



Laramie Energy

End of Well Cement Report

Nichols 0994-24-11W 05-077-10387

S:24 T:9S R:94W Mesa CO

Quote #: 08012/08242

I Execution #: 04476/04367



Laramie Energy

Attention: Mr. Aaron Duncan | (303) 339-4913 | aduncan@laramie-energy.com

Laramie Energy | 1401 17th St, Suite 1400 | Denver, CO 80202

Dear Mr. Duncan,

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 | (307) 887-4243 | Gage.Putnam@BJServices.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 632-2412

Sales Office 999 18th St. Suite 1200 Denver, CO 80202
Phone: (281) 408-2361

Cementing Treatment



Start Date	3/11/2018	Well	Nichols 0994-24-11W
End Date	3/12/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	ROGER FOSTER	API	05-077-10387
Service Supervisor	GLEN GILLIAM	Formation	
Field Ticket No.	Surface	Rig	H&P 290
District	Rifle, CO	Type of Job	Surface

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Previous Casing	15.25	16.00	65.00	60.00	0.00		
Open Hole	11.00			1,562.00	75.00		
Casing	8.10	8.63	24.00	1,552.00		J-55	ST&C

Shoe Length (ft): 48

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	1,504.00
Bottom Plug Size	8.625	Max Casing Pressure - Rated (psi)	2,360.00
Top Plug Used?	Yes	Max Casing Pressure - Operated (psi)	2,000.00
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	8.625	Job Pumped Through	No Manifold
Centralizers Used	Yes	Top Connection Thread	8 ROUND
Centralizers Quantity	18.00	Top Connection Size	8..625
Centralizers Type	Bow		
Landing Collar Depth (ft)	1,552		

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	Flare Prior to/during the Cement Job	No
Circulation Time (min)	45.00	Gas Present	No
Circulation Rate (bpm)	10.00		
Circulation Volume (bbls)	450.00		
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	30.00	Slurry Cement Temperature (°F)	60.00
Mix Water Temperature (°F)	46.00	Flow Line Temperature (°F)	

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Planned Top of Fluid (Ft)	Length (Ft)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Fresh Water	8.3300			0.00				40.0000
Lead Slurry	BJCem S100.3.01D	12.0000	2.5329	14.89	0.00	1,024.00	191	480.0000	85.5000
Tail Slurry	BJCem S100.3.01D	12.5000	2.2282	12.62	1,024.00	500.00	107	237.0000	42.1000
Displacement Final	Water	8.3300			0.00			0.0000	94.5000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Lead Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Lead Slurry	BJCem S100.3.01D	Foam Preventer, FP-25	0.3000	BWOB
Lead Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Lead Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.01D	IntegraSeal CELLO	0.1300	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, GYPSUM, A-10	5.0000	BWOB
Tail Slurry	BJCem S100.3.01D	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	CEMENT EXTENDER, SODIUM METASILICATE, A-2	2.0000	LBS/SK
Tail Slurry	BJCem S100.3.01D	Foam Preventer, FP-25	0.3000	BWOB

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
3/12/2018 2:53 AM	Fresh Water	6.00	40.00	325.00		
3/12/2018 3:06 AM	BJCem S100.3.01D	4.00	85.50	251.00		
3/12/2018 3:22 AM	BJCem S100.3.01D	3.00	42.10	113.00		
3/12/2018 3:34 AM	Water	3.00	94.50	110.00		

	Min	Max	Avg
Pressure (psi)	110.00	325.00	199.75
Rate (bpm)	3.00	6.00	4.00

Cementing Treatment



DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	32.00
Calculated Displacement Volume (bbls)	96.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	96.00	Amount of Spacer to Surface	0.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	0.50
Bump Plug Pressure (psi)	545.00	Total Volume Pumped (bbls)	96.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Full	Lost Circulation During Cement Job	No

Customer Name	LARAMIE	District	Rifle
Well Name	NICHOLS 24-11 W	Supervisor	GLEN GILLIAM
Job Type	Surface	Engineer	ZEN KEITH



Seq No.	Start Date	Start Time	Event	Equipment	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	3/11/2018	19:00	CALLOUT						BJ CREW CALLED OUT
2	3/11/2018	20:00	ON LOCATION						BJ CREW ARRIVES ON LOCATION
3	3/11/2018	21:30	STEACS/ RIG UP						STEACS/ RIG UP MEETING WITH BJ CREW
4	3/11/2018	21:45	RIG UP						BJ CREW RIGS UP EQUIPMENT FOR SURFACE JOB
5	3/11/2018	22:30	DOWN TIME						RIG PULLING DRILL PIPE AND THEN RUN CASING
6	3/12/2018	2:00	PIPE ON BOTTOM						PIPE ON BOTTOM, RIG CIRCULATING 10 BPM/.75 HRS
7	3/12/2018	2:30	SAFETY METTING						SAFETY MEETING WITH RIG CREW ON JOB OPERATIONS
8	3/12/2018	2:45	STAB HEAD						BJ CREW STABS HEAD
9	3/12/2018	2:48	FILL LINES		8.33	2	5	90	FILL LINES WITH 5 BBLS FRESH WATER
10	3/12/2018	2:51	TEST LINES						TEST LINES AT 3000 PSI
11	3/12/2018	2:53	SPACER		8.33	6	35	325	35 BBLS FRESH WATER SPACER
12	3/12/2018	3:04	BATCH UP LEAD		12				BATCH UP LEAD CEMENT AT 12 PPG
13	3/12/2018	3:06	LEAD DOWN HOLE		12	4		251	LEAD CEMENT DOWN HOLE AT 12 PPG
14	3/12/2018	3:14	50 BBLS GONE		12	6	50	391	50 BBLS LEAD CEMENT GONE
15	3/12/2018	3:21	BATCH UP TAIL		12.5				BATCH UP TAIL CEMENT AT 12.5 PPG
16	3/12/2018	3:22	TAIL DOWN HOLE		12.5	3		113	TAIL CEMENT DOWN HOLE AT 12.5 PPG
17	3/12/2018	3:26	20 BBLS GONE		12.5	6	20	417	20 BBLS GONE TAIL CEMENT
18	3/12/2018	3:34	SHUT DOWN						SHUT DOWN, DROP TOP PLUG
19	3/12/2018	3:35	DISPLACEMENT		8.33	3		100	KICK OUT PLUG, START DISPLACEMENT
20	3/12/2018	3:42	50 BBLS GONE		8.33	8	50	701	50 BBLS GONE DISPLACEMENT
21	3/12/2018	3:44	CEMENT TO SURFACE		8.33	8	64	715	CEMENT TO SURFACE 32 BBLS TOTAL
22	3/12/2018	3:52	BUMP PLUG		8.33	2.5	96	545	BUMP PLUG FCP-545 PSI TOOK TO 1706 PSI HELD 10 10 MINS
23	3/12/2018	4:02	CHECK FLOATS						FLOATS HELD 0.5 BBLS BACK
24	3/12/2018	4:05	STEACS/ RIG DOWN						STEACS MEETING WITH BJ CREW ON RIG DOWN
25	3/12/2018	4:15	RIG DOWN						BJ CREW RIGS DOWN EQUIPMENT AND CLEAN PUMP TRUCK
26	3/12/2018	5:00	AAR						AAR WITH BJ CREW ON JOB OPERATIONS AND RIG DOWN
27	3/12/2018	5:30	STEACS/ JOURNEY						STEACS/ JOURNEY WITH BJ CREW ON CONVOY BACK TO DISTRICT
28	3/12/2018	6:00	DEPART LOCATION						BJ CREW DEPARTS LOCATION
29	3/12/2018		***MISC***						BUMP PLUG FCP-545 PSI TOOK TO 1706 PSI HELD 10 10 MINS, FLOATS HELD 0.5 BBLS BACK, 32 BBLS CEMENT TO SURFACE, FULL RETURNS, NO ISSUES DURING JOB



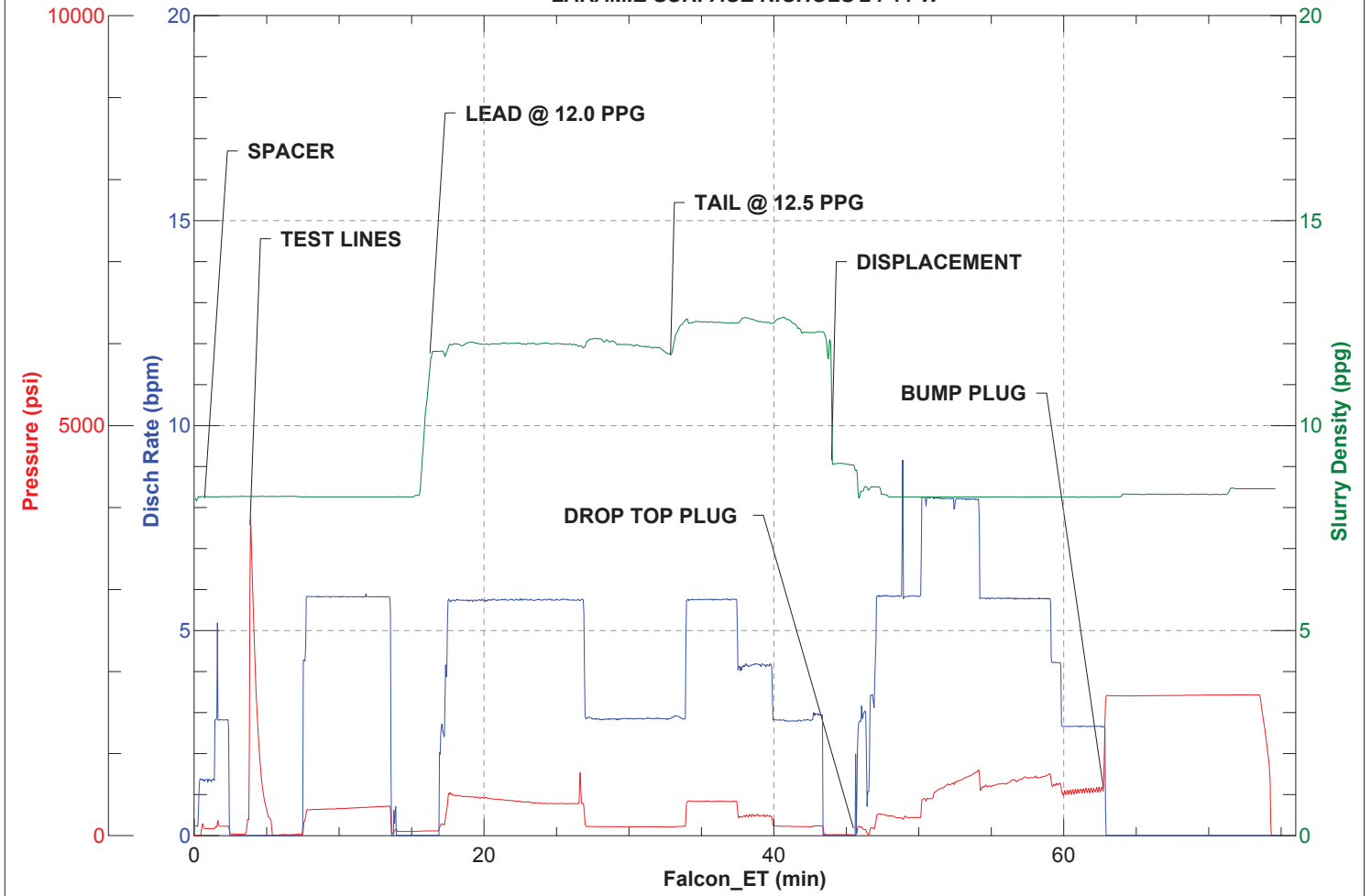
JobMaster Program Version 4.02C1

Job Number: 3710

Customer: LARAMIE

Well Name: NICHOLS 24-11 E

LARAMIE SURFACE NICHOLS 24-11 W



Cementing Treatment



Start Date	3/14/2018	Well	Nichols 0994-24-11W
End Date	3/14/2018	County	MESA
Client	LARAMIE ENERGY	State/Province	CO
Client Field Rep	Matt Settles	API	05-077-10387
Service Supervisor	Wendell Youngberg	Formation	-
Field Ticket No.	Production	Rig	H&P 290
District	Rifle, CO	Type of Job	Long String

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Previous Casing	8.10	8.63	24.00	1,524.00		J-55	ST&C
Casing	4.00	4.50	11.60	7,512.00		L-80	LT&C
Open Hole	8.88			7,522.00	10.00		

Shoe Length (ft): 85

HARDWARE

Bottom Plug Used?	Yes	Tool Type	Float Collar
Bottom Plug Provided By	Non BJ	Tool Depth (ft)	7,426.00
Bottom Plug Size	4.500	Max Tubing Pressure - Rated (psi)	-
Top Plug Used?	Yes	Max Tubing Pressure - Operated (psi)	-
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	10,690.00
Top Plug Size	4.500	Max Casing Pressure - Operated (psi)	4,000.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	91.00	Job Pumped Through	No Manifold
Centralizers Type	Bow	Top Connection Thread	8 rd
Landing Collar Depth (ft)	7,493	Top Connection Size	4.5

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	10 sec SGS	5.00
Circulation Time (min)	60.00	10 min SGS	9.00
Circulation Rate (bpm)	6.00	30 min SGS	17.00
Circulation Volume (bbls)	360.00	Flare Prior to/during the Cement Job	No
Lost Circulation Prior to Cement Job	No	Gas Present	No
Mud Density In (ppg)	10.10	Gas Units	0
Mud Density Out (ppg)	-		
PV Mud In	23		
PV Mud Out	-		
YP Mud In	22		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	34.00	Slurry Cement Temperature (°F)	70.00
Mix Water Temperature (°F)	65.00	Flow Line Temperature (°F)	108.00

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Planned Top of Fluid (Ft)	Length (Ft)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	11.00			0.00				60.00
Lead Slurry	BJCem P100.3.01R	12.70	1.9791	11.12	1,024.00	4,499.00	775	1,528.00	272.00
Tail Slurry	BJCem P70.6.01R	13.50	1.8512	9.35	5,523.00	2,050.00	393	727.00	129.40
Displacement Final	Water + ResCare +Biocide	8.33			0.00			0.00	116.40

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	GELLANT WATER, GW-86	0.8000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-7C	0.3000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	10.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	RETARDER, R-3	1.4000	PPB
Lead Slurry	BJCem P100.3.01R	RETARDER, R-3	0.5000	BWOB
Lead Slurry	BJCem P100.3.01R	DISPERSANT, CD-31	0.1000	BWOB
Lead Slurry	BJCem P100.3.01R	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01R	BONDING AGENT, BA-60	0.3000	BWOB
Lead Slurry	BJCem P100.3.01R	GELLANT WATER, GW-86	0.1000	BWOB
Lead Slurry	BJCem P100.3.01R	Foam Preventer, FP-25	0.3000	BWOB
Tail Slurry	BJCem P70.6.01R	EXTENDER, BENTONITE	6.0000	BWOB
Tail Slurry	BJCem P70.6.01R	SAND, S-8, Silica Flour, 200 Mesh	25.0000	BWOB
Tail Slurry	BJCem P70.6.01R	BONDING AGENT, BA-60	0.2000	BWOB
Tail Slurry	BJCem P70.6.01R	RETARDER, R-3	0.2000	BWOB
Tail Slurry	BJCem P70.6.01R	FLUID LOSS, FL-24	0.4000	BWOB
Tail Slurry	BJCem P70.6.01R	Flyash (Rockies)	20.0000	PCT
Tail Slurry	BJCem P70.6.01R	Foam Preventer, FP-25	0.3000	BWOB
Tail Slurry	BJCem P70.6.01R	CEMENT, CLASS G	70.0000	PCT
Tail Slurry	BJCem P70.6.01R	BONDING AGENT, BA-90	10.0000	PCT
Displacement Final	Water + ResCare +Biocide	CLAY STABILIZER ResCare CS	0.0800	GPB

Cementing Treatment



TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
3/14/2018 10:35 AM	IntegraGuard EZ Spacer	4.00	60.00	446.00
3/14/2018 10:51 AM	BJCem P100.3.01R	6.00	272.00	427.00
3/14/2018 11:43 AM	BJCem P70.6.01R	5.00	129.40	405.00
3/14/2018 12:20 PM	Water + ResCare +Biocide	10.00	115.00	2,185.00

	Min	Max	Avg
Pressure (psi)	0.00	3,090.00	600.00
Rate (bpm)	0.00	10.00	6.00

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0.00
Calculated Displacement Volume (bbls)	115.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	114.00	Amount of Spacer to Surface	20.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	1.50
Bump Plug Pressure (psi)	3,090.00	Total Volume Pumped (bbls)	580.00
Were Returns Planned at Surface	No	Top Out Cement Spotted	No
Cement returns During Job	Full	Lost Circulation During Cement Job	No



Customer Name LARAMIE
Well Name NICHOLS 0994-24-11W
Job Type Long String

District Rifle
Supervisor JAMES ROUSH
Engineer GAGE PUTNAM

Seq No.	Start Date	Start Time	Category	Event	Equipment	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	3/14/2018	4:00	Mobilization	Callout						BJ CREW CALLED OUT WITH A RTS OF 09:00 AM 3/14/18
2	3/14/2018	5:30	Mobilization							JOURNEY MANAGEMENT WITH BJ CREW
3	3/14/2018	5:45	Mobilization	Leave Location						LEAVE DISTRICT
4	3/14/2018	7:45	Mobilization	Arrive on Location						ARRIVE ON LOCATION
5	3/14/2018	7:55	Operational							STEACS BREIFING WITH BJ CREW
6	3/14/2018	8:05	Operational	Spot Units						SPOT TRUCKS
7	3/14/2018	8:30	Operational	Rig Up						RIG UP ALL EQUIPMENT
9	3/14/2018	9:30	Operational	Prime Up						PIPE ON BOTTOM, RIG TO CIRCULATE
10	3/14/2018	10:05	Operational	Safety Meeting						SAFTEY MEETING WITH BJ CREW, COMPANY, AND RIG CREW
11	3/14/2018	10:25	Operational	Rig Up						RIG UP CEMENT HEAD TO CASING
12	3/14/2018	10:28	Operational	Start Pumping		8.34	2	5	224	BREAK CIRCULATION
13	3/14/2018	10:31	Operational	Pressure Test						TEST LINES 5000
14	3/14/2018	10:33	Operational	Pump Spacer		11	5	60	423	WEIGHTED SPACER @ 11 PPG
	3/14/2018	10:49	Operational	Pump Spacer		11	4		155	50 BBLs GONE SPACER
22	3/14/2018	10:51	Operational	Pump Lead Cement		12.7				BATCH UP LEAD CEMENT @ 12.7 PPG (775 SXS Y- 1.97 MW- 11.12)
23	3/14/2018	10:53	Operational	Pump Lead Cement		12.7	5	272	334	LEAD CEMENT @ 12.7 PPG DOWNHOLE
24	3/14/2018	11:05	Operational	Pump Lead Cement		12.7	6		407	50 BBLs GONE LEAD SLURRY
25	3/14/2018	11:13	Operational	Pump Lead Cement		12.7	6		421	100 BBLs GONE LEAD SLURRY
26	3/14/2018	11:21	Operational	Pump Lead Cement		12.7	6		427	150 BBLs GONE LEAD SLURRY
27	3/14/2018	11:29	Operational	Pump Lead Cement		12.7	6		405	200 BBLs GONE LEAD SLURRY
	3/14/2018	11:38	Operational	Pump Lead Cement			5		315	250 BBLs GONE LEAD SLURRY
28	3/14/2018	11:41	Operational	Pump Tail Cement		13.5				BATCH UP TAIL SLURRY @ 13.5 PPG (393 SXS Y- 1.85 MW-9.33)
29	3/14/2018	11:42	Operational	Pump Tail Cement		13.5	5	129	419	TAIL CEMENT @ 13.5 PPG DOWN HOLE
30	3/14/2018	11:52	Operational	Pump Tail Cement		13.5	5		382	50 BBLs GONE TAIL SLURRY
31	3/14/2018	12:01	Operational	Pump Tail Cement		13.5	4		405	100 BBLs GONE TAIL SLURRY
32	3/14/2018	12:06	Operational	Clean Pumps and Lines		8.34	3	10	120	WASH PUMPS AND LINES
33	3/14/2018	12:19	Operational	Drop Top Plug		8.43	6	105	414	DROP TOP PLUG START
34	3/14/2018	12:22	Operational	Pump Displacement		8.43	10		1574	DISPLACEMENT
35	3/14/2018	12:29	Operational	Pump Displacement		8.43	10		2130	50 BBLs GONE DISPLACEMENT
36	3/14/2018	12:32	Operational	Pump Displacement		8.43	2	10	1597	100 BBLs GONE DISPLACEMENT
37	3/14/2018	12:35	Operational	Land Plug		8.43			3090	SLOW RATE TO BUMP PLUG
38	3/14/2018	12:51	Operational	Check Floats						BUMP PLUG, PRESSURE UP TO 3000 PSI
39	3/14/2018	13:00	Operational	Safety Meeting						BLEED PRESSURE, CHECK FLOATS, 1.5 BBL BACK
40	3/14/2018	13:15	Operational	Rig Down						RIG DOWN MEETING WITH BJ CREW AND RIG HANDS
41	3/14/2018	14:45	Operational	Safety Meeting						START RIG DOWN ALL UNITS
42	3/14/2018	15:00	Mobilization	Leave Location						JOURNEY MANAGEMENT WITH BJ CREW
43	3/14/2018									LEAVE LOCATION
45	3/14/2018		Operational	Other (See comments)						FCP- 1597, BUMP PLUG- 3090 PSI, FLOATS HOLDING 1.5 BBLs BACK



JobMaster Program Version 4.02C1
Job Number: 3832
Customer: LARAMIE
Well Name: NICHOLS 0994-24-11W

