



Great Western Operating Company

Ottesen LE 09-362HC

API # 05-123-44368

Surface

10/27/2018

Quote #: 21664

Execution #: 12493



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	10/27/2018	Well	Ottesen LE 09-362HC
End Date	10/27/2018	API#	05-123-44368
Client	Great Western Operating Company LLC	County	WELD
Service Sup.	Andrew Hyde	State/Province	CO
District	Cheyenne, WY	Type of Job	Surface
Execution ID	EXC-12493-J9Y0D502	Project ID	PRJ1012092

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	1,766.00	1,766.00	25.00		
Casing	8.92	9.63	36.00	1,766.00	1,766.00		J-55	LTC

Shoe Length (ft): 41.00

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,7124.91
Top Plug Provided By	Non BJ	Centralizers Type	Bow
Top Plug Size	9.625	Top Connection Thread	LTC
Centralizers Used	Yes	Top Connection Size	9.625
Centralizers Quantity	18.00	Landing Collar Depth (ft)	1,724

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)	8.00	Lost Circulation Prior to Cement Job	No
Circulation Volume (bbls)	240.00	Mud Density In (ppg)	8.90
Mud Density Out (ppg)	8.90		

Cementing Treatment



TEMPERATURE

Ambient Temperature (°F) 55.00
Mix Water Temperature (°F) 60.00

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	1720	769	1,068.0000	190.2000
Displacement Final	Water	8.3300			0.00			0.0000	129.7000

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

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	4.00
Calculated Displacement Volume (bbls)	132.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	132.00	Amount of Spacer to Surface	20.00
Did Float Hold?	No	Pressure Left on Casing (psi)	1,100.00
Bump Plug	Yes	Total Volume Pumped (bbls)	342.00
Bump Plug Pressure (psi)	600.00	Top Out Cement Spotted	No
Were Returns Planned at Surface	Yes	Lost Circulation During Cement Job	No
Cement returns During Job	Yes		

EVENT LOG



Customer Name: Great Western Operating
Company LLC

Well Name: Ottesen LE 09-362HC

Job Type: Surface

Quote ID: QUO-21664-S7H9D9

District: Cheyenne, WY

Plan ID: ORD-12493-J9Y0D5

Execution ID: EXC-12493-J9Y0D502

BJ Supervisor: Andrew Hyde

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol(bbls)	Pipe Pressure(psi)	Comments
1	10/27/2018 12:00	Callout					BJ crew gets called out and requested on location at 18:00
2	10/27/2018 14:00	Safety Meeting					BJ crew talks about the hazards of driving to location
3	10/27/2018 14:30	Other (See comment)					Depart yard
4	10/27/2018 17:00	Arrive on Location					Arrive on location
5	10/27/2018 17:10	Safety Meeting					BJ crew talks about the hazards of spotting in equipment and rigging up
6	10/27/2018 17:30	Rig Up					Rig up
7	10/27/2018 20:00	Safety Meeting					BJ and rig crew talk about the hazards of pumping the job
8	10/27/2018 20:59	Prime Up	8.3300	2.00	3.00	40.00	Pump 3 bbls of water to fill lines
9	10/27/2018 21:01	Pressure Test					Pressure test pumps and lines to 3,500 psi
10	10/27/2018 21:05	Pump Spacer	8.3300	2.00	20.00	50.00	Pump 20 bbls of water spacer
11	10/27/2018 21:15	Pumping Cement	14.5000	5.00	190.00	200.00	Mix up and pump 769 sks of BJCem S1 ppg, yield 1.39, 6.81 gal/sk, 190 bbls
12	10/27/2018 22:18	Other (See comment)					Shutdown line out manifold to drop top plug
13	10/27/2018 22:20	Drop Top Plug					Customer witness plug leave manifold
14	10/27/2018 22:22	Pump Displacement	8.3300	6.00	112.00	350.00	Pump 132 bbls of water displacement
15	10/27/2018 22:43	Pump Displacement	8.3300	2.00	20.00	600.00	Slow rate the last 20 bbls to 2 bpm
16	10/27/2018 22:49	Land Plug					Bump plug at 600 psi, took it up to 1,050 psi

EVENT LOG



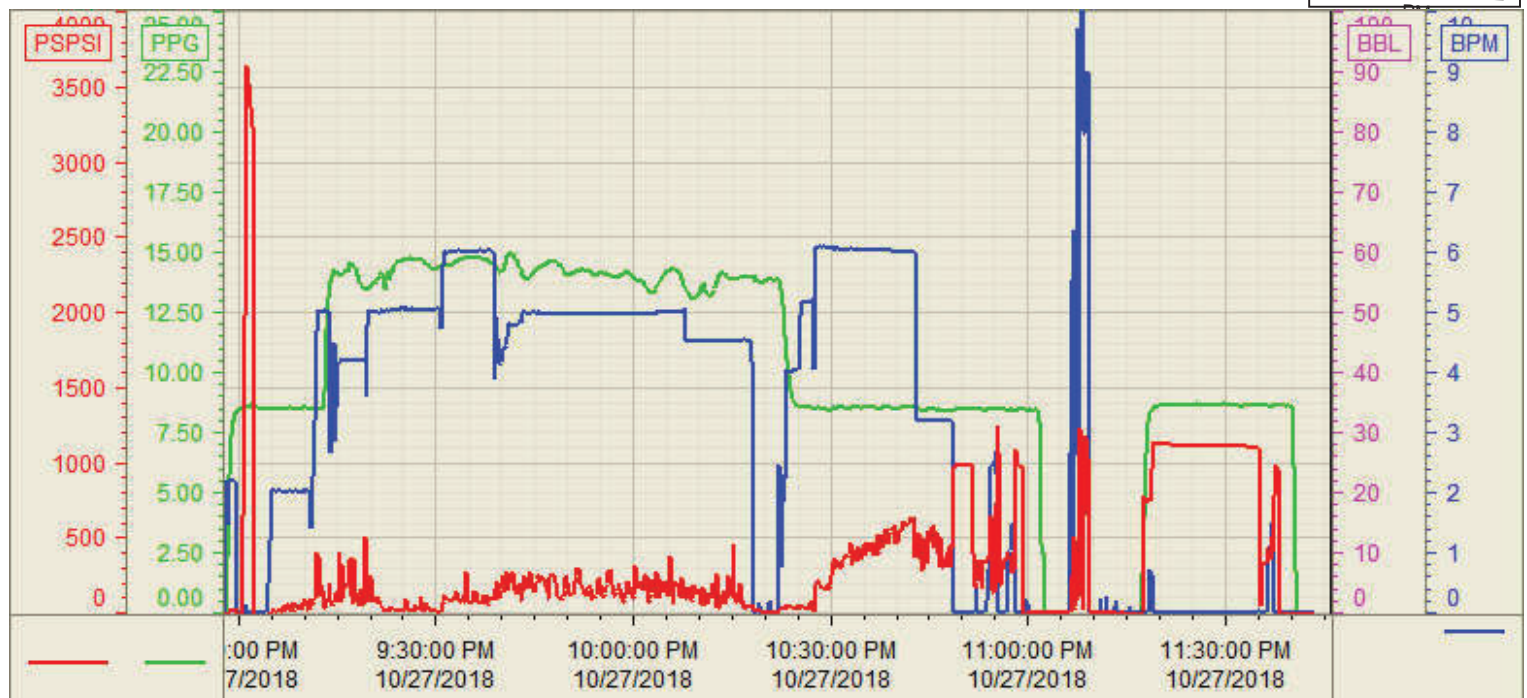
17	10/27/2018 22:53	Check Floats					Floats didn't hold pressure up to 1,000 psi and released pressure 3 times, customer wanted to do the casing test and then try again
18	10/27/2018 23:20	Pressure Test					Casing test to 1,150 psi, dropped to 1,137 psi after 15 min
19	10/27/2018 23:35	Other (See comment)					Floats still weren't hold pressure up to 1,100 psi, and shut in well
20	10/27/2018 23:40	Safety Meeting					BJ crew talks about the hazards of rigging down
21	10/27/2018 23:50	Rig Down					Rig down
22	10/28/2018 01:00	Leave Location					Depart location
23	10/28/2018 01:02	Other (See comment)					Got 4 bbls cement to surface

Customer: Great Western
Well Number: 09-362HC
Lease Info: Ottesen



Print Date/Time

10/27/2018 11:47:12



	Name	Y value	X value/time stamp	Tag name Y
1	DSPSI		10/27/2018 11:45:58 PM i.	CementenDS_DISCHARGE_PRESS_DIAL
2	BPM		10/27/2018 11:45:58 PM i.	CementenFlow_Combined
3	Den2 - Discharge Density (F		10/27/2018 11:45:58 PM i.	CementenDENSITY2_ACTUAL_RATE
4				
5				

Source: Control1 11:43:33 PM