



Laramie Energy

End of Well Cement Report

Bruton 19-20E 05-077-10378
S:30 T:9S R:93W Mesa CO

CallSheet #: 910 (Surface), 922 (Production)
Proposal #: 13391



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

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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	0	1553	75
Casing	Inner	8.625	8.097	24	STC	0	1524	0

1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Bulk Trailer	503		120
Cement Pump	PPC11250	Dewitt, Eric	120
Bulk Trailer	512		120
Light Duty Pickups	2	Bell, Wesley	120
Cement Chemical	403		120

1.3 Timing

Event	Date/Time
Call Out	6/15/2017 12:00
Depart Facility	6/15/2017 14:00
On Location	6/15/2017 15:30
Rig Up Iron	6/15/2017 15:40
Job Started	6/15/2017 18:20
Job Completed	6/15/2017 19:40
Rig Down Iron	6/15/2017 20:30
Depart Location	6/15/2017 20:45

1.4 General Job Information

Metrics	Value
Well Fluid Density	10 lb/gal
Well Fluid Type	WBM
Rig Circulation Time	1 hours
Calculated Displacement	95.5 bbls
Actual Displacement	95.5 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	14 bbls
Well Topped Out	No

1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	24
Yield Point	22
10 sec. SGS	6
10 min. SGS	22
30 min. SGS	49
Flow Line Temp.	95

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	82 °F
BHST	106 °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	Water	Flush	8.33			42.00		40.00	0
1	2	ALTCem S100-12	Lead	12.00	2.53	14.85		191.00	85.94	0
1	3	ALTCem S100-12	Tail	12.50	2.22	12.58		124.00	49.10	1024
1	4	Water	DisplacementFinal	8.33			42.00		95.00	0

1.10 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	Depart Yard	6/15/2017	14:00					Depart Yard for Laramie Bruton 19-20E.
2	Arrive Location	6/15/2017	15:30					Receive permission to spot vehicles. Spot Falcon Pump, Bulk Truck, Curtain Side.
3	Pre-job Safety Meeting	6/15/2017	18:05					Pre-job Safety Meeting with rig crew, 7 BJ Souls.
4	Rig Head and Kelly line	6/15/2017	18:15					Rig up cement head to casing and kelly to cement head manifold.
5	Load Lines	6/15/2017	18:20	8.22	1	2		Load lines, test to 3,000psi
6	Begin water ahead	6/15/2017	18:25	8.33	6.7	40	95	Pump 40 bbls water ahead.
7	Batch up lead	6/15/2017	18:35	12	6.7			Batch up Lead Cement
8	Lead Down Hole	6/15/2017	18:51	12	6.7	50	345	Lead Down Hole 50bbls
9	Lead Down Hole	6/15/2017	18:54	12	6.4	36	295	Lead Down Hole 86bbls
10	Batch up Tail	6/15/2017	18:55	12.5	5.3	5	239	Tail Down Hole 5bbls
11	Tail Down Hole	6/15/2017	19:08	12.5	5.1	49	239	Tail Down Hole 54bbls
12	Drop Plug	6/15/2017	19:10	8.33	6	7	90	Drop Top Plug, Disp 7bbls, 90psi
13	Displacement	6/15/2017	19:13	8.33	6.1	22	442	Displacement 29bbls, 442psi
14	Displacement	6/15/2017	19:15	8.33	6.3	28	300	Displacement 50bbls, 300psi
15	Displacement	6/15/2017	19:20	8.33	2.3	30	906	Displacement 80bbls, 906psi
16	Bump Plug	6/15/2017	19:25	8.33	2.3	15.5	2200	Displacement 95.5bbls, 2,200 psi
17	Casing Test	6/15/2017	19:35					Casing Test 10minutes.
18	Job Complete	6/15/2017	19:40					Job Complete
19	Depart Location	6/15/2017	20:45					Depart Location



3 Water Analysis

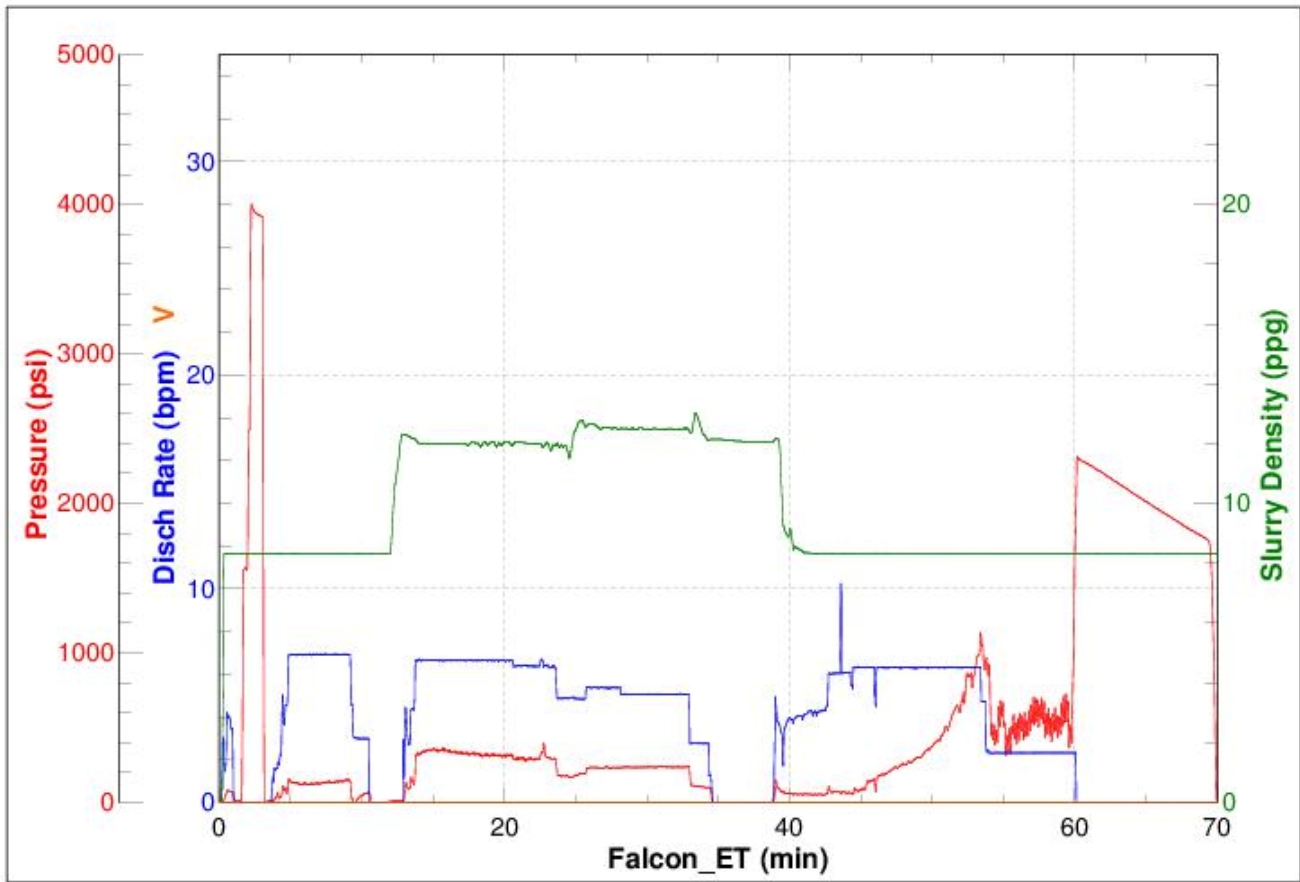
Metrics	Value	Recommended
Water Source	None	
Temperature	65 °F	50-80 °F
pH Level	6.5	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	200 mg/L	0-500 mg/L
Carbonates	100 mg/L	0-100 mg/L
Sulfates	250 mg/L	0-1500 mg/L
Potassium	200 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L



4 Pump Diagrams



Job Number: 910
Customer: Laramie
Well Name: Bruton 19-20E



Job Start: Thursday, June 15, 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	7747	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1524	7757	10

1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	E-527	Busheri, Hamza		120
Silo	6 (Silo)			120
Silo	7 (silo)			120
Cement Chemical	403	Bell, Wesley	McVay Jr., Jerry	120
Cement Pump	PPC11250	Dewit, Eric		120
Plug Container	150507			
Swage	150527			

1.3 Timing

Event	Date/Time
Call Out	6/18/2017 05:30
Depart Facility	6/18/2017 07:00
On Location	6/18/2017 08:40
Rig Up Iron	6/18/2017 08:45
Job Started	6/18/2017 10:27
Job Completed	6/18/2017 12:39
Rig Down Iron	6/18/2017 12:45
Depart Location	6/18/2017 14:00

1.5 General Job Information

Metrics	Value
Well Fluid Density	9.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Time	1 hours
Calculated Displacement	119.1 bbls
Actual Displacement	119 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls

1.6 Well Fluid Details

Metrics	Value
Plastic Viscosity	20
Yield Point	13
10 sec. SGS	4
10 min. SGS	20
30 min. SGS	45
Flow Line Temp.	57

1.7 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

1.8 Job Details (cont.)

Metrics	Value
BHCT	177 °F
BHST	238 °F

1.9 Circulation

Lost Circulation Experienced
No

**1.10 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	115
1	2	ALTCem P100-X2	Lead	12.70	1.97	11.07		788.00	276.94	1024
1	3	ALTCem P70-X1	Tail	13.50	1.90	9.55		401.00	135.66	5592
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		119.00	0

1.11 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	2	Lead	ALTCem P100-X2	ADF-20	Defoamer	0.00	
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	Arrive Location	6/18/2017	08:40					Arrive Location: Bruton 19-20E
2	Spot Equipment	6/18/2017	08:48					Spot Equipment
3	Rig up Safety Meeting/Rig up	6/18/2017	08:51					Rig Up Safety Meeting/Rig up
4	Job Safety Meeting with Rig Crew	6/18/2017	10:00					Job Safety meeting with Rig Crew
5	Rig up Cement Head to casing	6/18/2017	10:10					Rig up cement head to casing
6	Load/Test Line	6/18/2017	10:27	8.33	1.5	3	203	Load/Test Line
7	Pressure Test	6/18/2017	10:29				4000	Pressure test line, 4000psi
8	Batch CD Spacer	6/18/2017	10:31	11				Batch CD Spacer
9	Pump Spacer	6/18/2017	10:33	11	3.3	3	255	Spacer down hole, 3bbls
10	Pump Spacer	6/18/2017	10:35	11	5.1	5	379	Spacer down hole, 8bbls
11	Pump Spacer	6/18/2017	10:40	11	3.1	22	59	
12	Finish Spacer/Batch up Lead	6/18/2017	10:42	11	3.1	10	59	Spacer down hole complete, 40bbls/Batch up lead
13	Pump Lead	6/18/2017	10:47	12.7	5.4	20	325	Lead down hole, 20bbls
14	Pump Lead	6/18/2017	10:53	12.7	5.2	30	327	Lead down hole, 50bbls
15	Pump Lead	6/18/2017	11:00	12.7	7	50	525	Lead down hole, 100bbls
16	Pump Lead	6/18/2017	11:07	12.7	7	50	510	Lead down hole, 150bbls
17	Pump Lead	6/18/2017	11:14	12.7	7	50	488	Lead down hole, 200bbls
18	Pump Lead	6/18/2017	11:22	12.7	5.2	50	265	Lead down hole, 250bbls
19	Finish Lead/Batch up Tail	6/18/2017	11:27	12.7	5.1	26	276	Lead down hole complete, 276bbls/Batch up Tail
20	Pump Tail	6/18/2017	11:31	13.5	5.1	5	360	Tail down hole, 5bbls
21	Pump Tail	6/18/2017	11:34	13.5	5.1	5	368	Tail down hole, 10bbls
22	Pump Tail	6/18/2017	11:41	13.6	5.3	40	402	Tail down hole, 50bbls
23	Pump Tail	6/18/2017	11:50	13.5	5.3	50	368	Tail down hole, 100bbls
24	Finish Tail	6/18/2017	12:02	13.5	3	35	110	Tail down hole complete, 135 bbls
25	Wash up line	6/18/2017	12:05					Wash up line
26	Pump Displacement	6/18/2017	12:10	8.33	6.7	3	176	Displacement, 3bbls
27	Pump Displacement	6/18/2017	12:18	8.33	6.8	47	1313	Displacement, 50bbls
28	Pump Displacement	6/18/2017	12:25	8.33	6.8	50	2155	Displacement, 100bbls
29	Pump Displacement	6/18/2017	12:27	8.33	4	10	1972	Displacement, 110bbls
30	Displacement down hole complete	6/18/2017	12:29	8.33	4	9	3023	Displacement complete, 119bbls
31	Bleed off pressure	6/18/2017	12:39					Bleed off pressure, 1.5bbls back
32	Rig Down	6/18/2017	12:40					Rig Down
33	Rig down complete	6/18/2017	13:30					Rig down complete
34	Depart location	6/18/2017	14:00					Depart location

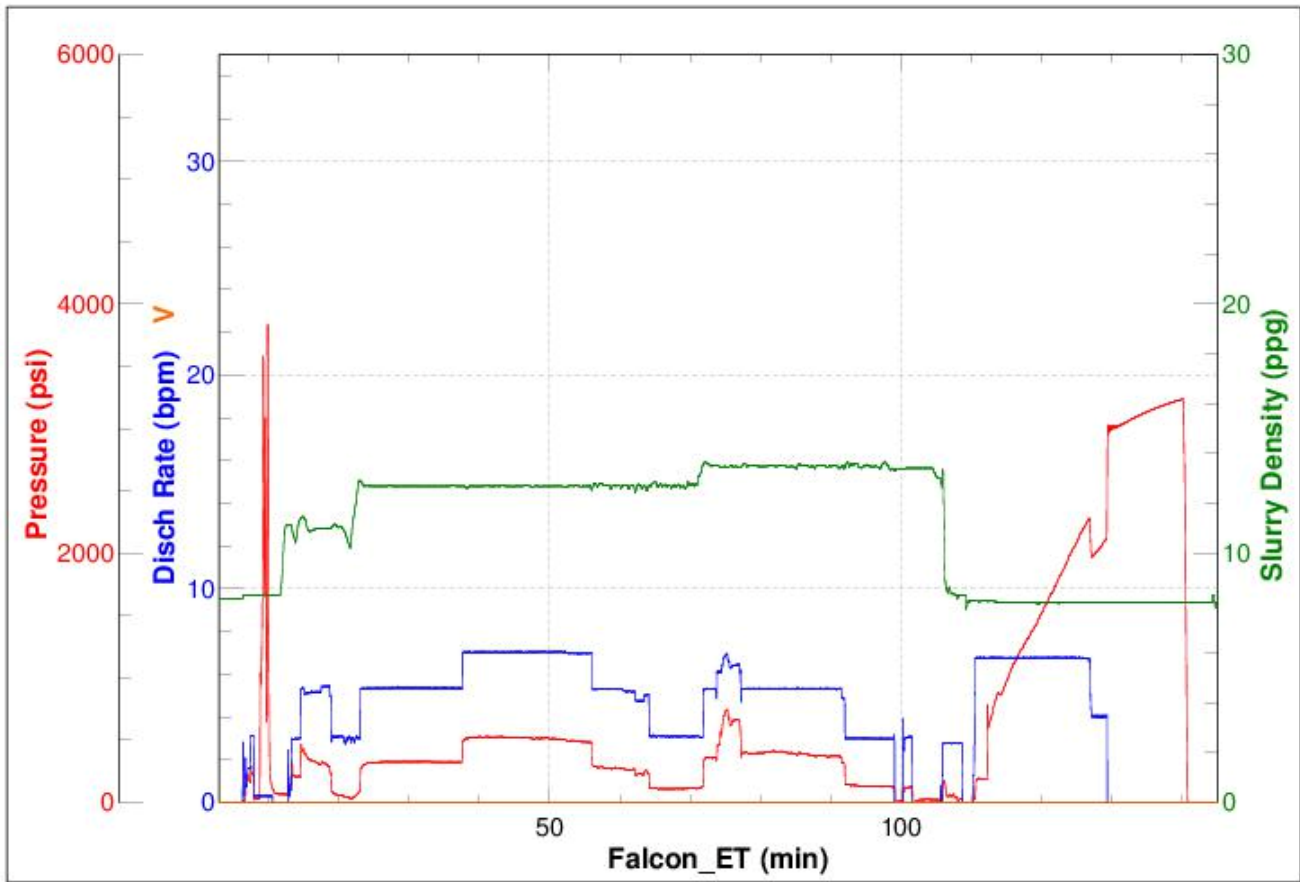


3 Water Analysis

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	0	0-1000
Total Hardness	130 mg/L	0-500 mg/L
Carbonates	100 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

BJ Job Number: 910
Customer: Laramie
Well Name: Bruton 19-20E



Job Start: Sunday, June 18, 2017