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# Laramie Energy End of Well Cement Report

Bruton 19-03E 05-077-10422  
S:19 T:9S R:93W Mesa CO

CallSheet #: 1231 (Surface), 1240 (Production)  
Proposal #: 13850



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

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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](mailto:Zen.Keith@bjservices.com)

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## 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	1561	75
Casing	Inner	8.625	8.097	24	STC	0	1551	0
Casing	Outer	16	15.25	65	n/a	0	60	0

#### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	E496	Johnson, Brandon		120
Bulk Trailer	512			
Light Duty Pickups	2	Helton, Shane		120
Cement Chemical	401	Gonzalez, Omar		120
Cement Pump	PCP11250	McClure, Christian	Ken Estep	120

#### 1.3 Timing

Event	Date/Time
Call Out	8/24/2017 09:00
Depart Facility	8/24/2017 11:00
On Location	8/24/2017 12:45
Rig Up Iron	8/24/2017 13:00
Job Started	8/24/2017 15:25
Job Completed	8/24/2017 16:39
Rig Down Iron	8/24/2017 16:55
Depart Location	8/24/2017 17:45

#### 1.4 General Job Information

Metrics	Value
Well Fluid Density	8.43 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	450 bbls
Rig Circulation Time	0.45 hours
Calculated Displacement	95.8 bbls
Actual Displacement	95.5 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	25 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	8.43 lb/gal
Well Fluid Density Out of Well	8.43 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 <sup>3</sup> /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	S100-12	Lead	12.00	2.53	14.85		190.00	85.49	0
1	3	S100-12	Tail	12.50	2.22	12.58		107.00	42.37	1060
1	4	Water	DisplacementFinal	8.33			42.00		95.80	0
1	5	S100-12	Topout	12.50	2.22	12.58		132.00	52.27	0

### 1.9 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Lead	S100-12	AC3-10	Cement	100.00	%
1	2	Lead	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	2	Lead	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	2	Lead	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	2	Lead	S100-12	AXE-30	Extender	2.00	lb/sk
1	3	Tail	S100-12	AC3-10	Cement	100.00	%
1	3	Tail	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	3	Tail	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	3	Tail	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	3	Tail	S100-12	AXE-30	Extender	2.00	lb/sk
1	5	Topout	S100-12	AC3-10	Cement	100.00	%
1	5	Topout	S100-12	ACL-10	Accelerator	2.00	lb/sk
1	5	Topout	S100-12	ACL-20	Accelerator	5.00	%BWOB
1	5	Topout	S100-12	ADF-11	Defoamer	0.30	%BWOB
1	5	Topout	S100-12	ALC-10	LostCirculation	0.13	lb/sk
1	5	Topout	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	Customer Requested	8/24/2017	13:00					Customer Requested on Location
2	Yard Call	8/24/2017	09:00					Yard Call
3	Journey Management	8/24/2017	09:30					Journey Management
4	Depart Facility	8/24/2017	11:00					Depart Facility
5	Arrived on Location	8/24/2017	12:45					Arrived on Location
6	Rig up Equipment	8/24/2017	13:00					Rig up Equipment
7	WOR	8/24/2017	13:20					WOR
8	Casing on Bottom	8/24/2017	14:30					Casing on Bottom
9	Steacs Briefing	8/24/2017	15:15					Steacs Briefing
10	Rig up Cement Head	8/24/2017	15:22					Rig up Cement Head
11	Load Line	8/24/2017	15:25	8.34	2	2	100	Load Line
12	Pressure Test	8/24/2017	15:27	8.34			3000	Pressure Test
13	Fresh Water Spacer	8/24/2017	15:29	8.34	4.8	40	130	Fresh Water Spacer
14	Start Lead Cement	8/24/2017	15:35	12	4.5		135	Start Lead Cement
15	Lead Cement	8/24/2017	15:46	12	4.5	50	179	50 Bbls Lead Cement
16	Start Tail Cement	8/24/2017	15:55	12.5	4.6		233	Start Tail Cement
17	Tail Cement	8/24/2017	16:05	12.5			45	45 Bbls Tail Cement
18	Drop Plug	8/24/2017	16:05					Drop Plug
19	Start Displacement	8/24/2017	16:06	8.34	4.6		120	Start Displacement
20	Displacement	8/24/2017	16:17	8.34	4.6	50	291	50 Bbls Displacement
21	Slow Rate	8/24/2017	16:25	8.34	2.6	85	342	85 Bbls Slow Rate
22	Land Plug	8/24/2017	16:29	8.34		95.5	2009	Land Plug & Start Casing Test
23	Check Float	8/24/2017	16:39					Check Float ( Good )



### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	78.5 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	200 mg/L	0-500 mg/L
Carbonates	N/A mg/L	0-100 mg/L
Sulfates	120 mg/L	0-1500 mg/L
Potassium	200 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L



## 4 Pump Diagrams

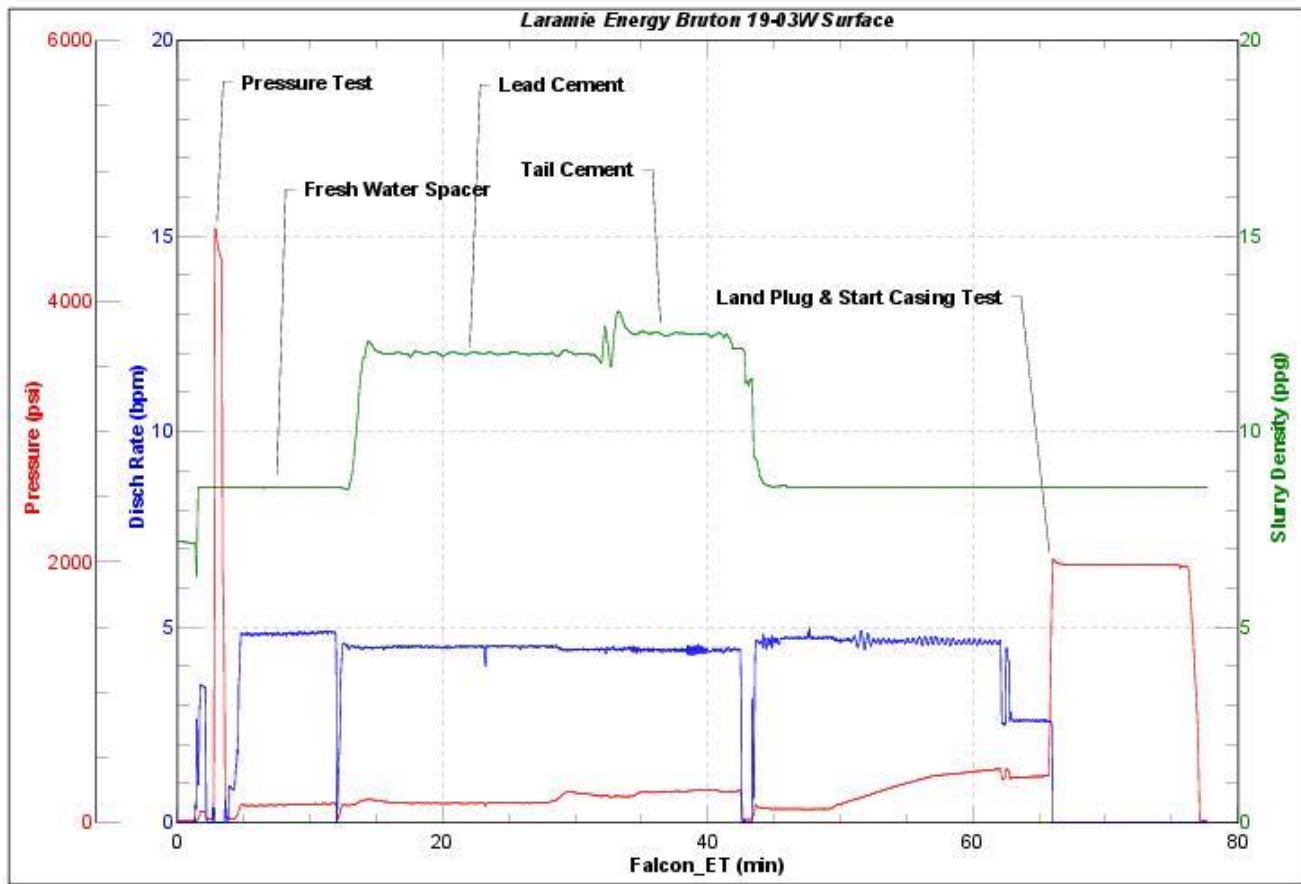


JobMaster Program Version 4.02C1

Job Number: 1231

Customer: Laramie Energy

Well Name: Bruton 19-03W



BJ Services

Job Start: Thursday, August 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	1560	0
Casing	Inner	4.5	4	11.6	LTC	0	8456	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1560	8461	10

### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	E529	Estep, Ken		120
Silo	6 (Silo)			
Silo	7 (silo)			
Cement Pump	C156	McClure, Christian	Johnson, Brandon	120
Cement Chemical	403	Gonzalez, Omar		120
Light Duty Pickups	4	Helton, Shane	Linn III, Paul	120

### 1.3 Timing

Event	Date/Time
Call Out	8/27/2017 05:00
Depart Facility	8/27/2017 07:10
On Location	8/27/2017 09:00
Rig Up Iron	8/27/2017 09:20
Job Started	8/27/2017 11:34
Job Completed	8/27/2017 14:05
Rig Down Iron	8/27/2017 14:20
Depart Location	8/27/2017 15:20

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	9.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	800 bbls
Rig Circulation Time	1.25 hours
Calculated Displacement	130 bbls
Actual Displacement	131 bbls
Total Spacer to Surface	10 bbls
Total CMT to Surface	0 bbls

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	25
Yield Point	16
10 sec. SGS	5
10 min. SGS	18
30 min. SGS	42
Filtrate	0.57
Flow Line Temp.	83

### 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	9.6 lb/gal
Well Fluid Density Out of Well	9.6 lb/gal

### 1.7 Job Details (cont.)

Metrics	Value
BHCT	176 °F
BHST	237 °F

**1.8 Circulation**

Lost Circulation Experienced
No

**1.9 Job Execution Information**

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Top (ft)
1	1	CD Spacer	Spacer	11.00			33.15		60.00	0
1	2	P100-X2	Lead	12.70	1.97	11.07		914.00	321.22	1024
1	3	P70-X1	Tail	13.50	1.90	9.55		401.00	135.66	6311
1	4	Water w/ ASF- 50	DisplacementFinal	8.33			41.92		131.00	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	P100-X2	AC3-10	Cement	100.00	%
1	2	Lead	P100-X2	ABX-30	BondEnhancer	0.30	%BWOB
1	2	Lead	P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	P100-X2	ADS-10	Dispersant	0.10	%BWOB
1	2	Lead	P100-X2	AR-10	Retarder	0.50	%BWOB
1	2	Lead	P100-X2	AVS-10	Viscosifier	0.10	%BWOB
1	3	Tail	P70-X1	ACG-10	Cement	70.00	%
1	3	Tail	P70-X1	AFA-10	Extender	20.00	%
1	3	Tail	P70-X1	AXE-20	Extender	10.00	%
1	3	Tail	P70-X1	ABX-30	BondEnhancer	0.20	%BWOB
1	3	Tail	P70-X1	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	P70-X1	AFL-10	FluidLoss	0.40	%BWOB
1	3	Tail	P70-X1	AR-10	Retarder	0.30	%BWOB
1	3	Tail	P70-X1	ASR-20	StrengthRetrogression	25.00	%BWOB
1	3	Tail	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	Customer Requested	8/27/2017	11:00					Customer Requested on Location
2	Yard Call	8/27/2017	06:00					Yard Call
3	Journey Management	8/27/2017	07:10					Journey Management
4	Depart Facility	8/27/2017	07:20					Depart Facility
5	Arrived on Location	8/27/2017	09:00					Arrived on Location
6	Steacs Briefing	8/27/2017	09:10					Steacs Briefing
7	Rig up Equipment	8/27/2017	09:20					Rig up Equipment
8	WOR	8/27/2017	10:00					WOR
9	Casing on Bottom	8/27/2017	10:30					Casing on Bottom
10	Steacs Briefing	8/27/2017	11:25					Steacs Briefing
11	Rig up Cement Head	8/27/2017	11:30					Rig up Cement Head
12	Load Line	8/27/2017	11:34	8.34	2	4	133	Load Line
13	Pressure Test	8/27/2017	11:37	8.34			5000	Pressure Test
14	Weighted Spacer	8/27/2017	11:43	11	5	63	250	Weighted Spacer
15	Start Lead Cement	8/27/2017	11:58	12.7	5		225	Start Lead Cement
16	Lead Cement	8/27/2017	12:09	12.7	5	50	250	50 Bbls Lead Cement
17	Lead Cement	8/27/2017	12:19	12.7	5	100	250	100 Bbls Lead Cement
18	Lead Cement	8/27/2017	12:29	12.7	5	150	147	150 Bbls Lead Cement
19	Lead Cement	8/27/2017	12:39	12.7	5	200	173	200 Bbls Lead Cement
20	Lead Cement	8/27/2017	12:49	12.7	5	250	161	250 Bbls Lead Cement
21	Lead Cement	8/27/2017	12:59	12.7	5	300	161	300 Bbls Lead Cement
22	Slow Rate	8/27/2017	13:02	12.7	4	318	95	318 Bbls Lead Cement
23	Start Tail Cement	8/27/2017	13:02	13.5	4		137	Start Tail Cement
24	Tail Cement	8/27/2017	13:16	13.5	5	50	250	50 Bbls Tail Cement
25	Tail Cement	8/27/2017	13:27	13.5	4	100	150	100 Bbls Tail Cement
26	Slow Rate	8/27/2017	13:36	13.5	2.5	147	150	147 Bbls Tail Cement
27	Wash Pumps and Line	8/27/2017	13:39					Wash Pumps and Line
28	Drop Plug	8/27/2017	13:44					Drop Plug
29	Displacement	8/27/2017	13:44	8.34	5		0	Displacement
30	Displacement	8/27/2017	13:49	8.34	10	50	1513	50 Bbls Displacement
31	Displacement	8/27/2017	13:56	8.34	9.5	100	2106	100 Bbls Displacement
32	Slow Rate	8/27/2017	13:58	8.34	6.5	110	1875	110 Bbls Displacement
33	Slow Rate	8/27/2017	14:00	8.34	2.5	120	1608	120 Bbls Displacement
34	Land Plug	8/27/2017	14:05				3049	Land Plug & Start Casing Test
35	Check Float	8/27/2017	14:15					Check Float (Good)

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	71 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	240	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	140 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	0 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

### 4 Pump Diagrams

