



Laramie Energy End of Well Cement Report

**Bruton 19-01W 05-077-10429
S:19 T:9S R:93W Mesa CO**

CallSheet #: 1198 (Surface), 1207 (Production)
Proposal #: 13787



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 28730 US-6, Rifle, CO 81650
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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	1560	75
Casing	Inner	8.625	8.097	24	STC	0	1549	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	Gonzalez, Omar		120
Bulk Trailer	512	Johnson, Brandon		120
Cement Pump	PCP11250			
Cement Chemical	403	McClure, Christian		120
Light Duty Pickups	2	Helton, Shane	McNeal, Lawrence	120

1.3 Timing

Event	Date/Time
Call Out	8/20/2017 17:30
Depart Facility	8/20/2017 17:40
On Location	8/20/2017 19:30
Rig Up Iron	8/20/2017 19:50
Job Started	8/20/2017 23:53
Job Completed	8/21/2017 01:03
Rig Down Iron	8/21/2017 01:15
Depart Location	8/21/2017 02:15

1.4 General Job Information

Metrics	Value
Well Fluid Density	8.43 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	1 hours
Calculated Displacement	95.6 bbls
Actual Displacement	95 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	24 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 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	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		97.00	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



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	8/20/2017	22:00					Customer Requested Crew @ 22:00
2	Yard Call	8/20/2017	17:20					Yard Call
3	Journey Management	8/20/2017	17:30					Journey Management
4	Depart Facility	8/20/2017	17:40					Depart Facility
5	Arrived on Location	8/20/2017	19:30					Arrived on Location
6	STEACS Briefing	8/20/2017	19:40					STEACS Briefing
7	Rig up Equipment	8/20/2017	19:50					Rig up Equipment
8	WOR	8/20/2017	20:00					WOR
9	Casing on Bottom	8/20/2017	22:45					Casing on Bottom
10	STEACS Briefing	8/20/2017	23:30					STEACS Briefing
11	Rig up Cement Head	8/20/2017	23:43					Rig up Cement Head
12	Load Line	8/20/2017	23:47	8.34	3	3	125	Load Line
13	Pressure Test	8/20/2017	23:50	8.34			3000	Pressure Test
14	Fresh Water Spacer	8/21/2017	23:53	8.34	5	70	220	Fresh Water Spacer
15	Start Lead Cement	8/21/2017	00:15	12	5		251	Start Lead Cement
16	Lead Cement	8/21/2017	00:26	12	5	50	236	50 Bbls Lead Cement
17	Slow Rate	8/21/2017	00:33	12	3.7	85	115	85 Bbls Lead Cement Slow Rate
18	Start Tail Cement	8/21/2017	00:33	12.5	5		221	Start Tail Cement
19	Tail Cement	8/21/2017	00:45	12.5		48.6		Top of Tail 503'
20	Drop Plug	8/21/2017	00:46					Drop Plug
21	Start Displacement	8/21/2017	00:46	8.34	5		100	Start Displacement
22	Slow Rate	8/21/2017	01:03	8.34	2.8	85	347	Slow Rate
23	Land Plug	8/21/2017	01:05			95	2024	Land Plug & Start Casing Test
24	Check Float	8/21/2017	01:15					Check Float Good



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	65.1 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	200 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	125 mg/L	0-500 mg/L
Carbonates	12 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	250 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L



4 Pump Diagrams

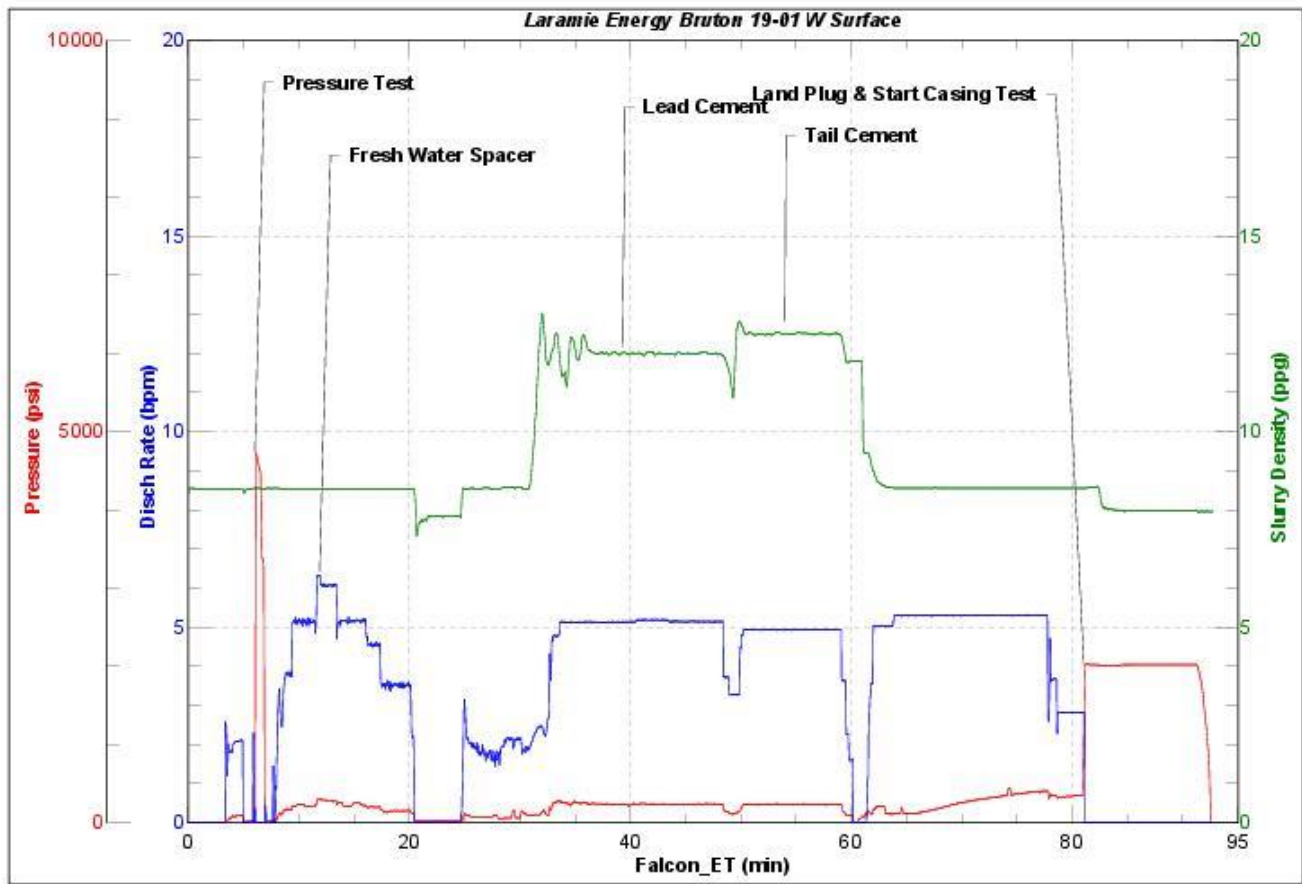


JobMaster Program Version 4.02C1

Job Number: 1198

Customer: Laramie Energy

Well Name: Bruton 19-01 W



BJ Services

Job Start: Sunday, August 20, 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	1524	0
Casing	Inner	4.5	4	11.6	LTC	0	8153	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1524	8153	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Silo	6 (Silo)			
Silo	7 (silo)			
Bulk Trailer	E491	Johnson, Brandon		120
Light Duty Pickups	2	Helton, Shane	Ken Estep	120
Cement Chemical	401	Gonzalez, Omar		120
Cement Pump	PCP11250	McClure, Christian		120

1.3 Timing

Event	Date/Time
Call Out	8/23/2017 09:00
Depart Facility	8/23/2017 09:15
On Location	8/23/2017 11:00
Rig Up Iron	8/23/2017 11:25
Job Started	8/23/2017 13:45
Job Completed	8/23/2017 16:33
Rig Down Iron	8/23/2017 16:40
Depart Location	8/23/2017 17:30

1.4 General Job Information

Metrics	Value
Well Fluid Density	10 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	900 bbls
Rig Circulation Time	1.4 hours
Calculated Displacement	125.43 bbls
Actual Displacement	121.3 bbls
Total Spacer to Surface	30 bbls
Total CMT to Surface	0 bbls

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	23
Yield Point	15
10 sec. SGS	5
10 min. SGS	14
30 min. SGS	36
Filtrate	0.78
Flow Line Temp.	97

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	10 lb/gal
Well Fluid Density Out of Well	10 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 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		60.00	0
1	2	P100-X2	Lead	12.70	1.97	11.07		859.00	301.89	1024
1	3	P70-X1	Tail	13.50	1.90	9.55		401.00	135.66	6003
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		126.00	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	8/23/2017	13:00					Customer Requested on Location
2	Yard Call	8/23/2017	09:00					Yard Call
3	Journey Management	8/23/2017	09:15					Journey Management
4	Depart Facility	8/23/2017	09:25					Depart Facility
5	Arrived on Location	8/23/2017	11:00					Arrived on Location
6	STEACS Briefing	8/23/2017	11:15					STEACS Briefing
7	Rig Up Equipment	8/23/2017	11:25					Rig Up Equipment
8	Casing on Bottom	8/23/2017	12:00					Casing on Bottom
9	STEACS Briefing	8/23/2017	13:30					STEACS Briefing
10	Rig Up Cement Head	8/23/2017	13:40					Rig Up Cement Head
11	Load Line	8/23/2017	13:45	8.34	1.5	3	200	Load Line
12	Pressure Test Line	8/23/2017	13:50	8.34			5000	Pressure Test Line
13	Weighted Spacer	8/23/2017	13:55	11	5	56	516	Weighted Spacer
14	Start Lead Cement	8/23/2017	14:15	12.7	5.3		500	Start Lead Cement
15	Lead Cement	8/23/2017	14:52	12.7	4.7	105	207	105 Bbls Lead Cement
16	Lead Cement	8/23/2017	15:14	12.7	5.3	200	242	200 Bbls Lead Cement
17	Lead Cement	8/23/2017	15:29	12.7	3.2	282	198	282 Bbls Lead Cement
18	Tail Cement	8/23/2017	15:30	13.5				Start Tail Cement
19	Tail Cement	8/23/2017	15:40	13.5	3.2	50	151	50 Bbls Tail Cement
20	Tail Cement	8/23/2017	15:51	13.5	5.3	100	299	100 Bbls Tail Cement
21	Tail Cement	8/23/2017	15:59	13.5		134		134 Bbls Tail Cement
22	Wash Pumps and Line	8/23/2017	16:00					Wash Pumps and Line
23	Drop Plug	8/23/2017	16:05					Drop Plug
24	Start Displacement	8/23/2017	16:05	8.34				Start Displacement
25	Displacement	8/23/2017	16:12	8.34	9.5	50	1543	50 Bbls Displacement
26	Displacement	8/23/2017	16:18	8.34	9.6	100	1976	100 Bbls Displacement
27	Slow Rate	8/23/2017	16:20	8.34	3.5	115	1875	115 Bbls Slow Rate
28	Land Plug	8/23/2017	16:22			121.3	3033	Land Plug & Start Casing Test
29	Check Float	8/23/2017	16:32					Check Float (Good)



3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	73.4 °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	125 mg/L	0-500 mg/L
Carbonates	12 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	250 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L



4 Pump Diagrams

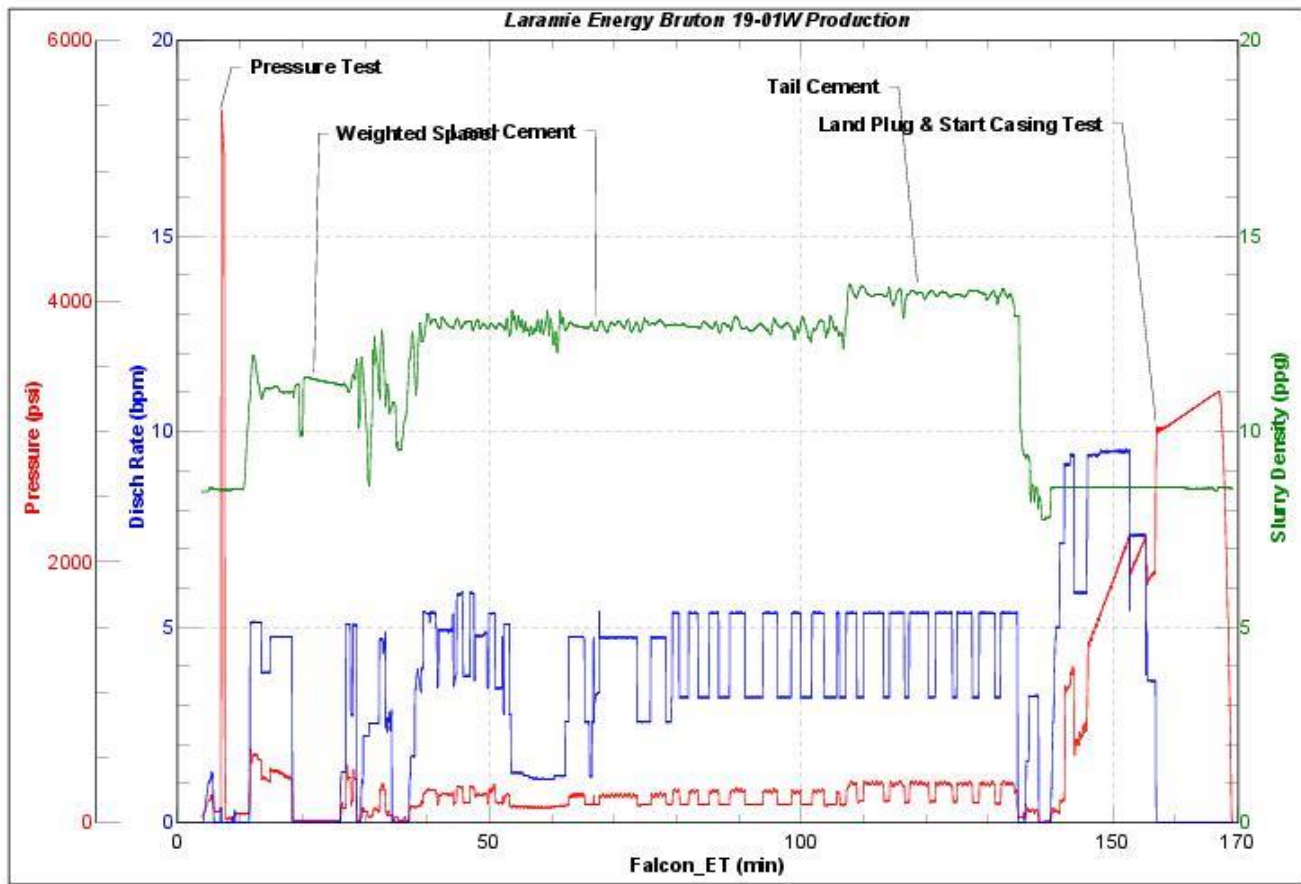


JobMaster Program Version 4.02C1

Job Number: 1207

Customer: Laramie Energy

Well Name: Bruton 19-01W



BJ Services

Job Start: Wednesday, August 23, 2017