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# **Laramie Energy**

## **End of Well Cement Report**

**Bruton Fed 19-09E 05-077-10433**  
**S:19 T:9S R:93W Mesa CO**

CallSheet #: 1519 (Surface), 1529 (Production)  
Proposal #: 14128



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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,

**Gage Putnam**

Field Engineer I | (970) 632-2006 | [Gage.Putnam@Bjservices.com](mailto:Gage.Putnam@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	1560	75
Casing	Inner	8.625	8.097	24	STC	0	1560	0
Casing	Outer	16	15.25	65	n/a	0	60	0

#### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Mileage
Bulk Trailer	512		
Bulk Trailer	E491	Velazquez, Damien	160
Cement Pump	C156	McNeal, Lawrence	80
Cement Chemical	403	Cose, Rhaun	80
Light Duty Pickups	4	Gilliam, Glen	160

#### 1.3 Timing

Event	Date/Time
Call Out	10/12/2017 17:00
Depart Facility	10/12/2017 20:00
On Location	10/12/2017 22:00
Rig Up Iron	10/12/2017 22:45
Job Started	10/13/2017 02:15
Job Completed	10/13/2017 04:15
Rig Down Iron	10/13/2017 03:55
Depart Location	10/13/2017 05:00

#### 1.4 General Job Information

Metrics	Value
Well Fluid Density	9.6 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	96 bbls
Actual Displacement	96 bbls
Total Spacer to Surface	40 bbls
Total CMT to Surface	14 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	9.6 lb/gal
Well Fluid Density Out of Well	9.6 lb/gal

#### 1.6 Job Details (cont.)

Metrics	Value
BHCT	82 °F
BHST	106 °F

**1.7 Circulation**

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
Yes	0	0	86

**Circulation Details:**

LOST RETURNS 86 BBLS INTO DISPLACEMENT WHEN SLOWED RATE TO 2 BPM.

**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		168.00	75.59	0
1	3	S100-12	Tail	12.50	2.22	12.58		120.00	47.52	1050
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	BJ CREW CALLED OUT	10/12/2017	17:00					BJ CREW CALLED OUT TO LOCATION RTS-23:00
2	STEACS/ JOURNEY	10/12/2017	19:30					STEACS/ JOURNEY WITH BJ CREW
3	DEPART YARD	10/12/2017	20:00					BJ CREW DEPARTS YARD TO LOCATION
4	ARRIVE ON LOCATION	10/12/2017	22:00					BJ CREW ON LOCATION
5	RIG UP MEETING	10/12/2017	22:30					STEACS/ RIG UP EQUIPMENT
6	RIG UP EQUIPMENT	10/12/2017	22:45					BJ CREW RIGS UP EQUIPMENT
7	RIG SET UP CRT	10/12/2017	23:00					RIG CREW SETTING UP CRT TOOL, START TO RUN CASING. BJ CREW DOWN
8	PIPE ON BOTTOM	10/13/2017	01:30					PIPE ON BOTTOM, RIG CIRCULATING
9	SAFETY MEETING	10/13/2017	01:50					SAFETY MEETING WITH RIG CREW, STEACS
10	STAB HEAD	10/13/2017	02:10					BJ CREW STABS HEAD
11	BREAK CIRCULATION	10/13/2017	02:19	8.34	4	5	68	BREAK CIRCULATION 5 BBLS FRESH WATER
12	TEST LINES	10/13/2017	02:20					TEST LINES 3000 PSI
13	FRESH WATER SPACER	10/13/2017	02:22	8.34	5	35	148	35 BBLS FRESH WATER SPACER
14	BATCH UP LEAD	10/13/2017	02:30	12				BATCH UP LEAD CEMENT 12 PPG
15	LEAD DOWN HOLE	10/13/2017	02:33	12	6		295	LEAD CEMENT DOWN HOLE 12 PPG
16	50 BBLS GONE	10/13/2017	02:42	12	3	50	46	50 BBLS LEAD CEMENT GONE, 66 BBLS TOTAL
17	BATCH UP TAIL	10/13/2017	02:47	12.5				BATCH UP TAIL CEMENT AT 12.5 PPG
18	TAIL DOWN HOLE	10/13/2017	02:48	12.5	4		135	TAIL CEMENT DOWN HOLE 12.5 PPG
19	25 BBLS GONE	10/13/2017	02:53	12.5	5.5	25	261	25 BBLS TAIL CEMENT GONE, 45 BBLS TOTAL
20	SHUT DOWN	10/13/2017	03:00					SHUT DOWN DROP TOP PLUG
21	START DISPLACEMENT	10/13/2017	03:01	8.34	6		156	START DISPLACEMENT
22	50 BBLS GONE	10/13/2017	03:09	8.34	6.5	50	340	50 BBLS DISPLACEMENT GONE
23	BUMP PLUG	10/13/2017	03:18			96		96 BBLS DISPLACEMENT, FCP-355 PSI
24	BLED PRESSURE	10/13/2017	03:28					FLOATS HELD, 1 BBL BACK
25	PUMP WATER	10/13/2017	03:30	8.34		10		PUMP 10 BBLS SUGAR WATER IN CELLAR



26	RIG DOWN MEETING	10/13/2017	03:45					RIG DOWN MEETING/ STEACS WITH BJ CREW
27	RIG DOWN EQUIPMENT	10/13/2017	03:55					BJ CREW RIGS DOWN EQUIPMENT
28	JOB COMPLETE	10/13/2017	04:15					JOB COMPLETE
29	AAR MEETING	10/13/2017	04:30					AAR MEETING WITH BJ CREW
30	STEACS/JOURNEY	10/13/2017	04:45					STEACS/JOURNEY WITH BJ CREW
31	DEPART LOCATION	10/13/2017	05:00					BJ CREW DEPARTS LOCATION
32	***MISC***	10/13/2017	00:00					BUMP PLUG FCP-355 PSI, TOOK TO 2000 PSI HELD FOR 10 MINS. BLED PRESSURE, FLOATS HELD- 1BBL BACK, 14 BBLs OF CEMENT BACK TO SURFACE.



### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	47 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	443 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	475 mg/L	0-500 mg/L
Carbonates	140 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L





#### 4 Pump Diagrams

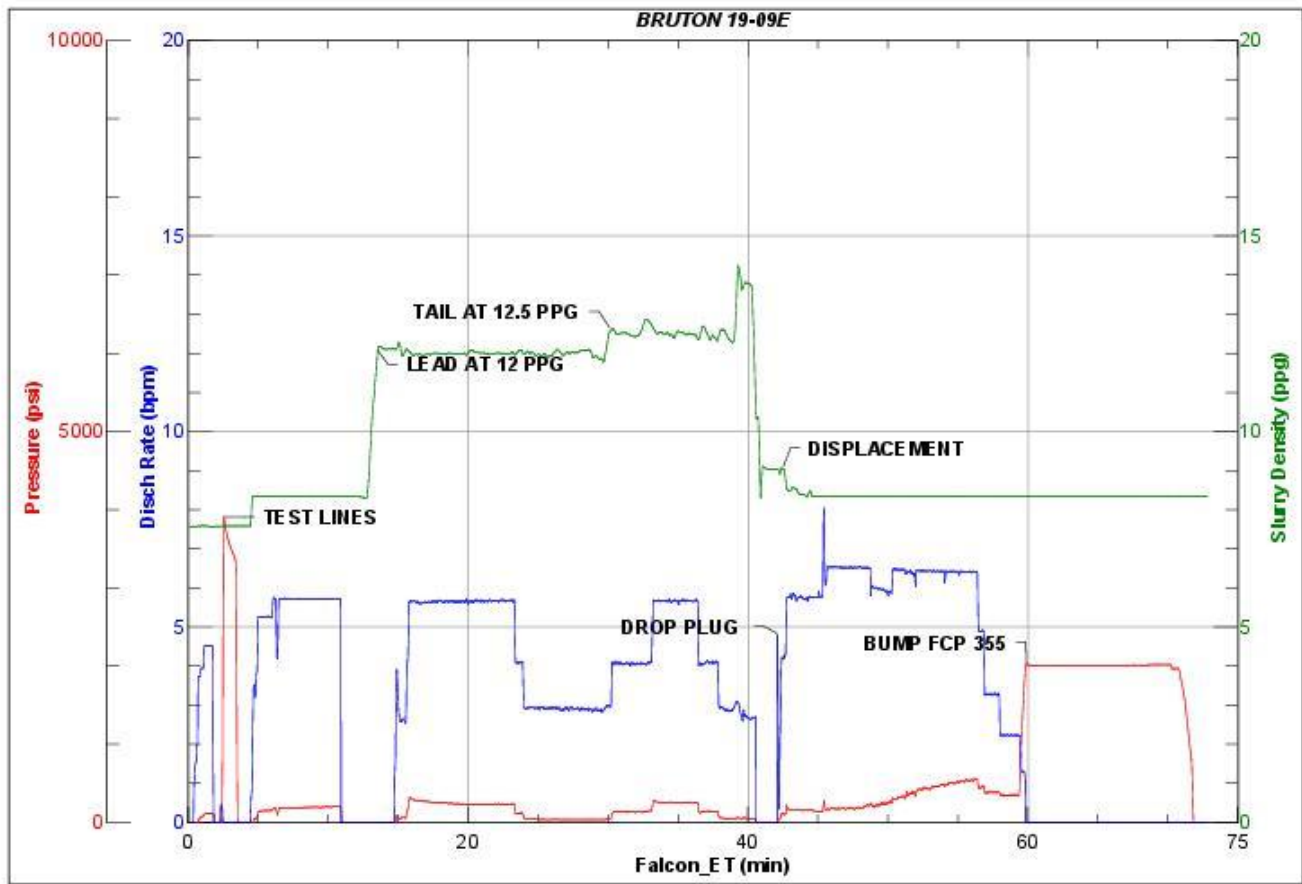


JobMaster Program Version 4.02C 1

Job Number: 1519

Customer: LARAMIE

Well Name: BRUTON 19-09E



BJ Services

Job Start: Friday, October 13, 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	8223.5	0
Open Hole	Outer	n/a	8.88	n/a	n/a	1550	8230	10

### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	E496	Salas, Eddie	Aden, Alan	120
Silo	6 (Silo)			
Silo	7 (silo)			
Cement Chemical	401	Cose, Rhaun		120
Cement Pump	C992	Turek, Chad		120
Light Duty Pickups	2	Linn III, Paul		120

### 1.3 Timing

Event	Date/Time
Call Out	10/15/2017 17:45
Depart Facility	10/15/2017 20:00
On Location	10/15/2017 22:20
Rig Up Iron	10/16/2017 05:00
Job Started	10/16/2017 07:08
Job Completed	10/16/2017 10:00
Rig Down Iron	10/16/2017 10:20
Depart Location	10/16/2017 11:30

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	9.5 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	900 bbls
Rig Circulation Time	1.5 hours
Calculated Displacement	126.11 bbls
Actual Displacement	124 bbls
Total Spacer to Surface	10 bbls
Total CMT to Surface	0 bbls

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	22
Yield Point	18
10 sec. SGS	4
10 min. SGS	19
30 min. SGS	47
Filtrate	N/A
Flow Line Temp.	117

### 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	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 (sk)	Volume (bbl)	Top (ft)
1	1	CD Spacer	Spacer	11.00			32.84		60.00	0
1	2	P100-X2	Lead	12.70	1.97	11.07		868.00	305.05	1024
1	3	P70-X1	Tail	13.50	1.90	9.55		402.00	136.00	6058
1	4	Water w/ ASF-50	DisplacementFinal	8.33			41.92		127.00	0

**1.10 Job Fluid Details**

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	1	Spacer	CD Spacer	ASR-20	StrengthRetrogression	179.97	lb/bbl
1	1	Spacer	CD Spacer	AR-10	Retarder	1.40	lb/bbl
1	1	Spacer	CD Spacer	ASF-20	Surfactant	0.80	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	CALL OUT	10/15/2017	17:45					CALL OUT. ON LOCATION TIME OF 05:00
2	STEACS	10/15/2017	19:30					PRE-CONVOY SAFETY MEETING
3	DEPART RIFLE YARD	10/15/2017	20:00					DEPART RIFLE YARD FOR H&P 290
4	ARRIVE ON LOCATION	10/15/2017	22:00					ARRIVE ON LOCATION. RIG CREW WAS RUNNING CASING. COULD NOT SPOT IN OR RIG UP
5	STEACS	10/16/2017	04:45					PRE-RIG UP SAFETY MEETING
6	RIG UP	10/16/2017	05:00					SPOT IN EQUIPMENT AND RIG UP
7	STEACS	10/16/2017	06:15					PRE-JOB SAFETY MEETING WITH RIG CREW AND BJ SERVICES CEMENT CREW
8	RIG UP	10/16/2017	06:30					LOAD PLUG CONTAINER, STAB PLUG CONTAINER, RIG UP LINES TO PLUG CONTAINER
9	FILL LINES	10/16/2017	07:08	8.33	2	5	86	FILL LINES WITH 5 BBLs. OF FRESH WATER
10	PRESSURE TEST	10/16/2017	07:11				5618	PRESSURE TESTED TO 5618 PSI
11	DROP PLUG	10/16/2017	07:18					DROPPED BOTTOM PLUG
12	SPACER	10/16/2017	07:20	11	3	5	452	11 PPG WEIGHTED SPACER 60 BBLs TOTAL WITH 48 GALS OF ASF-20 AND 20 GALS OF ADF-20. REQUIRING 46.9 BBLs OF WATER. WEIGHT VERIFIED WITH MUD SCALE
13	SPACER	10/16/2017	07:29	11	6	20	604	WEIGHTED SPACER
14	SPACER	10/16/2017	07:38	11	56	5	352	WEIGHTED SPACER
15	LEAD	10/16/2017	07:39	12.7	20	6	467	LEAD CEMENT 12.7 PPG 868 SKS 1.97 FT <sup>3</sup> /SK 11.07 GAL/SK FOR A TOTAL OF 306.09 BBLs OF LEAD CEMENT REQUIRING 228.78 BBLs OF WATER. WEIGHT VERIFIED BY MUD SCALES.
16	LEAD	10/16/2017	07:48	12.7	60	6	680	PUMPED LEAD CEMENT
17	LEAD	10/16/2017	07:58	12.7	120	6	495	PUMPED LEAD CEMENT
18	SHUT DOWN	10/16/2017	08:03					SHUT DOWN RAN OUT OF WATER IN RIG TANK
19	LEAD	10/16/2017	08:04	12.7	150	4	213	PUMPED LEAD CEMENT
20	LEAD	10/16/2017	08:08	12.7	165	6	312	PUMPED LEAD CEMENT
21	LEAD	10/16/2017	08:13	12.7	195	3	153	PUMPED LEAD CEMENT
22	LEAD	10/16/2017	08:18	12.7	210	6	372	PUMPED LEAD CEMENT
23	LEAD	10/16/2017	08:25	12.7	255	3	135	PUMPED LEAD CEMENT



24	LEAD	10/16/2017	08:41	12.7	305	3	150	FINISHED PUMPING LEAD CEMENT WITH 305 BBLS OF LEAD AWAY.
25	TAIL	10/16/2017	08:43	13.5	10	3	147	TAIL CEMENT 13.5 PPG 402 SKS 1.90 FT3/SK 9.55 GAL/SK FOR A TOTAL OF 136.03 BBLS OF LEAD CEMENT REQUIRING 91.41 BBLS OF WATER. WEIGHT VERIFIED BY MUD SCALES.
26	TAIL	10/16/2017	08:48	13.5	15	6	419	PUMPED TAIL CEMENT
27	TAIL	10/16/2017	08:53	13.5	60	6	744	PUMPED TAIL CEMENT
28	TAIL	10/16/2017	09:02	13.5	100	4	225	PUMPED TAIL CEMENT
29	TAIL	10/16/2017	09:11	13.5	142	4	152	FINISHED PUMPING TAIL CEMENT WITH 142 BBLS OF TAIL AWAY.
30	SHUT DOWN	10/16/2017						SHUT DOWN
31	WASH PUMPS AND LINES	10/16/2017	09:14					WASHED PUMPS AND LINES TO 3-SIDED TANK
32	DROP PLUG	10/16/2017	09:20					DROPPED TOP PLUG VERIFIED BY DRILLER
33	DISPLACEMENT	10/16/2017	09:26	8.33	10	8.5	305	PUMPED DISPLACEMENT WITH 11 GALS OF ASF-50 IN IT.
34	DISPLACEMENT	10/16/2017	09:29	8.33	20	9.5	1147	PUMPED DISPLACEMENT
35	DISPLACEMENT	10/16/2017	09:30	8.33	30	10	1272	PUMPED DISPLACEMENT
36	DISPLACEMENT	10/16/2017	09:32	8.33	50	10	1555	PUMPED DISPLACEMENT
37	DISPLACEMENT	10/16/2017	09:37	8.33	100	10	2240	PUMPED DISPLACEMENT
38	DISPLACEMENT	10/16/2017	09:39	8.33	117	4	1811	PUMPED DISPLACEMENT
39	DISPLACEMENT	10/16/2017	09:40	8.33	124	4	2214	PUMPED DISPLACEMENT
40	LANDED PLUG	10/16/2017	09:41				3630	LANDED THE PLUG FINAL CIRCULATING PRESSURE WAS 2214 PSI. TOOK IT TO 3630
41	CASING TEST	10/16/2017	09:51					HELD 3630 PSI ON THE CASING FOR 10 MINS
42	CHECK FLOATS	10/16/2017	09:55					CHECK FLOATS, FLOATS HELD 2 BBLS BACK.
43	STEACS	10/16/2017	10:00					PRE-RIG DOWN SAFETY MEETING WITH RIG CREW
44	RIG DOWN	10/16/2017	10:10					RIG DOWN THE FLOOR AND LINES TO THE FLOOR
45	WASH PUMPS AND LINES	10/16/2017	10:10					WASHED PUMPS AND LINES TO 3-SIDED TANK
46	STEACS	10/16/2017	10:30					PRE-RIG DOWN SAFETY MEETING
47	RIG DOWN	10/16/2017	10:35					RIG DOWN ALL EQUIPMENT.
48	BLOW DOWN SILOS	10/16/2017	10:35					BLOW DOWN SILO 6 AND 7 INTO BULK TRUCK
49	AAR	10/16/2017	11:05					AFTER ACTION REVIEW
50	DEPART FROM LOCATION	10/16/2017	11:30					DEPART FROM LOCATION.



### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	40.6	50-80 °F
pH Level	7	5.5-8.5
Chlorides	>289	0-3000 mg/L
Total Alkalinity	80	0-1000
Total Hardness	>125	0-500 mg/L
Carbonates	N/A	0-100 mg/L
Sulfates	<200	0-1500 mg/L
Potassium	250	0-3000 mg/L
Iron	0	0-300 mg/L



## 4 Pump Diagrams

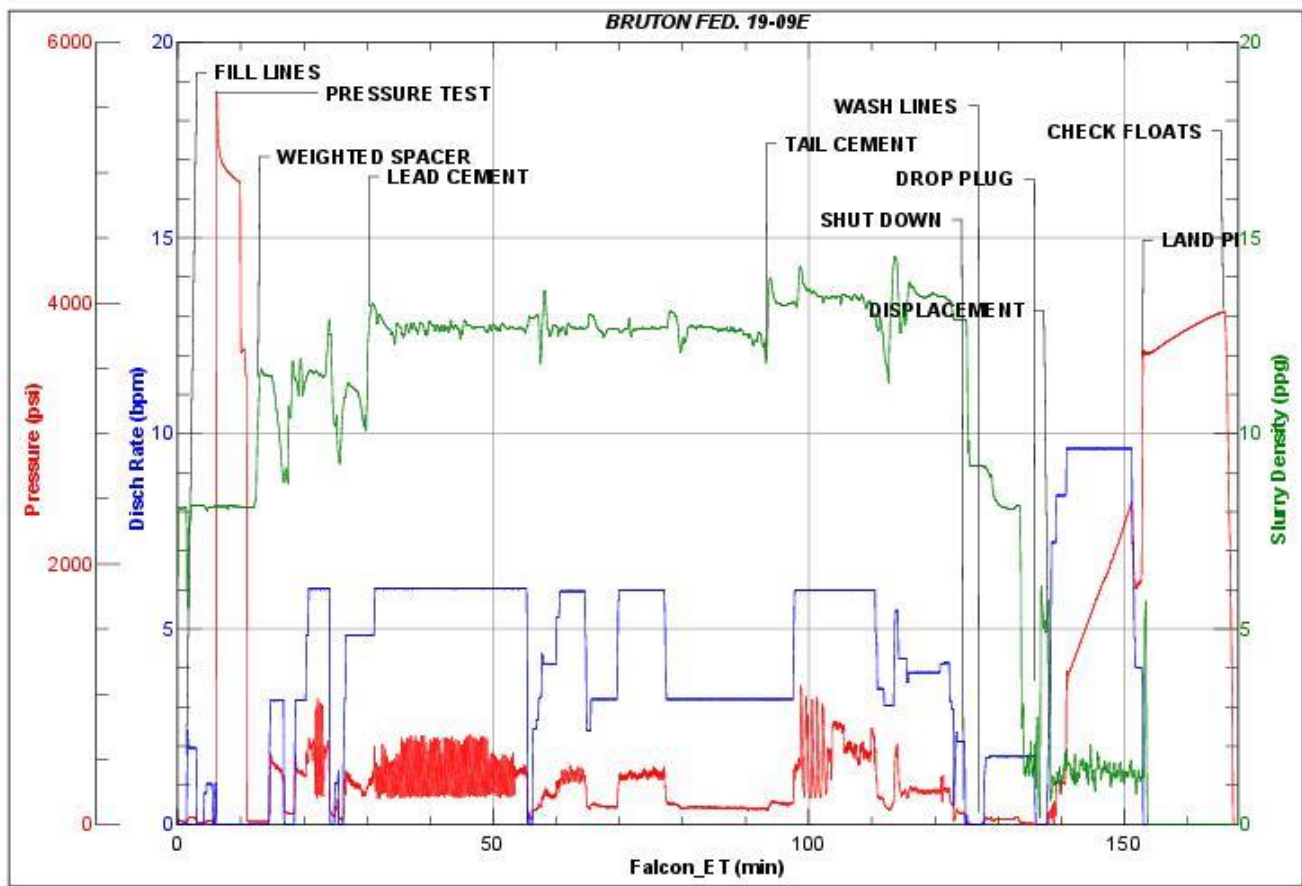


JobMaster Program Version 4.02C 1

Job Number: 1529

Customer: LARAMIE

Well Name: BRUTON FED. 19-09E



BJ Services

Job Start: Monday, October 16, 2017