



# Great Western Operating Company

B-Farm LD 18-394HNX

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API # 05-001-10093

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Surface

12/3/2018

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Quote #: 23697

Execution #: 13661



# Great Western Operating Company, LLC

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

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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

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# Cementing Treatment



<b>Start Date</b>	12/3/2018	<b>Well</b>	B-Farm LD 18-394HNX
<b>End Date</b>	12/3/2018	<b>API#</b>	05-001-10093
<b>Client</b>	Great Western Operating Company LLC	<b>County</b>	ADAMS
<b>Service Sup.</b>	Roger Acuna	<b>State/Province</b>	CO
<b>District</b>	Cheyenne, WY	<b>Execution ID</b>	EXC-13661-M0Q7X402
<b>Type of Job</b>	Surface	<b>Project ID</b>	PRJ1013174

## 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	1,781.00	1,781.00	25.00		
Casing	8.92	9.63	36.00	1,781.00	1,781.00		J-55	LTC

**Shoe Length (ft):** 44.00

## HARDWARE

<b>Top Plug Used?</b>	Yes	<b>Tool Type</b>	Float Collar
<b>Top Plug Provided By</b>	Non BJ	<b>Tool Depth (ft)</b>	1,736.67
<b>Top Plug Size</b>	9.630	<b>Max Casing Pressure - Rated (psi)</b>	3,520.00
<b>Centralizers Used</b>	Yes	<b>Max Casing Pressure - Operated (psi)</b>	2,816.00
<b>Centralizers Quantity</b>	18.00	<b>Pipe Movement</b>	None
<b>Centralizers Type</b>	Bow	<b>Job Pumped Through</b>	Manifold
<b>Landing Collar Depth (ft)</b>	1,737	<b>Top Connection Thread</b>	LTC
		<b>Top Connection Size</b>	9.625

## CIRCULATION PRIOR TO JOB

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

## TEMPERATURE

<b>Ambient Temperature (°F)</b>	30.00	<b>Slurry Cement Temperature (°F)</b>	30.00
<b>Mix Water Temperature (°F)</b>	50.00		

# 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

<b>Displaced By</b>	BJ Services	<b>Amount of Cement Returned/Reversed</b>	13.00
<b>Calculated Displacement Volume (bbls)</b>	133.00	<b>Method Used to Verify Returns</b>	Visual
<b>Actual Displacement Volume (bbls)</b>	133.00	<b>Amount of Spacer to Surface</b>	20.00
<b>Did Float Hold?</b>	Yes	<b>Pressure Left on Casing (psi)</b>	0.00
<b>Bump Plug</b>	Yes	<b>Amount Bled Back After Job</b>	0.50
<b>Bump Plug Pressure (psi)</b>	1,500.00	<b>Total Volume Pumped (bbls)</b>	331.00
<b>Were Returns Planned at Surface</b>	Yes	<b>Top Out Cement Spotted</b>	No
<b>Cement returns During Job</b>	Yes	<b>Lost Circulation During Cement Job</b>	No

# EVENT LOG



**Customer Name:** Great Western Operating Company  
LLC

**Well Name:** B-Farm LD 18-394HNX

**Job Type:** Surface

**Quote ID:** QUO-23697-F6K8V6

**Plan ID:** ORD-13661-M0Q7X4

**District:** Cheyenne, WY

**Execution ID:** EXC-13661-M0Q7X402

**BJ Supervisor:** Roger Acuna

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	12/03/2018 01:30	Callout					CALLED OUT RTS 0730
2	12/03/2018 03:00	Depart for Location					DEPART CHEYENNE WY CAMP
3	12/03/2018 05:30	Arrive on Location					ARRIVE TO LOCATION, CHECK IN WITH COMAPNY MAN
4	12/03/2018 05:30	STEACS Briefing					STEACS RIG UP
5	12/03/2018 05:45	Rig Up					RIG UP IRON AND HOSES
6	12/03/2018 06:00	Client	8.4000	10.00	150.00	200.00	WAITING ON RIG TO RUN CASING AND CIRCULATE WELL
7	12/03/2018 08:00	STEACS Briefing					PRE JOB SAFETY MEETING TO DISCUSS JOB PROCEDURES
8	12/03/2018 08:12	Pump Spacer	8.3300	3.00	3.00	200.00	FILL LINES 3BBLS DYE WATER
9	12/03/2018 08:13	Pressure Test				2,000.00	TEST LINES
10	12/03/2018 08:15	Pump Spacer	8.3300	4.00	17.00	250.00	PUMP 17BBLS FRESH WATER
11	12/03/2018 08:21	Pump Tail Cement	14.5000	6.00	188.00	400.00	PUMP 188BBLS BJCEM S100.3.XC @ 14.5PPG (760SKS 1.39YLD 6.81GPS)
12	12/03/2018 08:57	End Pumping					SHUTDOWN
13	12/03/2018 09:02	Drop Top Plug					DROP TOP PLUG
14	12/03/2018 09:24	Pump Displacement	8.3300	6.00	110.00	900.00	PUMP FRESH WATER DISPLACEMENT
15	12/03/2018 09:26	Cement Back-to-Surface					CEMENT TO SURFACE 120BBLS INTO DISPLACEMENT
16	12/03/2018 09:32	Pump Displacement	8.3300	3.00	13.00	1,000.00	SLOW RATE TO LAND PLUG
17	12/03/2018 09:32	Land Plug				1,500.00	LAND PLUG 500PSI OVER FINAL CIRC PRESSURE. 13 BBLs TOTAL CMT TO SURFACE.
18	12/03/2018 09:32	Pressure Test				1,500.00	CASING TEST FOR 15MIN
19	12/03/2018 09:48	Check Floats					CHECK FLOATS, FLOATS HELD GETTING 0.5BBLS BACK TO THE PUMP
20	12/03/2018 09:50	End Pumping					END JOB
21	12/03/2018 09:50	STEACS Briefing					STEACS RIG DOWN

# EVENT LOG

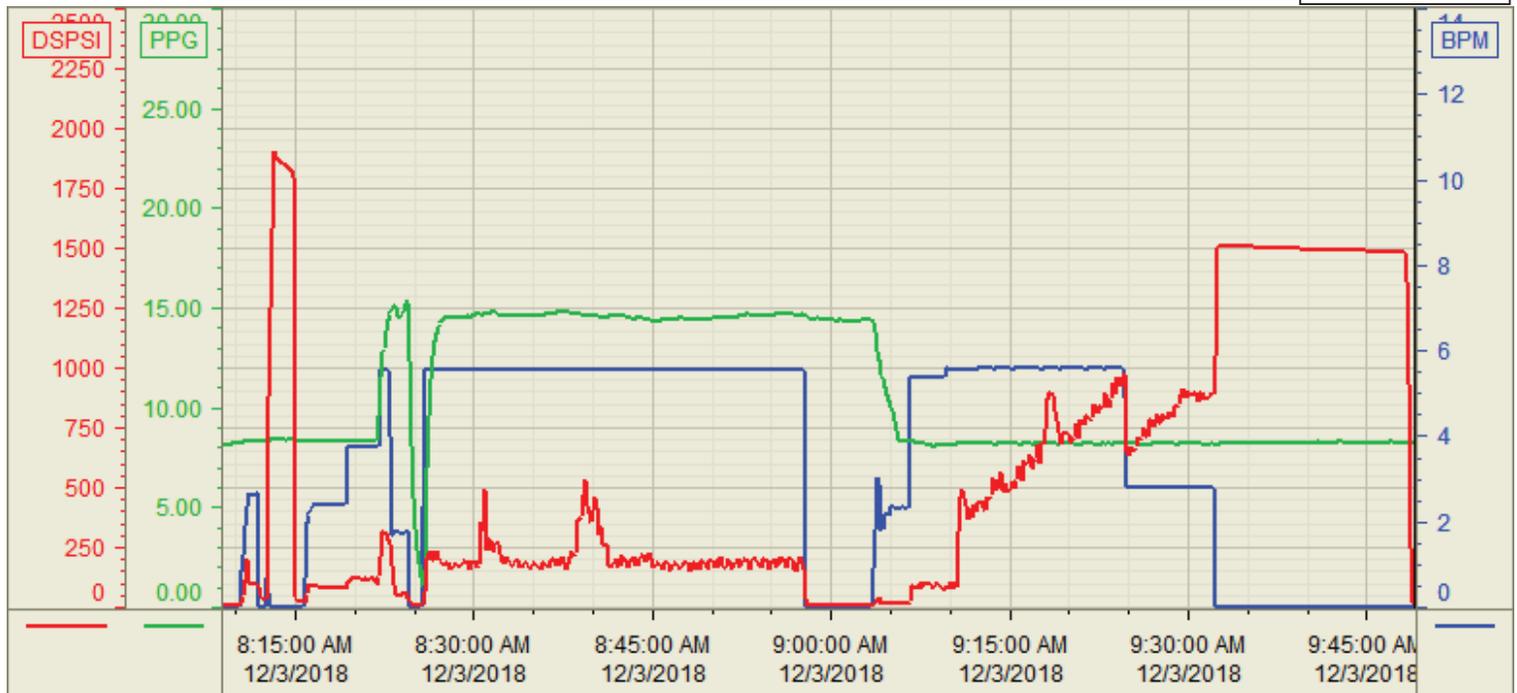


22	12/03/2018 10:00	Rig Down					RIG DOWN IRON AND HOSES
23	12/03/2018 10:30	Leave Location					DEPART LOCATION

Customer: Great Western  
 Well Number: 18-394HNX  
 Lease Info: B-Farms LD



Print Date/Time  
 12/3/2018 9:53:58 AM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press(PSI)	16.3 i.	12/3/2018 9:49:00 AM i.	Cementer\DS_DISCHARGE_PRESS_DIAL
2	DH - Density (PPG)	8.21 i.	12/3/2018 9:49:00 AM i.	Cementer\DENSITY2_ACTUAL_RATE
3	Combined rate (BPM)	0.00 i.	12/3/2018 9:49:00 AM i.	Cementer\Flow_Combined
4				
5				

Source: Control1 9:53:53 AM