



# Great Western Operating Company

B-Farm LD 18-392HC

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API # 05-001-10094

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## Surface

12/01/2018

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Quote #: 23612

Execution #: 13573



# 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](mailto: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>	12/1/2018	<b>Well</b>	B-Farm LD 18-392HC
<b>End Date</b>	12/1/2018	<b>API#</b>	05-001-10094
<b>Client</b>	Great Western Operating Company LLC	<b>County</b>	ADAMS
<b>Client Field Rep.</b>	Jason Haines	<b>State/Province</b>	CO
<b>Service Sup.</b>	Roger Acuna	<b>Formation</b>	
<b>District</b>	Cheyenne, WY	<b>Rig</b>	Ikon 12
<b>Type of Job</b>	Surface	<b>Project ID</b>	PRJ1013087
<b>Execution ID</b>	EXC-13573-F4S3F302		

## 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	1,756.00	1,756.00	25.00		
Casing	8.92	9.63	36.00	1,756.00	1,756.00		J-55	LTC

Shoe Length (ft): 43.00

## HARDWARE

<b>Bottom Plug Used?</b>	No	<b>Tool Type</b>	Float Collar
<b>Top Plug Used?</b>	Yes	<b>Tool Depth (ft)</b>	1,711.65
<b>Top Plug Provided By</b>	Non BJ	<b>Max Casing Pressure - Rated (psi)</b>	3,520.00
<b>Top Plug Size</b>	9.625	<b>Max Casing Pressure - Operated (psi)</b>	2,816.00
<b>Centralizers Used</b>	Yes	<b>Pipe Movement</b>	None
<b>Centralizers Quantity</b>	18.00	<b>Job Pumped Through</b>	Manifold
<b>Centralizers Type</b>	Bow	<b>Top Connection Thread</b>	LTC
<b>Landing Collar Depth (ft)</b>	1,712	<b>Top Connection Size</b>	9.625

## CIRCULATION PRIOR TO JOB

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

# Cementing Treatment



## TEMPERATURE

Ambient Temperature (°F)	45.00	Slurry Cement Temperature (°F)	45.00
Mix Water Temperature (°F)	45.00		

## 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	Water	8.3300			0.00				20.0000
Tail Slurry	BJCem S100.3.XC	14.5000	1.3902	6.81	0.00	1700	760	1,056.0000	188.0000
Displacement Final	Water	8.3300			0.00			0.0000	131.5000

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	Amount of Cement Returned/Reversed	31.50
Calculated Displacement Volume (bbls)	131.50	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	131.50	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)	1,200.00	Total Volume Pumped (bbls)	339.50
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:** B-Farm LD 18-392HC

**Job Type:** Surface

**Quote ID:** QUO-23612-D6X4H8

**Plan ID:** ORD-13573-F4S3F3

**District:** Cheyenne, WY

**Execution ID:** EXC-13573-F4S3F302

**BJ Supervisor:** Roger Acuna

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
1	12/01/2018 06:00	Callout					CALLED OUT RTS 1200
2	12/01/2018 07:30	Depart for Location					DEPART CHEYENNE WY CAMP
3	12/01/2018 11:00	Arrive on Location					ARRIVE TO LOCATION, CHECK IN WITH COMPANY MAN
4	12/01/2018 11:00	STEACS Briefing					STEACS RIG UP
5	12/01/2018 11:15	Rig Up					RIG UP IRON AND HOSES
6	12/01/2018 12:00	Client					WAITING ON RIG TO FINISH RUNNING CASING AND CIRCULATE
7	12/01/2018 12:45	STEACS Briefing					PRE-JOB SAFETY MEETING TO DISCUSS JOB PROCEDURES
8	12/01/2018 13:03	Pump Spacer	8.3300	3.00	3.00	400.00	PUMP 3BBLs DYE WATER
9	12/01/2018 13:09	Pressure Test				2,000.00	TEST LINES
10	12/01/2018 13:12	Pump Spacer	8.3300	5.00	17.00	400.00	PUMP 17BBLs FRESH WATER
11	12/01/2018 13:19	Pump Tail Cement	14.5000	6.00	188.00	600.00	PUMP 188BBLs BJCEM S100.3.XC @ 14.5PPG (760SKS 1.39YLD 6.81GPS) CALCULATED TO SURFACE
12	12/01/2018 13:55	End Pumping					SHUTDOWN
13	12/01/2018 13:56	Drop Top Plug					DROP TOP PLUG
14	12/01/2018 13:57	Pump Displacement	8.3300	6.00	120.00	500.00	PUMP FRESH WATER DISPLACEMENT
15	12/01/2018 14:14	Cement Back-to-Surface					CEMENT TO SURFACE @ 100BBLs INTO DISPLACEMENT
16	12/01/2018 14:16	Pump Displacement	8.3300	3.00	12.00	700.00	SLOW RATE TO LAND PLUG. 31.5 BBLs CMT TO SURFACE
17	12/01/2018 14:21	Land Plug				1,200.00	LAND PLUG 500PSI OVER FINAL CIRCULATING PRESSURE

# EVENT LOG

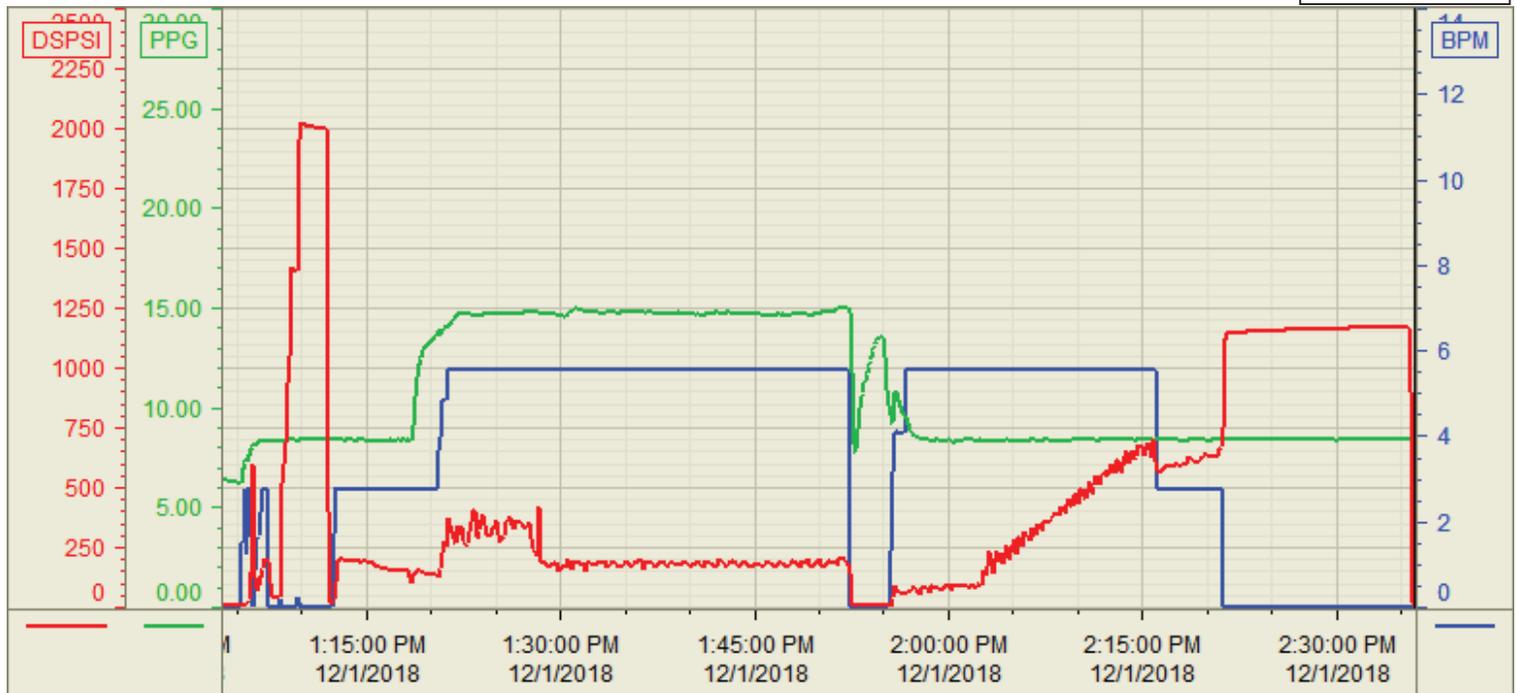


18	12/01/2018 14:21	Pressure Test				1,200.00	CASING TEST 1150 PSI CLIMBED TO 1172 PSI AFTER 15MIN
19	12/01/2018 14:35	Check Floats					CHECK FLOATS, FLOATS HELD GETTING 0.5BBLS BACK TO THE PUMP
20	12/01/2018 14:36	End Pumping					END JOB
21	12/01/2018 14:36	STEACS Briefing					STEACS RIG DOWN
22	12/01/2018 14:45	Rig Down					RIG DOWN IRON AND HOSES
23	12/01/2018 15:00	Leave Location					DEPART LOCATION

Customer: Great Western  
 Well Number: 18-392HC  
 Lease Info: B-Farms LD



Print Date/Time  
 12/1/2018 2:46:26 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press(PSI)	8.5	12/1/2018 2:36:02 PM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	DH - Density (PPG)	8.41	12/1/2018 2:36:02 PM	Cementer\DENSITY2_ACTUAL_RATE
3	Combined rate (BPM)	0.00	12/1/2018 2:36:02 PM	Cementer\Flow_Combined
4				
5				

Source: Control1 2:46:21 PM