



Great Western Operating Company, LLC

Stillroven Farm 3

API #05-123-45410

Surface Cement

September 20, 2018

Quote #: QUO-19405

Execution #: EXC-11057



Great Western Operating Company, LLC

Attention: Mr. Matt Mount | (720) 595-2173 | mmount@gwogco.com

Great Western | 1001 17th Street, Suite 2000 | Denver, CO 80202

Dear Mr. Mount,

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,

Zen Keith
Field Engineer III | (307) 757-7178 | Zen.Keith@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	9/19/2018	Field Ticket#	FT-11057-J5S0J50202-51210
End Date	9/20/2018	Well	Stillroven Farm 3
Client	GREAT WESTERN OPERATING COMPANY, LLC	API#	05-123-45410
Client Field Rep.	Satch Bowe	Well Classification	
Service Sup.	Mark Rust	County	Weld
District	Rifle, CO	State/Province	CO
Type of Job	Surface	Formation	
Execution ID	EXC-11057-J5S0J502	Rig	
Project ID	PRJ1010767		

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	Excess(%)	Grade	Thread
Open Hole	13.50	0.00	0.00	1,524.00	25.00		
Casing	8.92	9.63	36.00	1,524.00		J-55	LTC

Shoe Length (ft): 40.00

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,483.19
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	3,520.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	2,816.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	15.00	Job Pumped Through	No Manifold
Centralizers Type	Bow	Top Connection Thread	8rd
Landing Collar Depth (ft)	1,483	Top Connection Size	9.625

Cementing Treatment



CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Solids Present at End of Circulation	No
Circulation Prior to Job	Yes	Flare Prior to/during the Cement Job	No
Circulation Time (min)	30.00	Gas Present	No
Circulation Rate (bpm)	6.00		
Lost Circulation Prior to Cement Job	No		
Mud Density In (ppg)	8.34		
Mud Density Out (ppg)	8.34		

TEMPERATURE

Ambient Temperature (°F)	65.00	Slurry Cement Temperature (°F)	88.00
Mix Water Temperature (°F)	75.00		

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	6.80	0.00	1550	695	965.0000	171.7000
Displacement Final	Water	8.3300			0.00			0.0000	113.5000

Cementing Treatment



Fluid Type	Fluid Name	Component	Concentration	UOM
Tail Slurry	BJCem S100.3.XC	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	BJCem S100.3.XC	FOAM PREVENTER, FP-13L	0.0060	GALS/SK

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Comments
9/19/2018 11:28:00 PM	Water	4.00	20.00	67.00	
9/19/2018 11:32:00 PM	BJCem S100.3.XC	4.00	171.70	132.00	
9/20/2018 12:13:00 AM	Water	7.00	113.50	689.00	
		Min	Max	Avg	
Pressure (psi)		67.00	689.00	296.00	
Rate (bpm)		4.00	7.00	5.00	

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	35.00
Calculated Displacement Volume (bbls)	113.50	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	113.50	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)	1,109.00	Total Volume Pumped (bbls)	308.00
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: Stillroven Farm 3

Job Type: Surface

Quote ID: QUO-19405-C0Y0H2

Plan ID: ORD-11057-J5S0J5

Execution ID: EXC-11057-J5S0J502

District: Rifle, CO

BJ Supervisor: Mark Rust

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
1	09/19/2018 18:00	Callout					Job Call Out (RTS 21:30)
2	09/19/2018 19:30	Arrive on Location					Arrive on location
3	09/19/2018 19:30	Customer					Waiting on rig to run Casing
4	09/19/2018 22:30	Spot Units					Spot pump truck
5	09/19/2018 22:35	Rig Up					Perform safety meeting/Rig up pump
6	09/19/2018 23:00	Safety Meeting					Safety meeting with rig crew and Customer
7	09/19/2018 23:15	Rig Up					Rig up cement head
8	09/19/2018 23:22	Start Pumping	8.3400	2.50	5.00	35.00	Load lines with water
9	09/19/2018 23:24	Pressure Test	8.3400			3,000.00	Test lines with water
10	09/19/2018 23:28	Pump Spacer	8.3400	4.00	15.00	67.00	Pump water spacer
11	09/19/2018 23:32	Pumping Cement	14.5000	4.00	0.00	125.00	Start pumping cement

EVENT LOG



Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
12	09/19/2018 23:32	Pumping Cement	14.5000	4.00	50.00	125.00	Pumping cement
13	09/19/2018 23:39	Pumping Cement	14.5000	4.50	100.00	132.00	Pumping cement
14	09/19/2018 23:54	Pumping Cement	14.5000	4.50	150.00	131.00	Pumping cement
15	09/20/2018 00:05	Pumping Cement	14.5000	3.50	172.00	128.00	Finish Pumping cement
16	09/20/2018 00:11	Drop Top Plug	8.3400				Shut down/Drop top plug
17	09/20/2018 00:13	Pump Displacement	8.3400	4.00	0.00	35.00	Start displacement
18	09/20/2018 00:13	Pump Displacement	8.3400	7.00	50.00	456.00	Pumping displacement
19	09/20/2018 00:22	Pump Displacement	8.3400	5.00	100.00	689.00	Pumping displacement
20	09/20/2018 00:31	Pump Displacement	8.3400	3.50	113.50	665.00	Finish Pumping displacement
21	09/20/2018 00:35	Land Plug	8.3400		113.50	1,109.00	Bump plug/Hold pressure F.C 665psi
22	09/20/2018 00:38	Check Floats	8.3400		113.50		Bleed pressure/Check floats 0.5bbls back
23	09/20/2018 00:39	Pressure Test	8.3400			1,010.00	Test casing
24	09/20/2018 00:55	End Pumping	8.3400			1,033.00	Finish casing Test/Bleed pressure
25	09/20/2018 00:55	Rig Down	8.3400				Wash pump/Safety meeting/Start rig down
26	09/20/2018 01:45	Leave Location					Leave location

