



Great Western Operating Company

B-Farm LD 18-393HN

API # 05-001-10096

Surface

12/2/2018

Quote #: 23689

Execution #: 13630



Great Western Operating Company, LLC

Great Western Operating Company, LLC | 1801 Broadway, Suite 500 | Denver, CO 80202

Dear Great Western Operating Company, LLC,

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,
Jason Creel
Field Engineer I | (307) 256-0306 | Jason.Creel@BJServices.com

Field Office
1716 East Allison Rd., Cheyenne WY. 82007 | (307) 638-5585

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

Cementing Treatment



Start Date	12/2/2018	Well	B-FARM LD 18-393HN
End Date	12/2/2018	API#	05-001-10096
Client	Great Western Operating Company LLC	County	ADAMS
Service Sup.	Roger Acuna	State/Province	CO
District	Cheyenne, WY	Execution ID	EXC-13630-V8K3L102
Type of Job	Surface	Project ID	PRJ1013140

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Open Hole	13.50	0.00	0.00	1,782.00	1,782.00	25.00		
Casing	8.92	9.63	36.00	1,782.00	1,782.00		J-55	LTC

Shoe Length (ft): 44.00

HARDWARE

Top Plug Used?	Yes	Tool Depth (ft)	1,737.68
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3,520.00
Top Plug Size	9.630	Max Casing Pressure - Operated (psi)	2,816.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	18.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	LTC
Landing Collar Depth (ft)	1,738	Top Connection Size	9.625
Tool Type	Float Collar		

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Mud Density In (ppg)	8.40
Circulation Prior to Job	Yes	Mud Density Out (ppg)	8.40
Circulation Time (min)	15.00	Solids Present at End of Circulation	No
Circulation Rate (bpm)	10.00	Flare Prior to/during the Cement Job	No
Circulation Volume (bbls)	150.00	Gas Present	No
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	35.00	Slurry Cement Temperature (°F)	65.00
Mix Water Temperature (°F)	65.00		

Cementing Treatment



BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Length (Ft)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	Water	8.3300						20.0000
Tail Slurry	BJCem S100.3.XC	14.5000	1.3902	6.81	1700	760	1,056.0000	188.0000
Displacement Final	Water	8.3300					0.0000	133.0000

Fluid Type	Fluid Name	Component	Concentration	UOM
Tail Slurry	BJCem S100.3.XC	CEMENT, ASTM TYPE III	100.0000	PCT

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ Services	Amount of Cement Returned/Reversed	35.00
Calculated Displacement Volume (bbls)	133.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	133.00	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	0.50
Bump Plug Pressure (psi)	1,280.00	Total Volume Pumped (bbls)	341.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement returns During Job	Yes	Lost Circulation During Cement Job	No

EVENT LOG



Customer Name: Great Western Operating
Company LLC

Well Name: 18-393HN B-FARM LD 18-393HN

Job Type: Surface

Quote ID: QUO-23689-C4G2J1

Plan ID: ORD-13630-V8K3L1

District: Cheyenne, WY

Execution ID: EXC-13630-V8K3L102

BJ Supervisor: Roger Acuna

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	12/02/2018 04:30	Callout					CALLED OUT RTS 1030
2	12/02/2018 07:30	Depart for Location					DEPART CHEYENNE CAMP
3	12/02/2018 09:00	Arrive on Location					ARRIVED TO LOCATION
4	12/02/2018 09:00	STEACS Briefing					STEACS RIGUP
5	12/02/2018 09:15	Rig Up					RIG UP IRON AND HOSES
6	12/02/2018 09:30	Client					WAIT ON RIG TO RUN CASING AND CIRCULATE
7	12/02/2018 10:45	STEACS Briefing					PRE JOB SAFETY TO DISCUSS PROCEDURES FOR JOB
8	12/02/2018 11:02	Pump Spacer	8.3300	3.00	3.00	200.00	FILL LINES 3 BBLS DYE WATER
9	12/02/2018 11:05	Pressure Test				2,000.00	TEST LINES
10	12/02/2018 11:08	Pump Spacer	8.3300	5.00	17.00	200.00	PUMP 17 BBLS FRESH WATER
11	12/02/2018 11:14	Pump Tail Cement	14.5000	6.00	188.00	250.00	PUMP 188 BBLS BJ CEM S100.3.XC @14.5 PPG(760 SKS 1.39 YLD 6.81 GPS)
12	12/02/2018 11:53	End Pumping					SHUTDOWN
13	12/02/2018 11:54	Drop Top Plug					DROP TOP PLUG
14	12/02/2018 11:55	Pump Displacement	8.3300	6.00	113.00	700.00	PUMP FRESH WATER DISPLACEMENT
15	12/02/2018 12:14	Cement Back- to-Surface					CMT TO SURFACE @ 98 BBLS INTO DISPLACEMENT
16	12/02/2018 12:17	Pump Displacement	8.3300	3.00	20.00	750.00	SLOW RATE TO BUMP PLUG
17	12/02/2018 12:24	Land Plug				1,280.00	LAND PLUG 500PSI OVER FINAL CIRCULATING PRESSURE. 35 BBLS CMT TO SURFACE.

EVENT LOG

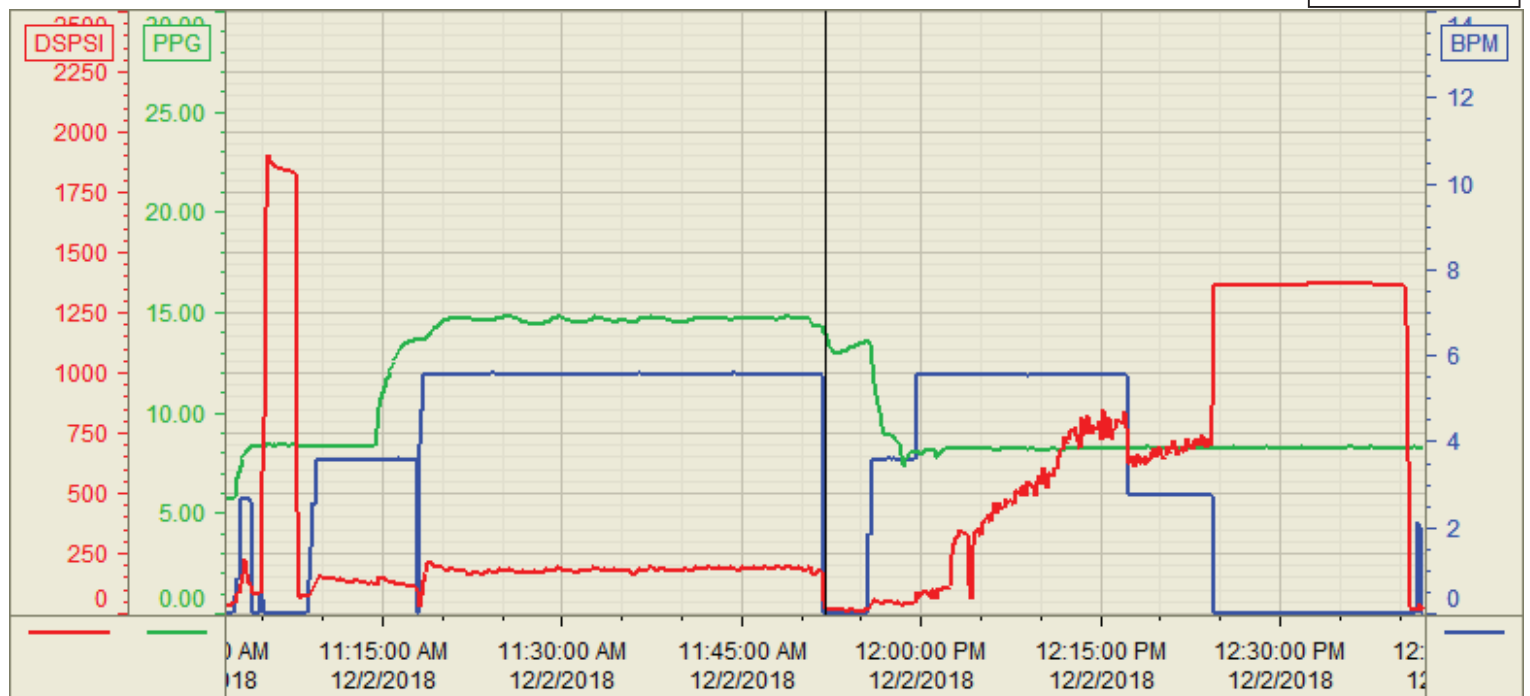


18	12/02/2018 12:25	Pressure Test				1,280.00	TEST CASING FOR 15 MINUTES. 1280 PSI START, 1285 PSI END.
19	12/02/2018 12:40	Check Floats					CHECK FLOATS, FLOATS HELD GETTING .5 BBLS BACK TO PUMP
20	12/02/2018 12:41	End Pumping					END JOB
21	12/02/2018 12:41	STEACS Briefing					STEACS RIG DOWN
22	12/02/2018 12:56	Rig Down					RIG IRON AND HOSES
23	12/02/2018 13:11	Leave Location					DEPART LOCATION

Customer: Great Western
Well Number: 18-393HN
Lease Info: B-Farms LD



Print Date/Time
12/2/2018 1:08:26 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press(PSI)	13.0	12/2/2018 11:52:01 AM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	DH - Density (PPG)	13.77 i.	12/2/2018 11:52:00 AM i.	Cementer\DENSITY2_ACTUAL_RATE
3	Combined rate (BPM)	0.00 i.	12/2/2018 11:52:00 AM i.	Cementer\Flow_Combined
4				
5				

Source: Control1 1:08:20 PM