



Bonanza Creek Energy

Antelope Federal T-20-17XRLNC

API # 05-123-49092

Production

May 15, 2019

Quote #: 30344

Execution #: 17940



Bonanza Creek Energy

Attention: Mr. Adam Conry | (303) 883.3351 | AConry@bonanzacrk.com

Bonanza Creek Energy | 410 17th St Suite 1400 | Denver, CO. 80202

Dear Mr. Adam Conry,

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 1716 East Allison Rd., Cheyenne WY, 82007
Phone: (307) 638-5585

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

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Travis Tolman	FORMATION	NIOBRARA
DISTRICT	Cheyenne, WY	RIG	Akita 519
SERVICE	Cementing	COUNTY	WELD
		STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)
Casing	4.78	5.50	20.00	17,029.00	6,972.00	
Previous Casing	8.92	9.63	36.00	1,632.00	1,632.00	
Open Hole	8.50	0.00	0.00	17,039.00	6,972.00	7.00

HARDWARE

Bottom Plug Used?	Yes	Landing Collar Depth (ft)	16,984
Bottom Plug Provided By	Non BJ	Tool Type	Float Collar
Bottom Plug Size	5.500	Tool Depth (ft)	16,984.00
Top Plug Used?	Yes	Max Casing Pressure - Rated (psi)	12640.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Operated (psi)	5500.00
Top Plug Size	5.500	Pipe Movement	None
Centralizers Used	Yes	Job Pumped Through	Manifold
Centralizers Quantity	133.00	Top Connection Thread	BUTT
Centralizers Type	Rigid	Top Connection Size	5.5

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	YP Mud In	9
Circulation Prior to Job	Yes	Solids Present at End of Circulation	No
Circulation Time (min)	180.00	10 sec SGS	3
Circulation Rate (bpm)	10.00	10 min SGS	5
Lost Circulation Prior to Cement Job	No	30 min SGS	7
Mud Density In (ppg)	9.60	Flare Prior to / during the Cement Job	No
PV Mud In	15	Gas Present	No

TEMPERATURE

Ambient Temperature (°F)	82.00	Slurry Cement Temperature (°F)	75.00
Mix Water Temperature (°F)	68.00	Flow Line Temperature (°F)	135.00

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FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	PLN TOP FLD (ft)	LENGTH (ft)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	11.0000			0.00				26.0000
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	12.0000			0.00				28.0000
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	11.0000			0.00				26.0000
Lead Slurry	BJCem P100.3.01C	12.5000	2.1529	12.23	0.00	5,000.00	590	1263.0000	225.9000
Tail Slurry	BJCem P50.6.02C	13.5000	1.4770	7.45	5,000.00	12,020.00	2000	2952.0000	523.6000
Displacement 2	Retarded Water	8.3337			13,244.00	0.00	0	0.0000	20.0000
Displacement Final	Displacement Final (Water)	8.3308			0.00			0.0000	356.6000

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	IntegraGuard GW-86	1.2000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	WEIGHTING ADDITIVE, W-11	243.3100	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-7C	2.0000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	RETARDER, R-31	0.5000	PPB
Spacer / Pre Flush / Flush	IntegraGuard EZ Spacer II	SPACER SURFACTANT, SS-267	1.0000	GPB
Lead Slurry	BJCem P100.3.01C	RETARDER, SR-20	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	BONDING AGENT, BA-60	0.4000	BWOB
Lead Slurry	BJCem P100.3.01C	FLUID LOSS, FL-24	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	IntegraSeal POLI	0.1300	LBS/SK
Lead Slurry	BJCem P100.3.01C	CEMENT, ASTM TYPE III	100.0000	PCT
Lead Slurry	BJCem P100.3.01C	IntegraGuard GW-86	0.2000	BWOB
Lead Slurry	BJCem P100.3.01C	FOAM PREVENTER, FP-25	0.3000	BWOB
Lead Slurry	BJCem P100.3.01C	EXTENDER, BENTONITE	4.0000	BWOB
Tail Slurry	BJCem P50.6.02C	RETARDER, SR-20	0.0500	BWOB
Tail Slurry	BJCem P50.6.02C	Flyash (Rockies)	50.0000	PCT
Tail Slurry	BJCem P50.6.02C	CEMENT, CLASS G	50.0000	PCT
Tail Slurry	BJCem P50.6.02C	FLUID LOSS, FL-66	0.2000	BWOB
Tail Slurry	BJCem P50.6.02C	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	BJCem P50.6.02C	EXTENDER, BENTONITE	2.0000	BWOB
Tail Slurry	BJCem P50.6.02C	IntegraGuard GW-86	0.1000	BWOB
Displacement 2	Retarded Water	RETARDER, SR-61L	0.1000	GPB
Displacement 2	Retarded Water	BIOCIDE, BIOC11139W	0.0100	GPB
Displacement Final	Displacement Final (Water)	BIOCIDE, BIOC11139W	0.0100	GPB

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DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	116.00
Calculated Displacement Vol (bbls)	376.60	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	376.50	Amt of Spacer to Surface	80.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	3.50
Bump Plug Pressure (psi)	5400.00	Total Volume Pumped (bbls)	1214.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Full	Lost Circulation During Cement Job	No

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BJ Cementing Event Log

Long String - Cheyenne, WY - Travis Tolman

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	05/15/2019 06:00	Callout					Crew called out for on location of 1100, pre-trip equipment for job
2	05/15/2019 07:25	Depart for Location					Crew ready to depart for location
3	05/15/2019 09:51	Arrive on Location					Arrived on location, running casing, met with company man to get numbers, discuss job and safety
4	05/15/2019 11:35	Spot Units					Spot equipment
5	05/15/2019 11:45	STEACS Briefing					Held safety meeting with crew to discuss rig up, job tasks and safety
6	05/15/2019 12:00	Rig Up					Rigged up from equipment to rig floor
7	05/15/2019 15:00	STEACS Briefing					Held safety meeting with company man, rig hands and crew to discuss job and safety
8	05/15/2019 15:36	Pump Spacer	8.3000	2.00	3.00	150.00	Load pump and lines with fresh water
9	05/15/2019 15:39	Pressure Test	8.3000			6300.00	Pressure test pump and lines with fresh water
10	05/15/2019 15:49	Pump Spacer	11.0000	4.20	26.00	221.00	Pump 26bbls of spacer at 11# with chemicals
11	05/15/2019 15:56	Pump Spacer	12.0000	4.20	28.00	200.00	Pump 28bbls of spacer at 12# with chemicals
12	05/15/2019 16:03	Pump Spacer	11.0000	4.20	26.00	100.00	Pump 26bbls of spacer at 11# with chemicals
13	05/15/2019 16:13	Pump Lead Cement	12.5000	6.00	226.00	250.00	Pump 590sks/225.9bblb of lead cement at 12.5#-2.15Y-12.23gps
14	05/15/2019 17:02	Pump Tail Cement	13.5000	6.00	523.00	250.00	Pump 2000sks/523.6bbls of tail cement at 13.5#-1.47-7.45gps, top of tail calculated at 4221'
15	05/15/2019 18:50	End Pumping					Shut down, wash up pump and lines
16	05/15/2019 19:00	Pump Displacement	8.3000	2.00	2.00	0.00	Pump 2bbls of fresh water with SR-61
17	05/15/2019 19:01	Drop Bottom Plug					Drop bottom plug 1500psi
18	05/15/2019 19:02	Pump Displacement	8.3000	2.00	3.00	0.00	Pump 3bbls of fresh water with SR-61
19	05/15/2019 19:04	Drop Top Plug					Drop top plug, 3000psi
20	05/15/2019 19:06	Pump Displacement	8.3000	6.00	160.00	2300.00	Pump displacement with fresh water, 1st 20bbls with SR-61, rest with Biocide, calculated displacement 376.6
21	05/15/2019 19:35	Other (See comment)	8.3000	4.50	170.00	2400.00	Slow rate to land plug
22	05/15/2019 20:15	Other (See comment)	8.3000	3.00	25.00	2550.00	Slow rate to land plug
23	05/15/2019 20:23	Other (See comment)	8.3000	2.00	21.50	2500.00	Slow rate to land plug

24	05/15/2019 20:35	Land Plug	8.3000			3548.00	Land plug, burst 1st plug, actual displacement 376.5bbls, got 116bbls of cement to surface plus 80bbls of spacer
25	05/15/2019 20:36	Pump Displacement	8.3000	2.00	6.00	5400.00	Pump displacement to burst 2nd plug
26	05/15/2019 20:39	Land Plug	8.3000			5400.00	Land plug, burst 2nd plug
27	05/15/2019 20:39	Check Floats					Check float, held, got 3.5bbls back
28	05/15/2019 21:00	STEACS Briefing					Held safety meeting with crew to discuss rig down and safety
29	05/15/2019 21:10	Rig Down					Rigged down from rig floor to equipment
30	05/15/2019 22:30	Leave Location					Crew ready to depart location

