POST JOB REPORT

Laramie Energy

PTA Post Job Report

Nichols 0994-24-16W 05-077-10384

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

Quote #: 09334 | **Execution #:** 05296

Laramie Energy

Attention: Mr. Aaron Duncan | (303) 859-3634 | 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 | (970) 632-2006 | 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	3/30/2018	**Well**	Nichols 0994-24-16W
End Date	3/30/2018	**County**	MESA
Client	LARAMIE ENERGY	**State/Province**	CO
Client Field Rep	Roger Foster	**API**	05-077-10384
Service Supervisor	Andrew Linn	**Formation**	-
Field Ticket No.	PTA - Nichols 24-16W	**Rig**	H&P 290
District	Rifle, CO	**Type of Job**	Plug & Abandon- Plug

PLUG 1

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)
Previous Casing	8.02	8.63	28.00	1,557.00	
Open Hole	8.88			2,833.00	30.00
Drill Pipe	3.83	4.50	16.60	1,883.00	
Tubing	2.44	2.88	6.40	2,833.00	

HARDWARE

Tool Type	Swege
Tool Depth (ft)	2,660.00
Pipe Movement	None
Job Pumped Through	No Manifold
Top Connection Thread	xo
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**	4.00
Circulation Time (min)	120.00	**10 min SGS**	9.00
Circulation Rate (bpm)	9.00	**30 min SGS**	12.00
Circulation Volume (bbls)	1,080.00	**Flare Prior to/during the Cement Job**	No
Lost Circulation Prior to Cement Job	No	**Gas Present**	No
Mud Density In (ppg)	9.80	**Gas Units**	0
Mud Density Out (ppg)	-		
PV Mud In	13		
PV Mud Out	-		
YP Mud In	13		
YP Mud Out	-		

TEMPERATURE

Ambient Temperature (°F)	38.00	**Slurry Cement Temperature (°F)**	89.60
Mix Water Temperature (°F)	70.20	**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	IntegraGuard EZ Spacer	11.00			0.00				19.30
Tail Slurry	Plug 1	15.80	1.1485	4.99		600.00	230	265.0000	47.00
Displacement 1	IntegraGuard EZ Spacer	11.00			0.00			0.0000	5.00
Displacement Final	WBM	9.90			0.00			0.0000	22.60

Cementing Treatment

Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
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	RETARDER, R-3	1.4000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	10.0000	PPB
Tail Slurry	Plug 1	RETARDER, R-3	0.1000	BWOB
Tail Slurry	Plug 1	CEMENT, CLASS G	100.0000	PCT
Displacement 1	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
Displacement 1	IntegraGuard EZ Spacer	RETARDER, R-7C	0.3000	PPB
Displacement 1	IntegraGuard EZ Spacer	GELLANT WATER, GW-86	0.8000	PPB
Displacement 1	IntegraGuard EZ Spacer	RETARDER, R-3	1.4000	PPB
Displacement 1	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	10.0000	PPB

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
3/30/2018 5:42 AM	IntegraGuard EZ Spacer	2.00	19.00	153.00
3/30/2018 5:55 AM	Plug 1	2.50	47.00	261.00
3/30/2018 6:15 AM	IntegraGuard EZ Spacer	2.00	5.00	85.00
3/30/2018 6:17 AM	WBM	2.00	22.00	71.00

	Min	Max	Avg
Pressure (psi)	0.00	0.00	0.00
Rate (bpm)	0.00	0.00	0.00

Cementing Treatment

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	**Method Used to Verify Returns**	Visual
Calculated Displacement Volume (bbls)	27	**Total Volume Pumped (bbls)**	97.50
Actual Displacement Volume (bbls)	27	**Lost Circulation During Cement Job**	No
Were Returns Planned at Surface	No		
Cement returns During Job	No		

CEMENT PLUG

Bottom of Cement Plug?	No	**Wiper Balls Used?**	No
Wiper Ball Quantity	-	**Plug Catcher**	No
Number of Plugs	3		

Cementing Treatment

PLUG 2

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)
Previous Casing	8.02	8.63	28.00	1,557.00	
Open Hole	8.88			1,807.00	20.00
Drill Pipe	3.83	4.50	16.60	857.00	
Tubing	2.44	2.88	6.40	1,807.00	

Shoe Length (ft):

HARDWARE

Tool Type	Swege
Tool Depth (ft)	1,808.00
Pipe Movement	None
Job Pumped Through	No Manifold
Top Connection Thread	xo
Top Connection Size	4.5

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	**Solids Present at End of Circulation**	No
Circulation Prior to Job	Yes	**10 sec SGS**	4.00
Circulation Time (min)	30.00	**10 min SGS**	9.00
Circulation Rate (bpm)	8.00	**30 min SGS**	12.00
Circulation Volume (bbls)	240.00	**Flare Prior to/during the Cement Job**	No
Lost Circulation Prior to Cement Job	No	**Gas Present**	No
Mud Density In (ppg)	9.80	**Gas Units**	0
PV Mud In	13		
YP Mud In	13		

Cementing Treatment

TEMPERATURE

Ambient Temperature (°F)	42.00	**Slurry Cement Temperature (°F)**	89.60
Mix Water Temperature (°F)	70.20	**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	IntegraGuard EZ Spacer	11.00			0.00				25.90
Tail Slurry	Plug 2	15.80	1.1518	5.00		500.00	175	202.00	35.90
Displacement 1	IntegraGuard EZ Spacer	11.00			0.00			0.00	5.00
Displacement Final	WBM	9.90			0.00			0.00	2.00

Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
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	RETARDER, R-3	1.4000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	10.0000	PPB
Tail Slurry	Plug 2	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	1.0000	BWOW
Tail Slurry	Plug 2	CEMENT, CLASS G	100.0000	PCT
Displacement 1	IntegraGuard EZ Spacer	RETARDER, R-7C	0.3000	PPB
Displacement 1	IntegraGuard EZ Spacer	GELLANT WATER, GW-86	0.8000	PPB
Displacement 1	IntegraGuard EZ Spacer	RETARDER, R-3	1.4000	PPB
Displacement 1	IntegraGuard EZ Spacer	SAND, S-8, Silica Flour, 200 Mesh	168.8967	PPB
Displacement 1	IntegraGuard EZ Spacer	EXTENDER, BENTONITE	10.0000	PPB

Cementing Treatment

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
3/30/2018 8:24 AM	IntegraGuard EZ Spacer	2.00	25.90	105.00
3/30/2018 8:37 AM	Plug 2	2.00	35.90	128.00
3/30/2018 8:54 AM	IntegraGuard EZ Spacer	2.00	5.00	77.00
3/30/2018 8:55 AM	WBM	2.00	2.00	69.00

	Min	Max	Avg
Pressure (psi)	69.00	128.00	94.75
Rate (bpm)	2.00	2.00	2.00

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	**Method Used to Verify Returns**	
Calculated Displacement Volume (bbls)	15.00	**Amount of Spacer to Surface**	
Actual Displacement Volume (bbls)	15.20	**Total Volume Pumped (bbls)**	79.00
		Top Out Cement Spotted	No
		Lost Circulation During Cement Job	No

CEMENT PLUG

Bottom of Cement Plug?	No	**Wiper Balls Used?**	No
Wiper Ball Quantity	-	**Plug Catcher**	No
Number of Plugs	3		

Cementing Treatment

PLUG 3 - SURFACE

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)
Tubing	2.44	2.88	6.40	150.00	
Previous Casing	8.02	8.63	28.00	150.00	

Shoe Length (ft):

HARDWARE

Tool Type	Swedge
Tool Depth (ft)	180.00
Pipe Movement	None
Job Pumped Through	No Manifold
Top Connection Thread	8 rnd.
Top Connection Size	2.875

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	**Solids Present at End of Circulation**	No
Circulation Prior to Job	Yes	**10 sec SGS**	4.00
Circulation Time (min)	30.00	**10 min SGS**	9.00
Circulation Rate (bpm)	8.00	**30 min SGS**	12.00
Circulation Volume (bbls)	240.00	**Flare Prior to/during the Cement Job**	No
Lost Circulation Prior to Cement Job	No	**Gas Present**	No
Mud Density In (ppg)	8.90	**Gas Units**	0
PV Mud In	13		
YP Mud In	13		

Cementing Treatment

TEMPERATURE

Ambient Temperature (°F)	46.00	**Slurry Cement Temperature (°F)**	89.60
Mix Water Temperature (°F)	70.20	**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	8.33			0.00				2.00
Tail Slurry	Plug 3	15.80	1.1645	5.00		150.00	44	52.00	9.10
Displacement Final	Fresh Water	8.33			0.00			0.00	1.00

Fluid Type	Fluid Name	Component	Concentration	UOM
Tail Slurry	Plug 3	ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	2.0000	BWOB
Tail Slurry	Plug 3	CEMENT, CLASS G	100.0000	PCT

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)
3/30/2018 2:17 PM	Plug 4	2.00	9.10	157.00
3/30/2018 2:22 PM	Fresh Water	2.00	1.00	134.00

	Min	Max	Avg
Pressure (psi)	103.00	157.00	130.00
Rate (bpm)	2.00	2.00	2.00

Cementing Treatment

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	**Amount of Cement Returned/Reversed**	1.00
Calculated Displacement Volume (bbls)	0	**Method Used to Verify Returns**	Visual
Actual Displacement Volume (bbls)	1.50	**Total Volume Pumped (bbls)**	12.00
Were Returns Planned at Surface	No	**Top Out Cement Spotted**	No
Cement returns During Job	Yes	**Lost Circulation During Cement Job**	No

CEMENT PLUG

Bottom of Cement Plug?	No	**Wiper Balls Used?**	No
Wiper Ball Quantity	-	**Plug Catcher**	No
Number of Plugs	3		

COMMENTS

Treatment Report

No chart from plug jobs as the hardline cable for digital transmission was damaged prior to job.

Customer Name	LARAMIE	**District**	Rifle
Well Name	NICHOLS 24-16W	**Supervisor**	ANDREW LINN
Job Type	Plug & Abandon - Plug	**Engineer**	GAGE PUTNAM

Seq No.	Start Date	Start Time	Event	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	3/29/2018	19:30	CALL OUT					CREW CALL OUT ON LOCATION TIME OF ASAP
2	3/29/2018	20:45	STEACS					PRE CONVOY SAFETY MEETING
3	3/29/2018	21:25	LEAVE RIFLE YARD					LEAVE RIFLE YARD FOR H&P 290
4	3/29/2018	23:15	ARRIVE ON LOCATION					ARRIVE ON LOCATION, RIG CREW WAS RUNNING IN WITH DRILL PIPE
5	3/29/2018	23:18	SITE ASSESSMENT					SITE ASSESSMENT
6	3/29/2018	23:22	SPOT EQUIPMENT					SPOT IN BULK TRUCK
7	3/29/2018	23:29	STEACS					PRE RIG UP SAFETY MEETING WITH ALL BJ SERVICES CEMENT CREW
8	3/29/2018	23:36	RIG UP					RIG UP ALL GROUND EQUIPMENT
9	3/30/2018	10:01	SAFETY MEETING					PRE JOB SAFETY MEETING WITH RIG CREW AND ALL BJ SERVICES CEMENT CREW.
10	3/30/2018	10:02	RIG UP					HOOK UP LINES AND CROSS-OVER
11	3/30/2018	5:34	FILL LINE	8.33	2	5	231	FILL LINES WITH 5 BBLS. FRESH WATER
12	3/30/2018	5:37	PRESSURE TEST				3146	PRESSURE TEST TO 3146 PSI.
13	3/30/2018	5:43	SPACER	11	2	1	153	WEIGHTED SPACER
14	3/30/2018	5:46	SPACER	11	2.5	5	266	WEIGHTED SPACER
15	3/30/2018	5:52	SPACER	11	2.5	19	254	WEIGHTED SPACER
16	3/30/2018	5:55	CEMENT	15.8	2.5	1	261	CEMENT 15.8 PPG 1.15 CUFT/SK 4.99 GAL/SK 229 SK. FOR 46.9 BBLS OF CEMENT REQUIRING 27.21 BBLS OF FRESH WATER. WEIGHT OF CEMENT VERIFIED WITH MUD SCALE
17	3/30/2018	6:04	CEMENT	15.8	2.5	25	110	PUMPED CEMENT
18	3/30/2018	6:12	CEMENT	15.8	2.5	46.5	108	FINISHED PUMPING CEMENT
19	3/30/2018	6:15	SPACER	11	2	1	84	WEIGHTED SPACER
20	3/30/2018	6:17	SPACER	11	2	5	59	WEIGHTED SPACER
21	3/30/2018	6:17	DISPLACEMENT	9.8	2	1	71	MUD DISPLACEMENT
22	3/30/2018	6:22	TAIL CEMENT	9.8	2	22	76	MUD DISPLACEMENT
23	3/30/2018	6:22	SHUT DOWN					SHUT DOWN
24	3/30/2018	6:25	PULLED DRILL PIPE					RIG CREW PULLED 9 STANDS OF DRILL PIPE OUT OF THE HOLE AT 15 FT/MIN.
25	3/30/2018	7:54	RIG CIRCULATED					RIG CIRCULATED FOR 30 MINS.
26	3/30/2018	8:22	START PLUG #2					START PLUG NUMBER 2
27	3/30/2018	8:24	SPACER	11	2	1	105	WEIGHTED SPACER
28	3/30/2018	8:35	SPACER	11	2	26.3	89	WEIGHTED SPACER
29	3/30/2018	8:37	CEMENT	15.8	2	1	114	CEMENT 15.8 PPG 1.15 CUFT/SK 4.99 GAL/SK 175 SK. FOR 35.84 BBLS OF CEMENT REQUIRING 20.79 BBLS OF FRESH WATER. WEIGHT OF CEMENT VERIFIED WITH MUD SCALE
30	3/30/2018	8:45	CEMENT	15.8	2	20	109	PUMPED CEMENT
31	3/30/2018	8:52	CEMENT	15.8	2	36.7	128	FINISHED PUMPING CEMENT
32	3/30/2018	8:54	SPACER	11	2	1	77	WEIGHTED SPACER
33	3/30/2018	8:55	SPACER	11	2	5.2	59	WEIGHTED SPACER
34	3/30/2018	8:55	DISPLACEMENT	10	2	1	69	MUD DISPLACEMENT
35	3/30/2018	8:59	DISPLACEMENT	10	2	10	68	MUD DISPLACEMENT
36	3/30/2018	9:00	SHUT DOWN					SHUT DOWN
37	3/30/2018	9:04	PULLED DRILL PIPE					RIG CREW PULLED 9 STANDS OF DRILL PIPE OUT OF THE HOLE AT 30 FT/MIN.
38	3/30/2018	12:20	RIG CIRCULATED					RIG CIRCULATED FOR 30 MINS.
39	3/30/2018	13:21	RIG TAGGED CEMENT					RIG RAN IN WITH DRILL PIPE AND TAGGED CEMENT AT 1434 FT.
40	3/30/2018	14:15	START PLUG #3					START PLUG NUMBER 3
41	3/30/2018	14:17	CEMENT	15.8	2	1	157	CEMENT 15.8 PPG 1.15 CUFT/SK 4.99 GAL/SK 44 SK. FOR 9.01 BBLS OF CEMENT REQUIRING 5.23 BBLS OF FRESH WATER. WEIGHT OF CEMENT VERIFIED WITH MUD SCALE
42	3/30/2018	14:21	CEMENT	15.8	2	10.8	103	FINISHED PUMPING CEMENT
43	3/30/2018	14:20	CEMENT TO SURFACE					CEMENT TO SURFACE
44	3/30/2018	14:22	DISPLACEMENT	8.33	2	1.5	88	FRESH WATER DISPLACEMENT TO CLEAR TUBING
45	3/30/2018	14:23	SHUT DOWN					SHUT DOWN
46	3/30/2018	14:25	PUMP WATER					RAN 25 BBLS OF SUGAR WATER THREW CELLAR PUMP
47	3/30/2018	14:34	STEACS					PRE RIG DOWN SAFETY MEETING WITH RIG CREW

Customer Name	LARAMIE	**District**	Rifle
Well Name	NICHOLS 24-16W	**Supervisor**	ANDREW LINN
Job Type	Plug & Abandon - Plug	**Engineer**	GAGE PUTNAM

Seq No.	Start Date	Start Time	Event	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
48	3/30/2018	14:40	RIG DOWN					RIG DOWN RIG FLOOR
49	3/30/2018	14:51	WASH UP					WASH PUMPS AND LINES TO CELLAR
50	3/30/2018	15:04	STEACS					PRE RIG DOWN SAFETY MEETING WITH ALL BJ SERVICES CEMENT CREW
51	3/30/2018	15:10	RIG DOWN					RIG DOWN ALL EQUIPMENT
52	3/30/2018	15:35	AAR					AFTER ACTION REVIEW
53	3/30/2018	15:44	STEACS					PRE CONVOY SAFETY MEETING
54	3/30/2018	16:02	DEPART FROM LOCATION					DEPART FROM LOCATION FOR RIFLE YARD. THANK YOU FOR USING BJ SERVICES, ANDREW LINN AND CREW.