507	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1550	8518	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Silo	6 (Silo)			
Silo	7 (silo)			
Bulk Trailer	E391	Youngberg, Wendell		130
Pump Truck	104	Gilliam, Glen	Casciato, Luke	130
Light Duty Pickups	3	Roush, James	Hyde, Tyson	130

1.3 Timing

Event	Date/Time
Call Out	6/28/2017 00:00
Depart Facility	6/28/2017 01:00
On Location	6/28/2017 03:00
Rig Up Iron	6/28/2017 03:30
Job Started	6/28/2017 10:45
Job Completed	6/28/2017 13:30
Rig Down Iron	6/28/2017 13:40
Depart Location	6/28/2017 15:00

1.4 General Job Information

Metrics	Value
Well Fluid Density	9.5 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	800 bbls
Rig Circulation Time	3 hours
Calculated Displacement	131 bbls
Actual Displacement	131 bbls
Total Spacer to Surface	3 bbls
Total CMT to Surface	0 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	21
Yield Point	21
10 sec. SGS	5
10 min. SGS	25
30 min. SGS	49
Filtrate	7.8
Flow Line Temp.	142

1.6 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.5 lb/gal
Well Fluid Density Out of Well	9.5 lb/gal

1.7 Job Details (cont.)

Metrics	Value
BHCT	177 °F
BHST	238 °F

1.8 Circulation

Lost Circulation Experienced
No

**1.9 Job Execution Information**

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	CD Spacer	Spacer	11.00			33.15		40.00	141
1	2	ALTCem P100-X2	Lead	12.70	1.97	11.07		926.00	325.43	1050
1	3	ALTCem P70-X1	Tail	13.50	1.90	9.55		401.00	135.66	6369
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		132.00	0

1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	1	Spacer	CD Spacer	ASR-20	StrengthRetrogression	179.73	lb/bbl
1	1	Spacer	CD Spacer	AR-10	Retarder	1.40	lb/bbl
1	1	Spacer	CD Spacer	ASF-20	Surfactant	0.50	gal/bbl
1	1	Spacer	CD Spacer	AVS-10	Viscosifier	0.80	lb/bbl
1	2	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%
1	2	Lead	ALTCem P100-X2	ABX-30	BondEnhancer	0.30	%BWOB
1	2	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	ALTCem P100-X2	ADS-10	Dispersant	0.10	%BWOB
1	2	Lead	ALTCem P100-X2	AR-10	Retarder	0.50	%BWOB
1	2	Lead	ALTCem P100-X2	AVS-10	Viscosifier	0.10	%BWOB
1	3	Tail	ALTCem P70-X1	ACG-10	Cement	70.00	%
1	3	Tail	ALTCem P70-X1	AFA-10	Extender	20.00	%
1	3	Tail	ALTCem P70-X1	AXE-20	Extender	10.00	%
1	3	Tail	ALTCem P70-X1	ABX-30	BondEnhancer	0.20	%BWOB
1	3	Tail	ALTCem P70-X1	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	ALTCem P70-X1	AFL-10	FluidLoss	0.40	%BWOB
1	3	Tail	ALTCem P70-X1	AR-10	Retarder	0.30	%BWOB
1	3	Tail	ALTCem P70-X1	ASR-20	StrengthRetrogression	25.00	%BWOB
1	3	Tail	ALTCem P70-X1	AVS-50	Viscosifier	6.00	%BWOB
1	4	DisplacementFinal	Water w/ ASF-50	ASF-50	ClayProtection	0.08	gal/bbl



2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Call Out	6/28/2017	00:00					Crew called out at 6/28/2017 at 00:00 requested on location at 06:00
2	Crew Leave Yard	6/28/2017	13:00					BJ crew left Rifle yard at 13:00
3	Arrive on Location	6/28/2017	03:00					Arrive on location meet with customer and receive well information. TD 8518ft. TP 8507 ft. SJ 83 ft. 4.5 11.6 lb
4	Pre- Rig up Meeting	6/28/2017	03:30					With BJ crew talked about the hazards of spotting and rigging up equipment.
5	Rig Up Equipment	6/28/2017	03:40					Spot in equipment and rig up water, iron, bulk.
6	Wait On Rig	6/28/2017	04:00					Wait on rig to finish running pipe and Circ. Well.
7	Finish Waiting On Rig	6/28/2017	10:25					Rig landed out casing at 07:30 am and Circulated at 8 BPM 800 BBLS 700 psi 0 units of gas.
8	Pre-Job Safety meeting	6/28/2017	10:30					With BJ Crew and Rig Crew talked about the hazards of pumping the cement job.
9	Rig Up Floor	6/28/2017	10:35					Rig up Cement head and high-pressure hoses.
10	Start Job	6/28/2017	10:43					BJ Crew took control of the well.
11	Pump Water	6/28/2017	10:43	8.33	2	2	350	Pump 2 bbls of H2O ahead to fill lines and break Circ.
12	Shutdown	6/28/2017	10:44					Shutdown to line out Manifold for pressure test.
13	Pressure Test	6/28/2017	10:45					Pressure test BJ iron to 5000 Psi
14	Pump Spacer	6/28/2017	10:50	11	4	40	375	Mixed and pump 40 bbls of CD Spacer at 11.00 PPG with Surfactants ASF-20
15	Pump Lead Cement	6/28/2017	11:07	12.7	5	325	200	Mix and pump 927 sks of ALTcem P100-X2 lead at 12.70 PPG 1.97 Yield 11.07 Gal/sks
16	Pump Tail Cement	6/28/2017	12:16	13.5	5	136	350	Mix and pump 401 sks of ALTcem P70-X1 Tail at 13.50 PPG 1.90 Yield 9.55 gal/sks
17	Shutdown	6/28/2017	12:51					Shutdown to line out manifold to wash pumps and lines into the cellar
18	Wash Pumps And Lines	6/28/2017	12:52	8.33		10		Washed pumps and lines in the Cellar (with 50 lbs of Sugar.)



19	Start Displacement	6/28/2017	12:57	8.33	5	50	800	Start displacement total displacement was 131 bbls
20	Increase rate	6/28/2017	13:05	8.33	6	10	1098	Increase rate per customer request pumped fresh water with ASF-50
21	Increase rate	6/28/2017	13:07	8.33	8	60	2031	Increase rate per customer request pumped fresh water with ASF-50
22	Slow Rate	6/28/2017	13:15	8.33	3	11	2031	Slow rate to Bump Plug
23	Bump Plug	6/28/2017	13:17	8.33			1800	Bump plug pressure up to 3000 for 10 min casing test
24	Check Floats	6/28/2017	13:27				3000	Check floats, Floats held and returned 1.5 bbls back to pump truck
25	Pre-Rig Down Meeting	6/28/2017	13:30					With BJ crew and rig crew talked about the hazards of rigging down equipment
26	Rig Down Equipment	6/28/2017	13:35					Rig down water, Iron, Bulk
27	Crew Leave Location	6/28/2017	15:00					BJ crew pulled off location

3 Water Analysis

Metrics	Value	Recommended
Water Source		
Temperature	50-80°F °F	50-80 °F
pH Level	5.5-8.5	5.5-8.5
Chlorides	0-3000 mg/L mg/L	0-3000 mg/L
Total Alkalinity	0-1000	0-1000
Total Hardness	0-500 mg/L mg/L	0-500 mg/L
Carbonates	0-100 mg/L mg/L	0-100 mg/L
Sulfates	0-1500 mg/L mg/L	0-1500 mg/L
Potassium	0-3000 mg/L mg/L	0-3000 mg/L
Iron	0-300 mg/L mg/L	0-300 mg/L

4 Pump Diagrams

